CONSTRUCTION PRODUCT CATALOG

FULL RANGE SOLUTIONS

BUILDING TRUST

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Construction

Sika® Armatec® 110 EpoCem

Bonding Agent and Reinforcement Protection

Description	Sika® Armatec® 110 EpoCem is a 3-component, solvent-free, moisture-tolerant, epoxy-modified, cementitious product specifically formulated as a bonding agent and anti-corrosion coating.
Where to Use	■ As an anti-corrosion coating for reinforcing steel in concrete restoration. ■ As added protection to reinforcing steel in areas of thin concrete cover. ■ As a bonding agent for repairs to concrete and steel. ■ As a bonding agent for placing fresh, plastic concrete to existing hardened concrete.
Advantages	■ Excellent adhesion to concrete and steel. ■ Acts as an effective barrier against penetration of water and chlorides. ■ Long open time - up to 16 hours. ■ Not a vapor barrier. ■ Can be used exterior on-grade. ■ Contains corrosion inhibitors. ■ Excellent bonding bridge for cement or epoxy based repair mortars. ■ High strength, unaffected by moisture when cured. ■ Spray, brush or roller application. ■ Non-flammable, solvent free.
Coverage	**Bonding agent:** minimum (theoretical) on smooth, even substrate 80 ft.^{2}/gal. (=20 mils thickness). Coverage will vary depending on substrate profile and porosity. **Reinforcement Protection:** 40 ft.^{2}/gal. (=20 mils thickness) (2 coat application).
Packaging	3.5 gal. unit. (47.6 fl. oz. Comp. A + 122.1 fl. oz. Comp. B + 46.82 lb. Comp. C) Comp. A + B in carton, Comp. C in multi-wall bag. 1.65 gal. unit. (22.7 fl. oz. A + 57.6 fl. oz. B + 4 bags @ 5.5 lb.) Factory-proportioned units in a pail.

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 1 year in original, unopened packaging.

Storage Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using. If components A and B are frozen, discard. Protect Component C from humidity.

Color Concrete gray

Density (Mixed) 125 lb./ft.^{3} (2.0 kg.)

Pot Life Approximately 90 minutes

Compressive Strength (ASTM C-109)

3 days	4500 psi	(31.0 MPa)
7 days	6500 psi	(44.8 MPa)
28 days	8500 psi	(58.6 MPa)

Flexural Strength (ASTM C-348) 28 days 1250 psi (8.6 MPa)

Splitting Tensile Strength (ASTM C-496) 28 days 600 psi (4.1 MPa)

Important Data for Sika Armatec 110 as a Corrosion Protective Coating

Water	Water Permeability at 10 bar (145 psi)	8.92×10^{-15} ft./sec.
	Control	7.32×10^{-10} ft./sec.
	Water vapor diffusion coefficient μ H_2O	110
Carbon Dioxide	Carbon dioxide diffusion coefficient μ CO_2	14000

TEST DATA: Time-to-Corrosion Study

- Sika® Armatec® 110 more than tripled the time to corrosion
- Reduced corrosion rate by over 40%

Important Data for Sika® Armatec® 110 as a Bonding Agent

Bond Strength (ASTM C882) **14 days moist cure, plastic concrete to hardened concrete:**

Wet on Wet	2800 psi	(19.3 MPa)
24 hr. Open Time	2600 psi	(17.9 MPa)

Bond of Steel Reinforcement to Concrete (Pullout Test):

Sika® Armatec® 110 Coated	625 psi	(4.3 MPa)
Epoxy Coated	508 psi	(3.5 MPa)
Plain Reinforcement	573 psi	(3.95 MPa)

How to Use

Surface Preparation

Cementitious substrates: Should be cleaned and prepared to achieve a laitance and contaminant-free surface prepared in accordance with the requirements specified by the overlay or repair material by blast cleaning or equivalent mechanical means. Substrate must be saturated surface dry (SSD) with no standing water.

Steel: Should be cleaned and prepared thoroughly by blast cleaning.

Mixing

Shake contents of both Component 'A' and Component 'B'. Empty entire contents of both Component 'A' and Component 'B' into a clean, dry mixing pail. Mix thoroughly for 30 seconds with a Sika paddle on a low speed (400-600 rpm) drill. Slowly add the entire contents of Component 'C' while continuing to mix for 3 minutes until blend is uniform and free of lumps. Mix only that quantity that can be applied within its pot life.

Application

As a bonding agent - Apply by stiff-bristle brush or broom. Spray apply with Goldblatt Pattern Pistol or equal equipment. For best results, work the bonding slurry well into the substrate to ensure complete coverage of all surface irregularities. Apply the freshly mixed patching mortar or concrete wet on wet, or up to the maximum recommended open time, onto the bonding slurry.

Maximum recommended open time between application of Armatec® 110 and patching mortar or concrete:

80°-95°F (26°-35°C)	6 hours
65°-79°F (18°-26°C)	12 hours
50°-64°F (10°-17°C)	16 hours
40°-49°F (4°-9°C)	wet-on-wet

For corrosion protection only - Apply by stiff-bristle brush or spray at 80 ft.^{2}/gal. (20 mils). Take special care to properly coat the underside of the totally exposed steel. Allow coating to dry 2-3 hours at 73°F, then apply a second coat at the same coverage. Allow to dry again before the repair mortar or concrete is applied. Pour or place repair within 7 days.

Limitations

- Substrate and ambient temperature: Minimum 40°F (5°C).
- Maximum 95°F (35°C).
- Minimum thickness: As a bonding agent 20 mils.
- For reinforcement protection 40 mils.
- (2 coats, 20 mils each).
- Not recommended for use with expansive grouts.
- Use of semi-dry mortars onto Sika® Armatec® 110 EpoCem must be applied "wet on wet".
- When used in overhead applications with hand placed patching mortars, use "wet on wet" for maximum mortar built thickness.
- Substrate profile as specified by the overlay or repair material is still required.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 32, Hi-Mod

High-modulus, high-strength, epoxy bonding/grouting adhesive

Description	Sikadur® 32, Hi-Mod, is a multi-purpose, 2-component, 100% solids, moisture-tolerant structural epoxy adhesive. It conforms to the current ASTM C-881, Types I, II, and V, Grade-2, Class C and AASHTO M-235 specifications.
Where to Use	■ Bond fresh, plastic concrete to hardened concrete and steel. ■ Grout horizontal cracks in structural concrete and wood by gravity feed. ■ Machinery and 'robotic' base-plate grout. ■ Structural adhesive for concrete, masonry, metal, wood, etc.
Advantages	■ High-strength bonding/grouting adhesive. ■ Tolerant to moisture before, during and after cure. ■ Excellent adhesion to most structural materials. ■ Convenient easy-to-mix ratio A:B = 1:1 by volume. ■ Easy-to-use for bonding/grouting applications. ■ Fast initial set; rapid gain to ultimate strengths. ■ USDA-certified for use in food plants.
Coverage	**Bonding Adhesive** - 1 gal. covers approximately 80 ft.^{2} on smooth surface. **Base Plate Grout** - 1 gal. mixed with 1.5 parts oven-dried aggregate by loose volume yields approximately 420 cu. in. of grout. **Anchoring grout -** 1 gal. yields 231 cu. in. of grout.
Packaging	1, 2 and 4 gal. units.

Typical Data *(Material and curing conditions @ 73°F {23°C} and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.		
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.		
Color	Concrete gray		
Mixing Ratio	Component 'A': Component 'B' = 1:1 by volume.		
Viscosity	Approximately 3,000 cps.		
Pot Life	Approximately 30 minutes. (60 gram mass). Approximately 22 minutes. (350 gram mass, 8 oz.)		
Contact Time	**40°F (4°C)*:** 12 hrs.	**73°F (23°C)*:** 3-4.5 hrs.	**90°F (32°C)*:** 1.5-2 hrs
Compressive Modulus, psi	**7 day**	2.1 X 10^5 psi (1,449 MPa)	
Tensile Properties (ASTM D-638)			
7 day	Tensile Strength	6,900 psi (48 MPa)	
	Elongation at Break	1.9%	
14 day	Modulus of Elasticity	5.4 X 10^5 psi (3,726 MPa)	
Flexural Properties (ASTM D-790)			
14 day	Flexural Strength (Modulus of Rupture)	7,000 psi (48.3 MPa)	
	Tangent Modulus of Elasticity in Bending	6.9 X 10^5 psi (4,800 MPa)	
Shear Strength (ASTM D-732)	**14 day**	Shear Strength	6,200 psi (43 MPa)
Water Absorption (ASTM D-570)	**7 day** (24 hour immersion)		0.21%
Heat Deflection Temperature (ASTM D-648)			
7 day	[fiber stress loading 264 psi (1.8 MPa)]	122°F (50°C)	
Bond Strength (ASTM C-882):			
2 day (moist cure)	Plastic Concrete to Hardened Concrete		1,700 psi (11.7 MPa)
	Hardened Concrete to Hardened Concrete		2,000 psi (13.8 MPa)
	Hardened Concrete to Steel		1,900 psi (13.1 MPa)
14 day (moist cure)	Plastic Concrete to Hardened Concrete		2,200 psi (15.1 MPa)
	Plastic Concrete to Steel		2,000 psi (13.8 MPa)
	Hardened Concrete to Hardened Concrete		2,000 psi (13.8 MPa)

Compressive Properties (ASTM D-695)
Compressive Strength, psi (MPa)

	40°F* (4°C)	73°F* (23°C)	90°F* (32°C)
8 hour	-	140 (1.0)	1,700 (11.7)
16 hour	-	4,800 (33.1)	7,300 (50.3)
1 day	30.0 (0.2)	5,700 (39.3)	7,300 (50.3)
3 day	5,300 (36.6)	11,300 (77.9)	10,400(71.7)
7 day	9,600 (66.2)	11,800 (81.4)	10,400(71.7)
14 day	11,900 (82.1)	12,200 (84.1)	10,400(71.7)
28 day	12,600 (86.9)	12,200 (84.1)	10,500(72.4)

*Material cured and tested at the temperatures indicated.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants.

Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blastcleaning or other equivalent mechanical means.

Steel - Should be cleaned and prepared thoroughly by blastcleaning or other equivalent mechanical means.

Mixing

Pre-mix each component. Proportion equal parts by volume of Component 'A' and Component 'B' into clean pail. Mix thoroughly for 3 minutes with Sika paddle on low-speed (400-600 rpm) drill until blend is a uniform color. Mix only that quantity that can be applied within its pot life.

Application

To bond fresh concrete to hardened concrete - Apply by brush, roller, broom or spray. Place fresh concrete while Sikadur® 32, Hi-Mod, is still tacky. If coating becomes glossy and loses tackiness, remove any surface contaminants then recoat with additional Sikadur® 32 Hi-Mod, and proceed.

To grout baseplates - Add up to 1 1/2 parts of oven-dried aggregate to 1 part of mixed Sikadur® 32, Hi-Mod, by volume. Place grout under baseplate. Avoid contact with the underside of the plate. A 1/4 to 3/8 in. (6 to 10 mm) space should remain between the top of the grout and the bottom of the plate.

Maximum thickness of grout per lift is 1.5 in. (38 mm) If multiple lifts are needed, allow preceding layer to cool to touch before applying additional layer. The remaining 1/4 to 3/8 in. (6 to 10 mm) space should be filled with neat Sikadur® 32 Hi-Mod. Pour a sufficient quantity of neat epoxy to allow the level to rise slightly higher than the underside of the bearing plate.

To gravity feed cracks - Pour neat material into vee-notched crack. Continue placement until completely filled. Seal underside of slab prior to filling if cracks reflect through.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C).
- For spray applications, consult Technical Service at 800-933-7452.
- Use only oven-dry aggregate.
- Material is a vapor barrier after cure.
- For applications on exterior, on-grade substrates, consult Technical Services at 800-933-7452.
- Do not apply over wet, glistening surface.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 32, Hi-Mod LPL

High-modulus, high-strength, extended pot life, epoxy bonding/grouting adhesive

Description	Sikadur® 32, Hi-Mod LPL is a multi-purpose, 2-component, 100% solids, moisture-tolerant, structural epoxy adhesive. Sikadur® 32, Hi-Mod LPL offers a long pot life and contact time even at 100°F (38°C). Sikadur® 32, Hi-Mod LPL conforms to the current ASTM C-881, Types I and II, Grade-2, Class-C and AASHTO M-235 specifications.
Where to Use	■ Hot weather concrete placements requiring a bonding adhesive. ■ Bond fresh, plastic concrete to hardened concrete and steel. ■ Grout horizontal cracks in structural concrete and wood by gravity feed. ■ Machinery and baseplate grout. ■ Structural adhesive for concrete, masonry, metal, wood, etc.
Advantages	■ Extended pot life and contact time at elevated temperatures. ■ High-strength bonding/grouting adhesive. ■ Tolerant of moisture before, during, and after cure. ■ Excellent adhesion to most structural materials. ■ Convenient easy-to-mix ratio A:B = 1:1 by volume. ■ Easy-to-use for bonding/grouting applications.
Coverage	**Bonding Adhesive -** 1 gal. covers approximately 80 ft.^{2} on smooth surface. **Base Plate Grout -** 1 gal. mixed with 1 1/2 parts oven-dried aggregate by loose volume yields approximately 420 in.^{3} of grout.
Packaging	1 and 4 gal. units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.
Color	Dark gray.
Mixing Ratio	Component 'A' : Component 'B' = 1:1 by volume.
Viscosity (Mixed)	Approximately 2,800 cps.
Pot Life	Approximately 90 minutes @ 73°F (23°C). (8 fl. oz. volume) Approximately 60 minutes @ 100°F (38°C). (8 fl. oz. volume)

Contact Time:

Substrate Temperature	40°F (4°C)	73°F (23°C)	90°F (32°C)
Material Temperature 73°F (23°C)	10-14 hr.	6-7 hr.	2-2.5 hr.
Material Temperature 100°F (38°C)	6-8 hr.	5-6 hr.	1.5-2 hr.

Tensile Properties (ASTM D-638) 14 day

Tensile Strength	5,800 psi (40.0 MPa)
Elongation at Break	5 %
Modulus of Elasticity	4.9 x 10^5 psi (3,381 MPa)

Flexural Properties (ASTM D-790)

14 day	Flexural Strength (Modulus of Rupture)	9,100 psi (62.8 MPa)
	Tangent Modulus of Elasticity in Bending	7.3 X 10^5 psi (5,037 MPa)

Shear Strength (ASTM D-732)	**14 day**	Shear Strength	6,400 psi (44.1 MPa)
Water Absorption (ASTM D-570)	**7 day**	(4 hours)	0.15%
Deflection Temperature (ASTM D-648)		**14 day**	108°F (42°C)
		(fiber stress loading = 264 psi {1.8 MPa})	

Bond Strength (ASTM C-882)

14 day (moist cure)	Plastic concrete to hardened concrete	2,200 psi (15.2 MPa)
14 day (moist cure)	Plastic concrete to steel	2,200 psi (15.2 MPa)
2 day (dry cure)	Hardened concrete to hardened concrete	3,100 psi (21.3 MPa)
14 day (moist cure)	Hardened concrete to hardened concrete	2,900 psi (20 MPa)

Compressive Properties (ASTM D-695)		
Compressive Strength, psi (MPa)	**40°F* (4°C)***	**73°F* (23°C)***
1 day	-	-
3 day	-	10,700 (73.8)
7 day	2,500 (17.2)	11,000 (75.9)
14 day	8,300 (57.2)	12,000 (82.3)
28 day	10,000 (68.9)	13,000 (89.7)
Compressive Modulus	**28 day**	2.6 x 10^5 psi (1,794 MPa)

* Material cured and tested at the temperatures indicated.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants.
Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means.
Steel - Should be cleaned and prepared thoroughly by blast cleaning or other equivalent mechanical means.

Mixing

Pre-mix each component. Proportion equal parts by volume of Component 'A' and Component 'B' into clean pail. Mix thoroughly for 3 minutes with Sika paddle on low-speed (400-600 rpm) drill until blend is a uniform color. Mix only that quantity that can be applied within its pot life.

Application

To bond fresh concrete to hardened concrete - Apply by brush, roller, broom, or spray. Place fresh concrete while Sikadur® 32, Hi-Mod LPL is still tacky. If coating becomes glossy and loses tackiness, remove any surface contaminants then recoat with additional Sikadur® 32, Hi-Mod LPL and proceed.

To grout base plates - Add 1 1/2 parts of oven-dried aggregate to 1 part of mixed Sikadur® 32, Hi-Mod LPL by volume. Place grout under baseplate. Avoid contact with the underside of the plate. A 1/4- to 3/8-in. (6-10 mm) space should remain between the top of the grout and the bottom of the plate. Maximum thickness of grout per lift is 1.5 in. (38 mm) If multiple lifts are needed, allow preceding layer to cool to touch before applying additional layer. The remaining 1/4 to 3/8-in. (6-10 mm) space should be filled with neat Sikadur® 32, Hi-Mod LPL. Pour a sufficient quantity of neat epoxy to allow the level to rise slightly higher than the underside of the bearing plate.

To gravity feed cracks - Pour neat material into vee-notched crack. Continue placement until completely filled. Seal underside of slab prior to filling if cracks reflect through.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C).
- For spray applications, consult Technical Service.
- Use only oven-dry aggregate.
- Material is a vapor barrier after cure.
- For applications on exterior, on-grade substrates, consult Technical Service.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Liquid Weld

Concrete and Plaster Bonding Agent

Description	Superior, reemulsifiable, liquid bonding agent for concrete, cement mortars and stucco.
Where to Use	■ Bond new concrete to new or old concrete ■ Interior or Exterior use ■ Vertical or Horizontal ■ Use on concrete, concrete block, cement board, hardiboard, plywood, brick, plaster, tile, gypsum, or stone
Advantages	■ Reemulsifiable or rewettable ■ Extended open time ■ Increased bond strength ■ High build bonding agent ■ Improved repair durability
Coverage	Unit yields approx. 150 - 300 sq.ft. per gallon depending upon actual porosity of the prepared substrate.
Packaging	1 x 2 gallon can; box

How to Use

Mixing	Prior to installation, stir SikaQuick Liquid Weld before use for consistent dispersion. Apply Undiluted.
Surface Preparation	Remove all deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an aggregate-fractured surface with a minimum CSP 3 surface profile or greater. Ensure there are no curing compounds or other contaminants remaining on the substrate before application. Substrate must be dry before application.
Application	Be sure repair is not less than 1/2 inch in depth. Apply Liquid Weld uniformly over the substrate using a stiff brush, broom, roller or spray to form a continuous film. Reapply Liquid Weld that are not covered entirely. Allow film to dry for approximately 1 hour prior to application of mortars, concrete or stucco. Dry time can be affected by temperature and humidity, check to make sure product is dry to the touch before topping. Extremely porous substrates may require 2 coats of Liquid Weld. Protect newly applied Liquid Weld from dust, dirt, debris and moisture.

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% RH)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	1 year in original, unopened containers
Storage Conditions:	Store in cool, frost-free conditions with temperatures between 50°F to 90°F (10°C to 32°C).
Product Conditioning:	Condition product to between 50°F to 90°F (10°C to 32°C).
Drying Time:	1 Hour
Colors:	Light Blue
Viscosity:	1000 cps
Tensile Bond Strength (ACI 503R):	150 psi (7 days) - substrate failure (5,000 psi concrete)
Shear Bond Strength (ASTM C881):	800 psi (7 days)
Freeze-Thaw Stability:	5 cycles freeze (-10 deg F and thaw). Freeze-thaw stable.

Construction

Limitations

- Not for use in wet environments, including exterior horizontal substrates, in or around swimming pools,showers, decks, below grade or retaining walls that may be subject to hydrostatic pressures, side walks, or parking ramps.
- Do not dilute
- Do not apply onto water soluble substrates
- Do not apply on frozen or frost covered substrates.
- Low temperatures or high humidity will extend curing time.
- Do not allow stored product to freeze

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaRepair® 222

One-component, early strength gaining, cementitious patching material

Description	SikaRepair® 222 is a one-component, early strength gaining, cementitious, patching material for horizontal repair of concrete.
Where to Use	■ On grade, above and below grade on concrete and mortar. ■ As a repair material for spalled horizontal concrete surfaces, walkways, ramps, steps, etc.
Advantages	■ Easy-to-use; just add water. ■ Not a vapor barrier. ■ Suitable for exterior and interior applications. ■ Not flammable. ■ Easily applied to clean, sound substrate. ■ High early strengths.
Coverage	Approximately 0.42 cu. ft. Approximately 0.62 cu. ft. (222+32 lbs. of 3/8" pea gravel).
Packaging	50 lb. multi-wall bag. SikaLatex R - 1 gal. plastic jug; 4/carton, 5 gal. pails

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life	One year in original, unopened bags.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.
Color	Concrete gray
Mixing Ratio	gallon to gallon of liquid per 50 lb. bag
Application Time	Approximately 30 minutes
Finishing Time	50-120 minutes

Note: All times start after adding Component 'B' to Component 'A' and are highly affected by temperature, relative humidity, substrate temperature, wind, sun, and other jobsite conditions.

		With undiluted Latex R
Compressive Strength (ASTM C109)		
1 day	>2,000 psi (12.4 MPa)	2,300 psi (15.9 MPa)
7 days	4,000 psi (27.6 MPa)	4,500 psi (31.0 MPa)
28 days	5,000 psi (34.5 MPa)	5,500 psi
Flexural Strength (ASTM C293)		
28 days	750 psi (5.2 MPa)	1,200 psi (8.2 MPa)
Splitting Tensile Strength (ASTM C496)		
28 days	450 psi (3.1 MPa)	700 psi (4.8 MPa)
Bond Strength *(ASTM C882 modified)		
28 days	2,000 psi (13.8 MPa)	2,000 psi (13.8 MPa)

* Mortar scrubbed into substrate.

How to Use

Surface Preparation

Surface Preparation Remove all deteriorated concrete, dirt, oil grease and all bond inhibiting materials from surface. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1/8 inch. (CSP-6). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application.

Priming

For priming of reinforcing steel use Sika® Armatec® 110 EpoCem (consult Technical Data Sheet). Concrete Substrate: Prime the prepared substrate with a brush or sprayed applied coat of Sika® Armatec® 110 EpoCem (consult Technical Data Sheet). Alternately, a scrub coat of SikaRepair® 222 can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.

Mixing

With water: Wet down all tools and mixer to be used. Add approximately 3/4 gallon of water to mixing vessel. Slowly add 1 bag of SikaRepair® 222 while continuing to mix. Mechanically mix with a low-speed drill (400-600 rpm) and Sika paddle or in an appropriate size mortar mixer. Add an additional 1/8 gallon of water if needed. With Latex R: Pour 3/4 gallon of SikaLatex® R into the mixing container. Slowly add powder, mix and adjust as above.

With diluted Latex R: SikaLatex® R may be diluted up to 5:1 (water: Sika Latex R) for projects requiring minimal polymer-modification. Pour 3/4 gallon of the mixture into the mixing container. Slowly add powder, mix and adjust as above. SikaRepair® 222 Concrete: For applications greater than 1 inch depth, add a 3/8 inch coarse aggregate. Aggregate must be non-reactive (reference ASTMC1260, C227 and C289), clean, well-graded, saturated surface dry (SSD), have low absorption and high density, and comply with ASTM C33 size number 8 per Table 2. Addition rate must not exceed 32 lbs. of aggregate/bag of SikaRepair® 222 (32 lbs. of 3/8 in. aggregate is approximately 2.5 to 3.0 gal. by loose volume of aggregate). Water may be varied to achieve the desired consistency. Do not over water.

Application

The prepared mortar must be scrubbed into the substrate, filling all pores and voids. Force material against edge of repair, working toward center. After filling repair, consolidate, then screed. Allow mortar to set to desired stiffness, then finish. Mixing, placing and finishing should not exceed 45 minutes maximum.

Tooling & Finishing

Curing As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based, compatible curing compound. Curing compounds adversely affect the adhesion of following lifts of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect freshly applied mortar from direct sunlight, wind, rain and frost.

Limitations

- Application thickness: (with water and diluted Latex R) Min. Max. inches one lift Neat 1/4 inch (6 mm) 1 inch (25 mm) Extended 1 inch (25 mm) 4 inches (100 mm)
- Application thickness: (with undiluted Latex R) Min. Max. inches one lift Neat 1/8 in (3 mm) 1 inch (25 mm) Extended 1 inch (25 mm) 4 inches (100 mm)
- Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application.
- Addition of coarse aggregates may result in variations of the physical properties of the mortar.
- Use only potable water.
- Not intended for use as an overlay material.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaRepair® 223

One component, early strength gaining, cementitious patching material

Description	SikaRepair 223 is a one-component, early strength gaining, cementitious, patching material for vertical and overhead repair of concrete.
Where to Use	■ On grade, above, and below grade on concrete and mortar. ■ As a repair material for vertical and overhead concrete surfaces.
Advantages	■ Easy-to-use. ■ Suitable for exterior and interior applications. ■ Easily applied to clean, sound substrate. ■ High early strengths. ■ Increased abrasion resistance. ■ Increased freeze/thaw resistance. ■ Not a vapor barrier. ■ Not flammable
Coverage	Approximately 0.41 cu. ft.
Packaging	SikaRepair 223 - 50 lb. multi-wall bag. SikaLatex R - 1 gal. plastic jug; 4/carton, 5 gal. pails

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	One year in original, unopened bags.	
Storage Conditions	Store dry at 40°-95°F (4°-35°C). **Condition material to 65°-75°F before using.**	
Color	Concrete gray	
Mixing Ratio	gallon to 1 gallon of liquid per 50 lb. bag	
Application Time	Approximately 15 min. after adding powder to Latex or Latex R. Application time is dependent on temperature and relative humidity.	
Finishing Time	20 to 60 min after combining powder and liquid: depends on temperature, relative humidity, and type of finish desired	
Flexural Strength (ASTM C-293)		**with undiluted Latex R**
28 days	850 psi (5.9 MPa)	1,200 psi (8.2 MPa)
Splitting Tensile Strength (ASTM C-496)		
28 days	550 psi (3.8 MPa)	700 psi (4.8 MPa)
Bond Strength * (ASTM C-882 modified		
28 days	1,800 psi (12.4 MPa)	2,000 psi (13.8 MPa)
Compressive Strength (ASTM C-109)		
1 day	>3,500 psi (20.7 MPa)	>4,000 psi (22.8 MPa)
7 days	6,000 psi (41.4 MPa)	6,200 psi (42.8 MPa)
28 days	>7,500 psi (48.3 MPa)	>8,000 psi (51.7 MPa)

*Mortar scrubbed into substrate

How to Use

Surface Preparation

Remove all deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. Be sure repair area is not less than 1⁄4 inch in depth. Preparation work should be done by scabbler or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1⁄8 inch (CSP-6). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application.

Priming

For priming of reinforcing steel use Sika Armatec 110 EpoCem (consult Technical Data Sheet).

Concrete Substrate: Prime the prepared substrate with a brush or sprayed applied coat of Sika Armatec 110 EpoCem (consult Technical Data Sheet). Alternately, a scrub coat of Sika Repair 223 can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.

Mixing

With water: Wet down all tools and mixer to be used. Add approximately 3⁄4 gallon of water to mixing vessel. Slowly add 1 bag of SikaRepair 223 while continuing to mix. Mechanically mix with a low-speed drill (400-600 rpm) and Sika paddle. 1⁄4 gallon of water may be added to achieve desired consistency. Do not over water. Maintain a mix temperature of 65°-75°F for maximum performance by using hot or cold water as needed.

With Latex R: Pour 3⁄4 gallon of SikaLatex R into the mixing container. Slowly add powder while continuing to mix mechanically as above. Add remaining SikaLatex R (up to 1⁄4 gallon) to adjust the desired consistency.

note: SikaLatex R must be protected from freezing. If frozen, discard.

With diluted Latex R: Sika Latex R may be diluted up to 5:1 (water:Sika Latex R) for projects requiring minimal polymer-modification. Pour 3⁄4 gallon of the mixture into the mixing container. Slowly add powder and mix as above. Add remaining diluted SikaLatex R (up to 1⁄4 gallon) to adjust the desired consistency.

Application

At the time of application, surfaces should be saturated surface dry (SSD) with no standing water. Mortar must be scrubbed into the substrate, filling all pores and voids. Force material against edge of repair, working toward center. After filling repair, consolidate, then screed. Material may be applied in multiple lifts. The thickness of each lift not to be less than 1⁄2 inch minimum. Where multiple lifts are required score top surface of each lift to produce a roughened surface for next lift. Allow preceding lift to reach final set, 30 minutes minimum before applying fresh material. Saturate surface of the lift with clean water. Scrub fresh mortar into preceding lift. Allow mortar to set to desired stiffness, then finish with wood or sponge float for a smooth surface, or texture as required. For repairs greater than 1 inch in depth, the use of SikaRepair 222 extended with coarse aggregate, and appropriate formwork is also recommended.

Important: Maximum bond is achieved with application of a scrub coat on properly prepared, saturated surface dry (SSD) substrate.

Tooling and Finishing

As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based compatible curing compound. Curing compounds adversely affect the adhesion of following lifts of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect freshly applied mortar from direct sunlight, wind, rain and frost.

Limitations

- Application thickness: (with water and diluted Latex R) Minimum ¼ inch (6 mm). Maximum in one lift 1.5 inch (38 mm).
- Application thickness: (with undiluted Latex R) Minimum ⅛ inch (3 mm). Maximum in one lift 1.5 inch (38 mm).
- Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application.
- Use only potable water.
- Do not use solvent-based curing compound.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur Hi-Mod 32.

Construction

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.v.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaRepair® SHA

Fast-setting, one component, cementitious repair mortar with superior high build properties

Description	SikaRepair SHA is a fast-setting, one-component, cementitious ready to use repair mortar. The incorporation of low density aggregates allows high build applications on vertical and overhead surfaces. SikaLatex R or SikaLatex may be used instead of water for a two component, polymer-modified repair mortar.
Where to Use	■ Fast repairs to overhead and vertical concrete and mortar surfaces on grade, above and below grade. ■ As a repair material for building facades, parking structures, industrial plants, bridges, etc.
Advantages	■ Minimal time required between lifts. ■ Fast finishing time ■ Time/labor-saving material; application up to 3 inches on vertical surfaces in one layer. ■ Easy to use; just add water. ■ High bond strength ensures excellent adhesion. ■ Good, early and ultimate strength. ■ Increased freeze/thaw durability and resistance to deicing salts. ■ Easy to clean. ■ Suitable for exterior and interior applications. ■ Not a vapor barrier.
Coverage	0.55 cu. ft./bag
Packaging	Sika Repair SHA: 25 lb. bag, 60/pallet; 50 lb. (22.7 kg.) multi-wall bag. SikaLatex (R): 1 gal. plastic jug; 4/carton, 5 gal. pails.

Typical Data *(Material and curing conditions @ 73°F (23C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	One year in original, unopened bags.	
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.	
Color	Concrete gray.	
Mixing Ratio	1 50 lb. bag SikaRepair SHA + 3/4 gal. to 1 gal. of liquid	
Density (Wet mix)	106 lbs./cu. ft. (1.70 kg./l)	
Application Time	Approximately 10-15 minutes.	
Finishing Time	20-30 minutes	
Time Between Lifts	Less than 1 hour	
Compressive Strength (ASTM C-109)		**with Latex R**
1 day	2,000 psi (13.8MPa)	2,500 psi (17.2 MPa)
7 days	3,000 psi (20.7 MPa)	3,500 psi (24.1 MPa)
28 days	4,500 psi (31.0 MPa)	5,000 psi (34.5 MPa)
Flexural Strength (ASTM C-293)		
28 days	800 psi (5.5 MPa)	1,100 psi (9.7 MPa)
Bond Strength * (ASTM C-882 modified		
28 days	1,000 psi (6.8 MPa)	1, 800 psi (12.4 MPa)

*Mortar scrubbed into substrate

How to Use

Substrate	Concrete, mortar, and masonry products.

Construction

Surface Preparation - **Concrete/Mortar:** Remove all deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. Preparation work should be done by high pressure water blast, scabbler or other appropriate mechanical means to obtain an exposed aggregate surface profile of ±1/16-in. (CSP-5). After preparation, substrate strength should be verified prior to patch placement. Substrate should be saturated surface dry (SSD) with no standing water during application.

Reinforcing Steel: Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel use Sika Armatec 110 EpoCem (consult Technical Data Sheet).

Concrete Substrate: Prime the prepared substrate with a brush or sprayed applied coat of Sika Armatec 110 EpoCem (consult Technical Data Sheet). Alternately, a scrub coat of Sika Repair SHA can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.

Mixing

With water: Pour 3/4 of one gallon of water into the mixing container. Add powder while mixing continuously. Mix mechanically with a low-speed drill (400-600 rpm) and mixing paddle or in an appropriate mortar mixer. Add more water to obtain desired consistency of the mortar. Do not exceed one gallon per bag. Mix to uniform consistency, maximum 3 minutes. Manual mixing can be tolerated only for less than a full unit. Thorough mixing and proper proportioning is necessary.

With Latex R: Pour 3/4 gallon of Sika Latex R into the mixing container. Slowly add powder and mix as above.

With diluted Latex R: Sika Latex R may be diluted up to 5:1 (water: Sika Latex R) for projects requiring minimal polymer-modification. Pour 3/4 gallon of the mixture into the mixing container. Slowly add powder and mix as above.

Note: SikaLatex R must be protected from freezing. If frozen, discard.

Application

The mixed SikaRepair SHA must be worked well into the primed substrate, filling all pores and voids. Compact well. Force material against edge of repair working towards the center. Thoroughly compact the mortar around exposed reinforcement. After filling repair, consolidate, then screed. Finish with steel, wood, plastic floats, or damp sponges, depending on the desired surface texture. Where multiple lifts are required, score top surface on each lift to produce a roughened substrate for next lift. Allow preceding lift to harden before applying fresh material. Saturate surface of the lift with clean water. If previous layers are over 48 hours old, mechanically prepare the substrate and dampen.

Tooling and Finishing

As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound. Curing compounds adversely affect the adhesion of following lifts of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect freshly applied mortar from direct sunlight, wind, rain and frost.

* Pretesting of curing compound is recommended.

Limitations

- Application thickness: Minimum: With water: 1/4 inch (6 mm). With Latex R: 1/8" (3 mm). Maximum in one lift: 3 inches (75 mm) vertical, 1.5 inches (38 mm) overhead.
- Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application.
- Do not use solvent based curing compounds. As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur Hi-Mod 32.

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada inc.
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Quebec H9R 4A9
Phone: 514-697-2610
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Sika Mexicana S.A. de C.v.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaRepair® SHB

One component, cementitious repair mortar with superior high build properties that may be hand applied or wet-sprayed

Description	SikaRepair SHB is a one-component, cementitious ready to use repair mortar. It is a multi-purpose mortar which can be applied by trowel or low pressure wet spray process. The incorporation of low density aggregates allows high build applications on vertical and overhead surfaces. SikaLatex R or SikaLatex may be used instead of water for a two component, polymer-modified repair mortar.
Where to Use	■ Fast repairs to overhead and vertical concrete on mortar surfaces on grade, above and below grade. ■ As a repair material for building facades, parking structures, industrial plants, bridges, etc.
Advantages	■ Time/labor-saving material; application up to 3 inches on vertical surfaces in one layer. ■ Application by hand or low pressure wet spray method. ■ Easy to use; just add water. ■ High bond strength ensures excellent adhesion. ■ Good, early and ultimate strength. ■ Increased freeze/thaw durability and resistance to deicing salts. ■ Easy to clean. ■ Suitable for exterior and interior applications. ■ Not a vapor barrier.
Coverage	0.55 cu. ft./bag
Packaging	Sika Repair SHB: 25 lb. bag, 60/pallet, 50 lb. (22.7 kg.) multi-wall bag. SikaLatex (R): 1 gal. plastic jug; 4/carton, 5 gal. pails.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	One year in original, unopened bags.	
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.	
Color	Concrete gray	
Mixing Ratio	1 50 lb. bag SikaRepair SHB + 3/4 to 1 gallon of liquid	
Density (Wet mix)	106 lbs./cu. ft. (1.70 kg./l.)	
Working Time	Approximately 30 minutes.	
Finishing Time	(Initial Set) 2-3 hours	
Compressive Strength (ASTM C-1090)		**with Latex R**
1 day	2,500 psi (17.2MPa)	2,500 psi (17.2 MPa)
28 days	5,000 psi (34.5 MPa)	5,000 psi (34.5 MPa)
Flexural Strength (ASTM C-293)		
28 days	800 psi (5.5 MPa)	1,400 psi (9.7 MPa)
Bond Strength * (ASTM C-882 modified		
28 days	1,000 psi (6.8 MPa)	1, 800 psi (12.4 MPa)

*Mortar scrubbed into substrate

How to Use

Substrate	Concrete, mortar, and masonry products.
Surface Preparation	**Concrete/Mortar:** Remove all deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. Preparation work should be done by high pressure water blast, scabbler or other appropriate mechanical means to obtain an exposed aggregate surface profile of ±1/16-in. (CSP5). Substrate should be saturated surface dry (SSD) with no standing water during application. **Reinforcing Steel:** Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high pressure washed with clean water after mechanical cleaning.
Priming	For priming of reinforcing steel use Sika Armatec 110 EpoCem (consult Technical Data Sheet). **Concrete Substrate:** Prime the prepared substrate with a brush or sprayed applied coat of Sika Armatec 110 EpoCem (consult Technical Data Sheet). Alternately, a scrub coat of Sika Repair SHB can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.
Mixing	**With water:** Pour 3/4 of one gallon of water into the mixing container. Add powder while mixing continuously. Mix mechanically with a low-speed drill (400-600 rpm) and mixing paddle or in an appropriate mortar mixer. Adjust water to desired consistency of the mortar. Do not exceed one gallon per bag. Mix to uniform consistency, maximum 3 minutes. Manual mixing can be tolerated only for less than a full unit. Thorough mixing and proper proportioning is necessary. **With Latex R:** Pour 3/4 gallon of Sika Latex R into the mixing container. Slowly add powder, mix and adjust as above. **With diluted Latex R:** Sika Latex R may be diluted up to 5:1 (water: Sika Latex R) for projects requiring minimal polymer modification. Pour 3/4 gallon of the mixture into the mixing container. Slowly add powder, mix and adjust as above. **Note:** SikaLatex R must be protected from freezing. If frozen, discard.
Application	SikaRepair SHB can be applied either by hand or wet spray process equipment. The mixed SikaRepair SHB must be worked well into the primed substrate, filling all pores and voids. Compact well. Force material against edge of repair working towards the center. Thoroughly compact the mortar around exposed reinforcement. After fillin repair, consolidate, then screed. Finish with steel, wood, plastic floats, or damp sponges, dependi g on the desired surface texture. Where multiple lifts are required, score top surface on each lift to produce a roughened substrate for next lift. Allow preceding lift to harden before applying fresh material. Saturate surface of the lift with clean water. If previous layers are over 48 hours old, mechanically prepare the substrate and dampen. **Application by machine:** Apply SikaRepair SHB mortar by low or high pressure wet spray. Shoot SikaRepair SHB perpendicular to the surface. This minimizes rebound, creates the smoothest pattern (reduces 'bumps') and properly encases the rebars. The velocity of the material is sufficient if, at a distance of 18 to 24 in., the material pattern flattens out on contact with the surface and the rebars are encased. After applying the material, allow it to stiffen for about 10 minutes before removing bumpy areas with a trowel. Before applying the next layer, allow the material to reach initial set. This will take anywhere from 45 minutes to several hours, depending on mix consistency, mix and ambient temperature, wind conditions and humidity. Begin and finish a given patch on the same da .
Tooling and Finishing	As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound. Curing compounds adversely affect the adhesion of following lifts of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect freshly applied mortar from direct sunlight, wind, rain and frost. * Pretesting of curing compound is recommended.
Limitations	■ Application thickness: Minimum: With water: 1/4 inch (6 mm). With Latex R: 1/8 inch (3 mm). Maximum in one lift: 3 inches (75 mm) vertical. 1.5 inches (38 mm) overhead. ■ Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application. ■ Do not use solvent based curing compounds. ■ As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur Hi-Mod 32.

Construction

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800-933-7452. NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTION FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.v.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaTop® 121 PLUS

Two-component, polymer-modified, cementitious leveling/pore sealing mortar plus FerroGard 901 penetrating corrosion inhibitor

Description

SikaTop 121 *PLUS* is a two component, polymer-modified, leveling and pore sealing mortar with the additional benefit of FerroGard 901, penetrating corrosion inhibitor. SikaTop 121 *PLUS* provides a smooth substrate, free of irregularities and bug holes for following protective coatings.

Where to Use

- As a leveling/pore sealing mortar prior to protective coatings.
- On horizontal, vertical and overhead surfaces, interior and exterior.
- On grade, above and below grade, on concrete and mortar substrates.
- Block filler.
- Minor repair for gouges and broken edges.

Advantages

- Excellent adhesion to concrete and mortar substrates.
- High flexural and compressive strengths
- Increased density - improved carbon dioxide resistance (carbonation) without adversely affecting water vapor transmission (not a vapor barrier).
- Increased freeze/thaw durability and resistance to deicing salts.
- Adds effective cover over rebars.
- Enhanced with FerroGard 901, a penetrating corrosion inhibitor - reduces corrosion even in the adjacent concrete.
- Compatible with coefficient of thermal expan ion of concrete - Passes ASTM C-884 (modified)
- Can be applied over Sika FerroGard 903, corrosion inhibiting impregnation.
- Not flammable

Coverage

0.4 cu. ft./unit; One unit covers approximately 65 sq. ft. (6 m2) of smooth surface at 1/12 inch (2 mm) thickness

Packaging

Component 'A' - 1 gal. plastic jug; 4/carton. **Component 'B'** - 46.5 lb. multi-wall bag.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	One year in original, unopened packaging.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using. Protect Component 'A' from freezing; if frozen, discard.
Color	Concrete gray when mixed.
Mixing Ratio	Plant-proportioned kit. Mix entire unit.
Application	Approximately 45 min. after adding Component 'B' to Component 'A'.
Time	Application time is dependent on temperature and relative humidity.
Finishing Time	45 to 60 min. after combining components; depends on temperature, relative humidity, and type of finish desired

Flexural Strength (ASTM C-293) **28 days** 2,000 psi (13.8 MPa)

Splitting Tensile strength (ASTM C-496) **28 days** 750 psi (5.2 MPa)

Bond Strength* (ASTM C-882 modified **28 days** 2,000 psi (13.8 MPa)

Bond Strength Pull-Out Test (ACI 503R-30 modified **28 days** 350 psi (2.4 MPa) substrate failure

Compressive Strength (ASTM C-109)

1 day	1,250 psi (8.6 MPa)
7 days	5,000 psi (34.5 MPa)
28 days	6,000 psi (41.4 MPa)

Permeability (AASHTO T-277) **28 days** Approximately 500 Coulombs

Corrosion Testing for FerroGard 901

Cracked Beam Corrosion Tests:

Reduced corrosion rates 63% versus control specimens. ASTM G109 modified after 400 days

* Mortar scrubbed into substrate.

Construction

How to Use

Substrate	Concrete, mortar, and masonry products.
Surface Preparation	Remove all deteriorated concrete, dirt, oil, grease and all bond-inhibiting materials from the surface. Surface should be open-pore and textured (CSP-4). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application.
Priming	For priming of reinforcing steel use Sika Armatec 110 EpoCem (consult Technical Data Sheet). **Concrete Substrate:** Prime the prepared substrate with a brush or sprayed applied coat of Sika Armatec 110 EpoCem (consult Technical Data Sheet). Alternately, a scrub coat of SikaTop 121 Plus can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.
Mixing	Pour approximately 4/5 of Component A into mixing container. Add Component B while continuing to mix. Mechanically mix with a low-speed drill (400-600 rpm) and paddle or appropriate-size mortar mixer. Mix to uniform consistency, maximum 3 minutes. Add remaining Component A to mix if a more loose consistency is desired. Manual mixing can be tolerated only for less than a full unit.
Application	SikaTop 121 PLUS can be applied by trowel, notched trowel, stiff bristle, or low pressure hopper gun. Work the material well into the prepared substrate, filling all pores and voids. As soon as the mortar layer starts to set, a uniform surface texture can be obtained by rubbing the surface with a fine sponge or a plastic trowel. Do not overwork SikaTop 121 PLUS during finishing and avoid the use of additional wate .
Tooling and Finishing	As per ACI recommendations for portland cement concrete, curing is required. Protect the freshly applied mortar against direct sunlight, wind, frost and rain. Curing compounds adversely affect the adhesion of protective coatings. Therefore, do not use a water based curing compound, if the leveling mortar is going to be over coated.
Limitations	■ Application thickness: Minimum 1/12 inch (2 mm); Maximum 1/6 inch (4 mm) ■ Minimum ambient and surface temperatures, 45°F (7°C) and rising at time of application. ■ As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur Hi-Mod 32.

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.v.
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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

TESTED PER ICRI GUIDELINE FOR INORGANIC REPAIR MATERIAL DATA SHEET PROTOCOL GUIDELINE NO. 320.3R

Construction

SikaTop® 122 PLUS

Two-component, polymer-modified, cementitious, trowel-grade mortar plus Sika FerroGard® 901 penetrating corrosion inhibitor

Description

SikaTop® 122 PLUS is a two-component, polymer-modified, portland cement based, fast-setting, trowel-grade mortar. It is a high performance repair mortar for horizontal and vertical surfaces and offers the additional benefit of Sika FerroGard® 901, a penetrating corrosion inhibitor.

Where to Use

- On grade, above and below grade on concrete and mortar.
- On horizontal surfaces.
- As a structural repair material for parking structures, industrial plants, walkways, bridges, tunnels, dams, ramps, floods, etc.
- To level concrete surfaces.
- As an overlay system for topping/resurfacing concrete.

Advantages

- Extremely low shrinkage **proven by four industry standard test methods.**
- High compressive and flexural strengths.
- High abrasion resistance.
- Increased freeze/thaw durability and resistance to deicing salts.
- Compatible with coefficient of thermal expansion of concrete - Passes ASTM C-884.
- Increased density - improved carbon dioxide resistance (carbonation) without adversely affecting water vapor transmission (not a vapor barrier).
- Sika FerroGard® 901, a penetrating corrosion inhibitor - reduces corrosion even in the adjacent concrete.
- USDA certifiable for the food industry.
- ANSI/NSF Standard 61 potable water compliant.

Coverage

0.51 cu. ft./ unit mortar; 0.75 cu. ft./unit concrete; (mixed mortar + 42 lbs. 3/8 pea gravel)

Packaging

Component 'A' - 1-gal. plastic jug; 4/carton. **Component 'B'** - 61.5-lb. multi-wall bag.

Typical Data ***(Material and curing conditions @ 73°F (23°C) and 50% R.H.)***

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	One year in original, unopened packaging.
Storage Conditions	Store dry at 40°-95°F. Condition material to 65°-75°F before using. Protect Component 'A' from freezing. If frozen, discard.
Color	Concrete gray when mixed.
Mixing Ratio	Plant-proportioned kit, mix entire unit.
Application Time	Approximately 30 minutes.
Finishing Time	50-120 minutes

Note: All times start after adding Component 'B' to Component 'A' and are highly affected by temperature, relative humidity, substrate temperature, wind, sun and other job site conditions.

Density (wet mix)	**ASTM C 138**		136 lbs./ft³ (2.18 kg./l)
Flexural Strength	**ASTM C 293**	28 days	1,500 psi
Split Tensile	**ASTM C 496**	28 days	500 psi
Bond Strength	**ASTM C 882 (modified)**	28 days	2,000 psi
Compressive Strength	**ASTM C 109**		
		1 day	2,500 psi
		7 days	5,300 psi
		28 days	7,000 psi
Shrinkage	**ASTM C 157 (mod. ICRI 320.3R)**		
Specimen Size 1"x1"x11-1/4"		28 days	<0.05%
Specimen Size 3"x3"x11-1/4"		28 days	<0.021%
Ring Test (days)	**ASTM C 1581**		>70 days
Ring Test - Average Max Strain	**ASTM C 1581**		-9 µstrain
Ring Test - Average Stress Strain	**ASTM C 1581**		0.49 psi/day
Ring Test - Potential for Cracking	**ASTM C 1581**		Low
Baenzinger Block		90 days	No cracking
Freeze/Thaw Durability (300 cycles)	**ASTM C 666**		98%
Cl Permeability	**ASTM C 1202**		<500 Coulombs.
Direct Bond Strength	**ASTM C 1583**		
		7 days	400 psi
		28 days	>300 psi
Modulus of Elasticity	**ASTM C 531**		3.00×10^6 psi
Initial Set Time (min)	**ASTM C 266**		40-70

Construction

How to Use

Substrates	Concrete, mortar, and masonry products.
Surface Preparation	Remove all deteriorated concrete, dirt, oil, grease and all bond inhibiting materials from surface. Be sure repair area is not less than 1/8 inch in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1/16 inch (CSP-5); ±1/8 inch (CSP-6). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application. **Reinforcing Steel:** Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel use Sika® Armatec® 110 EpoCem (Consult Product Data Sheet). **Priming Concrete Substrate:** Prime the prepared substrate with a brush or sprayed applied coat of Sika® Armatec® 110 EpoCem (consult Product Data Sheet). Alternately, a scrub coat of SikaTop® 122 PLUS can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.
Mixing	Pour approximately 7/8 of Component 'A' into the mixing container. Add Component 'B' (powder) while mixing continuously. Mix mechanically with a low-speed drill (400- 600 rpm) and mixing paddle or mortar mixer. Add remaining Component 'A' (liquid) to mix if a more loose consistency is desired. Mix to a uniform consistency, maximum 3 minutes. Thorough mixing and proper proportioning of the two components is necessary. **For SikaTop® 122 PLUS concrete:** Pour all of Component 'A' into mixing container. Add all of Component 'B' while mixing, then introduce 3/8 inch coarse aggregate at desired quantity. Mix to uniform consistency, maximum 3 minutes. Addition rate is 42 lbs. per bag (approx. 3.0 to 3.5 gal. by loose volume). The aggregate must be non-reactive (reference ASTM C 1260, C 227 and C 289), clean, well-graded, saturated surface dry, have low absorption and high density, and comply with ASTM C 33 size number 8 per Table 2. Note: Variances in the quality of the aggregate will affect the physical properties of SikaTop® 122 PLUS. The yield is increased to 0.75 cu. ft./unit with the addition of the aggregate (42 lbs.). Do not use limestone aggregate.
Application	SikaTop® 122 PLUS must be scrubbed into the substrate, filling all pores and voids. Force material against edge of repair, working toward center. After filling repair, consolidate, then screed. Allow mortar or concrete to set to desired stiffness, then finish with wood or sponge float for a smooth surface, or broom or burlap-drag for a rough finish.
Tooling & Finishing	As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound (ASTM C 309 compliant). Curing compounds adversely affect the adhesion of following layers of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect newly applied material from direct sunlight, wind, rain and frost. *Pretesting of curing compound is recommended.
Limitations	**Application thickness:** — **Min.** — **Max. in one lift** Neat — 1/8 inch (3 mm) — 1 inch (25 mm) Extended — 1 inch (25 mm) — 4 inches (100 mm) ■ Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application. ■ Addition of coarse aggregates may result in variations of the physical properties of the mortar. ■ Do not use solvent-based curing compound. ■ Size, shape and depth of repair must be carefully considered and consistent with practices recommended by ACI or ICRI. For additional information, contact Technical Service. ■ For additional information on substrate preparation, refer to ICRI Guideline No.310.2R Coatings, Polymer Overlays, and Concrete Repair. ■ If aggressive means of substrate preparation is employed, substrate strength should be tested in accordance with ACI 503 Appendix A prior to the repair application. ■ As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® 32, Hi-Mod.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-3087

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Querétaro
C.P. 76920
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Fax: 52 442 2250537

TESTED PER ICRI GUIDELINE FOR INORGANIC REPAIR MATERIAL DATA SHEET PROTOCOL GUIDELINE NO. 320.3R

Construction

SikaTop® 123 PLUS

Two-component, polymer-modified, cementitious, non-sag mortar plus Sika FerroGard® 901 penetrating corrosion inhibitor

Description	SikaTop® 123 PLUS is a two-component, polymer-modified, Portland cement-based, fast-setting, non-sag mortar. It is a high performance repair mortar for vertical and overhead surfaces and offers the additional benefit of Sika FerroGard® 901, a penetrating corrosion inhibitor included in its formulation.
Where to Use	■ On grade, above and below grade on concrete and mortar. ■ On vertical and overhead surfaces. ■ As a structural repair material for parking structures, industrial plants, walkways, bridges, tunnels, dams and ramps. ■ Approved for repairs over cathodic protection systems
Advantages	■ Extremely low shrinkage **proven by four industry standard test methods.** ■ High compressive and flexural strengths. ■ Increased freeze/thaw durability and resistance to deicing salts. ■ Compatible with coefficient of thermal expansion of concrete - Passes ASTM C 884. ■ Increased density - improved carbon dioxide resistance (carbonation) without adversely affecting water vapor transmission (not a vapor barrier). ■ Enhanced with Sika FerroGard® 901, a penetrating corrosion inhibitor - reduces corrosion even in the adjacent concrete. ■ USDA certifiable for incidental food contact ■ ANSI/NSF Standard 61 potable water approved compliant.
Coverage	0.39 cu. ft./ unit.
Packaging	**Component 'A'** - 1-gal. plastic jug; 4/carton. **Component 'B'** - 44-lb. multi-wall bag.

Typical Data ***(Material and curing conditions @ 73°F (23°C) and 50% R.H.)***

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	One year in original, unopened packaging.		
Storage Conditions	Store dry at 40°-95°F. Condition material to 65°-75°F before using. Protect Component 'A' from freezing. If frozen, discard.		
Color	Concrete gray when mixed.		
Mixing Ratio	Plant-proportioned kit, mix entire unit.		
Application Time	Approximately 15 minutes.		
Finishing Time	20-60 minutes		
Note:	All times start after adding Component 'B' to Component 'A' and are highly affected by temperature, relative humidity, substrate temperature, wind, sun and other job site conditions.		
Density (wet mix)	**ASTM C 138**		132 lbs./ft³ (2.2 kg./l)
Flexural Strength	**ASTM C 293**	28 days	1,500 psi
Split Tensile	**ASTM C 496**	28 days	900 psi
Bond Strength	**ASTM C 882 (modified)**	28 days	2,000 psi
Compressive Strength	**ASTM C 109**		
		1 day	3,000 psi
		7 days	4,000 psi
		28 days	6,000 psi
Shrinkage	**ASTM C 157 (mod. ICRI 320.3R)**		
Specimen Size 1x1x11-1/4"			28 days 0.05%
Specimen Size 3x3x11-1/4"		28 days	0.038%
Ring Test (days)	**ASTM C 1581**		>70 days
Ring Test - Average Max Strain	**ASTM C 1581**		-36 µstrain
Ring Test - Average Stress Strain	**ASTM C 1581**		4.92 psi/day
Ring Test - Potential for Cracking	**ASTM C 1581**		Low
Baenzinger Block		90 days	No cracking
Freeze/Thaw Durability (300 cycles)	**ASTM C 666**		98%
Cl Permeability (coul)	**ASTM C 1202**		<500 Coulombs.
Direct Bond Strength	**ASTM C 1583**	28 days	500 psi (substrate failure)
Modulus of Elasticity	**ASTM C 531**		2.94 x 10^6 psi
Initial Set Time (min)	**ASTM C 266**		20-40
Final Set Time (min)	**ASTM C 266**		<75

Construction

How to Use

Substrates	Concrete, mortar, and masonry products.
Surface Preparation	Remove all deteriorated concrete, dirt, oil, grease and all bond inhibiting materials from surface. Be sure repair area is not less than 1/8 inch in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1/16 inch (CSP-5). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application. **Reinforcing Steel:** Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel use Sika® Armatec® 110 EpoCem (consult Product Data Sheet). **Priming Concrete Substrate:** Prime the prepared substrate with a brush or sprayed applied coat of Sika® Armatec® 110 EpoCem (consult Product Data Sheet). Alternately, a scrub coat of SikaTop® 123 PLUS can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.
Mixing	Pour Component 'A' into mixing container. Add Component 'B' while mixing continuously. Mix mechanically with a low-speed drill (400 - 600 rpm) and mixing paddle or mortar mixer. Mix to a uniform consistency, maximum 3 minutes. Manual mixing can be tolerated only for less than a full unit. Thorough mixing and proper proportioning of the two components is necessary.
Application	SikaTop® 123 PLUS must be scrubbed into the substrate, filling all pores and voids. Force material against edge of repair, working toward center. After filling repair, consolidate, then screed. Material may be applied in multiple lifts. The thickness of each lift, not to be less than 1/8 inch minimum or more than 1.5 inches maximum. Where multiple lifts are required score top surface of each lift to produce a roughened surface for next lift. Allow preceding lift to reach initial set, 30 minutes minimum, before applying fresh material. Saturate surface of the lift with clean water. Scrub fresh mortar into preceding lift. Allow mortar or concrete to set to desired stiffness, then finish with wood or sponge float for a smooth surface.
Tooling & Finishing	As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based*, compatible curing compound (ASTM C 309 complaint). Curing compounds adversely affect the adhesion of following lifts of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. If necessary protect newly applied material from direct sunlight, wind, rain and frost. *Pretesting of curing compound is recommended.
Limitations	■ Application thickness: Minimum 1/8 inch (3 mm). Maximum in one lift - 1.5 in. (38 mm). ■ Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application. ■ Do not use solvent-based curing compound. ■ Size, shape and depth of repair must be carefully considered and consistent with practices recommended by ACI or ICRI. For additional information, contact Technical Service. ■ For additional information on substrate preparation, refer to ICRI Guideline No. 310.2R re: Polymer Overlays and Concrete Repair. ■ If aggressive means of substrate preparation is employed, substrate strength should be tested in accordance with ACI 503 Appendix A prior to the repair application. ■ As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® 32, Hi-Mod.

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Phone: 514-697-2610
Fax: 514-694-3087

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C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaQuick® 1000

Rapid hardening repair mortar with extended working time

Description

SikaQuick® 1000 is a 1-component, rapid hardening, early strength gaining, cementitious, patching material for concrete.

Where to Use

- Use on grade, above, and below grade on concrete.
- Highway overlays and repairs.
- Structural repair material for concrete roadways, parking structures, bridges, dams and ramps.
- Full depth patching repairs.
- Economical patching material for horizontal repairs of concrete and mortar.

Advantages

- Specially suited for hot weather applications when extended working time is required.
- Rapid hardening as defined by ASTM C-928.
- Epoxy coatings can be applied as early as 6 hrs. On site testing is recommended for verification. Please consult coatings manufacturer for recommendations.
- Freeze/thaw resistant.
- Easy to use, labor-saving material.
- Not gypsum-based.
- High early strength.
- Open to foot traffic in 4 hours; to vehicle traffic in 6 hours (at 73°F).
- Easily applied to clean, sound substrate.
- Not a vapor barrier.

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% R.H.) (Water/powder = 0.10)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened bag.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). For best results, condition material to 65°-75°F before using.
Color	Concrete gray.
Mixing Ratio	Approximately 4.5 - 5 pints of liquid per 50 lb. bag.
Application Life	Approximately 30 minutes after adding powder to the water.

Compressive Strength, psi — **Mortar - ASTM C-109**

3 hours	1,250 psi (8.6 MPa)
1 day	4,000 psi (27.6 MPa)
7 days	5,000 psi (34.5 MPa)
28 days	7,000 psi (48.2 MPa)

Flexural Strength, psi (ASTM C-78)

1 day	700 psi (4.8 MPa)
7 days	900 psi (6.2 MPa)
28 days	1,000 psi (6.9 MPa)

Splitting Tensile Strength, psi (ASTM C-496)

1 day	300 psi (2.0 MPa)
7 days	400 psi (2.7 MPa)
28 days	500 psi (3.4 MPa)

Bond Strength, psi (ASTM C-882) modified

1 day	1750 psi (12.0 MPa)
7 days	2000 psi (13.8 MPa)
28 days	2500 psi (17.2 MPa)

Direct Tensile Bond, psi (ACI 503)	**28 days**	300 psi (substrate failure)
Drying Shrinkage, % (ASTM C-596)	**28 days**	0.06
Modulus of Elasticity, psi (ASTM C-469)	**28 days**	4.6 x 10^6
Chloride Permeability, Coulombs (ASTM C-1202)	**28 days**	< 1000
Freeze/Thaw Resistance, % (ASTM C-666)	**28 days**	98%
Scaling Resistance, lb./ft² (ASTM C-672)	**50 cycles**	0.080
Initial Set, Minutes (ASTM C-266)		40-90
Final Set, Minutes (ASTM C-266)		60-120
Abrasion Resistance, Inches of Wear at 1 hr. (ASTM C-779)	**28 days**	0.026

*Independent certificates available upon request.

Construction

Coverage	Approximately 0.42 cu. ft. When extended with 25 lbs. of 3/8 in. gravel yield is approximately 0.58 cu. ft.
Packaging	50 lb. multi-wall bag.

How to Use

Surface Preparation

Surface must be clean and sound. Remove all deteriorated concrete, dirt, oil, grease, and other bond-inhibiting materials from the area to be repaired. Be sure repair area is not less than 1/4 in. deep. Preparation work should be done by appropriate means. Obtain an exposed aggregate surface with a minimum surface profile of ± 1/8 in. (CSP-6) on clean, sound concrete. To ensure optimum repair results, the effectiveness of decontamination and preparation should be assessed by a pull-off test. Saw cutting of edges is preferred and a dovetail is recommended. Saturate surface to be repaired with clean water. Substrate should be saturated surface dry (SSD) prior to application.

Priming

For priming of reinforcing steel use Sika® Armatec® 110 EpoCem (consult Technical Data Sheet). Concrete Substrate: Prime the prepared substrate with a scrub coat of SikaQuick® 1000 prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.

Mixing

Mechanically mix in an appropriately sized mortar mixer. Wet down all tools and mixer to be used.

With water: Start with 4.5 pints of water added to the mixing vessel. Add 1 bag of SikaQuick® 1000 while continuing to mix. Add up to another 1/2 pint of water to achieve desired consistency. Do not over-water.

With Latex R: Pour 4.5 pints of SikaLatex® R into the mixing container. Slowly add powder, mix and adjust as above.

With diluted Latex R: SikaLatex® R may be diluted up to 5:1 (water: SikaLatex® R) for projects requiring minimal polymer modification. Pour 4.5 pints of the mixture into the mixing container. Slowly add powder, mix and adjust as above. For applications greater than 1 in. in depth, add 3/8 in. coarse aggregate. The aggregate must be non-reactive (reference ASTM C-1260, C-227 and C-289), clean, well graded, saturated surface dry, have low absorption and high density, and comply with ASTM C-33 size number 8 per Table 2.

Note: Variances in aggregate may result in different strengths. The addition rate is 25 lbs. of aggregate per bag of SikaQuick ®1000. (25 lbs. of 3/8 in. aggregate is approximately 2.0 gallons by loose volume of aggregate). Do not exceed a slump of 7 in. This may cause excessive bleeding and retardation and will reduce the strength and performance of the material.

Application

The prepared mortar must be scrubbed into substrate. Be sure to fill all pores and voids. Force material against edge of repair, working toward center. After filling repair, screed off excess. Allow concrete to set to desired stiffness, then finish. If a smoother finish is desired, a magnesium float should be used. Mixing, placing, and finishing should not exceed 30 minutes maximum. To control setting times, cold water should be used in hot weather and hot water used in cold weather.

Tooling & Finishing

As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene,a fine mist of water or a curing compound meeting ASTM C-309. Moist cure should commence immediately after finishing. If necessary, protect newly applied material from rain. To prevent from freezing, cover with insulating material.

Limitations

- Minimum ambient and surface temperatures 45°F and rising.
- Minimum application thickness 1/4 in. as a mortar and 1 in. extended with aggregate.
- Maximum application thickness 1 in. as a mortar and 6 in. extended with aggregate.
- Do not feather edge.
- Do not exceed 7 in. slump when extended.
- Use only potable water.
- Variations in aggregates may produce differences in strengths from the typical values stated in Sika's Technical Data.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.
- Do not use Sika® Armatec® 110 EpoCem as a bonding agent with SikaQuick® 1000.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaQuick® 2500

Very rapid hardening, repair mortar

Description

SikaQuick® 2500 is a 1-component, very rapid hardening, early strength gaining, cementitious, patching material for concrete.

Where to Use

- Use on grade, above, and below grade on concrete.
- Highway overlays and repairs.
- Structural repair material for concrete roadways, parking structures, bridges, dams and ramps.
- Full depth patching repairs.
- Economical patching material for horizontal repairs of concrete and mortar.

Advantages

- Very rapid hardening as defined by ASTM C-928.
- Epoxy coatings can be applied as early as 4 hrs. On site testing is recommended for verification. Please consult coatings manufacturer for recommendations.
- Freeze/thaw resistant.
- Easy to use, labor-saving material.
- Not gypsum-based.
- High early strength.
- Fast-setting.
- Open to foot traffic in 45 minutes; to vehicle traffic in 1 hour (at 73°F).
- Easily applied to clean, sound substrate.
- Not a vapor barrier.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.) (Water/powder = 0.12)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened bag.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). For best results, condition material to 65°-75°F before using.
Color	Concrete gray.
Mixing Ratio	Approximately 5 - 5.5 pints of liquid per 50 lb. bag.
Application Life	Approximately 15 minutes after adding powder to the water.

Compressive Strength, psi	**Mortar - ASTM C-109**
1 hour	**2,500 psi (17.2 MPa)
2 hours	**4,000 psi (27.6 MPa)
1 day	**5,700 psi (39.3 MPa)
7 days	7,500 psi (51.7 MPa)
28 days	**8,500 psi (58.6 MPa)

Flexural Strength, psi (ASTM C-78)	
1 day	800 psi (5.5 MPa)
7 days	1,000 psi (6.9 MPa)
28 days	**1,100 psi (7.6 MPa)

Splitting Tensile Strength, psi (ASTM C-496)	
1 day	300 psi (2.0 MPa)
7 days	500 psi (3.4 MPa)
28 days	600 psi (4.1 MPa)

Bond Strength, psi (ASTM C-882) modified	
1 day	**1,800 psi (12.4 MPa)
7 days	2,500 psi (17.2 MPa)
28 days	**2,700 psi (21.4 MPa)

Direct Tensile Bond, psi (ACI 503)	**28 days**	300 psi (substrate failure)
Drying Shrinkage, % (ASTM C-596)	**28 days**	**0.06
Modulus of Elasticity, psi (ASTM C-469)	**28 days**	4.6 x 10^6
Chloride Permeability, Coulombs (ASTM C-1202)	**28 days**	< 500
Freeze/Thaw Resistance, % (ASTM C-666)	**28 days**	**98%
Scaling Resistance, lb./ft² (ASTM C-672)	**50 cycles**	0.080
Initial Set, minutes (ASTM C-266)	12-24	
Final Set, minutes (ASTM C-266)	20-40	
Abrasion Resistance, inches of wear at 1 hr. (ASTM C-779)	**28 days**	0.026

*Independent certificates available upon request.

Construction

Coverage	Approximately 0.43 cu. ft. When extended with 25-30 lbs. of 3/8 in. gravel yield is approximately 0.60 cu. ft.
Packaging	50-lb. multi-wall bag.

How to Use

Surface Preparation

Surface must be clean and sound. Remove all deteriorated concrete, dirt, oil, grease, and other bond-inhibiting materials from the area to be repaired. Be sure repair area is not less than 1/4 in. deep. Preparation work should be done by appropriate means. Obtain an exposed aggregate surface with a minimum surface profile of ± 1/8 in. (CSP-6) on clean, sound concrete. To ensure optimum repair results, the effectiveness of decontamination and preparation should be assessed by a pull-off test. Saw cutting of edges is recommended. Saturate surface to be repaired with clean water. Substrate should be saturated surface dry (SSD) prior to application.

Priming

For priming of reinforcing steel use Sika® Armatec® 110 EpoCem (consult Technical Data Sheet). Concrete Substrate: Prime the prepared substrate with a scrub coat of SikaQuick 2500 prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.

Mixing

Mechanically mix in an appropriately sized mortar mixer. Wet down all tools and mixer to be used.

With water: Start with 5 pints of water added to the mixing vessel. Add 1 bag of SikaQuick® 2500 while continuing to mix. Add up to another 1/2 pint of water to achieve desired consistency. Do not over water.

With Latex R: Pour 5 pints of SikaLatex® R into the mixing container. Slowly add powder, mix and adjust as above.

With diluted Latex R: SikaLatex® R may be diluted up to 5:1 (water: SikaLatex® R) for projects requiring minimal polymer modification. Pour 5 pints of the mixture into the mixing container. Slowly add powder, mix and adjust as above. For applications greater than 1 in. in depth, add 3/8 in. coarse aggregate. The aggregate must be non-reactive (reference ASTM C-1260, C-227 and C-289), clean, well graded, saturated surface dry, have low absorption and high density, and comply with ASTM C-33 size number 8 per Table 2.

Note: Variances in aggregate may result in different strengths. The addition rate is 25-30 lbs. of aggregate per bag of SikaQuick® 2500. (25-30 lbs. of 3/8 in. aggregate is approximately 2.0 - 2.4 gallons by loose volume of aggregate). Do not exceed a slump of 7 in. This may cause excessive bleeding and retardation and will reduce the strength and performance of the material.

Application

The prepared mortar must be scrubbed into substrate. Be sure to fill all pores and voids. Force material against edge of repair, working toward center. After filling repair, screed off excess. Allow concrete to set to desired stiffness, then finish. If a smoother finish is desired, a magnesium float should be used. Mixing, placing, and finishing should not exceed 15 minutes maximum.

To control setting times, cold water should be used in hot weather and hot water used in cold weather.

Tooling & Finishing

As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a curing compound meeting ASTM C-309. Moist cure should commence immediately after finishing. If necessary, protect newly applied material from rain. To prevent from freezing, cover with insulating material.

Limitations

- Minimum ambient and surface temperatures 45°F and rising.
- Minimum application thickness 1/4 in. as a mortar and 1 in. extended with aggregate.
- Maximum application thickness 1 in. as a mortar and 6 in. extended with aggregate.
- Do not feather edge.
- Do not exceed 7 in. slump when extended.
- Use only potable water.
- Variations in aggregates may produce differences in strengths from the typical values stated in Sika's Technical Data.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.
- Do not use Sika® Armatec® 110 EpoCem as a bonding agent with SikaQuick® 2500.
- When extended : Minimum application is 1 inches, Max application 6 inches.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaQuick® VOH

Fast Setting, one component, cementitious vertical and overhead repair mortar with superior high build properties

Description	SikaQuick® VOH is a fast setting, one component, ready-to-use repair mortar for vertical and overhead applications using specialty cement blends.
Where to Use	■ Fast repairs to overhead and vertical concrete and mortar surfaces on grade, above and below grade. ■ As a repair material for building facades, parking structures, industrial plants, bridges, etc. ■ As a fast setting repair material for new construction defects.
Advantages	■ Minimal time required between lifts. ■ Fast finishing time ■ Time/labor-saving material; application up to 3 inches on vertical surfaces in one layer ■ Easy to use; just add water ■ High bond strength ensures excellent adhesion ■ High early and ultimate strength ■ Increased freeze/thaw durability and resistance to deicing salts ■ Suitable for exterior and interior applications. ■ Not a vapor barrier ■ Overhead thickness up to 2" ■ Fiber reinforced and polymer modified ■ Contains corrosion inhibitor
Coverage	~.44 cu. ft.
Packaging	44 lb bag

Typical Data ***(Material and curing conditions @ 73°F (23°C) and 50% R.H.)***

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS. THIS DATA REFLECTS MATERIAL TESTED AT A MIXING RATIO OF 6.25 PINTS/UNIT.

Shelf Life:	One year in original, unopened bags.			
Storage Conditions:	Store dry at 40°-95°F (4°-35°C).			
Product Conditioning:	Condition material to 65°-75°F before using.			
Color:	Concrete gray.			
Mixing Ratio:	6 - 6.5 pints/unit			
Density (Wet mix):	~ 125 lbs. / cu. ft.			
Application Time:	Approximately 20 minutes.			
Finishing Time:	20-30 minutes			
Lift Height:	Max: 3”	Min: 1/8”		
Time Between Lifts:	After final set			

Splitting Tensile Strength, psi (ASTM C-496)		**1 day**	**7 days**	**28 days**
		200	250	500
Compressive Strength, psi (ASTM C-109):	**3 hrs**	**1 day**	**7 days**	**28 days**
	>2000	>3000	>4500	5500
Flexural Strength, psi (ASTM C-293):		**1 day**	**7 days**	**28 days**
		400	600	1000
Bond Strength*, psi (ASTM C-882 modified):		**1 day**	**7 days**	**28 days**
		1000	1600	2000
Modulus of Elasticity, psi (ASTM C-469)			**7 days**	
			>2.2 x 10^6	
Rapid Chloride Permeability (ASTM C1202)		Low Range		

Bond Strength, psi - Direct Tensile (IRCI No. 210.3):	Substrate failure >250
Shrinkage (50% R.H.) (ASTM C-157; ICRI protocol):	<.05%
Initial Set, min. (ASTM C-266)	20-25
Final Set, min. (ASTM C-266)	30-40

*Mortar scrubbed into substrate

Construction

How to Use

Surface Preparation	**Concrete/Mortar:** Remove all deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. Preparation work should be done by high pressure water blast, scabbler or other appropriate mechanical means to obtain an exposed aggregate surface profile of +- 1/16 in. (CSP-5). After preparation, substrate strength should be verified prior to patch placement. Substrate should be saturated surface dry (SSD) with no standing water during application. **Reinforcing Steel:** Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high pressure washed with clean water after mechanical cleaning.
Priming:	**Reinforcement Steel:** For priming of reinforcement steel use Sika® Armatec® 110 EpoCem (Consult Technical Data Sheet). **Concrete Substrate:** A scrub coat of SikaQuick® VOH should be applied prior to placement of mortar. The repair mortar has to be applied into the wet scrub coat before it dries. The use of Sika® Armatec® 110 EpoCem as a bonding agent for concrete is not recommended.
Mixing	Wet down all tools and mixer to be used. Mix mechanically with a low-speed drill (400 - 600 rpm) and mixing paddle or mortar mixer. Mix to a uniform consistency, maximum 3 minutes. Manual mixing can be tolerated only for less than a full unit. Thorough mixing and proper proportioning of the powder and liquid is necessary. Inaccurate proportioning of the powder to liquid will result in a finished product that may not conform with stated properties. **With water:** Start mixing with 6 pints of water per 44 lb. bag. Adjust the water dosage by a maximum amount of +/- 1/2 pint, if necessary, to achieve the desired consistency. Do not over-water. Over-watering may result in difficulty handling and/or not meeting stated property values. **With Latex R:** Start mixing with 6 pints of SikaLatex® R per 44 lb. bag. Adjust the SikaLatex® R dosage by a maximum amount of +/- 1/2 pint, if necessary, to achieve the desired consistency.
Application	The mixed SikaQuick® VOH must be worked well into the prepared substrate, filling all pores and voids. Compact well. Force material against edge of repair working towards the center. Thoroughly compact the mortar around exposed reinforcement. After filling repair, consolidate, then screed. Finish with steel, magnesium, wood, plastic floats, or damp sponges, depending on the desired surface texture. Where multiple lifts are required, score top surface on each lift to produce a roughened substrate for next lift. Allow preceding lift to harden before applying fresh material. Saturate surface of the lift with clean water. If previous layers are over 6 hours old, mechanically prepare the substrate and dampen.
Tooling and Finishing	As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound. Curing compounds adversely affect the adhesion of following lifts of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect freshly applied mortar from direct sunlight, wind, rain and frost. * Pretesting of curing compound is recommended.
Removal	Cured product must be removed mechanically.
Over Painting	Acrylic waterbased systems - 4 hrs Epoxy/PU based systems - 6 hrs Compatibility and adhesion testing is always recommended.
Limitations	■ Application thickness: Minimum: With water: 1/8 inch (3 mm). Maximum in one lift: 3 inches (75 mm) vertical, 2 inches (51 mm) overhead. ■ Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application. ■ To control setting times, cold water should be used in hot weather and hot water used in cold weather. ■ Do not use solvent based curing compounds. As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32. ■ Remixing product after it begins to set is prohibited. ■ Do not use Sika® Armatec® 110 EpoCem as a bonding agent with SikaQuick® VOH.

Construction

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
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Fax: 52 442 2250537

Construction

SikaQuick® Smooth Finish

Light Weight Mortar for Concrete Reprofiling and Patching

Description	SikaQuick® Smooth Finish is a fast setting, one component, durable, sand free mortar for repairing and reprofiling vertical and overhead concrete surfaces to acheive a smooth finish.
Where to Use	■ Tilt up panels ■ Pre Cast Concrete ■ Cast in Place Concrete ■ Concrete Block ■ Masonry
Advantages	■ Minimal time required between lifts. ■ Ultra smooth consistency; Easy to apply ■ Fast finishing time, sanded and painted same day ■ Time/labor-saving material; application up to 1/2" inch on vertical surfaces in one layer ■ Easy to use; just add water ■ High bond strength ensures excellent adhesion ■ Suitable for interior and exterior applications ■ Precast grey color
Coverage	50 lb bag yields approximately 115 sq.ft. at 1/16"
Packaging	50 lb (22.7 kg) bag

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	One year in original, unopened bags.
Storage Conditions	Store dry at 40°-95°F (4°-35°C).
Product Conditioning	Condition material to 65°-75°F before using.
Color	Concrete gray
Mixing Ratio	8.5-9.5 quarts/unit (up to 2:1 POWDER:WATER)
Application Time	Approximately 30 minutes.
Finishing Time	1 hour
Lift Height	Max: 1/2"
Time Between Lifts	After final set

Compressive Strength (ASTM C-109), psi

24 hours	1000 psi
28 days	>2000 psi

Bond Strength, psi - Direct Tensile (IRCI No. 210.3): Substrate failure >250

How to Use

Surface Preparation

Concrete/Mortar: Remove all deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. After preparation, substrate strength should be verified prior to patch placement. Substrate should be dry or saturated surface dry (SSD) with no standing water during application.

Mixing

Wet down all tools and mixer to be used. Mix mechanically with a low-speed drill (400 - 600 rpm) and mixing paddle or by hand. Mix to a uniform consistency, maximum 3 minutes. Manual mixing can be tolerated only for less than a full unit. Thorough mixing and proper proportioning of the powder and liquid is necessary. Inaccurate proportioning of the powder to liquid will result in a finished product that may not conform with stated properties.

Start mixing with 8 - 9 quarts of water per 50 lb. bag. DO NOT EXCEED 9 qts. Adjust the water dosage, if necessary, to achieve the desired consistency. DO NOT OVER WATER. Over-watering may result in difficulty handling and/or not meeting stated property values. Do not retemper. Clean bucket and mixing equipment in between batches.

Application

SikaQuick® Smooth Finish should be applied in one pass in thicknesses ranging from a true feather edge to 1/2" in depth. Typical working time of the product is 1 hour at 73 deg F. Working time will vary depending on application temperature. In high temperature work environments, cold water should be used to to increase working time.

Over Paint: Can be overcoated same day.

Tooling and Finishing

Once material is in place, as the material hardens, use a trowel to shave or cut the excess material to the desired shape. Material can be sanded and painted the same day.

Limitations

- Not to be applied in lifts over 1/2". If multiple lifts are required, score top surface on each lift to produce a roughened substrate for next lift. Allow preceding lift to harden before applying fresh material. Saturate surface of the lift with clean water.
- Do not apply on gypsum substrates
- Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application.
- To control setting times, cold water should be used in hot weather and hot water used in cold weather.
- Do not use solvent based curing compounds. As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.
- Remixing product after it begins to set is prohibited.
- Do not use Sika® Armatec® 110 EpoCem as a bonding agent with SikaQuick® Smooth Finish.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikacrete® 321 FS

One-component, cementitious, pourable, rapid hardening concrete mix

Description	Sikacrete® 321 FS is a one-component, portland-cement concrete containing factory blended coarse aggregate designed for quick turnaround patching and overlay needs.
Where to Use	▪ As a structural repair material for bridges, parking facilities, industrial plants and walkways ▪ On horizontal, vertical and overhead surfaces (formed) ▪ On grade, above, and below grade on concrete ▪ Full depth repairs ▪ Filler for voids and cavities
Advantages	▪ Complies with ASTM C-928 specifications for very rapid and rapid hardening mortars ▪ Very rapid setting structures can be opened to vehicular traffic in 2 hours ▪ Non-gypsum based with volume stability ▪ Compatible with coefficient of thermal expansion of concrete ▪ Increased resistance to deicing salts ▪ Easily applied to clean, sound substrate ▪ Not a vapor barrier ▪ Excellent resistance to freeze/thaw with outstanding durability ▪ Pre-packaged coarse aggregate: Eliminates need to extend material in the field; Eliminates the risk of reactive aggregate ▪ Formulated to compensate for shrinkage
Coverage	Approximately 0.50 ft.^{3}/unit. Actual yield on site may vary due to surface profile, waste, and other factors.
Packaging	65 lb. multi-wall bag; bulk bag available on request

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life		1 year in original, unopened packaging.
Storage Conditions		Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.
Mixing Ratio		Mix with clean potable water at rate of up to 5 pints per bag.
Application Time		Approximately 30 minutes Initial Slump 7-9” Slump at 15 minutes >5-7”
Initial Set		40-50 minutes
Final Set		50-60 minutes
Flexural Strength (ASTM C-78)	**28 days**	700 psi (5.0 MPa)
Splitting Tensile Strength (ASTM C-496)	**1 day** **7 days**	400 psi (2.8 MPa) 600 psi (4.1 MPa)
Bond Strength* (ASTM C-882 modified)	**1 day** **7 days**	2,500 psi (17.2 MPa) 3,000 psi (20.7 MPa)
Direct Tensile Bond (ACI 503)	**7 days**	>250 psi
Compressive Strength (ASTM C-39)	**2 hour**	2,500 psi (17.2 MPa)

	3 hour	3,000 psi (20.7 MPa)
	1 day	5,000 psi (34.5 MPa)
	7 days	6,000 psi (41.4 MPa)
	28 days	7,500 psi (51.7 MPa)
Shrinkage (ASTM C-157)		<0.06%
Freeze Thaw Factor (ASTM C-666)	**300 cycles**	>90%
Chloride ion permeability (ASTM C-1202)	**28 days**	<1,500 Coulombs

* Mortar scrubbed into substrate.

How to Use

Surface Preparation

Concrete: Remove all deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. Be sure repair area is not less than 1 in. in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1/8 in. (CSP-7). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application.

Reinforcing Steel: Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning.

Mixing

Place 5 pints of water in mixing container. Slowly add Sikacrete® 321 FS while continuing to mix. Mix to a uniform consistency, maximum 3 minutes. Mechanically mix with a low-speed drill (400-600 rpm) and paddle or in appropriate-size mortar mixer or concrete mixer. Some mixers will take longer than others to achieve the desired slump.

Application

Form and pour applications: Pre-wet surface to SSD. Ensure good intimate contact with the substrate is achieved. To accomplish this, material should be scrubbed into the substrate or other suitable means should be employed such as vibration of the material . Vibrate form while pouring.

Tooling & Finishing

Finish as desired

Curing: As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound. Curing compounds adversely affect the adhesion of following layers of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect newly applied material from direct sunlight, wind, rain and frost. For best results, keep surface moist with clean, cool potable water for 1-2 hours after initial set. A Hudson Sprayer is suggested for an even application.

*Pretesting of curing compound is recommended.

Removal

Cured product can only be removed mechanically.

Limitations

- Application thickness: Minimum 1 in. (25 mm); Maximum 8 in. (200 mm)
- Minimum ambient and surface temperatures 40°F (4°C) and rising at time of application.
- Elevated temperatures will decrease working time and slump.
- Rate of strength gain will be reduced at colder temperatures. On site testing is recommended.
- Bonding agents like Armatec® 110 and others, which cure at a slower rate than 321 FS, should not be used. If bonding agents are used, follow cure times for the bonding agents used as a guide prior to putting Sikacrete® 321 FS in service. Assure suitability with the manufacturer of the bonding agent.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Product Data Sheet
Edition 7.14.2014
Sikacrete 211

Sikacrete® 211

One-component, cementitious, pumpable and pourable concrete mix

Description	Sikacrete 211 is a 1-component, portland-cement concrete containing factory blended coarse aggregate.
Where to Use	▪ Full depth repairs. ▪ On grade, above, and below grade on concrete. ▪ On horizontal, vertical and overhead surfaces. ▪ As a structural repair material for parking facilities, industrial plants, walkways, bridges, tunnels, dams and balconies. ▪ Filler for voids and cavities.
Advantages	▪ Pre-packaged coarse aggregate: Eliminates need to extend material in the field; Eliminates the risk of reactive aggregate. ▪ High bond strength. ▪ Compatible with coefficient of thermal expansion of concrete. ▪ Increased resistance to deicing salts. ▪ Simple-to-use labor-saving system. ▪ Easily mixed. ▪ Good freeze/thaw resistance. ▪ Easily applied to clean, sound substrate. ▪ Not a vapor barrier. ▪ Not flammable
Coverage	Approximately 0.65 ft.^{3}/unit
Packaging	80 lb. multi-wall bag.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened packaging.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.
Color	Concrete gray when mixed.
Mixing Ratio	Mix with clean potable water at rate of up to 1 gallon per bag. Start with 4/5 gallon and mix to consistency required with remainder of gallon.
Application Time	Initial Slump 5”-7”; Slump at 30 minutes >4”
Flexural Strength (ASTM C-78)	**28 days** 700 psi (5.0 MPa)
Splitting Tensile Strength (ASTM C-496)	**28 days** 750 psi (3.4 MPa)
Bond Strength* (ASTM C-882 modified	**28 days** 1,500 psi (15.2 MPa)
Compressive Strength (ASTM C-39)	
1 day	2,000 psi (13.8 MPa)
7 days	4,500 psi (31.0 MPa)
28 days	5,000 psi (37.9 MPa)
Shrinkage (ASTM C-157)	**28 days** <0.05%
Chloride ion permeability (Astm C-1202)	**28 days** <1,500 Coloumbs

* Mortar scrubbed into substrate.

Construction

How to Use

Substrate	Concrete, mortar, and masonry products.
Surface Preparation	**Concrete:** Remove all deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. Be sure repair area is not less than 1 in. in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1/8 in. (CSP-7). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application. **Reinforcing Steel:** Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel use Sika Armatec 110 EpoCem (consult Technical Data Sheet).
Priming	For priming of reinforcing steel use Sika Armatec 110 EpoCem (consult Technical Data Sheet).
Mixing	Place 4/5 of 1 gallon water in mixing container. Add Sikacrete 211 while continuing to mix. Add additional water up to 1 gallon total. Mix to a uniform consistency, maximum 3 minutes. Mechanically mix with a low-speed drill (400-600 rpm) and paddle or in appropriate size mortar mixer or concrete mixer.
Application	**Form and pour or pump applications:** Pre-wet surface to SSD. Ensure good intimate con-tact with the substrate is achieved. To accomplish this, material should be scrubbed into the substrate or other suitable means should be employed such as vibration of the material or pumping under pressure. Vibrate form while pouring or pumping. Pump with a variable pres-sure pump. Continue pumping until a 3 to 5 psi increase in normal line pressure is evident then STOP pumping. Form should not deflect. Vent to be capped when steady flow is evident, and forms stripped when appropriate.
Tooling and Finishing	As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound. Curing compounds adversely affect the adhesion of following layers of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after fi - ishing. Protect newly applied material from direct sunlight, wind, rain and frost. *Pretesting of curing compound is recommended.
Limitations	▪ Application thickness: Minimum 1 in. (25 mm); Maximum 8 in. (200 mm) ▪ Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application. ▪ Using SikaLatex, SikaLatex R or similar products will result in loss of slump and slump retention. Field tests for suitability are strongly recommended.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada inc.
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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.v.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Sika ViscoCrete® Technology

Construction

Sikacrete® 211 SCC Plus

One-component, cementitious, polymer-modified, self consolidating concrete mix with an integral migrating corrosion inhibitor

Description	Sikacrete 211 SCC Plus is a one-component, self consolidating concrete containing factory blended coarse aggregate. This self consolidating concrete bag is silica fume and polymer modified and also contains a migrating corrosion inhibito .
Where to Use	▪ Full depth repairs. ▪ On grade, above and below grade on concrete. ▪ On horizontal surfaces. ▪ Vertical and overhead surfaces when formed and pumped or poured. ▪ As a structural repair material for parking facilities, industrial plants, walkways, bridges, tunnels, dams, and balconies. ▪ Filler for voids and cavities.
Advantages	▪ Self consolidating concrete - Excellent placement characteristics. ▪ Polymer-modified. ▪ Integral Penetrating Corrosion Inhibitor. ▪ Silica Fume Enhanced. ▪ Prepackaged coarse aggregate. Eliminates the need to extend material in the field. Elimi -nates the risk of reactive aggregate. ▪ Can be pumped or poured into forms and gets excellent consolidation without vibrating.
Coverage	Approximately 0.50 ft.^{3}/bag. Actual results on site may vary.
Packaging	65 lb. bag.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened packaging.	
Storage Conditions	Store dry at 40°-95°F (4°-35°C). **Condition material to 65°-75°F (18°-24°C) before using.**	
Initial Spread	SCC, 27-33 Inches approx.	
Spread at 30 min.	> 15 inches	
Application Time	60 minutes	
Flexural Strength (ASTM C-78)	**1 day**	500 psi (3.4 MPa)
	7 days	750 psi (5.2 MPa)
	28 days	1,000 psi (6.9 MPa)
Splitting Tensile Strength (ASTM C-496)	**7 days**	750 psi (5.1 MPa)
	28 days	1,000 psi (6.9 MPa)
Slant Shear Bond Strength* (ASTM C-882 modified		
	1 day	1,000 psi (6.9 MPa)
	7 days	1,500 psi (10.3 MPa)
	28 days	2,500 psi (17.2 MPa)
Direct Tensile Bond (ACI 503)	**1 day**	250 psi (1.7 MPa)
	7 days	300 psi (2.1 MPa)
Compressive Strength (ASTM C-39)		
	1 day	2,000 psi (13.8 MPa)
	7 days	5,500 psi (37.9 MPa)
	28 days	6,500 psi (44.8 MPa)
Shrinkage (ASTM C-157)	**28 days**	<0.05%

Chloride ion permeability (ASTM C-1202)	**28 days**	<650 Coloumbs
Freeze Thaw Resistance (ASTM C-666)	**300 cycles**	> 99%
Scaling Resistance (ASTM C-672)	**50 cycles**	2
Sulfate Resistance (ASTM C-1012)		
Length change after 6 months		0.006

* Mortar scrubbed into substrate.

Construction

How to Use

Surface Preparation

Remove all deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. Be sure repair area is not less than 1 in. in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1/8 in. (CSP-7-8). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application.

Reinforcing Steel: Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning. For priming and protection of reinforcing steel use Sika Armatec 110 EpoCem (consult Technical Data Sheet).

Mixing

Start mixing with 5.5 pints of water. An additional 0.5 pint can be added if needed. Do not over water as excess water will cause segregation. Add Sikacrete 211 while continuing to mix. Mix to a uniform consistency, maximum 3 minutes. Mechanically mix with a low-speed drill (400-600 rpm) and paddle or in appropriate-size mortar mixer or concrete mixer.

Application

Pre-wet surface to SSD(Saturated Surface Dry). Ensure good intimate contact with the substrate is achieved. To accomplish this, material should be scrubbed into the substrate or other suitable means should be employed such as vibration of the material or pumping under pressure. Vibrate form while pouring or pumping. Pump with a variable pressure pump. Continue pumping until a 3 to 5 psi increase in normal line pressure is evident then STOP pumping. Form should not deflect. Vent to be capped when steady flow is evident, and forms stripped when appropriate.

Tooling and Finishing

As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound. Curing compounds adversely affect the adhesion of following layers of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect newly applied material from direct sunlight, wind, rain and frost.

*Pretesting of curing compound is recommended.

Limitations

- Application thickness: Minimum 1 in. (25 mm); Maximum 8 in. (200 mm)
- Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur 32 Hi-Mod.

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Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

TESTED PER ICRI GUIDELINE FOR INORGANIC REPAIR MATERIAL DATA SHEET PROTOCOL GUIDELINE NO. 320.3R

Construction

SikaTop® 111 PLUS

Two-component, polymer-modified, cementitious, screed mortar plus Sika FerroGard® 901 penetrating corrosion inhibitor

Description

SikaTop® 111 PLUS is a two-component, polymer-modified, portland cement-based, fast-setting, screed mortar. It is a high performance repair mortar for horizontal, vertical and overhead surfaces in form and pour applications. It offers the additional benefit of Sika FerroGard® 901, a penetrating corrosion inhibitor included in its formulation.

Where to Use

- On grade, above and below grade on concrete and mortar substrates.
- On horizontal, vertical and overhead surfaces.
- As a structural repair material for parking structures, industrial plants, walkways, bridges, tunnels, dams, floors, etc.
- Approved for reapairs over cathodic protection systems.
- Free-flowing repair mortar for hard-to-reach areas.
- Filler for voids and cavities.

Advantages

- Extremely low shrinkage **proven by four industry standard test methods.**
- High compressive and flexural strengths.
- Increased freeze/thaw durability and resistance to deicing salts.
- Compatible with coefficient of thermal expansion of concrete - Passes ASTM C 884.
- Increased density - improved carbon dioxide resistance (carbonation) without adversely affecting water vapor transmission (not a vapor barrier).
- Enhanced with Sika FerroGard® 901, a penetrating corrosion inhibitor - reduces corrosion even in the adjacent concrete.
- USDA certifiable for incidental food contact.
- ANSI/NSF Standard 61 potable water compliant.

Coverage

0.5 cu. ft./ unit. Approximately 0.75 cu. ft./unit concrete (mixed mortar + 42 lbs. of 3/8" pea gravel)

Packaging

Component 'A' - 1-gal. plastic jug; 4/carton. **Component 'B'** - 61.5-lb. multi-wall bag.

Typical Data ***(Material and curing conditions @ 73°F (23°C) and 50% R.H.)***

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life — One year in original, unopened packaging.

Storage Conditions — Store dry at 40°-95°F. Condition material to 65°-75°F before using. Protect Component 'A' from freezing. If frozen, discard.

Color — Concrete gray when mixed.

Mixing Ratio — Plant-proportioned kit, mix entire unit.

Application Time — Approximately 30 minutes.

Finishing Time — 50-120 minutes

Note: All times start after adding Component 'B' to Component 'A' and are highly affected by temperature, relative humidity, substrate temperature, wind, sun and other job site conditions.

Density (wet mix)	**ASTM C 138**		136 lbs./ft³ (2.18 kg./l)
Flexural Strength	**ASTM C 293**	28 days	1,400 psi
Split Tensile	**ASTM C 496**	28 days	600 psi
Bond Strength	**ASTM C 882 (modified)**	28 days	2,000 psi
Compressive Strength	**ASTM C 109**		
		1 day	2,500 psi
		7 days	5,500 psi
		28 days	6,500 psi
Shrinkage	**ASTM C 157 (mod. ICRI 320.3R)**		
Specimen Size 1" x 1" x 11-1/4"		28 days	<0.05%
Specimen Size 3" x 3" x 11-1/4"		28 days	0.022%
Ring Test (days)	**ASTM C 1581**		>70 days
Ring Test - Average Max Strain	**ASTM C 1581**		-16 µstrain
Ring Test - Average Stress Strain	**ASTM C 1581**		1.46 psi/day
Ring Test - Potential for Cracking	**ASTM C 1581**		Low
Baenzinger Block		90 days	No cracking
Freeze/Thaw Durability (300 cycles)	**ASTM C 666**		98%
Cl Permeability	**ASTM C 1202**		<500 Coulombs.
Direct Bond Strength	**ASTM C 1583**	28 days	>500 psi (substrate failure)
Modulus of Elasticity	**ASTM C 531**		3.00 x 10^6 psi
Initial Set Time (min)	**ASTM C 266**		40-70
Final Set Time (min)	**ASTM C 266**		>90

How to Use

Substrate	Concrete, mortar, and masonry products.
Surface Preparation	Remove all deteriorated concrete, dirt, oil, grease and all bond inhibiting materials from surface. Be sure repair area is not less than 1/2 inch in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1/16 inch (CSP-5); ±1/8 inch (CSP-6). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application. **Reinforcing Steel:** Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel use Sika® Armatec® 110 EpoCem (consult Product Data Sheet). **Priming Concrete Substrate:** Prime the prepared substrate with a brush or sprayed applied coat of Sika® Armatec® 110 EpoCem (consult Product Data Sheet). Alternately, a scrub coat of SikaTop® 111 PLUS can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.
Mixing	Pour approximately 7/8 of Component 'A' into the mixing container. Add Component 'B' (powder) while mixing continuously. Mix mechanically with a low speed drill (400-600 rpm) and mixing paddle or mortar mixer. Add remaining Component 'A' (liquid) to mix if a more loose consistency is desired. Mix to a uniform consistency, maximum 3 minutes. Thorough mixing and proper proportioning of the two components is necessary. **For SikaTop 111 PLUS concrete:** Pour all of Component 'A' into mixing container. Add all of Component 'B' while mixing, then introduce 3/8 inch coarse aggregate at desired quantity. Mix to uniform consistency, maximum 3 minutes. Addition rate is 42 lbs. per bag (approx. 3.0 to 3.5 gal. by loose volume). The aggregate must be non-reactive (reference ASTM C 1260, C 227 and C 289), clean, well-graded, saturated surface dry, have low absorption and high density, and comply with ASTM C 33 size number 8 per Table 2. Note: Variances in the quality of the aggregate will affect the physical properties of SikaTop 111 PLUS. The yield is increased to 0.75 cu. ft./unit with the addition of the aggregate (42 lbs.). Do not use limestone aggregate
Application	**Horizontal:** Mortar or concrete must be scrubbed into the substrate, filling all pores and voids. After filling repair, screed the material. Allow mortar or concrete to set to desired stiffness, then finish with wood or sponge float for a smooth surface, or broom or burlap-drag for a rough finish. Form and pour or pump applications: Pre-wet surface to SSD. Vibrate form while pouring or pumping. Pump with a variable pressure pump. Continue pumping until a 3 to 5 psi increase in normal line pressure is evident then STOP pumping. Form should not deflect. Vent to be capped when steady flow is evident, and forms stripped when appropriate.
Tooling and Finishing	As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound (ASTM C 309 compliant). Curing compounds adversely affect the adhesion of following layers of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect newly applied material from direct sunlight, wind, rain and frost. *Pretesting of curing compound is recommended.
Limitations	**Application thickness:** **Min.** **Max. inches one lift** Neat ½ inch (12 mm) 1 inch (25 mm) Extended 1 inch (25 mm) 6 inches (150 mm) ■ Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application. ■ Addition of coarse aggregates may result in variations of the physical properties of the mortar. ■ Do not use solvent-based curing compound. ■ As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® 32, Hi-Mod.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-697-3087

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Querétaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaQuick® FNP

Self-consolidating, fast-setting, one-component, structural repair mortar with fiber reinforcement and integral corrosion inhibitor

Description	SikaQuick FNP is a self consolidating mortar for pouring and pumping into pre-placed aggregate, concrete repair applications.
Where to Use	■ Horizontal, vertical and overhead repairs (formed) ■ Parking garages, bridges, beams, columns, tunnels, building facades, retaining walls and other structural applications ■ Pre-placed aggregate applications ■ Marine structures such as piers, damns, sea walls, etc.
Advantages	■ High fluidity for ease of pumping and pouring in congested repairs ■ Fiber Reinforced ■ Integral corrosion inhibitor ■ One-component for easy mixing ■ Up to 8" in thickness ■ Freeze/Thaw resistant ■ Extremely Low Shrinkage ■ Excellent bond strength
Coverage	~0.5 cu.ft. per 55 lb bag.
Packaging	55 lb bag

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	1 year in original, unopened packaging.
Storage Conditions:	Store dry at 40°-95°F (4°-35°C).
Condition material:	Condition material to 65°- 75°F before using.
Pot Life	60 minutes
Initial Set	4-5 hours
Final Set	6-7 hours
VOC:	0 g/L

Compressive Strength (ASTM C-109),	**psi (MPa)**
Day 1	4500
Day 7	8500
Day 28	>11000
Flexural Strength (ASTM C-348)	**psi(MPa)**
Day 1	700
Day 7	1300
Day 28	1500
Modulus of Elasticity (ASTM C-469)	**psi(GPa)**
Day 28	$5x10^6$ (34)
Chloride Perm. (ASTM C1202/ AASHTO T277)	500 coulombs
Freeze Thaw Resist. (ASTM C666)	98%
Splitting Tensile Strength (ASTM C496)	900 psi (28 days)
Volume Change (ASTM C806)	+0.06
Direct Tensile Bond Strength (ACI 503R)	500-600 psi
Slant Shear Bond (ASTM C881)	3000 psi (28 days)

Construction

How to Use

Surface Preparation

Remove all deteriorated concrete, dirt, oil, grease, and all bond-inhibiting materials from surface. Be sure repair area is not less than 1 in. in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1/8 in. (CSP-7-8). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standingwater during application.

Reinforcing Steel: Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning. For priming and protec-tion of reinforcing steel use Sika® Armatec® 110 EpoCem (consult Product Data Sheet).

Mixing

Start with 10 pints of water in mixing container. Add SikaQuick FNP while continuing to mix. Add additional water up to 0.5 pints. Mix to a uniform consistency, maximum 3 minutes. Mechanically mix with a low-speed drill (400-600 rpm) and paddle or in appropriate size mortar mixer or concrete mixer.

Application

Form and pour or pump applications: Pre-wet surface to SSD(Saturated Surface Dry). Ensure good intimate contact with the substrate is achieved. To accomplish this, material should be scrubbed into the substrate or other suitable means should be employed such as vibration of the material or pumping under pressure. Vibrate form while pouring or pumping. Pump with a variable pres-sure pump. Continue pumping until a 3 to 5 psi increase in normal line pressure is evident then STOP pumping. Form should not deflect. Vent to be capped when steady flow is evident and forms stripped when appropriate. When preplaced aggregate, pre-wash aggregate before placing in repair area.

Tooling & Finishing

As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound. Curing compounds adversely affect the adhesion of following layers of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect newly applied material from direct sunlight, wind, rain and frost.
*Pretesting of curing compound is recommended.

Limitations

- Application thickness: Minimum 1 in. (25 mm); Maximum 8 in. (200 mm). Thicker appliations have been done successfully. Please consult Sika Technical Service.
- Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application. Refer to the American Concrete Institute (ACI) for cold-weather or hot-weather application guidelines.
- Do not add any additives (plasticizers, accelerators, retarders, etc.) or cement to SikaQuick FNP
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts, with an appropriate epoxy such as Sikadur® 32 Hi-Mod.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Sikacem® 103

Machine-applied, silica fume enhanced, cementitious mortar

Construction

Description	Sikacem 103 is a ready-to-use, non-accelerated, cementitious, silica fume enhanced mortar with a dust control agent. Sikacem 103 is formulated for machine applications using dry or wet process spray equipment.
Where to Use	Sikacem 103 is particularly suitable for structural repairs in large area applications; for structures such as bridges, viaducts, retaining walls, parking structures, tunnels, galleries, industrial and residential buildings, piers, off-shore platforms, etc. ■ Use on grade, above, and below grade on concrete and mortar. ■ Use on vertical, overhead and horizontal surfaces.
Advantages	■ One-component, ready to use mortar. ■ Excellent adhesion to currently prepared, sound substrates. ■ High compressive and flexural strength, rapid strength and development ■ High density. ■ Not a vapor barrier. ■ Formulated to minimize dust formation. ■ Low in rebound, extremely economical in use. ■ Low water cement ratio, very low shrinkage. ■ Can be troweled and screed after application.
Coverage	Yield in service will vary according to amount of water utilized in the shotcreting process. Theoretical yield, without waste, of a 55 lb. bag is approximately 0.48 cu.ft/bag. Estimating should be based on prior experience or actual field evaluation
Packaging	55 lb. multi-wall bags.

Typical Data *(Material and curing conditions @ 73F (23°C) and 100% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened bags.	
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.	
Color	Concrete gray	
Density (wet mix)	137 lbs./cu.ft.	(2.2 kg/l)
Compressive Strength (ASTM C-109)		
(3 inch cubes)		
2 day	6,000 psi	(41.4 MPa)
7 day	7,000 psi	(48.3 MPa)
28 day	8,000 psi	(55.2 MPa)
Freeze/Thaw Resistance (ASTM C-666)	300 cycles	95%
Rapid Chloride Permeability Testing (AASHTO T-277)	Coulombs passed: less than 750 (very low)	
Flexural Strength (ASTM C-78)		
7 day	1,000 psi	(6.9 MPa)
28 day	1,400 psi	(9.7 MPa)
Tensile Strength (ASTM C-496)		
7 day	600 psi	(4.1 MPa)
28 day	750 psi	(5.2 MPa)
Direct Bond Strength (pull off test) (ACI 503.R)		
28 day	290-580 psi	(2-4 MPa) mostly concrete failure (substrate)
Modulus of Elasticity		
Static Modulus	(28 days)	4.6×10^6 psi (32,000 MPa)
Dynamic Modulus	(28 days)	5.8×10^6 psi (40,000 MPa)

Construction

How to Use

Surface Preparation

Concrete/Mortar: Substrate must be sound, clean, and free from oil, grease, loose material, surface contaminants and other bond-inhibiting materials. Steel reinforcement must be clean and free from any rust. Be sure repair area is not less than 1/3 in. in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means, to obtain an exposed aggregate surface (CSP-6). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application. When applying on critical substrates, the use of Sika Armatec 110 EpoCem as a bonding agent is advised.

Reinforcing Steel: Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel, use Sika Armatec 110 EpoCem (consult Product Data Sheet).

Application

Dry Process: Sikacem 103 is applied by conventional dry spray shotcrete equipment. Generally, do not use equipment with high rotor capacity. Apply Sikacem 103 in accordance with ACI 506-R85, “Guide to Shotcrete”. Important factors to observe during shotcreting are nozzle distance (2-6 ft.), angle to substrate (90°F), and consistency of mortar. Immediately after application and before set, mortar consistency should be plastic, like a firm jell .

Wet Process: Mixing: Conventional wet-process spray equipment such as the Mayco ST-45 or C-30HD machine should be used. Set up wet-process equipment; then add the water (approx. 5 pints per bag) directly into mixer. Start the mixer in motion and add the Sikacem 103 mortar while continuing to mix. Mix to uniform consistency using a maximum of 6 pints of water per 55 lb. (25 kg.) bag (approx. 3 minutes).

Application: At time of application, surfaces should be saturated surface dry but hold no standing water. Apply Sikacem 103 mortar by spraying or trowelling for repairing vertical or overhead surfaces. Shoot the material perpendicular to the surface. This minimizes rebound, creates the smoothest pattern (reduces ‘bumps’) and properly encases the rebars. The velocity of the material is sufficient if, at a distance of 18 to 24 in., the material pattern flattens out on contact with the surface and the rebars are encased. After applying the material, allow it to stiffen for about 10 minutes before removing bumpy areas with a trowel. Before applying the next layer, allow the material to reach initial set. This will take anywhere from 2 -4 hours, depending on mix consistency, mix and ambient temperature, wind conditions and humidity. Begin and finish a given patch on the same day.

Tooling and Finishing

A natural gun finish may be used. If a gun-finish is too rough, special finishes may be applied. Approximately 5-10 min. after initial set, excess material should be sliced off with a sharp-edged cutting screed.
The surface may then be finished to your requirements:

- broomed for a rough texture
- wood-flo ted for a granular texture
- steel-trowelled for a smooth finish

As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap an polyethylene, a fine mist of water or a water based* compatible curing compound. Curing compounds adversel affect the adhesion of following layers of mortar, leveling mortar or protective coatings. Moist curing shoul commence immediately after finishing. Protect newly applied material from direct sunlight, wind, rain and frost.

*Pretesting of curing compound is recommended.

Limitations

- **Application thickness:** Minimum 1/3 inch (8 mm) for large areas, local 1/4 inch (6 mm) can be tolerated.
- Maximum in one layer for large areas, 2 inches (50 mm). Local applications up to 6-10 inches (150-250 mm) are possible.
- Minimum ambient and surface temperatures 40°F (4°C) and rising at the time of application.
- Do not use solvent-based curing compounds.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur Hi-Mod 32.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT’S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800-933-7452. NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTION FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product’s most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika’s Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.v.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikacem® 103F

Machine-applied, silica fume enhanced, fiber-reinforced cementitious mortar

Description	Sikacem 103F is a ready-to-use, non-accelerated, cementitious, silica fume enhanced, fiber-reinforce mortar with a dust control agent. Sikacem 103F is formulated for machine applications using dry or wet process spray equipment.
Where to Use	Sikacem 103F is particularly suitable for structural repairs in large area applications; for structures such as bridges, viaducts, retaining walls, parking structures, tunnels, galleries, industrial and residential buildings, piers, off-shore platforms, etc. ■ Use on grade, above, and below grade on concrete and mortar. ■ Use on vertical, overhead and horizontal surfaces.
Advantages	■ One-component, ready to use mortar. ■ Excellent adhesion to currently prepared, sound substrates. ■ High compressive and flexura strength, rapid strength and development. ■ Fiber-reinforced ■ High density. ■ Not a vapor barrier. ■ Formulated to minimize dust formation. ■ Low in rebound, extremely economical in use. ■ Low water cement ratio, very low shrinkage. ■ Can be troweled and screed after application.
Coverage	Yield in service will vary according to amount of water utilized in the shotcreting process. Theoretical yield, without waste, of a 55 lb. bag is approximately 0.48 cu.ft/bag. Estimating should be based on prior experience or actual fiel evaluation.
Packaging	55 lb. multi-wall bags.

Typical Data *(Material and curing conditions @ 73F (23°C) and 100% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened bags.		
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.		
Color	Concrete gray		
Density (wet mix)	137 lbs./cu.ft.	(2.2 kg/l)	
Compressive Strength (ASTM C-109)			
(3 inch cubes)			
2 day	6,000 psi	(41.4 MPa)	
7 day	7,000 psi	(48.3 MPa)	
28 day	8,000 psi	(55.2 MPa)	
Freeze/Thaw Resistance (ASTM C-666)	300 cycles	95%	
Rapid Chloride Permeability Testing (AASHTO T-277)	Coulombs passed: less than 750 (very low)		
Flexural Strength (ASTM C-78)			
7 day	1,000 psi	(6.9 MPa)	
28 day	1,400 psi	(9.7 MPa)	
Tensile Strength (ASTM C-496)			
7 day	600 psi	(4.1 MPa)	
28 day	750 psi	(5.2 MPa)	
Direct Bond Strength (pull off test) (ACI 503.R)			
28 day	290-580 psi	(2-4 MPa)	mostly concrete failure (substrate)
Modulus of Elasticity			
Static Modulus	(28 days)	4.6×10^6 psi (32,000 MPa)	
Dynamic Modulus	(28 days)	5.8×10^6 psi (40,000 MPa)	

Construction

How to Use

Surface Preparation

Concrete/Mortar: Substrate must be sound, clean, and free from oil, grease, loose material, surface contaminants and other bond-inhibiting materials. Steel reinforcement must be clean and free from any rust. Be sure repair area is not less than 1/3 in. in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means, to obtain an exposed aggregate surface (CSP-6). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application. When applying on critical substrates, the use of Sika Armatec 110 EpoCem as a bonding agent is advised.

Reinforcing Steel: Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel, use Sika Armatec 110 EpoCem (consult Product Data Sheet).

Application

Dry Process: Sikacem 103F is applied by conventional dry spray shotcrete equipment. Generally, do not use equipment with high rotor capacity. Apply Sikacem 103F in accordance with ACI 506-R85, “Guide to Shotcrete”. Important factors to observe during shotcreting are nozzle distance (2-6 ft.), angle to substrate (90°F), and consistency of mortar. Immediately after application and before set, mortar consistency should be plastic, like a firm jelly.

Wet Process: Mixing: Conventional wet-process spray equipment such as the Mayco ST-45 or C-30HD machine should be used. Set up wet-process equipment; then add the water (approx. 5 pints per bag) directly into mixer. Start the mixer in motion and add the Sikacem 103F mortar while continuing to mix. Mix to uniform consistency using a maximum of 6 pints of water per 55 lb. (25 kg.) bag (approx. 3 minutes).

Application: At time of application, surfaces should be saturated surface dry but hold no standing water. Apply Sikacem 103F mortar by spraying or trowelling for repairing vertical or overhead surfaces. Shoot the material perpendicular to the surface. This minimizes rebound, creates the smoothest pattern (reduces ‘bumps’) and properly encases the rebars. The velocity of the material is sufficien if, at a distance of 18 to 24 in., the material pattern flatten out on contact with the surface and the rebars are encased. After applying the material, allow it to stiffen for about 10 minutes before removing bumpy areas with a trowel. Before applying the next layer, allow the material to reach initial set. This will take anywhere from 2 -4 hours, depending on mix consistency, mix and ambient temperature, wind conditions and humidity. Begin and finis a given patch on the same day.

Tooling and Finishing

A natural gun finish may be used. If a gun-finish is too rough, special finisher may be applied. Approximately 5-10 min. after initial set, excess material should be sliced off with a sharp-edged cutting screed.
The surface may then be finished to your requirements:

- broomed for a rough texture
- wood-floated for a granular texture
- steel-trowelled for a smooth finish

As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylenes, a fin mist of water or a water based* compatible curing compound. Curing compounds adversely affect the adhesion of following layers of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing Protect newly applied material from direct sunlight, wind, rain and frost.

*Pretesting of curing compound is recommended.

Limitations

- Application thickness: Minimum 1/3 inch (8 mm) for large areas, local 1/4 inch (6 mm) can be tolerated.
- Maximum in one layer for large areas, 2 inches (50 mm). Local applications up to 6-10 inches (150-250 mm) are possible.
- Minimum ambient and surface temperatures 40°F (4°C) and rising at the time of application.
- Do not use solvent-based curing compounds.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur Hi-Mod 32.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.v.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikacem® 133

Machine-applied, polymer-modified, silica fume enhanced, cementitious mortar

Description	Sikacem® 133 is a high performance, ready-to-use, non-accelerated, cementitious, polymer-modified, silica fume enhanced mortar with a dust control agent. Sikacem® 133 is formulated for machine applications using dry or wet process shotcrete equipment.
Where to Use	Sikacem® 133 is particularly suitable for structural repairs in large area applications; for structures such as bridges, viaducts, retaining walls, parking structures, tunnels, galleries, industrial and residential buildings, piers, off-shore platforms, etc. ■ Use on grade, above, and below grade on concrete and mortar. ■ Use on vertical, overhead and horizontal surfaces.
Advantages	■ One-component, ready to use mortar. ■ Excellent adhesion to currently prepared, sound substrates. ■ High compressive and flexural strength, rapid strength development. ■ Excellent freeze/thaw durability and resistance to deicing salts. ■ Tested for application during dynamic load (under traffic conditions). ■ Increased density and durability - can be used as a thin overlay for additional protection of reinforcement. ■ High resistance to the diffusion of carbon dioxide (carbonation). ■ Not a vapor barrier. ■ Constant modulus of elasticity in a wide temperature range. ■ Formulated to minimize dust formation. ■ Low in rebound, extremely economical in use. ■ Low water cement ratio, very low shrinkage. ■ Can be troweled and screed after application.
Coverage	Yield in service will vary according to rebound and amount of water utilized in the shotcreting process. Average yields for overhead consistencies approximately 0.42 cu. ft./bag. For vertical consistencies approximately 0.45 cu. ft./bag. For horizontal consistencies approximately 0.48 cu. ft./bag. Estimating should be based on prior experience or actual field evaluation.
Packaging	55 lb. multi-wall bags.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 100% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 1 year in original, unopened bags.

Storage Conditions Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.

Color Concrete gray

Density (wet mix) 137 lbs./cu. ft. (2.2 kg./l)

Compressive Strength (ASTM C-109)
2 day 4,000 psi (27.6 MPa) **7 day** 6,000 psi (41.4 MPa) **28 day** 8,000 psi (55.2 MPa)

Freeze/Thaw Resistance (ASTM C-666) 300 cycles 100%

Flexural Strength (ASTM C-78) **7 day** 1,250 psi (8.6 MPa) **28 day** 1,630 psi (11.2 MPa)

Rapid Chloride Permeability Testing (AASHTO T-277)
Coulombs passed: less than 500

Tensile Strength (ASTM C-496) **7 day** 630 psi (4.3 MPa) **28 day** 800 psi (5.5 MPa)

Direct Bond Strength (pull off test) (ACI 503.R)
28 day 290-580 psi (2-4 MPa) mostly concrete failure (substrate)

Modulus of Elasticity
Static Modulus (28 days) 3.5 x 10^6 psi (24,000 MPa) at -4°/68°F (-20°/+20°C)
Dynamic Modulus (28 days) 4.8 x 10^6 psi (33,000 MPa)

Carbon Dioxide Diffusion Coefficient (μCO2) 20,000

Coefficient of Thermal Expansion 4.4 x 10^{-6}/F (8 x 10^{-6}/C)

Tested and approved for application during dynamic load by the Technical University, Aachen for the German Federal Ministry of Transportation.

Construction

How to Use

Surface Preparation

Concrete/Mortar: Substrate must be sound, clean, and free from oil, grease, loose material, surface contaminants and other bond-inhibiting materials. Steel reinforcement must be clean and free from any rust. Be sure re-pair area is not less than 1/4" in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means, to obtain an exposed aggregate surface (CSP-6). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application. When applying on critical substrates, the use of Sika® Armatec® 110 EpoCem as a bonding agent is advised.

Reinforcing Steel: Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel, use Sika® Armatec® 110 EpoCem (consult Product Data Sheet).

Application

Dry Process: Sikacem® 133 is applied by conventional dry spray shotcrete equipment. Generally, do not use equipment with high rotor capacity. Apply Sikacem® 133 in accordance with ACI 506-R85, "Guide to Shotcrete''. Important factors to observe during shotcreting are nozzle distance (2-6 ft.), angle to substrate (90), and consistency of mortar. Immediately after application and before set, mortar consistency should be plastic, like a firm jelly.

Wet Process: Mixing: Conventional wet-process spray equipment such as the Mayco ST-45 or C-30HD machine should be used. Set up wet-process shotcrete equipment; then add the water (approx. 5 pints per bag) directly into mixer. Start the mixer in motion and add the Sikacem® 133 mortar while continuing to mix. Mix to uniform consistency using a maximum of 6 pints of water per 55 lb. (25 kg.) bag (approx. 3 minutes).

Application: At time of application, surfaces should be saturated surface dry but hold no standing water. Apply Sikacem® 133 mortar by spraying or trowelling for repairing vertical or overhead surfaces. Shoot the material perpendicular to the surface. This minimizes rebound, creates the smoothest pattern (reduces 'bumps') and properly encases the rebars. The velocity of the material is sufficient if, at a distance of 18-24 in., the material pattern flattens out on contact with the surface and the rebars are encased. After applying the material, allow it to stiffen for about 10 minutes before removing bumpy areas with a trowel. Before applying the next layer, allow the material to reach initial set. This will take anywhere from 2-4 hours, depending on the mix consistency, mix and ambient temperature, wind conditions, and humidity. Begin and finish a given patch on the same day.

Tooling & finishing

A natural gun finish may be used. If a gun-finish is too rough, special finishes may be applied. Approximately 5-10 min. after initial set, excess material should be sliced off with a sharp-edged cutting screed. The surface may then be finished to your requirements: broomed for a rough texture; wood-floated for a granular texture; steel-trowelled for a smooth finish.

Curing As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curni g compound. Curing compounds adversely affect the adhesion of following layers of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect newly applied material from direct sunlight, wind, rain and frost.

*Pretesting of curing compound is recommended.

Limitations

- Application thickness: Minimum 1/3 inch (8 mm) for large areas, local 1/4 inch (6 mm) can be tolerated.
- Maximum in one layer for large areas, 2 inches (50 mm). Local applications up to 6-10 inches (150-250 mm) are possible.
- Minimum ambient and surface temperatures 40°F (4°C) and rising at the time of application.
- Do not use solvent-based curing compounds.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential area of contact by coating aluminum bars, rails, posts, etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Product Data Sheet
Edition 7.14.2014
SikaRepair 224

SikaRepair® 224

One-component, cementitious, sprayable mortar for structural repairs

Description	SikaRepair 224 is a one-component, pre-packaged, ready-to-use, cementitious, silica fume, fiber reinforced, high strength shrinkage-compensated mortar. Formulated for application by trowel or low pressure spray. It is designed especially for repair of overhead and vertical surfaces.
Where to Use	A high performance repair mortar for wet spray application. Suitable for new construction, repairs, and maintenance work. Typical applications include: ■ Structural repair material for water and wastewater treatment plants, parking structures, industrial plants, bridges, tunnels and dams, etc. ■ Use on vertical and overhead surfaces. ■ Use on grade, above, and below grade on concrete and mortar. ■ Potable water tank. (NSF approved in Marion, OH and Santa Fe Springs, CA)
Advantages	■ Ready-for-use, one-component material. ■ Easy to use; just add water. ■ Sprayable system. ■ Potable water approved. ■ Superior workability. Can be trowelled and screeded after application. ■ Labor-saving system. ■ Superior abrasion resistance over conventional Portland cement mortar. ■ Bond strength ensures superior adhesion. ■ Not a vapor barrier. ■ Compatible with coefficien of thermal expansion of concrete. ■ Increased resistance to de-icing salts. ■ Good freeze/thaw resistance. ■ High early strengths. ■ Very low shrinkage. ■ Silica Fume enhanced. ■ Fiber reinforced.
Coverage	Yield in service will vary. Average yield is approximately 0.40 cu. ft./bag. Estimating should be based on prior experience or actual field evaluation.
Packaging	50-lb. (22.7 kg) multi-wall bags.

Typical Data *(Material and curing conditions @ 73°F and 100% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened bags.	
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.	
Color	Dark gray.	
Mixing Ratio	3/4 gallon to 7/8 gallon liquid per 50 lb. bag of material	
Density (wet mix)	125 lbs./cu. ft. (2.0 kg./l.)	
Compressive Strength (ASTM C-109)		**73°F**
	1 day	4,500 psi (31 MPa)
	7 day	8,000 psi (55 MPa)
	28 day	10,000 psi (69 MPa)
Flexural Strength (ASTM C-348)	**28 day**	1,100 psi (7.6 MPa)
Tensile Strength (ASTM C-496)	**28 day**	735 psi (5.0 MPa)
Direct Tensile Pull off (ACI 503)	**28 day**	greater than 350 psi (Failure in substrate. Substrate prepared with 20,000 psi hydroblasting)
Slant Shear (ASTM C -882 modified	**28 day**	>2,500 psi (24.1 MPa)
Chloride Permeability (ASTM C1202/AASHTO T277)	**28 day**	less than 500 coulombs
Sulfate Resistance (ASTM C-1012)	**1 year**	less than 0.06%
Setting Time (ASTM C 266)	**Initial:** 2 to 3 hours. **Final:** 5 to 6.5 hours.	

Construction

How to Use

Surface Preparation

Substrate must be sound, clean, and free from oil, grease, loose material, surface contaminants and other bond-inhibiting materials. Steel reinforcement must be clean and free from any rust. Be sure repair area is not less than 3/8 in. in depth. Preparation work should be done by high pressure water blast, or other appropriate mechanical means, to obtain an exposed aggregate surface (CSP-6). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no stand-ing water during application. Reinforcing Steel: Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high-pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel, use Sika Armatec 110 EpoCem (consult Technical Data Sheet).

Priming

Concrete Substrate: Prime the prepared substrate with a brush or sprayed applied coat of Sika Armatec 110 EpoCem (consult Technical Data Sheet). Alternately, a scrub coat of Sika Repair 224 can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries

Mixing

With water: Add the water (approx. 3/4 gal.) directly into mixer. Start the mixer in motion and add the SikaRepair 224 mortar while continuing to mix. Mix to uniform consistency using a maximum of 7/8 gallons of water per 50 lb. (22.7 kg.) bag (approx. 3 minutes).

With Latex R: Pour 6-7 pints of Sika Latex R into the mixing container. Slowly add powder and mix as above. **With Diluted Latex R:** Sika Latex R may be diluted up to 5:1 (water: Sika Latex R) for projects requiring minimal polymer-modification Pour 6-7 pints of the mixture into the mixing container. Slowly add powder and mix as above **SikaRepair 224 Concrete:** For horizontal applications greater than 1 inch deep, add 3/8 inch coarse aggregate. Aggregate must be non-reactive (reference ASTMC1260, C227 and C289), clean, well-graded, saturated surface dry (SSD), have low absorption and high density, and comply with ASTM C33 size number 8 per Table 2. Addition rate must not exceed 25 lbs. of aggregate/bag of SikaRepair 224 (25 lbs. of 3/8 in. aggregate is approximately 2.0 to 2.5 gal. by loose volume of aggregate). If the placement is vertical or overhead, temporary support of the material is required. Contact Sika Technical Service for application details.

Application

Conventional wet-process shotcreting equipment such as a low-pressure or a high-pressure machine should be used. At time of application, surfaces should be saturated surface dry but hold no standing water. Apply SikaRepair 224 mortar by low pressure spraying or trowelling for repairing vertical or overhead surfaces. Shoot the shotcrete perpendicular to the surface. This minimizes rebound, creates the smoothest pattern (reduces 'bumps') and properly encases the rebars. The velocity of the shotcrete is suf-ficien if, at a distance of 18 to 24 in., the shotcrete pattern flatten out on contact with the surface and the rebars are encased. After applying the shotcrete, allow it to stiffen for about 10 minutes before removing bumpy areas with a trowel. Before applying the next layer, allow the shotcrete to reach initial set. This will take anywhere from 45 minutes to several hours, depending on mix consistency, mix and ambient temperature, wind conditions and humidity. Begin and finis a given patch on the same day.

Tooling and Finishing

As per ACI recommendations for portland cement mortar, curing is required when jobsite conditions warrant. Moist cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound. Curing compounds adversely affect the adhesion of following layers of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing Protect newly applied material from direct sunlight, wind, rain and frost.

*Pretesting of curing compound is recommended.

Limitations

Application thickness:

- Minimum 3/8 inch (9 mm).

Vertical applications:

- SikaRepair 224 can be spray applied up to 2" thickness in one lift.

Overhead applications:

- The thickness should be no more than 1 to 1.5" per pass. If repair requires several lifts (over 1.5"), each lift should be applied as soon as the previous lift will support it.

General:

- For additional information, consult Technical Service.
- Minimum ambient and surface temperatures 40°F (4°C) and rising at the time of application.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur Hi-Mod 32.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikacrete®-213F Fire protection mortar

Pre-bagged, cement-based, fire protection mortar. Protects FRP/ epoxy from exposure due to high temperatures of fire.

Description

Sikacrete®-213F is a cement-based, pre-bagged, dry mix, fire protection mortar. It is highly effective in protecting FRP strengthening structures from the high temperature of fire. It is also used in tunnel construction as a fire barrier.

Where to Use

Sikacrete®-213F is used for concrete and reinforced concrete structures exposed to fire hazards. It contains phyllosilicate aggregates, which are highly effective in resisting the heat of hydrocarbon fires. The thickness of the fire protection layer to be applied depends on the specified fire resistance. The outstanding properties of Sikacrete®-213F allow greatly reduced thickness of the fire protection layer required.

Advantages

- Pre-bagged, dry mortar mix for application by wet spray process.
- Minimal layer thickness to meet specifications.
- Easy to apply.
- Lightweight, low density.
- Does not require reinforcement up to 40 mm (1.57 in.) thick except for overhead applications.
- The sprayed mortar surface can be finished by trowel or wood float.
- >240 minutes fire resistance achievable.
- Minimal rebound.
- 4 hour fire resistance over SikaWrap® and CarboDur FRP composites
  - UL File BXUV.N856 - beam strengthened with CarborDur plates and SikaWrap® 103C/230C fabrics
  - UL File BXUV.N857 - beam strengthened with SikaWrap® 103C/100G/A30G fabrics
  - UL File BXUV.X855 - Column strengthened with SikaWrap® 103C fabric
  - ULC File BXUVC.N813 – beam strengthened with CarboDur plates and SikaWrap® 103C/230C fabrics
  - ULC File BXUVC.N814 – beam strengthened with SikaWrap® 103C/100G/430G fabrics
  - ULC File BXUVC.X826 - column strengthened with SikaWrap® 103C fabric
- Independently assessed by UL (ULC) to CAN/ULC-S101, Standard Methods of Fire Endurance Tests of Building Construction Materials; and ASTM E119 (NFPA 251) Standard Test Methods of Fire Tests of Building Construction and Materials.
- Fire-resistance ratings tested in accordance with ANSI/UL 263

Coverage

Consumption Approx. 6 kg/m2 for a layer thickness of 10 mm.
Approx. 6 sf/12 kg bag for layer thickness of 40 mm (1.57 in.)

Packaging

26.46 lb bag (12 kg)

Typical Data ***(Material and curing conditions @ 73°F (23°C) and 50% R.H.)***

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Self Life:	1 Year in original, unopened packaging in cool and dry conditions.	
Density:	Powder:	Approx. 0.46 kg/l
	Fresh applied:	Approx. 1.17 kg/l (sprayed)
	Applied after 28 days:	Approx. 0.61 kg/l (sprayed)
pH Value:	12.0 -12.5	
Layer Thickness:	40 mm (1.57 in.)	
Mechanical / Physical Properties		
Compressive Strength:	Approx. 2.0 N/mm	
Freeze/Thaw/De-Icing:	In order to guarantee resistance to frost, freeze thaw cycles and de-icing salts, the Salt Resistance surface of the mortar must be treated with Sikagard-Wallcoat T.	
Thermal Conductivity:	Approx. 0.23 W/mK at +10°C	

Construction

How to Use

Surface Preparation

Concrete: Concrete substrate must be clean and sound. Remove any existing coatings, oil, grease, dirt, dust, curing agents, impregnations, wax, laitance, coatings and bond-inhibiting materials fro the surface by appropriate means, including high-pressure water (> 11,000 psi). the substrate must be thoroughly pre-dampened to a saturated, surface dry (SSD) condition to prevent water loss and incomplete cement hydration when the mortar is placed.

Steel: Steel substrates must be clean, dry and stable. Remove all existing treatments, such as coatings, sealers, wax and other contaminants such as rust, dirt, grease, oils and foreign matter. A steel primer is recommended.

FRP Composites: Composite materials, such as carbon and glass fiber reinforced polymers must be cured, clean, dry and stable. Remove all carbon dust from the surface. If the epoxy resin has blushed, this must be cleaned prior to installing Sikacrete®-213F. Prime the FRP composite surface with Sikadur® 300 or Sikadur® 330 epoxy. Broadcast binding aggregate into the wet prime coat to adhere the Sikacrete®-213F fire resistant mortar.

Mixing

Pour 2 gallons, 7 pints (10.9 liters) of potable water into a suitably sized and clean mixing container. Add 1 bag (12 kg) Sikacrete-213F powder slowly while mechanically mixing, using a heavy duty, low speed drill (300 – 450 rpm) with a mud mixer or other suitable paddle. Mix to a uniform consistency for a minimum of 3 minutes. Mixing can also be done in a mortar mixer setup for a direct feed in to wet shotcreting equipment, maintaining the same mixing requirements as when mixing with a drill. Once mixed, if a wetter consistency is required, increase the water content up to a maximum of 3 gallons, 4 pints (14 liters). **Note:** Do **not** overwater as excessive water will cause severe bleeding, retardation and will reduce the strength and performance of the mortar. Extending ("bulking") the mortar with additional aggregate or adding any other material into the mix is not permitted as this may impact the fire resistance of the mortar.

Application

At the time of application, the concrete substrate must be SSD (saturated surface dry) with no surface water visible. FRP Composite and steel surfaces should be dry and clean. Resin surfaces must have an acceptable contact surface to which the mortar will adhere. Sikacrete®-213F is applied by the wet-spray, dense stream or wet-spray, thin stream method (for vertical/overhead surfaces). Position spray nozzle 18 – 24 inches (450 – 600 mm) perpendicular to the surface. This will minimize rebound, create a smoother finished surface and will flatten out when applied at the proper pressure. Allow Sikacrete®-213F to set sufficiently before finishing or scraping to the desired lines. When application requires an aesthetic or protective coating, contact Sika's Technical Services for guidance.

Application equipment should include wet-spray, screw pump systems such as an Aliva® rotor system, Putzmeister®, Bunker® spray concrete system or similar.

To achieve the optimum physical characteristics, the spray nozzle must be handled by a trained and experienced operator.

Where a risk of vibration or mechanical damage to the surface exists and for overhead applications, the use of a light wire mesh reinforcement is recommended in order to prevent any debonding of the mortar layer.

Tooling and finishing

Application equipment:
Wet Spray Screw pump.
Reinforcement: Where there is a risk of vibration or mechanical damage to the surface, the use of a light wire mesh reinforcement is recommended in order to prevent any debonding of the mortar layer.
As per ACI 308 requirements for cementitious materials, curing is required. To achieve performance consistent with the properties on this technical data sheet, curing must be done by recognized curing methods such as mist spray or water/damp burlap, white polyethylene film or approved curing compound. Curing must start immediately after finishing. Protect freshly applied mortar from direct sunlight, wind, rain and frost.

Limitations

- Substrate Temperature +5°C min. / +35°C max.
- Ambient Temperature +5°C min. / +35°C max.
- The surface of the freshly applied mortar can be finished for up to one hour after application dependent on the temperature and humidity.
- Wire mesh reinforcement required when applied in thicknesses greater than 40 mm (1.57 in.) and for overhead applications.

Construction

- Sikacrete®-213F must not assume any load-bearing function
- Sikacrete®-213F is a sacrificial layer and must be replaced in the event of a fire
- Sikacrete®-213F must not be exposed to weathering (frost, freeze/thaw, moisture) without additional protection

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaTop® Seal 107

Flexible, waterproofing and protective slurry mortar

Description

SikaTop® Seal 107 is a two-component, polymer-modified, cementitious waterproofing and protective slurry mortar for concrete. It is slightly flexible to tolerate fine cracks and suitable in both interior and exterior applications.

Advantages

SikaTop® Seal 107 provides the following beneficial properties:

- Improves the watertightness of water-containing concrete tanks, reservoirs, and clearwells.
- Protects against water penetration, yet water vapor permeable (breathable).
- Excellent freeze/thaw resistance.
- Good adhesion to sound, prepared substrates.
- Easy and fast mixing and application.
- Good abrasion resistance.
- Protects against concrete carbonation (80 mils SikaTop® Seal 107 is equivalent to 6 inches of concrete).
- Can be mixed to slurry or trowelable consistency.
- Improves concrete/masonry appearance.
- Available in concrete gray and off-white.
- SikaTop® Seal 107 is ANSI/NSF 61 potable water compliant.

Where to use

- Horizontal surfaces subjected to light foot traffic (balconies).
- For waterproofing of drinking water, tanks, reservoirs, and clear wells.
- For internal and external waterproofing and damp-proofing concrete, mortar blockwork and brickwork.
- For protection of concrete structures against the deleterious effects of deicing salts and freeze/thaw cycles.
- For sealing “hairline” cracks in concrete structures not subject to movement surfaces.
- For interior and exterior waterproofing of basements.
- Vertical surfaces.

Coverage

- For damp-proofing: apply one coat at 40 mils.
- For waterproofing: apply two coats at 40 mils per coat. Theoretical thickness (wet film) on smooth substrates: 40 ft.^{2}/gal. = 40 mils (2 kg./m^2 = 1 mm). The above figures are theoretical and do not allow for substrate profile and wastage. Three coats may be required in areas of extremely high water infiltration.

Packaging

44 lb. unit - when mixed yields 2.65 gallons (10 l)
Component ‘A’ - 1 gal. plastic jug; 4/carton. Component ‘B’ - 35.5 lb. multi-wall bag.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 1 year when unopened.

Storage Protect Component ‘A’ from freezing and Component ‘B’ from moisture. Store dry at 40°- 95°F (4°- 35°C). Condition material to 65°-75°F conditions before using.

Colors Concrete gray and off white.

Mixing Ratio Component ‘A’: Component ‘B’. Slurry consistency 1:4.1 by weight (full unit)
Trowelable consistency 1:4.5 by weight (90% liquid to full bag)

Density (wet mix) 125 lbs./ft.^{3} (2.0 kg./l.) = 16.6 lbs./gal.

Working Time Approximately 60 minutes at 68°F; Approximately 30 minutes at 86°F

Compressive Strength (ASTM D-695) @ 28 days

Type White	3,000 psi (20.7 MPa)
Type Gray	3,400 psi (23.4 MPa)

Tensile Strength (ASTM C-307) 28 days

White	870 psi (6.0 MPa)
Gray	990 psi (6.8 MPa)

Bond Strength (ACI 503R-30 Modified): Pull-off Test 28 days 180 psi (1.25 N/mm^2)

Flexibility (ASTM D522 modified) Approximately 25%

Watertightness under hydrostatic pressure (DIN 1048 mod.)

Water Pressure		Penetrated Water		Water Absorption	
feet	(bar)	grains	(grams)	grains ft^2 • hours	(grams) (m^2 • hours)
16	(0.5)	0	(0)	0	(0)
33	(1)	15	(1)	3	(2)
99	(3)	31	(2)	10	(7)

Rendering mortars absorbing less than 91 grains/ft.^{2} • h (64 grams/m^2• h) are considered watertight.

Vapor Permeability (ASTM E-96) U.S. perms: 28 days 18 (not a vapor barrier)

Carbon Dioxide Diffusion Coefficient (μCO_2) Approximately 35,000, equivalent to 6 inches of concrete

Water Vapor Diffusion Coefficient (μH_2O) Approximately 500 (“breathable”)

Construction

How to Use

Substrate Preparation

Concrete, mortar and masonry surfaces must be clean, free from grease, oil and loosely adhering particles. All surfaces must be as true and flat as possible. An open-textured, sandpaper-like substrate is ideal (CSP-3). All surfaces must be saturated surface dry (SSD), with no standing water at time of application. It is necessary to stop water ingress prior to the application of SikaTop® Seal 107. Use a quick setting, waterproof slurry (SikaSet®) to seal water leaks.

Mixing

The consistency of the mix can be altered by reducing the amount of Component 'A' (liquid) to be used. Under normal circumstances, when the full quantities of both components are mixed together, a slurry consistency will result. For a trowelable consistency use only 90% of component 'A'. Mix in a clean container by slowly adding the powder component to the liquid component and mixing with slow speed drill and mixing paddle.

Application

SikaTop® Seal 107 can be applied by trowel, notched trowel, stiff bristle, or spray equipment. Work the material well into the prepared substrate, filling all pores and voids.

For brush consistency: Apply the first coat of SikaTop® Seal 107 with horizontal brush strokes and leave to harden (4 to 8 hours). Apply the second coat with vertical brush strokes.

For trowel consistency: Apply the first coat with a notched trowel and leave to harden (4 to 8 hours). Apply the second coat with a flat trowel.

For spray application: Use a hopper gun spray equipment, textured sprayer (e.g. Texspray E110c), or a rotor/stator pump equipment. Allow the first coat to harden (4 to 8 hours) prior to the application of the second coat. As soon as the mortar layer starts to set, a uniform surface texture can be obtained by rubbing the surface with a fine sponge or a plastic trowel. Do not overwork SikaTop® Seal 107 during finishing and avoid the use of additional water. [Where required, a third coat of SikaTop® Seal 107 may be applied no later than 24 hours after the second coat (in this case, do not trowel or sponge finish the second coat). If intercoat period exceeds 24 hours, light grit blasting is required prior to further application].

Balcony Waterproofing Layer: Fill in any spalled areas in the existing substrate with the appropriate Sika repair mortar as required. Apply an appropriately sized closed cell backer rod along transition (wall-slab) to prevent three-sided adhesion. Apply a continuous cant bead of Sikaflex® 11-FC or Sikaflex® 2C, to a depth of 1/8" minimum and 1/2 inch thickness. Allow sealant to cure sufficiently. Substrate must be SSD with no standing water at time of application. Apply a 1/16" thick layer of SikaTop® Seal 107 over the entire balcony. While the material is still wet apply a "360 degree pull" non-alkaline, woven fiberglass mesh to reinforce the 107 layer along static hairline cracks, wall to slab transitions and patched areas. Using trowels remove any wrinkles in the mesh by forcing down into the SikaTop® Seal 107. Ensure the mesh is completely embedded and covered with SikaTop® Seal 107. If any areas are not covered apply additional SikaTop® Seal 107 over top of mesh to cover. Trowel to a smooth uniform finish. Allow curing so that surface can take foot traffic without harming the coating.

Tooling & Finishing

Curing: As with all cement based products, curing is important. Protect newly applied product against direct sunlight, wind, rain and frost.

Limitations

- If rain is anticipated within 1-2 days after application, the surface should be protected in order to prevent streaking.
- Not an aesthetic coating.
- Minimum ambient and substrate temperatures are 45°F (7°C) and rising at the time of application.
- Maximum application thickness per coat = 80 mils (2 mm). Do not apply less than 20 ft.²/gal. = 1 m²/liter.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.
- Allow 2 days of air curing before subjecting SikaTop® Seal 107 to submersion.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Primer MB

Solvent Free, Epoxy Primer and Moisture Barrier for use with SikaBond Adhesives, SikaLevel underlayments and other flooring systems on critical substrates

Description	Sika Primer MB is a 2-component, solvent-free, low-viscosity, epoxy primer for use with under ALL flooring products, wood, carpet, vinyl, LVT, self-leveling underlayments, floating floors, and other flooring systems that require protection from sub-floor moisture.
Where to Use	■ Moisture barrier to help control moisture propagation in cementitious substrates with a moisture content not exceeding 6% by Tramex Method and residual moisture up to 100% R.H. or 25 lbs./1000 sq.ft./24 hrs. ■ For substrate consolidation on concrete, cement and gypsum screeds. ■ Adhesion promoter for old and new adhesive residues in conjunction with other Sika products.
Advantages	■ Solvent-free (100% solids) ■ Easy roller applied application, low viscosity ■ Convenient, easy to mix packaging ■ Shorter construction periods ■ Excellent penetration and stabilization of the substrate ■ Reduction of adhesive consumption ■ Suitable for use on floors with radiant heating ■ Compatible with SikaBond wood flooring adhesives, SikaLevel MB Excel, and other underlay ment systems ■ Can be used below floating floors

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life	2 years from date of production if stored properly in undamaged sealed containers
Storage Conditions	Store dry at 50°F (10°C) - 77°F (25°C)
Color	Blue tint
Viscosity	
Chemical Base	Two component epoxy
Density	9.14 lbs/gal (1.1 kg/l)
Cure Time	Minimum curing time, prior to walking on primer/or for applying SikaBond Adhesives: at 50ºF (10ºC) 18 hours at 73ºF (23ºC) 8 hours at 86ºF (30ºC) 6 hours

* When Sika Primer MB is left on the substrate for more than the maximum allowable open time at 36 hours prior to placing adhesive, the surface must be mechanically prepared (i.e. sanded) solvent wiped before proceeding.

Service Temperature	-40°F to +158°F
Compressive Strength	10,000 psi (after 7 days, at 73°F [23°C] and 50% RH)
Shore D Hardness	83 (after 7 days, at 73°F [23°C] and 50% RH) (mixed A&B)
Water Vapor Permeability	0.06 g/m2-24hour-mmHG per ASTM E-96 Standard Test Method of Water Vapor Transmission of Materials

Construction

Coverage

- 250-300 sq.ft. per pail, depending on substrate porosity
- When used as an adhesion promoter or surface consolidator alone, coverage will be approximitly 400-450 sq.ft. per pail depending on substrate.
- MUST produce a monolithic, pinhole-free finish with a continuous film. The need for multiple coats is directly related to surface absorption. Dense substrates can consume less material and absorbent substrates can consume more material.

Packaging

2.64 gallon pails

How to Use

Surface Preparation

- Substrate must be clean, dry, sound and homogeneous, free from oils, grease, dust, and loose or friable particles. Paint, laitance, and other poorly adhering contents must be mechanically removed.
- Substrate must have an open textured surface to allow Sika Primer MB to penetrate. (i.e. Blast cleaning, grinding are considered acceptable means to achevie the desired surface profile but . Acid and chemical etching are not acceptable)
- At least 50 % of the surface area must be cleared of residual adhesive and cutbacks. (i.e. by grinding or mechanical substrate preparation)
- Minimum compressive strength > 1160 psi. Tensile Bond strength > 116 psi.
- The floor must be cleaned with an industrial vacuum prior to installation of the Sika Primer MB. Consult level/patch system manufacturer regarding priming prior to the placement of materials.
- Applicator must always verify that preparation of the surface is sufficient prior to using Primer MB or patch/level compound.
- On fiber reinforced concrete, fibers should be flamed off the surface prior to application of Sika Primer MB as a moisture barrier.
- Please contact Sika Technical Service for any questions related to your project.

Conditions/Limits: Substrate temperature during laying and until Sika® Primer MB has fully cured should be above 50°F (10°C) and in case of radiant floor heating below 86°F (30°C). Application temperature of substrate must be minimum 5°F (3°C) above the measured dew point temperature. Substrate Humidity: Subfloor moisture content should not exceed 6% when measured with a Tramex moisture meter or 4% when measured using the CM method.

Mixing

Add one full can of Component A to one full can of Component B then mix with an electric drill and mixing (Jiffy Mixer type) paddle at a low speed to reduce air entrainment (300-400 rpm). Using a paint stick or similar is not sufficient to mix the primer. A minimum mixing time of 3 minutes shall be observed; mixing shall continue until a homogeneous mix has been achieved. Scrape sides of pail with paint stick or paddle to ensure all contents are thoroughly mixed together. Unmixed material applied to the floor will not cure properly.

Application

- Apply Sika Primer MB uniformly (in 2 directions 90°) to the substrate using a medium nap roller, ensuring that a continuous coat is achieved over the entire surface (MUST produce a mirror like finish)
- Pour contents of pail onto the floor for best working time. Attempting to work from the pail will reduce working time.

Application	Recommended Coatings	Results in
Moisture barrier only	Minimum 1x	Mirror like finish
Substrate consolidation only	Minimum 1x	Good penetration
Adhesion promotion only	Minimum 1x	Mirror like finish
Moisture barrier + substrate consolidation	Minimum 2x	Mirror like finish
Moisture barrier + adhesion promotion	Minimum 2x	Mirror like finish
A waiting time of > 8 hours and < 36 hours must be observed between coats of Sika Primer MB		

- When used as a primer for helping moisture mitigation in cement substrates prior to applying SikaLevel-125 & SikaLevel-315, prepare the substrate mechanically as in accordance with the guidelines stated in subtitle “Substrate Preparation”. Apply the first coat at 75-115 sq. ft. gal. Apply the second coat at 150-225 sq. ft. gal. after a minimum of 8 hours and a maximum of 36 hours after the first coat is applied. Broadcast to refusal oven dried silica sand (20/30) on the second coat immediately. Sweep sand once the epoxy is cured. Apply SikaLevel-125 / 315 on cured epoxy
- Alternately, when used in conjunction with the SikaLevel MB Excel system, prepare the substrate mechanically as in accordance with the guidelines stated in subtitle “Substrate Preparation”. Apply the first coat at 75-115 sq. ft. gal. Apply the second coat at 150-225 sq. ft. gal. after a minimum of 8 hours and a maximum of 36 hours after the first coat is applied. Apply SikaLevel 02 EZ Primer at 350-500 sq. ft. gal. after a minimum of 8 hours and a maximum of 36 hours after the second

coat is applied. After approximately 1-2 hours, or when SikaLevel 02 EZ Primer is dry to the touch, apply SikaLevel-125 / 315.

Pot Life (Max. open time), If primer is left in pail after mixing:

at 50ºF (10ºC) ~ 60 minutes

at +68ºF (20ºC) ~ 30 minutes

at +86ºF (30ºC) ~ 15 minutes

Removal

Clean all tools and application equipment with cleaning solvent (Xylene, MEK are effective). Hardened/ cured material can only be removed mechanically.

Limitations

- Proper coverage must be used to achieve moisture barrier properties.
- Sika Primer MB will not act as a moisture barrier for gypsum screeds.
- Sika Primer MB only protects from moisture coming from below the concrete.
- Sika Primer MB does not prevent moisture occurring between the Primer MB and the floating floor due to secondary sources of moisture or acclimation, e.g. water condensation.
- Sika Primer MB is not suitable for use with bonded systems due to possible curing and adhesion problems.
- Gypsum based sub-floors are very susceptible to excess moisture and will be degraded if exposed to excess moisture from below or above.
- Sika Primer MB will not prevent damage to gypsum based sub-floors that are exposed to excess moisture levels.
- Sika recommends the use of Portland Cement underlayments for best results. Consult level/ patch system manufacturer regarding priming and other application/limitation guidelines prior to the placement of materials.
- Sika Primer MB will not prevent hydrostatic pressure.
- Floor covering manufacturer's and Wood flooring manufacturer's recommendations, like room humidity levels and wood acclimation requirements should be strictly followed.
- Sika does not make any standing recommendations as to the structural integrity of old adhesive residues or sub-flooring materials that are not manufactured by Sika.
- Sika Primer MB must not be applied to a visibly wet substrate.
- When Sika Primer MB is left on the substrate for more than the maximum allowable open time of 36 hours, prior to placing the adhesive, the surface must be thoroughly cleaned and mechanically prepared (i.e. screened sand) and solvent wiped. Failure to do this, may result in adhesion problems. For detailed instructions consult the Product Data Sheets or contact our Technical Service. When used in conjunction with SikaBond Wood Floor Adhesives and floating floors, Sika Primer MB does not need to be broadcasted with sand.

Construction

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaLevel®-01 Primer

Concrete primer and sealer for use with SikaLevel®-125 and SikaLevel®-315.

Description	SikaLevel® -01 Primer is a one-part, water-dispersed and solvent-free, acrylic-based solution used to prime and seal floor surfaces prior to the application of SikaLevel®-125 and SikaLevel®-315 underlayment.
Where to Use	Use as a primer/sealer for absorbent substrates including concrete and cement screeds. Particularly suitable as an adhesion promoter and surface sealer beneath SikaLevel®-125 and SikaLevel®-315, enhancing the bond and integrity of the underlayment when applied onto porous substrates.
Advantages	■ Ready to use, no dilution required. ■ Water-based and solvent-free. ■ Penetrates substrate to reduce outgassing and formation of bubbles in the underlayment. ■ Prevents water loss from the underlayment into the substrate. ■ Quick-drying and fast film formation to increase productivity. ■ Achieves excellent bond values throughout the recommended range of application temperatures. ■ Effectively seals concrete surfaces in a single, economic operation.
Coverage	Approximately 325 to 500 ft.² gal or 8 to 10 m²/ltr approximately. Coverage figures do not include allowance for surface profile and porosity or material waste.
Packaging	1 U.S. gal. jug

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened container. Protect from high heat and freezing; if frozen, discard.
Storage Conditions	Store dry at 40°-77°F (5°-25°C). Condition material to 65°-75°F (18°-24°C) before using.
Specific Gravity	approx. 1.02 kg/ltr.
Solids Content	23%
Drying time	<2 hours
Recoat Time	Allow previous coats to become tack-free before applying additional coats
Bond Strength	>217 psi (>1.5 MPa) (substrate failure)
VOC (EPA method 24)	< 10 g/L

How to Use

Surface Preparation

The substrate must be dry, clean and sound before priming and applying the underlayment materials. Remove all existing treatments such as coatings, sealers, wax, latex compounds, impregnations and curing agents, together with all contaminants i.e. dirt, dust, laitance, grease, oils, and foreign matter, which will interfere with the penetration of a primer and the adhesion of an underlayment. Prepare concrete and cement substrates by mechanical means, such as shotblasting, sandblasting, waterjetting, scarifying, or other appropriate methods, to achieve an open-textured, fine- gripping surface (ICRI - CSP 3 minimum). Weak concrete should be removed and surface defects such as blowholes and spalls fully exposed and repaired with a suitable Sika mortar prior to priming and levelling. All cracks and holes should be similarly filled to prevent loss of coverage or seepage of the primer through to lower areas. Consult Sika Technical Service for recommendations.
All loose friable material, including preparation residue, must be completely removed using a vacuum before application of the SikaLevel®-01 Primer. The compressive strength of the concrete substrate should be at least >3000 psi / 20.7 MPa at 28 days with a minimum tensile strength of >145 psi/ 1.0 MPa at the time SikaLevel®-01 Primer is applied. Moisture vapor emission rates of the substrate should comply and meet the requirements of the proposed floor covering. Please consult the manufacturer of the final floor finish for recommendations. Careful consideration should be given to the selection of the method of mechanical surface preparation and the

	timing of the primer and the underlayment application . Immediately following mechanical preparation on some excessively porous substrates, Outgassing will increase for a short period of time (approx. 48 hours) until an equilibrium in slab vapor pressure and the ambient environment is reached. Before overall installation begins, Sika recommends the application of several small test patches to determine primer application requirements and acceptability of final product performance. In general a one-coat application of the SikaLevel®-01 Primer should be sufficient; however, allowance should be made for double priming on excessively porous substrates. Where multiple coats are required, do not apply excessive material.
Mixing	Before applying SikaLevel®-01 Primer, thoroughly shake the container in which the material is supplied to agitate the contents, ensure all solids are distributed throughout the dispersion and a uniform consistency is achieved.
Application	Ensure that both concrete/cement based substrates and ambient temperatures are between (50°F)10°C - 95°F(35°C) before commencing the application of SikaLevel®-01 Primer. The stated application temperatures are to be achieved before priming and should be maintained for a period of at least 3 days after installation of the underlayment. Should colder conditions prevail, make allowance for the use of indirect and vented heaters to achieve and maintain the application temperature required. Where temperatures exceed 86°F(30°C), refer to and follow ACI hot weather application and protection guidelines.
Tooling & Finishing	Apply SikaLevel®-01 Primer by brush or roller (long nap roller for rougher surfaces), working the material into the prepared substrate. Typically, one single application is required; however, porous substrates may require two or more coats of primer to effectively seal the surface. Ensure coverage is at most 325 to 500 ft^2/US gal, 10 to 12 m^2/ltr per coat, depending upon the substrate, but ponding of the primer on the surface must be avoided and puddles must be removed. Where multiple applications are necessary to seal the surface, allow previous coats to become tack-free before applying additional primer. When first applied, SikaLevel® Primer appears white; once dry, it is clear. This facilitates quality control in terms of complete coverage and clearly confirms when the underlay can be installed.
Over Painting	To ensure proper adhesion, SikaLevel®-125 and SikaLevel®-315 underlayment is applied within 24 hours of the application of the SikaLevel®-01 Primer, but only once the primer is clear (without milky spots) and dry to the touch (typically after a minimum of 2 hours drying time under normal environmental conditions). Lower temperatures and/or humid conditions may extend the drying time between priming coats or before installation of the underlayment.
Limitations	■ For interior use only. Primer developed for SikaLevel®-125 and SikaLevel®-315. ■ Condition material to 65-75°F (18-24°C) before using. ■ Do not apply to substrates at temperatures below +(50°F)10°C as this will slow the drying and effectiveness of the primer. ■ Do not apply where the relative humidity of the substrate exceeds 75% as this will limit the efficiency of the primer. ■ The substrate should be surface dry with relative humidity of surrounding air low enough to allow efficient drying of the primer. ■ Ponding of the primer must be avoided; ensure even distribution by brush or roller to work the primer into the substrate. ■ Low temperature or high humidity will extend the drying time and the waiting time before applying the underlayment. ■ SikaLevel®-01 Primer does not form a moisture barrier. For proper moisture mitigation, consult Sika Technical Services.

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CAUTION	**IRRITANT.** May cause eye and skin irritation.
Handling & Storage	Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Open doors and windows during use. Use a properly fitted NIOSH respirator if ventilation is poor. Wash thoroughly with soap and water after use. Remove contaminated clothing and launder before reuse.
First Aid	**Eyes** – Hold eyelids apart and flush thoroughly with water for 15 minutes. **Skin** – Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. **Inhalation** – Remove to fresh air. **Ingestion** – Do not induce vomiting. Dilute with water. Contact physician. **in all cases, contact a physician immediately if symptoms persist.**
Clean Up	Use personal protective equipment (chemical resistant gloves/ goggles/clothing). Without direct contact, sweep up spilled or excess product and place in suitable sealed container. Dispose of excess product and container in accordance with applicable local, state, and federal regulations. Hardened material may have to be manually or mechanically removed.

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Lyndhurst, NJ 07071
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Fax: 201-933-6225

Sika canada inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika mexicana S.a. de c.v.
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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Level-02 EZ Primer

Acrylic Primer for use with Sika® Level underlayments on difficult substrates

Description	Special Acrylic Primer for use on sound, smooth and non-porous substrates in interior areas. Applied prior to the use of Sika® Level underlayments and patching compounds on epoxy, ceramic tiles, old vinyl, linoleum, rubber and other coverings.
Where to Use	Sika® Level-02 EZ Primer is suitable for use on: ■ Smooth and sound substrates e.g.: terrazzo, ceramic tiles, natural stone covering ■ Epoxy based moisture control membranes ■ Old coatings and sealers ■ Old, smooth and sound concrete surfaces ■ Metal substrates e.g. channelled plate ■ Well fitted, vacuumed and sanded vinyl, linoleum and rubber coverings in domestic areas ■ Thermoplastic and semi-flexible tiles ■ Well fitted quartz-vinyl coverings in domestic and commerical areas
Advantages	■ Increased bond to substrate ■ High coverage ■ Single component; ready for use ■ Quick dry time ■ Low VOC ■ Solvent-free ■ Suitable for use with radiant heating ■ Low odor
Coverage	Unit yields approx. 350 - 500 sq.ft. per gallon depending upon actual porosity of the prepared substrate.
Packaging	1 gal. pail
Product Shelf Life	1 year in original, unopened container
Product Storage	Store in cool, frost-free conditions with temperatures above 40°F (4.5°C)

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% R.H.)
RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Basis	Acrylic dispersion with additives
Color	Mint
Drying time	Approx. 1 - 2 hours prior to application of underlayments
Storage temperature	Between 40°F - 95°F (5°C - 35°C)
Application temperature	Between 40°F - 95°F (5°C - 35°C)
Temperature resistance	Up to 122°F (50°C)

How to Use

Surface Preparation

Subfloors must be smooth, sound, clean, dry and free of any contaminants which may hinder adhesion. Surface treatments or any "friable" areas of the subfloor must be mechanically removed and the subfloor repaired with Sika leveling compounds as required. On absorbent substrates use Sika Primer MB. All slabs on or below grade level must be known to have an intact vapor retarder directly beneath or on top of the concrete in conformance to the relevant standards. If moisture readings are above 75%RH or 3 lbs./1000 sq.ft./24 hrs. then use of Sika Primer MB is recommended to suppress residual moisture (see data sheet). Old water-soluble adhesives should be removed completely; old water-resistant adhesives should be mechanically removed as far as possible. The complete mechanical removal of cutback (i.e. grinding, sanding, blasting) can be hazardous as old cutback adhesive may contain asbestos. Do not sand or grind adhesive residue. Harmful dust may result. Inhalation of asbestos dust may cause asbestosis or other serious bodily harm. Please consult the adhesive manufacturer and all applicable government agencies for rules

Construction

and regulations concerning the removal of flooring and adhesives that contain asbestos. Prime remaining adhesive residues accordingly.

Old vinyl, linoleum and rubber coverings (up to 2.5 mm). Substrates consisting of old vinyl coverings with cushioned backings are not suitable. In heavy loaded areas (e.g. hospitals), laying on top of old coverings is not recommended. Soft old coverings are not suitable for installation of parquet. Please consult Sika technical service. Old coverings must be well fitted to the substrate. Poorly attached coverings should be removed. Vinyl, linoleum and rubber coverings should be thoroughly cleaned and sanded. Quartz vinyl coverings should be cleaned thoroughly. As it is only possible to partially test the full surface bond on old coverings, especially on larger surfaces, we recommend that a mock be installed prior to total application.

Mixing

Prior to installation, stir Sika® Level-02 EZ Primer before use for consistent dispersion. Apply undiluted.

Application

Apply primer with a suitable tool, e.g. a 1/4“ nap roller, paintbrush or brush, short-pile roller or pad applicator. Avoid formation of puddles. Ensure that both concrete/cement based substrates and ambient temperatures are between 40°F - 95°F (5°C - 35°C) before commencing the application of Sika® Level-02 EZ Primer. The stated application temperatures are to be achieved before priming and should be maintained for a period of at least 3 days after installation of the underlayment. Should colder conditions prevail, make allowance for the use of indirect and vented heaters to achieve and maintain the application temperature required. Where temperatures exceed 86°F(30°C), refer to and follow ACI hot weather application and protection guidelines.
Clean tools in water immediately after use.
Apply SikaLevel underlayments or reprofiling mortars once SikaLevel 02 EZ is dry to the touch, typically 1-2 hours after primer application

Limitations

- For interior use only. Not to be used as a primer for Sikafloor resins
- Do not apply to substrates at temperatures below 41°F (5°C) as this will slow the drying and effectiveness of the primer.
- Do not apply Sika® Level-02 EZ Primer or Sika® Level underlayments onto chipboard, particle board, hardboard, metal, gypsum or dimensionally unstable substrates.
- Where substrates exhibit a a Tramex reading over 4% or a Moisture Vapor Emission Rate (MVER) of over 3 lbs. per 1,000 ft2 per 24 hours using a calcium chloride test (ASTM F-1869), pre apply Sikafloor MB Primer. Consult the manufacturer of the final floor covering to identify the maximum permitted MVER and retained moisture content for their product.
- Do not apply where the relative humidity of the substrate exceeds 75% as this will limit the efficiency of the primer.
- The substrate should be surface dry with relative humidity of surrounding air low enough to allow efficient drying of the primer.
- Sika® Level-02 EZ Primer does not form a moisture barrier. For proper moisture mitigation, consult Sika Technical Services.
- Product should not be used if exposed to freezing temperatures.
- Not suitable on polyolefin and floor coverings with Sealers which are not removable with basic detergent chemicals. If in doubt test in a small area.
- Do not apply SIkaLevel underlayaments or reprofiling mortars while SikaLevel 02 EZ is still wet or tacky

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Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Level SkimCoat

Fast setting, cement based smoothing and finishing compound

Description	Sika Level SkimCoat is a one-component, easy to use and fast drying, cementitious skim mortar ideal for the repair or reprofiling of concrete, approved wood subfloors, gypsum based subfloors and correctly prepared ceramic or quarry tiles before the installation of Sika Level underlayments or final floor coverings. Can be installed as a true featheredge as well as filling voids and leveling defects up to 1/2" (0-13mm) in depth.
Where to Use	■ Used to reprofile substrates or subfloor surfaces from feather edge to 1/2" (13 mm) prior to applying Sika Level Underlayments or floor finishes. ■ Repair minor defects, holes and cracks in concrete and wood subfloors. ■ To pre-fill non-moving joints and seams in concrete and wooden substrates. ■ To skim correctly prepared ceramic or quartz tiles and encapsulate stable, non-bleeding, water resistant adhesive residue. such as cutback ■ Used to re-profile rough substrates or subfloor surfaces from feather edge to 1/2" (13 mm) prior to applying levelers or floor finishes. ■ To skim over Sika Primer MB, not to exceed 1/8" (3 mm), within 36 hours of primer application ■ Suitable for use with radiant heating systems.
Advantages	■ Easy to prepare and quick to apply. ■ Sand free product fto achieve a true feather edge ■ Moisture resistant (interior only), no moisture vapor emission limitations on properly prepared concrete. ■ Zero VOC's. ■ Repairs new and renovates old floors. ■ Good adhesion to substrates, subfloors and stable adhesive residue. ■ Rapid setting; receives primers, levelers, adhesives and coverings without delay. ■ Excellent standard of finish can be achieved to allow direct application of coverings. ■ Up to 30 minutes after mixing, pot life can be extended by remixing without additional water.
Coverage	33 sq ft. at 1/8 inch. 110 sq ft or more at feather edge Coverage will vary based on substrate smoothness
Packaging	10 lb bag. Pack of 4 bags.

Typical Data *(Material and curing conditions @ 70°F (22°C) and 65% R.H.)*

Shelf Life	1 year in original, unopened packaging
Storage Conditions	Store dry at 41°-90°F (5°-32°C). Protect from moisture; if damp, discard material.
Application Temperature	Substrate and ambient room temperatures must be above 50°F (10°C) and below 86°F (35°C).
Color	Gray
Mixing Ratio	Mix entire contents of bag (10 lbs/4.5 kg of powder) with up to 2 qts. (1.9L) of water.
Application Thickness	Feather edge - 1/2 in. (13 mm)
Working Time	10 to 20 min.
Setting Times (ASTM 266)	Initial Set - 20 to 30 min. Final Set - 30 to 60 min.

Compressive Strength 28 days (ASTM C109 mod.) 3700 psi (25 N/mm²)

Flexural Strength 28 days (ASTM C348) 1300 psi (7 N/mm²)

Flammability (ASTM E84)

Flame Spread: 0 ; Smoke Development: 0

Covering time: Once material has hardened sufficiently so that a primer, underlayment or adhesive does not disturb the surface, it may be covered. Drying time will be dependent upon temperature, humidity and the thickness of the skim mortar. For polyurethane adhesives, wait 16 hrs before application.

Construction

How to Use

Surface Preparation

All concrete, cement and ceramic/quarry tile substrates must be dry, clean and stable before applying the skim mortar compound. Remove all existing treatments such as coatings, sealers, wax, latex compounds, impregnations and curing agents, together with all contaminants and loose matter e.g. dirt, dust, laitance, grease, oils, and foreign matter, which will interfere with the adhesion of Sika Level SkimCoat. Prepare concrete, cement and ceramic/quarry tile substrates by mechanical means, such as light shotblasting, sanding or other appropriate methods, to remove weak material and achieve a matt, glaze free open textured, fine-gripping surface. Vacuum substrates thoroughly.

All subfloors must be structurally stable and well bonded or fastened. Plywood subfloors must consist of exterior-grade wood which complies with Group 1 CC Type, is engineer approved and either recommended or warranted by the wood manufacturer or final floor covering supplier.

Ensure wooden floors are well ventilated from below. Moisture Vapor Emission Rates of the substrate should comply and meet the requirements of the proposed floor covering. Test substrates for moisture content and consult the manufacturer of the final floor finish for advice.

Mixing

As with all prebagged cement products, some settlement may have occurred during storage and transportation and dry blending of the material is recommended. Mix entire contents of bag (10 lb of powder) with up to 2 quarts (1.9 l) of water. For mixing less than a full bag at once, use up to a ratio of 2:1 part water. Pour cool, potable water into a suitably sized and clean mixing container, using a calibrated measuring jug, or similar, to ensure strict control of the water content (avoid over-watering). Cool water (70°F/21°C) serves to maximize the pot life and working time. Slowly add Sika Level SkimCoat powder to the water using a high speed electric mixer (min 600 rpm) and mortar/grout mixing paddle to blend water and powder for 2-3 minutes. Smaller volumes can also be mixed by hand for 2-3 minutes. Mix until a uniform, lump free and smooth consistency is achieved.

Note: Do not overwater and avoid entrapment of air and excessive mixing as this will impact performance. Do not mix more mortar than can be used within the stated pot life and working time, taking into consideration ambient temperatures.

Application

The stated ambient and substrate application temperatures are to be achieved before works are started. Where temperatures exceed 86°F (30°C), refer to and follow ACI hot weather application and protection guidelines. Using a flat edge steel trowel, apply Sika Level SkimCoat immediately following mixing. Ensure that the compound is tightly trowelled into all defects, seams, and non-moving joints or across roughened surfaces as required. Where defects, details or roughened surfaces require repair or reprofiling to a depth greater than 1/2" (13 mm), use the appropriate SikaLevel® self levelling underlayment. Consult Sika Technical Services for advice or alternative recommendations.

Limitations

- For interior use only. Not suitable for exposed repairs or resurfacing.
- Do not exceed the recommended water dosage and use clean potable water.
- Do not apply onto dimensionally unstable substrates.
- Do not use on presswood, flakeboard, metallic or similar substrates and always comply with the final floor manufacturer's recommendations or instructions as to substrate or subfloor standards.
- Not suitable for use on water soluble adhesive residues or those which suffer from migration/bleeding.
- Do not use as a large or deep surface leveler.
- Do not expose to adverse drying conditions while curing. Protect from other trades, traffic, dust, dirt, high ambient temperatures and direct sunlight until final floor covering is completely dry.
- Sika Level SkimCoat must be covered with an underlayment or final floor covering.
- Not suitable for applications where hydro static pressure is present.
- Sika Primer MB must be clean before application of SkimCoat. A solvent wipe is recommended

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Fax: 514-694-2792

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Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
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C.P. 76920
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Fax: 52 442 2250537

Construction

Sika® Level Rapid Patch

Fast-setting cementitious patch for use with Sika® Level underlayments and general floor coverings to repair or reprofile old, damaged or uneven floors

Description	Sika® Level Rapid Patch is a one-component, polymer modified, easy to use and fast drying cementitious patching mortar ideal for the repair or re-profiling of concrete, approved wood subfloors and correctly pre-pared ceramic or quarry tiles before the installation of Sika® Level underlayments or final floor coverings. Easily applied and with both high adhesion values and fine finishing qualities it can be used fill and level defects from 1/2 inch (0-13 mm) in depth.
Where to Use	■ Used to repair minor defects, holes and cracks in concrete and wood subfloors before installing underlayments or final covering ■ To pre-fill non-moving joints and seams in concrete and wooden substrates. ■ Used to re-profile rough substrates or subfloor surfaces from feather edge to 1/2 inch (13 mm) prior to applying levelers or floor finishes. ■ Used as a parge coat to fill bug holes and surface voids creating a contiguous surface.
Advantages	■ Easy to prepare and quick to apply. ■ Excellent high build properties. ■ Zero VOC content. ■ Repairs new and renovates old floors ■ Good adhesion to substrates, subfloors and stable adhesive residue. ■ Rapid setting; receives primers, levelers, adhesives and coverings without delay. ■ Excellent standard of finish can be achieved to allow direct application of coverings.
Packaging	25 lb (11.3 kg) bags.

Typical Data ***(Material and curing conditions @ 73°F (23°C) and 50% R.H.)***

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened packaging.		
Storage Conditions	Store dry at 41°-90°F (5°-32°C). Protect from moisture; if damp, discard material.		
Application Temperature	Substrate and ambient room temperatures must be above 50°F (10°C) and below 86°F (35°C).		
Color	Gray		
Mixing Ratio	Mix entire contents of bag (25 lbs [11.3 kg] of powder) with up to 1 gal. (3.75 ltrs.) of water. For part mixes, use up to 3 parts powder with up to 1 part water by volume. For a creamier mix, use less water.		
Application Thickness	Featheredge - 1/2 in. (13 mm).		
Working Time	15 to 20 min.		
Setting Times			
	Initial Set		20 to 30 min.
(ASTM 266)	Final Set		30 to 45 min.
Compressive Strength	(ASTM C 109 mod.)	28 days	>3000 psi (21 N/mm^2)

Drying Time before Covering Once material has hardened sufficiently so that a primer, underlayment or adhesive does not disturb the surface, it may be covered. Drying time will be dependent upon temperature, humidity and the thickness of the skim mortar.

Construction

How to Use
Surface Preparation

All concrete, cement and ceramic/quarry tile substrates must be dry, clean and stable before applying the skim mortar compound. Remove all existing treatments such as coatings, sealers, wax, latex compounds, impregnations and curing agents, together with all contaminants and loose matter i.e. dirt, dust, laitance, grease, oils, and foreign matter, which will interfere with the adhesion of Sika® Level Rapid Patch. Prepare concrete, cement and ceramic/quarry tile substrates by mechanical means, such as light shotblasting, sanding or other appropriate methods, to remove weak material and achieve a matt, glaze free open-textured, fine-gripping surface (ICRI - CSP 3 minimum).

All subfloors must be structurally stable and well bonded or fastened. Remove all existing treatments such as coatings, sealers, wax, latex compounds, impregnations and curing agents, together with all contaminants and loose matter i.e. dirt, dust, laitance, grease, oils, and foreign matter. Plywood subfloors must consist of exterior-grade wood which complies with Group 1 CC Type, is engineer approved and either recommended or warranted by the wood manufacturer or final floor covering supplier. Ensure wooden floors are well ventilated from below. Moisture Vapor Emission Rates of the substrate should comply and meet the requirements of the proposed floor covering. Test substrates for moisture content and consult the manufacturer of the final floor finish for advice

Mixing

As with all pre-bagged cement products, some settlement may have occurred during storage and trans-portation and dry blending of the material is recommended. Mix entire contents of bag (25 lb of powder) with up to 1 gal. of water. For part mixes, use up to 3 parts Sika® Level Rapid Patch powder with up to 1 part water by volume. For a creamier mix, use less water. Pour cool, potable water into a suitably sized and clean mixing container, using a calibrated measuring jug, or similar, to ensure strict control of the water content (avoid over-watering). Cool water (70°F/21°C) serves to maximize the pot life and work-ing time. Slowly add Sika® Level Rapid Patch powder to the water while either hand mixing or using a low speed electric mixer (300 to 450 rpm) and mortar/grout mixing paddle to blend water and powder for a minimum of 3 minutes. Mix until a uniform, lump free and smooth consistency is achieved. Mixing with a low speed drill equipped with a mixing paddle produces a more uniform, creamier mix with better workability. **Note:** Do not over water and avoid entrapment of air and excessive mixing as this will impact upon performance. Do not mix more mortar than can be used within the stated pot life and working time, taking into consideration ambient temperatures.

Application

The stated ambient and substrate application temperatures are to be achieved before works are started. Where temperatures exceed 86°F (30°C), refer to and follow ACI hot weather application and protection guidelines. Using a flat edge steel trowel, apply Sika® Level Rapid Patch immediately following mixing. Ensure that the compound is tightly trowelled into all defects, seams, and non-moving joints or across roughened surfaces as required. Where defects, details or roughened surfaces require repair or reprofil-ing to a depth greater than 13 mm, use the appropriate Sika® Level self levelling underlayment. Consult Sika Technical Services for advice or alternative recommendations.

Limitations

- For interior use only. Not suitable for exposed repairs or resurfacing.
- Do not exceed the recommended water dosage and use clean potable water.
- Do not install over substrates that contain asbestos.
- Not suitable for use on water soluble adhesive residues or those which suffer from migration/bleeding.
- Do not expose to adverse drying conditions while curing. Protect from other trades, traffic, dust and dirt until final floor covering is completely dry.
- Sika® Level Rapid Patch must be covered with an underlayment or final floor covering.
- Not a final wearing surface.
- Substrate and ambient temperatures must be between 50°F (10°C) and 100°F (38°C).
- Do not use on self-stick tile, particleboard, presswood, flake board, metallic or similar substrates and always comply with the final floor manufacturer's recommendations or instructions as to substrate or subfloor standards.
- Gypsum substrates should always be dry.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800-933-7452. NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTION FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Sika® Level-315

Very rapid hardening and durable, cementitious, self-leveling underlayment for use at 1/25 to 2 inches* (1 to 50 mm) thickness

Construction

Description

Sika® Level-315 is a one-component, fast track and versatile cementitious underlayment for interior concrete, cementitious, wood and tiled substrates. It can be applied manually or by pump to produce a self-smoothing, very rapid-setting, flat and economical substrate prior to the application of a final floor finish. Typical application thickness is 1/25 to 2 inches* (1 to 50 mm).

* in localized areas

Where to Use

Interior floor leveling and smoothing applications where floor coverings are to follow, such as:
Institutional - schools, colleges, hospitals, clinics, libraries, galleries, museums
Commercial - offices, corridors, hallways, canteens, cafeterias, stores, hotels, restaurants
Residential - domestic properties, condominiums and high rise construction

Advantages

- Easy and quick to install
- Zero VOC content and low odor
- Highly fluid and self-leveling
- Manual or pumpable application
- Feather-edging acceptable in pedestrian areas
- Levels new and renovates old floors
- Very rapid drying, can be walked on in as little as 1-2 hours at 73°F (23°C)
- Ceramic tiles and natural stone can be installed after 1-2 hours
- Floor coverings (carpet, vinyl, PVC, rubber, engineered wood flooring) can be installed after 24 hours
- Excellent underlay for tiles, sheet products and wood floor bonding systems

Coverage

Approximately 0.46 cu.ft. per 50 lb (22.7 kg) bag
Approximate coverage at typical thicknesses per 50 lb bag

1/25 in (1 mm)	140 ft²
1/8 in (3 mm)	41.25 ft²
3/16 in (5 mm)	27.5 ft²
3/8 in (10 mm)	13.75 ft²
5/8 in (16 mm)	8.7 ft²
1 in (25 mm)	5.6 ft²

(Coverage figures do not include allowance for surface profile and porosity or material waste)

Cure Mechanism

Polymer modified rapid hardening cement.

Packaging

50 lb (22.7 kg) bag

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year from date of production if stored properly in original, unopened and undamaged sealed packaging.
Storage Conditions	Store dry at 40°-86°F (4°-30°C). Condition material to 65°-75°F (18°-24°C) before using. Protect from moisture. If damp, discard material.
Color	Concrete gray
Yield	Approximately 0.46 cu. ft. (0.013 m³) per 50 lb (22.7 kg) bag. Approximate coverage at typical thicknesses per 50 lb (22.7 kg) bag. Coverage figures do not include allowance for surface profile and porosity or material waste.
Mixing Ratio	9.0 - 9.5 pints of water per 50 lb (22.7 kg) bag
Application Temp. (substrate & ambient)	Minimum 50°F (10°C); Maximum 95°F (35°C)
Application Thickness	Minimum 1/25 in (1.0 mm); Maximum 2 in (50 mm)
Density {wet mix} (ASTM C-185)	130 lb/ft³
Working Time	25 to 30 minutes at 3/16 in (5 mm) thickness
Flowability (EN 12706)	~ 5" at 15 minutes
Setting Times (ASTM C 266)	**Initial Set** – 40 -60 min.; **Final Set** – 60-80 min.
Length Change 28 days (ASTM C-157 modified)	<0.04%

Construction

Flexural Strength 28 days (ASTM C-580)	1,500 psi		
Compressive Strength (ASTM C-109), psi			
	73°F* (23°C)		
16 hour	2,000	**7 day**	3,875
24 hours	2,750	**14 day**	4,125
3 day	3,250	**28 day**	> 5,000
Pull-Out Strength 3/16 in (5 mm) thickness with Sika Level-01 Primer (ACI 503)	> 2.0 MPa (290 psi)		
VOC (EPA method 24)	0 g/L		

How to Use

Surface Preparation

All concrete and cement substrates must be primed using Sika® Level-01 Primer and all difficult-to-bond-to substrates, including wood subfloors, ceramic, quarry and vinyl tiles and cut back adhesive must be primed using Sika® Level-02 Primer in accordance with the product data sheet. The substrate must be dry, clean and stable before priming and applying the underlayment materials. Remove all existing treatments such as coatings, sealers, wax, latex compounds, impregnations and curing agents, together with all contaminants i.e. dirt, dust, laitance, grease, oils, and foreign matter, which will interfere with the penetration of Sika® Level-01 Primer and the adhesion of Sika® Level-315.

Concrete & Dense Substrates

Prepare concrete, cement and dense substrates, including ceramic, quarry and vinyl tiles by mechanical means, such as shotblasting, sandblasting, water-jetting, scarifying, or other appropriate methods, to achieve an open-textured, fine-gripping surface (ICRI - CSP 3 minimum). Weak concrete should be removed and surface defects such as blowholes and spalls fully exposed and repaired Sika® Level SkimCoat or SikaQuick® mortar prior to priming and levelling. All cracks and holes should be similarly filled to prevent seepage of the primer through to lower areas. Consult Sika Technical Sales for recommendations. All loose friable material, including preparation residue, must be completely removed using a vacuum before application of the Sika® Level-01 Primer. The compressive strength of the concrete substrate should be at least 20 MPa (>2900 psi) at 28 days with a minimum tensile strength of 1.0 MPa (>145 psi) at the time Sika® Level-01 Primer is applied. Moisture vapor emission rates of the substrate should comply and meet the requirements of the proposed floor covering. Please consult the manufacturer of the final floor finish for advice.

Careful consideration should be given to the selection of the method of mechanical surface preparation and the timing of application of primer and underlayment. Immediately following mechanical preparation on some excessively porous substrates, outgassing will increase for a short period of time (approx. 48 hours) until equilibrium in slab vapor pressure and the ambient environment is reached. Before overall installation begins, Sika recommends the application of several small test patches to determine primer application requirements and acceptability of final product performance. In general, a one-coat application of Sika® Level-01 Primer should be sufficient; however, allowance should be made for double priming on excessively porous or profiled substrates. Where multiple coats are required, do not apply excessive primer.

Wooden/Plywood Subfloors

Where installing Sika® Level-315 underlayment over wooden subfloors, ensure that the subfloor consists of at least two layers of exterior grade plywood, a minimum of 1 ¼ inch (32mm) in thickness and meets, as a minimum, the deflection parameters of L/360 (live and dead loads taken into consideration). The wood/plywood must then be suitably secured, bonded and prepared to a contaminant free and sound condition. Refer to the manufacturer of the final floor covering with regard to the deflection requirements of the floor finish system.

Mixing

Pour 9.0 - 9.5 pints of cool, potable water into a suitably sized and clean mixing container, using a calibrated measuring jug, or similar, to ensure strict control of the water content (avoid over-watering). Cool water 70°F serves to maximize the working time; if available water is not at this temperature, then consideration should be given to cooling the water. Add Sika® Level-315 to the water, while slowly stirring, adding the complete contents of the 50 lb. sack. Once all the powder has been added, continue mixing until a lump-free and uniform consistency is achieved.

If mixing in a barrel or similar container, employ the water to powder ratio as stated above and use a low speed electric mixer (300 to 450 rpm) and egg beater style mixing paddle to blend water and powder for a minimum of 3 minutes, until a uniform mix has been produced. Do not overmix or allow the paddle to rise above the level of material as this will introduce and entrap air into the mix, potentially shortening the working life or causing pin-holing in the underlayment. Let the mixed material stand until the majority of air bubbles have dispersed.

When pump-mixing, ensure that the mechanical mixers and pumps are in sound working order. Pre-clean and test the equipment, checking that the mixing and pumping elements are fully functional and that meshes are in place to prevent foreign matter from entering the hopper or being dispensed onto the floor.

Application

Prior to placing the underlayment, ensure that all sources of premature drying or direct sunlight are blocked off to avoid accelerated curing and reduced physical properties. The stated ambient and substrate application temperatures are to be achieved before installation and should be maintained for a period of at least 3 days thereafter. Should colder conditions prevail, make allowances for the use of indirect and vented heaters to achieve and maintain the application temperatures required. Where temperatures exceed 86°F (30°C), refer to and follow ACI hot weather application and protection guidelines. Before laying the material, organize labor to operate most effectively, ensuring that installers can maintain a continuous flow of material and avoid creating cold joints. The dimensions of the pour, in terms of width, should also be set accordingly. Sika® Level-315 must not be applied in such a way that expansion and control joints in the substrate re bridged; such joints must be detailed through the underlayment. Provide for expansion and control joints where specified, including at the perimeter of rooms, columns, and pedestals. Should such joints not exist in the substrate, they should still be provided for in the underlayment. Joints, of at least 1/4 in

Construction

(6 mm) can be formed using foam tape at the time of laying or can be cut into Sika® Level-315 within 24 hours of application. Pour or pump the mixed material onto the primed surface quickly and without delay, in a ribbon pattern, ensuring that a wet edge is maintained; spread by trowel or pin screed/gauge rake to the required thickness achieving the necessary coverage over high points. Nominal maximum thickness is 1" per lift. Localized areas with depths up to 2" per lift are possible. For large scale areas that require deeper applications, the following recommendations can be used to minimize material cost:

1. The material can be extended by adding up to 30% of 20/30 grade sand during mixing to achieve up to 2.5" in one lift. A reduction in flow, approximately 15%, can be expected. The final layer should be neat to allow for a smooth finished floor. When adding aggregate, expect coverage to increase by approximately .16 cu.ft. per 25 lbs of aggregate.
2. Pre-washed 3/8" pea-gravel can be pre-placed into the area being leveled allowing for up to 2.5" in one lift. Applicator must be aware that the aggregate can cause voids in the underlayment if not filled correctly. When adding aggregate, expect coverage to increase by approximately .16 cu.ft. per 25 lbs of aggregate. Multiple lifts can also be applied to achieve greater depths, making sure to prime with Sika® Level 01 Primer in between lifts. If necessary, further detailed recommendations can be obtained by calling Sika Corporation's Technical Service Department. Over large areas, application by conventional piston, rotor-stator or underlayment type pumps is more appropriate. Thoroughly spike roll in two directions (90°) to remove installation marks and any entrapped air, but avoid overworking.

Over Painting

Waiting Time / Overcoating

Suitable for overcoating with impermeable moisture sensitive floors after drying (max. 3% humidity); normally reached after 24 hours. Suitable for overcoating with tiles or other moisture insensitive floor covering after 1-2 hours. Suitable for wood floor bonding at 1/8 inch (3 mm) thickness after 24 hours. Times are approximate and at 73ºF(+23ºC) and 50% R.H. and thus will be affected by changing substrate and ambient conditions, particularly the temperature and relative humidity. When overcoating Sika® Level-315 always ensure the moisture content has achieved the required value for the coating product, as the waiting time will vary with the application thickness and ambient humidity. (Refer to the top coat product data sheet). Typical moisture content of the product should be <4% prior to overcoating. Other test recommended by floor covering manufacturer should be used as the final decision making tool.

Limitations

- For interior use only. Not suitable for slopes or inclines >0.5%
- Do not apply Sika® Level-315 onto based, chipboard, particle board, hardboard, metal, gypsum-based floors or dimensionally unstable substrates.
- Engineer-approved wooden (plywood) subfloors must be at least 1.25 in. (3.2 cm) in thickness and must be properly secured, bonded, and prepared and free of contaminants and loose friable material.
- Always prime concrete and cement substrates with SikaLevel® Primer-01 primer
- Protect Sika® Level-315 from excessive heat and moving air by turning off radiant heating and forced air ventilation for 24 hours before installation and while the underlayment is curing.
- Do not exceed the recommended water dosage and use clean potable water.
- Temperature variations will affect working time, with low temperatures extending drying times.
- Protect newly applied Sika® Level-315 from condensation and water for at least 24 hours.
- Prevent contaminants, dust and dirt from coming into contact with the underlayment for at least 4 hours and do not expose to rolling dynamic loads for 2 days (at 73°F, 50% R. H.).
- When overcoating with Sika Primer MB, mechanical preparation may be required to remove all surface laitance and material which could interfere with adhesion.
- If subsequent layers of Sika® Level-315 are installed on existing, cured Sika® Level-315, mechanical preparation and re-priming is required.
- As the thickness of the underlayment will influence the time at which it can be overcoated or overlayed with stones, tiles, or coverings, the manufacturer of such materials must be consulted for guidance regarding substrate moisture content and other characteristics.
- Sika® Level-315 does not provide an aesthetic finish and is intended to receive a final floor covering.
- For adhesives other than SikaBond®, we recommend a test application prior to use.

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Product Data Sheet
Edition 9.30.2015
Sika® Level-125

Sika® Level-125

Durable, cementitious, self-leveling underlayment for use at 1/25 to 2 inches* (1 to 50 mm) thickness

Description

Sika® Level–125 is a one-component, durable and versatile cementitious underlayment for interior concrete, and cementitious substrates. It can be applied manually or by pump to produce a self-smoothing, rapid-setting, flat and economical substrate prior to the application of a final floor finish. Typical application thickness is 1/25 to 2 inches* (1 to 50 mm).

* in localized areas

Where to Use

Interior floor leveling and smoothing applications where floor coverings are to follow, such as:
Institutional - schools, colleges, hospitals, clinics, libraries, galleries, museums
Commercial - offices, corridors, hallways, canteens, cafeterias, stores, hotels, restaurants
Residential - domestic properties, condominiums and high rise construction

Advantages

- Easy and quick to install
- Zero VOC content and low odor
- Highly fluid and self-leveling
- Manual or pumpable application
- Feather-edging acceptable in pedestrian areas
- Levels new and renovates old floors
- Very rapid drying, can be walked on in after 2-3 hours at 73°F (23°C)
- Suitable for overcoating with non-moisture sensitive tile after 2-3 hours
- Floor coverings (carpet, vinyl, PVC, rubber, engineered wood flooring) can be installed after 1-3 days
- Excellent underlay for tiles, sheet products and wood floor bonding systems

Coverage

Approximately 0.438 cu.ft. per 50 lb (22.7 kg) bag
Approximate coverage at typical thicknesses per 50 lb bag

1/25 in (1 mm)	131.4 ft^2
1/8 in (3 mm)	42.0 ft^2
3/16 in (5 mm)	28.0 ft^2
3/8 in (10 mm)	14.0 ft^2
5/8 in (16 mm)	8.4 ft^2
1 in (25 mm)	5.3 ft^2

(Coverage figures do not include allowance for surface profile and porosity or material waste)

Cure Mechanism

Polymer modified rapid hardening cement.

Packaging

50 lb (22.7 kg) bag

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year from date of production if stored properly in original, unopened and undamaged sealed packaging.
Storage Conditions	Store dry at 40°-86°F (4°-30°C). Condition material to 65°-75°F (18°-24°C) before using. Protect from moisture. If damp, discard material.
Color	Concrete gray
Yield	Approximately 0.46 cu. ft. (0.013 m^3) per 50 lb (22.7 kg) bag. Approximate coverage at typical thicknesses per 50 lb (22.7 kg) bag. Coverage figures do not include allowance for surface profile and porosity or material waste.
Mixing Ratio	1 gallon of water per 50 lb (22.7 kg) bag
Application Temp. (substrate & ambient)	Minimum 50°F (10°C); Maximum 95°F (35°C)
Application Thickness	Minimum 1/25 in (1.0 mm); Maximum 2 in (50 mm)
Density {wet mix} (ASTM C-185)	133 lb/ft^3
Working Time	25 minutes at 3/16 in (5 mm) thickness
Flowability (EN 12706)	~ 5" at 15 minutes
Setting Times (ASTM C 266)	**Initial Set** – 45-90 min.; **Final Set** – 70-100 min.
Length Change 28 days (ASTM C-157 modified)	<0.04%
Flexural Strength 28 days (ASTM C-580)	1,150 psi

Compressive Strength (ASTM C-109), psi

	50°F* (10°C)	73°F* (23°C)	86°F* (30°C)
24 hours	1,000	1,250	1,390
3 days	1,375	1,500	1,665
7 days	1,625	2,500	2,600
28 days	2,875	4,000	3,125

Pull-Out Strength 3/16 in (5 mm) thickness with Sika Level-01 Primer (ACI 503)

> 2.0 MPa (290 psi)

VOC (EPA method 24) 0 g/L

How to Use

Surface Preparation

All concrete and cement substrates must be primed using Sika® Level-01 Primer and all difficult-to-bond-to substrates, including wood subfloors, ceramic, quarry and vinyl tiles and cut back adhesive must be primed using Sika® Level-02 Primer in accordance with the product data sheet. The substrate must be dry, clean and stable before priming and applying the underlayment materials. Remove all existing treatments such as coatings, sealers, wax, latex compounds, impregnations and curing agents, together with all contaminants i.e. dirt, dust, laitance, grease, oils, and foreign matter, which will interfere with the penetration of Sika® Level-01 Primer and the adhesion of Sika® Level-125.

Concrete & Dense Substrates

Prepare concrete, cement and dense substrates, including ceramic, quarry and vinyl tiles by mechanical means, such as shotblasting, sandblasting, water-jetting, scarifying, or other appropriate methods, to achieve an open-textured, fine-gripping surface (ICRI - CSP 3 minimum). Weak concrete should be removed and surface defects such as blowholes and spalls fully exposed and repaired Sika® Level SkimCoat or SikaQuick® mortar prior to priming and levelling. All cracks and holes should be similarly filled to prevent seepage of the primer through to lower areas. Consult Sika Technical Sales for recommendations. All loose friable material, including preparation residue, must be completely removed using a vacuum before application of the Sika® Level-01 Primer. The compressive strength of the concrete substrate should be at least 20 MPa (>2900 psi) at 28 days with a minimum tensile strength of 1.0 MPa (>145 psi) at the time Sika® Level-01 Primer is applied. Moisture vapor emission rates of the substrate should comply and meet the requirements of the proposed floor covering. Please consult the manufacturer of the final floor finish for advice.

Careful consideration should be given to the selection of the method of mechanical surface preparation and the timing of application of primer and underlayment. Immediately following mechanical preparation on some excessively porous substrates, outgassing will increase for a short period of time (approx. 48 hours) until equilibrium in slab vapor pressure and the ambient environment is reached. Before overall installation begins, Sika recommends the application of several small test patches to determine primer application requirements and acceptability of final product performance. In general, a one-coat application of Sika® Level-01 Primer should be sufficient; however, allowance should be made for double priming on excessively porous or profiled substrates. Where multiple coats are required, do not apply excessive material.

Wooden/Plywood Subfloors

Where installing Sika® Level-125 underlayment over wooden subfloors, ensure that the subfloor consists of at least two layers of exterior grade plywood, a minimum of 1 ¼ inch (32mm) in thickness and meets, as a minimum, the deflection parameters of L/360 (live and dead loads taken into consideration). The wood/plywood must then be suitably secured, bonded and prepared to a contaminant free and sound condition. Consult the manufacturer of the final floor covering with regard to the deflection requirements of the floor finish system.

Mixing

Pour 1 gallon of cool, potable water into a suitably sized and clean mixing container, using a calibrated measuring jug, or similar, to ensure strict control of the water content (avoid over-watering). Cool water 70°F serves to maximize the working time; if available water is not at this temperature, then consideration should be given to cooling the water. Add Sika® Level-125 to the water, while slowly stirring, adding the complete contents of the 50 lb. sack. Once all the powder has been added, continue mixing until a lump-free and uniform consistency is achieved.

If mixing in a barrel or similar container, employ the water to powder ratio as stated above and use a low speed electric mixer (300 to 450 rpm) and egg beater style mixing paddle to blend water and powder for a minimum of 3 minutes, until a uniform mix has been produced. Do not overmix or allow the paddle to rise above the level of material as this will introduce and entrap air into the mix, potentially shortening the working life or causing pin-holing in the underlayment. Let the mixed material stand until the majority of air bubbles have dispersed.

When pump-mixing, ensure that the mechanical mixers and pumps are in sound working order. Pre-clean and test the equipment, checking that the mixing and pumping elements are fully functional and that meshes are in place to prevent foreign matter from entering the hopper or being dispensed onto the floor.

Application

Prior to placing the underlayment, ensure that all sources of premature drying or direct sunlight are blocked off to avoid accelerated curing and reduced physical properties. The stated ambient and substrate application temperatures are to be achieved before installation and should be maintained for a period of at least 3 days thereafter. Should colder conditions prevail, make allowances for the use of indirect and vented heaters to achieve and maintain the application temperatures required. Where temperatures exceed 86°F (30°C), refer to and follow ACI hot weather application and protection guidelines. Before laying the material, organize labor to operate most effectively, ensuring that installers can maintain a continuous flow of material and avoid creating cold joints. The dimensions of the pour, in terms of width, should also be set accordingly. Sika® Level-125 must not be applied in such a way that expansion and control joints in the substrate re bridged; such joints must be detailed through the underlayment. Provide for expansion and control joints where specified, including at the perimeter of rooms, columns, and pedestals. Should such joints not exist in the substrate, they should still be provided for in the underlayment. Joints, of at least 1/4 in

Construction

(6 mm) can be formed using foam tape at the time of laying or can be cut into Sika® Level-125 within 24 hours of application. Pour or pump the mixed material onto the primed surface quickly and without delay, in a ribbon pattern, ensuring that a wet edge is maintained; spread by trowel or pin screed/gauge rake to the required thickness achieving the necessary coverage over high points. Nominal maximum thickness is 1" per lift. Localized areas with depths up to 2" per lift are possible. For large scale areas that require deeper applications, the following recommendations can be used to minimize material cost:

1. The material can be extended by adding up to 30% of 20/30 grade sand during mixing to achieve up to 2.5" in one lift. A reduction in flow, approximately 15%, can be expected. The final layer should be neat to allow for a smooth finished floor. When adding aggregate, expect coverage to increase by approximately .16 cu.ft. per 25 lbs of aggregate.
2. Pre-washed 3/8" pea-gravel can be pre-placed into the area being leveled allowing for up to 2.5" in one lift. Applicator must be aware that the aggregate can cause voids in the underlayment if not filled correctly. When adding aggregate, expect coverage to increase by approximately .16 cu.ft. per 25 lbs of aggregate. Multiple lifts can also be applied to achieve greater depths, making sure to prime with Sika® Level 01 Primer in between lifts. If necessary, further detailed recommendations can be obtained by calling Sika Corporation's Technical Service Department. Over large areas, application by conventional piston, rotor-stator or underlayment type pumps is more appropriate. Thoroughly spike roll in two directions (90°) to remove installation marks and any entrapped air, but avoid overworking.

Over Painting

Waiting Time / Overcoating

Suitable for overcoating with impermeable moisture sensitive floors after drying (max. 3% humidity); normally reached after 24 hours. Suitable for overcoating with tiles or other moisture insensitive floor covering after 2-3 hours. Suitable for wood floor bonding at 1/8 inch (3 mm) thickness after 24 hours. Times are approximate andat 73ºF(+23ºC) and 50% R.H. and thus will be affected by changing substrate and ambient conditions, particularly the temperature and relative humidity. When overcoating Sika® Level-125 always ensure the moisture content has achieved the required value for the coating product, as the waiting time will vary with the application thickness and ambient humidity. (Refer to the top coat product data sheet). Typical moisture content of the product should be <4% prior to overcoating. Other test recommended by floor covering manufacturer should be used as the final decision making tool.

Limitations

- For interior use only. Not suitable for slopes or inclines >0.5%
- Do not apply Sika® Level-125 onto based, chipboard, particle board, hardboard, metal, gypsum-based floors or dimensionally unstable substrates.
- Engineer-approved wooden (plywood) subfloors must be at least 1.25 in. (3.2 cm) in thickness and must be properly secured, bonded, and prepared and free of contaminants and loose friable material.
- Always prime concrete and cement substrates with Sika® Level Primer-01 primer
- Protect Sika® Level-125 from excessive heat and moving air by turning off radiant heating and forced air ventilation for 24 hours before installation and while the underlayment is curing.
- Do not exceed the recommended water dosage and use clean potable water.
- Temperature variations will affect working time, with low temperatures extending drying times.
- Protect newly applied Sika® Level-125 from condensation and water for at least 24 hours.
- Prevent contaminants, dust and dirt from coming into contact with the underlayment for at least 4 hours and do not expose to rolling dynamic loads for 2 days (at 73°F, 50% R. H.).
- When overcoating with Sika® Primer MB, mechanical preparation may be required to remove all surface laitance and material which could interfere with adhesion.
- If subsequent layers of Sika® Level-125 are installed on existing, cured Sika® Level-125, mechanical preparation and re-priming is required.
- As the thickness of the underlayment will influence the time at which it can be overcoated or overlayed with stones, tiles, or coverings, the manufacturer of such materials must be consulted for guidance regarding substrate moisture content and other characteristics.
- Sika® Level-125 does not provide an aesthetic finish and is intended to receive a final floor covering.
- For adhesives other than SikaBond®, we recommend a test application prior to use.

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Construction

Sika® FerroGard® 903

Penetrating, corrosion inhibiting, impregnation coating for hardened concrete

Description

Sika® FerroGard® 903 is a corrosion inhibiting impregnation for hardened, reinforced concrete surfaces. It is designed to penetrate the surface and then to diffuse in vapor or liquid form to the steel reinforcing bars embedded in the concrete. Sika® FerroGard® 903 forms a protective layer on the steel surface which inhibits corrosion caused by the presence of chlorides as well as by carbonation of concrete.

Where to use

Sika® FerroGard® 903 is recommended for all steel-reinforced, prestressed, precast, post tensioned or marine concrete. Use of Sika® FerroGard® 903:

- Steel-reinforced concrete, bridges and highways exposed to corrosive environments (de-icing salts, weathering).
- Building facades and balconies.
- Steel-reinforced concrete in or near a marine environment.
- Parking garages.
- Piers, piles, and concrete dock structures.
- As part of Sika's system approach for buildings and civil engineering structures.

Advantages

How it Works: Sika® FerroGard® 903 is a combination of amino alcohols, and organic and inorganic inhibitors that protects both the anodic and cathodic parts of the corrosion cell. This dual action effect dramatically delays the initiation of corrosion and greatly reduces the overall corrosion activity. Sika® FerroGard® 903 protects the embedded steel by depositing a physical barrier in the form of a protective layer on the surface of the steel reinforcement. This barrier inhibits corrosion of the steel.

Sika® FerroGard® 903 offers owners, specifiers, port authorities, DOTs, and engineers, a corrosion inhibitor that can easily be applied to the surface of existing concrete to extend the service life of any reinforced concrete structure.

- Protects against the harmful effects of corrosion by penetrating the surface of even the most dense concrete and diffusing to the steel to inhibit corrosion.
- Enhances the durability of reinforced concrete.
- Does not require concrete removal.
- Does not contain calcium nitrite.
- Easily applied by either spray or roller to all existing reinforced concrete.
- Can be applied to reinforced concrete that already exhibits corrosion.
- Adds additional benefits when used prior to protective coatings in concrete restoration systems.
- Water based for easy handling and application.
- Not a vapor barrier; allows vapor diffusion.
- FerroGard has been proven effective in both laboratory (ASTM G109/Cracked Beams) and field analysis.
- ANSI/NSF Standard 61 potable water approved.

Coverage

For normal concrete, application is 200 ft.²/gal. each coat. A minimum of two coats is always recommended. For dense concrete, application may exceed 300 ft.²/gal. Therefore, more than two coats may be required to achieve the **total application rate: 100 ft.²/gal.**

Packaging

5 gallon pails with spout, 55 gallon drums.

Typical Data *[at 73°F(23°C)]*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life	18 months minimum in original, unopened container.
Storage Conditions	Store at 40°-95°F (4°-35°C). Protect from freezing. If frozen, discard.
Color	Pale Yellow
Viscosity	15 cps
Flash Point	None (water based)
Density	1.13 (9.4 lbs./gal.)
pH	11 (±1)
Application Rate	100 ft.² /gal. total application rate

Construction

How to Use

Surface Preparation

Before applying Sika® FerroGard® 903 be sure the surface is clean and sound. Remove all dirt, dust, oil, grease, efflorescence or existing coatings from concrete surface by steam cleaning, water blasting or slightly sandblasting. Allow concrete surface to dry prior to application of Sika® FerroGard® 903. The dryer the surface the better the penetration and effectiveness.

Key Criteria	Performance Level	Test Method/Institute
Corrosion inhibition	FerroGard corrosion inhibitors delay the onset of corrosion and reduce the rate of corrosion by 65% versus control specimen after 1 year.	1
Penetration Rate in hardened concrete	FerroGard 903 penetrates independently of orientation (horizontal, vertical, overhead) at a rate of 1/10 to 4/5 inches (2.5 to 20 mm)per day, depending on the density of the concrete.	2
Depth of Penetration	FerroGard 903 penetrates up to 3 inches (76 mm) in 28 days.	2
Protective layer on steel	FerroGard 903 forms a protective layer on the reinforcing steel of high integrity measured at as much as100 Å in thickness.	3
Displacement of chlorides from steel surface	FerroGard 903 forms a continuous film on the reinforcing steel and displaces chloride ions from the steel surface.	3
Corrosion Rate Field Monitoring	Reduction of corrosion rates in excess of 65%.	4

Test Method/Institute:

1. Cracked Concrete Beam Test (adapted from ASTM G109).
2. Secondary Neutron Mass Spectroscopy (SNMS) / Institute for Radiochemistry, Karlsruhe (Germany), Prof. Dr. J. Goschnick.
3. X-ray Photon Spectroscopy (XPS) and Secondary Ion Mass Spectroscopy (SIMS) / Brundle and Associates, San Jose, CA and University Heidelberg (Germany), Prof. M. Grunze.
4. Performance of Corrosion Inhibitors in Practice, Graeme Jones, C-Probe Technologies Ltd., 2000.

Application

Sika® FerroGard® 903 is applied by roller, brush or spray on concrete surfaces. When spraying, use a conventional airless spray system or hand-pressure equipment. A minimum of two coats is always recommended. Dense substrates may require more coats. Waiting time between coats of Sika® FerroGard® 903 is at least 1 hour. Allow a minimum of one day to allow Sika® FerroGard® 903 to dry and penetrate.

When Sika® FerroGard® 903 is used prior to the application of a repair mortar, concrete overlay, protective coating, or any other application, care must be taken to remove any residue remaining on the surface from the application of Sika® FerroGard® 903. Clean the substrate in such a manner (i.e. push the water in one direction away and off from the surface to be over-coated) to completely remove any residue. Horizontal surfaces require pressure washing (2,000 psi minimum) to remove the residue. Vertical surfaces may be rinsed with water or pressure washed. The use of Sika® Armatec® 110 EpoCem as a bonding agent prior to the application of repair mortars or concrete overlays is suggested. Drying times depend on environmental conditions, absorbency of the substrate and maximum recommended moisture content for the subsequently applied system.

Limitations

- Minimum ambient and substrate temperatures 35°F.
- Do not apply when temperature is expected to fall below 35°F within 12 hours.
- If the applied surfaces will be submerged after the application of Sika® FerroGard® 903, a waterproofing coating must be applied prior to submersion.
- Substrate should be as dry as possible prior to the application.
- Protect glass, wood, brick, galvanized steel, copper and exposed aluminum during the application.
- Maximum chloride content of concrete structures intended to be treated with Sika® FerroGard® 903 is 6 lbs./y^3 (measured at the level of the reinforcing steel). For levels up to 10 lbs./y^3, consult technical service.

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Construction

Sika® FerroGard®-908

Dual functional surface applied corrosion inhibitor and penetrating sealer for reinforced concrete.

Description	Sika® FerroGard®-908 is designed to be applied to the concrete surface. Sika® FerroGard®-908 penetrates the concrete and mitigates active corrosion and/or delays the onset of corrosion.
Where to Use	Sika® FerroGard®-908® is recommended for steel-reinforced concrete, pre-stressed, pre-cast, post tensioned concrete or concrete in marine environments. Common applications include: ■ Bridges and highways exposed to corrosive environments (deicing salts, weathering) ■ Building facades and balconies ■ Parking garages ■ Piers, piles, and concrete dock structures ■ Vertical, horizontal and overhead surfaces ■ As part of Sika's system approach for buildings and civil engineering
Advantages	■ Significantly reduces active corrosion due to chlorides and or carbonation, even in cracked concrete ■ Increases the resistivity of the reinforced concrete ■ Enhances the durability of reinforced concrete. ■ Long term efficiency, deep penetration ■ Does not require concrete removal. ■ Repels additional water and chloride ions. ■ Contains amino alcohol corrosion inhibitor. ■ Ready to use and easily applied by spray or roller. ■ Adds additional benefits when used prior to protective coatings in concrete restoration systems. ■ Not a vapor barrier; allows vapor diffusion. ■ Proven effective per ASTM G109/Cracked Beams. ■ Increases the resistance of concrete to freeze and thaw cycles and de-icing salts
Packaging	5 gallon pails, 55 gallon drums
Coverage	Required consumption is 125 sf / gallon. This is normally achieved with 2 coats (250 sf/gallon/coat); however 3 coats may be required for dense concrete and 1 coat may be achievable on porous concrete. Site mockups should be completed to verify.

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

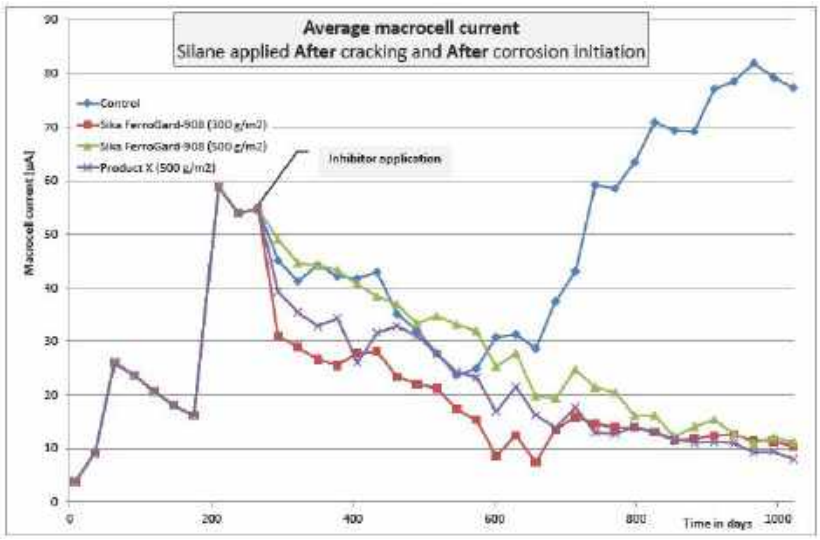
Storage:	Store in unopened, undamaged and original sealed packaging in dry and cool conditions. Protect from moisture.
Shelf Life:	2 years from production date.
Product Conditioning:	Condition material between 40°F and 95°F
Application Temperature Range:	40°F and 95°F
Sealer Type:	Alkylalkoxy Silane
Active Ingredient Content:	99%
Color:	Clear
VOC:	327 g/l
Flash Point:	104°F (40°C)
Chloride penetration(NCHRP 244)	@125 sq.ft./gal Series II – Absorbed chloride: 88% Series IV – Absorbed chloride: 98%

Corrosion Data

Cracked Concrete Beam (ASTM G 109 modified)

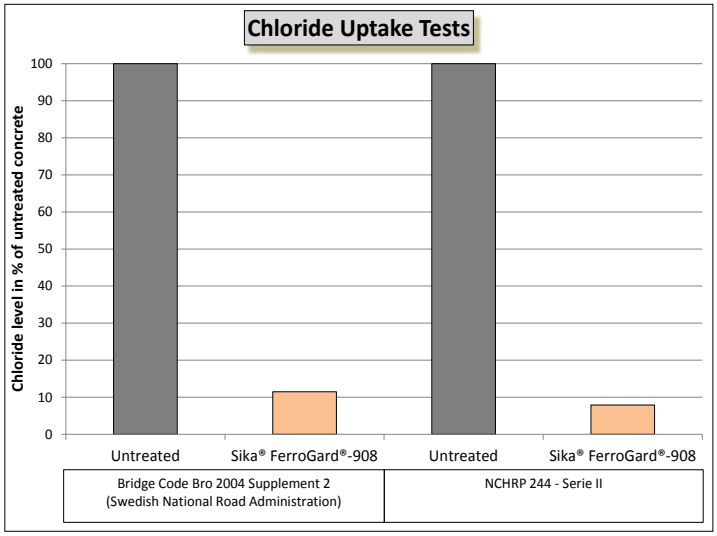
20 Ponding cycles: 2 weeks with 3.0% sodium chloride solution and 2 weeks drying at 68°F.
After the 20th cycle, the concentration of the sodium chloride solution was increased to 5.0%

Application **before** cracking – Measurement after 2.5 years of ponding		
	MacroCell Current in µA	Corrosion reduction
Untreated	81.9	
Sika® FerroGard®-908	6.9	92%
Application after cracking – Measurement after 2.5 years of ponding		
	MacroCell Current in µA	Corrosion reduction
Untreated	81.9	
Sika® FerroGard®-908	0.6	99%
Application after cracking and after corrosion initiation – Measurement after 2.5 years of ponding		
	MacroCell Current in µA	Corrosion reduction
Untreated	81.9	
Sika® FerroGard®-908	10.9	87%



Chloride ion uptake reduction

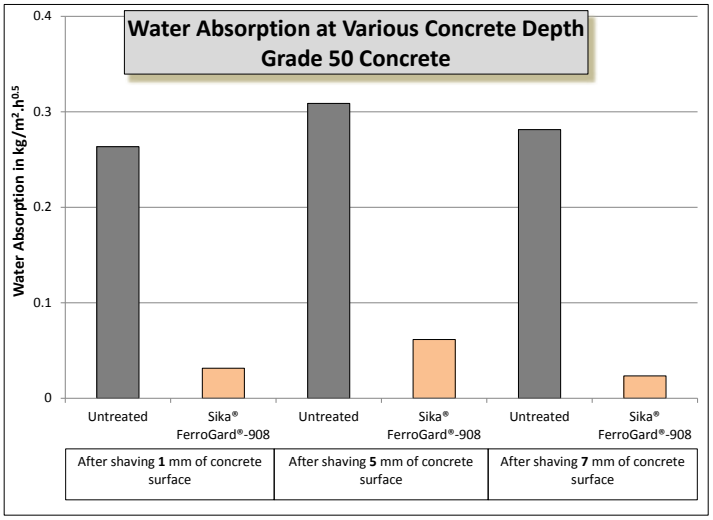
Compared to untreated concrete, concrete treated with Sika® FerroGard®-908 shows a significantly reduced chloride uptake (test carried out using various methods).



Water penetration reduction

Test performed according to the European Standard EN 13057:2002 modified (100 mm sample size).

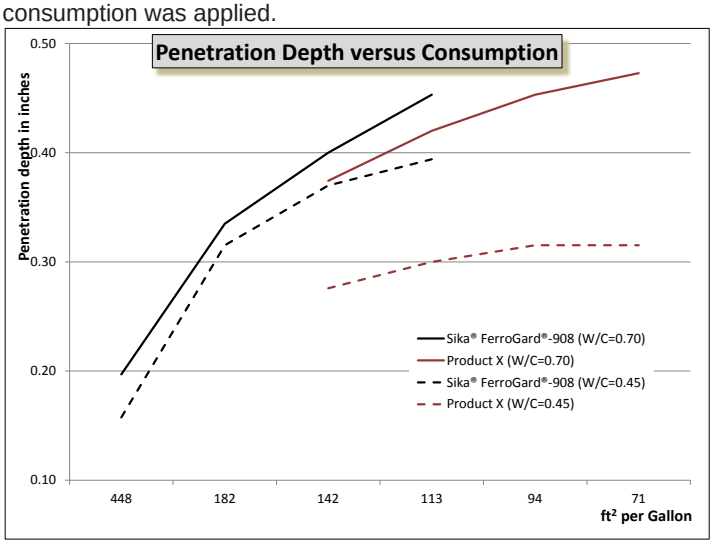
Capillary absorption measurement were carried out after shaving 1, 5 and 7 mm of the concrete surface to assess the reduction of water absorption in the depth of the concrete surface.



Penetration depth

Sika® FerroGard®-908 is compared to a product available in the market on two types of concrete mixes (one concrete with water cement ratio of 0.70 and the second one with 0.45).

The results show clearly a higher penetration of **Sika® FerroGard®-908** into the test concrete when the same consumption was applied.



How To Use

Surface Preparation

Surfaces must be sound, clean, dry and free of frost, dirt, dust, loose concrete, grease, oil, contaminants or other foreign matter that may adversely affect the penetration of Sika FerroGard®-908. New concrete should cure a minimum of 28 days; however, sooner is possible, please contact Technical Services for more information. Concrete surfaces must be prepared using mechanical means (sandblast, shotblast, high pressure water, etc.). Cracks in concrete more than 12 mils should be repaired ahead of the treatment.

Mixing

None required, comes ready to use. Do not dilute with water or solvent.

Application

Apply using a low-pressure spray, brush or roller, in a single pass from the bottom up taking care not to let the product run. Apply subsequent coats wet on wet. Avoid ponding on the surface.

Construction

If used as a corrosion treatment prior to the application of Sikagard® and Sikalastic® protective coatings please contact Sika Technical Services for more information.

To ensure excellent bond, use of Sika® Concrete Repair Systems, sealants and coatings is strongly encouraged. Field mock ups are always recommended to verify final construction installation requirements.

Do not apply Sika® FerroGard®-908 to wet or damp substrates. Do not apply if rain is expected within four hours following application, or if high winds or other conditions prevent proper application.

Limitations

- Areas such as window frames which still need to be painted must be protected, avoid contact with Sika FerroGard®-908.
- Can damage some coatings and bituminous products.
- May lead to darkening of concrete, apply sample areas first.
- Cannot be overcoated with limewash or cement paint.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Sikagard® 701W

Solvent-free, siloxane emulsion concentrate

Construction

Description	Sikagard® 701W is a solvent-free concentrate of silane modified siloxane emulsion. It must be diluted and the diluted liquid solution forms a water and chloride-ion repellent impregnation specifically formulated to seal absorbent cementitious surfaces and other masonry substrates.
Where to Use	■ When diluted, use Sikagard® 701W as a colorless, non-vapor-barrier, water and chloride ion-repellent impregnation for absorbent materials. ■ Treat concrete bridges, roadways, runways, parapet walls, precast, beams, columns, curbing, retaining walls, pavers, etc. ■ Treat both new and existing structures. ■ Treat masonry brickwork, stucco, etc. ■ Porous architectural curtain wall panels. ■ Use on steel-reinforced structures to reduce the corrosion and latent damage potential of chlorides.
Advantages	Sikagard® 701W is both an economical and simple-to-use sealer. Because of its unique ability to decrease water and chloride intrusion, Sikagard® 701W helps reduce the danger of rebar corrosion. Sikagard® 701W: ■ Meets the standards of acceptability for concrete sealers established in NCHRP Report #244. ■ Enhances concrete integrity. ■ Reduces efflorescence. ■ Improves resistance to frost and de-icing salts (chloride ion). ■ Reduces dirt penetration. ■ Does not act as a vapor barrier. ■ May be applied to alkaline substrates. ■ Will not degrade under UV exposure.
Coverage	100-250 ft²/gal., (diluted concentrate) depending on porosity of substrate. For proven results against chloride-ion intrusion, 125 ft²/gal. is recommended.
Packaging	5 gal. pail.

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened containers (undiluted).	
Storage	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using. Protect from freezing.	
Color	white/opaque liquid	
Mix Ratio	1 gal: 4 gal. tap water yields 5 gals. of sealer.	
Viscosity	Approximately 5-20 cps.	
% solids	50% (silane modified siloxane polymer)	
% Non volatiles (ASTM D-5095)	Active level: 10%	Solids: 10%
VOC	211 g/l 46 g/l as diluted	
Flash Point	212°F	
NCHRP244 Report Series 2 Test		
Reduction in Water Absorption	91%	
Water Vapor Transmission	100%	
Reduction in Cl ion intrusion	90%	
Federal Spec SSW - 110C	Water absorption	0.97%

Construction

How to Use

Surface Preparation

Before applying Sikagard® 701W, be sure surface is clean and sound. The best impregnation is achieved on a dry, very absorbent substrate. Remove all grease, curing compounds, surface treatments, coating, oils, etc.

Preparation Work: Concrete and masonry surfaces, sandblast, high pressure water blast or use other mechanical means.

Mixing

Dilute Sikagard® 701W concentrate with tap water in an appropriately sized mixing container. Mix with a low speed (400-600 rpm) drill with Sika paddle or comparable drum mixer until uniformly blended. Make sure paddle is completely covered so as not to entrain air. For best results, Sikagard® 701W should be remixed if unused 24 hours after blending with water.

Application

Apply by roller, brush (horizontal surfaces), or spray. Any pooling of water repellent indicates overdosing on a dense substrate while rapid absorption indicates a porous substrate. Variations in concentration down to 8:1 for dense substrates or coverage area, and/or multiple wet-on-wet applications for porous substrates may be utilized to achieve optimal substrate treatment. Preliminary site test application is recommended to determine effective coverage and performance. **Maximum water repellency is generally realized in 72 hours, but may take longer depending on surface and atmospheric conditions.**

Limitations

- Adjacent surfaces such as window frames, glass, stainless steel, aluminum, etc., must be masked before application.
- Do not apply at a temperature below 40°F.
- Do not apply when substrate temperature exceeds 120°F.
- Material is not recommended for below-grade waterproofing.
- Do not apply through standing water.
- Material is not intended to seal visible cracks or crevices from moisture intrusion.
- Material is not intended for waterproofing under hydrostatic pressure.
- Performance and penetration depth are dependent upon the surface composition.
- Do not use on green concrete.
- **When over-coating:** an on-site adhesion test is essential to determine actual compatibility.
- Sikagard® 701W is not a carbonation barrier.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

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Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard® 740 W

Silane based reactive water repellent penetrating sealer

Description	Sikagard® 740 W is a one part low viscosity, reactive impregnation for concrete and cementitious substrates based on concentrated Silane emulsion. Sikagard® 740 W complies with the requirements of NCHRP Report 244 Series II & IV. Sikagard® 740 W is classified under the ALBERTA infrastructure and transportation specifications. Sikagard® 740 W complies with the highest requirements of EN 1504-2 for hydrophobic Impregnation (penetration depth class II & resistance to freeze-thaw cycles and chloride ion penetration).
Where to Use	Sikagard® 740 W is used as water-repellent penetrating sealer (hydrophobic treatment) for absorbent substrates such as: ■ Walkways and ramps. ■ Industrial floors. ■ Exposed aggregate. ■ Pre-cast or pre-placed concrete. ■ Masonry. ■ Parking decks. ■ Stadiums. ■ Bridge Decks.
Advantages	■ Good penetration. ■ Economical and easy to use. ■ Independent test data available. ■ Reduces capillary water absorption, protection against driving rain and splashing on vertical areas. ■ Reduction of absorption of aggressive or deleterious agents dissolved in water (i.e. chlorides). ■ Not a vapor barrier. ■ Increases the resistance of concrete to freeze and thaw cycles and de-icing salts. ■ Water based emulsion, Low VOC. ■ Resistant to sea water. ■ Ready and easy to use.
Coverage	Coverage is entirely dependent on the porosity of the substrate. Extremely non-porous substrates may only require 1 coat. To ensure proper penetration depth, a field mock up is recommended: ~ 240-380 ft²/gal.
Packaging	5 gallon pail, 55 gallon drum.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life		9 months from date of production.
Storage Conditions		Store in unopened, undamaged and original sealed packaging in dry and cool conditions. Protect from moisture.
Product Conditioning		Condition material between 40°F and 95°F.
Sealer Type		Alkylalkoxy Silane
Active Ingredient Content		40%
Base		Water emulsion
VOC		<350 g/l
Depth of Penetration - OHD L-34		<10 mm
Alberta DOT Type 1a		129ft²/US Gallon
Alberta DOT Type 1b		
Water Repellance		86.3%
Alkali Resistance		85.3%
Vapor Transmission		72.3%
NCHRP 244 Series II:	(125 ft²/gal)	
Water Weight Gain		85%
Absorbed Chloride		96%

Construction

NCHRP 244 Series IV: (125 ft²/gal)		
Absorbed Chloride	79.1%	
90 Day Salt Ponding - AASHTO T 259	0.0-0.5”	93%
	0.5-1.0”	73%
	1.0-1.5”	74%
Scaling Resistance - ASTM C672:	None	
90 Day Salt Ponding - AASHTO T 259	0.0-0.5”	93%
	0.5-1.0”	73%
	1.0-1.5”	74%
Scaling Resistance - ASTM C672:	None	

How to Use

Surface Preparation

Best results are achieved when Sikagard® 740 W is applied on 28 days old concrete – however, due to its high alkali resistance; it is still possible to apply it as early as 3 days – lower penetration might then be expected.

Best results are achieved on a dry, very absorbent substrate. All surfaces to be sealed must be dry, clean, sound before application. Remove all grease, curing compounds, surface treatments, coatings, oils, etc.

Preparation Work: Concrete and masonry surfaces must be prepared using mechanical means (sandblast, shotblast, high pressure water, etc.). Cracks in concrete more than 12 mils must be repaired prior to application of the hydrophobic treatment. If using water to clean, substrate should be visibly dry (i.e. no damp/dark patches) before coating. Surface moisture as measured by Tramex® should read 6% or lower.

Mixing

Sikagard® 740 W is supplied ready for use and must not be diluted.

Application

Substrate and ambient temperature for application should be between 40°F and 95°F. Sikagard® 740 W is applied using a low-pressure spray, airless spray, brush or roller, in a single pass from bottom up taking care not to let the product run. Apply subsequent pass “wet on wet” until the required consumption is achieved. On horizontal surface, use flooding technique but avoid excessive ponding on the surface.

Over Painting

Can be overcoated with water and solvent based polymer paint - contact the proposed paint manufacturer for recommendations.

Sikagard® 740 W can be used as a water repellent primer under many Sikagard® protective coatings. Penetration of water is thus prevented at possible weak spots or in the event of damage to the top coat and the risk of consequential damages such as paint flaking can be reduced. Sika always recommends evaluating compatibility under field conditions by use of a mock-up.

Waiting time: minimum 5 hours, maximum 1 week.

Limitations

- Best results are achieved when Sikagard® 740 W is applied on 28 days old concrete – however, due to its high alkali resistance; it is still possible to apply it at an early age – lower penetration might then be expected.
- Areas such as window frames which still need to be painted must be securely covered to avoid contact with Sikagard® 740 W.
- Areas not to be impregnated such as window panes need to be protected from being accidentally contaminated with Sikagard® 740 W.
- Sikagard® 740 W can damage some coatings and bituminous products.
- In rare cases, Sikagard® 740 W might lead to light darkening of concrete, apply sample areas first.
- Cannot be overcoated with limewash or cement paint.
- Apply Sikagard® 740 W onto a sample area to confirm consumption rates versus penetration depth.
- Refer to the latest Method Statement for detailed information regarding surface preparation, application method, etc.

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Sika Mexicana S.A. de C.V.
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Fracc. Industrial Balvanera
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Construction

Sikagard® 705 L

Silane based reactive water repellent penetrating sealer

Description	Sikagard® 705 L is a one part low viscosity, solvent free, reactive impregnation for concrete and cementitious substrates based on silane technology with 99% active ingredient. Sikagard®-705 L complies with the highest requirements of EN 1504-2 for hydrophobic Impregnation (penetration depth class II & resistance to freeze-thaw cycles and chloride ion penetration) and is tested in accordance with NCRHP 224 Series II & IV.
Where to Use	Sikagard® 705 L is used as water-repellent penetrating sealer (hydrophobic treatment) for absorbent substrates such as: ■ Parking decks ■ Bridge decks ■ Concrete highway surfaces ■ Ramps and Barriers ■ Cooling Towers ■ Stadiums ■ Natural stone substrates ■ Many other traffic bearing/reinforced concrete substrates and structures
Advantages	■ Excellent penetration (~100% active content). ■ Economical and easy to use. ■ Reduces capillary water absorption, protection against driving rain and splashing on vertical areas. ■ Reduction of absorption of aggressive or deleterious agents dissolved in water (i.e. de-icing salts or chloride from marine environment). ■ Non vapor barrier. ■ Long term efficiency, deep penetration. ■ Increases the resistance of concrete to freeze and thaw cycles and de-icing salts. ■ Low VOC content. ■ Resistant to sea water. ■ Ready and easy to use.
Coverage	Dependent on absorbency of the substrate as well as the required penetration depth: 240-360 ft²/ gal per coat.
Cure Mechanism	Sikagard® 705 L does not require any special curing but must be protected from rain for at least 3 hours at +68°F.
Packaging	5 gal. pail, 55 gal. drum.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years from production date.
Storage Conditions	Store in unopened, undamaged and original sealed packaging in dry and cool conditions. Protect from moisture.
Product Conditioning	Condition material between 40°F and 95°F.
Sealer Type	Alkylalkoxy Silane
Active Ingredient Content	~100%
VOC	327g/l
Application Thickness	7 mils
Depth of Penetration - OHD L-34	>10 mm
Flash Point	104°F (40°C)
Alberta DOT Type 1c	
Water Repellance after Heavy Abrasion	85.3%
Alkali Resistance	84.8%
Vapor Transmission	106.9%
NCHRP 244: (125 ft²/gal)	
Series II - Absorbed Chloride	88%

Construction

Series IV - Absorbed Chloride	98%
Water Absorption - ASTM C642	.06% (24 hrs)/.1% (48 hrs)
Scaling Resistance - ASTM C672	None
90 Day Salt Ponding - AASHTO T 259	82.6% (.5-1")

How to Use

Surface Preparation

Best results are achieved when Sikagard® 705 L is applied on 28 days old concrete – however, due to its high alkali resistance, it is still possible to apply as early as 3 days. Testing should always be done to ensure proper penetration depth. Best results are achieved on a dry, very absorbent substrate. All surfaces to be sealed must be dry, clean, sound before application. Remove all grease, curing compounds, surface treatments, coatings, oils, etc.

Preparation Work: Concrete, masonry and natural stone surfaces must be prepared using mechanical means (sandblast, shotblast, pressure wash, etc.). Cracks in concrete more than 12 mils must be repaired prior to application of the hydrophobic treatment. If using water to clean, substrate should be visibly dry (i.e. no damp/dark patches) before coating. Surface moisture as measured by Tramex® should read 6% or lower.

Mixing

Sikagard® 705 L is supplied ready to use and must not be diluted.

Application

Sikagard® 705 L is applied using a low-pressure spray, brush or roller, in a single pass from bottom up taking care not to let the product run. Apply subsequent coats wet on wet. Avoid ponding on the surface.

Over Painting

Can be over-coated with water and solvent based polymer paint - contact the proposed paint manufacturer for recommendations. Sikagard® 705 L can be used as a water repellent primer under many Sikagard® protective coatings. Penetration of water is thus prevented at possible weak spots or in the event of damage to the top coat and the risk of consequential damages such as paint flaking can be reduced. Waiting time for Sikagard® over-coating: minimum 5 hours, maximum 1 week.

Limitations

- Best results are achieved when Sikagard® 705 L is applied on 28 days old concrete – however, due to its high alkali resistance, it is still possible to apply it at a very early age as 3 days. Testing should always be done prior to application on early age concrete to ensure sufficient penetration depth.
- Areas such as window frames which still need to be painted must be securely covered to avoid contact with Sikagard® 705 L.
- Areas not to be impregnated such as window panes need to be protected from being accidentally contaminated with Sikagard® 705 L.
- Sikagard® 705 L can damage some coatings and bituminous products.
- Sikagard® 705 L can lead to darkening of concrete, apply sample areas first.
- Cannot be over-coated with limewash or cement paint.

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Construction

Sikagard® 706 Thixo

Silane based water repellent impregnation cream

Description	Sikagard® 706 Thixo is a one part reactive silane based impregnation cream. It is a solvent free product with ~ 80% content of active substance. Sikagard® 706 Thixo complies with the highest requirements of EN 1504-2 for hydrophobic Impregnation (penetration depth class II & resistance to freeze-thaw cycles and chloride ion penetration) and NCHRP Report 244 Series II & IV.
Where to Use	Sikagard® 706 Thixo is used as water-repellent impregnation (hydrophobic treatment) for absorbent substrates such as: ■ Marine structures ■ Pilings ■ Piers ■ Bridge decks ■ Building facades
Advantages	■ Non-sag (thixotropic) consistency, allowing wastage-free application of sufficient quantities and assuring deep penetration. ■ Reduction of water absorption. ■ Reduction of absorption of aggressive or deleterious agents dissolved in water (i.e. de-icing salts or chloride from marine environment). ■ No noticeable change of water vapor permeability. ■ Not film forming. ■ Ready to use. ■ Long term efficiency, deep penetration. ■ Increases the resistance of concrete to freeze and thaw cycles and de-icing salts. ■ Resistant to sea water. ■ Low VOC content. ■ Waste free. ■ Non Vapor Barrier.
Coverage	Between ~200-250 ft²/gal. can be applied in one operation to vertical and sloped surfaces without loss of material. The exact amount depends on the absorbency of the substrate. At higher application rates, the impregnating agent might liquefy at the top of the concrete and it may start to run off. A second coat may be applied at any time but is usually unnecessary. A preliminary trial should be carried out to assess the penetration depth in the given substrate.
Packaging	5 gallon pail, 55 gallon drum.

Typical Data ***(Material and curing conditions @ 73°F (23°C) and 50% R.H.)***

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	12 months from date of production.
Storage Conditions	Store in undamaged and unopened original sealed packaging in dry and cool conditions.
Product Conditioning	+40°F min. / +100°F max.
Chemical Base	Silane (~ 80% active ingredient)
Density	~ 900 g/l
pH Value	~ 8
VOC	<320 g/l
Resistance to Freeze-Thaw-Salts Stress	Comply (EN 13581)
Depth of Penetration Class II: **Test performed on concrete with a W/C = 0.70**	≥ 10 mm
Water Absorption	<7.5% (EN 13580)
Drying Rate Coefficient Resistance	Class I: > 30% (EN 13579)
Alkali Resistance	< 10%

Approvals/Standards
- Conforms with NCHRP Report 244 Series II & IV.
- Conforms to the requirements of LPM-qualification test to SIA 162/5, Report A-20 450-1 of 19.04.1999. (Water absorption, penetration depth, alkali resistance, water vapor diffusion, resistance to freeze thaw cycles and de-icing salts).
- Conforms to the requirement of the “Bro 2002” Swedish National Road Administration (SNRA) publication No. VV2002:47 report reference F507580 Arev.

Construction

How to Use

Surface Preparation

Best results are achieved when Sikagard® 706 Thixo is applied on 28 days old concrete – however, due to its high alkali resistance, it is still possible to apply it as early as 3 days. Best results are achieved on a dry, very absorbent substrate. All surfaces to be sealed must be dry, clean, sound before application. Remove all grease, curing compounds, surface treatments, coatings, oils , etc.

Preparation Work: Concrete and masonry surfaces must be prepared using mechanical means (sandblast, shotblast, high pressure water, etc.). Cracks in concrete more than 12 mils must be repaired prior to application of the hydrophobic treatment.

Mixing

Sikagard® 706 Thixo is supplied ready for use and should not be thinned or diluted.

Application

Sikagard® 706 Thixo is applied using airless spray, brush or roller, from bottom up.

Over Painting

Can be over-coated with water and solvent based polymer paint - contact the proposed paint manufacturer for recommendations. Sikagard® 706 Thixo can be used as water repellent primer under many Sikagard® protective coatings. Penetration of water is thus prevented at possible weak spots or in the event of damage to the top coat and the risk of consequential damages such as paint flaking can be reduced. Waiting time for Sikagard® over-coating: minimum 5 hours, maximum 1 week.

Limitations

- Best results are achieved when Sikagard® 706 Thixo is applied on 28 days old concrete – however, due to its high alkali resistance, it is still possible to apply it as early as 3 days.
- Areas such as window frames which still need to be painted must be securely covered to avoid contact with Sikagard® 706 Thixo.
- Areas not to be impregnated such as window panes need to be protected from being accidentally contaminated with Sikagard® 706 Thixo.
- Sikagard® 706 Thixo can damage some coatings and bituminous products.
- Sikagard® 706 Thixo can lead to darkening of concrete, apply sample areas first.
- Cannot be over-coated with limewash or cement paint.
- Apply Sikagard® 706 Thixo onto a sample area to confirm consumption rates versus required penetration depth.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard® 550W Elastocolor

Description	Sikagard® 550W Elastocolor is an elastomeric, crack-bridging, anti-carbonation, acrylic protective coating. Sikagard® 550W Elastocolor provides protection to reinforced concrete from the ingress of carbon dioxide and other aggressive gasses. It offers high resistance to chlorides and other waterborne salts and excellent UV light resistance. Sikagard® 550W Elastocolor will not act as a vapor barrier and will enhance the appearance of the structure.
Where to Use	Protective, crack-bridging coating for concrete, mortar, stucco, masonry, and exterior finishing systems subject to cracking/dynamic movement. For use on building and civil engineering structures subject to cracking or as the top coat in complete repair and protection systems.
Advantages	■ Can bridge dynamically moving cracks. ■ Excellent carbonation barrier. ■ Vapor permeable. ■ Provides resistance to weathering and frost. ■ Crack bridging properties maintained at low temperatures. ■ Excellent long term UV light resistance. ■ Can be applied by brush, roller, or airless spray. ■ Good color stability. ■ Extremely resistant to dirt pick up and mildew. ■ Non-flammable as a system. ■ Easily maintained silk finish.
Coverage	Theoretical yield per coat: 100 ft²/gal/coat. Recommended 'wet' film thickness: 16 mils/coat. Recommended 'dry' film thickness: 8 mils/coat. Normal coating system is two coats at a total dry film thickness of 16 mils. Consumption is dependent on porosity of substrate. In addition, allowance must be made for surface profile, unavoidable variation in applied film thickness, loss and waste. Sikagard® Elastic Base Coat can be used as a first coat in a two coat system of Sikagard® 550W Elastocolor.
Packaging	5 gal. Pails

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original unopened container.
Storage Conditions	Store dry at 40°-95°F (4°-35°C) Condition material to 60°-75°F (15°-25° C) before using. Protect from freezing. If frozen discard.
Colors	469 standard colors. Custom color-matching available.
Pot Life	Indefinite, provided proper care is taken in protecting the system from moisture, freezing, contamination, or evaporation.

Solids Content	**by weight**	**by volume**
Smooth 550W	62%	55%
Sikagard® 552W	20%	17%

Tensile Properties (ASTM D-412 modified after 21 days cure)

Tensile Strength	200 psi
Elongation at Break	625% at 73°F (23°C)
Tensile Strength at 0°F (-18°C)	1100 psi
Elongation at Break at 0°F (-18°C)	225%

Waiting Time (between coats) and Curing Rates	**45°F (8°C)**	**68°F (20°C)**	**85°F (30°C)**
Sikagard® 552W Primer+Sikagard® 550W	24 hours	12 hours	6 hours
Sikagard® 550W	12 hours	8 hours	6 hours
Rain resistant (at 75% R.H.)	24 hours	4 hours	2 hours

(Note: Over coating old coatings will increase the waiting times by 100%)

Water Vapor Diffusion (at 16 mils = 400 microns dry film thickness)
μ - value H_2O (diffusion coefficient) = 2,146
SdH_2O (equivalent air thickness) = 2.6 ft. (0.8 m)

Carbon dioxide diffusion (at 16 mils = 400 microns dry film thickness)

	***After 2,000 hours**
μ - value CO_2 (diffusion coefficient) =	214,000
R (equivalent air thickness) =	299 ft. (91 m)
Sc (Equivalent concrete thickness) =	9 inches (23 cm)

*accelerated weathering

Crack-Bridging (at 16 mils = 400 microns DFT)

Static (at -4°F/-20°C)	30 mils (0.75 mm)
Dynamic>1000 cycles (at -4°F/-20°C)	12 mils (0.3 mm)

Moisture Vapor Permeability (ASTM E-96) 14.5 Perms

Construction

Resistance to Wind Driven Rain (TT-C-555B)	No passage of water through the coating	
Flame Spread and Smoke Development (ASTM E-84-94)		
Flame Spread: 5	Smoke Development: 5	Class Rating: A
Weathering (ASTM G-23)	10,000 hours	Excellent, no chalking or cracking

How to Use

Surface preparation

All surfaces to be coated must be dry, clean, sound, and frost free with curing compound residues and any other foreign matter removed. An open textured sandpaper like surface is ideal (CSP-3). Where necessary, surfaces should be prepared mechanically by blast cleaning or high speed pressure waterjetting. Allow adequate time for drying. Bug holes, cracks or irregularities of substrate should be filled and leveled with SikaTop®, SikaRepair®, SikaQuick® or acrylic surface fillers as appropriate. Cracks 1/32" or greater should be routed and sealed with a polyurethane sealant before coating.

Priming: All porous areas or concrete with excessive porosity should be primed using Sikagard® 552W Primer or SikaLatex® R to allow easy application of Sikagard® 550W Elastocolor.

Mixing

Stir the coating to ensure uniformity using a slow speed (400-600 rpm) drill and 1/2" jiffy style mixing paddle. To minimize color variation when using multiple units, blend two pails of Sikagard® 550W Elastocolor. Use one pail and maintain the second pail to repeat this procedure (boxing) for the entire application.

Application

Any areas of glass or other surfaces should be masked. Recommended application temperatures (ambient and substrate) 45°-95°F (7°-35°C). Sikagard® 550W Elastocolor can be applied by brush, roller, or spray over entire area moving in one direction. Allow a minimum of two hours prior to re-coating. At lower temperatures and high humidity, waiting time will be prolonged. At higher temperatures, work carefully to maintain a wet edge. As with all coatings, job site mock-ups should always be completed to confirm acceptability of workmanship, material and aesthetics.

NOTE: To achieve a dry film thickness of 16 mils, two coats should be anticipated. For maximum adhesion, (especially on porous substrates) the use of Sikagard® 552W is recommended. Sikagard® 552W primer can be applied by brush or roller. Brushing provides more even and pore free coats and better penetration.

Limitations

- Not designed for use as a traffic bearing surface.
- Substrates must be dry prior to application.
- Minimum age of concrete prior to application is 14 days, depending on curing and drying conditions (moisture content must be below 5%).
- Minimum age of SikaTop®, SikaRepair®, or SikaQuick® prior to application is three days, depending on curing and drying conditions (moisture content must be below 5%).
- Allow sufficient time for substrate to dry after rain or other inclement conditions.
- Protect from freezing. If frozen, discard.
- Sikagard® 550W Elastocolor should not be applied at relative humidity greater than 90%, or if rain is forecast within the specified rain resistance period.
- Maximum crack width 1/32".
- During application, regular monitoring of the wet film thickness and material consumption is advised to ensure that the correct layer thickness is achieved. When over-coating existing coatings, compatibility and adhesion testing is recommended.
- When over-coating Sikaflex® sealants, a prime coat of Sikagard® 550W Elastocolor Accent Base Coat may be necessary over the sealant to minimize dirt pick up on cured coating.
- Do not store Sikagard® 550W Elastocolor in direct sunlight for prolonged periods.
- Strong winds can cause shrinkage if material is applied at lower temperatures.
- Ensure that the primer is thoroughly dry before over-coating to prevent formation of bubbles and blisters, particularly in warmer weather.
- Not recommended for roofing.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

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201 Polito Avenue
Lyndhurst, NJ 07071
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Fax: 201-933-6225

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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard®-550 W CA Elastocolor

Description

Sikagard 550 W CA Elastocolor is an elastomeric, crack-bridging, anti-carbonation, acrylic protective coating. Sikagard 550 W CA Elastocolor provides protection to reinforced concrete from the ingress of carbon dioxide and other aggressive gasses. It offers high resistance to chlorides and other waterborne salts and excellent UV light resistance. Sikagard 550 W CA Elastocolor will not act as a vapor barrier and will enhance the appearance of the structure.

Where to Use

Protective, crack-bridging coating for concrete, mortar, stucco, masonry, and exterior finishing systems subject to cracking/dynamic movement. For use on building and civil engineering structures subject to cracking or as the top coat in complete repair and protection systems.

Advantages

- Can bridge dynamically moving cracks.
- Excellent carbonation barrier.
- Vapor permeable.
- Provides resistance to weathering and frost.
- Crack bridging properties maintained at low temperatures.
- Excellent long term UV light resistance.
- Can be applied by brush, roller, or airless spray.
- Good color stability.
- Extremely resistant to dirt pick up and mildew.
- Non-flammable as a system.
- Easily maintained silk finish.

Coverage

Theoretical yield per coat: 100 ft²/gal/coat. Recommended 'wet' film thickness: 16 mils/coat. Recommended 'dry' film thickness: 8 mils/coat. Normal coating system is two coats at a total dry film thickness of 16 mils. Consumption is dependent on porosity of substrate. In addition, allowance must be made for surface profile, unavoidable variation in applied film thickness, loss and waste. Sikagard® Elastic Base Coat can be used as a first coat in a two coat system of Sikagard® 550 W CA Elastocolor.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life
2 years in original unopened container.

Storage Conditions
Store dry at 40°-95°F (4°-35°C) Condition material to 60°-75°F (15°-25° C) before using. Protect from freezing. If frozen discard.

Colors
469 standard colors. Custom color-matching available.

Pot Life
Indefinite, provided proper care is taken in protecting the system from moisture, freezing, contamination, or evaporation.

VOCs
42 g/L.

Solids Content	**by weight**	**by volume**
Smooth 550W	62%	55%
Sikagard® 552W	20%	17%

Tensile Properties (ASTM D-412 modified after 21 days cure)

Tensile Strength	285 psi
Elongation at Break	610% at 73°F (23°C)
Tensile Strength at 0°F (-18°C)	1100 psi
Elongation at Break at 0°F (-18°C)	225%

Waiting Time (between coats) and Curing Rates	**45°F (8°C)**	**68°F (20°C)**	**85°F (30°C)**
Sikagard® 552W Primer+Sikagard® 550W	24 hours	12 hours	6 hours
Sikagard® 550W	12 hours	8 hours	6 hours
Rain resistant (at 75% R.H.)	24 hours	4 hours	2 hours

(Note: Over coating old coatings will increase the waiting times by 100%)

Water Vapor Diffusion (at 16 mils = 400 microns dry film thickness)
μ - value H_2O (diffusion coefficient) = 2,146
SdH_2O (equivalent air thickness) = 2.6 ft. (0.8 m)

Carbon dioxide diffusion (at 16 mils = 400 microns dry film thickness)

	***After 2,000 hours**
μ - value CO_2 (diffusion coefficient) =	214,000
R (equivalent air thickness) =	299 ft. (91 m)
Sc (Equivalent concrete thickness) =	9 inches (23 cm)

*accelerated weathering

Crack-Bridging (at 16 mils = 400 microns DFT)

Static (at -4°F/-20°C)	30 mils (0.75 mm)
Dynamic>1000 cycles (at -4°F/-20°C)	12 mils (0.3 mm)

Construction

Moisture Vapor Permeability (ASTM E-96)	14.5 Perms		
Resistance to Wind Driven Rain (TT-C-555B)	No passage of water through the coating		
Flame Spread and Smoke Development (ASTM E-84-94)			
Flame Spread: 5	Smoke Development: 5	Class Rating: A	
Weathering (ASTM G-23)	10,000 hours	Excellent, no chalking or cracking	

Packaging 5 gal. Pails

How to Use

Surface preparation

All surfaces to be coated must be dry, clean, sound, and frost free with curing compound residues and any other foreign matter removed. An open textured sandpaper like surface is ideal (CSP-3). Where necessary, surfaces should be prepared mechanically by blast cleaning or high speed pressure waterjetting. Allow adequate time for drying. Bug holes, cracks or irregularities of substrate should be filled and leveled with SikaTop®, SikaRepair®, SikaQuick® or acrylic surface fillers as appropriate. Cracks 1/32" or greater should be routed and sealed with a polyurethane sealant before coating.

Priming: All porous areas or concrete with excessive porosity should be primed using Sikagard® 552W Primer or SikaLatex® R to allow easy application of Sikagard® 550 W CA Elastocolor.

Mixing

Stir the coating to ensure uniformity using a slow speed (400-600 rpm) drill and 1/2" jiffy style mixing paddle. To minimize color variation when using multiple units, blend two pails of Sikagard® 550 W CA Elastocolor. Use one pail and maintain the second pail to repeat this procedure (boxing) for the entire application.

Application

Any areas of glass or other surfaces should be masked. Recommended application temperatures (ambient and substrate) 45°-95°F (7°-35°C). Sikagard® 550 W CA Elastocolor can be applied by brush, roller, or spray over entire area moving in one direction. Allow a minimum of two hours prior to re-coating. At lower temperatures and high humidity, waiting time will be prolonged. At higher temperatures, work carefully to maintain a wet edge. As with all coatings, job site mock-ups should always be completed to confirm acceptability of workmanship, material and aesthetics.

NOTE: To achieve a dry film thickness of 16 mils, two coats should be anticipated. For maximum adhesion, (especially on porous substrates) the use of Sikagard® 552W is recommended. Sikagard® 552W primer can be applied by brush or roller. Brushing provides more even and pore free coats and better penetration.

Limitations

- Not designed for use as a traffic bearing surface.
- Substrates must be dry prior to application.
- Minimum age of concrete prior to application is 14 days, depending on curing and drying conditions (moisture content must be below 5%).
- Minimum age of SikaTop®, SikaRepair®, or SikaQuick® prior to application is three days, depending on curing and drying conditions (moisture content must be below 5%).
- Allow sufficient time for substrate to dry after rain or other inclement conditions.
- Protect from freezing. If frozen, discard.
- Sikagard® 550 W CA Elastocolor should not be applied at relative humidity greater than 90%, or if rain is forecast within the specified rain resistance period.
- Maximum crack width 1/32".
- During application, regular monitoring of the wet film thickness and material consumption is advised to ensure that the correct layer thickness is achieved. When over-coating existing coatings, compatibility and adhesion testing is recommended.
- When over-coating Sikaflex® sealants, a prime coat of Sikagard® 550 W CA Elastocolor Accent Base Coat may be necessary over the sealant to minimize dirt pick up on cured coating.
- Do not store Sikagard® 550 W CA Elastocolor in direct sunlight for prolonged periods.
- Strong winds can cause shrinkage if material is applied at lower temperatures.
- Ensure that the primer is thoroughly dry before over-coating to prevent formation of bubbles and blisters, particularly in warmer weather.
- Not recommended for roofing.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
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Quebec H9R 4A9
Phone: 514-697-2610
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Construction

Sikagard® 552W Primer

Adhesion Promoter, Surface Conditioner for Concrete Surfaces

Description	Sikagard® 552W Primer is a one component, penetrating, adhesion promoter for priming concrete and other masonry surfaces prior to the application of acrylic emulsion coatings. Sikagard® Primers will reduce the consumption rate of the subsequent coat by providing a uniformly absorptive surface.
Where to Use	Primer coat for concrete and mineral substrates or those showing signs of higher than average porosity when over-coating existing coatings which are firmly bonded.
Advantages	▪ Resistant to water vapor diffusion. ▪ Environmentally friendly. ▪ Water-based. ▪ Excellent wetting properties. ▪ Reduces consumption of subsequent coat.
Coverage	**Theoretical**: 320 ft²/gal. All coverages dependent on porosity of substrate. Allowances must be made for surface profile, unavoidable variations in applied film thickness, loss and waste. In addition, two coats may be required on very absorbent surfaces.
Packaging	5 gal. re-closable metal pail.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened container.
Storage Conditions	Store dry at 40°-75°F (4°-24°C). Condition material to 65°-75°F (18°-24°C) before using.
Color	Milky-white, opaque.
Solids Content	20% by volume.
Application Temperatures	45°-90°F (7°-32°C)

Waiting Times

Uncoated masonry of concrete:	**Resistant to Rain**	**Prior to Over-coating**
45°F (8°C)	2 hr.	12 hr.
68°F (20°C)	30 min.	5 hr.
86°F (30°C)	15 min.	2.5 hr.
Previously Coated Substrates:	**Resistant to Rain**	**Prior to Over-coating**
45°F (8°C)	4 hr.	24 hr.
68°F (20°C)	4 hr.	24 hr.
86°F (30°C)	30 min.	6 hr.

Construction

How to Use

Surface Preparation

All surfaces to be primed must be dry, clean, sound, and free of curing compound residues and other bond inhibiting material.

Preparation Work: Concrete and masonry surfaces - blast clean, high pressure water blast or use other approved mechanical means to achieve an slightly open, roughened substrate.

Mixing

Stir thoroughly using a slow speed (400-600 rpm) drill and paddle prior to application.

Application

Any areas of glass should be protected by masking.

Fill all visible hairline cracks and surface defects with appropriate Sika® repair mortar, leveling mortar or Sikagard® surface fill prior to applying primers. Sikagard® Primers can be applied by brush, roller or spray equipment. Brushing provides more even and pore free coats with better penetration. Allow a minimum of 4 hours prior to re-coating. At lower temperature, the waiting time will be prolonged.

Limitations

- When over-coating existing coatings, **compatibility and adhesion testing is essential**.
- Ensure primer is thoroughly dry before over-coating to prevent formation of bubbles and blisters, particularly in warmer weather.
- Ensure that the primer penetrates completely without forming a glaze on the surface.
- Extremely absorbent substrate may require more than one coat of primer.
- Sikagard® primers should not be stored in direct sunlight for prolonged periods of time.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

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601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Bonding Primer

Two-component, rapid curing, water-based epoxy primer

Description	Sika® Bonding Primer is a rapid curing, water based primer consisting of two components: a pre-reacted epoxy resin dispersed in water (Part A), and a waterborne modified polyamine solution (Part B). In its wet mixed state, it is milky green and slightly viscous.
Where to Use	Suitable for use on most sound substrate surfaces where both a penetrative and surface-lying effect is required.
Advantages	■ Fast cure allows same-day membrane application in most conditions. ■ Low odor, low VOC formulation. ■ Compatible with most common substrate materials (not for metal surfaces).
Coverage	350 ft²/gal on non-absorbent smooth substrates. 300 ft²/gal on prepared, dry concrete. 200 ft²/gal on absorbent gypsum and cementitious cover boards. **Note:** Rough, porous, or absorbent surfaces will require additional primer and will reduce yield.
Cure Mechanism	Chemical and evaporative cure.
Chemical Resistance	Not intended for direct exposure.

Packaging:	Bonding Primer Kit	Part A	Part B
	1 Gallon	0.8 US Gallons	0.2 US Gallons
	5 Gallons	4 US Gallons	1 Gallons

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	24 months in original, unopened and undamaged sealed containers.
Storage	Store dry at 35°-77°F (2°-25°C).
Product Conditioning	Condition material to 50°-77°F (10°-25°C) before using for ease of application.
Pot Life	12 hours
Total Volume Solids (ASTM D-2697)	15%
VOCs (ASTM D-2369-81)	12.5 g/l
Flash Point	110°F (59°C)
Service Temperature	-22° to 176°F (-30° to 80°C) intermittent.

Construction

How to Use

Surface Preparation	All substrate surfaces shall be clean, dry and sound. Acceptable substrates include: sound concrete and masonry, wood and plywood, mineralized asphaltic cap sheet, sprayed polyurethane foam, gypsum and cementitious cover boards, and coated glass-faced polyisocyanurate foam boards. Reference separate System Data Sheet for specific surface preparation requirements.
Mixing	Mix ratio is 4:1 (A:B) by weight and volume. Add Part B into Part A and mix with stir stick or mechanical mixer (Jiffy) at low speed. Avoid adding air into the primer during mixing. When fully mixed, the primer should be free from streaks and of a uniform light green color. **Do not break down kits into smaller quantities.**
Application	Apply by brush or phenolic resin core roller at the recommended rate. Correct amount of primer will saturate the substrate and leave a slight film on the substrate top surface. Apply evenly without puddling.
Removal	Remove wet primer with clean water. Once cured, primer can only be removed by mechanical means.
Over Painting	Allow primer to cure completely prior to applying membrane resin. 1 hour at 95°F 2 hours at 68°F 4 hours at 41°F Ideally, membrane resin will be applied within 24 hours of primer application. This is required for applications in tropical/subtropical environments to avoid UV-related primer deterioration. Maximum primer exposure is 7 days. Primer exposed longer than 7 days, and primer exposed to water during curing and exhibiting a chalky appearance, must be reprimed. Deteriorated primer must be mechanically removed before primer reapplication.

Limitations

- To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures.
- Minimum ambient and substrate temperature during application and curing of material is 41°F (5°C); maximum is 95°F (35°C). Surface temperatures must be no higher than 140°F (60°C).
- Do not apply on substrates with moisture content greater than 4% by weight, measured by Tramex® Concrete Moisture Encounter Meter.
- Minimum age of concrete must be 21-28 days depending on curing and drying conditions.
- Do not thin with solvents.
- Do not store materials outdoors exposed to sunlight and moisture for prolonged periods.
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D-4263 (Polyethylene Sheet method).
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems.
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing may occur.
- Precautions should be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- When applying over existing coatings or membranes compatibility and adhesion testing, subsequent approval by Technical Services is required.
- On grade concrete decks should not be covered with Sikalastic® membrane systems.
- Unvented metal pan, split/sandwich slab with encapsulated membrane and/or insulation, cinder fill decks, and lightweight insulating concrete overlays should not be covered with Sikalastic® membrane systems without additional deck evaluation and subsequent approval by Technical Services.
- Not recommended for metal substrates.

Construction

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

RESPONSIBLE CARE® ISO 9001 RC 14001

Construction

Sikagard® 570

Elastomeric, UV curable, high build, fully reinforceable, acrylic facade coating.

Description

Sikagard 570 is an elastomeric, UV curing, crack-bridging, anti-carbonation, acrylic protective coating. Sikagard 570 provides protection to reinforced concrete from the ingress of carbon dioxide and other aggressive gasses. It offers high resistance to chlorides and other waterborne salts and excellent UV light resistance. Sikagard 570 will not act as a vapor barrier and will enhance the appearance of the structure. Sikagard 570 is cured by exposure to UV radiation present in sunlight, which aids in the development of a surface skin which is relatively harder than the bulk of the coating beneath. This leads to a more durable surface and reduced dirt pickup. Similarly, as the coating does eventually begin to wear, the exposed material will maintain its hardened surface.

Where to Use

Protective, crack-bridging coating for concrete, mortar, stucco, masonry, and exterior finishing systems subject to cracking/dynamic movement. For use on building and civil engineering structures subject to cracking or as the top coat in complete repair and protection systems.

Advantages

- UV curable top coat for a more durable wearing surface and lesser dirt pickup.
- Can bridge dynamically moving cracks
- Excellent carbonation barrier
- Vapor permeable
- Provides resistance to weathering and frost
- Crack bridging properties maintained at low temperatures
- Excellent long term UV light resistance
- Can be applied by brush, roller, or airless spray
- Good color stability
- Extremely resistant to dirt pick up and mildew
- Nontoxic, nonflammable as a system
- Easily maintained silk finish

Packaging

5 gallon

Coverage

Theoretical yield per coat: 100 sq. ft./gal/coat. Recommended 'wet' film thickness: 16 mils/coat. Recommended 'dry' film thickness: 8 mils/coat. Normal coating system is two coats at a total dry film thickness of 16 mils. Consumption is dependent on porosity of substrate. In addition, allowance must be made for surface profile, unavoidable variation in applied film thickness, loss and waste. Sikagard Elastic Base Coat can be used as a first coat in a two coat system of Sikagard 570.

Theoretical yield for reinforced system: 40 sq.ft./gal for the base coat with reinforcement: 40 mils 'wet' film thickness. A top coat at 80 sq.ft./gal to fully encapsulate the reinforcement: 20 mils 'wet' film thickness. In addition, allowance must be made for surface profile, unavoidable variation in applied film thickness, loss and waste.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original unopened container
Storage Conditions	Store dry at 40˚ - 95˚F (4˚ -35˚C) Condition material to 60˚ - 75˚F (15˚ - 25˚C) before using. Protect from freezing. If frozen discard.
Colors	469 standard colors. Custom color-matching available.
Pot Life	Indefinite, provided proper care is taken in protecting the system from moisture, freezing, contamination, or evaporation.

Solids Content	**by weight**	**by volume**
Smooth 570	62%	55%
Sikagard® 552W	20%	17%

Tensile Properties (ASTM D-412 modified after 21 days cure)

Tensile Strength	250 psi
Elongation at Break	675% at 73°F (23°C)
Tensile Strength at 0°F (-18°C)	1200 psi
Elongation at Break at 0°F (-18°C)	275%

Waiting Time (between coats) and Curing Rates	**45°F (8°C)**	**68°F (20°C)**	**85°F (30°C)**
	24 hours	12 hours	6 hours
	12 hours	8 hours	6 hours
Rain resistant (at 75% R.H.)	24 hours	4 hours	2 hours

(Note: Over coating old coatings will increase the waiting times by 100%)

Water Vapor Diffusion (at 16 mils = 400 microns dry film thickness)

μ - value H_2O (diffusion coefficient) =	2,146
SdH_2O (equivalent air thickness) =	2.6 ft. (0.8 m)

Carbon dioxide diffusion (at 16 mils = 400 microns dry film thickness)

Construction

	*After 2,000 hours
μ - value CO_2 (diffusion coefficient) =	214,000
R (equivalent air thickness) =	299 ft. (91 m)
Sc (Equivalent concrete thickness) =	9 inches (23 cm)
*accelerated weathering	
Crack-Bridging (at 16 mils = 400 microns DFT)	
Static (at -4°F/-20°C)	30 mils (0.75 mm)
Dynamic>1000 cycles (at -4°F/-20°C)	12 mils (0.3 mm)
Moisture Vapor Permeability (ASTM E-96)	14.5 Perms
Resistance to Wind Driven Rain (TT-C-555B)	No passage of water through the coating
Flame Spread and Smoke Development (ASTM E-84-94)	
Flame Spread: 5	Smoke Development: 5 Class Rating: A
Weathering (ASTM G-23)	10,000 hours Excellent, no chalking or cracking

Curing Mechanism

UV curing requires sunlight to harden the surface. This produces a tactile coating reflecting the composite nature of the coating film. In the complete absence of sunlight a softer surface will result although the product will dry cure.

How To Use

Surface Preparation

Surface preparation: All surfaces to be coated must be dry, clean, sound, and frost free with curing compound residues and any other foreign matter removed. An open textured sandpaper like surface is ideal (CSP-3). Where necessary, surfaces should be prepared mechanically by blast cleaning or high speed pressure water jetting. Allow adequate time for drying. Bugholes, cracks or irregularities of substrate should be filled and leveled with SikaTop, SikaRepair, SikaQuick or acrylic surface fillers as appropriate

Priming: All porous areas or concrete with excessive porosity should be primed using Sikagard 552W Primer or SikaLatex R to allow easy application of Sikagard 570.

Crack Treatment: Treatment of existing cracks and reinforcement Sikagard 570 is designed to accommodate existing cracks and those starting from “zero” up to defined limits. The product will fill and bridge minor static cracks up to 0.04” if applied more thickly on those areas. Static cracks larger than 0.04” should be filled with acrylic filler prior to being coated with Sikagard 570. Dynamic cracks can also be addressed this way as well, but should be filled prior with a flexible sealant. It is advisable to also embed Sika Flexitape for dynamic cracks over 0.04”, as well as with construction, control, and expansion joints. Multi cracked or crazed surfaces should be either repaired beforehand or the Sikagard 570 system should be completely reinforced with Sika’s Reemat Standard Glass Fiber Matt.

Mixing

Stir the coating to ensure uniformity using a slow speed (400-600 rpm) drill and 1/2” jiffy style mixing paddle. To minimize color variation when using multiple units, blend two pails of Sikagard 570. Use one pail and maintain the second pail to repeat this procedure (boxing) for the entire application.

Application

Any areas of glass or other surfaces should be masked. Recommended application temperatures (ambient and substrate) 45 - 95 F (7-35 C). Sikagard 570 can be applied by brush, roller, or spray over entire area moving in one direction. Allow a minimum of two hours prior to recoating. At lower temperatures and high humidity, waiting time will be prolonged. At higher temperatures, work carefully to maintain a wet edge. As with all coatings, job site mock-ups should always be completed to confirm acceptability of workmanship, material and aesthetics.

NOTE: To achieve a dry film thickness of 16 mils, two coats should be anticipated. For maximum adhesion, (especially on porous substrates) the use of Sikagard 552W is recommended. Sikagard 552W primer can be applied by brush or roller. Brushing provides more even and pore free coats and better penetration.

Limitations

- Not designed for use as a traffic bearing surface
- Substrates must be dry prior to application
- Minimum age of concrete prior to application is 14 days, depending on curing and drying conditions (moisture content must be below 5%)
- Minimum age of SikaTop, SikaRepair, or SikaQuick prior to application is three days, depending on curing and drying conditions (moisture content must be below 5%)
- Allow sufficient time for substrate to dry after rain or other inclement conditions
- Protect from freezing. If frozen, discard
- Sikagard 570 should not be applied at relative humidity greater than 90%, or if rain is forecast within the specified rain resistance period
- Maximum crack width 1/32”
- During application, regular monitoring of the wet film thickness and material consumption is advised to ensure that the correct layer thickness is achieved. When over-coating existing coatings, compatibility and adhesion testing is recommended
- When over-coating Sikaflex sealants, a prime coat of Sikagard 570 Accent Base Coat may be necessary over the sealant to minimize dirt pick up on cured coating.
- Do not store Sikagard 570 in direct sunlight for prolonged periods
- Strong winds can cause shrinkage if material is applied at lower temperatures
- Ensure that the primer is thoroughly dry before over-coating to prevent formation of bubbles and blisters, particularly in warmer weather
- Not recommended for roofing

Construction

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard® 62

High-build, protective, solvent-free, colored epoxy coating

Description	High-build, protective, solvent-free, colored epoxy coating.
Where to Use	Use as a high build, corrosion-resistant, protective coating, as a protective lining for secondary containment structures or as a seamless flooring system.
Advantages	■ Exceptional tensile strength. ■ Good chemical resistance for long-term protection. ■ Convenient A:B = 1:1 mixing ratio. ■ Easy, paint-like viscosity. ■ Available in 3 standard colors: gray, red, and tan. ■ Excellent bonding to all common structural substrates. ■ Super abrasion resistance for long-term wear. ■ Sikagard® 62 gray in ANSI/NSF 61 potable water compliant ■ Material is USDA certifiable.
Coverage	Approximately 150-250 ft.²/gal. depending on condition of substrate.
Packaging	4 gal. units; 1 qt. units, 12/case.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.
Color	Gray, red, tan.
Mixing Ratio	Component 'A' : Component 'B'=1:1 by volume.
Viscosity (Mixed)	Approximately 3,500 cps.
Pot Life	Approximately 35 to 40 minutes. (60 gram mass).
Tack-Free Time	Approximately 4 hours.
Open Time	Light foot traffic: 5-7 hours. Rubber-wheel traffic: 8-10 hours.
Immersion and Chemical Exposure	Minimum cure: 3 days

Tensile Properties (ASTM D-638)

14 day	Tensile Strength	5,400 psi (37.3 MPa)
	Elongation at Break	2.7 %

Abrasion (ASTM D-1044) (Taber Abrader)

7 day	Weight loss, 1,000 cycles (H-22 wheel, 1,000 gm weight)	0.61 gm

Abrasion Resistance (ASTM D-968)

14 day	Abrasion Coefficient	51 liters/mil.

Adhesion (ASTM D-3359)

1 day	Adhesion Classification	4A

Water Absorption (ASTM D-570)

7 day	(24 hour immersion)	0.1%

Construction

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants.

Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blastcleaning or equivalent mechanical means.

Steel - Should be cleaned and prepared thoroughly by blastcleaning.

Mixing

Pre-mix each component. Proportion equal parts by volume of Components 'A' and 'B' into a clean mixing container. Mix with a low-speed (400-600 rpm) drill using a Sika paddle for 3 minutes, until uniform in color.

Application

Apply coating using high-quality roller, brush or spray. Two coats are recommended. Apply second coat as soon as the first coat is tack-free and the traffic of application will not damage the first coat. The second coat, however, must be applied within 48 hours since a longer delay will require additional surface preparation.

Do not spray with slip resistant granules mixed into the coating. For use as a seamless flooring system, consult Technical Service.

Limitations

- Minimum substrate and ambient temperature for application 50°F (10°C).
- Maximum moisture content of concrete substrate by weight when measured with a Tramex CME or CMExpert type concrete moisture meter is 4%.
- Do not apply over wet, glistening surface.
- Material is a vapor barrier after cure.
- Do not apply to porous surfaces exhibiting moisture-vapor transmission during the application. Consult Technical Service.
- Minimum age of concrete prior to application is 21-28 days, depending on curing and drying conditions.
- Do not apply to exterior, on-grade substrates.
- Use oven-dried aggregate only.
- Do not thin with solvents.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.
- On 'green or 'damp' concrete, EpoCem can be used as a pore filler to reduce vapor drive and potential osmotic blistering.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Construction

Sikagard® 670W

Water dispersed, acrylic, protective, anti-carbonation coating

Description	Sikagard® 670W is a water dispersed colored, acrylic, protective coating. Sikagard® 670W prevents moisture ingress, is water vapor permeable and provides an excellent carbonation barrier.
Where to Use	Above grade, exterior application on buildings or civil engineering structures. It is designed to aesthetically enhance and protect concrete and other masonry substrates subject to normal hydrothermal movement.
Advantages	■ Easy to apply. ■ Extremely resistant to dirt pick-up and mildew. ■ Excellent resistance to carbon dioxide and other aggressive gas diffusion. ■ Excellent UV resistance. ■ Excellent weathering resistance. ■ Prevents ingress of chlorides. ■ Cost effective protection. ■ Vapor permeable; allows each way water vapor diffusion (breathable).
Coverage	**Theoretical per coat:** 300 ft²/gal. Wet film thickness: 5 mils. Dry film thickness: 2.5 mils. Normal coating system is two coats minimum at a total nominal dry film thickness of 5 mils. Consumption is obviously dependent on substrate. In addition, allowance must be made for surface profile, variations in applied film thickness, loss and waste. A third coat may be necessary where opacity is reduced through thinning of the first coat, on dense substrates or with very bright color shades.
Packaging	5 gallon, re-closable plastic pails.

Typical Data (Material and curing conditions at 73°F (23°C) and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life
1 year in original, unopened container.

Storage Conditions
Store dry at 40°-95°F (4°-35°C). Condition material to 60°-75°F before using. Protect from freezing. If frozen, discard.

Colors
463 standard colors. Custom color-matching available.

Pot Life
Indefinite, provided proper care is taken in protecting the system from moisture, freezing, contamination, or evaporation.

Solids Content
by weight: 60% **by volume:** 46%

Waiting and Drying Times

Between Coats:	Rain Resistant After	Final Drying
45°F (7°C) approx. 90 min.	approx. 5 hours	approx. 24 hours
68°F (20°C) approx. 30 min.	approx. 1 hour	approx. 4 hours
85°F (30°C) approx. 20 min.	approx. 40 min.	approx. 3 hours

Water Vapor Diffusion (at 5 mils. = 120 microns dry film thickness)
μ - value H_2O (diffusion coefficient) = 3,140
SdH_2O (equivalent air thickness) = 1.3 ft. (0.4 m)

Carbon Dioxide Diffusion (at 5 mils. = 120 microns dry film thickness)
μ- value CO_2 (diffusion coefficient) = 1,100,000
$SdCO_2$ (equivalent air thickness) = 433 ft. (132 m.)
Equivalent concrete thickness (Sc) = approximately 13 inches (33 cm.)

Moisture Vapor Permeability (ASTM E-96)
17.9 Perms

Flame Spread and Smoke Development (ASTM E-84-94)
Flame Spread: 0 Smoke Development: 5 Class Rating: A

Weathering (ASTM G-26)
2000 hours Excellent, no chalking or cracking.

Construction

How to Use

Surface preparation

All surfaces to be coated must be clean, dry, laitance free, sound and frost-free with curing compound residues and any other contaminants removed. An open textured sandpaper-like surface is ideal (CSP-3). Where necessary, surfaces should be prepared mechanically by blast cleaning or high pressure water-jetting. Allow adequate time for drying. Bugholes, cracks or irregularities of substrate should be filled and leveled with SikaTop®, Sika® MonoTop® leveling mortar or Sikagard® Surface Fillers as appropriate.

Priming All porous areas or concrete with excessive porosity should be primed using Sikagard® 552W Primer or SikaLatex® R to allow easy application of Sikagard® 670W.

Mixing

Stir thoroughly to ensure uniformity using a low speed (400-600 rpm) drill and Sika paddle. To minimize color variation when using multiple batches, blend two batches of Sikagard® 670W. Use one pail and maintain the second pail to repeat this procedure (boxing) for the entire application.

Application

Any areas of glass or other surfaces should be masked. Recommended application temperatures (ambient and substrate) 45°-95°F (5°-35°C). Sikagard® 670W can be applied by brush, roller, or spray over entire area moving in one direction. Allow a minimum of 20-90 minutes prior to re-coating. At lower temperatures and high humidity, waiting time will be prolonged. At higher temperatures, work carefully to maintain a 'wet' edge. Sikagard® 670W is usually applied using a short nap lambs wool roller. Sikagard® 670W is particularly suitable for application by spray using the most standard spray painting equipment. As with all coatings, job site mock-ups should always be completed to confirm acceptability of workmanship and material.

Note: To achieve a dry film thickness of 4-6 mils., two uniform coats should be anticipated. On porous substrates, a third coat may be necessary and on particularly dense substrates, the first coat should be thinned 10% by volume with water. A third coat may then be needed for opacity.

Limitations

- Do not use over moving cracks.
- Substrate must be dry prior to the application.
- Minimum age of concrete prior to the application is 14 days, depending on curing and drying conditions (moisture content must be below 5%).
- Minimum age of SikaTop® or Sika® MonoTop® thin layer renderings is 3 days prior to the application of 670W (moisture content must be below 5%).
- Sikagard® 670W should not be applied at relative humidities greater than 90%, or if rain is forecast within the specified rain resistance period.
- Allow sufficient time for the substrate to dry after rain or other inclement conditions.
- Product must be protected from freezing. If frozen, discard.
- Not designed for use as a vehicular traffic bearing surface.
- During application, regular monitoring of wet film thickness and material consumption is advised to ensure that the correct layer thickness is achieved.
- When over-coating existing coatings, compatibility and adhesion testing is recommended.
- Do not store Sikagard® 670W in direct sunlight for prolonged periods.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Sikagard® 670W Clear

Water-based, 100% acrylic, protective coating

Description	Sikagard 670W Clear is a clear, water-based acrylic protective coating. Sikagard 670W Clear prevents moisture ingress, is water vapor permeable, and provides an excellent carbonation barrier.
Where to Use	Protective coating for exposed aggregate surfaces, concrete, masonry and brick. Application on vertical, overhead and Horizontal (non-traffic bearing) surfaces.
Advantages	■ Provides resistance to weathering, frost and de-icing salts. ■ Improves look of structure without changing appearance. ■ Excellent adhesion. ■ High UV light resistance. ■ Excellent resistance to carbon dioxide and other aggressive gas diffusion. ■ Water vapor permeable (breathable). ■ Easy application by brush, roller or spray. ■ Resistant to dirt pick-up. ■ Prevents ingress of chlorides. ■ Cost-effective protection.
Coverage	Theoretical per coat: 160 sq. ft./gal. Wet film thickness: 10 mils. Dry film thickness: 2.3 mils. All coverage is dependent on porosity of substrate. In addition, allowance must be made for surface profile. Unavoidable variation in application thickness, loss and waste. Normal coating system is one coat minimum at a total nominal dry film thickness of 2.3 mils. The total number of coats depends on the porosity of the substrate. On very porous substrates, two coats will typically be required.
Packaging	5 gallon, re-closable plastic pails.

Typical Data *(Material and curing conditions at 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened container.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). **Condition material to 65°-75°F (18°-24°C) before using.** Protect from freezing. If frozen, discard.
Pot Life	Indefinite, provided proper care is taken in protecting the system from moisture, freezing, contamination, or evaporation.
Solids Content	23% by volume
Viscosity	117-123 ku
VOC Content	193 g/L

Waiting and Drying Times at 2.3 mils, Dry

Between Coats	Rain Resistant After/Final Drying
45°F (7°C) approx. 70 min.	approx. 3 hours
68°F (20°C) approx. 60 min.	approx. 1 hour and 15 min.
85°F (30°C) approx. 15 min.	approx. 1 hour

Water Resistance (Cure Time = 1, 3, and 7 days) at 2.3 mils, Dry
ASTM D-2247: very good resistance to whitening (ASTM score = 8, where 10 is perfect)
ASTM D-714: No blisters (ASTM score = 10, where 10 is none)

Moisture Vapor Permeability (ASTM D-1653) at 2.3 Mils, Dry 7.72 perms

Water Spotting (Tested at 3 hr., 1, 2, 3, and 7 days)
ASTM D-1848: Very good resistance to whitening
(ASTM score = 8, where 10 is perfect)

Water Vapor Transmission (at 2.3 mils=55.2 microns dry film thickness)
μ - value H_2O (diffusion coefficient) = 10,300
Sd H_2O (equivalent air thickness) = 6 ft. (1.70 m.)

Carbon Dioxide Diffusion (at 2.3 mils=55.2 microns dry film thickness)
μ - value CO_2 (diffusion coefficient) = 631,000
Sd CO_2 (equivalent air thickness) = 226 ft. (69 m.)
Sc (equivalent concrete thickness) = 7 in. (17 cm.)

Construction

How to Use

Surface Preparation

All surfaces to be coated must be dry, clean, sound and frost-free with curing compound residues and any other foreign matter removed. An open textured sandpaper-like surface is ideal (CSP 3 as per ICRI guidelines). Where necessary, surfaces should be prepared mechanically by blast cleaning or high pressure waterjetting. Bugholes, cracks or irregularities of substrate should be filled and leveled with SikaTop, Sika MonoTop leveling mortar as appropriate.

Mixing

Stir thoroughly to ensure uniformity using a low speed (400-600 rpm) drill and Sika paddle.

Application

Any areas of glass or other surfaces should be masked. Recommended application temperatures (ambient and substrate) 45°-95°F (5°-35°C). Sikagard 670W Clear can be applied by brush, roller, or spray over entire area moving in one direction. Sikagard 670W Clear is usually applied using a short nap roller. Allow a minimum of 60 minutes prior to re-coating. At lower temperatures and high humidity, waiting time will be prolonged. At higher temperatures, work carefully to maintain a 'wet' edge. **As with all coatings, jobsite mock-ups should always be completed to confirm acceptability of workmanship, material and aesthetics.**

Limitations

- Not designed for use as a traffic-bearing surface.
- Substrate must be dry prior to the application. Allow sufficient time for the substrate to dry after rain or other inclement conditions, as this could cause bonding problems. A white haze may develop if moisture is trapped behind the coating.
- Minimum age of normal concrete prior to the application is 14 days, depending on curing and drying conditions. Substrate must be strong enough to properly prepare by mechanical means, achieving a sandpaper-like surface (CSP 3 as per ICRI guidelines).
- Sikagard 670W Clear should not be applied at relative humidities greater than 90%, or if rain is forecast within the specified rain resistance period.
- Do not thin.
- Do not apply if the ambient and substrate temperature are within 5°F (3°C) of the dew point temperature.
- Minimum age of SikaTop or Sika MonoTop thin layer renderings is 3 days prior to the application of Sikagard 670W Clear.
- Do not use over moving cracks.
- Product must be protected from freezing. If frozen, discard.
- During application, regular monitoring of wet film thickness and material consumption is advised to ensure that the correct layer thickness is achieved.
- When over-coating existing coatings, compatibility and adhesion testing is recommended.
- Do not store Sikagard 670W Clear in direct sunlight for prolonged periods.

Caution

Warning

Avoid breathing vapors. Use only with adequate ventilation. May cause respiratory irritation and headaches.

Irritant

Skin, eye, and respiratory irritant; avoid contact. Use of safety goggles and chemical resistant gloves is recommended. Remove contaminated clothing.

First Aid

In case of eye contact, flush with water for 15 minutes, contact physician immediately. For skin contact, wash skin with soap water. For respiratory problems, remove person to fresh air. Wash clothing before re-use.

Spill Clean Up

Confine spill, ventilate closed areas, and collect with absorbent material. Dispose of in accordance with current, applicable, local, state, and federal regulations. Uncured material can be removed water. Cured material can only be removed mechanically.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard® Elastic Base Coat

Elastic, crack-bridging, anti-carbonation base coat for Sikagard® 550W Elastocolor

Description	Sikagard® Elastic Base Coat is an elastic, crack-bridging, anti-carbonation, base coat. Sikagard® Elastic Base Coat protects structures from the ingress of carbon dioxide and other aggressive atmospheric influences without acting as a vapor barrier.
Where To Use	As a base coat to build up the proper thickness for Sikagard® 550W Elastocolor.
Advantages	■ Provides resistance to weathering, frost and de-icing salts. ■ Excellent carbonation barrier. ■ Dynamic crack-bridging properties. ■ Water vapor permeable. ■ Can be applied by brush, roller, or airless spray. ■ Will bridge dynamically moving cracks 300 microns (12 mils) at 400 microns (16 mils) dft (smooth).
Coverage	**Theoretical per coat:** **Smooth:** Yield: 100 ft²/gal. Wet film thickness: 16 mils. Dry film thickness: 8 mils. **Textured:** Yield: 70 ft²/gal. Wet film thickness: 23 mils. Dry film thickness: 11 mils. Sikagard® 550W Elastocolor coating system is two coats, base coat and top coat, minimum at a total dry film thickness of 16 mils. All coverage dependent on porosity of substrate. In addition, allowance must be made for surface profile, unavoidable variation in application thickness, loss and waste.
Packaging	5 gal. re closable plastic pail.

Typical Data *(Material and curing conditions at 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened container.		
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using. Protect from freezing. If frozen, discard.		
Color	Off White		
Pot Life	Indefinite, provided proper care is taken in protecting the system from moisture, freezing, contamination, or evaporation.		
Curing Rate	Initial tack-free time: 2 hours	Final cure: < 24 hours	
Solids Content	**by weight**	**by volume**	
Smooth	63%	47%	
Textured	64%	49%	

Tensile Properties (ASTM D-412 modified)

7 days	Tensile Strength	165 psi (1.1 MPa)
	Elongation at Break	370%
30 days	Tensile Strength	210 psi (1.4 MPa)
	Elongation at Break	345%

Low Temperature Flexibility (ASTM C-711) 0°F 1/2" Mandrel, 180° Bend - No Change

Moisture Vapor Permeability (ASTM E-96) 10 Perms

Flame spread and smoke development (ASTM E-84-94)
Flame Spread: 0 Smoke Development: 5 Class Rating: A

Construction

How to Use

Surface Preparation

All surfaces to be coated must be dry, clean, sound, and frost-free with curing compound residues and any other foreign matter removed. An open textured sandpaper-like surface is ideal (CSP-3). Where necessary, surfaces should be prepared mechanically by blast cleaning or high pressure water jetting. Allow adequate time for drying. Bug holes or irregularities of substrate should be leveled with SikaTop®, Sika® MonoTop® leveling mortar or surface fillers as appropriate.

Priming: All porous areas or concrete with excessive porosity or chalky surfaces should be primed using Sikagard® 552W or SikaLatex® R to allow easy application of Sikagard® Elastic Base Coat.

Mixing

Stir all materials to ensure uniformity using a low speed (400-600 rpm) drill and Sika paddle.

Application

Any areas of glass or other surfaces should be masked. Recommended application temperatures (ambient and substrate) 45°-100°F (7°-37°C). Apply by brush, roller, or spray over entire area moving in one direction. To obtain the proper coverage, a minimum of two coats are necessary. Allow a minimum of 2 hours prior to re-coating. Fill all visible hairline cracks and surface defects with appropriate Sika repair mortar, leveling mortar or sealer prior to applying Sikagard® Elastic Base Coat to entire surface. Consult Technical Service for spray application techniques.

Note: Brushing provides more even and pore free coats with better penetration. Allow a minimum of 3 hours prior to re-coating. At lower temperatures and high humidity, the waiting time will be prolonged. As with all coatings, job site mock-ups should always be completed to confirm acceptability of workmanship and material.

Limitations

- Not designed for use as a traffic bearing surface.
- Substrate must be dry prior to the application. Allow sufficient time for the substrate to dry after rain or other inclement conditions, as this could cause bonding problems.
- Minimum age of normal concrete prior to the application is 14 days, depending on curing and drying conditions (moisture content must be below 5%).
- Minimum age of SikaTop® or Sika® MonoTop® prior to application is 3 days, depending on curing and drying conditions (moisture content must be below 5%).
- Do not thin.
- Crack bridging is dependent on dry film thickness.
- If liquid material is frozen it should not be used.
- During application, regular monitoring of wet film thickness and material consumption is advised to ensure that the correct layer thickness is achieved.
- Crack bridging abilities are reduced with textured grade.
- Crack bridging properties require that the minimum dry film thickness be maintained. In no circumstances should this be less than 200 microns (8 mils) total.
- Not for use as an aesthetic coating.
- Available in pastel base only.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard® FlexCoat - Cementitious Protective Coating

Two-component, polymer-modified, waterproof, cement-based coating system

Description	Sikagard® FlexCoat is a polymerized cementitious protective coating. It consists of a unique rubber-like polymer liquid (Part A) mixed at the time of application with a cement aggregate blend (Part B).
Where to Use	■ Balcony deck surfacing. ■ Concrete exterior restoration. ■ Sidewalk resurfacing. ■ Wall refinishing and installation coating. ■ Stadium renovation. ■ Swimming pool walkways.
Advantages	It can be applied over almost any clean, sound surface e.g. concrete, block, masonry, etc. for a number of different floor, wall and roof uses. Important characteristics of Sikagard® FlexCoat are its extraordinary adhesion coupled with its ability to withstand prolonged pedestrian and light vehicular traffic. In these respects, the material is far superior to conventional cementitious coatings. Sikagard® FlexCoat provides a waterproof coating which substantially reduces or prevents water penetration, freeze-thaw scaling and concrete carbonation. It is a "breathable" coating which releases normal entrapped vapor without loosening or blistering. Sikagard® FlexCoat is available in natural cement color. Sikalastic® Traffic Systems can be top coated with Sikagard® Flexcoat cement based systems. Please refer to the spec component of the Sikalastic®/Sikagard® Flexcoat Hybrid System.
Packaging	55 lb. bag. and 2.5 gallon liquid (packaged in 3.5 gallon pail) = 1 unit.
Coverage	Sikagard® FlexCoat is applied in two coats. Each coat should be applied at 250 ft.²/unit. A total of 60 mils total thickness is required. On-site results for coverage will vary.

Typical Data *(Material and curing conditions @ 75°F {24°C}*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened packaging
Storage Conditions	Store dry at 40°-95°F(4°-35°C). Condition material to 65°-75°F before using.
Adhesion (ASTM C-882), Type I	515 psi
Absorption Weight gain by 4" coated concrete cube after 21 days water immersion	<2%
Weathering (ASTM G23) Weatherometer) Method 1 procedure, 60 cycles	No visible degradation
Hydrocarbon Substances Resistance (ASTM D-1308, Spot Open Test) 21 days repeated reapplication of gasoline, motor oil SAE-10, jet fuel	No softening or attack
Resistance to Wind-Driven Rain Fed Spec. TT-C-558 (8 hrs.) & TT-P-0035 (24 hrs.) At 5" water pressure and 60 gal./hr. water flow	No water or dampness noted on back of test panels
Compressive Strength (ASTM C-109)	2,440 psi
Tensile Strength (ASTM C-190)	430 psi
Elongation (ASTM D-412)	12%
Shore Hardness (ASTM D-2240)	Durometer "A" - 82
Impact Resistance (MIL-D-3134, Para. 4.7.3.)	No cracking or detachment (2 lb. steel ball dropped from 8 ft. height on to coated steel plate)
Water Vapor Permeability (E-96)	1.96 perms/inches
Flammable Properties (ASTM E-84 Steiner Tunnel Test)	Flame Spread - 4 Smoke Density - 0
Fire Resistance (UL790)	Complies as Class A

Construction

How to Use

Surface Preparation

Prepare surfaces by removal of dirt, foreign matter plus patching in accordance with manufacturer's recommendations. An open textured surface ICRI CSP.3 is recommended. Deeper areas shall be patched with appropriate patch material like SikaQuick® or SikaRepair® products. The material is applied in multiple coats by brush, roller, trowel or spray to a typical thickness of 60 mils.

Mixing

Place the liquid component in appropriate mixing container. It is always recommended to start mixing with approximately 80% of the liquid. Add the powder while continuing to mix. Mix to a uniform consistency, maximum 3 minutes. Mechanically mix with a low-speed drill (400-600 rpm) and paddle.

Application

Pre-wet surface to SSD (Saturate Surface Dry). Insure good intimate contact with the substrate is achieved. Sikagard® FlexCoat can be applied with brush, roller, trowel or spray application.

Apply first coat of Sikagard® FlexCoat. Apply following coats (one or two depending on service conditions/ requirements) by brush, trowel roller or spray. Finish to specified texture. Color Finish (optional) – apply Sikagard® FlexCoat ATC acrylic top coat for color finish, when specified, in two coats by roller, brush or spray.

Caution: Do not install Sikagard® FlexCoat in cold weather (i.e. below 50ºF/10ºC) or when rainfall can be expected prior to material setting.

Tooling & Finishing

Curing Protect newly applied Sikagard® FlexCoat from direct sunlight, wind, rain and freezing.

Limitations

- Apply product in temperatures > 50ºF (7ºC) and rising.
- Minor shade variation may occur with natural cement color material.
- Not suitable for use in areas where acids or other aggressive chemicals are spilled.
- Top coats strongly recommended for color uniformity.
- Will reflect dynamic concrete cracks.
- Static and dynamic cracks can be detailed in accordance with accepted industry practices of using embedding mesh or other methods to reduce the reflecting of cracks.
- Sikagard® FlexCoat is a dense, cement-based waterproofing material that is vapor permeable. This product will not create a vapor barrier.
- Efflorescence in the existing substrate can result in the failure of the bond or discoloration of the surface if there are areas of concrete that are not protected from water ingress.
- Sikagard® FlexCoat has been tested with Sikagard® Flexcoat ATC. Use of any other top coat needs to be tested for compatibility and performance.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® 32 Hi-Mod.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard® FlexCoat ATC (Acrylic Top Coat)

Single-component, water-based, acrylic top coat for Sikagard® FlexCoat

Description	Sikagard® FlexCoat ATC is a single component acrylic finish coating for two-coat application to Sikagard® FlexCoat in new or recoat work. Important characteristics of Top Coat are its durability and excellent weathering qualities.
Where to Use	Sikagard® FlexCoat ATC can be used as a top coat where uniformity is desired or colors other than Concrete Gray are desired. Sikagard® FlexCoat is an acrylic coating that will require maintenance and recoat applications will be dependant on its exposure to foot traffic.
Advantages	■ Tough, long-lasting finish. ■ Weather-resistant. ■ Excellent color retention. ■ VOC compliant. ■ No mess - self-mixing. ■ Offers resistance to dirt pickup and mildew. ■ Cost effective protection. ■ Vapor permeable - allows each way water vapor diffusion (breathable)
Packaging	5 gallon pail.
Coverage	Theoretical per coat: 300 sq.ft./gal/coat. Wet film thickness: 5 mils. Dry film thickness: 2.5 mils. Normal coating system is two coats minimum at a total nominal dry film thickness of 5 mils. Consumption is obviously dependent on substrate. In addition, allowance must be made for surface profile, variations in applied film thickness, loss and waste.

Typical Data *(Material and curing conditions @ 75°F {24°C})*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened bags.
Storage Conditions	Store dry at 40-95°F(4-35°C)- Protect From freezing. Condition material to 65-75°F before using.
Colors	Ivory Cream, Adobe and Bright Gray
Vehicle Type	Acrylate copolymer in aqueous dispersion
Gloss 60 Gloss Meter	90+
Cleaning Solvent	Water
Physical Properties	
Flexibility	Excellent
Weather	Excellent
Abrasion	Excellent
Curing Time (77ºF)	
Dry to touch	1 hr.
Recoat	4 hrs.
Traffic	24 hrs.
Color Retention	No fading or deleterious effect. Atlas Twin-Arc Weatherometer, 20 mins. Cycle; 17 mins. Dry - 3 min., Wet - 300 hrs.
Accelerated Ultraviolet Light Exposure	No fading or visible deleterious effect under 10x magnification. Desert Sunshine Exposure Test, Inc., Phoenix, AZ “Procedure EMMA” (mirror-accelerated exposure).

Construction

Chemical Resistance

Environment	Immersion	Splash & Spillage	Exterior Weathering
Weak Acid	NR	LR	R
Alkali	LR	R	R
Solvent	NR	NR	NR
Salts	R	R	R
Water	R	R	R

R - Recommended
NR - Not recommended
LR - Limited recommendation

How to Use

Surface Preparation

All surfaces to be coated must be clean, dry, laitance free, sound and frost-free with all residues and any other contaminants removed. An open textured sandpaper-like surface is ideal. Where necessary, surfaces should be prepared mechanically by blast cleaning or high pressure water blasting. Allow adequate time for drying.

Mixing

Stir thoroughly to ensure uniformity using a low speed (400-600) rpm drill and Sika Paddle. To minimize color variations when using multiple batches, blend tow batches of Sikagard® FlexCoat ATC. Use one pail and maintain the second pail to repeat this procedure (boxing) for the entire application.

Application

Any areas of glass or other surfaces should be masked. Recommended application temperatures (ambient and substrate) 45°-95°F (5°-35°C). Sikagard® FlexCoat ATC can be applied by brush, roller, or spray over entire area moving in one direction. Allow a minimum of 20-90 minutes prior to recoating. At lower temperatures and high humidity, waiting time will be prolonged. At higher temperatures, work carefully to maintain a 'wet' edge. Sikagard® FlexCoat ATC is usually applied using a short nap lamb's wool roller. Sikagard® Flex- Coat ATC is particularly suitable for application by spray using the most standard spray painting equipment.

As with all coatings, job site mock-ups should always be completed to confirm acceptability of workmanship and material. Apply first coat of Sikagard® FlexCoat ATC. Apply following coats (one or two depending on service conditions/requirements) by roller, brush or spray. Finish to specified texture.

Caution: Do not install Sikagard® FlexCoat in cold weather (i.e. below 50ºF/10ºC) or when rainfall can be expected prior to material setting.

Over painting

Typically in normal 73°F and 50% relative humidity conditions, Sikagard® FlexCoat can be top coated with Sikagard® FlexCoat ATC after 24 hours.

Limitations

- Substrate must be dry prior to the application.
- Sikagard® FlexCoat ATC should not be applied at relative humidities greater than 90%, or if rain is forecast within the specified rain resistance period.
- Allow sufficient time for the substrate to dry after rain or other inclement conditions.
- Product must be protected from freezing. If frozen, discard.
- Not designed for use as a vehicular traffic bearing surface.
- During application, regular monitoring of wet film thickness and material consumption is advised to insure that the correct layer thickness is achieved.
- Developed and tested as the topcoat for Sikagard® FlexCoat product. Use of this material in any other applications will require testing.
- Do not store Sikagard® FlexCoat ATC in direct sunlight for prolonged periods.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
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Corregidora, Queretaro
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Phone: 52 442 2385800
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Construction

SikaTop® 144

Polymer-modified portland-cement coating

Description	SikaTop® 144 is a polymer-modified, 2-component, cementitious coating. Designed for use on concrete, mortar, and masonry substrates. Easily applied by brush, roller, or spray equipment. This fine-textured, abrasion-resistant coating is used for protection against deicing salts and for damp-proofing/waterproofing.
Where To Use	■ Use on grade, above, and below grade on concrete, masonry, and mortar. ■ Use on horizontal, vertical, and overhead surfaces, both interior and exterior. ■ Potable water tanks. ■ Use as a coating over newly repaired concrete to provide a monolithic/uniform appearance. ■ Use as a protective coating to reduce the affect of deicing salt on concrete. ■ Use as a protective coating for waterproofing, damp-proofing, and improved resistance to weathering. ■ Use on concrete and masonry substrates to improve abrasion resistance to foot traffic and light pneumatic-tire traffic. ■ Use to coat the backside of architectural curtain wall panels to prevent water intrusion from the outside.
Advantages	■ Bond strength ensures superior adhesion. ■ Increases resistance of substrate to deicing salts. ■ Does not create a vapor barrier. ■ No mix water needed, liquid co-polymer triggers special blend of cements, fillers, and admixtures. ■ Superior abrasion resistance. ■ No batching, factory proportioned unit ensures consistent composition and high quality. Non-flammable; low odor. ■ Easily applied to clean, sound substrates. ■ Approved for use in contact with potable water. ■ USDA-approved for incidental food contact. ■ May be overcoated with Sikagard® protective coatings.
Coverage	First Coat 100-150 ft./gal. Second Coat 150-200 ft./gal. Coverage is dependent upon substrate texture and porosity.
Packaging	5-gal. unit consisting of 3.5-gal. plastic pail of Component 'A' and a 45-lb. multi-wall bag of Component 'B'.

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened packaging.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 60°-75°F before using. Component 'A' must be protected from freezing. If frozen, discard.
Color	White and cement-gray.
Mixing Ratio	Factory proportioned unit. Mix entire contents.
Pot Life	Approximately 4 hours.
Tack-Free Time	Approximately 30 minutes.
Recoat Time	Allow 2 hours minimum between coats.
Application Thickness	8-16 mils/coat.

Abrasion Resistance (ASTM D-968 modified)
7 day 55 liters/mil

Bond Strength (Elcometer)
7 day concrete substrate failure

Water-Vapor Transmission: (ASTM E-96)
7 day 1 coat 27 grains/hr./ft.^{2}
2 coats 24 grains/hr./ft.^{2}

Construction

How to Use

Substrate	Concrete, mortar, and masonry.
Surface Preparation	All surfaces to be coated must be clean, sound, and saturated surface dry with no standing water at the time of application. Remove all dust, laitance, grease, oils, curing compounds, waxes, impregnations, and other contaminants. Should substrate require repair, patch with appropriate SikaTop® PLUS repair system. Preparation work must be done by mechanical equipment, i.e., blast cleaning, water blasting, or a combination of the two.
Mixing	All mixing must be done mechanically using a low-speed drill (400-600 rpm) and Sika paddle. Place approximately 1/2 Component 'A' into a clean mixing container. While mixing, slowly add all of Component 'B' and continue to mix until you achieve a uniform paste with no lumps. Be sure to scrape down sides of the mixing container at this time. Add remainder of Component 'A' and continue to mix until uniformly blended.
Application	SikaTop® 144 should only be applied over properly prepared surfaces with high-quality brushes, rollers, or "hopper-type'' spray equipment. Surface should be saturated surface dry prior to application. Two coats are recommended for maximum performance. Recommended thickness per coat is 8 to 16 mils. Apply thoroughly mixed coating generously with loaded brush or roller. Always finish off with light strokes blending back into coated area for uniform appearance. For application in direct sun or on a hot substrate, pre-wet surface and allow surface water to dissipate before coating.
Tooling & Finishing	**Curing:** Protect newly applied SikaTop® 144 from direct sunlight, wind, rain and freezing.
Limitations	■ Maximum thickness of applications is 16 mils/coat, thicker application can result in cracking. ■ Do not apply when rain is expected. ■ Minimum ambient and substrate temperature is 45°F and rising at the time of application. ■ For spray application, coating must be screened prior to loading of the spray hopper. ■ Coating may chalk and show water marks due to weathering. ■ For applications where coating will be subjected to immersion, a 3-day cure is recommended. ■ Coating will slightly yellow with age and exposure to UV light. ■ As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.

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B - Joint Sealing and Adhesive Systems

SEALANT • WATERPROOFING & RESTORATION INSTITUTE
Issued to: Sika Corporation
Product: Sikaflex® 15LM
C719: Pass ✔ Ext:+100% Comp:-50%
Substrate: Mortar, Aluminum, Glass
[mortar substrate primed with Sika Primer 429]
Validation Date: 2/27/14 – 2/26/19
No. 214-SIK817

SEALANT VALIDATION
www.swrionline.org

Sikaflex®-15 LM

High-performance, low-modulus elastomeric sealant

Construction

Description

Sikaflex-15 LM is a low-modulus, high-performance, 1-component, polyurethane-based, non-sag elastomeric sealant. Meets Federal Specification TT-S-00230C, Type II, Class A; ASTM C-920, Type S, Grade NS, Class 100/50, use T, NT, G, A, O, M; Federal Specification for silicones - TT-S-001543 A, Type non-sag. Tested in accordance with ASTM C-1382 for use in EIFS systems.

Where to use

- Excellent for moving joints in vertical applications.
- Suitable for use between similar as well as dissimilar materials.
- Typical applications include joints in concrete panel and wall systems, around window and door frames, reglets, flashing, common roofing detail applications, etc.
- Exceptional sealant choice for high-rise and facade applications where high movement capability is required.
- An effective sealant for use in Exterior Insulation Finish Systems (EIFS).

Advantages

- Low modulus of elasticity.
- Easy and ready to use.
- Eliminates time, effort, waste, and equipment clean-up.
- Cures to a durable, flexible consistency.
- Exceptional cut and tear resistance.
- Stress relaxation properties.
- Excellent adhesion.
- Bonds to most construction materials without a primer.
- Paintable with water-, oil- and rubber based paints.
- Excellent resistance to aging, weathering.
- Jet fuel resistant.
- Proven in tough climates around the world.
- Non-leaching.
- Capable of +100% / -50% joint movement.
- Two-hour UL fire rating when used with Ultra Block®.

Chemical Resistance

Good resistance to water, diluted acids, and diluted alkalines. Not normally for fully immersed conditions Consult Technical Service for specific data.

Packaging

10.1 fl. oz. (300 mL), 20 fl. oz. (591 mL), 4.5 gal (17 L) in a 5 gal pail, 52 gal (197 L) in a 55 gal drum

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life

10.1 fl. oz. cartridges	12 months
20 fl. oz. uni-pac sausages	12 months
5 gal. pails	6 months
55 gal. drums	6 months

Storage Conditions Store at 40°-95°F. **Condition material to 65°-75°F before using.**

Colors White, Colonial White, Aluminum Gray, Limestone, Black, Dark Bronze, Capitol Tan, Off-White, Beige, Almond, Coping Stone, Aluminum Stone, Medium Bronze, Redwood Tan, Hartford Green and Stone. Special colors on request (min. volume).

Application Temperature 40° to 100°F. Sealant should be installed when joint is at mid-range of its anticipated movement.

Service Range -40° to 170°F (-40° to 75°C)

Curing Rate

Tack-free time	2 to 6 hours (TT-S-00230C)
Tack-free to touch	3 hours
Final cure	7 to 10 days

Recovery >80%

Shore A Hardness (ASTM D-2240) **21 day** 25 ± 5

Tensile Properties (ASTM D-412)

21 day	Tensile Stress	125 psi (.86 MPa)
	Elongation at Break	700%
	Stress at 100%	50 psi (.34 MPa)

Adhesion in Peel (TT-S-00230C)

Substrate	Peel Strength	Adhesion Loss
Aluminum	25 lb.	0%
Glass	25 lb.	0%
Concrete	30 lb.	0%

Weathering Resistance Excellent

Chemical Resistance Good resistance to water, diluted acids, and diluted alkalines. Not normally for fully immersed conditions. Consult Technical Service for specific data.

Construction

Coverage

10.1 oz Cartridge: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	24.3		
	3/8"	16.2	10.8	
	1/2"	12.1	8.1	6.1
	3/4"	8.1	5.4	4.0
	1"			3.0
	1.25"			2.4
	1.5"			2.0

20 oz Sausage: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	48.1		
	3/8"	32.1	21.4	
	1/2"	24.1	16.0	12.0
	3/4"	16.0	10.7	8.0
	1"			6.0
	1.25"			4.8
	1.5"			4.0

1 gallon: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

How to Use

Surface Preparation

Clean all surfaces. Joint walls must be sound, clean, dry, frost-free, and free of oil and grease. Curing compound residues and any other foreign matters must be thoroughly removed. A roughened surface will also enhance bond. Install bond breaker tape or backer rod to prevent bond at base of joint.

Priming

Priming is typically not necessary. Most substrates only require priming if testing indicates a need, i.e. due to excessively porous substrate. Consult Sikaflex Primer Technical Data Sheet or Technical Service for complete information as to primer requirements.

Note: Most Exterior Insulation Finish Systems (EIFS) manufacturers recommend the use of a primer. When EIFS manufacturer specifies a primer or if on-site bond testing indicates a primer is necessary, Sikaflex 429 primer is recommended. On-site adhesion testing is recommended with final system prior to the start of a job.

Application

Recommended application temperatures, 40°-100°F. For cold-weather applications, pre-conditioning units to approximately 70°F is recommended. Only apply sealant to clean, sound, dry, and frost-free substrates.

Sikaflex-15 LM should be applied into joints when joint slot is at mid-point of its designed expansion and contraction. Place nozzle of gun into bottom of the joint filling entire joint. Keep nozzle in the sealant, and continue on with a steady flow of sealant preceding the nozzle to avoid air entrapment. Avoid overlapping of sealant to eliminate entrapment of air.

Tooling and Finishing

Tool sealant to ensure full contact with joint walls and remove air entrapment. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio.

Removal

Use personal protective equipment (chemical resistant gloves/ goggles/clothing). Without direct contact, remove spilled or excess product and placed in suitable sealed container. Dispose of excess product and container in accordance with applicable environmental regulations.

Over Painting

Allow 1 week cure at standard conditions when using Sikaflex-15 LM in total water immersion situations and prior to painting.

Limitations

- Allow 1 week cure at standard conditions when using Sikaflex-15 LM in total water immersion situations and prior to painting.
- Maximum depth of sealant must not exceed 1/2 in.; minimum depth is 1/4 in.
- Do not cure in the presence of curing silicone sealants.
- Avoid contact with alcohol, and other solvent cleaners, during cure.
- When overcoating, an on site test is recommended to determine compatibility.
- Do not apply when moisture-vapor-transmission condition exists from the substrate, as this can cause bubbling within the sealant.
- Use opened cartridges and uni-pac sausages the same day.
- When applying sealant, avoid air-entrapment.
- Since system is moisture-cured, permit sufficient exposure to air.
- White color tends to yellow slightly when exposed to ultraviolet rays.
- Light colors can yellow if exposed to direct gas fired heating elements.
- The ultimate performance of Sikaflex-15 LM depends on good joint design and proper application. With joint surfaces properly prepared and sealed, movement of +100% -50% can be tolerated.
- Do not use in contact with bituminous/asphaltic materials.
- Joint sealant needs to be recessed in properly designed traffic bearing joint

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Product Data Sheet
Edition 5.13.2016
Sikaflex-1a

Sikaflex®-1a

One part polyurethane, elastomeric sealant/adhesive

SEALANT • WATERPROOFING & RESTORATION INSTITUTE
Issued to: Sika Corporation
Product: Sikaflex®-1A
C719: Pass ✔ Ext:+35% Comp:-35%
Substrate: Mortar, Aluminum, Glass
[mortar substrate primed with Sika Primer 429]
C661: Rating 40
Validation Date: 8/3/12 – 8/2/17
No. 0812-S11211 *Copyright © 2012*
SEALANT VALIDATION
www.swrionline.org

Description
Sikaflex-1a is a premium-grade, high-performance, moisture-cured, 1-component, polyurethane-based, non-sag elastomeric sealant. Meets Federal specification TT-S-00230C, Type II, Class A. Meets ASTM C-920, Type S, Grade NS, Class 35, use T, NT, O, M, G, I; Canadian standard CAN/CGSB 19.13-M87.

Where to Use
- Designed for all types of joints where maximum depth of sealant will not exceed 1/2 in.
- Excellent for small joints and fillets, windows, door frames, reglets, flashing, common roofing detail applications, and many construction adhesive applications.
- Suitable for vertical and horizontal joints; readily placeable at 40°F.
- Has many applications as an elastic adhesive between materials with dissimilar coefficients of expansion.
- Submerged conditions, such as canal and reservoir joints.

Advantages
- Eliminates time, effort, and equipment for mixing, filling cartridges, pre-heating or thawing, and cleaning of equipment.
- Fast tack-free and final cure times.
- High elasticity - cures to a tough, durable, flexible consistency with exceptional cut and tear-resistance.
- Stress relaxation.
- Excellent adhesion - bonds to most construction materials without a primer.
- Excellent resistance to aging, weathering.
- Proven in tough climates around the world.
- Odorless, non-staining.
- et fuel resistant.
- Certified to the NSF/ANSI Standard 61 for potable water.
- Urethane-based; suggested by EPA for radon reduction.
- Paintable with water-, oil- and rubber-based paints.
- Capable of ±35% joint movement.

Chemical Resistance
Good resistance to water, diluted acids, and diluted alkalines. Consult Technical Service for specific data.

Packaging
10.1 fl. oz. (300 mL), 20 fl. oz. (591 mL), 4.5 gal (17 L) in a 5 gal pail, 52 gal (197 L) in a 55 gal drum

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	10.1 fl. oz. cartridges	12 months
	20 fl. oz. uni-pac sausages	12 months
	5 gallon pail	6 months
	55 gallon drum	6 months
Storage Conditions	Store at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.	
VOC Content	40 g/L	
Colors	White, colonial white, aluminum gray, limestone, black, dark bronze, capitol tan, stone and medium bronze. Special architectural colors on request.	
Application Temperature	40° to 100°F. Sealant should be installed when joint is at mid-range of its anticipated movement.	
Service Range	-40° to 170°F	
Curing Rate	Tack-free time	3 to 6 hours
	Tack-free to touch	3 hours
	Final cure	4 to 7 days
Tear Strength (ASTM D-624)	55 lb./in.	
Shore A Hardness (ASTM C-661)	21 day	40±5
Movement Capability (ASTM C-719)	+/- 35%	

Tensile Properties (ASTM D-412)

21 day	Tensile Stress	175 psi (1.21 MPa)
	Elongation at Break	550%
	Stress at 100%	85 psi (0.59 MPa)

Adhesion in Peel (TT-S-00230C, ASTM C 794)

Substrate	Peel Strength	Adhesion Loss
Concrete	20 lb.	0%
Aluminum	20 lb.	0%
Glass	20 lb.	0%

Weathering Resistance Excellent

Construction

Coverage

10.1 oz Cartridge: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	24.3		
3/8"	16.2	10.8	
1/2"	12.1	8.1	6.1
3/4"	8.1	5.4	4.0
1"			3.0
1.25"			2.4
1.5"			2.0

20 oz Sausage: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	48.1		
3/8"	32.1	21.4	
1/2"	24.1	16.0	12.0
3/4"	16.0	10.7	8.0
1"			6.0
1.25"			4.8
1.5"			4.0

1 gallon: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	307.9		
3/8"	205.3	136.8	
1/2"	153.9	102.6	77.0
3/4"	102.6	68.4	51.3
1"			38.5
1.25"			30.8
1.5"			25.7

How to Use

Surface Preparation

Clean all surfaces. Joint walls must be sound, clean, dry, frost-free, and free of oil and grease. Curing compound residues and any other foreign matter must be thoroughly removed. A roughened surface will also enhance bond. Install bond breaker tape or backer rod to prevent bond at base of joint.

Priming

Priming is not usually necessary. Most substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure.

Consult Sikaflex Primer Technical Data Sheet or Technical Service for additional information on priming.

Application

Recommended application temperatures: 40°-100°F.

For cold weather application, condition units at approximately 70°F; remove prior to using. For best performance, Sikaflex-1a should be gunned into joint when joint slot is at mid-point of its designed expansion and contraction. Place nozzle of gun into bottom of the joint and fill entire joint. Keep the nozzle in the sealant, continue on with a steady flow of sealant preceding the nozzle to avoid air entrapment. Avoid overlapping of sealant to eliminate entrapment of air.

Tooling and Finishing

Tool sealant to ensure full contact with joint walls and remove air entrapment. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio, For use in horizontal joints in traffic areas, the absolute minimum depth of the sealant is 1/2 in. and closed cell backer rod is recommended.

Removal

Use personal protective equipment (chemical resistant gloves/goggles/clothing). Without direct contact, remove spilled or excess product and placed in suitable sealed container. Dispose of excess product and container in accordance with applicable environmental regulations.

Over Painting

Allow 1-week cure at standard conditions when using Sikaflex-1a in total water immersion situations and prior to painting.

Limitations

- When overcoating with water, oil and rubber based paints, compatibility and adhesion testing is essential.
- Sealant should be allowed to cure for 7 days prior to overcoating.
- Avoid exposure to high levels of chlorine. (Maximum continuous level is 5 ppm of chlorine.)
- Maximum depth of sealant must not exceed 1/2 in.; minimum depth is 1/4 in.
- Maximum expansion and contraction should not exceed 25% of average joint width.
- Do not cure in the presence of curing silicone sealants.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Do not apply when moisture-vapor-transmission condition exists from the substrate as this can cause bubbling within the sealant.
- Use opened cartridges and uni-pac sausages the same day.
- When applying sealant, avoid air-entrapment.
- Since system is moisture-cured, permit sufficient exposure to air.
- White color tends to yellow slightly when exposed to ultraviolet rays.
- Light colors can yellow if exposed to direct gas fired heating element.
- The ultimate performance of Sikaflex-1a depends on good joint design and proper application with joint surfaces properly prepared.
- The depth of sealant in horizontal joints subject to traffic is 1/2 in.
- Do not tool with detergent or soap solutions.
- Do not use in contact with bituminous/asphaltic materials.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikaflex®-1a+

Description	Sikaflex-1a+ is a premium-grade, high-performance, moisture-cured, 1-component, polyurethane-based, non-sag elastomeric sealant. Sikaflex-1a+ can be used in green and damp concrete applications. Meets Federal Specification TT-S-00230C, Type II, Class A. Meets ASTM C-920, Type S, Grade NS, Class 35, use T, NT, O, M, G, I.
Where to Use	■ Designed for all types of joints where maximum depth of sealant will not exceed 1/2 in. ■ Excellent for small joints and fillets, windows, door frames, reglets, flashing, common roofing detail applictions, and many construction adhesive applications. ■ Suitable for vertical and horizontal joints; readily placeable at 40°F ■ Has many applications as an elastic adhesive between materials with dissimilar coefficients of expansion. ■ Submerged conditions, such as canal and reservoir joints.
Advantages	■ Eliminates time, effort, and equipment for mixing, filling cartridges, pre-heating or thawing, and cleaning of equipment. ■ Fast tack-free and final cure times. ■ High elasticity - cures to a tough, durable, flexible consistency with exceptional cut and tear -resistance. ■ Stress relaxation. ■ Excellent adhesion - bonds to most construction materials without a primer. ■ Excellent resistance to aging, weathering. ■ Proven in tough climates around the world. ■ Can be applied to green concrete 24 hours after pour ■ Can be applied to damp concrete 1 hour after getting wet ■ Odorless, non-staining. ■ Jet fuel resistant. ■ Certified to the NSF/ANSI Standard 61 for potable water. ■ Urethane-based; suggested by EPA for radon reduction. ■ Paintable with water-, oil- and rubber-based paints. ■ Capable of ±35% joint movement.
Chemical Resistance	Good resistance to water, diluted acids, and diluted alkalines. Consult Technical Service for specific data.
Packaging	10.1 fl. oz. (300 mL) Cartridge 20 fl. oz. uni-pac Sausages

Typical Data (Material and curing conditions @ 75°F (24°C) and 50% RH)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	12 months in original, unopened packaging.
Storage:	Store at 40°-95°F (4°-35°C).
Product Conditioning:	Condition material to 65°-75°F before using.
Colors:	White & Limestone
Application Temperature:	40° to 100°F. Sealant should be installed when joint is at mid-range of its anticipated movement.
Service Range:	-40° to 170°F
Curing Rate:	Tack-free time 3 to 6 hours Tack-free to touch 3 hours
Final cure:	4 to 7 days
Tear Strength (ASTM D-624):	55 lb./in.
Shore A Hardness (ASTM C-661):	21 day 45±5
Movement Capability (ASTM C-719):	+/- 35%
Tensile Properties (ASTM D-412):	
21 day Tensile Stress	175 psi (1.21 MPa)
Elongation @ Break	550%
Stress @ 100%	85 psi (0.59 MPa)
Adhesion in Peel (TT-S-00230C, ASTM C 794):	
Substrate Peel Strength Adhesion Loss	Concrete 20 lb. 0% Aluminum 20 lb. 0% Glass 20 lb. 0%

Coverage

10.1 oz Cartridge: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	24.3		
	3/8"	16.2	10.8	
	1/2"	12.1	8.1	6.1
	3/4"	8.1	5.4	4.0
	1"			3.0
	1.25"			2.4
	1.5"			2.0

20 oz Sausage: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	48.1		
	3/8"	32.1	21.4	
	1/2"	24.1	16.0	12.0
	3/4"	16.0	10.7	8.0
	1"			6.0
	1.25"			4.8
	1.5"			4.0

How to Use

Surface Preparation

Clean all surfaces. Joint walls must be sound, clean, frost-free, and free of oil and grease. Curing compound residues and any other foreign matter must be thoroughly removed. A roughened surface will also enhance bond. Install bond breaker tape or backer rod to prevent bond at base of joint. Priming is not usually necessary. Most substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure.

For green concrete applications control joints must be cut 8 hours prior to sealant installation and in expansion joint forms must be removed 4 hours prior to sealant installation. For wet concrete applications all excess or standing water must be displaced and concrete must then dry for a minimum of 60 min prior to sealant installation.
Consult Sikaflex Primer Technical Data Sheet or Technical Service for additional information on priming.

Application

Recommended application temperatures: 40°-100°F. For cold weather application, condition units at approximately 70°F; remove prior to using. For best performance, Sikaflex-1a+ should be gunned into joint when joint slot is at mid-point of its designed expansion and contraction. Place nozzle of gun into bottom of the joint and fill entire joint. Keep the nozzle in the sealant, continue on with a steady flow of sealant preceding the nozzle to avoid air entrapment. Avoid overlapping of sealant to eliminate entrapment of air.

Sikaflex-1a+ can be applied on green concrete after the concrete has cured for a minimum of 24 hours at 75°F.Control joints must be cut and open for min of 8 hours prior to application. Expansion joints must have forms removed a minimum of 4 hours prior to application. For damp concrete applications Sikaflex-1a+ can be applied 60 minutes after any and all water has been displaced.

Tooling and Finishing

Tool sealant to ensure full contact with joint walls and remove air entrapment. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio, For use in horizontal joints in traffic areas, the absolute minimum depth of the sealant is 1/2 in. and closed cell backer rod is recommended.

Removal

Use personal protective equipment (chemical resistant gloves/goggles/clothing). Without direct contact, remove spilled or excess product and placed in suitable sealed container. Dispose of excess product and container in accordance with applicable environmental regulations.

Over Painting

Allow 1-week cure at standard conditions when using Sikaflex-1a+ in total water immersion situations and prior to painting.

Limitations

- Allow 1 week cure at standard conditions when using Sikaflex-1a+ in total water immersion situations.
- When overcoating with water, oil and rubber based paints, compatibility and adhesion testing is essential.
- Sealant should be allowed to cure for 7 days prior to overcoating
- Avoid exposure to high levels of chlorine. (Maximum continuous level is 5 ppm of chlorine.)
- Maximum depth of sealant must not exceed 1/2 in.; minimum depth is 1/4 in.
- Maximum expansion and contraction should not exceed 35% of average joint width.
- Do not cure in the presence of curing silicone sealants.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Do not apply when moisture-vapor-transmission condition exists from the substrate as this can cause bubbling within the sealant.
- Use opened cartridges and uni-pac sausages the same day.
- When applying sealant, avoid air-entrapment.
- Since system is moisture-cured, permit sufficient exposure to air.
- White color tends to yellow slightly when exposed to ultraviolet rays.
- Light colors can yellow if exposed to direct gas fired heating element.
- The ultimate performance of Sikaflex-1a+ depends on good joint design and proper application with joint surfaces properly prepared.
- The depth of sealant in horizontal joints subject to traffic is 1/2 in.
- Do not tool with detergent or soap solutions.
- Do not use in contact with bituminous/asphaltic materials.
- In green concrete applications sealing joints in poor or low strength concrete 24 hours after pour may impact ability of sealant to gain proper adhesion.
- In damp concrete applications all standing water and excess water must be eliminated prior to the 60 minute waiting time.

Construction

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikaflex®-1c SL

High performance, self-leveling, 1-part polyurethane sealant

Description

Sikaflex-1c SL is a single component, self-leveling, premium-grade polyurethane sealant with an accelerated curing capacity. Meets Federal Specification TT-S-00230C, Type I, Class A. Meets ASTM C-920, Type S, Grade P, Class 25, use T, M, A, G, I.

Where to Use

Sikaflex-1c SL is used to seal horizontal expansion joints in concrete and cementitious slabs such as:

- Sidewalks
- Balconies
- Pavements
- Terraces
- Warehouses
- Factories
- Civil Structures
- Plazas
- Pitch Pans
- Canals and Water Treatment

Advantages

- 1-component, no mixing
- Self-leveling, pourable
- Accelerated curing
- Can be applied to green concrete 24 hours after pour
- Can be applied to damp concrete 1 hour after getting wet
- Extremely elastic
- High durability
- Resists aging, weathering
- Excellent adhesion
- Convenient, easy-to-use packaging
- Jet fuel resistant
- Water Immersion Applications

Packaging

10.1 fl. oz. moisture-proof composite cartridges, 24/case.
29 oz. moisture-proof composite cartridges,12/case.
4.5 gallon pails. 50 gallon drums.

Typical Data (Material and curing conditions 73°F (23°C) and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	10.1 oz. cartridge 1 year in original unopened packaging. 29 oz. cartridge 1 year in original unopened packaging. 4.5 gallon pail 6 months. 50 gallon drum 6 months.
Storage Conditions:	Store at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.
Color:	Limestone
VOC Content:	40 g/l
Application Temperature:	40°-100°F. Sealant should be installed when joint is at mid-range of its anticipated movement.
Service Range:	-40° to 170°F.
Curing Rate Tack-free Time:	1 to 2 hours. Final Cure: 3 to 5 days
Recovery:	>90%
Shore 'A' Hardness (ASTM D-2240):	21 Day 40 ± 5
Tensile Properties (ASTM D-412):	
21 Day Tensile Strength:	150 psi
Elongation @ Break:	320%
Stress @ 100%:	110 psi
Adhesion in Peel (ASTM C-794):	
Substrate Peel Strength Adhesion:	
Mortar > 28 lbs.	0% Adhesion Loss
Aluminum > 30 lbs.	0% Adhesion Loss
Glass > 37 lbs.	0% Adhesion Loss
Joint Movement:	± 25%
Weathering Resistance:	Excellent

Construction

Coverage

10.1 oz Cartridge: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	24.3		
3/8"	16.2	10.8	
1/2"	12.1	8.1	6.1
3/4"	8.1	5.4	4.0
1"			3.0
1.25"			2.4
1.5"			2.0

29 oz Cartridge: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	69.8		
3/8"	46.5	31.0	
1/2"	34.9	23.3	17.4
3/4"	23.3	15.5	11.6
1"			8.7
1.25"			7.0
1.5"			5.8

1 gallon: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	307.9		
3/8"	205.3	136.8	
1/2"	153.9	102.6	77.0
3/4"	102.6	68.4	51.3
1"			38.5
1.25"			30.8
1.5"			25.7

How to Use

Surface Preparation

Surface Preparation Clean all surfaces. Joint walls must be sound, clean,dry, frost-free, and free of oil and grease. Curing compound residues and any other foreign matter must be thoroughly removed. A mechanically roughened surface will also enhance bond. For green concrete applications control joints must be cut 8 hours (min.) prior to sealant installation and expansion joint forms must be removed 4 hours (min.) prior to sealant installation. For wet concrete applications all excess or standing water must be displaced and concrete must then dry for a minimum of 60 min prior to sealant installation. Install bond breaker tape or backer rod to prevent bond at base of joint.

Priming

Priming is not usually necessary. Substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure. Consult Sikaflex Primer Technical Data Sheet or Technical Service for additional information on priming.

Application

Recommended application temperatures: 40°-100°F. Preconditioning sealant to approximately 70°F is necessary when working at extremes. For best performance, Sikaflex-1c SL should be poured into joint when joint slot is at mid-point of its designed expansion and contraction. Pour sealant into joint slot in one direction and allow sealant to flow and level out as necessary. Tool as required, although minimum tooling is necessary. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio. Always use bond breaker tape or closed cell backer rod for support on horizontal joints.

Sikaflex-1c SL can be applied in green concrete after the concrete has cured for a minimum of 24 hours at 75°F. Control joints must be cut and open for min of 8 hours prior to application. Expansion joints must have forms removed a minimum of 4 hours prior to application. For damp concrete applications Sikaflex-1c SL can be applied 60 minutes after any and all water has been displaced.

Limitations

- Allow 1 week cure at standard conditions when using Sikaflex-1c SL in total water immersion situations.
- When overcoating with water, oil and rubber bassed paints, compatibility and adhesion testing is essential.
- Maximum exposure level of chlorine is 5 ppm.
- In joints subject to movement - maximum depth of sealant must not exceed 1/2 in.; minimum depth is 1/4 in.
- Minimum depth of sealant for horizontal joints subject to traffic is 1/2 in.
- Maximum expansion and contraction should not exceed 25% of average joint width.
- Do not cure in the presence of curing silicone sealants.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Do not apply when moisture-vapor transmission condition exists from the substrate as this can cause bubbling within the sealant.
- Use opened cartridges the same day.
- The ultimate performance of Sikaflex-1c SL depends on good joint design and proper application with joint surfaces properly prepared.
- Do not use in contact with bituminous/asphaltic materials.
- In green concrete applications sealing joints in poor or low strength concrete 24 hours after pour may impact ability of sealant to gain proper adhesion.
- In damp concrete applications all standing water and excess water must be eliminated prior to the 60 minute waiting time.

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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikaflex®-2c NS

Two-component, non-sag, polyurethane elastomeric sealant

Description	Sikaflex-2c NS is a 2-component, premium-grade, polyurethane-based, elastomeric sealant. It is principally a chemical cure in a non-sag consistency. Meets ASTM C-920, Type M, Grade NS, Class 25, use T, NT, M, G, A, O, I and Federal Specification TT-S-00227E, Type II, Class A. Tested in accordance with ASTM C-1382 for use in EIFS systems.
Where to use	■ Intended for use in all properly designed working joints with a minimum depth of 1/4 inch. ■ Ideal for vertical and horizontal applications. ■ Placeable at temperatures as low as 40°F. ■ Adheres to most substrates commonly found in construction. ■ An effective sealant for use in Exterior Insulation Finish Systems (EIFS). ■ Submerged environments, such as canal and reservoir joints.
Advantages	■ Capable of ±50% joint movement. ■ Chemical cure allows the sealant to be placed in joints exceeding 1/2 in. in depth. ■ High elasticity with a tough, durable, flexible consistency. ■ Exceptional cut and tear resistance. ■ Exceptional adhesion to most substrates without priming. ■ Available in 35 architectural colors. ■ Color uniformity assured via Color-pak system. ■ Available in pre-pigmented Limestone Gray (no Color-pak needed). ■ Non-sag even in wide joints. ■ Easy to mix. ■ Paintable with water-, oil-, and rubber-base paints. ■ Jet fuel resistant.
Packaging	1.5 gal. unit. 3 gal units.

Typical Data *(Material and curing conditions 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life	One year in original, unopened containers.	
Storage Conditions	Store dry at 40°-95°F (4°-35°C). **Condition material to 65°-75°F before using.**	
Colors	A wide range of architectural colors are available. Special colors available on request.	
Application Temperature	40° to 100°F, ambient and substrate temperatures. Sealant should be installed when joint is at mid-range of its anticipated movement.	
Service Range	-40° to 170°F (-40°-75°C).	
Curing Rate (ASTM C-679)		
Tack-Free Time	6-8 hrs.	
Final Cure	3 days	
Application Life	3-4 hrs.	
Tear Strength	ASTM D-624	45 lb./in.
Shore A Hardness	ASTM D-2240	25 ± 5
Tensile Properties (ASTM D-412)		
Tensile Strength at Break	95 psi	
Tensile Elongation	500%	
Stress at 100%	70 psi	
Adhesion in Peel (Fed Spec. TT-S-00227E)		
Substrate	**Peel Strength**	**% Adhesion Loss**
Concrete	25 lb.	Zero
Weathering Resistance	Excellent	
Chemical Resistance	Good resistance to water, diluted acids, diluted alkalines, and residential sewage. Consult Technical Service at 1-800-933-SIKA for specific data.	

Construction

Coverage

1 gallon: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

How to Use

Surface Preparation

All joint-wall surfaces must be clean, sound, and frost-free. Joint walls must be free of oils, grease, curing compound residues, and any other foreign matter that might prevent bond. Ideally this should be accomplished by mechanical means. Bond breaker tape or backer rod must be used in bottom of joint to prevent bond.

Priming is typically not necessary. Most substrates only require priming if sealant will be subjected to water immersion after cure. Testing should be done, however, on questionable substrates, to determine if priming is needed. Consult Technical Service or Sikaflex Primer Technical Data Sheet for additional information on priming. Note: Most Exterior Insulation Finish Systems (EIFS) manufacturers recommend the use of a primer. When EIFS manufacturer specifies a primer or if on-site bond testing indicates a primer is necessary, Sikaflex 429 primer is recommended. On-site adhesion testing is recommended with final system prior to the start of a job.

Mixing

Pour entire contents of Component 'B' into pail of Component 'A'. Add entire contents of Color-pak into pail and mix with a low-speed drill (400-600 rpm) and Sikaflex paddle.* Mix for 3-5 minutes to achieve a uniform color and consistency. Scrape down sides of pail periodically. Avoid entrapment of air during mixing. When mixing in cold weather (<50°F), do not force the mixing paddle to the bottom of the pail. After adding Component 'B' and Color-pak into Component 'A', mix the top 1/2 to 3/4 of the pail during the first minute of mixing. After scraping down the sides of the pail, mix again for another minute. The paddle should reach the bottom of the pail between the first and second minute of mixing. Scrape down the sides of the pail a second time and then mix for an additional 2-3 minutes until the sealant is well blended. Color-pak must be used with tint base. For pre-pigmented Limestone base, just mix with low speed drill and Sikaflex paddle (no Color-pak needed).

Application

Recommended application temperatures 40°-100°F. Pre-conditioning units to approximately 70°F is necessary when working at extremes. Move pre-conditioned units to work areas just prior to application.

Apply sealant only to clean, sound, dry, and frost-free substrates. Sikaflex-2c should be applied into joints when joint slot is at mid-point of its designed expansion and contraction.

To place, load directly into bulk gun or use a follower plate loading system. Place nozzle of gun into bottom of joint and fill entire joint. Keeping the nozzle deep in the sealant, continue with a steady flow of sealant preceding nozzle to avoid air entrapment. Also, avoid overlapping of sealant since this also entraps air. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio. Tool sealant to ensure full contact with joint walls and remove air entrapment.

Limitations

- The ultimate performance of Sikaflex-2c NS depends on good joint design and proper application.
- Minimum depth in working joint is 1/4 in.
- Maximum expansion and contraction should not exceed 50% of average joint width.
- Do not cure in the presence of curing silicones.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Allow 3 day cure before subjecting sealant to total water immersion. Primer is required if sealant will be subjected to total water immersion.
- Avoid exposure to high levels of chlorine. (Maximum level is 5 ppm).
- Do not apply when moisture vapor transmission exists since this can cause bubbling within the sealant.
- Avoid over-mixing sealant.
- White color tends to yellow slightly when exposed to ultraviolet rays.
- Light colors can yellow if exposed to direct gas fired heating elements.
- When overcoating: an on-site test is recommended to determine actual compatibility.
- Rigid paints, coatings or primers will crack when placed over elastomeric sealants experiencing expansion or contraction
- The depth of sealant in horizontal joints subject to traffic is 1/2 inch.
- When used in areas with heavy traffic either recess joint or use TG (Traffic Grade) Additive to increase durability.

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Corregidora, Queretaro
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Construction

Sikaflex®-2c NS EZ Mix

Two-component, non-sag, polyurethane elastomeric sealant

Description	Sikaflex-2c NS EZ Mix is a 2-component, premium-grade, polyurethane-based, elastomeric sealant. It is principally a chemical cure in a non-sag consistency. Meets ASTM C-920, Type M, Grade NS, Class 25, use T, NT, M, G, A, O and Federal Specification TT-S-00227E, Type II, Class A. Meets CAN/CGSB 19.24 - M90.
Where to Use	■ Intended for use in all properly designed working joints with a minimum depth of ¼ inch. ■ Ideal for vertical and horizontal applications. ■ Placeable at temperatures as low as 40°F. ■ Adheres to most substrates commonly found in construction. ■ An effective sealant for use in Exterior Insulation Finish Systems (EIFS). ■ Submerged environments, such as canal and reservoir joints.
Advantages	■ Capable of ±50% joint movement. ■ Chemical cure allows the sealant to be placed in joints exceeding ½ in. in depth. ■ High elasticity with a tough, durable, flexible consistency. ■ Exceptional cut and tear resistance. ■ Exceptional adhesion to most substrates without priming. ■ Available in 35 architectural colors. ■ Color uniformity assured via Color-pak system. ■ Available in pre-pigmented Limestone Gray (no Color-pak needed). ■ Non-sag even in wide joints. ■ Certified to the NSF/ANSI Standard 61 for potable water. ■ Easy to mix. ■ Paintable with water-, oil-, and rubber-base paints. ■ Jet fuel resistant. ■ Cold weather booster for initial tack (see reverse side for data). ■ Shore A hardness can be increased by using “TG” additive. See Sikaflex-2c NS TG data sheet for specific details.
Packaging	1.5 gal. unit, 3 gal unit.

Typical Data *(Material and curing conditions 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life	One year in original, unopened containers.	
Storage Conditions	Store dry at 40°-95°F (4°-35°C). **Condition material to 65°-75°F before using.**	
Colors	A wide range of architectural colors are available. Special colors available on request.	
Application Temperature	40° to 100°F, ambient and substrate temperatures. Sealant should be installed when joint is at mid-range of its anticipated movement.	
Service Range	-40° to 170°F (-40°-75°C).	
Curing Rate (ASTM C-679)	Tack-Free Time Final Cure	8-10 hrs. 3 days
Application Life	4-6 hrs.	
Tear Strength	ASTM D-624	45 lb./in.
Shore A Hardness	ASTM D-2240	25 ± 5
Tensile Properties (ASTM D-412)		
Tensile Strength at Break	95 psi	
Tensile Elongation	300%	
Stress at 100%	70 psi	

Adhesion in Peel (Fed Spec. TT-S-00227E)

Substrate	**Peel Strength**	**% Adhesion Loss**
Concrete	>15 lb.	Zero

Weathering Resistance	Excellent
Chemical Resistance	Good resistance to water, diluted acids, diluted alkalines, and residential sewage. Consult Technical Service at 1-800-933-SIKA for specific data.

Coverage

1 gallon: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

How to Use

Surface Preparation Priming is typically not necessary. Most substrates only require priming if sealant will be subjected to water immersion after cure. Testing should be done, however, on questionable substrates, to determine if priming is needed. Consult Technical Service or Sikaflex Primer Technical Data Sheet for additional information on priming. Note: Most Exterior Insulation Finish Systems (EIFS) manufacturers recommend the use of a primer. When EIFS manufacturer specifies a primer or if on-site bond testing indicates a primer is necessary, Sikaflex 429 primer is recommended. On-site adhesion testing is recommended with final system prior to the start of a job.

Mixing Pour entire contents of Component 'B' into pail of Component 'A'. Add entire contents of Color-pak into pail and mix with a low-speed drill (400-600 rpm) and Sikaflex paddle.* Mix for 3-5 minutes to achieve a uniform color and consistency. Scrape down sides of pail periodically. Avoid entrapment of air during mixing. When mixing in cold weather (<50°F), do not force the mixing paddle to the bottom of the pail. After adding Component 'B' and Color-pak into Component 'A', mix the top 1/2 to 3/4 of the pail during the first minute of mixing. After scraping down the sides of the pail, mix again for another minute. The paddle should reach the bottom of the pail between the first and second minute of mixing. Scrape down the sides of the pail a second time and then mix for an additional 2-3 minutes until the sealant is well blended. Color-pak must be used with tint base. For pre-pigmented Limestone base, just mix with low speed drill and Sikaflex paddle (no Color-pak needed).

Application Recommended application temperatures 40°-100°F. Pre-conditioning units to 65-75°F is necessary when working at extremes. Move pre-conditioned units to work areas just prior to application. Apply sealant only to clean, sound, dry, and frost-free substrates. Sikaflex-2c should be applied into joints when joint slot is at mid-point of its designed expansion and contraction. To place, load directly into bulk gun or use a follower plate loading system. Place nozzle of gun into bottom of joint and fill entire joint. Keeping the nozzle deep in the sealant, continue with a steady flow of sealant preceding nozzle to avoid air entrapment. Also, avoid overlapping of sealant since this also entraps air.

Tooling and Finishing Tool sealant to ensure full contact with joint walls and remove air entrapment. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio. To accelerate the cure of Sikaflex-2c NS EZ Mix in cold weather temperatures, add Sikaflex-2c booster.

Removal Uncured material can be removed with xylene. Strictly follow solvent manufacturer's warnings and instructions for use. Cured material can only be removed mechanically. For spillage, collect, absorb, and dispose of in accordance with current, applicable local, state, and federal regulations.

Sikaflex-2c NS EZ Mix Working Time, hours

	73°F	100°F	40°F
Sikaflex-2c NS	4-6 hrs.	3 hrs.	6 hrs.
w/ 1 booster	2 hrs.	1 hr.	2-3 hrs.
w/ 2 boosters	1 hr.	<1 hr.	1.5 hrs.

Limitations

- The ultimate performance of Sikaflex-2c NS EZ Mix, depends on good joint design and proper application.
- Minimum depth in working joint is 1/4 in.
- Maximum expansion and contraction should not exceed 50% of average joint width.
- When used in areas with heavy traffic either recess joint or use TG (Traffic Grade) Additive to increase durability.
- Do not cure in the presence of curing silicones.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Allow 3 day cure before subjecting sealant to total water immersion. Primer is required if sealant will be subjected to total water immersion.
- Avoid exposure to high levels of chlorine. (Maximum level is 5 ppm).
- Do not apply when moisture vapor transmission exists since this can cause bubbling within the sealant.
- Avoid over-mixing sealant.
- White color tends to yellow slightly when exposed to ultraviolet rays.
- Light colors can yellow if exposed to direct gas fired heating elements.
- When overcoating, an on-site test is recommended to determine actual compatibility.
- Rigid paints, coatings or primers will crack when placed over elastomeric sealants experiencing expansion or contraction
- Do not use in contact with bituminous/asphaltic materials.

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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikaflex®-2c NS TG

Two-component, traffic-grade, polyurethane elastomeric sealant

Description	Sikaflex-2c NS TG is a premium-grade, polyurethane-based elastomeric sealant. It is principally a chemical cure in a non-sag consistency. Available in 35 standard colors (>320 special colors) with a convenient Colorpak. Also available as a pre-pigmented product in Limestone Gray. Meets ASTM C 920, Type M, Grade NS, use T, NT, O, M, G, A and Federal Specification TT-S-00227E. Product developed by addition of Sikaflex 2c NS TG Component to the standard Sikaflex 2c NS EZ Mix joint sealant.
Where to Use	■ Applications to include: parking garages, walkways, plazas, platforms, etc., with exposure to foot or pneumatic-tire traffic. ■ Intended for horizontal joints with a minimum depth of 1/2'' inch. ■ Placeable at temperatures as low as 40°F. ■ Adheres to most substrates commonly found in construction. ■ Acceptable for sealing joints in institutions, correctional facilities, etc., as a tamper resistant sealant.
Advantages	■ Capable of +25% joint movement. ■ Chemical cure allows the sealant to be placed in joints exceeding an inch in depth. ■ Tough, durable, flexible consistency. ■ Exceptional cut and tear resistance. ■ Exceptional adhesion to most substrates without priming. ■ Color uniformity assured via Color-pak system or pre-pigmented Limestone Gray. ■ Fuel resistant. ■ No Color-pak needed in pre-pigmented Limestone Gray.
Chemical Resistance	Good resistance to water, diluted acids, and diluted alkalines. Consult Technical Service at 1-800-933-SIKA for specific data.
Packaging	1.5 gal. unit (5.7 L) plus 5.25- fl. oz. (0.16 L) component Color-pak is also purchased separately. Limestone Gray color available pre-pigmented.

Typical Data *(Material and curing conditions 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	One year in original, unopened containers.
Storage Condition:	Store dry at 40°-95°F (4°-35°C). Condition material to 65°- 75°F before using.
Colors:	A wide range of architectural colors are available. Special colors available on request.
Application Temperature:	40° to 100°F, ambient and substrate temperatures. Sealant should be installed when joint is at mid-range of its anticipated movement.
Service Range:	-40° to 170°F (-40° - 75°C)
Shore A Hardness (ASTM D-2240):	21 day 45 ± 5
Tensile Properties (ASTM D-412):	21 day
Tensile Stress:	220 psi
Elongation at Break:	300%
Stress at 100%:	140 psi

Adhesion in Peel (TT-S-00230C, ASTM C-794)
Substrate: **Concrete Peel Strength:** 25 lb. **Adhesion Loss:** 0%

Weathering Resistance:	Excellent
Chemical Resistance:	Good resistance to water, diluted acids, and diluted alkalines. Consult Technical Service for specific data.
Joint Movement Capability:	± 25%

Construction

Coverage

1 gallon: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

How to Use

Surface Preparation All joint-wall surfaces must be clean, sound, and frost-free. Joint walls must be free of oils, grease, curing compound residues, and any other foreign matter that might prevent bond. Ideally, this should be accomplished by mechanical means. A roughened surface will also enhance bond. Bond breaker tape or backer rod must be used in bottom of joint to prevent bond.

Priming Priming is typically not necessary. Most substrates only require priming if sealant will be subjected to water immersion after cure. Testing should be done, however, on questionable substrates, to determine if priming is needed. Consult Technical Service or Sikaflex Primer Technical Data Sheet for additional information on priming.

Mixing Pour entire contents of Component 'B' and (1) 1/2 pint unit of Sikaflex-2c NS TG Component into pail of Component 'A'. For tint base: add entire contents of Color-pak into pail and mix with a low-speed drill (400-600 rpm) and Sikaflex paddle. *Mix for 3-5 minutes to achieve a uniform color and consistency. Scrape down sides of pail periodically. Avoid entrapment of air during mixing. *For pre-pigmented limestone base: just mix with low speed drill and Sikaflex paddle without Color-pak.

Application Recommended application temperatures 40°-100°F. Pre-conditioning units to 65-75°F is necessary when working at extremes. Move pre-conditioned units to work areas just prior to application. Apply sealant only to clean, sound, dry, and frost-free substrates. Sikaflex-2c NS TG should be applied into joints when joint slot is at mid-point of its designed expansion and contraction. To place NS TG, load directly into bulk gun or use a follower plate loading system. Place nozzle of gun into bottom of joint and fill entire joint. Keeping the nozzle deep in the sealant, continue with a steady flow of sealant preceding the nozzle to avoid air entrapment. Avoid overlapping of sealant to eliminate entrapment of air. Tool as required. Proper design is 2:1 width to depth ratio.

Tooling and Finishing Tool as required. Proper design is 2:1 width to depth ratio.

Removal Uncured material can be removed with xylene. Strictly follow solvent manufacturer's warnings and instructions for use. Cured material can only be removed mechanically. In case of spillage, wear suitable protective equipment, collect with absorbent materials and dispose of in accordance with current, applicable local, state, and federal regulations.

Over Painting Allow 3-day cure before subjecting sealant to total water immersion and prior to painting.

Limitations

- The ultimate performance of Sikaflex 2c NS TG depends on good joint design and proper application.
- Sealant depth for horizontal joint subject to traffic must be 1/2 in
- Maximum expansion and contraction should not exceed 25% of average joint width.
- Protect Sikaflex-2c NS TG Component from moisture. Use entire contents of container.
- Maximum addition rate of TG Component is (1) 1/2 pint container/unit of Sikaflex-2c NS.
- Do not cure in the presence of curing silicones.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Allow 3 day cure before subjecting sealant to total water immersion. Primer is required if sealant will be subjected to total water immersion.
- Do not apply when moisture vapor transmission exists since this can cause bubbling within the sealant.
- Avoid over-mixing sealant.
- White color tends to yellow over time when exposed to ultraviolet rays.
- When over-coating: an on-site test is recommended to determine actual compatibility and adhesion.
- The depth of sealant in horizontal joints subject to traffic is 1/2 in.
- Avoid exposure to high levels of chlorine. (Maximum continuous level is 5 ppm).
- Do not tool with detergent or soap solutions.
- Do not use in contact with bituminous/asphaltic materials.

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Fax: 514-694-2792

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Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800

Construction

Sikaflex®-2c SL

Two-component, self-leveling, polyurethane elastomeric sealant

Description	Sikaflex-2c SL is a 2-component, premium-grade, polyurethane-based, elastomeric sealant. It is principally a chemical cure in a self-leveling consistency. Meets ASTM C-920, Type M, Grade P, Class 25, use T, NT, M, G, A, O, I and Federal Specification TT-S-00227E, Type 1, Class A.
Where to use	■ Intended for use in all properly designed working joints with a minimum depth of 1/4 inch. ■ Ideal for horizontal applications. ■ Placeable at temperatures as low as 40°F. ■ Adheres to most substrates commonly found in construction. ■ Submerged conditions, such as canal and reservoir joints.
Advantages	■ True self-leveling properties. ■ Capable of ±25% joint movement. ■ Chemical cure allows the sealant to be placed in non-moving joints exceeding 1/2 in. in depth. ■ High elasticity with a tough, durable, flexible consistency. ■ Exceptional cut and tear resistance. ■ Exceptional adhesion to most substrates without priming. ■ Available in 35 architectural colors. ■ Color uniformity assured via Color-pak system. ■ Available in pre-pigmented Limestone Gray (no Color-pak needed). ■ Self-leveling consistency, easy to apply in horizontal joints. ■ Easy to mix. ■ Paintable with water-, oil-, and rubber-base paints. ■ Jet fuel resistant.
Packaging	1.5 gal. unit. 3 gal. units. Color-pak is purchased separately. Limestone Gray color available pre-pigmented.

Typical Data *(Material and curing conditions 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life	One year in original, unopened containers.	
Storage Conditions	Store dry at 40°-95°F (4°-35°C). **Condition material to 65°-75°F before using.**	
Colors	A wide range of architectural colors are available. Special colors available on request.	
Application Temperature	40° to 100°F, ambient and substrate temperatures. Sealant should be installed when joint is at mid-range of its anticipated movement.	
Service Range	-40° to 170°F (-40°-75°C).	
Curing Rate (ASTM C-679)	Tack-free Time Final Cure	6-8 hrs. 3 days
Application LifeTT-S-00227E	4 hrs.	
Tear Strength ASTM D-624	100 lb./in.	
Shore A Hardness ASTM D-2240	40 ± 5	
Tensile Properties (ASTM D412)		
Tensile Strength at Break	175 psi	
Tensile Elongation	650%	
Stress at 100%	100 psi	

Adhesion in Peel (Fed Spec. TT-S-00227E)

Substrate	Peel Strength	% Adhesion Loss
Concrete	30 lb.	Zero

Weathering Resistance	Excellent
Chemical Resistance	Good resistance to water, diluted acids, diluted alkalines, and residential sewage. Consult Technical Service for specific data.

Construction

Coverage

1 gallon: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

How to Use

Surface Preparation

Joint wall surfaces must be clean, sound, and frost-free. Joint walls must be free of oils, grease, curing compound residues, and any other foreign matter that might prevent bond. Ideally this should be accomplished by mechanical means. A roughened surface will also enhance bond. Bond breaker tape or backer rod must be used in bottom of joint to prevent bond.

Priming is typically not necessary. Most substrates only require priming if sealant will be subjected to water immersion after cure. Testing should be done, however, on questionable substrates, to determine if priming is needed. Consult Technical Service or Sikaflex Primer Technical Data Sheet for additional information on priming

Mixing

Pour entire contents of Component 'B' into pail of Component 'A'. Add entire contents of Color-pak into pail and mix with a low-speed drill (400-600 rpm) and Sikaflex paddle. * Mix for 3-5 minutes to achieve a uniform color and consistency. Scrape down sides of pail periodically. Avoid entrapment of air during mixing. Color-pak must be used with tint base. Note: When mixing 3 gal. unit, two containers of Component B and two color-paks must be used. *For pre-pigmented Limestone base, just mix with low speed drill and Sikaflex paddle (no Color-pak needed).

Application

Recommended application temperatures 40°-100°F. Pre-conditioning units to 65-75°F is necessary when working at extremes. Move pre-conditioned units to work areas just prior to application. Apply sealant only to clean, sound, dry, and frost-free substrates. Sikaflex-2c should be applied into joints when joint slot is at mid-point of its designed expansion and contraction. To place, pour or extrude the SL grade in one direction and allow it to flow and level as necessary. If extruding, load mixed sealant directly into bulk gun or use follower plate loading system. Place nozzle of gun into bottom of joint and fill entire joint. Keeping the nozzle deep in the sealant, continue with a steady flow of sealant preceding nozzle to avoid air entrapment. Also, avoid overlapping of sealant since this also entraps air.

Tooling and Finishing

Tool as necessary. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio.

Removal

Uncured material can be removed with xylene. Strictly follow solvent manufacturer's warnings and instructions for use. Cured material can only be removed mechanically. For spillage, collect, absorb, and dispose of in accordance with current, applicable local, state, and federal regulations.

Limitations

- The ultimate performance of Sikaflex-2c, depends on good joint design and proper application.
- Minimum depth in working joint is 1/4 in.
- Maximum expansion and contraction should not exceed 25% of average joint width.
- Do not cure in the presence of curing silicones.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Allow 3 day cure before subjecting sealant to total water immersion. Primer is required if sealant will be subjected to total water immersion.
- Avoid exposure to high levels of chlorine. (Maximum level is 5 ppm).
- Do not apply when moisture vapor transmission exists since this can cause bubbling within the sealant.
- Avoid over-mixing sealant.
- White color tends to yellow slightly when exposed to ultraviolet rays.
- Light colors can yellow if exposed to direct gas fired heating elements.
- When overcoating: an on-site test is recommended to determine actual compatibility.
- Rigid paints, coatings or primers will crack when placed over elastomeric sealants experiencing expansion or contraction.
- The minimum depth of sealant in horizontal joints subject to traffic is 1/2 inch.
- Do not tool with detergent or soap solution.

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C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikaflex® Textured Sealant

One-component, all purpose, polyurethane sealant

Description	Sikaflex Textured Sealant is a moisture-cured, 1-component, polyurethane-based, non-sag elastomeric sealant capable of ±25% joint movement. Meets Federal specification TT-S-00230C, Type II Class A. Meets ASTM C-920, Type S, Grade NS, Class 25.
Where to Use	■ Designed for all types of joints where maximum depth of sealant will not exceed ½ inch. ■ Suitable for vertical and horizontal joints; readily placeable at 40°F (4°C). ■ Has many applications as an elastic sealant between materials with dissimilar coefficients of expansion. ■ Ideal for: ◆ Weatherproofing of joints between brickwork, blockwork, masonry, wood and concrete or metal frames. ◆ Joints in walls, balconies, around window or door frames. ◆ Expansion joints.
Advantages	■ Excellent adhesion – bonds to most construction materials without a primer. ■ Textured appearance blends well to rough or stucco type surfaces. ■ Hides imperfections from tooling that a smooth sealant does not. ■ Excellent resistance to aging, weathering. ■ Non-staining. ■ Paintable with water-, oil- and rubber-based paints. ■ High elasticity – cures to a tough, durable, flexible consistency with exceptional cut and tear-resistance. ■ Stress relaxation. ■ Urethane-based; suggested by EPA for radon reduction.
Packaging	Disposable 10.1 fl. oz., moisture-proof composite cartridges, 24/case.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	12 months
Storage Conditions	Store at 40°-95°F (4°-35°C). **Condition material to 65°-75°F (18°-24°C) before using.**
VOC Content	40 g/L
Standard Colors	White, aluminum gray, limestone, dark bronze, buff and stone.
Application Temperature	40° to 100°F (4°-38°C) . Sealant should be installed when joint is at midrange of its anticipated movement.
Service Range	-40° to 170°F (-40°-77°C)
Curing Rate	Tack-free time: <6 hrs. Final cure: 7 days
Shore A Hardness	35±5
Adhesion in Peel (ASTM C-794)	Concrete: Meets ASTM C-920. Aluminum: Meets ASTM C-920. Glass: Meets ASTM C-920
Weathering Resistance	Excellent
Chemical Resistance	Good resistance to water, diluted acids, and diluted alkalines. Consult Technical Service for specific data.

Coverage

10.1 oz Cartridge: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	24.3		
	3/8"	16.2	10.8	
	1/2"	12.1	8.1	6.1
	3/4"	8.1	5.4	4.0
	1"			3.0
	1.25"			2.4
	1.5"			2.0

How to Use

Surface Preparation

Clean all surfaces. Joint walls must be sound, clean, dry, frostfree, and free of oil and grease and any other contaminants. A roughened surface will also enhance bond Install bond breaker tape or backer rod to prevent bond at base of joint.

Priming

Priming is not usually necessary. Most substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure. Consult Sikaflex Primer Technical Data Sheet or Technical Service for additional information on priming.

Application

Recommended application temperatures: 40°-100°F (4°-38°C). For cold weather application, condition units at approximately 70°F (21°C); remove prior to using. For best performance, Sikaflex Textured Sealant should be gunned into joint when joint slot is at mid-point of its designed expansion and contraction. Place nozzle of gun into bottom of the joint and fill entire joint. Keep the nozzle in the sealant, continue on with a steady flow of sealant preceding the nozzle to avoid air entrapment. Avoid overlapping of sealant to eliminate entrapment of air.

Tooling and Finishing

Tool sealant to ensure full contact with joint walls and remove air entrapment. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio.

Removal

Uncured material can be removed with approved solvent. Cured material can only be removed mechanically. For spillage, collect, absorb, and dispose of in accordance with current, applicable local, state, and federal regulations.

Limitations

- When over-coating with water, oil and rubber based paints, compatibility and adhesion testing is essential.
- Sealant should be allowed to cure for 7 days prior to overcoating
- Avoid exposure to high levels of chlorine. (Maximum continuous level is 5 ppm of chlorine.)
- Maximum depth of sealant must not exceed 1/2 in.; minimum depth is 1/4 in.
- Maximum expansion and contraction should not exceed 25% of average joint width.
- Do not cure in the presence of curing silicone sealants.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Do not apply when moisture-vapor-transmission condition exists from the substrate as this can cause bubbling within the sealant.
- Use opened cartridges the same day.
- When applying sealant, avoid air-entrapment.
- Since system is moisture-cured, permit sufficient exposure to air.
- White color tends to yellow slightly when exposed to ultraviolet rays.
- Light colors can yellow slightly if exposed to direct gas fired heating elements prior to the formation of initial skin.
- The ultimate performance of Sikaflex Textured Sealant depends on good joint design and proper application with joint surfaces properly prepared.
- Do not tool with detergent or soap solutions.
- Do not use in contact with bituminous/asphaltic materials.

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Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Product Data Sheet
Edition 5.11.2016
Sikasil WS-290

Sikasil® WS-290

Ultra low modulus, neutral cure silicone sealant

SEALANT • WATERPROOFING & RESTORATION INSTITUTE
Issued to: Sika Corporation
Product: Sikasil® WS-290
C719: Pass ✔ Ext:+100% Comp:-50%
Substrate: Mortar, Aluminum, Glass
C661: Rating 12
Validation Date: 3/28/12 – 3/27/17
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SEALANT VALIDATION
www.swrionline.org

Description	Sikasil WS-290 is a one-part, neutral-curing, ultra low-modulus, low to no bleed silicone sealant that cures to a durable, flexible building sealant Sikasil WS-290 performs exceptionally well under dynamic conditions due to its ultra-low modulus, high extension/compression, recovery properties and strong adhesion to most building materials. Sikasil WS-290 accommodates long-term movement of +100-50% in properly designed joints and is particularly well suited for use in Exterior Insulation Finish Systems (EIFS). Meets the requirements of ASTM C-920, Type S, Grade NS, Class 100/50, Use NT, M, G, A, O; TT-S-00230C, Type II, Class A; TT-S-001543A, Class A; CAN/CGSB-1 9.1 3-M87, AAMA 808.3
Where to Use	■ Sealing expansion and control joints in precast concrete panels and metal curtain walls. ■ As a weatherseal in glass to glass butt joint glazing. ■ As a weatherseal in both conventional glazing and structural glazing* applications, including cap, toe and heel beads. ■ Exterior Insulation Finish Systems (EIFS) and numerous other areas requiring a high-performance sealant.
Advantages	■ Unaffected by most atmospheric conditions ■ Non-staining ■ Joint movement +100/-50% ■ Excellent adhesion ■ One-component ■ Excellent gunnability in all temperatures ■ Ultra low Modulus
Packaging	10.1 fl.oz. (.300 ml) plastic cartridges, 20 fl.oz. (.592 ml) sausages, 2 gal. (7.57 L) pails

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	12 months in original unopened cartridges.
Storage Conditions	Store in unopened containers at temperatures lower than 80°F (27°C).
VOC Content	29 g/l

Uncured Properties at 77°F (25°C), 50% R.H.

Tool Time (Initial Skin)	30 minutes, (higher temperatures and/or humidity will shorten this time)
Cure Time	7-14 days
Flow, Sag, Slump	none
Full Adhesion	7-14 days
Tack Free Time	50 minutes

Cured Properties after 7 days at 77°F (25°C), 50% R.H.

Dynamic Movement Capability (ASTM C-719)	+100%, -50%
Elongation (ASTM D-412)	1000%
Shore A Hardness (ASTM C-661)	12
Ozone/UV Resistance (weatherometer)	Excellent
Peel Strength (ASTM C-794)	20-40 pli
Staining, Color Change	none
Staining on Porous Substrates (ASTM C1248)	no staining
Stress @ 100% (ASTM D-412)	42 psi (0.29 MPa)
Service Temperature Range	-80°F to 350°F
Tensile Strength (ASTM D-412)	165 psi (1.14 MPa)

Construction

Coverage

10.1 oz Cartridge: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	24.3		
	3/8"	16.2	10.8	
	1/2"	12.1	8.1	6.1
	3/4"	8.1	5.4	4.0
	1"			3.0
	1.25"			2.4
	1.5"			2.0

20 oz Sausage: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	48.1		
	3/8"	32.1	21.4	
	1/2"	24.1	16.0	12.0
	3/4"	16.0	10.7	8.0
	1"			6.0
	1.25"			4.8
	1.5"			4.0

1 gallon: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

How to Use

Surface Preparation

The substrate must be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion.

POROUS SUBSTRATES – clean by mechanical methods to expose a sound surface free of contamination and laitance.

NON-POROUS SUBSTRATES – for cleaning non-porous substrates, use two rag wipe method using xylene or an approved commercial solvent. Allow solvent to evaporate prior to sealant application.

Sikasil WS-290 is designed to obtain adhesion without the use of a primer; however, certain substrates may require a primer. Test by applying the sealant and/or primer sealant combination to confirm results and proposed application methods. Refer to Technical Data Sheet for Sikasil Primer 2100 and contact Technical Service for additional information.

Application

The number of joints and the joint width should be designed for a maximum of +100 and -50% movement of joint width at time of installation. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 1/2 inch (13mm) and the minimum is 1/4 inch (6mm). To control joint depth, use closed cell polyethylene, non-gassing polyolefin or open cell polyurethane backer rod. If joint depth does not allow for backer rod, use polyethylene bond breaker tape to prevent three-sided adhesion. Closed cell backer rod should be 25% larger than joint width; do not compress more than 40%. Open cell should be compressed 40%. Do not use open cell rod in horizontal on grade joint or with E.I.F.S. When installing during time of large temperature swings such as spring or fall, and in joints designed for movement greater than ± 25 %, be aware of the significant joint movement before cure, may cause aesthetic issues such as ripples in the sealant surface. Performance will not be affected.

Ready to use, apply using professional caulking gun. Do not open product container until preparation work has been completed. Apply sealant using consistent, positive pressure to force sealant into the joint. Tool sealant to create a concave joint shape and maximum adhesion. Dry tooling is recommended. DO NOT use soapy water or other liquids when tooling.

Tooling & Finishing

All joints should be masked to ensure a neat appearance and prevent sealant applied outside the joint. Place nozzle of the gun into bottom of joint and fill entire joint making complete contact with joint sides. Keep the nozzle in the sealant, continue with a steady flow of sealant preceding the nozzle to avoid air entrapment. Tool the sealant slightly concave using dry-tooling techniques. Do not tool with soap or detergent and water solutions.

Limitations

- Do not allow sealant to come in contact with solvent during cure.
- Do not allow sealant to come in contact with curing polyurethane sealants during cure.
- Not intended for immersion.
- Sealant may be applied below freezing temperatures if substrates are completely dry, frost free and clean. Contact Technical Service for more information.
- Do not apply when substrate temperatures are below -20°F or above 130°F.
- Not intended for structural glazing.
- Not recommended for horizontal vehicular traffic.
- Do not apply to surfaces that will be painted as sealant surface will not hold paint.
- Do not apply to damp or wet substrates.
- Lower temperature and humidity will extend tack free and cure rates.
- Allow treated wood to age six months before application.
- Brass and copper may be discolored. Test apply prior to application.
- Test sensitive substrates, such as mirror backings, for compatibility before use.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Sikasil® WS-290 FPS

Ultra low modulus, neutral cure, field pigmentable silicone sealant

Construction

Description	Sikasil WS-290 FPS is a field pigmentable, low to no bleed, low modulus, one–component plus color pack, non-sag, elastomeric, neutral cure silicone sealant. Sikasil WS-290 FPS performs exceptionally well under dynamic conditions due to its ultra-low modulus, high extension/compression, recovery properties and strong adhesion to most building materials. Sikasil WS-290 FPS accommodates long-term movement of +100-50% in properly designed joints and is particularly well suited for use in Exterior Insulation Finish Systems (EIFS). Meets the requirements of ASTM C-920, Type S, Grade NS, Class 100/50, Use NT, M, G, A, O; TT-S-00230C, Type II, Class A; TT-S-001543A, Class A; CAN/CGSB-19-.13-M87, AAMA 808.3.
Where to Use	Sealing expansion and control joints in precast concrete panels and metal curtain walls. ■ As a weatherseal in glass to glass butt joint glazing ■ As a weatherseal in nonstructural glazing applications, including cap, toe and heel beads ■ Exterior Insulation Finish Systems (EIFS) and numerous other areas requiring a high-performance sealant.
Application	■ Field pigmentable sealant ■ Unaffected by most atmospheric conditions ■ Non-staining ■ Joint movement +100/-50% ■ Excellent adhesion ■ One-component, plus color pack ■ Excellent gunnability in all temperatures ■ Ultra low modulus
Packaging	10.1 fl.oz. (.300 ml) plastic cartridges, 20 fl.oz. (.592 ml) sausages, 2 gal. (7.57 L) pails

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	12 months in original unopened cartridges.
Storage Conditions	Store in unopened containers at temperatures lower than 80°F (27°C).
Colors	White, Colonial White, Aluminum, Limestone, Black, Bronze, Medium Bronze. Custom colors available on request.
VOC Content	29 g/L

Uncured Properties at 77°F (25°C), 50% R.H.

Tool Time (Initial Skin)	30 minutes (higher temperatures and/or humidity will shorten this time)
Cure Time	7-14 days
Flow, Sag, Slump	no sag
Full Adhesion	7-14 days
Tack Free Time	50 min.

Cured Properties after 7 days at 77°F (25°C), 50% R.H.

Dynamic Movement Capability (ASTM C-719)	+100%, -50%
Elongation (ASTM D-412)	1000%
Shore A Hardness (ASTM C-661)	12
Ozone/UV Resistance (weatherometer)	Excellent
Peel Strength (ASTM C-794)	20-40 pli
Staining, Color Change (ASTM C-510)	none
Staining on Porous Substrates (ASTM C-1248)	no staining
Stress @ 100% (ASTM D-412)	42 psi (0.29 MPa)
Service Temperature Range	-80°F to 350°F
Tensile Strength (ASTM D-412)	165 psi (1.14 MPa)

Construction

Coverage

10.1 oz Cartridge: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	24.3		
3/8"	16.2	10.8	
1/2"	12.1	8.1	6.1
3/4"	8.1	5.4	4.0
1"			3.0
1.25"			2.4
1.5"			2.0

20 oz Sausage: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	48.1		
3/8"	32.1	21.4	
1/2"	24.1	16.0	12.0
3/4"	16.0	10.7	8.0
1"			6.0
1.25"			4.8
1.5"			4.0

1 gallon: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	307.9		
3/8"	205.3	136.8	
1/2"	153.9	102.6	77.0
3/4"	102.6	68.4	51.3
1"			38.5
1.25"			30.8
1.5"			25.7

How to Use

Surface Preparation

The substrate must be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion.

POROUS SUBSTRATES – clean by mechanical methods to expose a sound surface free of contamination and laitance.

NON-POROUS SUBSTRATES – for cleaning non-porous substrates, use two rag wipe method using xylene or an approved commercial solvent. Allow solvent to evaporate prior to sealant application.

Priming

Sikasil WS-290 FPS is designed to obtain adhesion without the use of a primer; however, certain substrates may require a primer. Test by applying the sealant and/or primer sealant combination to confirm results and proposed application methods. Refer to Technical Data Sheet for Sikasil 2100 primer and contact Technical Service for additional information.

Application

The number of joints and the joint width should be designed for a maximum of +100 and -50% movement of joint width at time of installation. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 1/2 inch (13mm) and the minimum is 1/4 inch (6mm). To control joint depth, use closed cell polyethylene, non-gassing polyolefin or open cell polyurethane backer rod. If joint depth does not allow for backer rod, use polyethylene bond breaker tape to prevent three-sided adhesion. Closed cell backer rod should be 25% larger than joint width; do not compress more than 40%. Open cell should be compressed 40%. Do not use open cell rod in horizontal on grade joint or with E.I.F.S. When installing during time of large temperature swings such as spring or fall, and in joints designed for movement greater than ± 25 %, be aware of the significant joint movement before cure, may cause aesthetic issues such as ripples in the sealant surface. Performance will not be affected.

Ready to use, apply using professional caulking gun. Do not open product container until preparation work has been completed. Apply sealant using consistent, positive pressure to force sealant into the joint. Tool sealant to create a concave joint shape and maximum adhesion. Dry tooling is recommended. DO NOT use soapy water or other liquids when tooling.

Tooling & Finishing

All joints should be masked to ensure a neat appearance and prevent sealant applied outside the joint. Place nozzle of the gun into bottom of joint and fill entire joint making complete contact with joint sides. Keep the nozzle in the sealant, continue with a steady flow of sealant preceding the nozzle to avoid air entrapment. Tool the sealant slightly concave using dry-tooling techniques. Do not tool with soap or detergent and water solutions.

Limitations

- Do not allow sealant to come in contact with solvent during cure.
- Do not allow sealant to come in contact with curing polyurethane sealants during cure.
- Not intended for immersion.
- Sealant may be applied below freezing temperatures if substrates are completely dry, frost free and clean. Contact Technical Service for more information.
- Do not apply when substrate temperatures are below -20°F or above 130°F.
- Not intended for structural glazing.
- Not recommended for horizontal vehicular traffic.
- Do not apply to surfaces that will be painted as sealant surface will not hold paint.
- Do not apply to damp or wet substrates.
- Lower temperature and humidity will extend tack free and cure rates.
- Allow treated wood to age six months before application.
- Brass and copper may be discolored. Test apply prior to application.
- Test sensitive substrates, such as mirror backings, for compatibility before use.

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Product Data Sheet
Edition 5.13.2016
Sikasil WS-295

Sikasil® WS-295

Neutral cure, weather sealing silicone sealant

SEALANT • WATERPROOFING & RESTORATION INSTITUTE
Issued to: Sika Corporation
Product: Sikasil® WS-295
C719: Pass ✓ Ext:+50% Comp:-50%
Substrate: Mortar, Aluminum, Glass
C661: Rating 25
Validation Date: 4/3/12 – 4/2/17
No. 412-SIK417 Copyright © 2012
SEALANT VALIDATION
www.swrionline.org

Description	Sikasil-WS 295 sealant is a one part, neutral cure for use in most common weatherproofing applications on a wide variety of materials. Meets the requirements of ASTM C-920, Type S, Grade NS, Class 50, Use NT, M, G, A, O; TT-S-00230C, Type II, Class A; CAN/CGSB-19.13-M87, AAMA 802.3 Type II, AAMA 803.3, AAMA 805.2, AAMA 808.3
Where to Use	Sikasil WS-295 silicone sealant has been specifically designed: ■ As a weatherseal in both conventional glazing and structural glazing* applications, including cap, toe and heel beads ■ As a weatherseal in glass to glass butt joint glazing ■ Sealing expansion and control joints in precast concrete panels and metal curtain walls. ■ Perimeter sealing of doors, windows and other building components ■ Adhering stiffeners to building panels ■ Excellent for use in unitized curtain wall systems
Advantages	■ Versatile medium modulus ■ Unaffected by most atmospheric conditions ■ Non-staining ■ Joint movement ±50% ■ Excellent adhesion ■ One-component ■ Excellent gunnability in all temperatures
Packaging	10.0 fl.oz. (295 ml) cartridge, 20 fl.oz. (600 ml) sausage

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	12 months in original unopened cartridges.
Storage Conditions	Store in unopened containers at temperatures lower than 80°F (27°C).
Colors	White, Colonial White, Aluminum, Limestone, Black, Bronze, Medium Bronze
VOC Content	37 g/L

Uncured Properties at 77°F (25°C), 50% R.H.

Tool/Work Time (Initial Skin)	20-30 minutes
Cure Time (ASTM C-679)	7-14 days
Flow, Sag, Slump (ASTM C-639)	no sag
Full Adhesion (ASTM C-679)	7-14 days
Tack Free Time (ASTM C-679)	50 min.

Cured Properties after 7 days at 77°F (25°C), 50% R.H.

Dynamic Movement Capability (ASTM C-719)	+/-50%
Elongation (ASTM D-412)	700%
Shore A Hardness (ASTM C-661)	25
Ozone/UV Resistance (ASTM D-1149)	Excellent
Peel Strength (ASTM C-794) on aluminum, glass and concrete	30 pli
Staining, Color Change (ASTM C-510)	None
Staining on Porous Substrates (ASTM C-1248)	No staining
Stress at 100% (ASTM D-412)	55 psi (0.38 MPa)
Service Temperature Range	-80°F to 350°F
Tensile Strength (ASTM D-412)	200 psi (1.38 MPa)

Construction

Coverage

10.1 oz Cartridge: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	24.3		
	3/8"	16.2	10.8	
	1/2"	12.1	8.1	6.1
	3/4"	8.1	5.4	4.0
	1"			3.0
	1.25"			2.4
	1.5"			2.0

20 oz Sausage: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	48.1		
	3/8"	32.1	21.4	
	1/2"	24.1	16.0	12.0
	3/4"	16.0	10.7	8.0
	1"			6.0
	1.25"			4.8
	1.5"			4.0

How to Use

Surface Preparation

The substrate must be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion.
POROUS SUBSTRATES – clean by mechanical methods to expose a sound surface free of contamination and laitance.
NON-POROUS SUBSTRATES – for cleaning non-porous substrates, use two rag wipe method using xylene or an approved commercial solvent. Allow solvent to evaporate prior to sealant application.

Priming

Sikasil WS-295 is designed to obtain adhesion without the use of a primer; however, certain substrates may require a primer. Test by applying the sealant and/or primer sealant combination to confirm results and proposed application methods. Refer to Technical Data Sheet for primers Sikasil 2100 primer and contact Technical Service for additional information.

Application

The number of joints and the joint width should be designed for a maximum of ±25% movement of joint width at time of installation. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 1/2 inch (13mm) and the minimum is 1/4 inch (6mm). To control joint depth, use closed cell polyethylene, non-gassing polyolefin or open cell polyurethane backer rod. If joint depth does not allow for backer rod, use polyethylene bond breaker tape to prevent three-sided adhesion. Closed cell backer rod should be 25% larger than joint width; do not compress more than 40%. Open cell should be compressed 40%. Do not use open cell rod in horizontal on grade joints or with E.I.F.S. Ready to use, apply using professional caulking gun. Do not open product container until preparation work has been completed. Apply sealant using consistent, positive pressure to force sealant into the joint. Tool sealant to create a concave joint shape and maximum adhesion. Dry tooling is recommended. DO NOT use soapy water or other liquids when tooling.

Removal

Use xylene, denatured alcohol or mineral spirits to remove uncured sealant from substrate and equipment. Follow solvent manufacturer's instructions for use and warnings. Cured material can only ne removed mechanically.

Limitations

- All structural silicone glazing applications must be reviewed and approved by Sika Facades, Fenestration and Insulating Glass Tech Service at 1-800-641-0234.
- Do not allow sealant to come in contact with solvent during cure.
- Do not allow sealant to come in contact with curing polyurethane sealants during cure.
- Not intended for immersion.
- Sealant may be applied below freezing temperatures if substrates are completely dry, frost free and clean. Contact Technical Service for more information.
- Do not apply when substrate temperatures are below -20°F or above 130°F.
- Not recommended for structural glazing applications
- Not recommended for horizontal vehicular traffic.
- Do not apply to surfaces that will be painted as sealant surface will not hold paint.
- Do not apply to substrates that bleed oil, plasticizers or solvent.
- Do not apply to damp or wet substrates.
- Lower temperature and humidity will extend tack free and cure rates.
- Allow treated wood to age six months before application.
- Brass and copper may be discolored. Test apply prior to application.
- Test sensitive substrates, such as mirror backings, for compatibility before use.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800

SEALANT · WATERPROOFING & RESTORATION INSTITUTE
Issued to: Sika Corporation
Product: Sikasil® WS-295
C719: Pass ✓ Ext:+50% Comp:-50%
Substrate: Mortar, Aluminum, Glass
C661: Rating 25
Validation Date: 4/3/12 – 4/2/17
No. 412-SIK417 Copyright © 2012
SEALANT VALIDATION
www.swrionline.org

Sikasil® WS-295 FPS

Neutral cure, field pigmentable silicone sealant

Construction

Description	Sikasil-WS 295 FPS sealant is a field pigmentable, no bleed, one component plus color pack, non-sag elastomeric, neutral cure silicone sealant for use in most common weatherproofing applications on a wide variety of materials. Meets the requirements of ASTM C-920, Type S, Grade NS, Class 50, Use NT, M, G, A, O; TT-S-00230C, Type II, Class A; CAN/CGSB-19.13-M87, AAMA 802.3 Type II, AAMA 803.3, AAMA 805.2, AAMA 808.3
Where to Use	Sikasil-WS 295 FPS silicone sealant has been specifically designed for: ■ As a weatherseal in nonstructural glazing applications including gap, toe and heel beads ■ As a weatherseal in glass to glass butt joint glazing. ■ Sealing expansion and control joints in precast concrete panels and metal curtain walls. ■ Perimeter sealing of doors, windows and other building components. ■ Adhering stiffeners to building panels. ■ Excellent for use in unitized curtain wall systems.
Advantages	■ One-part plus color pack ■ Unaffected by most atmospheric conditions ■ Non-staining ■ Joint movement ±50% ■ Excellent adhesion ■ Excellent gunnability in all temperatures
Packaging	2 gallon white base. Silicone color packs sold separately.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	12 months in original unopened cartridges.
Storage Conditions	Store in unopened containers at temperatures lower than 80°F (27°C).
Colors	White, Colonial White, Aluminum, Limestone, Black, Bronze, Medium Bronze. Custom colors available on request.
VOC Content	37 g/l

Uncured Properties at 77°F (25°C), 50% R.H.

Tool/Work Time (Initial Skin)	20-30 minutes
Cure Time (ASTM C-679)	7-14 days
Flow, Sag, Slump (ASTM C-639)	no sag
Full Adhesion (ASTM C-679)	7-14 days
Tack Free Time (ASTM C-679)	50 min.

Cured Properties after 7 days at 77°F (25°C), 50% R.H.

Dynamic Movement Capability (ASTM C-719)	+/-50%
Elongation (ASTM D-412)	700%
Shore A Hardness (ASTM C-661)	25
Ozone/UV Resistance (ASTM D-1149)	Excellent
Peel Strength (ASTM C-794) on aluminum, glass and concrete	30 pli
Staining, Color Change (ASTM C-510)	None
Staining on Porous Substrates (ASTM C-1248)	No staining
Stress at 100% (ASTM D-412)	55 psi (0.38 MPa)
Service Temperature Range	-80°F to 350°F
Tensile Strength (ASTM D-412)	200 psi (1.38 MPa)

Construction

Coverage

1 gallon: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

How to Use

Mixing

Cut open Sikasil® color pak and pour into pail. Mix using a slow speed drill (400-600 rpm) and a conventional sealant mixing paddle to disperse the color evenly for no more then three minutes, being sure to scrape down the sides during mixing. Avoid air entrapment during mixing.

Surface Preparation

The substrate must be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion.
POROUS SUBSTRATES – clean by mechanical methods to expose a sound surface free of contamination and laitance.
NON-POROUS SUBSTRATES – for cleaning non-porous substrates, use two rag wipe method using xylene or an approved commercial solvent. Allow solvent to evaporate prior to sealant application. Strictly follow solvent manufacturer's warnings and instructions for use.

Priming

Sikasil WS-295 FPS is designed to obtain adhesion without the use of a primer; however, certain substrates may require a primer. Test by applying the sealant and/or primer sealant combination to confirm results and proposed application methods. Refer to Technical Data Sheet for primers Sikasil Primer-2100 and contact Technical Service for additional information.

Application

The number of joints and the joint width should be designed for a maximum of ±25% movement of joint width at time of installation. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 1/2 inch (13mm) and the minimum is 1/4 inch (6mm). To control joint depth, use closed cell polyethylene, non-gassing polyolefin or open cell polyurethane backer rod. If joint depth does not allow for backer rod, use polyethylene bond breaker tape to prevent three-sided adhesion. Closed cell backer rod should be 25% larger than joint width; do not compress more than 40%. Open cell should be compressed 40%. Do not use open cell rod in horizontal on grade joint or with E.I.F.S.

Ready to use, apply using professional caulking gun. Do not open product container until preparation work has been completed. Apply sealant using consistent, positive pressure to force sealant into the joint. Tool sealant to create a concave joint shape and maximum adhesion. Dry tooling is recommended. DO NOT use soapy water or other liquids when tooling.

Limitations

- Do not allow sealant to come in contact with solvent during cure.
- Do not allow sealant to come in contact with curing polyurethane sealants during cure.
- Not intended for immersion.
- Sealant may be applied below freezing temperatures if substrates are completely dry, frost free and clean. Contact Technical Service for more information.
- Do not apply when substrate temperatures are below -20°F or above 130°F.
- Not recommended for structural glazing applications.
- Not recommended for horizontal vehicular traffic.
- Do not apply to surfaces that will be painted as sealant surface will not hold paint.
- Do not apply to substrates that bleed oil, plasticizers or solvent.
- Do not apply to damp or wet substrates.
- Lower temperature and humidity will extend tack free and cure rates.
- Allow treated wood to age six months before application.
- Brass and copper may be discolored. Test apply prior to application.
- Test sensitive substrates, such as mirror backings, for compatibility before use.
- Do not use open cell rod in horizontal on grade joint or with E.I.F.S.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

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Fax: 52 442 2250537

Construction

Product Data Sheet
Edition 5.4.2011
Sika Silbridge-300

Sika® Silbridge-300

Pre-formed, elastomeric silicone profile

Description

Sika Silbridge-300 products are extruded ultra low modulus elastomeric silicone profile that are usually bonded to substrates using Sikasil WS-295 sealant as an adhesive. Sika Silbridge-300 comes in a variety of standard shapes, colors and sizes and is successfully used in various applications.

Where to Use

Sika Silbridge-300 extruded profiles are specifically designed for numerous applications including but not limited to:

- Expansion joint seals (new & remedial construction)
- Window perimeter joint seals
- Roofing seals
- Fillet beads, coping joints and window seals (custom design)
- EIFS systems renovation
- Metail curtain wall

Advantages

- High tear resistance
- Ease of installation
- Color fast formulation
- Wide operational temperature range
- Non corrosive and corrosion resistant
- Resistant to ultraviolet exposure and weathering
- Capable of sealing high movement joints
- Reduces stress at bond-line making it well suited for soft and sensitive substrates such as EIFS
- Rapid cure of thin adhesive layer allows for early movement of substrates
- Economical alternative to cutting out existing failed sealant

Surface Finish

Standard profiles have a matte surface. Coarse and fine textures to match building substrates a also available on a special order basis.

Packages

Standard thickness approximately 2 mm.

Extrusion Width (in.)	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	9	10	11	12
Roll Length (ft.)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	50	50	50

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Hardness, Shore A (ASTM D-2240)	25 ± -5
Tensile Strength (ASTM D-412)	425 psi (2.93 MPa)
Tear Strength (ASTM D-624) (Die B)	70 lb/in + (12.2 N/mm +)
Elongation at Break (ASTM D-412)	950% +
Joint Movement Capability (ASTM C-1518-02)	200% Elongation 75% Compression
Operational Temperature	-60°F to 300°F (-50°F to 150°C)
Colors	White, Black, Limestone, Aluminum Gray, Colonial White, and Bronze, and Medium Bronze. Custom colors available upon request.
UV Resistance	Unaffected
Ozone Resistance	Unaffected
Radiation	Unaffected
Tear Propagation (ASTM C-1518-02)	Pass Movement Class: 200% E Tear Class: PT (Knotty Tear)

Construction

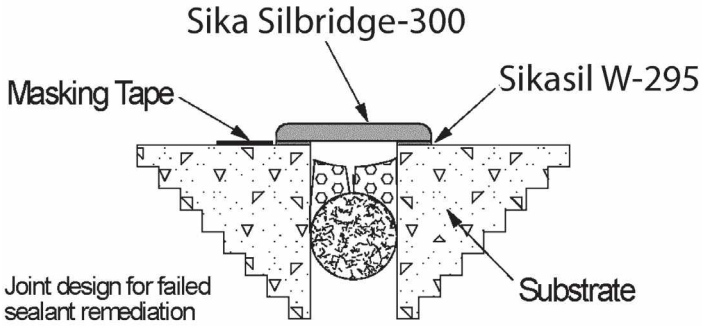
How To Use

Surface Preparation

Porous surfaces should be cleaned with dry, oil free compressed air. Grinding or abrasion may be necessary to remove materials that may interfere with the sealant adhesive. If the substrate is cleaned with pressurized water, use caution to prevent water from entering the structure through the open joint. Ensure that all cleaning agents are completely removed and allow the substrate to adequately dry before applying the Sikasil WS-295 and the Sika Silbridge-300 profile. Make sure to follow sealant adhesion guidelines of Sikasil WS-295 product data sheet. Non porous surfaces should be cleaned with an appropriate solvent using the two-cloth method.

Application

Apply a bead of Sikasil WS-295 in a straight line near the outside edge to be covered by Sika Silbridge-300. Allow enough space for the sealant adhesive to squeeze out to the edge of the extrusion and then stop. The bead should be approximately 1/8" to 1/4" in diameter depending on the uniformity of the substrate. Non porous surfaces such as glass or aluminum require less sealant adhesive, porous substrates such as grout or EIFS require more. Next, unroll the appropriate length of Sika Silbridge-300 strip and place it uniformly spaced over the joint to be sealed. To ensure uniform appearance, a flat piece of styro-foam can be used to press the extrusion firmly into place. If the application is on a smooth surface, a roller may be used to ensure a uniform wet-out of Sika Silbridge-300 along with the Sikasil WS-295. Clean or tool-off any excess sealant adhesive from the edges of the extrusion and substrate. Trim ends and terminate with a bead of sealant. Always apply horizontal joints before vertical joints. At intersections simply overlap the vertical Sika Silbridge-300 strip over the horizontal and ensure a proper seal by applying enough sealant adhesive.



I imitations

Sika Silbridge-300 profile should not be used under the following conditions
- Below grade or below water line applications
- Joints where physical abrasion and abuse may occur, such as traffic joint
- In association with building materials that bleed oils, plasticizers or other material.
- Do not coat with non silicone based coatings.
- Should not be bonded with low modulus silicone sealant.

Caution

For Sikasil W-295

Material Safety Data Sheets are available upon request from Sika Corporation. Similar information for solvents and other chemicals used with Sika products should be obtained from your suppliers. When solvents are used, proper safety precautions must be observed.

Clean Up

Uncured material can be removed with approved solvent. Cured material can only be removed mechanically. For spillage, collect, absorb, and dispose of in accordance with current, applicable local, state, and federal regulations.

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KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Industry

Sikasil®-GP / GP High Temp. Red

General Purpose Acetoxy Cure Silicone

Technical Product Data (typical values) *Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

		Sikasil®-GP	Sikasil®-GP Hi Temp Red
Chemical Base		1-C silicone	1-C silicone
Color		Multiple	Red
Cure mechanism		Moisture	Moisture
Cure type		Acetoxy	Acetoxy
Density (uncured)		8.18 lb/gal	8.8 lb./gal.
VOC		36 g/L	36 g/L
Non-sag properties	(ASTM C-639)	Non-sag	Non-sag
Skin Time	(MNA Method)	20 minutes	20 minutes
Tack free time[2]	(ASTM D-679)	30 minutes	30 minutes
Curing speed	(MNA Method)	1/8 inch 24 hours	1/8 inch 24 hours
Shrinkage		nil	nil
Shore A-hardness	(ASTM C-661)	25 +/-5	25 +/-5
Tensile strength	(ASTM D-412)	220 psi	350 psi
Elongation at break	(ASTM D-412)	350 %	400 %
Peel Strength	(ASTM C-794)	20 pli	
Movement capability	(ASTM C-719)	+/-25	
Application Temperature[1]	product only	-35° to 140°F (-32 to 40°C)	
Service temperature	permanent intermittent	- 40° to 275°F (-40° to 135°C) 325°F (163°C)	- 80° to 500°F (-62° to 260°C) 550°F (287°C)
Weathering Resistance		Excellent	Excellent
Shelf life (storage below 90°F (32°C))		24 months	24 months

[1] Substrate and Air Temperature must be between 15° - 120°F (-26 - 49°C). See "Application" Section for details.

[2] 77°F (25°C) / 50% r.h.

Description

Sikasil®-GP products are general purpose, one-component, non-sag, elastomeric, 100% RTV acetoxy silicone sealants. Meets the requirements of ASTM C-920, Type S, Grade NS, Class 25, Use NT, G, A, O. Recognized under UL QMFZ2, ANSI/NSF Standard 51 for direct food contact and California Air Resources Board 2003 requirements for Volatile Organic Compound content. Sikasil®-GP maintains elastomeric properties up to 275° F continuous, 325°F intermittent, and Sikasil®-GP HT (High Temperature) red up to 500°F continuous, 550°F intermittent. Sikasil®-GP HT Red also meets federal specification TT-S-005143A, Class A, and MIL-A-46106.

Product Benefits

- One-component ready to use
- Excellent for dynamic joint movement & dissimilar materials, Joint movement ±25%
- Excellent adhesion, bonds to many substrates without priming
- Fast Cure - Move assembled or sealed parts quickly
- Wide service temperature / durability
- Superior gunning & tooling
- High temperature red for temperature resistance up to 550°F
- Contains Anti-microbial additive for mold resistance

Areas of Application

- Sealing & glazing of windows, doors and skylights
- Conventional glazing and Storefronts
- Kitchen and bath countertops, Sanitary seals
- HVAC, Plumbing, Roofing
- Sealing trucks, trailers and RVs
- Marine applications
- Appliance Assembly

Typical Substrates

- Glass, aluminum, tile, fiberglass, plastic, ceramic, wood, steel and painted metals

Coverage

Cartridge: Approximately 12.2 linear ft. (3.7 lin. m) for ½ x ¼ in (13 x 6 mm) bead.

Cure Mechanism

Sikasil®-GP cures by reaction with atmospheric moisture. At low temperatures the water content of the air is lower and the curing reaction proceeds more slowly (see diagram below).

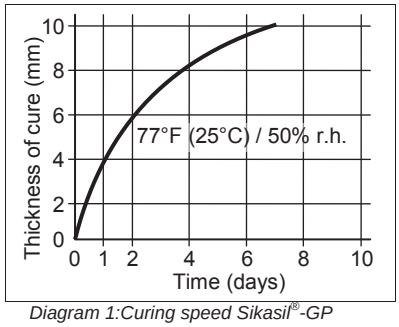

Diagram 1:Curing speed Sikasil®-GP

Chemical Resistance

Sikasil®-GP is resistant to UV radiation, fresh water, seawater and proprietary aqueous cleaning agents; temporarily resistant to fuels, mineral oils, vegetable and animal fats and oils; no resistance to organic acids, concentrated mineral acids, caustic solutions and solvents. The above information is offered for general guidance only. Advice on specific applications will be given on request. Contact Technical Service at (tsmh@sika-corp.com).

Method of Application

Surface preparation

The substrate must be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion.

POROUS SUBSTRATES - clean by mechanical methods to expose a sound surface free of contamination.

NON-POROUS SUBSTRATES - for cleaning non-porous substrates, use two cloth cleaning method using xylene, isopropyl alcohol or an approved, clean, pure non-diluted industrial grade solvent. Allow solvent to evaporate completely prior to sealant application. Strictly follow solvent manufacturer's warnings and instructions for use.

PRIMING Sikasil®-GP is designed to obtain adhesion without the use of a primer; however, certain substrates may require a primer. Test by applying the sealant and/or primer sealant combination to confirm results and proposed application methods. Refer to Technical Data Sheet for primers **Sika® Aktivator®-205, Sikasil®-2100**, or **Sikasil®-2300** available at www.sikausa.com or contact Technical Service for additional information at (tsmh@sika-corp.com).

Application

In all cases, make sure the joint design is correct. Proper joint design minimizes stresses on the sealant. Use masking tape if desired for areas adjacent to the joint to be sealed to prevent surface contamination. Apply sealant to dry, clean surfaces. An air operated or hand operated cartridge gun may be used. Do not break cartridge seal until just before use. Surfaces should be dried before the sealant is applied. Normally sealant skins in 10 minutes, dries to touch in 1 hour, bonds in 24 hours and fully cures in 7 days dependant on temperature and humidity.

This product is suitable for bulk dispensing straight from drums or pails by means of a pneumatic or hydraulic pump system. For recommendations on selecting and setting up a suitable pump system please contact our Technical Service Department at (tsmh@sika-corp.com).

Expansion Joint

Apply using caulking gun, dispensing equipment or trowel. Use sufficient quantity of adhesive to one or both substrates to provide designed contact area.

Adhesive Joint

Apply using professional caulking gun. Do not open product container until preparation work has been completed. Apply sealant using consistent, positive pressure to force sealant into the joint. Tool sealant to create a concave joint shape and ensure maximum adhesion. Dry tooling is recommended.

Tooling and finishing

Tool joint, if necessary, and remove masking tape. Tooling should be completed in one continuous stroke. Tool immediately after sealant is applied and before a skin begins to form. Dry tool - do not use soap, water or oil as a tooling aid. Remove masking tape immediately after tooling is completed. Complete Tooling of product within 5 minutes of sealant application.

Further information available at:
www.sikausa.com

Sika Corporation Industry Products 30800 Stephenson Highway Madison Heights, MI 48071 **MADE IN USA**

Removal

Uncured Sikasil®-GP may be removed from tools and equipment with solvents such as isopropyl alcohol or xylene if cleaned before sealant has begun to cure. Strictly follow solvent manufacturer's instructions for use and warning statements. Once cured, the material can only be removed mechanically. Hands and exposed skin should be washed with soap and water immediately after use. Do not use solvents on skin!

Overpainting

Sikasil®-GP cannot be overpainted.

Limitations

- Certain substrates may require a primer.
- Do not allow sealant to come in contact with solvent during cure.
- Not intended for long term water immersion.
- Sealant may be applied below freezing temperatures if substrates are completely dry, frost free and clean.
- Maximum depth of sealant must not exceed 1/2 inch; minimum depth 1/8 inch.
- Do not apply to surfaces that will be painted.
- Do not apply to substrates that bleed oil, plasticizers or solvent.
- May stain porous substrates such as natural stone. Test before use.
- Do not apply to damp or wet substrates.
- Do not apply to surfaces sensitive to corrosion by acetic acid or vapors.
- Lower temperature and humidity will extend tack free and cure rates.
- Allow treated wood to age 6 months before application.
- Not intended for structural glazing
- Not for use in sealing insulating glass
- Test sensitive substrates, such as mirror backings for compatibility before use.
- Translucent product does not contain anti microbial additive.

WARNING: IRRITANT, SENSITIZER. Contains Ethyltriacetoxysilane (CAS: 17689-77-9) and Methyltriacetoxysilane (CAS: 4253-34-3). Direct eye contact may cause irritation. May cause skin and respiratory irritation. May cause drowsiness. May cause vomiting. When heated, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin and digestive system.

HMIS

Health	2
Flammability	1
Reactivity	0
Personal Protection	C

FIRST AID

Inhalation – Remove to fresh air. **Eyes -** Rinse with tepid water for 15 minutes. Call physician. **Skin –** Wash thoroughly with soap and tepid water. Remove contaminated clothing. **Ingestion –** Do not induce vomiting. Dilute with water. Call physician.

Further Information

Copies of the following publications are available on our website **www.sikausa.com** or by contacting (tsmh@sika-corp.com).

- Material Safety Data Sheet
- Product Data Sheet

In case of emergency call:
Chemtrec: 800-424-9300
International: 703-527-3887

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Material Safety Data Sheets containing physical, ecological, toxicological and other safety related data. It is highly recommended to read the actual Material Safety Data Sheet before using the product.

- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- KEEP CONTAINER TIGHTLY CLOSED
- FOR PROFESSIONAL USE ONLY

Packaging Information

Cartridge	10 fl. oz. (295ml)
Drum	52 gal.

Value Basis

All technical data stated on this Product Data Sheet are based on the results of laboratory tests only. Actual measured data in the field may vary due to site specific conditions which are not known to Sika and beyond our control.

Handling and Storage

Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Open doors and windows during use. Use a properly fitted NIOSH respirator if ventilation is poor. Wash thoroughly with soap and water after use. Remove contaminated clothing and launder before reuse.

Clean Up

Observe personal protective equipment recommendations described in MSDS. Disposal of collected product, residues, and cleanup materials may be governmentally regulated. Observe all applicable local, state and federal waste management regulations. Ventilate area. Contain spill. Evacuate unprotected personnel from hazard area. Wipe up and contain for disposal. Cover with absorbent, place in approved drum. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard.

Limited Material Warranty

Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES IMPLIED OR EXPRESS SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Material Safety Data Sheet which are available at www.sikausa.com. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Material Safety Data Sheet prior to product use.

Further information available at:
www.sikausa.com

Sika Corporation Industry Products
30800 Stephenson Highway
Madison Heights, MI 48071
MADE IN USA

Product Data Sheet
Version 11/23/2012

Sikasil®-N Plus US

Neutral Cure Silicone Assembly Sealant

Industry

Technical Product Data (typical values)

Chemical Base		1-C silicone	
		Pigmented	**Translucent**
Cure mechanism		Moisture	Moisture
Cure type		Oxime	Oxime
Density (uncured)		11.6 lbs./gal.	8.4 lb/gal
VOC		37 g/L (0.31 lb./gal.)	36 g/L, 0.30 lbs/gal
Non-sag properties	(ASTM C-639)	Non-sag	Non-sag
Slump		Nil	Nil
Skin Time	(MNA Method)	15 minutes	20 minutes
Tack free time[2]	(ASTM D-679)	30 minutes	30 minutes
Extrusion Rate g/min (ASTM C-1183 modified)	1/8" orifice @ 90 psi	230	360
Curing speed	(MNA Method)	1/8 inch 24 hours	1/8 inch 24 hours
Shrinkage		Nil	Nil
Shore A-hardness	(ASTM C-661)	30 ± 5	15 ± 5
Tensile strength psi (mpa)	(ASTM D-412)	300 psi (2.07)	190 psi (1.31)
Elongation at break	(ASTM D-412)	430%	430 %
Bond durability - glass/ aluminum / concrete	(ASTM-C793)	± 25 %	± 25 %
Movement capability	(ASTM C-719)	± 25 %	± 25 %
Application Temperature[1]	product only	-35° to 140°F (-32 to 40°C)	
Service temperature		- 80° to 350°F (-62° to 176°C)	
Weathering Resistance		Excellent	
Shelf life (storage below 90°F (32°C))	Cartridge and Unipac Drum and Pail	12 months 12 months	12 months 12 months

[1] Substrate and Air Temperature must be between 40° - 105°F (5 - 40°C). See "Application" Section for details.
[2] 77°F (25°C) / 50% r.h.

Description

Sikasil®-N Plus US is a general purpose, one-component, non-sag, elastomeric, 100% RTV neutral cure silicone sealant. Meets the requirements of ASTM C-920, Type S, Grade NS, Class 25, Use NT, T, M, G, A, O; TT-S-00230C, Type II, Class A; TT-S-001543A, Class A; CAN/CGSB-19.13-M87, AAMA 802.3 Type II, AAMA 803.3, AAMA 805.2, AAMA 808.3 and California Air Resources Board 2003 requirements for Volatile Organic Compound content.

Product Benefits

- Extremely long service life
- Excellent flexibility for dynamic joint movement
- Bonds to most substrates without priming
- Ready to use, no mixing required
- AAMA Certified component for window backbedding / glazing
- All season ease of application
- Fungicide additive for mildew resistance

Areas of Application

- Window and door fabrication
- Conventional glazing
- Back bedding and cap, toe and heel beads
- Perimeter sealing of windows, doors and skylights
- Expansion and control joints
- HVAC, White goods assembly
- Kitchen and bath countertops/solid surfaces, Sanitary Seals
- Marine cabins
- Truck/trailer/auto/RV

Typical Substrates

- Glass, aluminum, tile, fiberglass, plastic, ceramic, masonry, concrete, brick and wood

Coverage
Cartridge: Approximately 12.2 linear ft. (3.7 lin. m) for ½ x ¼ in (13 x 6 mm) bead.

Cure Mechanism
Sikasil®-N Plus US cures by reaction with atmospheric moisture. At low temperatures the water content of the air is lower and the curing reaction proceeds more slowly (see diagram below).

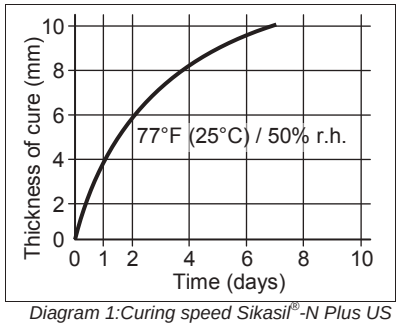

Diagram 1:Curing speed Sikasil®-N Plus US

Chemical Resistance
Sikasil®-N Plus US is resistant to UV radiation, fresh water, seawater and proprietary aqueous cleaning agents; temporarily resistant to fuels, mineral oils, vegetable and animal fats and oils; no resistance to organic acids, concentrated mineral acids, caustic solutions and solvents. The above information is offered for general guidance only. Advice on specific applications will be given on request. Contact Technical Service at (tsmh@sika-corp.com).

Method of Application
Surface preparation
The substrate must be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion.

POROUS SUBSTRATES – clean by mechanical methods to expose a sound surface free of contamination.

NON-POROUS SUBSTRATES – for cleaning non-porous substrates, use two cloth cleaning method using isopropyl alcohol, xylene or an approved, clean, pure non-diluted industrial grade solvent.. Allow solvent to evaporate completely prior to sealant application. Strictly follow solvent manufacturer's instructions for safe handling.

PRIMING Sikasil®-N Plus US is designed to obtain adhesion without the use of a primer; however, certain substrates may require a primer. Test by applying the sealant and/or primer sealant combination to confirm results and proposed application methods. Refer to Product Data Sheet for primers **Sikasil® 2100**, or **Sikasil® 2300** available at www.sikausa.com or by contacting Technical Service for additional information and recommendations at (tsmh@sika-corp.com).

Application
In all cases, make sure the joint design is correct. Proper joint design minimizes stresses on the sealant. Use masking tape if desired for areas adjacent to the joint to be sealed to prevent surface contamination. Apply sealant to dry, clean surfaces. An air operated or hand operated cartridge gun may be used. Do not break cartridge seal until just before use. Surfaces should be dried before the sealant is applied. Normally sealant skins in 8 minutes, dries to touch in 1 hour, and bonds in 24 hours.

This product is suitable for bulk dispensing straight from drums or pails by means of a pneumatic or hydraulic pump system. For recommendations on selecting and setting up a suitable pump system please contact our Technical Service Department at (tsmh@sika-corp.com).

Expansion Joint
Apply using professional caulking gun. Do not open product container until preparation work has been completed. Apply sealant using consistent, positive pressure to force sealant into the joint. Tool sealant to create a concave joint shape and ensure maximum adhesion. Dry tooling is recommended.

Adhesive Joint
Apply using professional caulking gun, dispensing equipment or trowel. Use sufficient quantity of adhesive to one or both substrates to provide designed contact area. Surfaces may be moved up to one hour after application without loss of adhesive strength.

Tooling and finishing
Tool joint, if necessary, and remove masking tape. Tooling should be completed in one continuous stroke. Tool immediately after sealant is applied and before a skin begins to form. Dry tool - DO NOT use soap, water or oil as a tooling aid. Remove masking tape immediately after tooling is completed. Complete tooling of product within 5 minutes of sealant application.

Removal
Uncured sealant may be removed from tools and equipment with solvents such as isopropyl alcohol or xylene, if cleaned before sealant has begun to cure. Strictly follow solvent manufacturer's instructions for use and warning statements. Once cured, the material can only be removed mechanically. Hands and exposed skin should be washed with soap and water immediately after use. Do not use solvents on skin!

Overpainting
Sikasil®-N Plus US cannot be overpainted.

Limitations
- Do not allow sealant to come in contact with solvent during cure.
- Do not allow sealant to come in contact with curing polyurethane sealants during cure.
- Not intended for immersion.
- Not intended for structural glazing.
- Sealant may be applied below freezing temperatures if substrates are completely dry, frost free and clean. Contact Technical Service for more information.
- Not recommended for horizontal traffic.
- Not recommended for absorptive surfaces such as natural stone, particularly limestone or marble where staining may occur. Test before use.
- Do not apply to surfaces that will be painted.
- Do not apply to substrates that bleed oil, plasticizers or solvent.
- Do not apply to damp or wet substrates.
- Lower temperature and humidity will extend tack free and cure rates.
- Allow treated wood to age six months before application.
- Brass and copper may be discolored. Test prior to application.
- Test sensitive substrates, such as mirror backings for compatibility before use.

WARNING: IRRITANT, SENSITIZER. Contains Methyl ethyl ketoxime (CAS: 96-29-7), Oximino Silane (Trade Secret). Direct eye contact may cause irritation. Eye contact may cause conjunctivitis, corneal damage, or severe chemical burns. May cause skin irritation and sensitization. May be absorbed through the skin. May cause irritation to respiratory system. May cause drowsiness. May be harmful if swallowed. If heated, silicones can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant

Further information available at:
www.sikausa.com
Sika Corporation Industry Products
30800 Stephenson Highway
Madison Heights, MI 48071 **MADE IN USA**

to the eyes, nose, throat, skin, and digestive system. Product contains oximes, possible skin sensitizers.

HMIS

Health	*1
Flammability	1
Reactivity	0
Personal Protection	C

FIRST AID

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, remove from skin and flush with water for 15 minutes. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. Get medical attention if irritation develops or ill effcts persist. Treat according to persons condition and specifics of exposure.

Further Information

Copies of the following publications are available on our website **www.sikausa.com** or by contacting (tsmh@sika-corp.com)

- Material Safety Data Sheet
- Product Data Sheet

In case of emergency call:
Chemtrec: 800-424-9300
International: 703-527-3887

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Material Safety Data Sheets containing physical, ecological, toxicological and other safety related data. It is highly recommended to read the actual Material Safety Data Sheet before using the product.

- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- KEEP CONTAINER TIGHTLY CLOSED
- FOR PROFESSIONAL USE ONLY

Packaging Information

Cartridge	10 fl. oz. (295ml)
Pail	4.5 gal (17 L) in a 5 gal pail
Drum	52 gal (197 L) in 55 gal drum

Value Basis

All technical data stated on this Product Data Sheet are based on the results of laboratory tests only. Actual measured data in the field may vary due to site specific conditions which are not known to Sika and beyond our control.

Handling and Storage

Use with adequate ventilation. Product evolves Methyl ethyl ketoxime (MEKO) and methanol when exposed to water or humid air. Provide adequate ventilation to control MEKO within exposure guidelines. Keep container closed and store away from water or moisture or oxidizing materials.

Storage: When stored in the original, unopened containers at or below 90°F (32°C), shelf life is one year. A product skin may form in pails and drums, remove prior to use.

Clean Up

Observe personal protective equipment recommendations described in MSDS. Disposal of collected product, residues, and cleanup materials may be governmentally regulated. Observe all applicable local, state and federal waste management regulations. Wipe up and contain for disposal. Final cleaning may require use of steam, solvents, or detergents.

Limited Material Warranty

Manufacturer / Distributor warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES IMPLIED OR EXPRESS SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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Further information available at:
www.sikausa.com

Sika Corporation Industry Products
30800 Stephenson Highway
Madison Heights, MI 48071
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Construction

SikaHyflex®-150 LM

One part, low modulus, hybrid sealant

Description

SikaHyflex®-150 LM is a premium-grade, high movement, fast curing, one component, non-sag, elastomeric, hybrid sealant. Meets ASTM C-920, Type S, Grade NS, Class 50, use NT, M, A, G, O

Where to Use

- For joints or gaps connecting dissimilar substrates – e.g. vinyl to concrete, aluminum to EIFS.
- Window Perimeter
- Expansion joints
- Curtain Wall construction
- For applications that require both paintability and adhesion to non-porous substrates
- When easy cold weather application is desired

Advantages

- Fast skin time
- Multi-substrate adhesion
- Superior UV resistance and weathering
- Color retention – white stays white
- Can be over-painted soon after application (once skin has formed)
- Very low VOC < 12g/L
- Non-staining

Packaging

10.1 fl. oz. Cartridge
20 fl. oz. Uni-pac sausage

Typical Data (Material and Curing conditions @ 73ºF (23ºC) and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	1 year	
Storage Conditions:	40ºF (5ºC) - 80ºF (27ºC), 50% RH. Condition Material to 65ºF - 75ºF before using	
Application Temperature:	40º - 100ºF. Sealant should be installed when joint is at mid-range of its anticipated movement	
Service range:	-40º - 170ºF	
VOC:	12 g/L	
Tack Free Time (ASTM C679):	<1 hr	
Movement capability (ASTM C719):	+/- 50%	
Stress at 100% (ASTM D-412):	30 psi	
Elongation (ASTM D-412):	1000%	
Shore A Hardness (ASTM C661):	27	
Stain and color change (ASTM C510):	None	
Adhesion in peel (ASTM C794):	Aluminum	36.5 pli
	Glass	33.8 pli
	Concrete	31.0 pli
Weathering resistance:	Excellent	

Coverage

10.1 oz Cartridge: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	24.3		
3/8"	16.2	10.8	
1/2"	12.1	8.1	6.1
3/4"	8.1	5.4	4.0
1"			3.0
1.25"			2.4
1.5"			2.0

20 oz Sausage: Yield in Linear feet

Width \ Depth	1/4"	3/8"	1/2"
1/4"	48.1		
3/8"	32.1	21.4	
1/2"	24.1	16.0	12.0
3/4"	16.0	10.7	8.0
1"			6.0
1.25"			4.8
1.5"			4.0

Construction

How To Use

Surface Preparation

The substrate must be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion.

POROUS SUBSTRATES – clean by mechanical methods to expose a sound surface free of contamination and laitance.

NON-POROUS SUBSTRATES – for cleaning non-porous substrates, use two rag wipe method using alcohol, xylene or an approved commercial solvent. Allow solvent to evaporate prior to sealant application.

Priming

SikaHyflex®-150 LM is designed to obtain adhesion without the use of a primer; however, certain substrates may require a primer. Test by applying the sealant and/or primer sealant combination to confirm results and proposed application methods. *In the situation where primer is needed on porous surfaces use Sika Primer 429. For non-porous surfaces contact Technical Services for proper recommendation.

Application

The number of joints and the joint width should be designed for a maximum of ±25% movement of joint width at time of installation. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 1/2 inch (13mm) and the minimum is 1/4 inch (6mm). To control joint depth, use closed cell polyethylene, non-gassing polyolefin or open cell polyurethane backer rod. If joint depth does not allow for backer rod, use polyethylene bond breaker tape to prevent three-sided adhesion. Closed cell backer rod should be 25% larger than joint width; do not compress more than 40%. Open cell should be compressed 40%. Do not use open cell rod in horizontal on grade joints or with E.I.F.S. Ready to use, apply using professional caulking gun. Do not open product container until preparation work has been completed. Apply sealant using consistent, positive pressure to force sealant into the joint. Tool sealant to create a concave joint shape and achieve maximum adhesion. Dry tooling is recommended. DO NOT use soapy water or other liquids when tooling.

Limitations

- SikaHyflex®-150 LM can be overpainted after a skin forms on the sealant
- When overcoating with water, oil and rubber based paints, compatibility and adhesion testing is essential. Rigid paints and coatings may lose adhesion to elastomeric sealants due to their inability to accommodate joint movement.
- Maximum depth of sealant must not exceed 1/2 in.; minimum depth is 1/4 in.
- Do not cure in the presence of curing silicone or polyurethane sealants.
- Use opened cartridges and uni-pac sausages the same day.
- When applying sealant, avoid air-entrapment.
- Since system is moisture-cured, permit sufficient exposure to air.
- Light colors can yellow if exposed to direct gas fired heating element.
- Do not tool with detergent or soap solutions.
- Do not use in contact with bituminous/asphaltic materials.
- Not intended for immersion.
- Not intended for structural glazing applications
- Sealant may be applied below freezing temperatures if substrates are completely dry, frost free and clean. Contact Technical Service for more information.
- Do not apply when substrate temperatures are below -20°F or above 130°F.
- Not recommended for horizontal vehicular traffic.
- Do not apply to substrates that bleed oil, plasticizers or solvent.
- Do not apply to damp or wet substrates.
- Lower temperature and humidity will extend tack free and cure rates.
- Allow treated wood to age six months before application.
- The ultimate performance of SikaHyflex-150 LM depends on good joint design and proper application with joint surfaces properly prepared.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Loadflex®-524 EZ

Two Component, Semi Rigid, Polyurea Control Joint Filler

Description	Sika® Loadflex® -524 EZ is a technologically advanced, two-component, quick-setting, semi-rigid, solvent-free, self-levelling control joint filler.
Where to Use	▪ Sika® Loadflex® -524 EZ is recommended for use as filler for static interior, horizontal saw cuts or preformed control and construction joints. ▪ Typically installed in facilities such as warehouses and industrial plants, where such joints are subject to load-bearing conditions involving wear and impact. ▪ Sika® Loadflex® -524 EZ is also used for repairing interior concrete slabs that have experienced random cracking due to shrinkage.
Advantages	▪ Quick-set formula reduces down time. ▪ Material can be shaved off smooth as early as 5 minutes or as late as 24 hours after placement at 73°F (23°C). ▪ Cures at temperatures down to -13°F (-25°C). ▪ Hard, load-bearing filler designed to withstand industrial traffic. ▪ Provides even load transfer across floor joints, thereby protecting joint edges from breaking down under traffic. ▪ Two components, easy to use, 1:1 mix ratio. ▪ Improved consistency to allow easier dispensing and reduced blockage of equipment. ▪ Seals joints from collecting dirt, dust and debris. ▪ Excellent moisture sensitivity.
Packaging	10 US gallon unit (Part A 5 gal, Part B 5 gal)

Technical

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	12 months in original, unopened packaging.
Storage Conditions	Store between 59 and 89°F. Condition product between 65 and 86°F before using.
Colors	Gray
Estimated Yield	Coverage rates for a 10 US gallon unit. Sika® Loadflex®-524 EZ should be installed to the full depth of the joint.

Coverage for 10 gallon kit at joint width of:

Joint Depth		1/8 in. (3mm)		1/4 in. (6mm)	
inches	mm	ft	m	ft	m
1	25	1,540	497	770	248
1 1/4	32	1,232	397	616	199
1 1/2	38	1,027	331	513	166
1 3/4	44	880	284	440	142
2	51	770	248	385	124

Note: The above chart is a theoretical guide only. Allowance must be made for surface profile, wastage, etc.

Construction

Mix Ratio	A:B = 1:1 by volume	
Properties at 23°C (73°F) and 50% R.H.		
Pot life	20 sec.	
Working time	10 sec.	
Modulus of Elasticity ASTM D638	6525 psi	
Tensile strength ASTM D638	652 psi	
Elongation at Break ASTM D638	110%	
Bond strength	> 218 psi	
Absorbtion ASTM D570	0.30%	
Shore D Hardness ASTM D2240	30-32	
Shore A Hardness ASTEM D2240	80-85	
Density	Part A	1.11 g/mL
	Part B	1.10 g/mL
	Part A+B	1.1 g/mL
Deformation MIL-D-24613 mod.	6.9 NPa (1000 psi) 43.9%	
Viscosity	Part A 2000-2500 cps	
	Part B 1000-1600 cps	
Cure time	Light traffic	15 min at 73°F (23°) 60 min at -13°F (-25°)
	Full traffic	30 min at 73°F (23°) 2 hrs at -13°F (-25°)

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

Method of Application

Mixing

- Pre-mix each component thoroughly before using. Sika® Loadflex® -524 EZ must be machine mixed / dispensed using a 1 to 1 ratio, plural component pump and 30 element static mixing nozzle. Note: Sika® Loadflex® -524 EZ sets too quickly to allow hand mixing.

Surface Preparation

- Surface must be clean, sound and dry. Remove all surface contaminants including without limitation contaminants such as dust, grease, curing compounds, impregnations, waxes, foreign particles and disintegrated materials that might prevent bond. Preferred methods of joint cleaning include using a dustless saw with diamond blade, with blade slightly wider than the joint so both sides of joint are cleaned or sand blasting. If unusual conditions are present contact Sika Technical Services.

Application

- Dispense Sika® Loadflex® -524 EZ directly from the static mixing nozzle into joints or cracks until the entire void is filled. Maintain a steady flow of material to eliminate overlapping as this may cause bubbling within the material. Joints should be slightly over filled and shaved level with the adjacent joint edges to facilitate a smooth appearance. For best results, shave the over-fill between 15 minutes to 24 hours after placing, when cured at 73°F (23°C). Cartridge: Product gels in static mixer after 15 seconds. Once started, do not stop the extrusion process. Additional static mixers are available from your supplier, if needed.

Limitations

- For best results, Sika® Loadflex® -524 EZ should be installed 120 days or longer after initial con crete placement, when the majority of concrete shrinkage has occurred and control joints are static. Refer to the relevant CSA A23.1 or ACI 302.1 standards.
- Substrate temperature should not be less than -13°F (-25°C) and rising at time of application.
- For interior, horizontal use only.
- For best results, materials should be conditioned to between 65 and 86°F (18 and 30°C).
- Do not thin. Solvents may prevent proper cure.
- Sika® Loadflex® -524 EZ is a vapor barrier after cure.
- Not for sealing cracks under hydrostatic pressure.
- Not to be used in moving cracks or joints which are designed for or exhibit movement.
- Not recommended for use as joint filler under resilient flooring or under polymer flooring. Contact your local Sika Sales Representative or the Technical Service Department for further information.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 51 NS

Flexible epoxy control-joint sealer/adhesive

Description	Sikadur® 51 NS is a 2-component, non-sagging, solvent-free, moisture-tolerant, flexible epoxy control joint sealer and adhesive.
Where to Use	■ Use to fill vertical and overhead non-moving, saw-cut construction control joints and cracks. ■ Use as a flexible adhesive.
Advantages	■ 2 to 1 ratio ensures easy mixing, easy handling. ■ An adhesive with excellent flexibility. ■ Excellent durability. ■ Conforms to ACI 302.1R (4.10-Joint Materials). ■ Shock-absorbent cure. ■ Prevents deterioration of control-joint edges. ■ Use as a security sealant.
Coverage	1 gal. will yield 231 cu. in. or will fill 102 ft. of 1/8 in. wide x 1.5 in. deep joint.
Packaging	3 gallon units.

Typical Data *Material and curing conditions @ 73°F (23°C) and 50% R.H.*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers		
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-85° F (18°-29°C) before using.		
Color	Concrete gray		
Mixing Ratio	Component 'A': Component 'B' = 2:1 by volume.		
Viscosity	Comp. 'A'	300,000-350,000 cps	
	Comp. 'B'	29,000-31,000 cps	
	Mixed	Non-sag paste	
Pot Life	1-1.5 hours		
Tack-Free Time	7-8 hours.		
Tensile Properties (ASTM D-638)			
14 days	Tensile Strength	650 psi (3.9 MPa)	
	Elongation at Break	80%	
	Modulus of Elasticity	1,800 psi (12.4 MPa)	
	Tensile stress at % elongation	2.5%	50 psi (0.35 MPa)
		5%	90 psi (0.62 MPa)
		10%	160 psi (1.10 MPa)
Tear Resistance (ASTM D-624)	**14 days**	110 lb./in. (19.4 N/mm)	
Hardness (ASTM D-2240)	**28 days**	(Shore A) 75-80	(Shore D) 30-40

Construction

How to Use

Surface Preparation

Substrate must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials, etc., by mechanical means (i.e. sandblasting, high pressure water blasting).

Mixing

Pre-mix each component. It is critical to accurately proportion 2 parts Component 'A' and 1 part Component 'B' by volume into a clean pail or appropriately sized mixing container. Mix thoroughly for 3 minutes with a Sika Paddle on a low-speed (400- 600 rpm) drill until uniform in color. Mix only that quantity which can be used within pot life.

Application

For vertical or overhead applications, gun Sikadur® 51 NS into construction/control joints and cracks with caulking gun, pressure extruder, or other suitable methods. Be sure to maintain steady pressure and steady flow of material, filling entire joint in a single application. Take care to eliminate overlapping as this may cause bubbling within the material. For use as a flexible adhesive, consult Sika Technical Service at 800-933-SIKA.

Limitations

- Do not thin Sikadur® 51 NS. Addition of solvents may prevent proper cure.
- Substrate temperature should be 40°F (4°C) minimum and rising.
- For best results, materials should be maintained between 65°-85°F (18°-29°C) during application.
- Do not apply through standing water.
- Minimum age of concrete is 28 days.
- Materials are vapor barriers after cure.
- Concrete or masonry must be tested for water-vapor transmission prior to application.
- Not designed for use under constant immersion in water or other liquids.
- Do not use in expansion (moving) joints.
- For application in non-moving joints only.
- The ultimate performance of Sikadur® 51 NS depends upon many factors, [i.e., proper joint design, thermally stable areas, (concrete slab), etc.].
- For applications other than sealing of control or construction joints, consult Sika Technical Service at 800-933-SIKA.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 51 SL

Flexible epoxy control joint resin

Description	Sikadur® 51 SL is a 2-component, self-leveling, 100% solids, flexible, control joint resin sealer and adhesive.
Where to Use	■ Use to fill horizontal, non-moving, saw cut construction control joints and cracks. ■ Use as a flexible adhesive.
Advantages	■ Remains flexible. Does not age-harden. ■ Prevents deterioration of joint edges. ■ Excellent adhesive properties. ■ Conforms to ACI 302.1R (4.10-Joint Materials). ■ Ideal for use with plural injection type systems. ■ Can be used on grades up to 15%. ■ Shock absorbent and durable. Withstands wheel traffic and heavy loads. ■ Use as a security sealant. ■ Use as a tamper resistant sealant.
Coverage	1 gal. will yield 231 in^3 or will fill 100 lin. ft. of 1/8 in. x 1.5 in. deep joint.
Packaging	4 gallon units.

Typical Data (*Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75° F (18°-24°C) before using.
Color	Concrete Gray
Mixing Ratio	Component 'A': Component 'B' = 1:1 by volume.
Viscosity	Comp. 'A' 5,800 cps (5,800) Comp. 'B' 7,900 cps (7,900) Mixed 7,000 cps (7,000)
Pot Life	20-25 minutes, 1 gallon (3.8 liter) 40 minutes, 8 fl. oz. (250 ml)
Tack-Free Time	7-8 hours

Tensile Properties (ASTM D-638)

14 days	Tensile Strength	570 psi (3.9 MPa)
	Elongation at Break	90%
	Modulus of Elasticity	2,800 psi (19.3 MPa)
	Tensile stress at % elongation	2.5% 70 psi (0.48 MPa)
		5% 110 psi (0.75 MPa)
		10% 160 psi (1.10 MPa)

Tear Resistance (ASTM D-624) 14 days 170 lb./in. (29.8 N/mm)

Hardness (ASTM D-2240) 28 days Hardness (Shore D) 50-55

Water Absorption (ASTM D-570) 7 days (24 hour immersion) 1.86%

Construction

How to Use

Surface Preparation

Substrate must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes and any other contaminants.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means.

Mixing

Pre-mix each component. Proportion equal parts by volume of Component A and Component B into clean pail. Mix thoroughly for 3 minutes with a low-speed (400-600 rpm) drill using a Sika paddle until uniform in color. Mix only that quantity that can be applied within its pot life.

Application

Pour the mixed Sikadur® 51 SL into the prepared joint or use low-pressure extrusion equipment.

Option 1: Allow the material to flow slowly, settle and self-level filling entire depth. Strike-off level and remove any excess material where required, before it hardens.

Option 2: If applied generously, sealant will overflow out of joint. Allow material to completely harden. Apply heat with an industrial heating gun to soften cured resin. Shave Sikadur® 51 SL with a sharp razor to level with the surfaces of the concrete that define the control joint.

Limitations

- Do not thin. Addition of solvents may prevent proper cure.
- Substrate temperature should be 40°F (4°C) minimum and rising.
- For best results, materials should be maintained between 65°-75°F (18°-24°C) during application.
- Do not apply through standing water.
- Minimum age of concrete is 28 days.
- Materials are a vapor barrier after cure.
- Concrete or masonry must be tested for water-vapor transmission prior to application.
- Not designed for use under constant immersion in water or other liquids.
- Do not use in expansion (moving) joints.
- For application in non-moving joints only.
- The ultimate performance of Sikadur® 51 SL depends upon many factors, [i.e., proper joint design, thermally stable areas (concrete slab), etc.].
- Sikadur® 51 SL should be installed full depth when sealing construction/control joints.
- Material should not be applied earlier than 28 days after new concrete is placed. A 60-90 day cure is recommended.
- Sikadur® 51 SL may change color over time, especially when exposed to ultraviolet rays, artificial heaters or intense lighting.
- For applications other than sealing of joints, consult Sika Technical Service prior to use.

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Sika Corporation
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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikasil®-728 NS

Non-sag, ultra low modulus, highway/parking garage, neutral cure silicone sealant

Description

Sikasil 728 NS is a high performance, non-sag. one-component , ultra low modulus elastomeric, neutral cure silicone sealant. Meets the requirements of ASTM D-5893: ASTM C-920, Type S, Grade NS, Class 100/50, Use NT, T, M, G, A, O with ultra low Shore Hardness: TT-S-00230C, Type II, Class A; Class A.

Where to Use

Construction Application
- Highway joints
- Bridges
- Stadiums
- Parking garages
- Plaza decks
- Driveways
- Decks
- Expansion joints
- Saw cut joints

Substrate
- Concrete, steel, glass, aluminum, ceramic, masonry, brick, stone and granite

Advantages
- Durable
- Ideal for cold climates
- Excellent flexibility for extreme high and low temperature conditions
- Excellent flexibility for dynamic joint movement
- Bonds to most substrates without priming; best performance obtained in horizontal joints when primed
- Ready to use, labor cost reduction
- Non sag, excellent for vertical joints
- All season ease of application
- Excellent for use on all types of concrete joints
- Jet fuel resistant
- Resistant to road salts

Packaging

4.5 gal (17 l) in a 5 gal pail; 52 gal (197 l) in 55 gal drum. 29 oz. cartridge/12 per case.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	When stored in the original, unopened containers at or below 90°F (32°C), shelf life is one year. A product skin may form in pails and drums, remove prior to use.	
Storage Conditions	Store in unopened containers at temperatures at or below 90°F (32°C).	
Colors	Limestone and Charcoal Gray.	
Uncured Properties at 77°F (25°C), 50% R.H.		
Cure Time (MNA Method)		1/16" / 24 hours
Slump (ASTM D-2202)		none
Skin-over Time (MNA Method)		15 - 25 min.
Tack Free Time (ASTM C-679)		30 - 40 min.
Extrusion Rate (ASTM C-1183 modified)		200 g/min. 1/8" orifice @ 90 psi
Rheological, Vertical (ASTM C-639)		non-sag @ 120°F (49°C)
VOC Content		1.64% by wt., 21 g/l, 0.18 lbs/gal
Service Temperature		-80°F to 350°F (-62.2°C to 176.6°C)
Cured Properties after 7 days at 77°F (25°C), 50% R.H.		
Movement Capability (ASTM C-719)		+100%, -50%
Elongation at Break (ASTM D-412)		1000%
Hardness,	**Shore OO (ASTM C-661 & ASTM D-2240)**	50
	Shore A (ASTM C-661 & ASTM D-2240)	5-10
Stress at 100% (ASTM D-412)		35 psi (0.24 MPa)
Peel Strength (ASTM C-794)		40 pli
Tensile Strength (ASTM D-412)		175 psi (1.20 MPa)
Bond Durability on glass, (ASTM C-719) aluminum and concrete		+100%, -50%
Weathering Resistance		Excellent

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

Construction

Coverage

1 gallon: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

29 oz Cartridge: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	69.8		
	3/8"	46.5	31.0	
	1/2"	34.9	23.3	17.4
	3/4"	23.3	15.5	11.6
	1"			8.7
	1.25"			7.0
	1.5"			5.8

How to Use

Installation

Joint Design: The number of joints and the joint width should be designed for a recommended joint movement of +25% and -25% at time of installation. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 1/2 inch (13 mm) and the minimum is 3/8 inch (10 mm). For joints greater than 1 inch (25.4 mm), do not exceed 1/2 inch (13 mm) in depth.

Joint Backing: To control joint depth, use closed cell polyethylene or non-gassing polyolefin backer rod. If joint depth does not allow for backer rod, use polyethylene bond breaker tape to prevent three-sided adhesion. Closed cell backer rod should be 25% larger than joint width; do not compress more than 40%.

Surface Preparation

The substrate must be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion.

Porous Substrates – clean by mechanical methods to expose a sound surface free of contamination and laitance.
Non-porous substrates – for cleaning non-porous substrates, use two rag wipe method using xylene or an approved commercial solvent. Allow solvent to evaporate prior to sealant application.

Primer

Sikasil-728 NS is designed to obtain adhesion without the use of a primer; however, best results are obtained when horizontal joints are primed. Test by applying the sealant and/or primer sealant combination to confirm results and proposed application methods. Refer to Technical Data Sheet for Sikasil Primer 2100 and contact Technical Service for additional information.

Application

Ready to use, apply using professional caulking gun or dispensing equipment. Do not open product container until preparation work has been completed. Apply sealant using consistent, positive pressure to force sealant into the joint. Apply the sealant so that it is recessed 1/8 inch (3 mm) below the surface. For parking deck joints, recess 1/4 inch (6 mm). For highway joints, recess 1/2 inch (13 mm). Tool sealant to create a concave joint shape and maximum adhesion. Dry tooling is recommended. DO NOT use soapy water or other liquids when tooling. Remove excess sealant from substrate while uncured using a commercial solvent, such as xylene. Strictly follow the solvent manufacturer's warnings and instructions for use. Cured sealant may be removed by mechanical means.

Limitations

- Do not allow sealant to come in contact with solvent during cure.
- Do not allow sealant to come in contact with curing polyurethane sealants during cure.
- Not intended for immersion.
- Sealant may be applied below freezing temperatures if substrates are completely dry, frost free and clean. Contact Technical Service for more information.
- Not recommended for structural glazing applications.
- Test recommended for absorptive surfaces such as granite, limestone or marble where staining may occur.
- Do not apply to substrates that bleed oil, plasticizers or solvent.
- Do not apply to damp or wet substrates.
- Lower temperature and humidity will extend tack free time and cure rates.
- Allow treated wood to age six months before application.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikasil®-728 RCS

Two-part, self-leveling, rapid cure, ultra low modulus, horizontal application, neutral cure silicone sealant

Description

Sikasil-728 RCS (Rapid Cure System) is a self-leveling, two-component, very rapid cure, ultra low modulus elastomeric, neutral cure silicone sealant. Exceeds the requirements of ASTM C-920, Type M, Grade P, Class 100/50, Use T, M, G, A, O; TT-S-00227E, Type I, and various AASHTO reports and state DOT approvals.

Where to Use

Construction Application
- Horizontal expansion joints
- Highway and bridge joints
- Saw cut joints - new and remedial
- Plaza decks
- Parking decks
- Bridges
- Airports
- Stadiums
- Driveways

Location
- Horizontal
- Interior and exterior
- Above grade or on grade

Substrate
- Concrete, steel, glass, aluminum, tile, ceramic, masonry, brick, stone and granite

Advantages
- No tooling, less labor
- Excellent flexibility for extreme high and low temperature conditions
- Excellent flexibility for dynamic joint movement
- Bonds to most substrates without priming
- Open to traffic in one hour
- All season ease of application
- Good contact/adhesion with hard to reach areas
- Ideal for cold climates
- Excellent for use on runways and tarmacs
- Jet fuel resistant
- Resistant to road salts

Packaging

40 fl. oz. unit - 2, 20 oz. sausages/20 per case; 9 gal unit (34.11 L) – 2 pails each containing 4.5 gal (17 L); 104 gal unit (394.16 L) –2 drums each containing 52 gal (197.08 L)

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	When stored in the original, unopened containers at or below 90°F (32°C), shelf life is one year. A product skin may form in pails and drums, remove prior to use.
Storage Conditions	Store in unopened containers at temperatures at or below 90°F (32°C).
Colors	Limestone and Charcoal Gray (when Part A, dark gray and Part B, white, are mixed).

Uncured Properties at 77°F (25°C), 50% R.H.

Cure Time (MNA Method)	90% in 1 hr.
Skin-over Time (MNA Method)	10 min.
Tack Free Time (ASTM C-679)	25 min.
Extrusion Rate (ASTM C-1183 modified, Type S)	50 g/min. 1/8" orifice @ 50 psi Specific Gravity 1.25 - 1.35
Rheological, Vertical (ASTM C-639)	self-leveling @ 120°F (49°C)
VOC Content	2.4% by wt., 30 g/l, 0.25 lbs/gal
Service Temperature	-80° to 350°F (-62.2° to 176.6°C)

Cured Properties after 7 days at 77°F (25°C), 50% R.H.

Movement Capability & Bond Durability (ASTM C-719) (glass, aluminum and concrete)	+100%, -50%
Elongation at Break (ASTM D-412)	> 1000%
Hardness, Shore OO (ASTM C-661 & ASTM D-2240)	50 ± 5
Hardness, Shore A (ASTM C-661 & ASTM D-2240)	4-6
Stress at 100% (ASTM D-412)	25 psi (0.17 MPa)
Peel Strength (ASTM C-794) (glass, aluminum and concrete)	30 pli
Tensile Strength (ASTM D-412)	70 psi (0.48 MPa)
Joint Elongation (ASTM D-5329 [a] [b])	725%
Joint Modulus (ASTM D-5329 [a] [b]) (100% elongation)	5
Weathering Resistance	Excellent

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

Construction

Coverage

20 oz Sausage: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	48.1		
	3/8"	32.1	21.4	
	1/2"	24.1	16.0	12.0
	3/4"	16.0	10.7	8.0
	1"			6.0
	1.25"			4.8
	1.5"			4.0

1 gallon: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

How to Use

Installation

Joint Design: The number of joints and the joint width may be designed for high movement capability. For joints one to three inches in width, the sealant will accept movements +100% and -50% and for three to four inches in width, the sealant will accept movements of ±50% of joint width at time of installation. The depth of the sealant should be 1/2 the width of the joint. The minimum depth is 1/4 inch (6 mm) and the maximum is 1/2 inch (12 mm). For joints greater than 1 inch (25.4 mm), do not exceed 1/2 inch (6 mm) in depth

Joint Backing: To control joint depth, use closed cell polyethylene or non-gassing polyolefin backer rod. If joint depth does not allow for backer rod, use polyethylene bond breaker tape to prevent three-sided adhesion. Closed cell backer rod should be 25% larger than joint width; do not compress more than 40%. Never use open cell rod in on grade horizontal joints.

Surface Preparation

The substrate must be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion.

Porous Substrates – clean by mechanical methods to expose a sound surface free of contamination and laitance. **Non-porous substrates** – for cleaning non-porous substrates, use two rag wipe method using xylene or an approved commercial solvent. Allow solvent to evaporate prior to sealant application.

Primer

Sikasil-728 RCS is designed to obtain adhesion without the use of a primer; however, best results are obtained when horizontal joints are primed. Test by applying the sealant and/or primer sealant combination to confirm results and proposed application methods. Refer to Technical Data Sheet for Sikasil Primer and contact Technical Service for additional information.

Application

Apply sealant using consistent, positive pressure to force sealant into the joint. Apply the sealant so that it is recessed 1/8 inch (3 mm) below the surface. For parking deck joints, recess 1/4 inch (6 mm). For highway joints, recess 1/4 inch (13 mm). Sikasil-728 RCS is self-leveling - no tooling is needed. DO NOT use soapy water or other liquids. Consult full application guide for further information. Sikasil-728 RCS will obtain adhesion to aged, cured asphalt. Never use on newly poured asphalt. Conduct a field test to document and confirm adhesion under actual jobsite conditions.

Removal

Remove excess sealant from substrate while uncured using a commercial solvent, such as xylene according to the solvent manufacturer's warnings and instructions for use. Cured sealant can only be removed by mechanical means.

Limitations

- Do not allow sealant to come in contact with solvent during cure.
- Do not allow sealant to come in contact with curing polyurethane sealants during cure.
- Not intended for immersion.
- Sealant may be applied below freezing temperatures if substrates are completely dry, frost free and clean. Contact Technical Service for more information.
- Contact Technical Service prior to using in joints over three inches (76 mm) wide.
- Not intended for structural glazing.
- Test recommended for absorptive surfaces such as limestone, granite or marble where staining may occur.
- Do not apply to substrates that bleed oil, plasticizers or solvent.
- Do not apply to damp or wet substrates.
- Lower temperature and humidity will extend tack free and cure rates.
- Allow treated wood to age six months before application.
- Brass and copper may discolor. Test apply prior to application.
- Test sensitive substrates, such as mirror backings for compatibility before use.

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Lyndhurst, NJ 07071
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Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920

Construction

Sikasil®-728 SL

Self-leveling, ultra low-modulus, highway/parking garage, neutral cure silicone sealant

Description

Sikasil-728 SL is a self-leveling, one-component, ultra low modulus, elastomeric, neutral cure silicone sealant. Meets the requirements of ASTM D-5893; ASTM C-920, Type S, Grade P, Class 100/50; Use T, M, G, A, O with an ultra low Shore Hardness; TT-S-00230C, Type I, Class A; TT-S-001543A, Class A.

Where to Use

Construction Application

- Highway joints
- Bridges
- Stadiums
- Parking garages
- Plaza decks
- Driveways
- Decks
- Expansion joints
- Saw cut joints

Substrate

- Concrete, steel, glass, aluminum, tile, ceramic, masonry, asphalt, brick, stone and granite

Advantages

- No tooling, less labor
- Durable
- Ideal for cold climates
- Excellent flexibility for extreme high and low temperature conditions
- Excellent flexibility for dynamic joint movement
- Bonds to most substrates without priming including aged asphalt and concrete
- Ready to use
- All season ease of application
- Good contact/adhesion with hard to reach areas
- Excellent for use on runways and tarmacs
- Jet fuel resistant
- Resistant to road salts

Packaging

4.5 gal (17 L) in a 5 gal pail; 52 gal (197 L) in 55 gal drum; 29 oz. cartridges/12 per case.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life		12 months in original unopened container. A product skin may form in pails and drums, remove prior to use.
Storage Conditions		Store in unopened containers at temperatures at or below 90°F (32°C).
Colors		Limestone and Charcoal Gray.
Uncured Properties at 77°F (25°C), 50% R.H.		
Cure Time (MNA Method)		1/16" / 24 hours
Skin-over Time (MNA Method)		60 min.
Tack Free Time (ASTM C-679)		115 min.
Extrusion Rate (ASTM C-1183 modified)		900 g/min. 1/8" orifice @ 90 psi
Rheological, Vertical (ASTM C-639)		self-leveling @ 120°F (49°C)
VOC Content		2.27% by wt., 29 g/L, 0.24 lbs/gal
Service Temperature		-80° to 350°F (-62.2° to 176.6°C)
Cured Properties after 7 days at 77°F (25°C), 50% R.H.		
Movement Capability (ASTM C-719)		+100%, -50%
Elongation at Break (ASTM D-412)		1100%
Hardness	**Shore OO (ASTM C-661 & ASTM D-2240)**	40
	Shore A (ASTM C-661 & ASTM D-2240)	3-5
Stress at 100% (ASTM D-412)		30 psi (0.21 MPa)
Peel Strength (ASTM C-794)		25 pli
Tensile Strength (ASTM D-412)		100 psi (0.69 MPa)
Bond Durability on glass, (ASTM C-719) aluminum and concrete		+100%, -50%
Weathering Resistance		Excellent

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

Construction

Coverage

29 oz Cartridge: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	69.8		
	3/8"	46.5	31.0	
	1/2"	34.9	23.3	17.4
	3/4"	23.3	15.5	11.6
	1"			8.7
	1.25"			7.0
	1.5"			5.8

1 gallon: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

How to Use

Surface Preparation

Joint Design: The number of joints and the joint width should be designed for a recommended joint movement of +25% and -25% at time of installation. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 1/2 inch (13 mm) and the minimum is 3/8 inch (10 mm). For joints greater than 1 inch (25.4 mm), do not exceed 1/2 inch (13 mm) in depth.

Joint Backing: To control joint depth, use closed cell polyethylene or non-gassing polyolefin backer rod. If joint depth does not allow for backer rod, use polyethylene bond breaker tape to prevent three-sided adhesion. Closed cell backer rod should be 25% larger than joint width; do not compress more than 40%.

The substrate must be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion.

Porous Substrates – clean by mechanical methods to expose a sound surface free of contamination and laitance.

Non-porous substrates – for cleaning non-porous substrates, use two rag wipe method using xylene or an approved commercial solvent. Allow solvent to evaporate prior to sealant application.

Sikasil-728 SL is designed to obtain adhesion without the use of a primer; however, best results are obtained when horizontal joints are primed. Test by applying the sealant and/or primer sealant combination to confirm results and proposed application methods. Refer to Technical Data Sheet for Sikasil Primer and contact Technical Service for additional information.

Application

Ready to use, apply using professional caulking gun or dispensing equipment. Do not open product container until preparation work has been completed. Apply sealant using consistent, positive pressure to force sealant into the joint. Apply the sealant so that it is recessed 1/8 inch (3 mm) below the surface. For parking deck joints, recess 1/4 inch (6 mm). For highway joints, recess 1/2 inch (13 mm). Sikasil-728 SL is self leveling therefore, no tooling is needed. It is typical that 728 SL may retain some residual surface tack in its first 10-14 days of cure. This condition does not affect the time the surface joint can be open to service in a properly recessed sealant joint. Sikasil-728 SL will obtain adhesion to aged, cured asphalt. Never use on newly poured asphalt. Conduct a field test to document and confirm adhesion under actual jobsite conditions.

Removal

Remove excess sealant from substrate while uncured using a commercial solvent, such as xylene. Strictly follow solvent manufacturer's instructions for use and warnings. Cured sealant may be removed by mechanical means. Cured sealant can only be removed by mechanical means.

Limitations

- Do not allow sealant to come in contact with solvent during cure.
- Do not allow sealant to come in contact with curing polyurethane sealants during cure.
- Not intended for immersion.
- Sealant may be applied below freezing temperatures if substrates are completely dry, frost free and clean. Contact Technical Service for more information.
- Not intended for structural glazing.
- Test recommended for absorptive surfaces such as granite, limestone or marble where staining may occur.
- Do not apply to surfaces that will be painted.
- Do not apply to substrates that bleed oil, plasticizers or solvent.
- Do not apply to damp or wet substrates.
- Lower temperature and humidity will extend tack free and cure rates.
- Allow treated wood to age six months before application.
- Brass and copper may be discolored. Test apply prior to application.
- Test sensitive substrates for compatibility before use.
- Due to the very low tensile strength of asphalt and possibility that asphalt may fail cohesively within itself, Sikasil 728 SL is not recommended for asphalt to asphalt joints.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 31, Hi-Mod Gel (1:1 Mix Ratio)

High-modulus, high-strength, structural, epoxy paste adhesive

Description	Sikadur® 31, Hi-Mod Gel, is a 2-component, 100% solids, solvent-free, moisture-tolerant, high-modulus, high strength, structural epoxy paste adhesive. It conforms to the current ASTM C-881, Types I and IV, Grade-3, Class-B/C and AASHTO M-235 specifications.
Where to Use	■ Structural bonding of concrete, masonry, metals, wood, etc. to a maximum glue line of ⅛ in. (3 mm). ■ Grout bolts, dowels, and pins. ■ Seals cracks and around injection ports prior to pressure-injection grouting. ■ Interior, vertical, and overhead repair of concrete as an epoxy mortar binder. ■ As a pick-proof sealant around windows, doors, lock-ups etc. inside correctional facilities.
Advantages	■ Meets physical requirements of ASTM C-881 Types I, II & IV, Grade 3, Classes B & C. ■ Suitable for potable water contact, meets NSF/ANSI Standard 61. ■ Excellent adhesion to concrete, masonry, metals, wood, and most structural materials. ■ Paste consistency ideal for vertical and overhead repair of concrete. ■ Fast-setting and strength-producing adhesive. ■ Convenient easy mix ratio A:B = 1:1 by volume.
Coverage	1 gal. yields 231 cu. in. (3,785 cm^3) of epoxy paste adhesive. 1 gal. (3.8 L) mixed with 1 gal. (3.8 L) by loose volume of oven-dried aggregate yields approximately 346 cu. in. (5,670 cm^3) of epoxy mortar.
Packaging	1 gal. and 3 gal. (11.4 L) units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-85°F (18°-29°C) before using.
Color	Concrete gray
Mixing Ratio	Component 'A' : Component 'B' = 1:1 by volume
Consistency	Non-sag paste
Pot Life	Approximately 60 minutes @ 73°F. (500 gram mass)
Tack-Free Time	1.5 - 2.5 hours at 30 mils. thick

Tensile Properties (ASTM D-638)

7 day	Tensile Strength	3,300 psi (22.7 MPa)
	Elongation at Break	0.9 %

Flexural Properties (ASTM D-790)

7 day	Flexural Strength (Modulus of Rupture)	6,100 psi (42.0 MPa)
	Tangent Modulus of Elasticity in Bending	1.67 X 10^6 psi (11,520 MPa)

Shear Strength (ASTM D-732) **7 day** Shear Strength 4,600 psi (31.7 MPa)

Bond Strength (ASTM C-882)

Hardened Concrete to Hardened Concrete:		
2 day	**(dry cure)**	2,200 psi (15.2 MPa)
2 day	**(moist cure)**	2,400 psi (16.5 MPa)
14 day	**(moist cure)**	2,900 psi (20.0 MPa)
Hardened Concrete to Steel:		
2 day (dry cure)		2,900 psi (20.0 MPa)

Tensile Bond Strength (Pull-off Method, Dyna, ASTM C-1583-04)

2 day 420 psi (2.9 MPa)

Heat Deflection Temperature (ASTM D-648) **7 day** (Fiber Stress Loading = 264 psi) 135°F (57°C)

Water Absorption (ASTM D-570) **24 hour** 0.07%

Compressive strength (ASTM D-695) psi (MPa)

	40°F (4°C)* **	73°F (23°C)* **	90°F (32°C)* **
2 hour	-	-	450 (3.1)
4 hour	-	800 (5.5)	10,500 (72.4)
8 hour	-	8,500 (58.6)	12,200 (84.1)
16 hour	700 (4.8)	10,500 (72.4)	13,000 (89.6)
1 day	6,000 (41.4)	13,000 (89.6)	15,000 (103.4)
3 day	11,000 (75.8)	14,000 (96.5)	16,000 (110.3)
7 day	12,900 (88.9)	15,000 (103.4)	16,000 (110.3)
14 day	13,500 (93.0)	15,400 (106.1)	16,000 (110.3)
28 day	14,000 (96.5)	16,000 (110.3)	16,000 (110.3)

Compressive Modulus of Elasticity (ASTM D-695)	**7 day**	7.95 X 10^5 psi	(5,485 MPa)
VOC Content	4.0 g/L (A+B)		

* Material cured and tested at temperatures indicated.
** See Limitations section for further information.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, and any other contaminants.
Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means.
Steel - Should be cleaned and prepared thoroughly by blast cleaning or other equivalent mechanical means.

Mixing

Pre-mix each component. Proportion 1 part Component 'B' to 1 part Component 'A' by volume into a clean pail or appropriately sized mixing container. Mix thoroughly for 3 minutes with Sika paddle on low-speed (400-600 rpm) drill until uniform in color. Mix only that quantity which can be used within its pot life. Prior to mixing, material should be conditioned to 65°-85°F (18°-29°C). To prepare an epoxy mortar, slowly add up to 1 part, by loose volume of an oven dried aggregate, to 1 part of the mixed Sikadur® 31, Hi-Mod Gel, and mix until uniform in consistency.

Application

As a structural adhesive - Apply the neat mixed Sikadur® 31, Hi-Mod Gel to the prepared substrates. Work into the substrate for positive adhesion. Secure the bonded unit firmly into place until the adhesive has cured. Glue line should not exceed 1⁄8-in. (3 mm).

To seal cracks for injection grouting - Place the neat mixed material over the cracks to be pressure injected and around each injection port. Allow sufficient time to set before pressure injecting. For interior vertical and overhead patching - Place the prepared mortar in void, working the material into the prepared substrate, filling the cavity. Strike off level. Lifts should not exceed 1-in (25 mm).

As a pick-proof sealant - Use automated or manual method. Apply an appropriate size bead of material around the area being sealed. Seal with neat Sikadur® 31, Hi-Mod Gel.

Limitations

- **THE NTSB HAS STATED THAT THIS PRODUCT IS APPROVED FOR SHORT TERM LOADS ONLY AND SHOULD NOT BE USED IN SUSTAINED TENSILE LOAD ADHESIVE ANCHORING APPLICATIONS WHERE ADHESIVE FAILURE COULD RESULT IN A PUBLIC SAFETY RISK. CONSULT A DESIGN PROFESSIONAL PRIOR TO USE.**
- Components of original 2:1 mix ratio formulation of Sikadur® 31, Hi-Mod Gel cannot be cross-mixed with components of Sikadur® 31, Hi-Mod Gel (NEW 1:1 Mix Ratio) formulation.
- Minimum substrate and ambient temperature 40°F (4°C).
- Do not thin. Solvents will prevent proper cure.
- When preparing an epoxy mortar, use oven-dried aggregate only.
- Maximum epoxy mortar thickness is 1 in. (25 mm) per lift.
- Epoxy mortar is for interior use only. Material is a vapor barrier after cure.
- Minimum age of concrete must be 21-28 days, depending upon curing and drying conditions, for mortar applications.
- Porous substrates must be tested for moisture-vapor transmission prior to mortar applications.
- Not for sealing cracks under hydrostatic pressure.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® Combiflex® SG System

High performance joint sealing system

Description

High performance joint sealing system for construction, expansion and connection joints as well as for cracks. When fixed to the joint, allows irregular and high movement in more than one direction, while
maintaining a high quality seal.

The Sikadur Combiflex SG System consists of a modified flexible Polyolefin (FPO) waterproofing tape with advanced adhesion using Sikadur 31, Hi-Mod Gel (1:1 Mix Ratio).

Where to Use

Sealing system for expansion, construction and connection joints, as well as for cracks in:
- Tunnels and culverts
- Hydroelectric power plants
- Sewage treatment plants
- Basements
- Water retaining structures and drinking water reservoirs
- Around iron, steel and concrete pipes
- Swimming pools

Sealing of:
- Joints with extreme movement
- Building sections where varying settlement is expected
- Cracks

Repair/reinstatement of leaking joint sealing systems such as:
- Waterbars
- Joint sealants, etc.

Typical Data *(Material and curing conditions 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life Combiflex Kit - 2 years in original, unopened containers.

Storage Conditions Store dry at 40°-85°F (4°-30°C.) **Condition material to 65°-85°F** before using.

Color Sikadur 31, Hi-Mod Gel (1:1 Mix Ratio), adhesive - light gray.
FPO sheeting - concrete gray.

Typical Technical Data for Sikadur 31, Hi-Mod Gel (1:1 Mix Ratio), Adhesive:

Pot Life Approximately 60 minutes.
Tack Free Time 1.5 - 2.5 hours

Typical Technical Data for Combiflex SG:

Tensile Properties (ASTM D-412)
Tensile Strength > 1,740 psi (12 MPa)
Elongation at Break > 600%
Tear Resistance (ASTM D-624) Die C
Tear Strength 69 lb/in. (12 N/mm)
Low Temperature of Performance Maintained to -40°F

Typical Technical Data for Sikadur Combiflex System:

Peel Strength (ASTM D-903)
7 days Substrate, Concrete No loss of adhesion between the Tape and the Sikadur 31, Hi-Mod Gel (1:1 Mix Ratio), or the Sikadur 31, Hi-Mod Gel (1:1 Mix Ratio) and the concrete

Chemical Resistance

Long term to:
Water, lime water, cement water, seawater, salt solutions, domestic sewage, bitumen (according to EN 1548), bitumen emulsion coatings (staining possible), etc.
Temporary to:
Light fuel oil, diesel, diluted alkali and mineral acids, ethanol, methanol, petrol, etc.

Ozone Resistance

3 month Exposure Water/Ozone (3 ppm) - No Effect; Air/Ozone (2-300 ppm) - No Effect

For additional information on Sikadur 31, Hi-Mod Gel (1:1 Mix Ratio), consult Technical Data Sheet or call Technical Service.

Construction

Advantages

- Advanced adhesion, **no activation of tape required**
- Easy to install
- Suitable for both dry and damp concrete surfaces
- UL Listed for potable water applications
- Extremely flexible
- Performs well within a wide range of temperatures
- Excellent adhesion to many materials
- Weather and water resistant
- Approved for contact with potable water
- Good resistance to many chemicals
- Root resistant
- Versatile system suitable for many difficult situations

Coverage

Sikadur Combiflex SG Tape - 82 lineal ft./roll. Sikadur 31, Hi-Mod Gel (1:1 Mix Ratio) - 40 lineal ft./gal.

Packaging

Kits: Pre-measured kits containing 4 in. wide by 20 ft. long Sikadur Combiflex SG tape, 60 oz. of Sikadur 31, Hi-Mod Gel (1:1 Mix Ratio).

The components may be also be purchased separately:

Sikadur Combiflex SG Tape - 4, 8 and 12 in. wide by 20 ft. long and 82 ft. long.

Sikadur 31, Hi-Mod Gel (1:1 Mix Ratio) - 3 gal. units, and 1 gal. unit.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, and any other contaminants. Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blastcleaning or equivalent mechanical means. Steel - Should be cleaned and prepared thoroughly by blastcleaning.

Mixing

Surface must be clean and sound. It may be dry or damp but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, and any other contaminants. Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blastcleaning or equivalent mechanical means. Steel - Should be cleaned and prepared thoroughly by blastcleaning or other equivalent means.

Application

Surface must be clean and sound. It may be dry or damp but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, and any other contaminants. Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blastcleaning or equivalent mechanical means. Steel - Should be cleaned and prepared thoroughly by blastcleaning

Limitations

- Minimum surface temperature 40°F.
- Do not thin Sikadur 31, Hi-Mod Gel (1:1 Mix Ratio). Solvents will prevent proper cure.
- Maximum application thickness of epoxy is 1/8 in.
- Epoxy is a vapor barrier after cure.
- Cover plates over joint are required when using Sikadur Combiflex SG Tape in traffic areas.
- If joints are to be subjected to water pressure, the tape must be supported in the joint. Hard foam or joint sealant is recommended.
- For exposure to negative water pressure, the Sikadur Combiflex SG Tape must be secured with a steel plate fixed on one side.
- The Sikadur Combiflex SG Tape must be protected from mechanical damage.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 23, Lo-Mod Gel

Low-modulus, paste-consistency, epoxy resin binder

Description	Sikadur® 23, Lo-Mod Gel, is a 2-component, 100% solids, moisture-tolerant, low-modulus, non-sag paste-consistency, epoxy resin binder. It conforms to the current ASTM C-881 and AASHTO M-235 specifications.
Where to Use	■ Use as a binder for epoxy mortar repairs. ■ As a pick-proof sealant around windows, doors, lock-ups, etc., inside correctional facilities, schools and institutions.
Advantages	■ Non-sag consistency. ■ Convenient easy to mix ratio A:B = 1:1 by volume. ■ Moisture-tolerant epoxy adhesive binder.
Coverage	1 gal. of mixed Sikadur® 23, Lo-Mod Gel, when mixed with 1 part by loose volume of oven-dried aggregate, yields approximately 346 cu. in. of epoxy mortar.
Packaging	4-gal. units

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.
Color	Concrete gray.
Mixing Ratio	Component 'A':Component 'B' = 1:1 by volume.
Consistency	Non-sag paste.
Pot Life	Approximately 45 minutes. (200 gram mass)

			Neat
Tensile Properties Mortar 1:1 (ASTM D-638)			
14 day	Tensile Strength	2,400 psi (16.5 MPa)	2,000 psi (13.8 MPa)
	Elongation at Break	1.0 %	6.3%
	Modulus of Elasticity	6.1×10^5 psi (4,206 MPa)	3.23×10^5 psi (2,227 MPa)
Flexural Properties Mortar 1:1 (ASTM D-790)			
14 day	Flexural Strength (Modulus of Rupture)	3,900 psi (26.9 MPa)	4,800 psi (33 MPa)
	Tangent Modulus of Elasticity in Bending	6.8×10^5 psi (4,688 MPa)	4.71×10^5 psi (3,247 MPa)
Shear Strength Mortar 1:1 (ASTM D-732)			
14 day	Shear Strength	3,300 psi (22.7 MPa)	3,000 psi (21 MPa)
Water Absorption Neat (ASTM D-570)			
7 day	(2 hour Boil)	0.4%	
Deflection Temperature Mortar 1:1 (ASTM D-648)			
14 day	[fiber stress loading = 66 psi (0.46 MPa)]	102°F (39°F)	
Bond Strength (ASTM C-882): Hardened concrete to hardened concrete			
2 day (dry cure)	Bond Strength	2,600 psi (17.9 MPa)	
14 day (moist cure)	Bond Strength	1,700 psi (11.7 MPa)	

Compressive Properties Mortar 1:1, (ASTM D-695)

Compressive Strength, psi (MPa)				**Neat**	
	40°F* (4°C)	**73°F* (23°C)**	**90°F* (32°C)**	**73°F* (23°C)**	**90°F* (32°C)**
8 hour	-	-	3,500 (24.1)	-	-
16 hour	-	3,300 (22.7)	5,600 (38.6)	120 (0.83)	960 (6.6)

1 day	-	4,500 (31.0)	5,700 (39.3)	1,300 (9.0)	1,600 (11.0)
3 day	100 (.69)	5,600 (38.6)	5,800 (40.0)	2,900 (20.0)	1,800 (12.4)
7 day	2,200 (15.2)	6,500 (44.8)	5,800 (40.0)	4,600 (31.7)	3,600 (24.8)
14 day	7,300 (50.3)	7,100 (48.9)	5,900 (40.7)	5,000 (34.5)	3,800 (26.2)
28 day	7,400 (51.0)	7,200 (49.6)	6,000 (41.4)	5,150 (35.5)	3,900 (26.9)
Compressive Modulus		**28 days**	4.0×10^5 psi (2,758 MPa)		1.28×10^5 psi (883 MPa)

* Cured and tested at the temperatures indicated.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blastcleaning or equivalent mechanical means.

Steel - Should be cleaned and prepared thoroughly by blastcleaning other equivalent mechanical means to a shiny metal finish.

Mixing

Pre-mix each component. Proportion equal quantities by volume of Component 'A' and Component 'B' into a clean pail. Mix thoroughly for 3 minutes with a Sika paddle on a low-speed (400-600 rpm) drill until uniform in color. Slowly add up to 1 part by loose volume of an oven-dried aggregate to 1 part of mixed Sikadur® 23, Lo-Mod Gel, and mix until uniform in consistency. Mix only that quantity that can be used within its pot life.

Application

As a mortar - Apply the Sikadur® 23, Lo-Mod Gel mortar using a trowel. Work material into surface. Fill void from deepest to shallowest area. Strike off level.

As a pick-proof sealant - Use automated or manual method. Apply an appropriate size bead of material around the area being sealed. Seal with neat Sikadur® 23, Lo-Mod Gel.

Limitations

- Do not thin, solvents will prevent proper cure.
- Use only oven-dried aggregate.
- Minimum substrate and ambient temperature 40°F (4°C).
- Porous substrates must be tested for moisture-vapor transmission prior to application.
- Material is a vapor barrier after cure.
- Minimum age of concrete before application is 21-28 days, depending on curing and drying conditions.
- Thickness in excess of 1/2 in. (13 mm) is not recommended in areas exposed to thermal change.
- Maximum thickness of 1.5 in./lift (38 mm/lift) for interior applications.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikaflex®-11 FC

One part advanced polyurethane, elastomeric sealant/adhesive

Description

Sikaflex-11 FC is a one-component, gun-grade, adhesive and sealing compound of permanent elasticity. This dual-purpose material is based on a special moisture-cured polyurethane with an accelerated curing time.

Where to Use

As an elastic adhesive for:

- Cover plates, gaskets and coverings.
- Acoustic ceiling tiles.
- Floor moldings and door sills.
- Light weight construction materials.
- Wood or metal and door frames.
- Roof tiles.

As an elastic joint sealer for:

- Air ducts and high vacuum systems.
- Containers, tanks, and silos.
- Gaskets in openings in walls or floors for ducts, piling, etc.
- Reservoirs or water retaining structures.
- Aluminum fabrication.
- Bolted lap joints.

Advantages

- Excellent adhesion on all cement-based materials, brick, ceramics, glass, metals, wood, epoxy, polyester and acrylic resin.
- Fast cure rate.
- Good weathering and water resistance.
- Non-corrosive.
- Can be painted over with water, oil, and rubber-based paints. (Preliminary tests recommended).
- High durability.

Chemical Resistance

Good resistance to water, weak acids, weak alkalis, sewerage, mineral oils, vegetable oils, fats, fuels. (Not resistant to organic solvents, paint thinner, strong acids, strong alkalis). Consult Technical Service for specific data.

Packaging

Disposable 10.1 fl. oz., moisture-proof composite cartridges, 12/case.

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	12 months in unopened container.
Storage Conditions	Store at 40°-95°F (4°-35°C). **Condition material to 65°-75°F before using.**
Color	White
VOC Content	28.5 g/L
Application Temperature	40° to 100°F. Sealant should be installed when joint is at mid-range of its anticipated movement.
Service Range	-40° to 170°F
Curing Rate	Tack-free Time (TT-S-00230C) 1 to 2 hours depending on climate. Final Cure 3 to 5 days
Recovery	ASTM C-719 >90%
Shore A Hardness (ASTM D-2240)	40-45
Tensile Properties (ASTM D-412)	
Tensile Stress	225 psi
Elongation at Break	600%
Lap-Shear Strength (ASTM D-1002)	modified, glass substrate
73 F/50% RH	165 psi
Weathering Resistance	Excellent

Construction

Coverage

10.1 oz Cartridge: Yield in Linear feet				
Depth		1/4"	3/8"	1/2"
Width	1/4"	24.3		
	3/8"	16.2	10.8	
	1/2"	12.1	8.1	6.1
	3/4"	8.1	5.4	4.0
	1"			3.0
	1.25"			2.4
	1.5"			2.0

How to Use

Surface Preparation

Clean all surfaces. Joint walls must be sound, clean, dry, frost-free, and free of oil and grease. Curing compound residues and any other foreign matter mustbe thoroughly removed. A roughened surface will also enhance bond.

Priming

Priming is not usually necessary for anodized aluminum, steel, non-absorbent materials such as glass, ceramics, stoneware and tiles. Most substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure. Consult Technical Service at 1-800-933-SIKA for additional information on priming.

Application

Recommended application temperatures: 40°-100°F. For cold weather application, condition material to 65°-75°F before using.

Place nozzle of gun into bottom of the joint and fill entire joint. Keep the nozzle in the sealant; continue on with a steady flow of sealant preceding the nozzle to avoid air entrapment. Avoid overlapping of sealant to eliminate entrapment of air.

Tooling and Finishing

Tool as required. Joint dimension should allow for 1/4 inch minimum and 1/2 inch maximum thickness for sealant. Proper design is 2:1 width to depth ratio.

Removal

In case of spills of leaks, wear suitable protective equipment, contain spill, collect with absorbent material, and transfer to suitable container. Ventilate area. Avoid contact. Dispose of in accordance with current, applicable local, state, and federal regulations. In case of emergency, call chemtrec 1-800-424-9300.

Over Painting

Allow 5 day cure at standard conditions when using Sikaflex-11 FC in total water immersion situations and prior to painting.

Limitations

- Allow 5 day cure at standard conditions when using Sikaflex-11 FC in total water immersion situations and prior to painting.
- Avoid exposure to high levels of chlorine. (Maximum level is 5ppm).
- Maximum depth of sealant must not exceed 1/2 in.; minimum depth is 1/4 in.
- Maximum expansion and contraction should not exceed 12.5% of average joint width.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Do not apply when moisture-vapor-transmission condition exists from the substrate as this can cause bubbling within the sealant.
- Use opened cartridges the same day.
- When applying sealant, avoid air-entrapment.
- Since system is moisture-cured, permit sufficient exposure to air.
- White color tends to yellow slightly when exposed to ultraviolet rays.
- The ultimate performance of Sikaflex-11 FC depends on proper application, good design and proper preparation of joint surfaces.
- Not for use in expansion joints.
- Heavier substrates may require additional support during the cure period.
- Do not use in contact with bituminous/asphaltic materials.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaBond® Construction Adhesive

One part advanced polyurethane, elastomeric adhesive

Description	SikaBond Construction Adhesive is a one-component, gun-grade, adhesive and sealing compound of permanent elasticity. This dual-purpose material is based on a special moisture-cured polyurethane with an accelerated curing time.
Where to Use	As an elastic adhesive for: ■ Paver caps, masonry veneer and Faux stone. ■ Cover plates, gaskets and coverings. ■ Acoustic ceiling tiles. ■ Floor moldings and door sills. ■ Light weight construction materials. ■ Wood, metal, or plastic window and door frames. ■ Roof tiles. As an elastic joint sealer for: ■ Air ducts and high vacuum systems. ■ Containers, tanks, and silos. ■ Gaskets in openings in walls or floors for ducts, piling, etc. ■ Reservoirs or water retaining structures. ■ Aluminum fabrication. ■ Bolted lap joints.
Advantages	■ Excellent adhesion on all cement-based materials, brick, ceramics, glass, metals, wood, epoxy, polyester, acrylic resin, and plastics. ■ Fast cure rate. ■ Waterproof and water immersible after cure. ■ Good weathering resistance. ■ Non-corrosive. ■ Can be painted over with water, oil, and rubber-based paints. (Preliminary tests recommended). ■ High durability.
Coverage	10.1 fl. oz. cartridge seals 12.2 lineal ft. of 1/2 x 1/4 in. joint.
Packaging	10.1 fl. oz. cartridge seals 12.2 lineal ft (3.72 lin m) of 1/2 x 1/4 in. joint (1.27 x 0.64 cm); 29 oz. cartridge seals 35 lineal ft. (10.7 lin.m.) of 1/2 x 1/4 in. joint

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life	10.1 oz. - 12 months in unopened container, 29 oz. - 12 months in unopened container
Storage Conditions	Store in dry warehouse conditions between 40°F and 80°F. For cold weather application, condition material to 65°-75°F before using.
Color	Gray
Application Temp	40° to 100°F
Service Range	-40° to 170°F
Final Cure	3 to 5 days
Weathering Resistance	Excellent
Chemical Resistance	Good resistance to water, weak acids, weak alkalis, sewerage, mineral oils, vegetable oils, fats, and fuels. (Not resistant to organic solvents, paint thinner, strong acids, strong alkalis). Consult Technical Service for specific data.

Construction

How to Use

Surface Prep	Most substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure. Consult Technical Service at 800-933-7452 for additional information on priming. Clean all surfaces. Joint walls must be sound, clean, dry, frost-free, and free of oil and grease. Curing compound residues and any other foreign matter must be thoroughly removed.
Priming	Priming is not usually necessary for anodized aluminum, steel, non-absorbent materials such as glass, ceramics, stoneware and tiles. Most substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure. Consult Technical Service for additional nformation on priming.
Application	Cut plastic tip to desired size and puncture airtight seal at base of tip. Force adhesive onto bonding surface. Use as spread, bead or for spot bonding. Recommended application temperatures: 40°-100°F.
Over Painting	Wait a minimum of 1 week and test for compatibility before painting.
Cure Mechanism	Tack free in 1-2 hours, depending on climate. Final cure in 5-8 days.
Limitations	■ Allow a minimum of 1 week cure at standard conditions when using SikaBond Construction Adhesive in total water immersion situations and prior to painting. ■ Avoid exposure to high levels of chlorine. (Maximum level is 5 ppm). ■ Avoid contact with alcohol and other solvent cleaners during cure. ■ Not for expansion joints. ■ Heavier substrates may require additional support during the cure period. ■ Do not use on tar, bituminous or asphaltic-based surfaces.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikaflex® Sealant/Adhesive Primers

Sikaflex Primers 260, 429, and 449

Description	Sikaflex primers are special materials formulated to improve the bond of Sikaflex urethane sealants when applied to specific substrates.
Sikaflex Primer 260	Sikaflex Primer 260 promotes adhesion of urethane sealants to various metallic, non-metallic, and plastic substrates.
Sikaflex Primer 429	Sikaflex Primer 429 promotes adhesion to clean, sound, and dry concrete, masonry, Exterior Insulation Finish Systems (EIFS), and wood — including teak and mahogany.
Sikaflex Primer 449	Sikaflex Primer 449 is used to promote adhesion to pvc, solvent-based enamel, PPG's fluorocarbon Duranar-finish, and certain plastics such as ABS and Plexiglass.

Substrate	Primer Required	Recommended primer if necessary
Concrete and Masonry		
Concrete Block	No	Sikaflex 429 primer
Placed Concrete	No	Sikaflex 429 primer
Precast Concrete	No	Sikaflex 429 primer
Mortar	No	Sikaflex 429 primer
Grout	No	Sikaflex 429 primer
Brick	No	Sikaflex 429 primer
SikaTops	No	Sikaflex 429 primer
Stone		
Granite	No	Sikaflex 429 primer
Marble	No	Sikaflex 260 primer
Paints		
Acrylic Latex	No Bond Achieved	
Emercoat 33	No Bond Achieved	
DeSoto Fluoropon	No Bond Achieved	
PPG Duracon S600	No Bond Achieved	
Solvent-based Enamel	Yes	Sikaflex 449 primer
PPG Fluorocarbon	Yes	Sikaflex 449 primer
Duranar	Yes	Sikaflex 449 primer
PPG Polycron	Yes	Sikaflex 449 primer
Kynar	Yes	Sikaflex 449 primer
Siliconized Polyester	Yes	Sikaflex 260 primer
Alucobond	Yes	Sikaflex 260 primer
Plastics		
PVC	Yes	Sikaflex 449 primer
ABS	Yes	Sikaflex 449 primer
Plexiglass	Yes	Sikaflex 449 primer
Plexiglass DR	Yes	Sikaflex 449 primer
Lucite	Yes	Sikaflex 449 primer
Rovel Plastic	Yes	Sikaflex 449 primer

Substrate	Primer Required	Recommended primer if necessary
Plastics cont'd		
Lexan	Yes	Sikaflex 260 primer
Teflon	No Bond Achieved	
Polyethylene	No Bond Achieved	
Polypropylene	No Bond Achieved	
Tuffak	Yes	Sikaflex 449 primer
Polyester/Fiberglass	No	Sikaflex 449 primer
Glass		
Glass - Sheet, float or plate	No	Sikaflex 260 primer
Porcelain	No	Sikaflex 260 primer
Ceramic tile	No	Sikaflex 260 primer
Metals		
Aluminum - Anodized	No	Sikaflex 260 primer
Aluminum - Mill Finish	Yes	Sikaflex 260 primer
Lead	No	Sikaflex 260 primer
Copper (bright/clean)	No	Sikaflex 260 primer
Brass	No	Sikaflex 260 primer
Zinc	No	Sikaflex 260 primer
Tinplate	No	Sikaflex 260 primer
Steel (Bright/Clean)	No	Sikaflex 260 primer
Steel - Stainless	Yes	Sikaflex 260 primer
Steel - Galvanized	Yes	Sikaflex 260 primer
Rubber		
Urethane	No	Sikaflex 449 primer
Woods		
Unfinished Woods	No	Sikaflex 429 primer
EIFS**		
Dryvit	Yes	Sikaflex 429 primer
Sto	Yes	Sikaflex 429 primer
Synergy	Yes	Sikaflex 429 primer

** Product will bond without primer however primer is recommended by EIFS manufacturers to properly seal substrate. Follow EIFS manufacturer's primer recommendations.

Typical Data *(Material and curing conditions 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life	6 months in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.
Color	Clear

Where to Use

Most substrates require a primer only if testing shows need for it or where the sealant will be underwater after cure. Certain substrates do require a primer under all conditions.

Advantages

- Single-component, ready to use.
- Easily applied by brush, dauber, or spray.

Coverage

Following are average coverages, depending on porosity of substrate:

Sikaflex Primer	Coverage per pint (Liner ft. 1/2" x 1/2" joint)
260	300-500
429	300
449	300-500

Packaging

Sikaflex 260 and 449 primers are available in pints, 6/carton.

Sikaflex 429 primer is available in pints, 6/carton; and gallons, 2/carton.

How to Use

Surface Preparation

The key to good bonding with Sikaflex sealants/primers is surface preparation. Specifically, all surfaces must be dry and free of dirt, grease, mold release agents, loose mortar, laitance, and any foreign matter. If the joint contains old sealant, it and all extraneous material must be removed and the substrate cleaned by mechanical means. Apply primers at substrate temperatures of 40°F and rising. Surface must be frost free.

Application

Shake or stir primer well before using. Apply to dry, clean, oil free surface with a brush, dauber or spray.

Sikaflex Primer	Dry time before installing sealant	
260	>1 hr.	<8 hrs.*
429	>1 hr.	<8 hrs.*
449	>30 min.	<8 hrs.*

* If sealant cannot be installed within 8 hours of priming, reprime.

Limitations

- Primer should not be used if it starts to gel in container.
- Protect Sikaflex primers from moisture. Once container has been opened, use contents immediately.
- Do not attempt to use partial containers.
- Do not reseal or reuse. Resealing may cause moisture contamination and gelling.

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Phone: 800-933-7452
Fax: 201-933-6225

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Pointe Claire
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C.P. 76920
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Construction

Sikasil® Primer-2100

Sikasil silicone primer

Description	Sikasil Primer 2100 is used to promote adhesion of Sikasil silicone sealants to a variety of construction materials such as stone, masonry, metal, coated glass and plastics.
Packaging	8 fl. oz. (240 ml) container, 33 fl. oz. (1 L) container

Typical Data *(Material and curing conditions @ 77°F {25°C} and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	18 months in unopened packaging
Storage Conditions	When stored in the original, unopened containers at or below 90°F (32°C), Sikasil Primer-2100 has a shelf life of 18 months from the date of manu facture.
Color	Clear
Odor	solvent odor
Physical State	Liquid
Specific Gravity	0.76
Viscosity	1 cps
VOC Content	748 g/L
Recommended Dry Time	15-30 min.

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

How to Use

For best bonding results, the following steps should be taken when using Sikasil Primer-2100.

Application

1. Thoroughly clean all surfaces of dust, dirt, tar, oils and other debris. Remove rust and scale from metal surfaces by abrasive cleaning or wire brushing. Masonry surfaces must clean dry and sound and prepared by mechanical means.

2. For cleaning non-porous substrates, use two cloth wipe method using xylene or an approved commercial solvent. Strictly follow solvent manufacturer's instructions for use and warnings. Allow solvent to evaporate prior to sealant application.

3. Apply Sikasil Primer-2100 to clean, dry surfaces by brushing or spraying before installation of backer rod. A coverage rate of about 400 square feet per gallon is recommended on rough or porous substrates. On smooth metal surfaces, a coverage rate of 800 square feet per gallon is possible.

4. For non-porous substrates, allow the primer to dry a minimum of 15 minutes or until all the solvent evaporates. If a white film is noted, remove excess primer with a clean dry cloth then apply sealant. For porous substrates, allow primer to dry 30-60 min. For EIFS substrates, apply a heavy coat in two directions at a minimum rate of 400 square feet per gallon. A light white primer stain should be visible. Drying time depends on temperature, humidity conditions and the porosity of the substrate.

5. Apply sealant as directed within eight hours or cleaning and re-priming will be required

Limitations

- Containers should be kept tightly sealed when not in use. Sikasil Primer-2100 hydrolyzes on contact with atmospheric moisture and prolonged exposure will reduce or destroy its effectiveness. When hydrolyzed, the primer will appear milky in color, do not use.
- Sikasil sealants must be applied within 8 hours of priming with Sikasil Primer-2100 or cleaning and re-priming will be required.

Construction

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Construction

Sika® Boom®

One-component, polyurethane foam

Description	Sika Boom is a pre-pressurized, portable, one-component, polyurethane foam system applied in a bead form. Sika Boom expands and cures slowly to a semi-rigid, closed cell foam upon reaction with moisture, such as ambient humidity. It is designed for easy dispensing through a straw adapter that is included with each can.
Advantages	Sika Boom provides the following beneficial properties: ■ Dries tack-free in approximately 8-10 minutes or less depending on moisture and temperature conditions. ■ Fully cures within 24 hours. ■ Cured foam can be sanded, painted or stained. ■ Cured foam is resistant to heat and cold. ■ Adheres to most building materials. ■ Expands 2 to 3 times its original size.
Where to Use	■ On any clean surface to fill, insulate and seal around gaps, beneath base plates, muds sills, top plate penetrations, corner joints, T-joints, exterior cracks, around utility panels, pipes, duct penetrations, etc. ■ For dispensing as a bead for filling cracks, crevices, and to fill smaller cavities.
Yields	1/4" Bead (6 mm) = 1,760 ft. (536 m) 3/8" Bead (9 mm) = 780 ft. (238 m) 1/2" Bead (12 mm) = 440 ft. (134 m)
Packaging	12 oz. can, 12/carton. 20 oz. can, 12/carton

Typical Data *(Material and curing conditions @ 70°F and 40% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	18 months.	
Storage Conditions	Store in a cool, dry area. Do not expose to open flame or temperatures above 120°F (49°C). Store at room temperature before use.	
Application Temperature	40°F (18°C) and 120°F (38°C)	
Service Range	-200°F to 200°F (-29°C to 93°C)	
Core Density	1.2 lbs/ft^3 (19.2 kg/m^3)	
R-factor	4-5 per inch (.03 w/m.k) typically	
Closed cell content (ASTM D-2856)	>70% (typically)	
Tack-Free Time	Approx. 10 minutes	
Cure Time	12-24 hours	
Cuttable (1" Bead at room conditions)	1 hour	
ASTM E-84 (12.5%)	Flame Spread	25
	Smoke Developed	50

Construction

How to Use

Substrate Prep

Substrate must be clean, firm, free of loose particles and free of dust, grease, mold release agents. Protect surfaces not to be foamed. Shake can before using. For best results in cavities larger than 3 inches in diameter, dampen substrate to supplement atmospheric pressure humidity in affecting consistent cure throughout applied foam.

Application

After following instruction for set-up, can is ready to use. The foam sealant flow can be metered by means of tilting the one piece straw adapter with the valve pointing downwards. By activating the adapter lever carefully, the extrusion rate can be regulated. Foam application can be interrupted when needed, as outlined in the instructions. Sika Boom is especially useful for irregular voids and on nonlinear cracks and crevices, as foam will expand up to 200% during curing process. Filling excessively large cavities can result in a prolonged curing process. Also, insufficient air or substrate moisture during cure may cause delayed expansion.

Limitations

- Not resistant to UV rays unless painted, covered or coated.
- Will not adhere to polyethylene, Teflon, silicone, oils and greases, mold release agents and similar materials.
- Do not expose to open flame or temperatures above 120°F (49°C). Excessive heat can cause shorter shelf life.
- Not intended as a firestop.
- Do not use where temperatures rise above 240°F (116°C).

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Duoflex® NS

Two-Component, Non Sag, Polysulfide Sealant

Description

Sika® Duoflex® NS is a two-component, non-sag, premium-quality polysulfide sealant, specifically designed for vertical and overhead surfaces.

Where to Use

Sika® Duoflex is suitable for either exterior or interior use to seal both static and dynamic joints:

- Joints in precast concrete.
- Joints in glass and metal curtain wall construction.
- Expansion and control joints in concrete and masonry walls.
- Joints in metal siding.
- Perimeters of aluminum window frames and metal panels.
- Joints located in gas stations /refueling environments.

Advantages

- Tough, elastic, rubber-like seal.
- Remains flexible with expansion and contraction of building component without adhesive or cohesive failure, based on good joint design.
- Stays resilient within a wide temperature range.
- Excellent resistance to water, oils, grease, most solvents, mild acids and alkalis.
- Tenacious adhesion to concrete, metal, wood, glass, stone, ceramic and masonry surfaces in any combination, typically without the need for priming with Sika Duoflex 5050 Primer.
- Effective under constant immersion or saturated conditions, when suitably primed.
- Certified under NSF/ANSI Method 61 and USDA acceptance (NS grade only).

Coverage

Coverage based on linear feet of sealant per gallon:

Width	Depth					
in (mm)	0.25 (6)	0.5 (13)	0.75 (19)	1 (25)	1.25 (32)	1.5 (38)
0.25 (6)	307.7					
0.5 (13)	153.8	76.7				
0.75 (19)	102.8	51.0	34.8			
1 (25)	76.7	38.6	26.1	19.6		
1.25 (32)	61.9	31.0	21.2	14.7	12.5	
1.5 (38)	51.0	26.1	17.4	12.5	9.8	8.7

Packaging

1.5 gallon (5.7 liter) unit

Chemical Resistance

(see Sika Duoflex chemical resistance chart)

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Self Life	1 year in original, unopened packaging.
Storage Conditions	Store dry between 40 and 95°F (4 and 35°C).
Product Conditioning	Condition material to 40 to 100°F before application. Pre-conditioning units to approximately 70°F (21°C) is necessary when working at the far ends of the application range.
Color	Bronze
UV Color Stability	Very good
Properties at 73°F (23°C) and 50% R.H.	
Pot Life	1 hr
Tack Free	6 hrs
Full Cure	7 days
Testing Standards	ASTM C920, Class 25
Application Temperature	40 to 100°F (4 to 38°C), ambient and substrate temperatures. Sealant should be installed when joint is at mid-range of its anticipated movement.
Service Range	-40 to 170°F (-40 to 77°C)
Movement Capabilities	± 25%
Elongation at Break ASTM D412	500% - 550%
Shore A Hardness ASTM D2240	25 - 30

Abrasion and Puncture Resistance	Excellent
Tensile Strength ASTM D412	150 - 200 psi (1.03 - 1.38 MPa)

How to Use

Surface Preparation

All joint surfaces must be clean, sound, dry and frost-free. Joint walls must be free of oils, grease, paints, coatings, sealers, curing compound residues, and any other foreign matter that might prevent adhesion. Ideally this should be accomplished by mechanical means (e.g. sandblasting, abrasive grinding, etd.). Bond breaker tape or backer rod must be used in bottom of joint to prevent bond.

Joint Design : Proper joint design for moving joints is 2:1 width to depth ratio, with a recommended 1/4" (6 mm) minimum and 1/2" (13 mm) maximum depth of sealant. For non-moving joints, the width to depth ratio can vary.

Priming: For maximum adhesion, including in submerged or immersed applications, the use of Sika® Duoflex Primer is necessary. Consult your Sika Technical Service Representative if unsure if primer is necessary. A uniform glossy sheen after priming indicates adequate primer. Some surfaces, such as porous concrete, may require two coats. Primer must be tack-free before applying sealant. Sealant must be applied same day as primer. Primed areas left overnight should be re-primed.

Mixing

Pour entire contents of Component B into pail of Component A and mix using a low speed drill (100-300 rpm) and Sika mixing paddle. Mix for 3-5 minutes to achieve uniform color and consistency. Scrape down sides of pail periodically. Avoid entrapment of air during mixing. Mixed material must be used within the pot life parameters given. Do not attempt to thin or use material that has started to harden. The individual components are formulated, manufactured and shipped to be used together.

When mixed in cold weather (<50 degF), do not force the mixing paddle to the bottom of the pail. After adding Component B in Component A, mix the top 1/2 to 3/4 of the pail in the first minute of mixing. After scraping down the sides of the pail, mix again for another minute. The paddle should reach the bottom of the pail between the first and second minute of mixing. Scrap down the sides of the pail a second time and then mix for an additional 2-3 minutes until sealant is well blended.

Application

Recommended application temperatures 40 to 100°F (4 to 38°C). Pre-conditioning units to approximately 70°F (21°C) is necessary when working at the far ends of the application range. Move pre-conditioned units to work areas just prior to application. Apply sealant only to clean, sound, dry, and frost-free substrates. Sika® Duoflex NS should be applied into joints when joint slot is at mid-point of its designed expansion and contraction. To place, load directly into bulk gun or use a follower plate loading system. Place nozzle of gun into bottom of joint and fill entire joint. Keeping the nozzle deep in the sealant, continue with a steady flow of sealant preceding nozzle to avoid air entrapment. Also, avoid overlapping of sealant since this also entraps air. Dry tool as required.

Limitations

- Do not use the B component from NS with the A component for SL and vice versa.
- The ultimate performance of Sika Duoflex NS depends on good joint design and proper application
- Primary and secondary immersion applications; Sika® Duoflex® Primer must be used
- Do not apply when moisture vapor transmission exists since this can cause bubbling within the sealant.
- When overcoating: an on-site test is recommended to determine actual compatibility.

Not suitable for:

- Joint movement more than 25%.
- Structural glazing applications.
- Improperly prepared or contaminated surfaces.
- Joints involving adhesion to painted surfaces.

(Consult your Sika Technical Service Representative).

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Duoflex® SL

Two-Component, Self Leveling, Polysulfide Sealant

Description

Sika® Duoflex® is a two-component, self-leveling, premium-quality polysulfide sealant ideally suited for quick application to horizontal surfaces.

Where to Use

Sika® Duoflex SL is suitable for either exterior or interior use in both static and dynamic joints:

- Expansion and control joints in concrete floors.
- Joints in podium deck structures.
- Expansion joints in tile and brick flooring.
- Joints in gas stations / refueling environments
- Resistant to chlorinated water up to 100ppm

Advantages

- Tough, elastic, rubber-like seal.
- Remains flexible with expansion and contraction of building component without adhesive or cohesive failure, based on good joint design.
- Stays resilient within a wide temperature range.
- Excellent resistance to water, oils, grease, most solvents, mild acids and alkalis.
- Tenacious adhesion to concrete, metal, wood, glass, stone, ceramic and masonry surfaces in any combination, typically without the need for priming.
- Effective under constant immersion or saturated conditions, when suitably primed.

Coverage

Coverage based on linear feet of sealant per gallon:

Width	Depth					
in (mm)	0.25 (6)	0.5 (13)	0.75 (19)	1 (25)	1.25 (32)	1.5 (38)
0.25 (6)	307.7					
0.5 (13)	153.8	76.7				
0.75 (19)	102.8	51.0	34.8			
1 (25)	76.7	38.6	26.1	19.6		
1.25 (32)	61.9	31.0	21.2	14.7	12.5	
1.5 (38)	51.0	26.1	17.4	12.5	9.8	8.7

Packaging

1.5 gallon (5.7 liter) unit

Chemical Resistance

(see Sika Duoflex chemical resistance chart)

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Self Life	1 year in original, unopened packaging.
Storage Conditions	Store dry between 40 and 95°F (4 and 35°C).
Product Conditioning	Condition material to 40 to 100°F before application. Pre-conditioning units to approximately 70°F (21°C) is necessary when working at the far ends of the application range.
Color	Bronze
UV Color Stability	Very good
Properties at 73°F (23°C) and 50% R.H.	
Pot Life	1 hr
Tack Free	6 hrs
Full Cure	7 days
Testing Standards	ASTM C920, Class 25
Application Temperature	39 to 100°F (4 to 38°C), ambient and substrate temperatures. Sealant should be installed when joint is at mid-range of its anticipated movement.
Service Range	-40 to 170°F (-40 to 77°C)
Movement Capabilities	± 25%
Elongation at Break ASTM D412	500% - 550%
Shore A Hardness ASTM D2240	25 - 30
Abrasion and Puncture Resistance	Excellent
Tensile Strength ASTM D412	150 - 200 psi (1.03 - 1.38 MPa)

Construction

How to Use

Surface Preparation

All joint surfaces must be clean, sound, dry and frost-free. Joint walls must be free of oils, grease, paints, coatings, sealers, curing compound residues, and any other foreign matter that might prevent adhesion. This should be accomplished by mechanical means (e.g. sandblasting, abrasive grinding, etd.). Bond breaker tape or backer rod must be used in bottom of joint to prevent bond.

Joint Design

Proper joint design for moving joints is 2:1 width to depth ratio, with a recommended 1/4" (6 mm) minimum and 1/2" (13 mm) maximum depth of sealant. For non-moving joints, the width to depth ratio can vary.

Priming

For maximum adhesion, including in submerged or immersed applications, the use of Sika® Duoflex 5050 Primer is necessary. Consult your Sika Technical Service Representative if unsure if primer is necessary. A uniform glossy sheen after priming indicates adequate primer. Some surfaces, such as porous concrete, may require two coats. Primer must be tack-free before applying sealant, typically 2 hrs on concrete and 4 hrs on steel at 77°F (25°C). Sealant must be applied same day as primer. Primed areas left overnight should be re-primed.

Mixing

Pour entire contents of Component B into pail of Component A and mix using a low speed drill (100-300 rpm) and Sika mixing paddle. Mix for 3-5 minutes to achieve uniform color and consistency. Scrape down sides of pail periodically. Avoid entrapment of air during mixing.

Mixed material must be used within the pot life parameters given. Do not attempt to thin or use material that has started to harden. The individual components are formulated, manufactured and shipped to be used together.

When mixed in cold weather (<50 degF), do not force the mixing paddle to the bottom of the pail. After adding Component B in Component A, mix the top 1/2 to 3/4 of teh pail in the first minute of mixing. After scraping down the sides of the pail, mix again for another minute. The paddle should reach the bottom of the pail between the first and second minute of mixing. Scrap down the sides of the pail a second time and then mix for an additional 2-3 minutes until sealant is well blended.

Application

Recommended application temperatures 40 to 100°F (4 to 38°C). Pre-conditioning units to approximately 70°F (21°C) is necessary when working at the far ends of the application range. Move pre-conditioned units to work areas just prior to application. Apply sealant only to clean, sound, dry, and frost-free substrates. Sika® Duoflex SL should be applied into joints when joint slot is at mid-point of its designed expansion and contraction. To place, load directly into bulk gun or use a follower plate loading system. Place nozzle of gun into end of joint and fill entire joint. Keeping the nozzle deep in the sealant, continue with a steady flow of sealant preceding nozzle to avoid air entrapment. Also, avoid overlapping of sealant since this also entraps air. On floor joints, properly recess the sealant to avoid material over the surface plane. Dry tool as required.

Limitations

- Do not use the B component from NS with the A component for SL and vice versa.
- The ultimate performance of Sika Duoflex SL depends on good joint design and proper application
- Primary and secondary immersion applications; Sika® Duoflex® Primer must be used
- Do not apply when moisture vapor transmission exists since this can cause bubbling within the sealant
- When overcoating: an on-site test is recommended to determine actual compatibility.

Not suitable for:

- Joint movement more than 25%.
- Glazing applications.
- Improperly prepared or contaminated surfaces.
- Joints involving adhesion to painted surfaces.

(Consult your Sika Technical Service Representative).

Construction

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
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Construction

Sika® Duoflex® 5050 Primer

Sika Duoflex 5050 Primer is a two component, low viscosity, adhesion-promoting, epoxy primer for use with Sika

Description	Sika® Duoflex® Primer 5050 is a two-component, low-viscosity, adhesion-promoting epoxy primer for Sika® Duoflex® polysulphide sealants.
Where to Use	■ To promote adhesion to porous and dense substrates, including concrete and metal, prior to installing Sika® Duoflex® NS/SL.
Advantages	■ Two-component 1:1 volume ratio ■ Low viscosity: easy to apply by brush. ■ Fast drying time; allowing earlier sealing. ■ Minimizes downtime; quicker use of joint. ■ Maximizes adhesion; enhances durability ■ Low VOC contents
Coverage	Yield Concrete: 700 – 800 lin. ft./unit (210 – 240 lin. m/unit) at 3-5 mils/coat
Packaging	1/4 gal. (0.95 L) unit

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Self Life	1 year in original, unopened packaging.
Storage Conditions	Store dry between 65 and 80°F (18 and 27°C).
Color	Part A: (Resin) Clear Part B: (Hardener) Amber
Yield: **Concrete** **Steel**	 700 – 800 lin. ft./unit (210 – 240 lin. m/unit) at 3-5 mils/coat 1100 – 1300 lin. ft./unit (335 – 395 lin. m/unit) as 2-3 mils coat
Application Temperature: **Ambient** **Substrate**	 40 to 95°F (5 to 35°C) 41°F (5°C) above dew point
Mix Ratio	1:1 by volume
Volume Solids	65%
Pot Life	3 hours
Waiting Time before Sealing: **Concrete** **Steel**	 Min. 2 hours /Max. 36 hours Min. 4 hours /Max. 36 hours
VOC Content	50 g/L
Note:	Material cures more slowly at cooler temperatures, and working time will be substantially reduced at higher temperatures. In hot weather, material should be cooled to between 65 and 80°F (18 and 27°C) prior to mixing and application to improve workability and avoid shortened pot life.

Construction

How to Use

Surface Preparation

Concrete: Apply only to clean, dry and sound substrates that are free of all coatings, sealers, curing compounds, oils, greases or any other contaminants which would impede penetration or adhesion. All surface irregularities, including cracks or substrate details, such as expansion joints and control joints, should be properly addressed prior to application. New concrete should be cured a minimum of 28 days with laitance and any weak surface layers removed.

Concrete that has been contaminated with chemicals or other foreign matter must be neutralized or removed.

Concrete should have a minimum surface tensile strength of at least 300 psi (2 MPa) as per ASTM D4541 and a surface profile of CSP 3-5 (a profile equal to 60-grit sandpaper, or coarser) in accordance with the International Concrete Repair Institute (ICRI) standard guideline #03732 for coating concrete. Prepare surface by mechanical means to achieve this desired profile.

Concrete surfaces potentially subject to out-gassing should be primed when the temperature of the substrate is dropping. Alternatively, double priming will greatly reduce the effects of out-gassing by additionally filling the pores in the concrete.

Steel: For service in an immersed environment, abrasive blast with an anchor profile of 2 - 4 mils in accordance with Steel Structures Painting Council Specification SP-5-63 or NACE No. 1, to achieve a "White Metal" finish. For splash and spillage exposure, "Near White" SP-10-63 or NACE No. 2 is required.

Mixing

Individually stir the contents of each component of Sika® Duoflex Primer 5050 until a uniform consistency and colour has been produced in each. Pour contents of Component B into the container in which Component A is held and thoroughly mix using a low speed drill and jiffy paddle for a minimum of 2 minutes until the blended liquid is of a consistent color (no streaking) and uniform consistency. Mix no longer than 3 minutes. **Note:** When initially pouring Component B into Component A, ensure all hardener is emptied from the container into the resin. While mixing, use a suitable tool to scrape the side and bottom of the container in which the blended components are held to ensure the entire product has been properly mixed. Any unmixed material will not cure and will potentially cause the subsequent installation of Sika® Duoflex NS/SL sealants to fail

Application

Apply Sika® Duoflex® Primer 5050 by brush at approximately 700 - 800 lin. ft./unit (210 - 240 lin. m/unit) as 3-5 mils coat onto concrete and 1100 - 1300 lin. ft./unit (335 - 395 lin. m/unit) as 2-3 mils coat onto steel. Sika® Duoflex® Primer 5050 must be dry to the touch, following a drying time of typically 2 hours at 73°F (25°C) on concrete and 4 hours at 73°F (25°C) on steel. Do not allow the waiting time to exceed 36 hours before proceeding with the installation of Sika® Duoflex® NS/SL sealants. Where the maximum waiting time is exceeded, do not seal but contact Sika Corp, Technical Services for guidance

Note: Observe the above waiting times after priming and before installation of the sealant. Installation of the sealant too soon or too late will jeopardize the adhesion and performance of Sika® Duoflex® NS/SL.

Limitations

- Do not thin with solvents
- Confirm with Sika Corp. that the product is suitable for specific chemical environments, prior to use.
- Prepare substrate according to "Surface Preparation" portion of this document.
- Minimum application temperature of 40°F (5°C) above dew point must be observed; do not apply onto damp surfaces.
- Moisture content of substrates must be < 4% (Tramex meter reading) and vapor transmission should be 3 pounds or less per 1000 square feet over 24 hours as confirmed through appropriate ASTM testing and quantitative relative humidity (RH) testing should confirm concrete RH results of < 75%.
- For industrial and commercial use only; to be handled by experienced or trained personnel only.
- For use only with Sika® Duoflex® sealants, as supplied by Sika Corp.

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Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

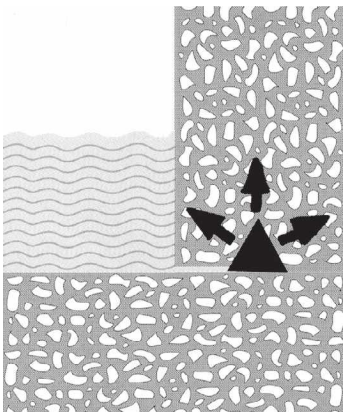
Construction

SikaSwell® S-2

One part polyurethane, extrudable swelling waterstop (bentonite-free)

Description

SikaSwell S-2 is a specially formulated, high-performance, swellable, one-component, polyurethane-based waterstop for use in all kinds of construction joints. Swelling rubber creates a compression seal within joint, blocking the passage of water.



Where to Use

- Designed for construction joints in new watertight concrete structures.
- Excellent for sealing pipe penetrations through walls and floor slabs.
- Excellent for sealing joints between precast elements.
- May be applied to horizontal, vertical and overhead surfaces.
- Ideal for watertight construction joints between new and existing concrete.

Advantages

- Swells up to 100% in potable water, slightly less in salt water and wastewater.
- Permanently water resistant, with no leaching and does not dissolve in water.
- Capable of sealing construction joints with head pressures of up to 50 psi (115 ft. head).
- Elastic-withstands wet/dry cycling.
- Easy, simple application.
- Adaptable in the field to suit job requirements.
- No nails, glue, or hooks required.
- Controlled expansion eliminates cracking in fresh concrete.
- Offers resistance to various chemicals.
- Thixotropic properties allow SikaSwell S-2 to seal irregular joint surfaces.
- Very economical.
- Saves labor by eliminating inverted keyways, split forming, heat splicing, special fittings and tieing to rebar associated with conventional PVC waterstops.
- No mixing required.
- Allows more thorough vibration of concrete at joint, resulting in better concrete consolidation which aids in achieving a watertight joint.

Typical Data *(Material and curing conditions 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life	9 months	
Storage Conditions	For best results, store dry at 70°F (20°C) before using.	
Color	Red	
Temperature of Product for Best Application		50° to 90°F
Tack Free Time		2-3 hours
Shore A Hardness	Swollen (7 days in tap water)	>10
	Non Swollen (7 days)	40-60
Swelling Capacity	1 day	<20%
	7 days	>100%
	Reduced and delayed swelling properties in salty water.	

Suggested Cross Section of Extruded Bead

Concrete Thickness	Number of Beads (in.)	Side length of triangular bead (in.)
8-12	1	5/8
12-20	1	3/4
> 20	2	3/4

Note: *If the maximum size aggregate in the concrete is greater than 1 inch, use 3/4 inch triangular section(s).*

Construction

Coverage

20 fl.oz. uni-pac sausage seals:

Triangular	Yield
5/8 x 5/8 x 5/8 in.	18 lineal ft.
3/4 x 3/4 x 3/4 in.	12 lineal ft.

Note: Yield may vary based on substrate irregularities.

Packaging

Disposable 20 fl. oz., moisture-proof uni-pac sausages, 20/carton.

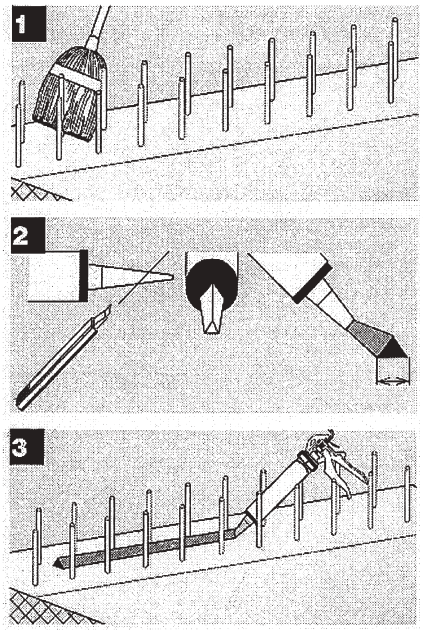
How to Use

Surface Preparation

Clean all surfaces. Substrate must be clean, sound, free of loose particles, dust, laitance, oils, and other contaminants. Surface may be dry or damp, with no presence of standing water. Do not leave the product in contact with wet concrete, or on a surface with a very high moisture content, for a long period of time, before casting new concrete. These conditions will decrease the adhesion between the SikaSwell S-2 bead and the surface of the joint.

Application

Recommended application temperatures: 50°-90°F. Extrude material using Sika MK-5 bulk caulking gun or other approved bulk gun. Cut the nozzle to obtain a triangular extrusion section with a size fulfilling effective needs (or use nozzle included in carton of SikaSwell S-2). Apply a uniform, continuous bead to the hardened concrete. Wait for approximately 2 hours after placement of the SikaSwell S-2 before placing concrete. The minimum thickness of concrete around the SikaSwell S-2 should be 4 inches on each side (reinforced concrete) or 6 in. on each side (non-reinforced concrete) and 4 inches on top. For optimum application, store at 70°F for a minimum of 8 hours prior to use; if the material appears stiff, knead the sausage for a short time before placing in bulk gun.



SikaSwell S-2 Installation

1. Clean surface of concrete.
2. Cut nozzle to obtain triangular extrusion section (or use nozzle included in carton of SikaSwell S-2).
3. Apply a uniform, continuous bead to hardened concrete. Wait 2 hours before placing new concrete.

Limitations

- Not suitable for expansion joints.
- Protect from rain to avoid expansion before placing new concrete and to assure 100% swelling capacity.
- Avoid placement of the concrete from a height greater than 20 inches. If this is not possible, allow SikaSwell S-2 to cure for 2 days before placing concrete.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
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Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

C - Epoxy Resin and Structural Engineering Systems

Bonding Agents

Sika Armatec 110 EpoCem	A10
Sikadur 32 Hi-Mod	A20
Sikadur 32 Hi-Mod LPL	A30

Crack Repair and Injection Resins

Injection

Sikadur 33	C10
Sikadur 35 Hi-Mod LV	C20
Sikadur 35 Hi-Mod LV LPL	C30
Sikadur 52	C40
Sikadur Crack Fix	C50
Sikadur Crack Weld	C60
Sikadur Injection Gel, Standard Set	C70

Healer/Sealers

Sikadur 55 SLV	C80
SikaPronto 19 TF	C90

Polyurethane Grouts

SikaFix HH+	C100
SikaFix HH Hydrophilic	C110
SikaFix HH LV	C120

Structural Strengthening Systems

Preformed

Sika CarboDur	C130
Sika CarboDur Rods	C140

Resins

Sikadur 30	C150
Sikadur 300	C160
Sikadur 301	C170
Sikadur 330 US	C180
Sikadur 340	C190
Sikadur Hex 300	C200

Carbon Fiber

SikaWrap Hex 103C	C210
SikaWrap Hex 103C HM	C220
SikaWrap Hex 103C 2X	C230
SikaWrap Hex 113C	C240
SikaWrap Hex 115C	C250
SikaWrap Hex 117C	C260
SikaWrap Hex 230C	C270
SikaWrap 1200C	C280
SikaWrap 600C ± 45	C290
SikaWrap FX 50C	C300

Glass Fiber

SikaWrap Hex 100G	C310
SikaWrap Hex 106G	C320

Presaturated

SikaWrap PreSaturated 103C	C330
SikaWrap PreSaturated 117C	C340
SikaWrap PreSaturated 100G	C350
SikaWrap PreSaturated 430G	C360

Multi-Purpose Structural Adhesives

Sikadur 31 Hi-Mod Gel (1:1 Mix Ratio)	B240
Sikadur 31 Hi-Mod Gel LPL	C370
Sikadur 31, SBA (20-45°F)	usa.sika.com
Sikadur 31, SBA Normal Set	C380
Sikadur 31, SBA Slow Set	C390
Sikadur 32 Hi-Mod	A20
Sikadur 32 Hi-Mod LPL	A30
Sikadur 33	C10
Sikadur 35 Hi-Mod LV	C20
Sikadur 35 Hi-Mod LV LPL	C30
Sikadur Injection Gel, Standard Set	C70

Epoxy Resin Mortars and Broadcast Systems

Heavy Traffic

Sikadur 21 Lo-Mod LV	C400
Sikadur 22 Lo-Mod	C410
Sikadur Epoxy Broadcast Overlay System	C420
Sikadur 22 Lo-Mod FS	C430
Sikadur 25 Lo-Mod	C440
Sikadur 23 Lo-Mod Gel	B270
Sikadur 35 Hi-Mod LV	C20
Sikadur 35 Hi-Mod LV LPL	C30
Sikadur 43 Patch-Pak	usa.sika.com

Light Traffic

Sikagard 62	A450
Sikadur Balcony System	C450
Sikagard Duochem 7500	C460
Sikagard Duochem 7500 Thixo	C470
Sikagard WDE Primer	C480
Sikagard 616	C490
Sikagard 664	C500
Sikagard 600	C510

Control Joint Systems

Sika Loadflex 524 EZ	B180
Sikadur 51 NS	B190
Sikadur 51 SL	B200

High Performance Joint Systems

Sikadur 31 Hi-Mod Gel (1:1 Mix Ratio)	B240
Sikadur Combiflex SG System	B260

Flooring

Sikagard 62	A450
Sikagard Duochem 7500	C460
Sikagard Duochem 7500 Thixo	C470
Sikagard WDE Primer	C480
Sikagard 616	C490
Sikagard 664	C500
Sikagard 600	C510

Anchoring

Sika AnchorFix-1	C520
Sika AnchorFix-2	C530
Sika AnchorFix-2 Arctic	C540
Sika AnchorFix-500	C550
Sika AnchorFix-3001	C560

Construction

Sikadur® 33

High-modulus, high-strength, structural, very rapid-curing epoxy, smooth-paste adhesive

Description	Sikadur 33 is a 2-component, 100% solids, moisture-tolerant, high-modulus, high-strength, structural, smooth-paste epoxy adhesive. It conforms to the current ASTM C-881, Types I and II, Grade-3, Class B/C* and AASHTO M-235 specifications. *except for gel time
Where to Use	Use to seal cracks and to secure injection ports in structural concrete and wood trusses prior to pressure-injection grouting.
Advantages	■ New smooth-paste consistency for vertical, horizontal and overhead crack sealing. ■ Very rapid curing, even in thin film, for faster pressure-injection grouting. ■ Injection may proceed as soon as 1 hour after application.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 2 years in original, unopened containers.

Storage Conditions Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.

Color Concrete gray.

Mixing Ratio Component 'A': Component 'B' = 1:1 by volume.

Consistency Smooth-paste adhesive.

Pot Life Approximately 15 minutes. (60 gram mass)

Tack-Free Time

40°F (4°C)*	73°F (23°C)*	90°F (32°C)*
1.5-1.75 hr	25-30 min	20-25 min

Tensile Properties (ASTM D-638)

1 day	Tensile Strength	3,300 psi (22.7 MPa)
	Elongation at Break	0.2%
	Modulus of Elasticity	8.3 X 10^5 psi (5,700 MPa)

Flexural Properties (ASTM D-790)

1 day	Flexural Strength (Modulus of Rupture)	4,800 psi (33.1 MPa)
	Tangent Modulus of Elasticity in Bending	1.2 X 10^6 psi (8,300 MPa)

Shear Properties (ASTM D-732) **1 day** Shear Strength 2,200 psi (15.2 MPa)

Heat Deflection Temperature (ASTM D-648)
1 day 120°F (49°C)
[fiber stress loading = 264 psi (1.8 MPa)]

Bond Strength (ASTM C-882): Hardened Concrete to Hardened Concrete
2 day (dry cure) 3,000 psi (20.6 MPa)

Water Absorption (ASTM D-570) **7 day** (24 hour immersion) 0.36 %

Compressive Properties (ASTM D-695)
Compressive Strength, psi (MPa)

	40°F (4°C)*	73°F (23°C)*	90°F (32°C)*
1 hour	30 (0.20)	5,600 (38.6)	4,600 (31.7)
2 hour	1,800 (12.4)	6,700 (46.2)	5,600 (38.6)
4 hour	3,500 (24.1)	7,800 (53.7)	5,700 (39.3)
8 hour	6,300 (43.4)	8,200 (56.5)	6,600 (45.5)
16 hour	6,900 (47.5)	8,500 (58.6)	7,100 (48.9)
1 day	7,400 (51)	8,600 (59.3)	7,300 (50.3)
3 day	7,900 (54.4)	9,000 (62)	7,600 (52.4)
7 day	8,300 (57.2)	9,200 (63.4)	7,800 (53.7)
14 day	8,500 (58.6)	9,200 (63.4)	8,100 (55.8)
28 day	8,600 (59.3)	9,400 (64.8)	8,300 (57.2)

Compressive Modulus **28 day** 9.6 X 10^5 psi (6,600 MPa)

* Material cured and tested at the temperatures indicated.

Coverage	1 gal. yields 231 cu. in. of paste adhesive.
Packaging	3 gallon unit
Cure Mechanism	Epoxy resin adhesive

How to Use

Surface Preparation	Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants. Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means. Steel - Should be cleaned and prepared thoroughly by blast cleaning.
Mixing	Pre-mix each component. Proportion equal parts by volume of Component 'B' and Component 'A' into a clean pail. Mix thoroughly for 3 minutes with Sika paddle on low-speed (400-600 rpm) drill until uniform in color. Mix only that quantity that can used within its pot life.
Application	To seal injection ports and cracks for injection grouting - Place the neat mixed material over the cracks to be pressure-injected and around each injection port. Allow sufficient time to set before pressure injecting. Use Sikadur 35, Hi-Mod LV, or Sikadur 52 for the low viscosity injection adhesive. Consult technical data sheets on these products for more information. Also, contact Technical Service (1.800.933. SIKA) for additional information on pressure injection grouting.
Removal	Uncured material can be removed with approved solvent (Xylene, M.E.K., Acetone, etc.). Strictly follow solvent manufacturer's warnings and instructions for use. Cured material can only be removed mechanically.
Limitations	■ Minimum substrate and ambient temperature 40°F (4°C). ■ Do not thin. Addition of solvents will prevent proper cure. ■ Material is a vapor barrier after cure. ■ Not for sealing cracks under hydrostatic pressure at the time of application. ■ Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Phone: 800-933-7452
Fax: 201-933-6225

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Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Sikadur® 35, Hi-Mod LV

Description	Sikadur® 35, Hi-Mod LV is a 2-component, 100% solids, moisture-tolerant, low-viscosity, high-strength, multi-purpose, epoxy resin adhesive. It conforms to the current ASTM C-881, Types I, II, and IV, Grade-1, Class C* and AASHTO M-235 specifications. *except for gel time
Where to Use	■ Pressure-injection of cracks in structural concrete, masonry, wood, etc. ■ Gravity-feed of cracks in horizontal concrete and masonry. ■ Epoxy resin binder for epoxy mortar patching and overlay of interior, horizontal surfaces. ■ Seal interior slabs and exterior above-grade slabs from water, chlorides, and mild chemical attack; also improves wearability.
Advantages	■ Super low viscosity. ■ Convenient easy mix ratio A:B = 2:1 by volume. ■ Unique, high-strength, structural adhesive for “can’t dry” surfaces. ■ Deep penetrating and tenacious bonding of cracks in structural concrete. ■ High-early-strength developing adhesive.
Coverage	1 gal. yields 231 in^3 of adhesive and grout. 1 gal. of adhesive, when mixed with 5 gal. by loose volume of oven-dried aggregate, yields approximately 808.5 in^3 of epoxy mortar.
Packaging	3 gal. units; 1 gal. units; 12 fl.-oz. units, 12/case.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIX DESIGNS, MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATIONS METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.			
Product Storage	Store dry at 40°-95°F (4°-35°C).			
Product Conditioning	Condition material to 65°-75°F (18°-24°C) before using.			
Color	Clear, amber.			
Mixing Ratio	Component A : Component B=2:1 by volume.			
Viscosity (Mixed)	Approximately 375 cps.			
Pot Life	Approximately 25 minutes. (60 gram mass)			
Tack Free Time	**40°F (4°C)**	**73°F (23°C)**	**90°F (32°C)**	
(3-5 mils) Neat	14-16 hrs.	3-3.5 hrs.	1.5-2 hrs.	

Tensile Properties (ASTM D-638)		**Neat**		**Mortar**
7 day	Tensile Strength	8,900 psi (61.4 MPa)	**14 day**	840 psi (5.8 MPa)
	Elongation at Break	5.4%		0.3%
14 day	Modulus of Elasticity	4.1 X 10^5 psi (2,800 MPa		7.6 X 10^5 psi (5,200 MPa)
Flexural Properties (ASTM D-790)				
14 day	Flexural Strength (Modulus of Rupture)	14,000 psi (96.6 MPa)		2,200 psi (15.2 MPa)
	Tangent Modulus of Elasticity in Bending	3.7 x 10^5 psi (2,600 MPa)		9.5 X 10^5 psi (6,500 MPa)
Shear Strength (ASTM D-732)				
14 day	Shear Strength	5,100 psi (35.2 MPa)		2,300 psi (15.9 MPa)
Heat Deflection Temperature (ASTM D-648)				
7 day	[fiber stress loading = 264 psi (1.8 MPa)]	124°F (51°C)		129°F (54°C)

Bond Strength (ASTM C-882): Hardened concrete to hardened concrete			
2 day	**(moist cure)**	Bond Strength	4,000 psi (27.6 MPa)
14 day	**(moist cure)**	Bond Strength	2,900 psi (20.0 MPa)
2 day	**(dry cure)**	Bond Strength	2,800 psi (19.3 MPa)

Water Absorption (ASTM D-570) 7 day (24 hour immersion) 0.27 %

Compressive Properties (ASTM D-695)

Compressive Strength, psi (MPa)	**Neat**			**Mortar (1:5)**		
	40°F (4°C)	73°F (23°C)	90°F (32°C)	40°F(4°C)	73°F (23°C)	90°F (32°C)
4 hour	-	-	-	-	-	800 (5.5)
8 hour	-	180 (1.2)	3,200 (22.1)	-	-	4,100 (28.3)
16 hour	-	4,500 (31.1)	6,300 (43.5)	-	400 (2.8)	5,700 (39.3)
1 day	-	6,000 (41.4)	9,100 (62.8)	120 (0.8)	5,000 (34.5)	6,900 (47.6)
3 day	4,000 (27.6)	10,700 (73.8)	10,500 (72.5)	6,200 (42.8)	6,800 (46.9)	7,000 (48.3)

7 day	6,800 (46.9)	11,000 (75.9)	10,500 (72.5)	6,300 (43.5)	7,900 (54.5)	8,800 (60.7)
14 day	10,300 (71.1)	12,000 (82.8)	10,500 (72.5)	6,800 (46.9)	8,500 (58.7)	8,800 (60.7)
28 day	12,400 (85.6)	13,000 (89.7)	10,500 (72.5)	7,000 (48.3)	8,600 (59.3)	8,800 (60.7)

Compressive Modulus **Neat** **Mortar**

7 day 3.2 X 10^5 psi (2,200 MPa) **28 day** 8.1 X 10^5 psi (5,600 MPa)

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles and disintegrated materials.

Concrete - Blast clean, shot blast or use other approved mechanical means to provide an open roughened texture.

Steel - Should be cleaned and prepared thoroughly by blast cleaning.

Mixing

Proportion 1 part Component 'B' to 2 parts Component 'A' by volume into a clean pail. Mix thoroughly for 3 minutes with Sika Paddle on low-speed (400-600 rpm) drill until uniformly blended. Mix only that quantity that can be used within its pot life. To prepare an epoxy mortar, slowly add 4-5 parts by loose volume of an oven-dried aggregate to 1 part of the mixed Sikadur® 35, Hi-Mod LV and mix until uniform in consistency.

Application

To gravity feed cracks - Blow vee-notched crack clean with oil-free compressed air. Pour neat Sikadur® 35, Hi-Mod LV into vee-notched crack. Continue placement until completely filled. Seal underside of slab prior to filling if cracks reflect through.

To pressure-inject cracks - Use automated injection equipment or manual method. Set appropriate injection ports based on system used. Seal ports and crack with Sikadur® 31, Hi-Mod Gel or Sikadur® 33. When the epoxy adhesive seal has cured, inject Sikadur® 35, Hi-Mod LV with steady pressure. Consult Technical Service for additional information.

To seal slabs - Spread neat Sikadur® 35, Hi-Mod LV over slab. Allow penetration. Remove excess to prevent surface film. Seal interior slabs and above-grade exterior slabs only.

For an epoxy mortar - Prime prepared surface with neat Sikadur® 35, Hi-Mod LV. Place prepared epoxy mortar before primer becomes tack-free. Place the epoxy mortar using trowels. Compact and level with vibrating screed or trowels. Finish with finishing trowel. Sikadur® 35, Hi-Mod LV mortar is for interior use only.

Limitations

- Do not thin with solvents. Consult Technical Service at 800-933-7452.
- Use oven-dried aggregate only.
- Maximum epoxy mortar thickness is 1.5 in. (38 mm) per lift.
- Epoxy mortar is for interior use only.
- Do not seal exterior slabs on grade.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions, for mortar and to seal slabs.
- Porous substrates must be tested for moisture-vapor transmission prior to application.
- Not for injection of cracks under hydrostatic pressure at the time of application.
- Do not inject cracks greater than 1/4 in. (6 mm) Consult Technical Service.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Construction

Sikadur® 35, Hi-Mod LV LPL

High-modulus, low-viscosity, high-strength, extended pot life, epoxy adhesive

Description	Sikadur® 35, Hi-Mod LV LPL is a 2-component, 100% solids, moisture-tolerant, low-viscosity, high-strength, multi-purpose epoxy resin adhesive. It conforms to the current ASTM C-881, Types I, II, and IV, Grade-1, Class-C** and AASHTO M-235 specifications. **except for bond strength
Where to Use	■ Low pressure and high pressure injection of cracks in structural concrete, masonry, wood, etc. ■ Gravity-feed of cracks in horizontal concrete and masonry. ■ Epoxy resin binder for epoxy mortar patching and grouting. ■ Seal interior slabs and exterior above-grade slabs from water, chlorides and mild chemical attack; also improves wearability. ■ Epoxy resin binder for epoxy mortar repair for structural pile members.
Advantages	■ Extended pot life. ■ Low viscosity and excellent penetrating ability. ■ Slow reaction rate and low exotherm. ■ Convenient, easy mix ratio; A:B = 2:1 by volume. ■ Unique, high-strength, structural adhesive for “can’t dry” surfaces. ■ Deep, penetrating and tenacious bonding of cracks in structural concrete. ■ Excellent chemical resistance.
Coverage	1 gal. yields 231 cu. in. of adhesive and grout. 1 gal. of adhesive, when mixed with 5 gal. by loose volume of oven-dried aggregate, yields approximately 808.5 cu. in. of epoxy mortar. Typical coverage is 150-175 ft.^{2}/gal. (3.7-4.3 m^2/L) for surface sealing. Coverage varies with porosity and surface profile of substrate. Higher porosity concrete will reduce coverage.
Packaging	3 gal. units. 165 gal. units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.
Color	Clear, amber.
Mixing Ratio	Component ‘A’ : Component ‘B’ = 2:1 by volume
Viscosity (Mixed)	Approximately 250 cps.
Pot Life	Approximately 90 minutes (250 grams). Approximately 40 minutes (250 grams) @ 100°F (38°C)

Tensile Properties (ASTM D-638)		**60°F (15°F)**	**73°F (23°F)**
7 day	Tensile Strength	7,200 psi (49.6 MPa)	7,500 psi (51.8 MPa)
	Elongation at Break	4.0 %	4.8%

Heat Deflection Temperature (ASTM D-648) 7 day (Fiber Stress Loading = 264 psi) 120°F (49°C)

Bond Strength (ASTM C-882): Hardened concrete to hardened concrete

2 day (moist cure)	Bond Strength 1,100 psi (7.6 MPa)
14 day (moist cure)	Bond Strength 1,300 psi (9.0 MPa)

Water Absorption (ASTM D-570) 24 hrs. (24 hr. immersion) 0.35%

Compressive Properties (ASTM D-695):

Compressive Strength	**73°F (23°C)**	**90°F (32°C)**
1 day	1,450 psi (10.0 MPa)	7,100 psi (49.0 MPa)
3 day	9,600 psi (66.2 MPa)	10,000 psi (69.0 MPa)
7 day	11,800 psi (81.3 MPa)	11,100 psi (76.6 MPa)
28 day	13,000 psi (89.6 MPa)	11,300 psi (78.0 MPa)

Compressive Modulus 7 day 270 psi (1,863 MPa)

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants.

Preparation Work: Concrete - Should be cleaned and prepared thoroughly to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means.

Steel - Should be cleaned and prepared thoroughly by blast cleaning or other equivalent mechanical means.

Mixing

Proportion 1 part Component 'B' to 2 parts Component 'A' by volume into a clean pail. Mix thoroughly for 3 minutes with a low-speed (400 - 600 rpm) drill using Sika Paddle until uniformly blended. Mix only that quantity that can be used within its pot life.

To prepare an epoxy mortar slowly add 4-5 parts by loose volume of an oven-dried aggregate to 1 part of the mixed Sikadur® 35, Hi-Mod LV LPL and mix until uniform in consistency.

Application

To gravity feed cracks - Blow vee-notched surface of crack clean with oil-free compressed air. Pour neat Sikadur® 35, Hi-Mod LV LPL, into vee-notched crack. Continue placement until completely filled. Seal underside of slab prior to filling if cracks reflect through.

To seal slabs - Spread neat Sikadur® 35, Hi-Mod LV LPL over slab. Allow penetration. Remove excess to prevent surface film. Seal interior slabs and above-grade exterior slabs only.

For an epoxy mortar - Prime prepared surface with neat Sikadur® 35, Hi-Mod LV, LPL. Place prepared epoxy mortar before primer becomes tack-free. Place the epoxy mortar using trowels. Compact and level with vibrating screed or trowels. Finish with finishing trowel. Epoxy mortar is for interior use only.

To pressure inject cracks - Suitable for low or high pressure injection. Use automated injection equipment or manual method. Set appropriate injection ports based on system used. Seal ports and crack with Sikadur® 31, Hi-Mod Gel or Sikadur® 33. When the epoxy adhesive seal has cured, inject Sikadur® 35, Hi Mod LV LPL with steady pressure. Consult Technical Service for additional information.

Limitations

- Minimum application temperature 40°F (4°C).
- Do not thin with solvents.
- Use oven-dried aggregate only.
- Maximum epoxy mortar thickness is 1.5 in. (38 mm) per lift.
- Epoxy mortar is for interior use only.
- Do not seal exterior slabs on grade.
- Minimum age of concrete must be 21-28 days, depending upon curing and drying conditions, for mortar applications. and to seal slabs.
- Porous substrates must be tested for moisture-vapor transmission prior to mortar or sealing slabs.
- Not for injection of cracks under hydrostatic pressure.
- Do not inject cracks greater than 1/4 in. (6 mm) Consult Technical Service.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 52

Advanced, very-low-viscosity, moisture-tolerant epoxy injection adhesive

Description	Sikadur® 52 is a 2-component, 100% solids, moisture-tolerant, epoxy adhesive. It is a low-viscosity, high-strength adhesive formulated specifically for grouting both dry and damp cracks. It conforms to the current ASTM C-881, Types I and II, Grade-1, Class C and AASHTO M-235 specifications.
Where To Use	■ Use neat for gravity feed or pressure injection of cracks in structural concrete, masonry, wood, etc. ■ Seal interior slabs and exterior above grade slabs from water, chlorides and mild chemical attack and to improve wearability.
Advantages	■ Tenacious crack-sealing grout. ■ Convenient easy mix ratio A:B = 2:1 by volume. ■ Advanced low-viscosity structural resin. ■ Unique, high-strength adhesive for 'can't dry' cracks.
Coverage	1 gal. yields 231 cu. in.
Packaging	3 gallons units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition to 65°-75°F (18°-24°C) before using.
Color	Clear, pale yellow.
Mixing Ratio	Component 'A': Component 'B' = 2:1 by volume.
Viscosity (Mixed)	Approximately 200 cps.
Pot Life	Approximately 30 minutes. (60 gram mass)

Tensile Properties (ASTM D-638)

14 day	Tensile Strength	7,900 psi (54 MPa)
	Elongation at Break	3.1%
	Modulus of Elasticity	2.0 X 10^5 psi (1,400 MPa)

Flexural Properties (ASTM D-790)

14 day	Flexural Strength (Modulus of Rupture)	5,400 psi (37.2 MPa)
	Tangent Modulus of Elasticity in Bending	3.8 X 10^5 psi (2,620 MPa)

Shear Strength (ASTM D-732) **14 day** Shear Strength 4,300 psi (29.6 MPa)

Bond Strength (ASTM C-882): Hardened Concrete to Hardened Concrete

2 day (dry cure)	Bond Strength	3,000 psi (20.6 MPa)
14 day (moist cure)	Bond Strength	2,200 psi (15.1 MPa)

Heat Deflection Temperature (ASTM D-648)

14 day 122°F (50°C)
[fiber stress loading = 264 psi (1.8 MPa)]

Water Absorption (ASTM D-570) **7 day** (2 hour boil) 1.5%

Compressive Properties (ASTM D-695)
Compressive Strength, psi (MPa)

	40°F* (4°C)*	73°F* (23°C)*	90°F* (32°C)*
8 hour	-	-	90 (0.62)
16 hour	-	3,000 (20.6)	7,300 (50.3)
1 day	-	4,500 (31.0)	8,400 (57.9)
3 day	1,800 (12.4)	10,000 (68.9)	8,700 (60.0)
7 day	6,100 (42.0)	11,300 (77.9)	10,400 (71.7)
14 day	6,800 (46.8)	11,700 (80.6)	10,400 (71.7)
28 day	8,400 (57.9)	12,000 (82.7)	10,400 (71.7)

Compressive Modulus	**28 days**	3.5 x 10^5 psi (2,400 MPa)

* Material cured and tested at the temperatures indicated.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants.

Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means.

Steel - Should be cleaned and prepared thoroughly by blast cleaning or other equivalent mechanical means.

Mixing

Proportion 1 part Component 'B' to 2 parts Component 'A' by volume into a clean pail. Mix thoroughly for 3 minutes with Sika Paddle on low-speed (400-600 rpm) drill until uniformly blended. Mix only that quantity that can be used within its pot life.

Application

To gravity feed cracks - Blow vee-notched crack clean with oil-free compressed air. Pour neat Sikadur® 52 into vee-notched crack. Continue placement until cracks are completely filled. Prior to filling, seal underside of slab if cracks reflect through.

To pressure inject cracks - Use automated injection equipment or manual method. Set appropriate injection ports based on system used. Seal ports and cracks with Sikadur 31, Hi-Mod Gel, or Sikadur® 33.

When the epoxy adhesive seal has cured, inject Sikadur® 52 with steady pressure. Consult Technical Service for additional information.

To seal slabs - Spread neat mixture of Sikadur® 52 over slab using a roller or squeegee, working material thoroughly into the substrate to ensure penetration. Coverage should be uniform. Coat interior slabs and above-grade exterior slabs only.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C).
- Do not thin. Addition of solvents will prevent proper cure.
- Material is a vapor barrier after cure.
- Not for injection of cracks under hydrostatic pressure at the time of application.
- Do not inject cracks greater than 1/4 in. (6 mm) without consulting Technical Service.
- Do not seal exterior slabs on grade.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Construction

Sikadur® Crack Fix

Low-viscosity, high-strength epoxy sealing system

Description	Sikadur® Crack Fix is a 2-component, 100% solids, moisture-tolerant, low-viscosity, high-strength, multi-purpose, epoxy resin adhesive. It conforms to the current ASTM C-881 and AASHTO M-235 specifications.
Where to Use	■ Gravity-feed of cracks in horizontal concrete and masonry. ■ Low pressure injection of cracks in structural concrete, masonry, wood, etc. ■ Grouting bolts, dowels, pins, etc. into horizontal concrete surfaces.
Advantages	■ Formulation identical to popular, high strength adhesive Sikadur® 35, Hi-Mod LV. ■ Five times stronger than concrete. ■ Convenient easy to use, single tube cartridge - fits standard caulk guns. ■ Deep, penetrating and tenacious bonding of cracks in structural concrete. ■ No mess - self-mixing.
Coverage	1 cartridge yields approximately 10.7-11.0 cu. in. (175-180 ml) of usable epoxy resin.
Packaging	Carton contains 12 single caulk tube-style cartridges; each cartridge packaged with 2 static mixers and 2 flow restrictors.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.		
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 60°-75°F (15°-24°C) before using.		
Color	Clear, amber.		
Mixing Ratio	Component A : Component B = 2:1 by volume.		
Viscosity (Mixed)	Approximately 375 cps.		
Pot Life	Approximately 25 minutes. (60 gram mass)		
Tack Free Time (3-5 mils)	**40°F (4°C)*** 14-16 hrs.	**73°F (23°C)*** 3-3.5 hrs.	**90°F (32°C)*** 1.5-2 hrs.

Tensile Properties (ASTM D-638)

7 day	Tensile Strength	7,000 psi (48.3 MPa)
	Elongation at Break	6.9%

Flexural Properties (ASTM D-790)

14 day	Flexural Strength (Modulus of Rupture)	11,000 psi (75.9 MPa)
	Tangent Modulus of Elasticity in Bending	3.1 x 10^5 psi (2,139 MPa)

Shear Strength (ASTM D-732)

14 day	Shear Strength	4,800 psi (33.1 MPa)

Heat Deflection Temperature (ASTM D-648)

7 day	[fiber stress loading = 264 psi (1.8 MPa)]	121°F (49°C)

Bond Strength (ASTM C-882): Hardened concrete to hardened concrete

2 day	**(moist cure)**	Bond Strength	1,300 psi (9.0 MPa)
14 day	**(moist cure)**	Bond Strength	1,350 psi (9.3 MPa)

Water Absorption (ASTM D-570) **7 day** (24 hour immersion) 0.27%

Compressive Properties (ASTM D-695)

Compressive Strength, psi (MPa)

	40°F (4°C)*	73°F (23°C)*	90°F (32°C)*
4 hour	-	-	-
8 hour	-	180 (1.2)	3,200 (22.1)

16 hour	-	4,500 (31.1)	6,300 (43.5)
1 day	-	6,000 (41.4)	9,100 (62.8)
3 day	4,000 (27.6)	9,000 (62.1)	10,500 (72.5)
7 day	6,800 (46.9)	11,000 (75.9)	10,500 (72.5)
14 day	10,300 (71.1)	12,000 (82.8)	10,500 (72.5)
28 day	12,400 (85.6)	13,000 (89.7)	10,500 (72.5)

Compressive Modulus

7 day 2.9 X 10^5 psi (2,000 MPa)

*Material cured and tested at the temperatures indicated.

How to Use

Surface Preparation

Surface must be clean, dry and sound. Remove dust from crack by brushing or by blowing clean with oil free compressed air.

Mixing

Cartridge Set-Up: Remove twist-cap and port plug from top of cartridge. Press one of enclosed "flow restrictors" into opening. Insert one of the enclosed static mixers through twist-cap and attach to threading. Insert Sikadur® Crack Fix cartridge into good quality caulking gun. Point upward during initial squeeze of gun's trigger to purge any entrapped air. As mixed resin approaches end of mixer, discard rest of initial squeeze and portion of next squeeze to ensure uniform blend of adhesive components.

Application

To gravity feed cracks - Blow vee-notched crack clean with oil-free compressed air. Dispense Sikadur® Crack Fix slowly into vee-notched crack. Continue placement until completely filled. Seal underside of slab prior to filling if cracks reflect through.

To inject cracks - Set appropriate injection ports. Seal ports and surface of crack with Sikadur® 31, Hi-Mod Gel or Sikadur® 33. When the epoxy adhesive seal has cured, inject Sikadur® Crack Fix with slow steady pressure. Consult Technical Service for additional information.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C). Maximum substrate temperature is 95°F (35°C).
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- Do not apply over wet, glistening surface.
- Not for injection of cracks subjected to osmotic or hydrostatic pressure during application.
- Do not inject cracks greater than ¼ in. (6 mm) Consult Technical Service at 1-800-933-SIKA.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® Crack Weld

Crack Injection Kit

Description	Two component, low viscosity, fast curing epoxy sealing system for repairs to cracks in concrete and solid masonry. Conforms to ASTM C-881.
Where to Use	■ Low pressure injection of cracks in structural concrete and solid masonry. ■ Gravity feed cracks in horizontal concrete and horizontal solid masonry.
Advantages	■ As strong as concrete. ■ Convenient mix in the nozzle cartridge system. ■ Cartridges fit standard caulking guns.
Coverage	Capseal will yield Approx. 300 mL Injection resins will yield Approx. 250 mL (See Charts for specific coverage rates)
Packaging	■ Capseal (x2) 300 ml ■ Injection Resin (x2) 250 ml ■ Capseal mixer nozzle (x2) ■ Capseal applicator fan (x2) ■ Cartridge Flow Restrictor (x1) ■ Injection resin mixers with extended tube (x2) ■ Push fit connector (x1) ■ Injection Ports (x16) ■ Pair of Gloves (x2) ■ Wooden Applicator (Tongue Depressor) (x2) ■ Instructional DVD (x1)

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	18 months in original, unopened containers.
Storage Conditions	Store dry at 40° -75° F (5° -24° C)
Product Conditioning	Condition dry at 40° -75° F (5° -24° C)

For Sikadur Injection Resin:

Compressive Strength (ASTM D-695), psi MPa	**40° F**	**68° F**	**95° F**
4 hours	-	-	500 (3.4)
8 hours	-	-	2000 (13.7)
16 hours	-	2000 (13.7)	3500 (24.1)
1 day	-	3000 (20.7)	5000 (34.5)
3 days	1500 (10.3)	8500 (58.6)	5500 (37.9)
7 days	6500 (44.8)	9000 (62.1)	7000 (48.3)
14 days	7500 (51.7)	9500 (65.5)	7500 (57.7)
28 days	9000 (62.1)	10,000 (68.9)	10,000 (68.9)

Compressive Modulus (ASTM D-695)	200,000 psi
Viscosity Mixed (ASTM D-2393)	500 cps
Pot Life (ASTM C-881)	25-30 min. (60g mass)
Tensile Strength (ASTM D-638)	6000 psi
Elongation at Break (ASTM D-638)	25 %
Tensile Modulus (ASTM D-638)	250,000 psi
Flexural Strength (ASTM D-732)	10,000 psi
Bond Strength (ASTM D-897)	
2 day	350 psi (concrete failure)
14 days	450 psi (concrete failure)
Water Absorption (ASTM D-570)	0.24%
Heat Deflection Temp. (ASTM D-648)	109.7° F
VOC:	Capseal: 30 g/L Inj. Resin: 5 g/L

For Sikadur Capseal:

Temp. (°F)	Gel Time (min)	Ready for Injection (min)
40	18	145
50	10	85
68	6	50
77	5	40
86	4	35

Coverage Rates:

Consumption of Crack Injection Resin in a crack					
	Length (in)	Width (in)	Depth (in)	Cu. Inches	# of Tubes
1/16" wide crack - 1" deep and 10 ft. Long	120	0.062	1	7.44	0.4
1/16" wide crack - 1.5" deep and 10 ft. Long	120	0.062	1.5	11.16	0.6
1/16" wide crack - 2" deep and 10 ft. Long	120	0.062	2	14.88	0.8
1/8" wide crack - 1" deep and 10 ft. Long	120	0.125	1	15	0.8
1/8" wide crack - 1.5" deep and 10 ft. Long	120	0.125	1.5	22.5	1.2
1/8" wide crack - 2" deep and 10 ft. Long	120	0.125	2	30	1.6
1/4" wide crack - 1" deep and 10 ft. Long	120	0.25	1	30	1.6
1/4" wide crack - 1.5" deep and 10 ft. Long	120	0.25	1.5	45	2.4
1/4" wide crack - 2" deep and 10 ft. Long	120	0.25	2	60	3.2

Consumption of Crack Injection Paste on a crack					
	Length (in)	Width (in)	Depth (in)	Cu. Inches	# of Tubes
1" Wide Strip - 10 ft. Long and 1/8" thick	120	1	0.125	15	0.8
1" Wide Strip - 10 ft. Long and 1/4" thick	120	1	0.25	30	1.6
1.5" Wide Strip - 10 ft. Long and 1/8" thick	120	1.5	0.125	22.5	1.2
1.5" Wide Strip - 10 ft. Long and 1/4" thick	120	1.5	0.25	45	2.4
2.0" Wide Strip - 10 ft. Long and 1/8" thick	120	2	0.125	30	1.6
2.0" Wide Strip - 10 ft. Long and 1/4" thick	120	2	0.25	60	3.2

How to Use

Surface Preparation

Substrate Preparation - For a successful application, very thorough preparation is a must. The crack to be treated must be dry and free from oil, grease, dust and other contaminants. Any loose material must be blown or brushed clear.

For Vertical Cracks (walls, columns, beams) - The surface of the crack should be sealed with the fast setting Sikadur Capseal supplied. The Capseal should also be used to affix the injection ports. The distance between the injection ports should be greater than the estimated depth of the crack (typically 1.5 times. If depth is not known, consult technical services).

For Horizontal Cracks (floors, slabs, etc.) - The Sikadur Capseal and injection ports may not be required as the resin may be introduced into the crack by gravity.

Mixing

Cartridge Set Up:

Sikadur Capseal - Open screw cap, cut film to remove metal clip and attach nozzle, extrude waste until a uniform color is achieved.

Sikadur Injection Resin - Remove screw cap, insert outlet plugs, attach mixer nozzle with extension tube*. Extrude waste to form a homogeneous mix. Use the push fit connector to connect to injection port.

*For horizontal cracks (floor, slab, etc.), remove the extension tube.

Application

For Vertical Cracks (walls, columns, beams) - The resin should be injected into the first (lower) port. When the resin begins to flow from the adjacent port, close off the first port and disconnect the hose. Reconnect to the second port and inject until resin starts to flow from the third; this process is repeated until the whole crack has been injected. After the resin has been allowed to cure, the injection ports and capseal should be removed and any holes or voids should be filled.

	For Horizontal cracks (floors, slabs, etc.) - To gravity feed cracks, seal the underside of the substrate prior to filling if the crack reflects through. Dispense the injection resin slowly into the vee-notched crack. Continue injecting until completely filled.
Removal	After the resin has been allowed to cure, the injection ports and capseal should be mechanically removed and any holes or voids should be filled.
Limitations	■ Minimum substrate and ambient temperature 40˚F (5˚C). Maximum substrate temperature 95˚ F (45˚). ■ Minimum age of concrete must be 21-28 days, depending on curing and drying conditions. ■ Do not apply over wet, glistening surfaces. ■ Not for injection of cracks subjected to osmotic or hydrostatic pressure during application. ■ Do not inject cracks greater than 1/4 in (6mm). Consult Sika Technical Services. ■ Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure. ■ **NOT FOR USE AS AN ANCHORING ADHESIVE.**

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Product Data Sheet
Edition 12.5.2014
Sikadur® Injection Gel

Sikadur® Injection Gel

High-modulus, high-strength, structural, non-abrasive, smooth epoxy paste adhesive

Description	Sikadur® Injection Gel, is a 2-component, 100% solids, moisture-tolerant, high-modulus, high-strength, structural epoxy. When mixed it gives a smooth, non-abrasive, paste adhesive. It conforms to the current ASTM C-881, Types I and IV, Grade-3, Class-C and AASHTO M-235 specifications.
Where to Use	■ Structural crack repairs not exceeding 1/4 in. (6 mm) width. ■ Mechanical grouting, machine and 'robotic' base plates, bearing pads, etc. ■ Waterproofing tunnels, cable vaults, tanks, basements, etc. ■ Re-anchoring of veneer masonry. Consult a design professional prior to use. ■ Wood-truss repairs. ■ Preventive maintenance - grout large cracks on new or existing structures to seal off reinforcing steel from the elements of corrosion. ■ Anchor grouting, bolts, dowels, pins and special fasteners. Consult a design professional prior to use. ■ As a pick-proof sealant around windows, doors, lock-ups, etc. inside correctional facilities.
Advantages	■ Unique, non-abrasive texture permits application with automated pressure-injection equipment. ■ Tolerant of moisture before, during, and after cure. ■ High-modulus, high-strength, structural-paste adhesive. ■ Excellent adhesion to masonry, concrete, wood, steel and most structural materials. ■ Paste consistency ideal for vertical and overhead grouting of cracks. ■ Convenient easy mix ratio A:B = 1:1 by volume. ■ Excellent lubricity for deep penetration.
Coverage	1 gal. yields 231 in^3 of epoxy paste adhesive.
Packaging	4 gal. units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened container.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.
Color	Gray.
Mixing Ratio	Component 'A' : Component 'B' = 1:1 by volume.
Consistency	Smooth, non-sag paste.
Pot Life	Approximately 30 minutes. (60 gram mass)

Tensile Properties: (ASTM D-638)

14 day	Tensile Strength	4,300 psi (29.7 MPa)
	Elongation at Break	1.3%
	Modulus of Elasticity	4.1 x 10^5 psi (2,829 MPa)

Flexural Properties (ASTM D-790)

14 day	Flexural Strength (Modulus of Rupture)	6,700 psi (46.2 MPa)
	Tangent Modulus of Elasticity in Bending	7.5 x 10^5 psi (5,175 MPa)

Shear Strength (ASTM D-732) **14 day** Shear Strength 3,700 psi (25.5 MPa)

Bond Strength (ASTM C-882):

Hardened concrete to hardened concrete

2 day (dry cure)	Bond Strength	3,000 psi (20.6 MPa)
2 day (moist cure)	Bond Strength	2,500 psi (17.2 MPa)
14 day (moist cure)	Bond Strength	2,600 psi (17.9 MPa)

Hardened concrete to steel

2 day (dry cure)	Bond Strength	3,300 psi (22.7 MPa)
14 day (moist cure)	Bond Strength	2,600 psi (17.9 MPa)

Heat Deflection Temperature (ASTM D-648)

7 day [fiber stress loading = 264 psi (1.8 MPa)] 120°F (49°C)

Water Absorption (ASTM D-570) **7 day** (24 hr. immersion) 0.11%

Construction

Compressive Properties (ASTM D-695)
Compressive Strength, psi (MPa)

	40°F*** (4°C)	73°F*** (23°C)	90°F (32°C)
4 hour	-	-	300 (2.1)
8 hour	-	300 (2.1 MPa)	6,500 (44.8)
16 hour	100 (0.7)	7,500 (51.7)	7,000 (48.3)
1 day	1,400 (9.6)	8,000 (55.1)	9,500 (65.5)
3 day	7,600 (52.4)	8,500 (58.7)	10,000 (68.9)
7 day	9,000 (62.1)	9,000 (62.1)	10,000 (68.9)
14 day	10,000 (68.9)	10,000 (68.9)	10,000 (68.9)
28 day	10,000 (68.9)	10,000 (68.9)	10,000 (68.9)

Compressive Modulus **7 day** 2.7 X 10^5 psi (1,863 MPa)

**Cured and tested at the temperatures indicated.

*See limitations section for further information.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants.

Preparation Work:

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast-cleaning or equivalent mechanical means.

Steel - Should be cleaned and prepared thoroughly by blast-cleaning.

Mixing

Sikadur® Injection Gel is specially designed and formulated to be mixed and applied with automated pressure-injection equipment. Follow the recommendations and directions supplied by the equipment manufacturer.

Pre-mix each component. Proportion equal parts by volume of Component 'B' and Component 'A' into a clean pail. Mix thoroughly for 3 minutes with Sika paddle on low-speed (400-600 rpm) drill until uniform in color. Mix only that quantity that can be applied within its pot life.

Application

As a structural adhesive - Apply the neat mixed Sikadur® Injection Gel to the prepared substrates. Work into the substrate for positive adhesion. Secure the bonded unit firmly into place until the adhesive has cured. Glue line should be kept as thin as possible, not to exceed more than 1/8 in. (3 mm).

To seal injection ports and cracks for injection grouting - Place the neat mixed material over the cracks to be pressure-injected and around each injection port. Allow sufficient time to set before pressure-injecting.

To anchor bolts, dowels, pins - Annular space around bolt should not exceed 1/8 in. (3 mm); depth of embedment is typically 10-15 times the bolt diameter. Grout with neat Sikadur® Injection Gel.

To grout cracks - Use automated injecting equipment or manual method. Set appropriate injection ports based on the system used. Cracks up to 1/4 in. (6 mm) wide may be grouted.

To anchor bolts, dowels, pins in hollow masonry or concrete block - Consult Sika Technical Service at 800-933-7452.

To seal baseplates and bearing pads - Inject in-place baseplate and bearing pads with Sikadur® Injection Gel. Apply up to 1/4 in. (6 mm) thick.

As a pick-proof sealant - use automated or manual method. Apply an appropriate size bead of material around the area being sealed. Seal with neat Sikadur® Injection Gel.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C).
- Do not thin. Addition of solvents will prevent proper cure.
- Material is a vapor barrier after cure.
- Not for sealing cracks under hydrostatic pressure.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 55 SLV

Super low-viscosity, moisture-tolerant epoxy resin, crack healer/penetrating sealer

Description	Sikadur® 55 SLV is a 2-component, 100% solids, moisture-tolerant, epoxy crack healer / penetrating sealer, having a fast tack-free time to minimize downtime. It is a super low-viscosity, high-strength adhesive formulated specifically for sealing both dry and damp, existing, non-dynamic cracks. It conforms to the current ASTM C-881, Types I and II, Grade-1, Class-C* and AASHTO M-235 specifications. * except for gel time
Where to Use	■ Sikadur® 55 SLV seals cracked concrete. ■ For interior slabs and exterior above-grade slabs. ■ For elevated horizontal decks, parking garages and other structures exposed to foot and pneumatic tire traffic.
Advantages	■ Super low viscosity/low surface tension for excellent penetration into existing cracks. ■ Seals existing cracks by gravity down to 2 mils (0.002" / 0.05 mm) in width. ■ Prolongs life of cracked concrete. ■ Penetrates and seals surface from water absorption, chloride-ion intrusion, and chemical attack (patent pending technology). ■ Improves concrete surface by reducing water and chloride intrusion. ■ Can be open to traffic in 6 hours at 73°F (23°C). ■ High bond strength, even in damp cracks. ■ **U.S. Patent No. (pending)** for ultra low viscosity healer/sealer to strengthen cracked concrete.
Coverage	1 gal. (3.8 liters) yields 231 cu. in. (3,785 cm^3) Typical coverage is 150-175 ft^2/gal. (3.7-4.3 m^2/L) for surface sealing. Coverage varies with porosity and surface profile of substrate. Higher porosity concrete will reduce coverage. For crack healing, follow Application instructions and allow to pond over cracks.
Packaging	3 gal. (11.35 l) unit = 'A' = 2 gal. (7.6 l) + 'B' = 1 gal. (3.8 l)

Typical Data *[Material and curing conditions @ 73°F (23°C) and 50% R.H.]*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers			
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.			
Color	Clear, amber			
Mixing Ratio	Component 'A' : Component 'B' = 2:1 by volume			
Viscosity (Mixed)	Approximately 105 cps			
Pot Life	Approximately 20 minutes			
Tack-Free Time	**40°F (4°C)***	**60°F (15°C)***	**73°F (23°C)***	**90°F (32°C)***
	> 11 hrs.	11 hrs.	6 hrs.	2.5 hrs.

Tensile Properties (ASTM D-638)	**73°F (23°C)**		
7 day	Tensile Strength	7,100 psi (48.9 MPa)	
	Elongation at break	10%	
Bond Strength (ASTM C-882)			
Hardened Concrete to Hardened Concrete		**2 day (moist cure)**	2,500 psi (17.2 MPa)
		14 day (moist cure)	2,500 psi (17.2 MPa)
Hardened Concrete to Steel		**2 day (moist cure)**	1,500 psi (10.3 MPa)
		14 day (moist cure)	1,600 psi (11.0 MPa)
Flexural Properties (ASTM D-790)			
7 day	Flexural Strength	8,500 psi (58.6 MPa)	
	Tangent Modulus of Elasticity	3.2 x 10^5 psi (2,206 MPa)	
Shear Strength (ASTM D-732)	**7 day**	5,800 psi (40.0 MPa)	
Heat Deflection Temperature (ASTM D-648)	**7 day**		
[fiber stress loading = 264 psi (1.8 MPa)		110°F (43°C)	
Water Absorption (ASTM D-570)	**7 day**	(24 hour immersion)	0.60%

Construction

Compressive Properties (ASTM D-695)

Compressive Strength, psi (MPa)

	40°F (4°C)*	60°F (15°C)*	73°F (23°C)*	90°F (32°C)*
1 day	-	320 (2.2)	1,100 (7.6)	4,800 (33.1)
3 day	2,000 (13.8)	6,500 (44.8)	8,300 (57.2)	8,000 (55.2)
7 day	7,800 (53.8)	10,400 (71.7)	10,900 (75.1)	8,300 (57.2)
14 day	9,600 (66.2)	11,000 (75.8)	11,800 (81.4)	10,000 (68.9)
28 day	11,700 (80.7)	12,000 (82.7)	12,000 (82.7)	10,000 (68.9)

Compressive Modulus **7 day** 3.0 x 10^5 psi (2,068 MPa)

How to Use

Surface Preparation

Substrate must be clean, sound and free of surface moisture. Remove dust, laitance, grease, oils, curing compounds, waxes, impregnations, foreign particles, coatings and disintegrated materials by mechanical means (i.e. shot blasting, sandblasting, etc.). For best results, substrate should be dry. Surfaces prepared by Low Pressure Water Cleaning or High Pressure Water Jetting methods should be allowed to dry for 24 hrs. minimum [at 73°F (23°C)].

Mixing

Mix 1 part Component 'B' to 2 parts Component 'A' by volume into a clean pail. Mix thoroughly for 3 minutes with Sika paddle or jiffy mixer on a low-speed (400-600 rpm) drill until uniformly blended. Mix only that quantity which can be used within its pot life.

Application

To gravity feed cracks: Sikadur® 55 SLV is applied to horizontal surfaces by flat squeegee or broom. Spread material over area and allow to pond over cracks. Let material penetrate into cracks and substrate. Remove excess epoxy with roller leaving no visible surface film. For cracks greater than 1/8 in. (3 mm) wide, fill crack with oven-dried sand before applying Sikadur® 55 SLV. Seal cracks from underside, when accessible, to prevent leakage.

A second treatment may be required on very porous substrates. Apply second treatment before broadcasting After treatment, wait a minimum of 20-30 minutes at 73°F (23°C) before broadcasting sand. Cover with broadcast of an oven-dried 20/40 silica sand or similar sand. Distribute evenly over the surface to excess at a rate of 30-40 lbs./100 sq. ft.. Allow to cure 6 hours minimum at 73°F (23°C). Remove any loose sand and open to traffic once epoxy has cured. Consult Sika Technical Service at 1-800-933-SIKA for additional information.

To pressure inject cracks: Use automated injection equipment. Set appropriate injection ports. Seal ports and cracks with Sikadur® 31, Hi-Mod Gel, Sikadur® Injection Gel or Sikadur® AnchorFix 2/Sikadur® AnchorFix 500. When the epoxy adhesive has cured, inject Sikadur® 55 SLV with steady pressure. Consult Technical Service at 1-800-933- SIKA for additional information. Mock ups to ascertain penetration on job site conditions is strongly recommended. Actual penetration should be verified by core testing.

Limitations

- Do not thin. Addition of solvents will prevent proper cure.
- Material is a vapor barrier after cure.
- Do not apply if rain is imminent. Water exposure or humidity will affect surface appearance and may cause surface whitening.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.
- Sealed concrete surface may appear blotchy due to differential absorption.
- Allow sufficient time for the substrate to dry after rain or other inclement conditions.
- Application temperature of substrate must be minimum 5°F (3°C) above the dew point.
- Minimum ambient and substrate temperature 40°F (4°C). Maximum application temperature 95°F (35°C).
- Do not inject cracks greater than 1/4 in. (6 mm) Consult Technical Service at 1-800-933-SIKA.
- Minimum age of concrete is 21-28 days, depending on curing and drying conditions.
- Not designed to seal or inject cracks under hydrostatic pressure during application.
- Penetration results will vary. Factors that may impede penetration include, but are not limited to, temperature (ambient and material), geometry of crack, concrete porosity, and dirt inside cracks.
- Product is not appropriate for use in dynamic cracks.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
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Construction

SikaPronto® 19 TF

Fast traffic time, high molecular weight methacrylate, crack healer/penetrating sealer

Description	SikaPronto® 19 TF is a 2-component, rapid-curing, solvent-free, high molecular weight methacrylate, crack-healer/penetrating sealer, with an extremely fast traffic time to minimize downtime.
Where to Use	■ Use on grade, above and below grade on concrete and mortar. SikaPronto® 19 TF seals surface of concrete from water and chlorides. ■ For horizontal decks, slabs, patios, driveways, parking garages, and other substrates exposed to foot and pneumatic-tire traffic.
Advantages	■ Penetrates cracks by gravity. ■ Structurally improves concrete surface. ■ Opens to traffic in under 3 hours. ■ Easy-to-use, 2-component system. ■ Does not produce a vapor barrier. ■ Low viscosity for easy, topical applications and excellent penetration into cracks. ■ Low odor. ■ High bond strength. ■ Prolongs life of cracked concrete. ■ As a penetrating sealer, SikaPronto® 19 TF reduces water absorption and chloride-ion intrusion.
Coverage	Typical coverage is 90-150 ft²/gal. for crack healing and surface sealing. Coverage varies with porosity and surface profile of substrate. Higher porosity will reduce coverage.
Packaging	1 gal. units, 4/carton; 4.5 gal. units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	Component 'A': 3 months in original, unopened container. Component 'B': 6 months in original, unopened container.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using. Storage at higher temperatures may cause material to pre-polymerize and will reduce shelf life.
Color	Dark purple when liquid; light amber after cure.
Mixing Ratio	Plant-proportioned kit; mix entire unit.
Methacrylate Monomer Viscosity	25 cps maximum.
Pot Life	Approximately 15 minutes.
Bulk Cure Time	90 minutes maximum.
Traffic Time	3 hours maximum.

Flexural Properties (ASTM D-790)

1 day	Flexural Strength	(Modulus of Rupture)	2,500 psi (17.2 MPa)

Bond Strength (ASTM C-882): Hardened concrete to hardened concrete

2 day	**(dry cure)**	Bond Strength	2,100 psi (14.4 MPa)
14 day	**(moist cure)**	Bond Strength	2,300 psi (15.8 MPa)

Compressive Properties (ASTM D-695)
Compressive Strength, psi (MPa)

	40°F* (4°C)	73°F* (23°C)	90°F* (32°C)
1 hour	-	1,000 (6.8)	1,900 (13.1)
2 hour	-	2,300 (15.8)	2,700 (18.6)
1 day	1,800 (12.4)	2,900 (20.0)	3,500 (24.1)
7 day	3,500 (24.1)	3,100 (21.3)	4,300 (29.6)

* Material cured and tested at the temperatures indicated.

Construction

How to Use

Surface Preparation

Substrate must be clean, sound and free of surface moisture. Remove dust, laitance, grease, oils, curing compounds, waxes, impregnations, foreign particles, coatings and disintegrated materials by mechanical means (i.e., blast cleaning). For best results, substrate should be dry. However, a saturated surface dry condition is acceptable.

Mixing

Before adding 'B' Component, mix 'A' Component for 30 seconds with a low-speed drill using a Sika paddle. Empty entire contents of 'B' Component into pail containing 'A' Component. Mix for 3 minutes with a low speed drill (400-600 rpm) using a Sika paddle. Caution: Mix only that quantity that can be placed within the pot life. Material should be quickly poured from pail onto concrete surface to prolong working life.

Application

SikaPronto® 19 TF is applied to horizontal surfaces by roller, squeegee or broom. Spread material over area and allow to pond over cracks. Let material penetrate into cracks and substrate; remove excess material leaving no visible surface film. For cracks greater than 1/8 in. (3 mm) wide, fill crack with oven-dried sand before applying SikaPronto® 19 TF. Seal cracks from underside, when accessible, to prevent leakage.

A second treatment may be required on very porous substrates. Apply second treatment before broadcasting. After treatment, wait at least 20 minutes at 73°F (23°C); cover with light broadcast of a dry 8/20 or similar sand. Distribute evenly over the surface at a rate of 15 to 20 lbs./100 ft² Allow to cure 3 hours at 73°F (23°C). Remove any loose sand and open to traffic. Consult Sika Technical Service for additional information.

Limitations

- Do not delay broadcasting more than 20 minutes @ 73°F (23°C).
- Do not thin. Addition of solvents will prevent proper cure.
- Minimum ambient and substrate temperature 35°F (2°C).
- Minimum age of concrete is 21-28 days, depending on curing and drying conditions.
- Sealed concrete surface may appear blotchy due to differential absorption.
- Not designed to seal cracks subject to hydrostatic pressure at the time of application.

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Construction

SikaFix® HH+

Hydrophobic, expanding, polyurethane, chemical grout

Description	SikaFix HH+ is a hydrophobic polyurethane foam grout that, when used with accelerator, is designed to stop water infiltration and fill voids outside a structure or joint and cracks in concrete structures. It may also be used in applications with high pressure flowing water.
Where to Use	■ Fill joints or cracks in concrete structures that exhibit some movement ■ Fill voids such as rock fissures, crushed fault or gravel layers ■ May be used in applications with high pressure water flow ■ Curtain wall grouting below grade structures
Advantages	■ Easy to apply, one component with accelerator ■ Hydrophobic, only a small amount of water is needed for reaction ■ Expands up to 30 times the liquid volume ■ Non-flammable ■ Contains no volatile solvents
Packaging	5 gal. metal pail. SikaFix Accelerator is available in 1 pint containers and SikaFix Pump Flush is available in 5 gal. pails. Sold separately.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Self Life	1 year in original unopened container	
Storage	Store in a dry area between 40°F - 90°F (4°C - 32°C) using original re-sealable containers	
VOC	0 g/L	
Uncured		
Solids	100%	
Viscosity	700 cps @ 74°F (23°C)	ASTM D1638
Color	Amber	
Specific Gravity	1.13	
Flashpoint COC method	>200°F	ASTM D93
Toxicity	Non-toxic	
SikaFix Accelerator		
Appearance	Transparent liquid	
Viscosity	25 cps @ 74°F (23°C)	ASTM D1638
Specific Gravity	.95	
Flashpoint	216°F	ASTM D3278-96
Cured		
Density	4 lbs/ft^3	ASTM D1622
Tensile Strength	29 psi	ASTM D638
Elongation	44%	ASTM D412
Shear	17 psi	ASTM C273
Absorption	<1%	ASTM D2842
Shrinkage	<1%	
Service Temperature	180°F (82°C) max	

Values given are not intended to be used in specific preparation

Cure Mechanism

Temperature	Gel time in minutes/seconds
50º F (10º C)	3 m 15 s
68º F (20º C)	2 m 10 s
77º F (25º C)	1 m 20 s
86º F (30º C)	1 m 10 s

Based on 2.5% SikaFix Accelerator dosage, corresponding with the recommended 5 gallon:1 pint ratio of SikaFix HH+ to SikaFix Accelerator. SikaFix Accelerator must be agitated by shaking the container prior to use.

How to Use

Surface Preparation

When the crack is contaminated on the outside, it will be necessary to clean the crack surface so that the crack can be exactly located. If the crack is wide or high water flows are encountered, it will be necessary to seal the surface of the crack with a surface sealing material (SikaSet Plug or open cell polyurethane foam saturated with SikaFix HH+). The surface sealing can be done before or after drilling the injection holes, depending on the particular situation.

Mixing

Prior to installation, the material should be agitated by vigorously shaking the 5-gallon pail or by mixing with a jiffy mixer, bung mixer or by hand. Prior to using SikaFix Accelerator, the container should be shaken vigorously as the contents may settle during storage. For normal use, each 5 gallon unit of SikaFix HH+ should be used with one pint container of SikaFix Accelerator, a dosage of 2.5%. The grout should never be used with more than 5% SikaFix Accelerator. Excess acceleration will cause vigorous expansion that is prone to shrinkage. Pour the desired amount of SikaFix HH+ into a clean pail. Measure the appropriate amount of SikaFix Accelerator and pour it into the SikaFix HH+ and mix adequately.

Application

Begin by drilling 5/8" diameter holes along the side of the crack at a 45 degree angle. Drill the hole to intersect the crack midway through the substrate. Install injection packers in the holes and tighten. Spacing of the injection ports depends on crack width, but normal varies from 6" to 36". It is always necessary to flush the drilled holes with water to remove debris and drill dust from the holes and crack. This will also ensure that the crack is wet enough to react with the grout when it is introduced to the crack. Begin the injection of the grout at the lowest packer installed on a vertical crack or at the first packer flushed for a horizontal crack. During the injection, you will notice that the SikaFix HH+ displaces water from the crack. Continue injecting until the grout appears at the adjacent packer hole. Stop pumping and reinstall the packer in the adjacent hole. Tighten the packer and move the pump hose to the second packer and begin injection. Continue the process until 3-4 packers have been grouted. Disconnect and go back to the first packer and inject all the ports for the second time if necessary. Some ports may take additional grout, which will fill up and further densify the material in the crack. Continue process until the length of the prepared crack is injected. Note: Injection pressure will vary from 200 psi to 2500 psi depending on the width of the crack, thickness of concrete and condition of concrete.

Removal

Residual resin that has foamed from the crack can be removed with a scraper as long as it is not cured to a solid on the surface. If the material has cured, remove with a wire brush or hand held grinders. SikaFix HH+ will aggressively bond to concrete surfaces.

Tooling & Finishing

When finished with the injection process, re-inject each installed packer with a small amount of water. This will react with the resin left behind in the drill hole. After the injection, the packers or injection ports can be cut flush with the concrete surface or can be removed from the injection holes. Let SikaFix HH+ cure completely before removing the packers. Packer holes can be filled with Sikadur 31, SikaRepair Mortar, or SikaSet Plug and troweled smooth.

Limitations

- Low temperatures will significantly affect viscosity and reaction time. If SikaFix Accelerator is allowed to freeze, it will lower performance of the product.
- Avoid splashing water into open containers, as material is water activated
- Water used to activate SikaFix HH+ must be in a range of pH 3-10 for optimum foam quality
- Material must be stored between 40°F - 90°F (4°C - 32°C)
- Material must be preconditioned to between 60°F - 90°F (16°C - 32°C) before use
- Ambient temperature must be between 40°F - 90°F (4°C - 32°C) for use
- Must be used in confined spaces
- The reaction may be affected by the presence of hydrocarbons. Pretesting is recommended.

Construction

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For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaFix® HH Hydrophilic

Low viscosity, expanding, polyurethane chemical grout

Description	SikaFix® HH Hydrophilic is a nonflammable hydrophilic polyurethane resin designed to form a flexible gasket or plug joints and cracks in concrete from water infiltration. In its uncured form, SikaFix® HH Hydrophilic is a pale yellow liquid. When it comes in contact with water, the grout expands quickly and cures to a tough, flexible, adhesive, closed cell foam that is essentially unaffected by mildly corrosive environments.
Where to Use	■ Sealing leaks through concrete cracks and joints. ■ Saturating backer rod to seal joints by the gasket method.
Advantages	■ Contains no volatile solvents. ■ Non-flammable. ■ Free Foam expands to 25 times its liquid volume. ■ High elongation creates tight seal in moving cracks.
Packaging	5 gallon pail.
Cure Mechanism	Water.
Chemical Resistance	Unaffected by mildly corrosive environments.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened container.	
Storage Conditions	Store in a dry area between 40°F-90°F (4°C-32°C) using original re-sealable containers. Low temperatures will affect viscosity. To minimize this effect, store the product at room temperature for a minimum period of 24 hours prior to use. Material must be preconditioned to between 60°F-90°F (16°C-32°C) before use. If site temperatures are extremely low, heat bands or heated water baths may be used on the pails, before and during use to maintain the products temperature. Immerse only the lower 2/3 of the pails. Avoid splashing water into open containers. Do not use if ambient temperature is below 40°F (4°C).	
Uncured		
Solids	100%	
Viscosity	650 cps @ 74°F (23°C)	ASTM D 1638
Color	Pale yellow	
Specific Gravity	1.16 @ 74°F (23°C)	
Flash Point	>200°F	
Corrosiveness	Non-corrosive	
Reaction initiation time		
1:1 with water	30 sec @ 77°F (25°C)	
Cured		
Density	4 lbs/ft^3	ASTM D 1622
Tensile Strength	170 psi	ASTM D 638
Elongation	400%	ASTM D 638
Shrinkage	<1%	

Values given are not to be used in a specific preparation.

How to Use

Surface Preparation

When the crack is contaminated at the outside, it will be necessary to clean the crack surface so that the crack can be exactly located. If the crack is wide or high water flows are encountered, it will be necessary to seal the surface of the crack with a surface sealing material (SikaSet® Plug, Sikadur® 31 Hi Mod Gel, or open cell polyurethane foam saturated with SikaFix® HH Hydrophilic). The surface sealing can be done before or after drilling the injection holes, depending on the particular situation.

Mixing

Prior to installation the material should be agitated vigorously shaking the 5 gallon pail or by mixing with a jiffy mixer, bung mixer or by hand. During injection the grout will follow the path of least resistance. When the material has stopped migrating, it will continue to expand against the confines of the crack/joint and compress within itself, forming a very dense, closed cell material and stopping the leak.

Application

Begin by drilling 5/8" diameter holes along the side of the crack at a 45 degree angle. Drill the hole to intersect the crack midway through the substrate. Install injection packers in the holes and tighten. Spacing of the injection ports depends on crack width, but normal varies from 6" to 36". It is always necessary to flush the drilled holes with water to remove debris and drill dust from the holes and crack. This will also ensure that the crack is wet enough to react with the grout when it is introduced to the crack. Begin the injection of the grout as the lowest packer installed on a vertical crack, or at the first packer flushed for a horizontal crack. During the injection, you will notice that the SikaFix® HH Hydrophilic displaces water from the crack. Continue injecting until the grout appears at the adjacent packer hole. Stop pumping and reinstall the packer in the adjacent hole. Tighten the packer and move the pump hose to the second packer and begin injection. Continue the process until 3-4 packers have been grouted. Disconnect and go back to the first packer and inject all the ports for the second time if necessary. Some ports may take additional grout, which will fill up and further densify the material in the crack. Continue process until the length of the prepared crack is injected.

Note: Injection pressure will vary from 200 psi to 2500 psi depending on the width of the crack, thickness of concrete and condition of concrete.

Tooling & Finishing

When finished with the injection process, re-inject each installed packer with a small amount of water. This will react with the resin left behind in the drill hole. After the injection, the packers or injection ports can be cut flush with the concrete surface or can be removed from the injection holes. Let SikaFix® HH Hydrophilic completely cure before removing the packers. Packer holes can be filled with Sikadur® 31 or SikaSet® Plug and troweled smooth.

Removal

Residual resin that has foamed from the crack can be removed with a scraper as long as it is not cured to a solid on the surface. If the material has cured, remove with a wire brush or hand held grinders. SikaFix® HH Hydrophilic will aggressively bond to concrete surfaces.

Limitations

- Low temperatures will significantly affect viscosity and reaction time.
- Avoid splashing water into open containers, as material is water activated.
- Water used to activate SikaFix® HH Hydrophilic must be in a range of pH 3-10 for optimum foam quality.
- Material must be stored between 40°F-90°F (4°C-32°C).
- Material must be preconditioned to between 60°F - 90°F (16°C - 32°C) before use.
- Ambient temperature must be between 40°F - 90°F (4°C - 32°C) for use.
- **Use only in applications where exposure to moisture is constant.**

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaFix® HH LV

Low viscosity, expanding, polyurethane chemical grout

Description

SikaFix® HH LV is a hydrophobic polyurethane that, when used alone or with SikaFix® Accelerator, is designed to form flexible gaskets or plug joints and cracks in concrete from water infiltration.

Where to Use

- Sealing leaks through concrete cracks and joints.
- Defective concrete (cracked and honeycombed).
- Limestone (tunnels, dams).
- Pipe intrusions.
- Wastewater tanks.
- Sewers, manholes, utility boxes, etc.

Advantages

- Easy to apply, one component with accelerator.
- Hydrophobic, only a small amount of water is needed for reaction.
- Expands up to 30 times in volume depending upon the amount of SikaFix® Accelerator used.
- Low viscosity permits injection into narrow hair line cracks.
- Excellent elongation creates tight seal in moving cracks.
- Tenacious adhesion to wet and dry surfaces.
- Contains no volatile solvents.
- ANSI Standard 61 potable water compliant

Packaging

5 gal plastic pail; 1 pint plastic container.

Cure Mechanism

Temperature	Gel Time (Accelerator dosage %)
50°F (10°C)	3m 10s (2.5%) 12m 0s (0%)
68°F (20°C)	1m 50s (2.5%) 6m 15s (0%)
77°F (25°C)	1m 15s (2.5%) 5m 10s (0%)
86°F (30°C)	1m 05s (2.5%) 4m 0s (0%)

Based on a 2.5% SikaFix® Accelerator dosage, corresponding with the recommended 5 gallon:1 pint ratio of SikaFix® HH LV to SikaFix® Accelerator, and a 0% dosage, corresponding with no SikaFix® Accelerator added. SikaFix® Accelerator must be agitated by shaking the container prior to use.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life

1 year in original, unopened container.

Storage

Store in a dry area between 40°F-90°F (4°C-32°C) using original re-sealable containers. Low temperatures will affect viscosity. To minimize this effect, store the product at room temperature for a minimum period of 24 hours prior to use. Material must be preconditioned to between 60°F-90°F (16°C-32°C) before use. If site temperatures are extremely low, heat bands or heated water baths may be used on the pails, before and during use to maintain the products temperature. Immerse only the lower 2/3 of the pails. Avoid splashing water into open containers. Do not use if ambient temperature is below 40°F (4°C).

Uncured

Solids	100%	
Viscosity	500 cps @ 74°F	ASTM D1638
Color	Amber	
Specific Gravity	1.15 @ 74°F (23°C)	
Flashpoint	>200°F	ASTM D93
Corrosiveness	Non-corrosive	

Construction

SikaFix HH LV Accelerator		
Appearance	Transparent liquid	
Viscosity	25 cps @ 74°F (23°C)	ASTM D1638
Specific Gravity	.95 @ 74°F (23°C)	
Flashpoint	216°F	ASTM D3278-96
Cured		
Density	4 lbs/ft^3	ASTM D1622
Tensile Strength	29 psi	ASTM D638
Elongation	44%	ASTM D638
Shear	17 psi	ASTM C273
Absorption	<1%	ASTM D2842
Shrinkage	<1%	
Service Temp	180°F (82°C) maximum	

Values given are not intended to be used in specific preparation.

How to Use

Surface Preparation

When the crack is contaminated at the outside, it will be necessary to clean the crack surface so that the crack can be exactly located. If the crack is wide or high water flows are encountered, it will be necessary to seal the surface of the crack with a surface sealing material (SikaSet® Plug, Sikadur® 31 Hi Mod Gel, or open cell polyurethane foam saturated with SikaFix® HH LV). The surface sealing can be done before or after drilling the injection holes, depending on the particular situation.

Mixing

Prior to installation, the material should be agitated by vigorously shaking the 5-gallon pail or by mixing with a jiffy mixer, bung mixer or by hand. Prior to using SikaFix® Accelerator, the container should be shaken vigorously as the contents may settle during storage. For normal use, each 5 gallon unit of SikaFix® HH LV should be used with one pint container of SikaFix® Accelerator, a dosage of 2.5%. The grout should never be used with more than 5% SikaFix® Accelerator. Excess acceleration will cause vigorous expansion that is prone to shrinkage. Pour the desired amount of SikaFix® HH LV into a clean pail. Measure the appropriate amount of SikaFix® Accelerator and pour it into the SikaFix® HH LV and mix adequately.

Application

Begin by drilling 5/8" diameter holes along the side of the crack at a 45 degree angle. Drill the hole to intersect the crack midway through the substrate. Install injection packers in the holes and tighten. Spacing of the injection ports depends on crack width, but normal varies from 6" to 36". It is always necessary to flush the drilled holes with water to remove debris and drill dust from the holes and crack. This will also ensure that the crack is wet enough to react with the grout when it is introduced to the crack. Begin the injection of the grout as the lowest packer installed on a vertical crack, or at the first packer flushed for a horizontal crack. During the injection, you will notice that the SikaFix® HH LV displaces water from the crack. Continue injecting until the grout appears at the adjacent packer hole. Stop pumping and reinstall the packer in the adjacent hole. Tighten the packer and move the pump hose to the second packer and begin injection. Continue the process until 3-4 packers have been grouted. Disconnect and go back to the first packer and inject all the ports for the second time if necessary. Some ports may take additional grout, which will fill up and further densify the material in the crack. Continue process until the length of the prepared crack is injected.

Note: Injection pressure will vary from 200 psi to 2500 psi depending on the width of the crack, thickness of concrete and condition of concrete.

Tooling & Finishing

When finished with the injection process, re-inject each installed packer with a small amount of water. This will react with the resin left behind in the drill hole. After the injection, the packers or injection ports can be cut flush with the concrete surface or can be removed from the injection holes. Let SikaFix® HH LV completely cure before removing the packers. Packer holes can be filled with Sikadur® 31 or SikaSet® Plug and troweled smooth.

Removal

Residual resin that has foamed from the crack can be removed with a scraper as long as it is not cured to a solid on the surface. If the material has cured, remove with a wire brush or hand held grinders. SikaFix® HH LV will aggressively bond to concrete surfaces.

Limitations

- Low temperatures will significantly affect viscosity and reaction time. If SikaFix® Accelerator is allowed to freeze, it will lower performance of the product.
- Avoid splashing water into open containers, as material is water activated.
- Water used to activate SikaFix® HH LV must be in a range of pH 3-10 for optimum foam quality.
- Material must be stored between 40°F-90°F (4°C-32°C).
- Material must be preconditioned to between 60°F-90°F (16°C-32°C) before use.
- Ambient temperature must be between 40°F-90°F (4°C-32°C) for use.
- Must be used in confined spaces.
- The reaction may be affected by the presence of hydrocarbons. Pretesting is recommended.

Construction

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika CarboDur®

Carbon fiber laminate for structural strengthening

Description

Sika CarboDur is a pultruded carbon fiber reinforced polymer (CFRP) laminate designed for strengthening concrete, timber and masonry structures. Sika CarboDur is bonded onto the structure as external reinforcement using Sikadur 30 epoxy resin as the adhesive.

Where to Use

Load increases
- Increased live loads in warehouses
- Increased traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization

Damage to structural parts
- Aging of construction materials
- Steel reinforcement corrosion
- Vehicle impact
- Fire

Serviceability improvements
- Decrease in deformation
- Stress reduction in steel reinforcement
- Crack width reduction

Change in structural system
- Removal of walls or columns
- Removal of slab sections for openings

Design or construction defects
- Insufficient reinforcements
- Insufficient structural depth

Advantages
- Very high strength
- Lightweight

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Base	Carbon fiber reinforced polymer with an epoxy resin matrix.
Shelf Life	Unlimited (no exposure to direct sunlight).
Color	Black
Tensile Strength	
Mean Value	4.49 x 10^5 psi (3,100 MPa)
Design Value	4.06 x 10^5 psi (2,800 MPa)
Modulus of Elasticity	
Mean Value	23.9 x 10^6 psi (165,000 MPa)
Design Value	23.2 x 10^6 psi (160,000 MPa)
Elongation at Break	1.69%
Design Strain	0.85%
Thickness	0.047 in. (1.2 mm)
Temperature Resistance	>300°F (>150°C)
Fiber Volumetric Content	>68%
Density	0.058 lbs./in^3 (1.60 g/cm^3)

Physical Properties

Product	*Thickness (mils)*	*Width (inches)*	*Cross Sectional Area*	*Tensile Strength*
Type S 512	47.2 (1.2 mm)	1.97 (50 mm)	0.093 sq. in. (60 mm^2)	37.8 x 10^3 lbs. (168 kN)
Type S 812	47.2 (1.2 mm)	3.15 (80 mm)	0.149 sq. in. (96 mm^2)	60.4 x 10^3 lbs. (269 kN)
Type S 1012	47.2 (1.2 mm)	3.94 (100 mm)	0.186 sq. in. (120 mm^2)	75.5 x 10^3 lbs. (336 kN)

Construction

- Non-corrosive
- Unlimited lengths
- Minimal preparation of laminates
- Very easy to install, especially overhead
- High modulus of elasticity
- Outstanding fatigue resistance
- Alkali resistant
- Simple laminate intersections or crossings

Coverage

Coverage of Sikadur 30 epoxy resin with CarboDur: Type S 512: approx. 50 LF/gallon. Type S 812: approx. 32 LF/gallon. Type S 1012: approx. 22 LF/gallon.

Packaging

Available in any length up to 250 m (820 ft.). Type S 512 width 50 mm (approx. 2”). Type S 812 width 80 mm (approx. 3”). Type S 1012 width 100 mm (approx. 4”).

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Existing uneven surfaces must be filled with an appropriate repair mortar (e.g. mixed Sikadur 30 epoxy with the addition of 1 part oven-dried sand). The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Surface Levelness/Irregularities: Maximum allowable deviation in 6 ft. shall be limited to 1/4” (6 mm) but no greater than 1/8” (3 mm) per foot. Any sharp edges (i.e. fins, form-marks, etc.) must be ground smooth and flush.
Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture.
CarboDur - Wipe clean with appropriate cleaner (e.g. MEK).

Cutting the CarboDur Laminate:

Preferred: CarboDur laminates should be cut with tools using a “shearing” force (e.g. guillotine or heavy duty shears). Care must be taken to support both sides of the CarboDur laminate to avoid splintering.

Alternate: A hack saw or other abrasive cutting method may be used. However, extra care must be taken to support the CarboDur laminate on both sides to avoid splintering. In addition, extra care must be taken to avoid exposure to carbon dust

Mixing

Consult Sikadur 30 technical data sheet for information on epoxy resin.

Application

Apply the neat mixed Sikadur 30 epoxy onto the concrete with a trowel or spatula to a nominal thickness of 1/16” (1.5 mm). Apply the mixed Sikadur 30 epoxy onto the CarboDur laminate with a “roof-shaped” spatula to a nominal thickness of 1/16” (1.5 mm). Within the open time of the epoxy, depending on the temperature, place the CarboDur laminate onto the concrete surface. Using a hard rubber roller, press the laminate into the epoxy resin until the adhesive is forced out on both sides. Remove excess adhesive. Glue line should not exceed 1/8 inch (3 mm). The external reinforcement must not be disturbed for a minimum of 24 hours. The epoxy will reach its design strength after 7 days.

Limitations

- **Design calculations must be made and certified by an independent licensed professional engineer. Design guidelines are available from Sika Corporation.**

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Fax: 201-933-6225

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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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C.P. 76920
Phone: 52 442 2385800
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Construction

Sika CarboDur® Rods

Carbon fiber rods for structural strengthening

Description

Sika CarboDur Rods are pultruded carbon fiber reinforced polymer (CFRP) rods designed for strengthening concrete, timber and masonry structures. The rods are primarily installed using the Near Surface Mounted (NSM) technique by inserting into grooves cut into the substrate and bonded with an epoxy resin. The rods can also be used for anchoring SikaWrap fabrics for positive attachment to concrete or masonry.

Where to Use

- Negative moment reinforcing in slabs and decks
- Anchoring of SikaWrap fabrics
- Strengthening of masonry walls
- Doweling applications
- Cathodic protection applications

Load increases

- Increased live loads in warehouses
- Increased loading in parking decks
- Installation of heavy machinery
- Vibrating structures
- Changes of building utilization

Damage to structural parts

- Aging of construction materials
- Steel reinforcement corrosion
- Vehicle impact
- Fire

Serviceability improvements

- Decrease in deformation
- Stress reduction in steel reinforcement
- Crack width reduction

Change in structural system

- Removal of walls or columns.
- Removal of slab sections for openings

Design or construction defects

- Insufficient reinforcements.
- Insufficient structural depth.

Advantages

- Very high strength
- Lightweight
- Non-corrosive
- Very easy to handle
- High modulus of elasticity
- Can accept traffic on surface (rods are countersunk)

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Base	Carbon fiber reinforced polymer with an epoxy resin matrix.
Shelf Life	Unlimited (no exposure to direct sunlight).
Color	Black
Tensile Strength	4.06×10^5 (2,800 MPa)
Tensile Modulus of Elasticity	22.5×10^6 psi (155,000 MPa)
Strain (Elongation at Break)	1.8%
Fiber Volumetric Content	65%
Temperature Resistance	>300°F (>150°C)

Physical Properties

Diameter	*Cross Sectional Area*	*Tensile Strength*
1/4 in.	0.05 sq. in.	12,500 lbs.
3/8 in.	0.11 sq. in.	27,500 lbs.

Construction

- High bond strength due to full encapsulation
- Rods are not visible once installed
- Outstanding fatigue resistance
- Alkali resistant

Coverage
Coverage of Sikadur 30 or Sikadur 32, Hi-Mod epoxy resin with Sika CarboDur Rods: 1/4 in. diameter approx. 85 LF/gal. (1/2 x 1/2 in. slots); 3/8 in. diameter: approx. 60 LF/gal. (5/8 x 5/8 in. slots)

Packaging
Custom cut lengths available.

How to Use

Surface Preparation
For Near Surface Mounted Applications, cut a groove into the concrete or masonry surface using an appropriate concrete saw or diamond blade. Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. In addition, clean the groove with compressed air prior to installation.

Preparation Work
Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture.
CarboDur Rods - wipe clean with appropriate cleaner (e.g. MEK).

Cutting the Rods
Rods may be cut to an appropriate length with a diamond blade on a chop saw or grinder. The rods should be wrapped with duct tape in the cutting zone to minimize splintering.

Mixing
Consult Sikadur 30 or Sikadur 32, Hi-Mod technical data sheet for information on epoxy resin.

Application
Near Surface Mounted Application

Grooves should be cut into the surface of the substrate to receive the CarboDur Rods. Care must be taken not to cut through existing reinforcing steel, steel tendons, embedded ducts, or other materials within the substrate. After preparing and cleaning the surface (see above), apply the mixed Sikadur 30, Sikadur 32, Hi-Mod or Sikadur AnchorFix into the grooves approximately half-full. Sikadur 30 has a paste consistency and may be use for vertical and overhead applications. Sikadur 32, Hi-Mod has a honey-type consistency and may be used for horizontal applications. Sikadur AnchorFix is packaged in cartridges and can be injected directly into the grooves for horizontal, vertical, or overhead applications. Within the open time of the epoxy, depending on the temperature, press the CarboDur Rods into the epoxy in the grooves. Apply additional epoxy over the rods to fill in the grooves. Strike the surface with a trowel to force out any air and provide a clean installation.

Anchoring SikaWrap Fabrics
To provide additional anchorage for SikaWrap Fabrics in shear or flexural strengthening applications, the fabric may be positively attached into grooves in the concrete at the ends. Cut grooves into the concrete as described above. Fill the grooves with either Sikadur 30, Sikadur 32 or Sikadur AnchorFix, depending on the orientation. Place the saturated fabric over the grooves, and press the CarboDur Rods into the grooves for positive attachment. Fill in any voids on the surface with additional epoxy, forcing out any air voids that might be present.

Limitations
Design calculations must be made and certified by an independent licensed professional engineer.

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 30

High-modulus, high-strength, structural epoxy paste adhesive for use with Sika® CarboDur® reinforcement.

Description	Sikadur® 30 is a 2-component, 100% solids, moisture-tolerant, high-modulus, high-strength, structural epoxy paste adhesive. It conforms to the current ASTM C-881 Type I, IV Grade 3, Class C and AASHTO M-235 specifications.
Where to use	■ Adhesive for bonding external reinforcement to concrete, masonry, steel, wood, stone, etc. ■ Structural bonding of composite laminates (Sika® CarboDur® CFRP) to concrete. ■ Structural bonding of steel plates to concrete. ■ Suitable for use in vertical and overhead configurations. ■ As a binder for epoxy mortar repairs.
Advantages	■ Long pot life. ■ Long open time. ■ Tolerant of moisture before, during and after cure. ■ High strength, high modulus, structural paste adhesive. ■ Excellent adhesion to concrete, masonry, metals, wood and most structural materials. ■ Fully compatible and excellent adhesion to Sika® CarboDur® CFRP composite laminate. ■ Paste consistency ideal for vertical and overhead applications of Sika® CarboDur®. ■ High abrasion and shock resistance. ■ Convenient easy mix ratio A:B=3:1 by volume. ■ Solvent-free. ■ Color-coded components to ensure proper mixing control.
Coverage	Type S 512 CarboDur®: approx. 50 LF/gal.; Type S 812 CarboDur: approx. 32 LF/gal.; Type S 1012 CarboDur®: approx. 22 LF/gal.
Packaging	1 gal. units.

Typical Data *(Material and curing conditions @ 73°F {23°C} and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-85°F (18°-29°C) before using.
Color	Light gray
Mixing Ratio	Component 'A': Component 'B' = 3:1 by volume.
Consistency	Non-sag paste.
Pot Life	Approximately 70 minutes @ 73°F (23°C) (1 qt.)

Tensile Properties (ASTM D-638)

7 day	Tensile Strength	3,600 psi (24.8 MPa)
	Elongation at Break	1%
	Modulus of Elasticity	6.5 X 10^5 psi (4,482 MPa)

Flexural Properties (ASTM D-790)

14 day	Flexural Strength (Modulus of Rupture)	6,800 psi (46.8 MPa)
	Tangent Modulus of Elasticity in Bending	1.7 X 10^6 psi (11,721 MPa)

Shear Strength (ASTM D-732) **14 day** Shear Strength 3,600 psi (24.8 MPa)

Bond Strength (ASTM C-882): Hardened Concrete to Hardened Concrete

2 day (moist cure)	Bond Strength	2,700 psi (18.6 MPa)
2 day (dry cure)	Bond Strength	3,200 psi (22.0 MPa)
14 day (moist cure)	Bond Strength	3,100 psi (21.3 MPa)
	Hardened Concrete to Steel	2,600 psi (17.9 MPa)
2 day (moist cure)	Bond Strength	3,000 psi (20.6 MPa)
2 day (dry cure)	Bond Strength	2,600 psi (17.9 MPa)
14 day (moist cure)	Bond Strength	

Heat Deflection Temperature (ASTM D-648)

7 day [fiber stress loading=264 psi (1.8 MPa)] 118°F (47°C)

Water Absorption (ASTM D-570) **7 day** (24 hour immersion) 0.03%

Construction

Compressive Properties (ASTM D-695) - Compressive Strength, psi (MPa)			
	40°F* (4°C)	73°F* (23°C)	90°F* (32°C)
4 hour	-	-	5,500 (37.9)
8 hour	-	3,500 (24.1)	6,700 (46.2)
16 hour	-	6,700 (46.2)	7,400 (51.0)
1 day	750 (5.1)	7,800 (53.7)	7,800 (53.7)
3 day	6,800 (46.8)	8,300 (57.2)	8,300 (57.2)
7 day	8,000 (55.1)	8,600 (59.3)	8,600 (59.3)
14 day	8,500 (58.6)	8,600 (59.3)	8,900 (61.3)
28 day	8,500 (58.6)	8,600 (59.3)	9,000 (62.0)
Compressive Modulus	7 day	3.9 x 10^5 psi (2,689 MPa)	

*Material cured and tested at the temperatures indicated.

How to Use

Surface Preparation

The concrete surface should be prepared to a minimum concrete surface profile (CSP) 3 defined by the ICRI surface-profile chips. Localized out-of-plane variations, including form lines, should not exceed 1/32 in. (1 mm). Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials, and other bond inhibiting materials from the surface. Existing uneven surfaces must be filled with an appropriate repair mortar (e.g., Sikadur® 30 with the addition of 1 part oven-dried sand). The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (as defined by ACI 503R, ASTM C1583) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Concrete - Blast clean, shot blast or use other approved mechanical means to provide an open roughened texture.

Steel - Should be cleaned and prepared thoroughly by blast cleaning to a white metal finish.

CarboDur® - Wipe clean with appropriate cleaner (e.g. MEK).

Mixing

Pre-mix each component. Proportion 1 part Component 'B' to 3 parts Component 'A' by volume into a clean pail or appropriately sized mixing container. Mix thoroughly for 3 minutes with Sika paddle on low-speed (400-600 rpm) drill until uniform in color. Mix only that quantity which can be used within its pot life.

To prepare an epoxy mortar: slowly add up to 1 part by loose volume of an oven-dried aggregate to 1 part of the mixed Sikadur® 30 and mix until uniform in consistency.

Application

For bonded, external reinforcement: Apply the neat mixed Sikadur® 30 onto the concrete with a trowel or spatula to a nominal thickness of 1/16" (1.5 mm). Apply the mixed Sikadur® 30 onto the CarboDur® laminate with a "roof-shaped" spatula to a nominal thickness of 1/16" (1.5 mm). Within the open time of the epoxy, depending on the temperature, place the CarboDur® laminate onto the concrete surface. Using a hard rubber roller, press the laminate into the epoxy resin until the adhesive is forced out on both sides. Remove excess adhesive. Glue line should not exceed 1/8 inch (3 mm). The external reinforcement must not be disturbed for a minimum of 24 hours. The epoxy will reach its design strength after 7 days.

For interior vertical and overhead patching: Work the material into the prepared substrate, filling the cavity. Strike off level. Lifts should not exceed 1 inch (25 mm).

Limitations

- Minimum substrate and ambient temperature is 40°F (4°C).
- Do not thin. Addition of solvents will prevent proper cure.
- Use oven-dried aggregate only.
- Maximum glue line of neat epoxy is 1/8 inch (3 mm).
- Maximum epoxy mortar thickness is 1 inch (25 mm) per lift.
- Minimum age of concrete must be 21-28 days, depending upon curing and drying conditions.
- Porous substrates must be tested for moisture vapor transmission prior to mortar applications.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 300

High-modulus, high-strength, impregnating resin

Description	Sikadur® 300 is a two-component 100% solids, moisture-tolerant, high strength, high modulus epoxy.
Where to Use	■ For use as an impregnating resin with SikaWrap® Structural Strengthening System. ■ Sikadur® 300 is used as a seal coat and impregnating resin for horizontal and vertical applications.
Advantages	■ Long pot life. ■ Long open time. ■ Easy to mix. ■ Tolerant of moisture before, during and after cure. ■ High strength, high modulus adhesive. ■ Excellent adhesion to concrete, masonry metals, wood and most structural materials. ■ Fully compatible and developed specifically for the SikaWrap® System. ■ High temperature resistance. ■ High abrasion and shock resistance. ■ Solvent-free, VOC compliant.
Coverage	As a sealer: 100 ft.²/gal.
	As an impregnating resin: 120 ft²/gal. - 9 oz. per sq.yd. fabrics 60 ft²/gal. - 18 oz. per sq.yd. fabrics 30 ft²/gal. - 37 oz. per sq.yd. fabrics
Packaging	4 gallon units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened container.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.
Color	Clear, amber.
Mixing Ratio	Mix entire unit, do not batch.
Viscosity (mixed)	approx. 500 cps
Reactivity	6-7 hours (time to reach 10,000 cps)
Tack Free (30 mils) ByK Drying Recorder	14-16 hours
Service Temperature Range	-40°F to 140°F (-40°C to 60°C)

Mechanical Properties *(14 day cure @73°F (23°C) and 50% R.H.)*

Tensile Strength (ASTM D-638)	8,000 psi (55 MPa)
Tensile Modulus (ASTM D-638)	2.5 x 10^5 psi (1,724 MPa)
Elongation @ Break (ASTM D-638)	3%
Flexural Strength (ASTM D-790)	11,500 psi (79 MPa)
Flexural Modulus (ASTM D-790)	5 x 10^5 psi (3,450 MPa)

Construction

How to Use

Surface Preparation

The concrete surface should be prepared to a minimum concrete surface profile (CSP) 3 as defined by the ICRI-surface-profile chips. Localized out-of-plane variations, including form lines, should not exceed 1/32 in. (1 mm). Substrate must be clean, sound, and free of surface moisture. Remove dust, laitance, grease, oils, curing compounds, waxes, impregnations, foreign particles, coatings and disintegrated materials by mechanical means (i.e., sandblasting). For best results, substrate should be dry. However, a saturated surface dry condition is acceptable.

Mixing

Pre-mix each component. Mix entire unit, do not batch. Pour contents of part B to part A. Mix thoroughly for 5 minutes on low using a paddle style mixer on low speed (400-600 rpm) drill until uniformly blended.

Application

As a sealer: Apply mixed Sikadur® 300 epoxy to a properly prepared substrate using a brush, roller or airless sprayer. Sikadur® 300 should be applied at a sufficient rate to fully saturate the substrate without producing a surface film. Coverage rates are based on a substrate with normal porosity.

As an impregnating resin: As an impregnating resin for vertical and horizontal applications, use Sikadur® 300. Resins may be applied to fabric by either manual or automatic means. For further information, consult installation guidelines.

Limitations

- Minimum substrate and ambient temperature 50°F (10°C).
- Do not thin with solvents.
- Material is a vapor barrier after cure.
- Minimum age of concrete must be 21-28 days depending on curing and drying conditions.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 301

High-modulus, high-strength, impregnating resin

Description	Sikadur® 301 is a two-component 100% solids, moisture-tolerant, high strength, high modulus structural epoxy adhesive.
Where to Use	For use as a priming sealer and/or an encapsulating resin with the SikaWrap® Structural Strengthening System fabrics.
Advantages	■ Medium pot life. ■ Easy to mix. ■ Tolerant of moisture before, during and after cure. ■ High strength, high modulus adhesive. ■ Excellent adhesion to concrete, masonry, metals, wood and most structural materials. ■ Fully compatible and developed specifically for the SikaWrap® Systems. ■ High temperature resistance. ■ High abrasion and shock resistance. ■ Solvent-free, VOC compliant.
Coverage	As a sealer: Approx. 75 ft²/gal. (1.84 m²/liter). As an impregnating resin: Approx. 50 ft²/gal. (1.23 m²/liter).
Packaging	4 gallon unit (15.14 liters).

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened container.	
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.	
Color	Light gray	
Mixing Ratio	Component 'A' : Component 'B' = 3 : 1 by volume	
Viscosity (mixed)	Approx. 2,700 cps	
Pot Life	Approx. 40 minutes (1 gallon volume)	
Contact Time	Approx. 90 minutes	
Heat Deflection Temperature (ASTM D-648) 7 day	117°F (47°C)	
Glass Transition Temperature (Tg) 7 day	120°F (49°C)	
Mechanical Properties		
Tensile Properties (ASTM D-638)		
7 day	Tensile Strength	8,000 psi (52.0 MPa)
	Modulus of Elasticity	290 ksi (2,000 MPa)
	Elongation at break	3.5%
Flexural Properties (ASTM D-790)		
7 day	Flexural Strength	13,000 psi (90.0 MPa)
	Tangent Modulus	500 ksi (3,448 MPa)
	Strain at Yield	3.0%
Compressive Properties (ASTM D-695)		
	Compressive Strength	
	1 day	4,000 psi (27.6 MPa)
	3 day	11,900 psi (82.1 MPa)
	7 day	13,900 psi (96.0 MPa)
	Compressive Modulus	
		250 ksi (1,725 MPa)

Construction

How to Use

Surface Preparation

The concrete surface should be prepared to a minimum concrete surface profile (CSP) 3 as defined by the ICRI-surface-profile chips. Localized out-of-plane variations, including form lines, should not exceed 1/32 in. (1 mm).

Substrate must be clean, sound, and free of surface moisture. Remove dust, laitance, grease, oils, curing compounds, waxes, impregnations, foreign particles, coatings and disintegrated materials by mechanical means (i.e. sandblasting). For best results, substrate should be dry. However, a saturated surface dry condition is acceptable.

Mixing

Pre-mix 'A' component, ('B' component does not require mixing). Mix entire unit, do not batch. Pour contents of Part 'B' into Part 'A'. Mix thoroughly for 5 minutes using a paddle style mixer on low speed (400-600 rpm) rotary drill until uniformly blended.

Application

As a sealer: Apply mixed Sikadur® 301 epoxy to a properly prepared substrate using a brush or roller. Sikadur® 301 should be supplied at a sufficient rate to fully saturate the substrate. Coverage rates are based on a substrate with normal porosity.

As an impregnating resin: Saturate SikaWrap® fabrics until fibers are completely wet-out. For vertical and overhead installations, Sikadur® 330 may be used first to prime/tack the substrate prior to installing the fabric.

Sikadur® 301 can be applied in either Dry Lay-Up or Wet Lay-Up fabric installation procedures. Consult the SikaWrap fabric technical data sheet for more information. If used as an impregnating resin in the Wet Lay-Up procedure, Sikadur® 301 should be manually applied onto both sides of the fabric using a brush or roller. After saturating, excess resin should be removed from the wet-out fabric using a squeegee.

Due to the mixed viscosity of Sikadur® 301, an automated fabric-saturating device should not be used. If automated fabric-saturating device is intended for use, consult the technical data sheets for appropriate impregnating resins (i.e. Sikadur® 300 or Sikadur® Hex 300).

Limitations

- Minimum substrate and ambient temperature 40°F (4°C). Maximum substrate and ambient temperature 95°F (35°C).
- Do not thin with solvents.
- Material is a vapor barrier after cure.
- Minimum age of concrete must be 21-28 days depending on curing and drying conditions.
- At low temperatures and/or high relative humidity, a slight oily residue (blush) may form on the surface of the cured Sikadur® 301 epoxy. If an additional layer of fabric or a coating is to be applied onto the cured epoxy, this residue must first be removed to ensure adequate bond. The residue can be removed with either a solvent wipe or with water and detergent. In both cases, the surface should be wiped dry prior to application of the next layer of fabric or coating.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 330 US

High-modulus, high-strength, impregnating resin

Description	Sikadur® 330 is a two-component , solvent-free, moisture-tolerant, high strength, high modulus structural epoxy adhesive.
Where to Use	For use as an impregnating resin with the SikaWrap® Hex 106G, 113C, 117C, 230C and 430G Structural Strengthening Systems.
Advantages	■ Long pot life. ■ Long open time. ■ Easy to mix. ■ Tolerant of moisture before, during and after cure. ■ High strength, high modulus adhesive. ■ Excellent adhesion to concrete, masonry, metals, wood and most structural materials. ■ Fully compatible and developed specifically for the SikaWrap® Systems. ■ High temperature resistance. ■ High abrasion and shock resistance. ■ Solvent-free, VOC compliant.
Coverage	First coat: 40-50 ft.²/gal.; Additional coats: 100 ft.²/gal.; Final coat: 160 ft.²/gal.
Packaging	3.2 gal. kit / (2) two 1.25 gal. Component "A" pails, (2) two 0.35 gal. Component "B" pails

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened container.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.
Color	Light gray.
Mixing Ratio	Component 'A' : Component 'B' = 4 : 1 by weight
Consistency	Non-sag paste.
Pot Life	57 minutes (325 ml)
Tack Free Time	4-5 hours

Heat Deflection Temperature (ASTM D-648)

7 day [fiber stress loading=264 psi (1.8 MPa) 120°F (50°C)

Mechanical Properties

Compressive Properties (ASTM D-695), psi (MPa)

	40°F (4°C)	60°F (16°C)	73°F (23°C)	90°F (32°C)
8 hour	-	-	-	8,000 (55.2)
1 day	-	8,100 (55.8)	10,700 (73.7)	10,600 (73.1)
3 day	8,100 (55.8)	11,200 (77.2)	11,100 (76.5)	11,000 (75.8)
7 day	11,200 (77.2)	11,600 (80.0)	11,200 (77.2)	11,800 (81.3)
14 day	12,500 (86.2)	12,400 (85.5)	11,800 (81.3)	11,900 (82.0)

Tensile Strength (ASTM D-638)	**7 day**	4,900 psi (33.8 MPa)
Elongation @ Break (ASTM D-638)	**7 day**	1.2%
Flexural Strength (ASTM D-790)	**7 day**	8,800 psi (60.6 MPa)
Flexural Modulus (ASTM D-790)	**7 day**	5.06 x 10^5 psi (3,489 MPa)

Construction

How to Use

Surface Preparation

The concrete surface should be prepared to a minimum concrete surface profile (CSP-3) as defined by the ICRI-surface-profile chips. Localized out-of-plane variations, including form lines, should not exceed 1/32 in. (1 mm).

Substrate must be clean, sound, and free of surface moisture. Remove dust, laitance, grease, oils, curing compounds, waxes, impregnations, foreign particles, coatings and disintegrated materials by mechanical means (i.e. sandblasting). For best results, substrate should be dry. However, a saturated surface dry condition is acceptable.

Mixing

Pre-mix each component. Mix entire unit, do not batch. Pour contents of part B to part A. Mix thoroughly for 5 minutes with a 1/2 inch "Jiffy" mixer mounted on a rotary drill and set at a slow speed (400-600 rpm) until uniformly blended. Mix only that quantity that can be used within its pot life.

Application

Dry Lay-Up: When installing a SikaWrap® Hex fabric in the dry lay-up process apply the mixed Sikadur® 330 epoxy resin directly onto the substrate at a rate of 40-50 ft.²/gal. (0.95-1.18 m²/L). Coverage rate will depend on the actual surface profile. This equates to a thickness of approximately 32-40 mils. Carefully place the fabric into the applied resin with gloved hands and smooth out. Work out any irregularities or air pockets with a plastic laminating roller. Let the resin squeeze out between the rovings of the fabric. If more than one layer of fabric is required, apply additional Sikadur® 330 US at a rate of 100 ft.²/gal. (2.37 m²/L) and repeat as described above. This equates to a thickness of approximately 16 mils. Add a final layer of Sikadur® 330 US onto the exposed surface at a rate of 160 ft²/gal. (3.79 m²/L). This equates to a thickness of approximately 10 mils.

Wet Lay-Up: When installing a SikaWrap® Hex fabric vertically or overhead in the wet lay-up process, mixed Sikadur® 330 can be applied to the substrate as a primer/tack coat to prevent the impregnated fabric from sliding down the concrete. Due to its mixed viscosity, do not use Sikadur® 330 US with an automatic fabric saturating device. Consult the SikaWrap® Hex fabric technical data sheet for information on saturating/impregnating fabric in a wet lay-up installation.

Limitations

- Minimum age of concrete is 21-28 days, depending on curing and drying conditions.
- All repairs required to achieve a level surface must be performed prior to application.
- Do not apply or cure Sikadur® 330 US in direct sunlight.
- Minimum substrate temperature 40°F (4°C). Maximum application temperature 95°C (35°C)
- Do not thin with solvents.
- Material is a vapor barrier after cure.
- Do not encapsulate saturated concrete in areas of freezing and thawing.
- Color of Sikadur 330 US may alter due to variations in lighting and/or UV exposure.
- Due to its mixed viscosity, do not use Sikadur 330 US with an automatic saturating device. Fabric must be saturated/impregnated manually when the wet lay-up process is used.
- At low temperatures and/or high relative humidity, a slight oily residue (blush) may form on the surface of the cured epoxy. If an additional layer of fabric, or a coating is to be applied onto the cured epoxy. This residue must first be removed to ensure adequate bond. The residue can be removed with either a solvent wipe (e.g. MEK) or with water and detergent. In both cases, the surface should be wiped dry prior to application of the next layer or coating.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Product Data Sheet
Edition 12.15.2015
Sikadur 340

Sikadur® 340

High-modulus, high-strength, primer for SikaWrap PreSaturated systems

Description	Sikadur 340 is a two-component 100% solids, moisture-tolerant, high strength, high modulus epoxy primer for use with SikaWrap PreSaturated systems
Where to Use	▪ For use as a seal coat and primer with SikaWrap PreSatruated Structural Strengthening Systems for vertical, horizontal and overhead applications.
Advantages	▪ Long pot life. ▪ Long open time. ▪ Easy to mix. ▪ Moisture tolerant ▪ High strength, high modulus adhesive. ▪ Excellent adhesion to concrete, masonry metals, wood and most structural materials. ▪ Thixotropic version ideal for overhead applications. ▪ High temperature resistance. ▪ High abrasion and shock resistance. ▪ Solvent-free, VOC compliant.
Coverage	As a primer: 140 ft²/gal. (~10 mils)
Packaging	1 gallon unit (1 pail of "A"; 2 cannisters of "B")

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened container.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). **Condition material to 65°-75°F (18°-24°C) before using.**
Color	Clear, amber.
Mixing Ratio	Mix entire unit, do not batch.
Viscosity	300 - 550 cps
Gel Time	90 minutes
Tack Free	3 hours
Glass Transition Temp. (Tg)	208°F (98°C)/140°F (60°C) post cure
Service Temperature Range	-40° to 140°F (-40 to 83°C)

Mechanical Properties *(Min. 7 day cure @ 73°F (23°C) and 50% R.H.)*

Tensile Strength (ASTM D-638)	5,580 psi (38.5 MPa)
Tensile Modulus (ASTM D-638)	2.7 x 10^5 psi (1,862 MPa)
Elongation @ Break (ASTM D-638)	1.5%

Construction

How to Use

Surface Preparation	The concrete surface should be prepared to a minimum concrete surface profile (CSP) 3 as defined by the ICRI-surface-profile chips. Localized out-of-plane variations, including form lines, should not exceed 1/32 in. (1 mm). Substrate must be clean, sound, and free of surface moisture. Remove dust, laitance, grease, oils, curing compounds, waxes, impregnations, foreign particles, coatings and disintegrated materials by mechanical means (i.e. sandblasting). For best results, substrate should be dry. However, a saturated surface dry condition is acceptable.
Mixing	Pre-mix "A" component. Mix entire unit, do not batch. Pour contents of both cannisters of part 'B' to part 'A'. Mix thoroughly for 3 minutes using a jiffy style mixer on low speed (400-600 rpm) drill until uniformly blended.
Application	Apply mixed Sikadur 340 epoxy to a properly prepared substrate using a brush, roller or airless sprayer. Sikadur 340 should be applied at a rate of approximately 10 mils. Coverage rates are based on a substrate with normal porosity.
Limitations	■ Minimum substrate and ambient temperature 40°F (4°C). ■ Do not thin with solvents. ■ Material is a vapor barrier after cure. ■ Minimum age of concrete must be 21-28 days depending on curing and drying conditions. ■ Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure. ■ DO NOT LEAVE MIXED EPOXY IN MASS; MATERIAL MAY GET HOT ■ Moisture content of the substrate must be 4% or less when measured using Tramex.
Clean Up	Ventilate area. Confine spill. Collect with absorbent material. Dispose of in accordance with current, applicable local, state and federal regulations. Uncured material can be removed with approved solvent. Cured material can only be removed mechanically.

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Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® Hex 300

High-modulus, high-strength, impregnating resin

Description	Sikadur® Hex 300 is a two-component 100% solids, moisture-tolerant, high strength, high modulus epoxies. Sikadur® Hex 300 is compliant with the 2012 and 2009 International Building Codes (IBC) and the 1997 Uniform Building Code (UBC) per ICC-ES Evalutation Report ESR-3288.
Where to Use	▪ For use as an impregnating resin with the SikaWrap® Structural Strengthening System. ▪ Sikadur® Hex 300 is used as a seal coat and impregnating resin for horizontal and vertical applications.
Advantages	▪ Long pot life. ▪ Long open time. ▪ Easy to mix. ▪ Tolerant of moisture before, during and after cure. ▪ High strength, high modulus adhesive. ▪ Excellent adhesion to concrete, masonry metals, wood and most structural materials. ▪ Fully compatible and developed specifically for the SikaWrap® System. ▪ High temperature resistance. ▪ High abrasion and shock resistance. ▪ Solvent-free, VOC compliant.
Coverage	As a sealer: 100 ft²/gal. As an impregnating resin: 120 ft²/gal. - 9 oz. per sq.yd. fabrics 60 ft²/gal. - 18 oz. per sq.yd. fabrics 30 ft²/gal. - 37 oz. per sq.yd. fabrics
Packaging	4 gallon units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened container
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using
Color	Clear, slightly amber
Mixing Ratio	Mix entire unit, do not batch down
Viscosity	~500 - 750 cps
Pot Life (1 quart volume mixed)	~3 - 4 hours
Reactivity	~6 - 7 hours (time to reach approx. 10,000 cps)
Tack Free	~12 - 14 hours
In-Service Temperature Range (cured)	-40° to 140°F (-40° to 60°C)

Tensile Properties

Tensile Strength (ASTM D-638)	7,500 psi (41.4 MPa)
Elongation at Break (ASTM D-638)	3.2%
Modulus of Elasticity	2.8 x 10^5 psi
Flexural Strength (Modulus of Rupture)**(ASTM D-790)**	11,500 psi (79.3 MPa)
Tangent Modulus of Elasticity in Bending (ASTM D-790)	5.1 x 10^5 psi (3,517 MPa)
Heat Deflection Temperature (ASTM D 648)	
7 days (fiber stress loading = 264 psi (1.8 MPa)	112°F (44.5°C)
Water Absorption (ASTM D 570)	
7 days (24 hour immersion)	0.32%

Construction

Compressive Properties (ASTM D 695)
Compressive Strength

	40°F* (4°C)	60°F * (15.5°C)	73°F* (23°C)	90°F* (32°C)
3 days	-	-	8,300 psi (57.2 MPa)	-
7 days	1,000 psi (7.1 MPa)	8,500 psi (58.6 MPa)	12,000 psi (82.7 MPa)	12,000 psi (82.7 MPa)
28 days	-	-	11,300 psi (77.9 MPa)	-

Compressive Modulus

7 days	3.8 x 10^5 psi (2,621 MPa)

* Material cured and tested at the temperatures indicated.

Typical Data *(Material post cured min. 48 hours @ 140°F (60°C) and 50% R.H.)*

Tensile Strength (ASTM D-638)	10,200 psi (70.3 MPa)
Elongation at Break (ASTM D-638)	4.8%
Modulus of Elasticity	3.4 x 10^5 psi (2,345 MPa)
Flexural Strength (Modulus of Rupture)**(ASTM D-790)**	17,800 psi (123 MPa)
Tangent Modulus of Elasticity in Bending (ASTM D-790)	6 x 10^5 psi (4,138 MPa)

How to Use

Surface Preparation

The concrete surface should be prepared to a minimum concrete surface profile (CSP) 3 as defined by the ICRI-surface-profile chips. Localized out-of-plane variations, including form lines, should not exceed 1/32 in. (1 mm). Substrate must be clean, sound, and free of surface moisture. Remove dust, laitance, grease, oils, curing compounds, waxes, impregnations, foreign particles, coatings and disintegrated materials by mechanical means (i.e. sandblasting). For best results, substrate should be dry. However, a saturated surface dry condition is acceptable.

Mixing

Pre-mix each component. Mix entire unit, do not batch. Pour contents of part 'B' to part 'A'. Mix thoroughly for 5 minutes using a paddle style mixer on low speed (400-600 rpm) drill until uniformly blended.

Application

As a sealer: Apply mixed Sikadur® Hex 300 epoxy to a properly prepared substrate using a brush, roller or airless sprayer. Sikadur® Hex 300 should be applied at a sufficient rate to fully saturate the substrate without producing a surface film. Coverage rates are based on a substrate with normal porosity.

As an impregnating resin: For vertical and horizontal applications, use Sikadur® Hex 300. For vertical and overhead applications use Sikadur® 330 US as tack coat/primer for the saturated fabric to prevent it from sliding off. Resins may be applied to fabric by either manual or mechanical means. For further information, consult installation guidelines.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C).
- Do not thin with solvents.
- Material is a vapor barrier after cure.
- Minimum age of concrete must be 21-28 days depending on curing and drying conditions.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.
- Mechanically prepared, top side, horizontal concrete surfaces can be primed with Sikadur Hex 300. Vertical or overhead surfaces however, must be primed with Sikadur 330 US.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

ICC ES	✓	ICC	ESR-3288
	✓	IBC	2012 Compliance

SikaWrap® Hex 103C

Carbon fiber fabric for structural strengthening

Construction

Description

SikaWrap® Hex 103C is a high strength, unidirectional carbon fiber fabric. Material is field laminated using Sikadur® 300/Hex 300 epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural concrete elements.

Where to Use

Load Increases
- Increased live loads
- Increased traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization

Seismic Strengthening
- Column wrapping
- Masonry walls

Damage to Structural Parts
- Aging of construction materials
- Vehicle impact
- Fire
- Blast resistance

Change in Structural System
- Removal of walls or columns
- Removal of slab sections for openings

Design or Construction Defects
- Insufficient reinforcements
- Insufficient structural depth

Advantages
- Approved by ICC ESR-3288
- Compliance with 2012 IBC
- Compliance with 2010 California Building Code
- Component of UL listed, fire-rated assembly
- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex geometries
- High Strength
- Light Weight
- Non-corrosive
- Alkali Resistant
- Low aesthetic impact

Packaging

Rolls: 25 in. x 50 ft.; 25 in. x 300 ft.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions	Store dry at 40° - 95°F (4° - 35°C)
Shelf Life	10 years
Color	Black
Primary Fiber Direction	0° (unidirectional)
Areal Weight	18 oz./sq.yd. (618 g/m^2)

TYPICAL FIBER PROPERTIES	
Property	**Typical Test Value**
Tensile Strength	5.5 x 10^5 psi (3,793 MPa)
Tensile Modulus	34 x 10^6 (234,500 MPa)
Elongation	1.5%
Density	0.065 lbs./in^3 (1.8 g/cc)
Nominal Fiber Thickness	0.0135 in. (0.34 mm)

Cured Laminate Properties with Sikadur 300/Sikadur Hex 300 Epoxy					
	Avg. Ultimate Value		Design Value		
Property	US Units	SI Units	US Units	SI Units	ASTM Test Method
	psi	MPa	psi	MPa	
Tensile Strength	180,000	1,241	(f^*_{fu}) 153,000*	1,055*	D3039/D7565
Tensile Modulus	-	-	(E_f) 9,400,000	64,828	D3039/D7565
Tensile % Elongation	1.6	1.6	(ε^*_{fu}) 1.0*	1.0*	D3039/D7565
140°F - Tensile Strength	123,000	848	90,600*	625*	D3039
140°F - Tensile Modulus	-	-	9,156,500*	63,148*	D3039
140°F - % Elongation	1.13	1.13	0.89*	0.89*	D3039
Compressive Strength	113,000	779	99,200*	684*	D695
Compressive Modulus	9,726,000	67,076	8,532,800*	58,847*	D695
90 deg Tensile Strength	3,500	24	1,700*	12*	D3039
90 deg Tensile Modulus	705,500	4,866	512,300*	3,533*	D3039
90 deg % Tensile Elongation	0.45	0.45	0.27*	0.27*	D3039
Shear Strength +/- 45 in plane	7,500	52	6,300*	43*	D3518
Shear Modulus +/- 45 in plane	362,500	2,500	340,000*	2,345*	D3518
Nominal Ply Thickness (in./mm)	0.04	1.016	0.04	1.016	-
Tensile Strength per in. width	7.2 kips/in. width	-	6.1 kips/in. width*	-	-
Stiffness (E_f*A) per in. width	-	-	376 kips/in. width	-	-
*** Average ultimate value minus 3 standard deviations**					

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface.
Consult the current product data sheets for Sikadur 330, Sikadur 300/Hex 300 or Sikadur 301 for additional information on surface preparation.
Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ASTM D-4541) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.
Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide a roughened, open-textured surface.
Round all corners to 1/2" radius in certain "contact critical" applications and at the engineers discretion, a thorough cleaning of the substrate using low pressure sand or water blasting may be sufficient.

Mixing

Consult Sikadur 300/Hex 300, Sikadur 301 or Sikadur 330 product data sheets for information.

Application	Prior to placing the fabric, the concrete surface is primed and sealed using Sikadur® 301, Sikadur® 330 US and/or Sikadur 300/Hex 300 epoxy. For overhead or vertical applications, prime concrete with Sikadur 330 US to improve tack. SikaWrap Hex 103C can be impregnated using either the Sikadur 301 or Sikadur 300/Hex 300. On larger projects, the impregnation process for Sikadur® 300/Hex 300 may be accomplished using a mechanically driven fabric saturator similar device. The fabric may also be manually saturated by hand for Sikadur 300/Hex 300 using a roller prior to placement. In either case, installation of this system should be performed only by a specially trained contractor.
Tooling & Finishing	Fabric can be cut to appropriate lengths by using a commercial quality heavy duty scissor. Since the dull or worn cutting implements can damage, weaken or fray the fabric, their use should be avoided.
Limitations	■ Design calculations must be made and certified by an independent licensed professional engineer. ■ System is a vapor barrier. Concrete should not be fully encapsulated in areas of freeze/thaw. ■ On projects governed by ICC regulations, use products listed on ESR-3288 ■ Do not place carbon fiber in direct contact with steel. Must be isolated (e.g. glass fabric) to protect against corrosion.

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

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601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Hex 103C HM

High modulus carbon fiber fabric for structural strengthening

Description

SikaWrap® Hex 103C HM is a high modulus, unidirectional carbon fiber fabric. Material is field laminated using Sikadur® 300/Hex 300 epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural elements.

Where to Use

Load Increases
- Increasing the live loads in warehouses
- Increasing traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization

Seismic Strengthening
- Column wrapping
- Masonry walls

Damage to Structural Parts
- Aging of construction materials
- Vehicle impact
- Fire
- Blast Resistance

Change in Structural System
- Removal of walls or columns
- Removal of slab sections for openings

Design or Construction Defects
- Insufficient reinforcement
- Insufficient structural depths

Advantages

- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex shapes
- High Strength
- Light Weight
- Non-corrosive
- Alkali Resistant
- Low Aesthetic Impact

Packaging

Rolls: 20” x 150’

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions	Store dry at 40°-95°F (4°-35°C)
Shelf Life	10 years
Color	Black
Primary Fiber Direction	0° (unidirectional)
Area Weight	18 oz./sq.yd. (618 g/m^2)

TYPICAL FIBER PROPERTIES	
Property	**Typical Test Value**
Tensile Strength	8.3 x 10^5 psi (5.723 MPa)
Tensile Modulus	43 x 10^6 psi (296,475 MPa)
Elongation	1.9%
Density	0.065 lbs./in^3 (1.8 g/cc)
Normal Fiber Thickness	0.0135 in (0.34 mm)

Cured Laminate Properties with Sikadur® 300/Sikadur® Hex 300 Epoxy					
	Avg. Ultimate Value		Design Value		
Property	US Units	SI Units	US Units	SI Units	ASTM Test Method
	psi	MPa	psi	MPa	
Tensile Strength	161,450	1,134	(f*fu) 138,200*	953	D3039/D7565
Tensile Modulus	-	-	(Ef) 12,400,000	85,517	D3039/D7565
Tensile % Elongation	1.2	1.2	(e*fu) 0.90*	0.90*	D3039/D7565
Nominal Ply Thickness (in./mm)	0.04	1.016	0.04	1.016	-
Tensile Strength per in. width	6.5 kips/in. width	-	5.5 kips/in. width	-	-
Stiffness (E_f*A) per in. width	-	-	496 kips/in. width	-	-

particles, disintegrated materials, and other bond inhibiting materials from the surface. Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi with concrete substrate failure.

Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open, roughened texture. In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Mixing

Consult Sikadur® 300/Hex 300/330 data sheet for information on epoxy resin.

Application

Prior to placing the fabric, the concrete surface is primed and sealed using Sikadur® 300/Hex 300. Material may be applied by spray, brush or roller. SikaWrap® Hex 103C HM can be impregnated using Sikadur® 300/Hex 300 epoxy. For best results on larger projects, the impregnation process should be accomplished using a mechanically driven saturator or similar device. In special cases where the size of the project does not justify the use of a saturator, the fabric may saturate by hand using a ruller prior to placement. In either case, installation of this system should be performed only by a specially trained and ap-proved contractor.

For overhead and vertical applications, prime concrete with Sikadur® 30 or Sikadur® 330 to improve tack. Saturate fabric with Sikadur® 300/Hex 300. Coat the exposed surface of final fabric layer using Sikagard® 670W or Sikagard® 62.

Tooling & Finishing

Fabric can be cut to appropriate length by using a commercial quality, heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber their use should be avoided.

Limitations

- **DESIGN CALCULATIONS MUST BE MADE AND CERTIFIED BY AN INDEPENDENT LICENSED PROFESSIONAL ENGINEER.**
- **SYSTEM IS A VAPOR BARRIER. CONCRETE SHOULD NOT BE FULLY ENCAPSULATED IN AREAS OF FREEZE/THAW.**

Construction

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Hex 103C-2X

High Strength, double thickness Carbon Fiber fabric for Structural Strengthening

Description

SikaWrap® Hex 103C 2X is a high strength, double thickness, unidirectional carbon fiber fabric. Material is field laminated using Sikadur® 300/Hex 300 epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural concrete elements.

Where to Use

- Load Increases
- Increased live loads
- Increased traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization
- Seismic Strengthening
- Column wrapping
- Masonry walls
- Damage to Structural Parts
- Aging of construction materials
- Vehicle impact
- Fire
- Blast resistance
- Change in Structural System
- Removal of walls or columns
- Removal of slab sections for openings
- Design or Construction Defects
- Insufficient reinforcements
- Insufficient structural depth

Advantages

- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex geometries
- High Strength
- High Tensile Modulus
- Non-corrosive
- Alkali Resistant
- Low aesthetic impact

Packaging

Rolls: 25 in. x 150 ft

Typical Data *(Material and curing conditions 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life: 10 years
Storage Condition: Store dry at 40°-95°F (4°-35°C).
Color: Black
Primary Fiber Direction: 0° (unidirectional)
Area Weight: 37.22 oz./sq.yd. (1262 g/m^2)

Cured Laminate Properties with Sikadur 300/Sikadur Hex 300 Epoxy

	Avg. Ultimate Value		Design Value		
Property	**US Units**	**SI Units**	**US Units**	**SI Units**	**ASTM Test Method**
	psi	**MPa**	**Design**	**MPa**	
Tensile Strength	178,654	1,231	(f*fu) 124,832	860	D3039/D7565
Tensile Modulus	-	-	(Ef) 11,200,000	77,221	D3039/D7565
Tensile % Elongation	1.62	1.62	(e*fu) 1.0	1.0	D3039/D7565
Nominal Ply Thickness (in./mm)	0.07	1.78	0.07	1.78	-
Tensile Strength per in. width	12.2 kips/in. width	-	8.9 kips/in. width	-	-

Construction

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult the current product data sheets for Sikadur 330 US Sikadur 300/Hex 300 or Sikadur 301 for additional information on surface preparation. Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ASTM D-4541) at the discretion of the engineer. Minimum tensilt strength, 200 psi (1.4 MPa) with concrete substrate failure. Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide a roughened, open-textured surface. Round all corners to 1/2" radius in certain "contact critical" applications and at the engineers discretion, a thorough cleaning of the substrate using low pressure sand or water blasting may be sufficient.

Mixing

Consult the current product data sheets for Sikadur 300, Sikadur 330 US and/or Sikadur Hex 300 for information on epoxy resins.

Application

Prior to placing the fabric, the concrete surface is primed and sealed using Sikadur 330 US and /or Sikadur 300/Hex 300 epoxy. For overhead or vertical applications, prime concrete with Sikadur 330 US to improve tack. SikaWrap Hex 103C 2X can be impregnated using either the Sikadur 300/Hex 300. Sika highly recommends using a mechanically driven fabric saturator in conjunction with Sikadur 300/Hex 300 for heavy weight fabrics. The fabric may also be manually saturated by hand for Sikadur 300/Hex 300 using a roller prior to placement though particular care must be taken to ensure complete saturation. In either case, installation of this system should be performed only by a specially trained contractor.
NOTE: On Caltrans DOT projects, only mechanically driven saturation may be used.

Tooling and Finishing

Cutting of SikaWrap: Fabric can be cut to appropriate lengths by using a commercial quality heavy duty scissor. Since the dull or worn cutting implements can damage, weaken or fray the fabric, their use should be avoided.

Limitations

- Design calculations must be made and certified by an independent licensed professional engineer.
- System is a vapor barrier. Concrete should not be fully encapsulated in areas of freeze/thaw.
- Do not place carbon fiber in direct contact with steel. Must be isolated (e.g. glass fabric) to protect against corrosion.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Hex 113C

Bi-directional Carbon fiber fabric for structural strengthening

Description

SikaWrap Hex 113C is a bi-directional carbon fiber fabric. Material is field laminated using Sikadur 300/Hex 300, Sikadur 301 or Sikadur Hex 330 epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural elements.

Where to Use

Load increases
- Increased live loads in warehouses
- Increased traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization.

Seismic strengthening
- Column wrapping
- Masonry walls

Damage to structural parts
- Aging of construction materials
- Vehicle impact
- Fire

Change in structural system
- Removal of walls or columns
- Removal of slab sections for openings

Design or construction defects
- Insufficient reinforcements
- Insufficient structural depth

Advantages
- Lightweight fabric ideal for confined spaces
- Can be applied in dry or wet lay-up process
- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex shapes
- High strength
- Non-corrosive
- Alkali resistant
- Low aesthetic impact

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions	Store dry at 40°F-95°F
Color	Black
Primary Fiber Direction	0°/90° (bi-directional)
Weight per Square Yard	5.7 oz. (196 g/m^2)
Weight Ratio (Warp:Weft)	1:1
Cured Laminate Properties (0°& 90°) Design Values	
Tensile Strength	66,000 psi (456 MPa)
Tensile Modulus	6.0 x 10^6 psi (41,400 MPa)
Elongation at Break	1.2%
Thickness	0.010 in. (0.25 mm)
Strength per Inch Width	660 lbs./layer (2.92 kN)
Fiber Properties	
Tensile Strength	5 x 10^5 psi (3,450 MPa)
Tensile Modulus	33.4 x 10^6 psi (230,000 MPa)
Elongation	1.5%
Density	0.065 lbs./in.^{3} (1.8 g/cc)

Construction

Packaging	Rolls: 50 in. x 300 ft.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult Sikadur Hex 300 and Sikadur 330 technical data sheets for additional information on surface preparation.

Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture.

In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Mixing

Consult Sikadur 300/Hex 300, Sikadur 301 or Sikadur 330 product data sheets for information.

Application

SikaWrap Hex 113C can be applied using wet or dry lay-up methods.

Dry Lay-Up: Apply the mixed Sikadur 330 or Sikadur 301 epoxy resin directly onto the substrate at a rate of 40-50 ft^2/gal. (32-40 mils), depending on the surface profile. Carefully place the fabric into the resin with gloved hands and smooth out any irregularities or air pockets using a plastic laminating roller. Allow the resin to squeeze out between the rovings of the fabric. If more than one layer of fabric is required, apply additional Sikadur 330 or Sikadur 301 at a rate of 100ft^2/gal. (16 mils) and repeat as above. Apply a final coat of Sikadur 330 or Sikadur 301 to the exposed surface at a rate of 160ft^2/gal. (10 mils).

Wet Lay-Up: Seal the prepared concrete surface using Sikadur 300/Hex 300 or Sikadur 301. Material may be applied by spray, brush or roller. SikaWrap Hex 113C can be impregnated using the Sikadur 300/Hex 300 or Sikadur 301 epoxy. For best results, the impregnation process should be accomplished using an automated fabric saturator. Once saturated, apply fabric to the sealed concrete surface and smooth out any irregulari-ties or air pockets using a plastic laminating roller. If required, apply additional layers of fabric while epoxy on previous layer is still tacky. Coat the exposed surface of final fabric layer using Sikagard 670W or Sikagard 62.

Installation of SikaWrap Products should be performed only by specially trained approved contractors.

Cutting SikaWrap

Fabric can be cut to appropriate length by using a commercial quality heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber, their use should be avoided. Consult MSDS for proper handling procedures.

Limitations

- Design calculations must be made and certified by an independent licensed professional engineer.
- System is a vapor barrier. Concrete should not be encapsulated in areas of freeze/thaw.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

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601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Hex 115C

Bi-directional carbon fiber fabric for structural strengthening

Description

SikaWrap Hex 115C is a bi-directional, high strength, carbon fiber fabric. Material is field laminated using Sikadur Hex 300/Hex 300 or Sikadur 301 epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural elements.

Where to Use

Load increases
- Increased live loads in warehouses
- Increased traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization

Seismic strengthening
- Column wrapping
- Masonry walls

Damage to structural parts
- Aging of construction materials
- Vehicle impact
- Fire
- Blast resistance

Change in structural system
- Removal of walls or columns
- Removal of slab sections for openings

Design or construction defects
- Insufficient reinforcements
- Insufficient structural depth

Advantages
- Used for shear, confinement or flexural strengthening.
- Flexible, can be wrapped around complex shapes.
- High strength.
- Light weight.
- Non-corrosive.
- Alkali resistant.
- Low aesthetic impact.

Packaging

Rolls: 50 in. x 300 ft.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult Sikadur 300, Sikadur 301, Sikadur Hex 300 and Sikadur 330 technical data sheets for additional information on surface preparation.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions	Store dry at 40°-95°F (4°-35°C)
Color	Black
Primary Fiber Direction	0°/90° (bi-directional)
Weight Per Square Yard	19.8 oz. (675 g/m^2)

Fiber Properties

Tensile Strength	5.5 x 10^5 psi (3,793 MPa)
Tensile Modulus	33 x 10^6 psi (234,500 MPa)
Elongation	4%
Density	0.065 lbs./in.^{3} (1.8 g/cc)

Construction

Cured Laminate Properties with Sikadur Hex 300 Epoxy Properties after standard cure followed by standard post cure. [70°-75°F (21°-24°C) - 5 days and 48 hour post cure at 140°F (60°C)]

	Average Value[1]		Design Value[2]		ASTM Test
Property	US Units	SI Units	US Units	SI Units	Method
	Psi	MPa	psi	MPa	
Tensile Strength*	83,980	579	70,870	489	D638
Tensile Modulus*	7,017,555	48,351	6,149,730	42,468	D638
Tensile % Elongation *	1.14	1.14	0.98	0.98	D638
140F - Tensile Strength	74,195	511	64,790	447	D638
140F - Tensile Modulus	6,340,680	43,688	6,203,025	43,739	D638
140F - % Elongation	1.12	1.12	0.96	0.96	D638
Compressive Strength	54,245	373	38,570	267	D695
Compressive Modulus	6,707,855	46,218	6,496,100	44,759	D695
90 deg Tensile Strength	83,980	579	70,870	489	D638
90 deg Tensile Modulus	7,017,555	48,351	6,930,773	47,753	D638
90 deg %Tensile Elongation	1.14	1.14	0.98	0.98	D638
Shear Strength-+/-45 In Plane	14,630	101	12,920	89	D3518
Shear Modulus +/-45 In Plane	0	0	0	0	D3518
Ply Thickness (inch/mm)	0.04	1			
Tensile Strength per inch width in each direction	2583	17.8	1854	12.7	D3039

Cured Laminate Properties with Sikadur Hex 306 Epoxy Properties after standard cure followed by standard post cure. [70°-75°F(21°-24°C) - 5 days and 48 hour post cure at 140°F(60°C)]

	Average Value[1]		Design Value[2]		ASTM Test
Property	US Units	SI Units	US Units	SI Units	Method
	Psi	MPa	Psi	MPa	
Tensile Strength*	82,080	565	69,825	481	D638
Tensile Modulus*	6,320,350	43,547	5,198,875	35,821	D638
Tensile % Elongation *	1.19	1.19	0.94	0.94	D638
140F - Tensile Strength	54,435	375	45,315	312	D638
140F - Tensile Modulus	4,704,875	32,417	3,779,765	26,044	D638
140F - % Elongation	1.13	1.13	0.76	0.76	D638
Compressive Strength	46,835	323	36,005	248	D695
Compressive Modulus	5,505,155	37,931	4,693,190	32,336	D695
90 deg Tensile Strength	82,080	565	69,825	481	D638
90 deg Tensile Modulus	6,320,350	43,547	5,198,875	35,821	D638
90 deg %Tensile Elongation	1.19	1.19	0.94	0.94	D638
Shear Strength-+/-45 In Plane	12,160	84	11,020	77	D3518
Shear Modulus +/-45 In Plane	416,480	2,870	380,570	2,623	D3518
Ply Thickness (inch/mm)	0.04	1			
Tensile Strength per inch width	3283	14.6	2793	12.4	D3039

* 24 sample coupons per test series; all other values based on 6 coupon test series
[1] Average value of test series - based on year 2000 testing program
[2] Average value minus 3 standard deviations calculated from the year 2000 testing program

Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture.

In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Mixing

Consult Sikadur 300/Hex 300 or Sikadur 301 data sheets for information on epoxy resins.

Application

Prior to placing the fabric, the concrete surface is primed and sealed using Sikadur Hex 300 epoxy. Material may be applied by spray, brush or roller. SikaWrap Hex 115C can be impregnated using Sikadur 300/Hex 300 or Sikadur 301 epoxy. For best results on larger projects, the impregnation process should be accomplished using a mechanically driven fabric saturator or similar device. In special cases where the size of the project does not justify the use of a saturator, the fabric may saturate by hand using a roller prior to placement. In either case, installation of this system should be performed only by a specially trained, approved contractor.

For overhead or vertical applications, prime concrete with Sikadur 30 or Sikadur 330 to improve tack. Saturate fabric with Sikadur 300/Hex 300 or Sikadur 301.

Cutting SikaWrap

Fabric can be cut to appropriate length by using a commercial quality heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber their use should be avoided. Consult MSDS for proper handling procedures.

Limitations

- Design calculations must be made and certified by an independent licensed professional engineer.
- System is a vapor barrier. Concrete should not be encapsulated in areas of freeze/thaw.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Hex 117C

Carbon fiber fabric for structural strengthening

Description	SikaWrap Hex 117C is a unidirectional carbon fiber fabric. Material is field laminated using either Sikadur 300/Hex 300, Sikadur 301 or Sikadur 330 epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural elements.
Where to Use	**Load increases** ■ Increased live loads in warehouses ■ Increased traffic volumes on bridges ■ Installation of heavy machinery in industrial buildings ■ Vibrating structures ■ Changes of building utilization **Seismic strengthening** ■ Column wrapping ■ Masonry walls **Damage to structural parts** ■ Aging of construction materials ■ Vehicle impact ■ Fire **Change in structural system** ■ Removal of walls or columns ■ Removal of slab sections for openings **Design or construction defects** ■ Insufficient reinforcements ■ Insufficient structural depth
Advantages	■ Lightweight fabric ideal for confined spaces ■ Used for shear, confinement or flexural strengthening ■ Flexible, can be wrapped around complex shapes ■ High strength ■ Non-corrosive ■ Alkali resistant ■ Low aesthetic impact
Packaging	Rolls: 12 in. x 300 ft. 24 in. x 300 ft.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions	Store dry at 40°-95°F (4°-35°C)
Color	Black
Primary Fiber Direction	0° (unidirectional)
Weight per Square Yard	9.0 oz. (300 g/m^2)
Cured Laminate Properties	***Design Values***
Tensile Strength	1.05 x 10^5 psi (724 MPa)
Modulus of Elasticity	8.2 x 10^6 psi (56,500 MPa)
Elongation at Break	1.0%
Thickness	0.02 in. (0.51 mm)
Strength per Inch Width	2,100 lbs./layer (9.3 kN)
Fiber Properties	
Tensile Strength	550,000 psi (3,793 MPa)
Tensile Modulus	34 x 10^6 psi (234,000 MPa)
Elongation	1.5%
Density	0.065 lbs/in^3 (1.8 g/cc)

Construction

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult Sikadur Hex 300 and Sikadur 330 technical data sheets for additional information on surface preparation.
Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.
Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture.
In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Mixing

Consult Sikadur Hex 300 or Sikadur 330 technical data sheet for information on epoxy resin.

Application

SikaWrap Hex 117C can be applied using wet or dry lay-up methods.

Dry Lay-Up: Apply the mixed Sikadur 330 or Sikadur 301 epoxy resin directly onto the substrate at a rate of 40-50 ft.^{2}/gal. (32-40 mils), depending on the surface profile. Carefully place the fabric into the resin with gloved hands and smooth out any irregularities or air pockets using a plastic laminating roller. Allow the resin to squeeze out between the rovings of the fabric. If more than one layer of fabric is required apply additional Sikadur 330 or Sikadur 301 at a rate of 100ft.^{2}/gal. (16 mils) and repeat as above. Apply a final coat of Sikadur 330 or SIkadur 301 to the exposed surface at a rate of 160ft.^{2}/gal. (10 mils).

Wet Lay-Up: Seal the prepared concrete surface using Sikadur 300/Hex 300 or Sikadur 301. Material may be applied by spray, brush or roller. SikaWrap Hex 117C can be impregnated using Sikadur 300/Hex 300 epoxy or Sikadur 301. For best results, the impregnation process should be accomplished using an automated saturation device. Once saturated, apply fabric to the sealed concrete surface and smooth out any irregulari-ties or air pockets using a plastic laminating roller. If required, apply additional layers of fabric while epoxy on previous layer is still tacky. For overhead or vertical applications, prime concrete with Sikadur 330 to improve tack. Saturate fabric with Sikadur 300/Hex 300 or Sikadur 301. Coat the exposed surface of final fabric layer using Sikagard 670W or Sikagard 62.
Installation of SikaWrap Products should be performed only by specially trained approved contractors.

Tooling & Finishing

Fabric can be cut to appropriate length by using a commercial quality heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber, their use should be avoided. Consult MSDS for proper handling procedures.

Limitations

- Design calculations must be made and certified by an independent licensed professional engineer.
- System is a vapor barrier. Concrete should not be encapsulated in areas of freeze/thaw.

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Phone: 514-697-2610
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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Hex 230C

Carbon fiber fabric for structural strengthening

Description	SikaWrap Hex 230C is a unidirectional carbon fiber fabric. Material is field laminated using Sikadur 200/Hex 300, Sikadur 301 or Sikadur 330 epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural elements.
Where to Use	**Load increases** ■ Increased live loads in warehouses. ■ Increased traffic volumes on bridges. ■ Installation of heavy machinery in industrial buildings. ■ Vibrating structures. ■ Changes of building utilization. **Seismic strengthening** ■ Column wrapping. ■ Masonry walls. **Damage to structural parts** ■ Aging of construction materials. ■ Vehicle impact. ■ Fire. **Change in structural system** ■ Removal of walls or columns. ■ Removal of slab sections for openings. **Design or construction defects** ■ Insufficient reinforcements. ■ Insufficient structural depth.
Advantages	■ Approved by ICBO/ICC ER-5558. ■ Lightweight fabric ideal for confined spaces. ■ Can be applied in dry or wet lay-up process. ■ Used for shear, confinement or flexural strengthening. ■ Flexible, can be wrapped around complex shapes. ■ High strength. ■ Non-corrosive. ■ Alkali resistant. ■ Low aesthetic impact.
Packaging	Rolls: 12 in. x 150 ft. 24 in. x 150 ft.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions	Store dry at 40°-95°F (4°-35°C)
Color	Black
Primary Fiber Direction	0° (unidirectional)
Weight per Square Yard	6.7 oz. (230 g/m^2)
Fiber Properties	
Tensile Strength	5 x 10^5 psi (3,450 MPa)
Tensile Modulus	33.4 x 10^6 psi (230,000 MPa)
Elongation	1.5%
Density	0.065 lbs./in.^{3} (1.8 g/cc)

Construction

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials, and other bond inhibiting materials from the surface. Consult Sikadur Hex 300 and Sikadur 330 technical data sheets for additional information on surface preparation. Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture.

In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Cured Laminate Properties with Sikadur 330 Epoxy Properties after standard cure [70° -75° F (21° -24° C) - 5 days]

	Average Value[1]		Design Value[2]		
Property	**US Units psi**	**SI Units MPa**	**US Units psi**	**SI Units MPa**	**ASTM Test Method**
Tensile Strength*	129,800	894	104,000	715	D-3039
Tensile Modulus*	9,492,300	65,402	8,855,000	61,012	D-3039
Tensile % Elongation*	1.33	1.33	1.09	1.09	D-3039
140° F (60° C) Tensile Strength	118,200	814	102,000	703	D-3039
140° F (60° C) Tensile Modulus	9,789,000	67,450	8,693,000	59,896	D-3039
140° F (60° C) % Elongation	1.16	1.16	1.00	1.00	D-3039
Compressive Strength	113,000	779	97,000	668	D-695
Compressive Modulus	9,724,700	67,003	9,230,000	63,597	D-695
90 deg Tensile Strength	3,965	27	390	23	D-3039
90 deg Tensile Modulus	852,800	5,876	799,000	5,502	D-3039
90 deg % Tensile Elongation	0.46	0.46	0.40	0.40	D-3039
Shear Strength +/-45 in. Plane	9,100	63	8,100	56	D-3518
Shear Modulus +/-45 in. Plane	421,200	2,902	406,000	2,800	D-3518
Ply Thickness	0.015	0.381	---	---	---

* 24 sample coupons per test series; all other values based on 6 coupon test series.
[1] Average value of test series.
[2] Average value minus 2 standard deviations

Mixing

Consult Sikadur Hex 300 or Sikadur 330 technical data sheets for information on epoxy resins.

Application

SikaWrap Hex 230C can be applied using wet or dry lay-up methods.

Dry Lay-Up: Apply the mixed Sikadur 330 or Sikadur 301 epoxy resin directly onto the substrate at a rate of 40-50 ft.^{2}/gal. (32-40 mils), depending on the surface profile. Carefully place the fabric into the resin with gloved hands and smooth out any irregularities or air pockets using a plastic laminating roller. Allow the resin to squeeze out between the rovings of the fabric. If more than one layer of fabric is required apply additional Sikadur 330 or SIkadur 301 at a rate of 100ft.^{2}/gal. (16 mils) and repeat as above. Apply a final coat of Sikadur 330 or Sikadur 301to the exposed surface at a rate of 160ft.^{2}/gal. (10 mils).

Wet Lay-Up: Seal the prepared concrete surface using Sikadur 300/Hex 300 or Sikadur 301. Material may be applied by spray, brush or roller. SikaWrap Hex 230C can be impregnated using either the Sikadur 300/Hex 300 epoxy or SIkadur 301. For best results, the impregnation process should be accomplished using an automated saturator. Once saturated, apply fabric to the sealed concrete surface and smooth out any irregulari-ties or air pockets using a plastic laminating roller. If required, apply additional layers of fabric while epoxy on previous layer is still tacky. For overhead or vertical applications, prime concrete with Sikadur 330 to improve tack. Saturate fabric with Sikadur 300/Hex 300 or Sikadur 301. Coat the exposed surface of final fabric layer using Sikagard 670W or Sikagard 62.

Installation of SikaWrap Products should be performed only by specially trained approved contractors.

Tooling & Finishing

Fabric can be cut to appropriate length by using a commercial quality heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber, their use should be avoided. Consult MSDS for proper handling procedures.

Limitations

- Design calculations must be made and certified by an independent licensed professional engineer.
- System is a vapor barrier. Concrete should not be encapsulated in areas of freeze/thaw.

Construction

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® 1200C

High Modulus Carbon Fiber Fabric for Structural Strengthening

Description

SikaWrap® 1200C is a high strength, unidirectional carbon fiber fabric. Material is field laminated using either Sikadur® Hex 300 or Sikadur® Hex 330 epoxy as an impregnating resin to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural elements. For applications to vertical and/or overhead surfaces, either Sikadur® 30 or Sikadur® 330 US is applied on the prepared concrete surface prior to placing the saturated fabric.

Where to Use

Load Increases
- Increasing the live loads in warehouses
- Increasing traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization

Seismic Strengthening
- Column wrapping
- Masonry walls

Damage to Structural Parts
- Aging of construction materials
- Vehicle impact
- Fire
- Blast Resistance

Change in Structural System
- Removal of walls or columns
- Removal of slab sections for openings

Design or Construction Defects
- Insufficient reinforcement
- Insufficient structural depths

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	10 years
Storage Conditions	Store dry at 40°-95°F (4°-35°C)
Color	Black
Primary Fiber Direction	0° (unidirectional)
Area Weight	36.50 oz/sq.yd (1238 g/m²)
Typical Dry Fiber Properties	
Tensile Strength	580,000 psi (4.00 GPa)
Tensile Modulus	35.0 x 10^6 psi (240 GPa)
Elongation	1.7%
Density	0.065 lb/in^3 (1.80 g/cm3)
Normal Fiber Thickness	0.064 in. (1.63 mm)

Cured Laminate Properties with Sikadur 300/Sikadur Hex 300 Epoxy

Properties after standard cure [70°-75°F (21°-24°C) - 5 days and 48 hour post cure at 140°F(60°C)]

	Avg. Ultimate Value		Design Value		
Property	US Units	SI Units	US Units	SI Units	ASTM Test Method
	psi	MPa	psi	MPa	
Tensile Strength	168,591.9	1,162.4	(f*fu) 132,650*	914.6	D3039/D7565
Tensile Modulus	-	-	(Ef) 10,098,776.6	7,575.8	D3039/D7565
Tensile % Elongation	1.4	1.4	(e*fu) 1.02*	1.02*	D3039/D7565
Nominal Ply Thickness (in./mm)	0.075	1.9	0.075	1.9	
Tensile Strength per in. width	12.6 kips/in. width	-	9.9 kips/in. width	-	-
Stiffness (Ef*A) per in. width	-	-	823.8 kips/in. width	-	-

* Average ultimate value minus 3 standard deviations.

Construction

Advantages	■ Used for shear, confinement or flexural strengthening ■ Flexible, can be wrapped around complex shapes ■ High Strength ■ Light Weight ■ Non-corrosive ■ Alkali Resistant ■ Low Aesthetic Impact
Packaging	50 in. x 135 ft. (127 cm x 41.2 m)

How to Use

Surface Preparation	Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials, and other bond inhibiting materials from the surface. Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure. Concrete - Blast clean, shotblast or use other approved mechanical means to provide a roughened, open-textured surface. In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand blasting or water blasting is sufficient.
Mixing	Consult the current product data sheet(s) for recommendations on the specified Sikadur epoxy adhesive(s) needed.
Application	Prior to placing the fabric, the concrete surface is primed and sealed using the appropriate Sikadur® epoxy adhesive (e.g. Sikadur® 30, Sikadur® 330 US or Sikadur® Hex 300). Material may be applied by spray, brush or roller. SikaWrap® 1200C can be impregnated using Sikadur® Hex 300 epoxy. For best results on larger projects, the impregnation process should be accomplished using Sikadur® Hex 300 and a mechanically driven saturator or similar device. In special cases where the size of the project does not justify the use of a saturator, the fabric may be saturated by hand using a ruller prior to placement. In either case, installation of this system should be performed only by a specially trained contractor. For overhead and vertical applications, prime concrete with Sikadur® 30 or Sikadur® 330 US to improve tack. Saturate fabric with Sikadur® Hex 300. Coat the exposed surface of final fabric layer using Sikagard® 670W or Sikagard® 62.
Tooling & Finishing	Fabric can be cut to appropriate length by using a commercial quality, heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber, their use should be avoided.
Limitations	■ DESIGN CALCULATIONS MUST BE MADE AND CERTIFIED BY AN INDEPENDENT LICENSED PROFESSIONAL ENGINEER. ■ SYSTEM IS A VAPOR BARRIER. CONCRETE SHOULD NOT BE ENCAPSULATED IN AREAS OF FREEZE/THAW. ■ Sika cannot and will not determine the location, spacing, and orientation of the SikaWrap® system installation on actual projects.

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Sika Corporation
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Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800

Construction

Product Data Sheet
Edition 5.17.2016
Identification no.
SikaWrap 600C

SikaWrap® 600C ± 45

Double Bias Carbon Fiber Fabric for Structural Strengthening

Description

SikaWrap 600C is a high strength, bi-directional carbon fiber fabric. Material is field laminated using Sikadur 300/Hex 300, Sikadur 301 or Sikadur 330 epoxy to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural elements.

Where to Use

Loading Increases
- Increasing the live loads in warehouses
- Increasing traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization

Seismic Strengthening
- Column wrapping
- Masonry walls

Damage to Structural Parts
- Aging of construction materials
- Vehicle impact
- Fire
- Blast Resistance

Change in Structural System
- Removal of walls or columns
- removal of slab sections for openings

Design or Construction Defects
- Insufficient reinforcements
- Insufficient structural depths

Advantages

- Provides high strength in multiple directions
- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex shapes
- High Strength
- Light Weight
- Non-corrosive
- Alkali Resistant
- Low Aesthetic Impact

Packaging

Rolls: 50" x 225 ft

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions	Store dry at 40°-95°F (4°-35°C)
Shelf Life	10 years
Product Conditioning	Condition fabric to same temperature as recommended for conditioning the specified Sikadur epoxy adhesive(s)
Color	Black
Primary Fiber Direction	+45/-45° (bidirectional)
Area Weight	17.11 oz/sq.yd (580 g/m2)
Typical Dry Fiber Properties	
Tensile Strength	711,000 psi (4900 MPa)
Tensile Modulus	33.4 x 10^6 psi (230 GPa)
Elongation	2.1%
Density	0.065 lb/in^3 (1.80 g/cm3)

Cured Laminate Properties with Sikadur 300 tested in primary fabric direction
Properties after standard cure [70°-75°F (21°-24°C) 7 days

	Avg. Ultimate Value		Design Value		
Property	US Units	SI Units	US Units	SI Units	ASTM Test Method
	psi	Mpa	Design	Mpa	
Tensile Strength	117,186 psi	807	(f*fu) 80,166	552	D3039/D7565
Tensile Modulus	-	-	(Ef) 6,500,000	44,815	D3039/D7565
Tensile % Elongation	1.73	1.73	(e*fu) 1.4	1.4	D3039/D7565
Nominal Ply Thickness (in./mm)	0.073	1.85	0.073	1.85	
Tensile Strength per in. width	8.55 kips/in. width	-	5.85 kips/in. width	-	-

All stated values reported above are absolute values based on 20 test specimens
Appropriate safety factors should be applied for design values in accordance with design guide/code

How To Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials, and other bond inhibiting materials from the surface. Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Concrete - Blast clean, shotblast or use other approved mechanical means to provide a roughened, open-textured surface. In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand blasting or water blasting is sufficient.

Mixing

Consult the current product data sheet(s) for recommendations on the specified Sikadur epoxy adhesive(s) needed.

Application

Prior to placing the fabric, the concrete surface is primed and sealed using the appropriate Sikadur epoxy adhesive (e.g. Sikadur 300/Hex 300, Sikadur 301 or Sikadur 330 US). Material may be applied by spray, brush or roller.

SikaWrap 600C ±45 can be impregnated using Sikadur 300/Hex 300 or Sikadur 301 epoxy. For best results on larger projects, the impreg-nation process should be accomplished using Sikadur Hex 300 and a mechanically driven saturator or similar device. In special cases where the size of the project does not justify the use of a saturator, the fabric may be saturated by hand using a ruler prior to placement. In either case, installation of this system should be performed only by a specially trained contractor.

For overhead and vertical applications, prime concrete with Sikadur 30 or Sikadur 330 US to improve tack. Saturate fabric with Sikadur Hex 300. Coat the exposed surface of final fabric layer using Sikagard 670W or Sikagard 62.

Tooling & Finishing

Cutting SikaWrap

Fabric can be cut to appropriate length by using a commercial quality, heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber, their use should be avoided.

Limitations

- DESIGN CALCULATIONS MUST BE MADE AND CERTIFIED BY AN INDEPENDENT LICENSED PROFESSIONAL ENGINEER
- SYSTEM IS A VAPOR BARRIER. CONCRETE SHOULD NOT BE ENCAPSULATED IN AREAS OF FREEZE/THAW
- Sika cannot and will not determine the location, spacing, and orientation of the SikaWrap system installation on actual projects.

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Phone: 800-933-7452
Fax: 201-933-6225

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601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® FX-50 C

Carbon fiber rope for structural connection and anchoring of SikaWrap strengthening systems

Description	SikaWrap® FX-50 C is a unidirectional carbon fibre string, encased in a plastic envelope, that serves as fibre connector for the anchorage of SikaWrap® fabrics.
Where to Use	■ Anchoring SikaWrap® carbon and glass fibre fabrics on concrete or masonry ■ Connecting SikaWrap® carbon or glass fibre fabrics through concrete or masonry structures ■ Flexible near surface mounted strengthening (NSM)
Advantages	■ Carbon fibre, corrosion resistant, durable ■ Multifunctional use ■ Easy to install
Coverage	Primer layer: 0.5 – 0.7 kg/m2 Anchor impregnation: 25 – 30 g/100 mm SikaWrap® fabrics: Please refer to the relevant product data sheet
Packaging	82 ft (25m) rolls on plastic reel dispenser in a box

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Fibre Type	Carbon Fiber
Construction	Unidirectional carbon fiber rope encased in a plastic envelope
Packaging	25 m roll on a plastic reel dispenser
Storage Conditions/Shelf-Life	Unlimited, provided there is no exposure to direct sunlight (UV light), in dry conditions and at temperatures of max. 122°F (50°C) Transportation only in the original packaging, or otherwise adequately protected against any mechanical damage
Weight	≥ 15.24 g/ft (carbon fibre content)
Fibre Cross Section	≥ .034 in^2 (based on carbon fibre content)
Fibre Density	1820 g/l

Dry fibre properties Values in longitudinal direction of the fibres

Tensile Modulus	3.48 *10^7 psi (2.4x10^5 MPa)
Tensile Strength	5.8 x 10^5 psi (4000 MPa)
Elongation at break	>1.6% (nominal)
Composite Cross Section	.086 sq.in. (assumption: 50% fibre content)

*Values according to ASTM D 4018

Composite Properties

Impregnating Resin	Sikadur®-300, Sikadur®-330
Composite Cross Section	0.1 sq.in. (assumption: 50% fibre content)
Tensile Modulus	3.33 *10^7 psi (2.3x10^5 MPa)
Tensile Strength	3.04 x 10^5 psi (2100 MPa)

Construction

How To Use

Surface Preparation

Minimal substrate tensile strength: 1.0 N/mm2 or as specified in the strengthening design. For further details, see also the Method Statements of installation of SikaWrap® FX (Ref. 850 41 09) SikaWrap® manual dry application (Ref. 850 41 02) SikaWrap® manual wet application (Ref. 850 41 03) or SikaWrap® machine wet application (Ref. 850 41 04).

Concrete and masonry: Substrates must be sound, dry, clean and free from laitance, ice, standing water, grease, oils, old surface treatments or coatings and any loosely adhering particles. Concrete must be cleaned and prepared to achieve a laitance and contaminant free, open textured surface.

Repairs and levelling: If carbonized or weak concrete cover has to be removed or levelling of uneven surfaces is needed, the following systems can be applied: Structural repair materials: Sikadur®-41 epoxy repair mortar, Sikadur®-30 adhesive or the Sika® MonoTop®-412 (horizontal, vertical, overhead) or Sika® MonoTop®-438 (horizontal, top-side) range (cementitious). (Details on application and limitation see the relevant Product Data Sheets)

For further details, see also the Method Statements of installation of SikaWrap® FX (Ref. 850 41 08), SikaWrap® manual dry application (Ref. 850 41 02) SikaWrap® manual wet application (Ref. 850 41 03) or SikaWrap® machine wet application (Ref. 850 41 04).

Application

The system build-up and configuration as described must be fully complied with and may not be changed.

Anchorage resin: Sikadur®-330, Sikadur® 300/Hex 300 or Anchorfix®-3001.

Impregnating / laminating resin: Sikadur®-300/Hex 300

Structural strengthening fabric: SikaWrap® carbon or glass fibre fabric

For detailed information on Sikadur®-330 or Sikadur®-300/Hex 300 together with the resin and fabric application details, please refer to the relevant Product Data Sheets and the Method Statements of SikaWrap® manual dry application (Ref. 850 41 02), SikaWrap® manual wet application (Ref. 850 41 03) and Installation of SikaWrap® FX (Ref. 850 41 09).

Tooling & Finishing

Application Method / Tools

The SikaWrap® FX can be cut with special scissors. Please refer to the Method Statement of Installation of SikaWrap® FX (Ref. 850 41 09) for the anchor installation and the Method Statement of SikaWrap® manual wet application (Ref. 850 41 03) or SikaWrap® machine wet application (Ref. 850 41 04) for the impregnating / laminating procedure of the fabrics.

Notes on Application / Limitations

This product should only be used by trained and experienced professionals.

The strengthening application is inherently structural and great care must be taken when choosing suitably experienced contractors.

Notes and limitations mentioned in the Method Statement Installation of SikaWrap® FX (Ref. 850 41 08) must be taken into account.

The SikaWrap® products are coated to ensure maximum bond and durability with the Sikadur® adhesives / impregnating / laminating resins. To maintain and ensure full system compatibility, do not interchange different system components.

The SikaWrap® system can be over coated with a cementitious overlay or other coatings for aesthetic and / or protective purposes. The over coating system selection is dependent on the exposure and the project specific requirements. For additional UV light protection in exposed areas use Sikagard®-550 W or Sikagard 670W.

Please refer to the Method Statement of SikaWrap® manual dry application (Ref. 850 41 02), SikaWrap® manual wet application (Ref. 850 41 03) or SikaWrap® machine wet application (Ref. 850 41 04) for further information, guidelines and limitations.

Construction

Limitations

- This product should only be used by trained and experienced professionals.
- The strengthening application is inherently structural and great care must be taken when choosing suitably experienced contractors.
- Notes and limitations mentioned in the Method Statement Installation of SikaWrap® Fibre Connectors (Ref. 850 41 08) must be taken into account.
- The SikaWrap® products are coated to ensure maximum bond and durability with the SikadurR adhesives / impregnating / laminating resins. To maintain and ensure full system compatibility, do not interchange different system components.
- The SikaWrap® system can be over coated with a cementitious overlay or other coatings for aesthetic and / or protective purposes. The over coating system selection is dependent on the exposure and the project specific requirements. For additional UV light protection in exposed areas use Sikagard®-550 W Elastic, Sikagard® ElastoColor-675 W or Sikagard®-680 S.
- Please refer to the Method Statement of SikaWrap® manual dry application (Ref. 850 41 02), SikaWrap® manual wet application (Ref. 850 41 03) or SikaWrap® machine wet.

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Fax: 201-933-6225

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Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap Hex® 100G

Glass fiber fabric for structural strengthening

Description	SikaWrap Hex 100G is a unidirectional E-glass fiber fabric. Material is field laminated using Sikadur 300/Hex 300 or Sikadur 301 epoxy to form a glass fiber reinforced polymer (GFRP) used to strengthen structural ele-ments.
Where to Use	■ Load increases ■ Seismic strengthening of columns and masonry walls ■ Damage to structural parts ■ Temporary strengthening ■ Change in structural system ■ Design or construction defects
Advantages	■ Approved by ICBO/ICC ER-5558. ■ Used for shear, confinement or flexural strengthening. ■ Flexible, can be wrapped around complex shapes. ■ Light weight. ■ Non-corrosive. ■ Acid resistant. ■ Low aesthetic impact. ■ Economical.
Packaging	**Rolls:** 50 in. x 30 ft., 50 in. x 150 ft.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult Sikadur 300, Sikadur 301, Sikadur Hex 300/306 and Sikadur 330 technical data sheets for additional information on surface preparation.

Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified following surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture.

In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions	Store dry at 40°-95°F (4°-35°C)
Color	White
Primary Fiber Direction	0° (unidirectional)
Weight Per Square Yard	27 oz. (913 g/m²)

Fiber Properties

Tensile Strength	3.3 x 10^5 psi (2,276 MPa)
Tensile Modulus	10.5 x 10^6 psi (72,413 MPa)
Elongation	4%
Density	0.092 lbs./in.^{3} (2.54 g/cc)
Nominal Thickness	0.014 in. (0.359 mm)

Construction

Cured Laminate Properties with Sikadur Hex 300 Epoxy
Properties after standard cure followed by standard post cure [70°-75°F (21°-24°C) - 5 days, 48 hours at 140°F (60°C)]

	Average Value[1]		Design Value[2]		
Property	US Units, psi	SI Units, MPa	US Units, psi	SI Units, MPa	ASTM Test Method
Tensile Strength*	88,800	612	77,100	531	D-3039
Tensile Modulus*	3,790,800	26,119	3,426,300	23,607	D-3039
Tensile % Elongation*	2.45	2.45	2.12	2.12	D-3039
140°F - Tensile Strength	79,900	551	75,700	521	D-3039
140°F - Tensile Modulus	3,728,000	25,690	3,221,600	22,197	D-3039
140°F - % Elongation	2.28	2.28	2.07	2.07	D-3039
Compressive Strength	86,600	597	74,600	515	D-695
Compressive Modulus	4,312,700	29,715	3,903,800	23,384	D-695
90° Tensile Strength	4,400	30	2,900	20	D-3039
90° Tensile Modulus	965,000	6,649	892,700	6,159	D-3039
90° % Tensile Elongation	0.46	0.46	0.28	0.28	D-3039
Shear Strength, +/- 45 in. Plane	5,800	40	4,600	32	D-3518
Shear Modulus +/- 45 in. Plane	335,900	2,314	291,500	2,012	D-3518
Ply Thickness (in./mm)	0.04	1.016	0.04	1.016	----

Cured Laminate Properties with Sikadur Hex 306 Epoxy
Properties after standard cure followed by standard post cure [70°-75°F (21°-24°C) - 5 days, 48 hours at 140°F (60°C)]

	Average Value[1]		Design Value[2]		
Property	US Units, psi	SI Units, MPa	US Units, psi	SI Units, MPa	ASTM Test Method
Tensile Strength*	83,400	575	72,900	484	D-3039
Tensile Modulus*	3,672,000	25,300	2,999,900	20,044	D-3039
Tensile % Elongation*	2.31	2.31	1.89	1.89	D-3039
140°F - Tensile Strength	69,300	477	62,400	431	D-3039
140°F - Tensile Modulus	3,306,400	22,781	2,970,700	20,468	D-3039
140°F - % Elongation	2.19	2.19	1.92	1.92	D-3039
Compressive Strength	75,000	517	64,800	447	D-695
Compressive Modulus	4,248,200	29,270	2,902,400	24,446	D-695
90° Tensile Strength	5,000	34	3,200	22	D-3039
90° Tensile Modulus	819,800	5,648	710,300	4,895	D-3039
90° % Tensile Elongation	0.66	0.66	0.45	0.45	D-3039
Shear Strength, +/- 45 in. Plane	6,100	42	5,500	38	D-3518
Shear Modulus +/- 45 in. Plane	337,200	2,323	297,600	2,050	D-3518
Ply Thickness (in./mm)	0.04	1.016	0.04	1.016	----

* 24 sample coupons per test series; all other values based on 6 coupon test series
[1] Average value of test series
[2] Average value minus 3 standard deviations

Mixing

Consult either Sikadur 300, Sikadur 301, or Sikadur Hex 300/306 data sheets for information on epoxy resins.

Application

Prior to placing the fabric, the concrete surface is sealed using Sikadur 300/Hex 300 or SIkadur 301 epoxy. Material may be applied by spray, brush or roller. SikaWrap Hex 100G can be impregnated using Sikadur Hex 300 epoxy. For best results on larger projects, the impregnation process should be accomplished using a mechanically driven fabric saturator or similar device. In special cases where the size of the project does not justify the use of a saturator, the fabric may be saturated by hand using a roller prior to placement. In either case, installation of this system should be performed only by a specially trained, approved contractor.

For overhead and vertical applications, prime concrete with Sikadur 30 or Sikadur 330 to improve tack. Saturate fabric with Sikadur 300/Hex 300 or Sikadur 301.

Cutting SikaWrap

Fabric can be cut to appropriate length by using a commercial quality heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber their use should be avoided. Consult MSDS for proper handling procedures.

Limitations

- Design calculations must be made and certified by an independent licensed professional engineer.
- System is a vapor barrier. Concrete should not be encapsulated in areas of freeze/thaw.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Hex 106G

Bi-directional Glass fiber fabric for structural strengthening

Description	SikaWrap Hex 106G is a bi-directional E-glass fiber fabric. Material is field laminated using Sikadur 330, Sikadur 301 or Sikadur 300/Hex 300 epoxy to form a glass fiber reinforced polymer (GFRP) used to strengthen structural elements.
Where to Use	**Load increases** **Seismic strengthening of:** ■ Columns ■ Masonry walls **Damage to structural parts** **Temporary strengthening** **Change in structural system** **Design or construction defects**
Advantages	■ Approved by ICBO/ICC ER-5558. ■ Used for shear, confinement or flexural strengthening. ■ Flexible, can be wrapped around complex shapes. ■ Light weight. ■ Non-corrosive. ■ Acid resistant. ■ Low aesthetic impact. ■ Economical.
Packaging	Rolls: 50 in. x 450 ft.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions	Store dry at 40°-95°F (4-35°C)
Color	White
Primary Fiber Direction	0°/90° (bi-directional)
Weight per Square Yard	9.6 oz. (325 g/m^2)
Weight Ratio (Warp:Weft)	1:1
Cured Laminate Properties (0° & 90°) Design Values	
Tensile Strength	35,300 psi (244 MPa)
Modulus of Elasticity	2.35 x 10^6 psi (16,215 MPa)
Elongation at Break	1.43%
Thickness	0.013 in. (0.33 mm)
Strength per Inch Width	572 lbs./layer (2.53 kN)
Fiber Properties	
Tensile Strength	3.3 x 10^5 psi (2,276 MPa)
Tensile Modulus	10.5 x 10^6 psi (72,390 MPa)
Elongation	4%
Density	0.092 lbs/in^3 (2.54 g/cc)

Construction

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials, and other bond inhibiting materials from the surface. Consult Sikadur Hex 300 and Sikadur 330 technical data sheets for additional information on surface preparation.
Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified following surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.
Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture.

In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Mixing

Consult Sikadur 330, Sikadur 301 or Sikadur 300/Hex 300 product data sheets for more information.

Application

SikaWrap Hex 106G can be applied using wet or dry lay-up methods.

Dry Lay-Up: Apply the mixed Sikadur 330 or Sikadur 301 epoxy resin directly onto the substrate at a rate of 40-50 ft^2/gal. (32-40 mils), depending on the surface profile. Carefully place the fabric into the resin with gloved hands and smooth out any irregularities or air pockets using a plastic laminating roller. Al-low the resin to squeeze out between the rovings of the fabric. If more than one layer of fabric is required apply additional Sikadur 330/301 at a rate of 100ft^2/gal. (16 mils) and repeat as above. Apply a final coat of Sikadur 330/301 to the exposed surface at a rate of 160ft^2/gal. (10 mils).

Wet Lay-Up: Seal the prepared concrete surface using Sikadur 300/Hex 300. Material may be applied by spray, brush or roller. SikaWrap Hex 106G can be impregnated using Sikadur 300/Hex 300 epoxy. For best results, the impregnation process should be accomplished using an automated fabric saturating device. Once saturated, apply fabric to the sealed concrete surface and smooth out any irregularities or air pockets using a plastic laminating roller. If required, apply additional layers of fabric while epoxy on previous layer is still tacky. For vertical and overhead applications, prime with Sikadur 330 for improved tack. Coat the exposed surface of final fabric layer using Sikagard 670W or Sikagard 62.

Installation of SikaWrap products should be performed only by specially trained approved contractors.

Cutting SikaWrap

Fabric can be cut to appropriate length by using a commercial quality heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber their use should be avoided. Consult MSDS for proper handling procedures.

Limitations

- Design calculations must be made and certified by an independent licensed professional engineer.
- System is a vapor barrier. Concrete should not be encapsulated in areas of freeze/thaw.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Pre-saturated 103C

Carbon fiber fabric for structural strengthening

Description

SikaWrap® Pre-saturated 103C is a high strength, unidirectional carbon fiber fabric pre-saturated to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural concrete elements.

Where to Use

Load Increases
- Increased live loads
- Increased traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization

Seismic Strengthening
- Column wrapping
- Masonry walls

Damage to Structural Parts
- Aging of construction materials
- Vehicle impact
- Fire
- Blast resistance

Change in Structural System
- Removal of walls or columns
- Removal of slab sections for openings

Design or Construction Defects
- Insufficient reinforcements
- Insufficient structural depth

Advantages
- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex geometries
- High Strength
- Light Weight
- Non-corrosive
- Alkali Resistant
- Low aesthetic impact

Packaging

Rolls: 24 in. x 30 ft.; Box of 2 rolls

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage:	Store dry at 40°F - 95°F (4° - 35°C)
Shelf Life:	1 year in original packaging at recommended storage conditions
Color:	Black
Primary Fiber Direction:	0°F (unidirectional)
Areal Weight:	18 oz. / sq. yd. (618 g/m^2)
Open Time:	2 hrs. after foil is opened

Typical Fiber Properties

Property	Typical Test Value
Tensile Strength	**5.5 x 10^5 psi (3,793 MPa)**
Tensile Modulus	**34 x 10^6 (234,500 MPa)**
Elongation	**1.5%**
Density	**0.065 lbs./in^3 (1.8 g/cc)**
Normal Fiber Thickness	**0.0135 in. (0.34 mm)**

Construction

Cured Laminate Properties					
	Avg. Ultimate Value		Design Value		
Property	US Units	SI Units	US Units	SI Units	ASTM Test Method
	psi	MPa	psi	MPa	
Tensile Strength	147,594	1,018	(f^*_{fu}) 120,589*	831*	D3039/D7565
Tensile Modulus	-	-	(E_T) 12,320,000	84,943	D3039/D7565
Tensile % Elongation	1.12	1.12	(ε^*_{fu}) 1.0*	1.0*	D3039/D7565
Nominal Ply Thickness (in./mm)	0.035	0.889	0.035	0.889	-
Tensile Strength per in. width	5.17 kips/in. width	-	4.22 kips/in. width*	-	-
Stiffness (E *A) per in. width	-	-	431.2 kips/in. width	-	-
* Average ultimate value minus 3 standard deviations					

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult the current product data sheets for Sikadur 340 for additional information on surface preparation.

Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off test- ing (ASTM D-4541) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide a roughened, open-textured surface.Round all corners to 1/2" radius in certain "contact critical" applications and at the engineers discretion, a thorough cleaning of the substrate using low pressure sand or water blasting may be sufficient.

Application

Prior to placing the fabric, the concrete surface is primed and sealed using Sikadur® 340. In either case, installation of this system should be performed only by a specially trained contractor.

Tooling & Finishing

Fabric can be cut to appropriate lengths by using a commercial quality heavy duty scissor. Since the dull or worn cutting implements can damage, weaken or fray the fabric, their use should be avoided.

Limitations

- System is a vapor barrier. Concrete should not be fully encapsulated in areas of freeze/thaw.
- Design calculations must be made and certified by an independent licensed professional engineer.
- Do not place carbon fiber in direct contact with steel. Must be isolated (e.g. glass fabric) to protect against corrosion.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Pre-saturated 117C

Carbon fiber fabric for structural strengthening

Description

SikaWrap® Pre-saturated 117C is a unidirectional carbon fiber fabric pre-saturated to form a carbon fiber reinforced polymer (CFRP) used to strengthen structural concrete elements.

Where to Use

Load Increases
- Increased live loads
- Increased traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization

Seismic Strengthening
- Column wrapping
- Masonry walls

Damage to Structural Parts
- Aging of construction materials
- Vehicle impact
- Fire
- Blast resistance

Change in Structural System
- Removal of walls or columns
- Removal of slab sections for openings

Design or Construction Defects
- Insufficient reinforcements
- Insufficient structural depth

Advantages
- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex geometries
- High Strength
- Light Weight
- Non-corrosive
- Alkali Resistant
- Low aesthetic impact

Packaging

Rolls: 24 in. x 30 ft.; Box of 2 rolls

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage:	Store dry at 40°F - 95°F (4° - 35°C)
Shelf Life:	1 year in original packaging at recommended storage conditions
Color:	Black
Primary Fiber Direction:	0°F (unidirectional)
Areal Weight:	9 oz. / sq. yd. (300 g/m^2)
Open Time:	2 hrs. after foil is opened

Typical Fiber Properties

Property	Typical Test Value
Tensile Strength	**5.5 x 10^5 psi (3,793 MPa)**
Tensile Modulus	**34 x 10^6 (234,500 MPa)**
Elongation	**1.5%**
Density	**0.065 lbs./in^3 (1.8 g/cc)**

Construction

Cured Laminate Properties					
	Avg. Ultimate Value		Design Value		
Property	US Units	SI Units	US Units	SI Units	ASTM Test Method
	psi	MPa	psi	MPa	
Tensile Strength	119,770	825	(f^*_{fu}) 93,662*	645*	D3039/D7565
Tensile Modulus	-	-	(E_T) 8,973,997	61,873	D3039/D7565
Tensile % Elongation	1.22	1.22	(ε^*_{fu}) 1.04*	1.04*	D3039/D7565
Nominal Ply Thickness (in./mm)	0.019	0.48	0.019	0.48	-
Tensile Strength per in. width	5.17 kips/in. width	-	1.78 kips/in. width*	-	-
Stiffness (E *A) per in. width	-	-	170.5 kips/in. width	-	-
* Average ultimate value minus 3 standard deviations					

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult the current product data sheets for Sikadur 340 for additional information on surface preparation.

Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off test- ing (ASTM D-4541) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide a roughened, open-textured surface.Round all corners to 1/2" radius in certain "contact critical" applications and at the engineers discretion, a thorough cleaning of the substrate using low pressure sand or water blasting may be sufficient.

Application

Prior to placing the fabric, the concrete surface is primed and sealed using Sikadur 340. In either case, installation of this system should be performed only by a specially trained contractor.

Tooling & Finishing

Fabric can be cut to appropriate lengths by using a commercial quality heavy duty scissor. Since the dull or worn cutting implements can damage, weaken or fray the fabric, their use should be avoided.

Limitations

- System is a vapor barrier. Concrete should not be fully encapsulated in areas of freeze/thaw.
- Design calculations must be made and certified by an independent licensed professional engineer.
- Do not place carbon fiber in direct contact with steel. Must be isolated (e.g. glass fabric) to protect against corrosion.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Pre-saturated 100G

Glass fiber fabric for structural strengthening

Description

SikaWrap® Pre-saturated 100G is a high strength, unidirectional glass fiber fabric pre-saturated to form a glass fiber reinforced polymer (GFRP) used to strengthen structural concrete elements.

Where to Use

Load Increases
- Increased live loads
- Increased traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization

Seismic Strengthening
- Column wrapping
- Masonry walls

Damage to Structural Parts
- Aging of construction materials
- Vehicle impact
- Fire
- Blast resistance

Change in Structural System
- Removal of walls or columns
- Removal of slab sections for openings

Design or Construction Defects
- Insufficient reinforcements
- Insufficient structural depth

Advantages
- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex geometries
- High Strength
- Light Weight
- Non-corrosive
- Alkali Resistant
- Low aesthetic impact

Packaging

Rolls: 24 in. x 30 ft.; Box of 2 rolls

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage:	Store dry at 40°F - 95°F (4° - 35°C)
Shelf Life:	1 year in original packaging at recommended storage conditions
Color:	White
Primary Fiber Direction:	0°F (unidirectional)
Areal Weight:	27 oz. / sq. yd. (913 g/m^2)
Open Time:	2 hrs. after foil is opened

Typical Fiber Properties

Property	Typical Test Value
Tensile Strength	**3.3 x 10^5 psi (3,793 MPa)**
Tensile Modulus	**10.5 x 10^6 (234,500 MPa)**
Elongation	**4.0%**
Density	**0.092 lbs./in^3 (2.54 g/cc)**
Nominal Fiber Thickness	**0.014 in (0.359 mm)**

Construction

Cured Laminate Properties					
	Avg. Ultimate Value		Design Value		
Property	US Units	SI Units	US Units	SI Units	ASTM Test Method
	psi	MPa	psi	MPa	
Tensile Strength	71,457	492	(f^*_{fu}) 64,226*	442*	D3039/D7565
Tensile Modulus	-	-	(E_T) 3,807,839	26,254	D3039/D7565
Tensile % Elongation	1.85	1.85	(ε^*_{fu}) 1.69*	1.69*	D3039/D7565
Nominal Ply Thickness (in./mm)	0.050	1.27	0.050	1.27	-
Tensile Strength per in. width	3.57 kips/in. width	-	3.21 kips/in. width*	-	-
Stiffness (E *A) per in. width	-	-	190 kips/in. width	-	-
* Average ultimate value minus 3 standard deviations					

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult the current product data sheets for Sikadur 340 for additional information on surface preparation.

Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off test- ing (ASTM D-4541) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide a roughened, open-textured surface.Round all corners to 1/2" radius in certain "contact critical" applications and at the engineers discretion, a thorough cleaning of the substrate using low pressure sand or water blasting may be sufficient.

Application

Prior to placing the fabric, the concrete surface is primed and sealed using Sikadur 340. In either case, installation of this system should be performed only by a specially trained contractor.

Tooling & Finishing

Fabric can be cut to appropriate lengths by using a commercial quality heavy duty scissor. Since the dull or worn cutting implements can damage, weaken or fray the fabric, their use should be avoided.

Limitations

- System is a vapor barrier. Concrete should not be fully encapsulated in areas of freeze/thaw.
- Design calculations must be made and certified by an independent licensed professional engineer.

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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

SikaWrap® Pre-saturated 430G

Glass fiber fabric for structural strengthening

Description

SikaWrap® Pre-saturated 430G is a unidirectional glass fiber fabric pre-saturated to form a glass fiber reinforced polymer (GFRP) used to strengthen structural concrete elements.

Where to Use

Load Increases
- Increased live loads
- Increased traffic volumes on bridges
- Installation of heavy machinery in industrial buildings
- Vibrating structures
- Changes of building utilization

Seismic Strengthening
- Column wrapping
- Masonry walls

Damage to Structural Parts
- Aging of construction materials
- Vehicle impact
- Fire
- Blast resistance

Change in Structural System
- Removal of walls or columns
- Removal of slab sections for openings

Design or Construction Defects
- Insufficient reinforcements
- Insufficient structural depth

Advantages
- Used for shear, confinement or flexural strengthening
- Flexible, can be wrapped around complex geometries
- High Strength
- Light Weight
- Non-corrosive
- Alkali Resistant
- Low aesthetic impact

Packaging

Rolls: 24 in. x 30 ft.; Box of 2 rolls

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage:	Store dry at 40°F - 95°F (4° - 35°C)
Shelf Life:	1 year in original packaging at recommended storage conditions
Color:	White
Primary Fiber Direction:	0°F (unidirectional)
Areal Weight:	13 oz. / sq. yd. (440 g/m^2)
Open Time:	2 hrs. after foil is opened

Typical Fiber Properties

Property	Typical Test Value
Tensile Strength	**3.3 x 10^5 psi (3,793 MPa)**
Tensile Modulus	**10.5 x 10^6 (234,500 MPa)**
Elongation	**4.0%**
Density	**0.092 lbs./in^3 (2.54 g/cc)**
Nominal Fiber Thickness	**0.0068 in (0.173 mm)**

Construction

Cured Laminate Properties					
	Avg. Ultimate Value		Design Value		
Property	US Units	SI Units	US Units	SI Units	ASTM Test Method
	psi	MPa	psi	MPa	
Tensile Strength	62,985	434	(f^*_{fu}) 51,328*	353*	D3039/D7565
Tensile Modulus	-	-	(E_T) 4,357,548	30,044	D3039/D7565
Tensile % Elongation	1.44	1.44	(ε^*_{fu}) 1.40*	1.40*	D3039/D7565
Nominal Ply Thickness (in./mm)	0.025	0.64	0.025	0.64	-
Tensile Strength per in. width	1.57 kips/in. width	-	1.28 kips/in. width*	-	-
Stiffness (E *A) per in. width	-	-	109 kips/in. width	-	-
* Average ultimate value minus 3 standard deviations					

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult the current product data sheets for Sikadur 340 for additional information on surface preparation.

Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off test- ing (ASTM D-4541) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide a roughened, open-textured surface.Round all corners to 1/2" radius in certain "contact critical" applications and at the engineers discretion, a thorough cleaning of the substrate using low pressure sand or water blasting may be sufficient.

Application

Prior to placing the fabric, the concrete surface is primed and sealed using Sikadur 340. In either case, installation of this system should be performed only by a specially trained contractor.

Tooling & Finishing

Fabric can be cut to appropriate lengths by using a commercial quality heavy duty scissor. Since the dull or worn cutting implements can damage, weaken or fray the fabric, their use should be avoided.

Limitations

- System is a vapor barrier. Concrete should not be fully encapsulated in areas of freeze/thaw.
- Design calculations must be made and certified by an independent licensed professional engineer.

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201 Polito Avenue
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Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 31, Hi-Mod Gel LPL

High-modulus, high-strength, structural, extended pot life, epoxy paste adhesive

Description	Sikadur® 31, Hi-Mod Gel LPL is a 2-component, 100% solids, moisture-insensitive, high-modulus, high-strength, structural epoxy paste adhesive. It conforms to the current ASTM C-881, Types I and IV, Grade-3, Class-C and AASHTO M-235 specifications.
Where to Use	■ Structural bonding of concrete, masonry, metals, wood, etc. to a maximum glue line of 1/8 in. (3mm). ■ Seals cracks and around injection ports prior to pressure-injection grouting. ■ Interior, vertical, and overhead repair of concrete as an epoxy mortar binder. ■ As a pick-proof sealant around windows, doors, lock-ups etc. inside correctional facilities.
Advantages	■ Extended pot life. ■ Moisture-tolerant before, during, and after cure. ■ High-modulus, high-strength, structural paste adhesive. ■ Excellent adhesion to concrete, masonry, metals, wood, and most structural materials. ■ Paste consistency ideal for vertical and overhead applications. ■ Fast-setting and strength-producing adhesive. ■ Convenient easy mix ratio A:B = 2:1 by volume.
Coverage	1 gal. yields 231 cu. in. of epoxy paste adhesive and grout. 1 gal. mixed with 1 gal. by loose volume of oven-dried aggregate yields approximately 346 cu. in. of epoxy mortar.
Packaging	3-gal. units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using.
Color	Concrete gray
Mixing Ratio	Component 'A' : Component 'B' = 2:1 by volume
Consistency	Non-sag paste
Pot Life	Approximately 120 minutes @ 73°F (23°C) (gallon volume) Approximately 60 minutes @ 90°F (32°C) (gallon volume)
Tack-Free Time	6-8 hours

Bond Strength (ASTM C-882): Hardened Concrete to Hardened Concrete

2 day		Bond Strength	2,000 psi (20.7 MPa)
14 day	**(moist cure)**	Bond Strength	2,300 psi (20.0 MPa)

Heat Deflection Temperature (ASTM D-648)

7 day	[fiber stress loading = 264 psi (1.8 MPa)]	124°F (51°C)

Compressive Properties (ASTM D-695)

Compressive Strength, psi (MPa)	**73°F (23°C)**
36 hour	6,400 (41.4)
2 day	7,000 (41.4)
3 day	9,000 (48.3)

Construction

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and any other contaminants.
Preparation Work: Concrete - Sandblast or use other approved mechanical methods.
Steel - Blast clean or use other equivalent mechanical means to achieve a white metal finish.

Mixing

Pre-mix each component. Proportion 1 part Component 'B' to 2 parts Component 'A' by volume into a clean pail. Mix thoroughly for 3 minutes with Sika paddle on low-speed (400 - 600 rpm) drill until uniform in color. Mix only that quantity that can be used within its pot life.

To prepare an epoxy mortar: Slowly add up to 1 part by loose volume of an oven-dried aggregate to 1 part of the mixed Sikadur® 31, Hi-Mod Gel LPL and mix until uniform in consistency.

Application

As a structural adhesive - Apply the neat mixed Sikadur® 31, Hi-Mod Gel LPL, to the mating or non-mating prepared substrates. Work into the substrate for positive adhesion. Secure the bonded unit firmly into place until the adhesion has cured. Glue line should not exceed 1/8 in. (3 mm).

To seal cracks for injection grouting - Place the neat mixed material over the cracks to be pressure injected and around each injection port. Allow sufficient time to set before pressure injecting.

For interior vertical and overhead patching - Place the prepared mortar in void, working the material into the prepared substrate, filling the cavity. Strike off level. Lifts should not exceed 1 in. (25 mm).

As a pick-proof sealant - Use automated or manual method. Apply an appropriate size bead of material around the area being sealed. Seal with neat Sikadur® 31, Hi-Mod Gel LPL.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C).
- Do not thin. Addition of solvents will prevent proper cure.
- Use oven-dried aggregate only.
- Maximum epoxy mortar thickness is 1 in. (25 mm) per lift.
- Epoxy mortar is for interior use only. Material is a vapor barrier after cure.
- Minimum age of concrete must be 21-28 days, depending upon curing and drying conditions, for mortar applications.
- Porous substrates must be tested for moisture-vapor transmission prior to mortar applications.
- Not for sealing cracks under hydrostatic pressure at the time of application.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur 31®, SBA Normal Set

Segmental Bridge Adhesive, Normal Set

High-modulus, high-strength, moisture tolerant, epoxy paste adhesive

Description	Sikadur 31, SBA is a unique high-modulus 2- component, moisture-tolerant, solvent-free, epoxy resin system available in three application temperature ranges. A unique high-modulus, structural adhesive for bonding hardened concrete to hardened concrete for segmental bridge construction. The mixed material has the consistency of paste and is a concrete gray color. It conforms to the current ASTM C-881, Type VI requirements, and ASBI guidelines.
Where to Use	■ Structural bonding of post-tensioned precast concrete bridge segments. ■ Sealing joints between concrete segments. ■ For use in segment-by-segment erection. ■ Supplied in three temperature grades to meet project requirements. (For cold weather conditions, refer to separate technical data sheet on Sikadur 31, SBA [20°-45°F].)
Advantages	■ Moisture tolerant before, during and after cure. ■ High-modulus, high-strength, structural paste adhesive. ■ Range of curing times to meet assembly and strength gain requirements. ■ Easy to apply, non-sag paste for vertical applications. ■ Excellent adhesion to concrete, steel and most construction materials. ■ Convenient easy to mix ratios. A:B=2:1 by volume. ■ Color-coded components to ensure proper mixing control.
Coverage	Approximately 12 sq. ft./gal. or 36 sq. ft./3 gal. unit.
Packaging	3 gal. units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). **Condition material to 70°-75°F (21°-24°C) before using.**
Color	Concrete gray
Consistency	Non-sag paste

Product name	**Temp. Range**	**Mix Ratio, A:B by volume**
Normal Set (40°-60°F)	40°-60°F (4°-15°C)	2:1
Normal Set (55°-95°F)	55°-95°F (13°-35°C)	2:1
Normal Set (80°-115°F)	80°-115°F (27°-46°C)	2:1

Property	ASTM C881 Spec.	SBA NS 40°- 60°F	SBA NS 55°- 95°F	SBA NS 80°-115°F
Pot life, 1 gal., min (ASTM C881)		~ 60	~ 60	~ 60
Compressive Strength, psi (ASTM D695)				
24 hr	2000	2000	2000	2000
48 hr	6000	6000	6000	6000
Open Time (ASTM C881) Contact Strength after open time, 2 day, psi	1 hour 1000	1 hour 1000	1 hour 1000	1 hour 1000
Bond strength, 2 day, psi (ASTM C882)	1000	1000	1000	1000
Heat deflection Temp., °F (ASTM D648)	≥120	≥120	≥120	≥120

Construction

How to Use

Surface Preparation	Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and any other contaminants.
Mixing	**Pre-mix each component**. Wear chemical resistant gloves and safety goggles. Mix all of Part 'A' with all of Part 'B'. Mix thoroughly for a minimum of 3 minutes with a low-speed (400-600 rpm) drill fitted with a mixing Sika paddle until a uniform gray color is achieved. Scrape down the sides of the mixing pail and ensure there are no streaks of unmixed epoxy before applying. Mix only that quantity which can be used within its pot life.
Application	Apply the neat mixed Sikadur 31, SBA to the concrete surface using a trowel, spatula or glove protected hand; work into surface, especially if it is damp. Spread to a thickness of 1/8" (3 mm) to one face or 1/16" (1.5 mm) on both faces, depending upon project requirements. Segments must be post-tensioned within the open time of the epoxy.
Removal	Ventilate area. Confine spill. Collect with absorbent material, flush area with water. Dispose of in accordance with current, applicable local, state and federal regulations. Uncured material can be removed with approved solvent. Follow solvent manufacturer's instructions for use and warnings. Cured material (when combined with component 'B') can only be removed mechanically.
Limitations	■ Do not thin Sikadur 31, SBA. Solvents will prevent proper cure. ■ Use correct temperature range material for prevailing conditions. ■ Use correct setting material (normal or slow) depending on method of erection. ■ Not for use as an adhesive for fresh, plastic portland cement concrete or mortar. ■ Lower temperatures will prolong cure time. Higher temperatures will rapidly accelerate cure time. ■ Use of product outside of designated temperature range is not recommended. ■ Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 31, SBA Slow-Set

Segmental Bridge Adhesive

High-modulus, high-strength, moisture tolerant, epoxy paste adhesive

Description	Sikadur® 31, SBA Slow-Set is a unique high-modulus 2-component, moisture-tolerant, solvent-free, epoxy-resin system available in three application temperature ranges. A unique high-modulus, structural adhesive for bonding hardened concrete to hardened concrete for segmental bridge construction. The mixed material has the consistency of paste and is a concrete gray color. It conforms to the current ASTM C-881, Type VII requirements, and ASBI guidelines.
Where to Use	▪ Structural bonding of post-tensioned precast concrete bridge segments. ▪ Sealing joints between concrete segments. ▪ Slow-set version for span-by-span erection. ▪ Supplied in three temperature grades to meet project requirements.
Advantages	▪ Moisture tolerant before, during and after cure. ▪ High-modulus, high-strength, structural paste adhesive. ▪ Range of curing times to meet assembly and strength gain requirements. ▪ Easy to apply, non-sag paste for vertical applications. ▪ Excellent adhesion to concrete, steel and most construction materials. ▪ Convenient easy to mix ratios. ▪ Color-coded components to ensure proper mixing control.
Coverage	Approximately 12 ft²/gal. or 36 ft²/3 gal. unit.
Packaging	3 gal. units.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 70°-75°F (21°-24°C) before using.
Color	Concrete gray.
Consistency	Non-sag paste.

Product Name	**Temp. Range**	**Mix Ratio, A:B by Volume**
Slow Set (40°-61°F)	40°-61°F (4°-16°C)	2:1
Slow Set (55°-75°F)	55°-75°F (13°-24°C)	2:1
Slow Set (70°-90°F)	70°-90°F (21°-32°C)	2:1

Property	ASTM C881 Spec.	SBA SS 40°- 61°F	SBA SS 55°-75°F	SBA SS 70°-90°F
Pot life, 1 gal., hrs (ASTM C881)	-	~ 2	~ 2	~ 2
Compressive Strength, psi (ASTM D695)				
36 hr	1000	1800	3000	6400
72 hr	2000	4500	6500	9000
Open Time (ASTM C881) Contact Strength after open time, 14 day, psi	8 hours 1000	8 hours 1500	8 hours 2000	8 hours 1500
Bond strength, 14 day, psi (ASTM C882)	1000	1800	2000	2300
Heat deflection Temp., °F (ASTM D648)	120	122	124	124

Construction

How to Use

Surface Preparation	Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and any other contaminants.
Mixing	**Pre-mix each component.** Wear chemical resistant gloves and safety goggles. Mix all of Part 'A' with all of Part 'B'. Mix thoroughly for a minimum of 3 minutes with a low-speed (400-600 rpm) drill fitted with a mixing Jiffy paddle until a uniform gray color is achieved. Scrape down the sides of the mixing pail and ensure there are no streaks of unmixed epoxy before applying. Mix only that quantity which can be used within its pot life.
Application	Apply the neat mixed Sikadur® 31, SBA Slow-Set to the concrete surface using a trowel, spatula, or glove protected hand; work into surface especially if it is damp. Spread to a thickness of 1/8" (3 mm) to one face or 1/16" (1.5 mm) on both faces, depending upon project requirements. Segments must be post-tensioned within the open time of the epoxy.
Limitations	■ Do not thin Sikadur® 31, SBA Slow-Set. Solvents will prevent proper cure. ■ Use correct temperature range material for prevailing conditions. ■ Use correct setting material (normal or slow) depending upon method of erection. ■ Not for use as an adhesive for fresh, plastic, portland cement concrete or mortar. ■ Lower temperatures will prolong cure time. Higher temperatures will rapidly accelerate cure time. ■ Use of product outside of designated temperature range is not recommended. ■ Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 21, Lo-Mod LV

Low-modulus, low-viscosity, epoxy resin binder

Description	Sikadur® 21, Lo-Mod LV, is a 2-component, 100% solids, moisture-tolerant, epoxy resin binder. It conforms to the current ASTM C-881 Type II, Grade 1, Class B & C and AASHTO M-235 specifications.
Where to Use	Use as a binder for epoxy mortar for patching and overlays.
Advantages	■ Tolerant to moisture both before and after cure. ■ Convenient easy mix ratio A:B = 1:1 by volume. ■ Excellent strength development. ■ Low viscosity gives you easy handling, high-yield epoxy mortar. ■ Material is USDA-certifiable for incidental food contact.
Coverage	**Prime Coat** - approximately 200-250 ft²/gal. **Mortar Binder** - 1 gal. of mixed Sikadur® 21, Lo-Mod LV with the addition of 6 parts by loose volume of an oven-dried sand, yields approximately 924 in³.
Packaging	4 gallon units. **Note: Part A of the Sikadur 22 Lo-Mod, Sikadur 22 Lo-Mod FS and Sikadur 21 Lo-Mod LV is a universal component of these three products.**

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-85°F (18°-29°C) before using.
Color	Clear, amber.
Mixing Ratio	Component 'A':Component 'B' = 1:1 by volume.
Viscosity	Approximately 1,000 cps.
Pot Life	Approximately 25 minutes. (200 gram mass)
Tack-Free Time	Approximately 3 hours; @ 90°F (32°C) Approximately 2 hours
Traffic Time	4-5 hours.

Tensile Properties (ASTM D-638)		**MORTAR 1:6**	**NEAT**
14 day	Tensile Strength	1,300 psi (8.9 MPa)	5,800 psi (40.0 MPa)
	Elongation at Break	0.2 %	5.5 %
	Modulus of Elasticity	6.6 x 10^5 psi (4,551 MPa)	1.43 x 10^5 psi (986 MPa)
Flexural Properties (ASTM D-790)		**MORTAR 1:6**	**NEAT**
14 day	Flexural Strength (Modulus of Rupture)	2,300 psi (15.8 MPa)	9,600 psi (66.2 MPa)
	Tangent Modulus of Elasticity in Bending	1.2 x 10^6 psi (8,274 MPa)	2.98 x 10^5 psi (2,055 MPa)
Shear Strength (ASTM D-732)		**MORTAR 1:6**	**NEAT**
14 day	Shear Strength	2,000 psi (13.7 MPa)	5,670 psi (39 MPa)
Water Absorption (ASTM D-570)			**NEAT**
7 day	(24 hr immersion)		0.26%

Bond Strength (ASTM C-882): Hardened concrete to hardened concrete

2 day	**(dry cure)**	Bond Strength	1,100 psi (7.5 MPa)
14 day	**(moist cure)**	Bond Strength	1,600 psi (11 MPa)

Abrasion (Taber Abrader)		**MORTAR 1:6**
14 day	Weight loss, 1,000 cycles (H-22 wheel; 1,000 gm. weight)	4.1 gm

Compressive Properties (ASTM C-579) Compressive Strength, psi (MPa)

	Mortar 1:6 (ASTM D-695)			
	40°F*(4°C)	**73°F*(23°C)**	**90°F* (32°C)**	**73°F (23°C) NEAT**
4 hour	-	-	500 (3.4)	-
8 hour	-	400 (2.7)	2,200 (15.1)	-
16 hour	20 (0.13)	2,100 (14.4)	4,600 (31.7)	116 (0.80)
1 day	40 (0.27)	2,600 (17.9)	4,700 (32.4)	1,900 (13.1)
3 day	1,400 (9.6)	4,900 (33.7)	5,500 (37.9)	6,700 (46.2)
7 day	3,500 (24.1)	5,400 (37.2)	6,200 (42.7)	9,000 (62.1)
14 day	4,500 (31.0)	6,000 (41.3)	6,200 (42.7)	9,100 (62.7)
28 day	4,600 (31.7)	6,100 (42.0)	6,200 (42.7)	9,200 (63.4)

Compressive Modulus	MORTAR	NEAT
28 day	7.6 x 10^5 psi (5,240 MPa)	2.58 x 10^5 psi (1,779 MPa)

* Material cured and tested at the temperatures indicated.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants.

Preparation Work:

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means.

Steel - Should be cleaned and prepared thoroughly by blast cleaning to white metal finish.

Mixing

Proportion equal parts by volume of Component 'A' and 'B' into clean pail. Mix thoroughly for 3 min. with Sika paddle on low-speed (400-600 rpm) drill until uniformly blended. Mix only that quantity that can be used within pot life.

To prepare epoxy mortar - Slowly add 6 parts by loose volume of oven-dried sand aggregate to 1 part of mixed Sikadur® 21, Lo-Mod LV. Mix until uniform in consistency.

Application

Epoxy Mortar - Prime prepared surface with mixed Sikadur® 21, Lo-Mod LV. Apply epoxy mortar by trowel or vibrating screed while primer is still tacky. Finish with finishing trowel.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C).
- Porous substrates must be tested for moisture-vapor transmission prior to application. (Ref. ASTM D-4263).
- Minimum age of concrete before application is 21-28 days depending upon curing and drying conditions.
- Do not apply to exterior slab on grade.
- Maximum application thickness on exterior substrates exposed to thermal change is 1/2 in (13 mm).
- Do not dilute. Addition of solvents will prevent proper cure.
- Use oven-dried aggregates only.
- Material is a vapor barrier after cure.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Fax: 514-694-2792

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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 22, Lo-Mod

Low-modulus, medium-viscosity, epoxy resin binder

Description	Sikadur® 22, Lo-Mod is a 2-component, 100% solids, moisture-tolerant, epoxy resin binder. It conforms to the current ASTM C-881, Type III, Grade-2, Class-C and AASHTO M-235 specifications.
Where to Use	Use neat as the binder resin for a skid-resistant broadcast overlay. Use also as the binder resin for epoxy mortar and concrete for patching and overlays.
Advantages	■ Tolerant to moisture both before and after cure. ■ Convenient easy mix ratio A:B = 1:1 by volume. ■ Excellent strength development. ■ Leveling viscosity for easy, efficient application of a broadcast overlay. ■ Material is USDA-certifiable.
Coverage	1 gal. yields 231 in^3 **Mortar Binder** - 1 gal. of mixed Sikadur® 22 Lo-Mod with the addition of 5 gal. by loose volume of an oven dried sand, yields approximately 808 in^3 of epoxy mortar.
Packaging	4 gallon units / 110 gallon unit / 660 gallon totes. **Note: Part A of the Sikadur 22 Lo-Mod, Sikadur 22 Lo-Mod FS and Sikadur 21 Lo-Mod LV is a universal component of these three products.**

Typical Data *[Material and curing conditions @ 73°F (23°C) and 50% R.H.]*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.		
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-85°F (18°-29°C) before using.		
Color	Clear to light amber.		
Mixing Ratio	Component 'A':Component 'B' = 1:1 by volume.		
Viscosity	Approximately 2,000 cps.		
Pot Life	Approximately 30 minutes (200 gram mass).		
Tack-Free Time	**40°F (4°C)** 24 hours	**73°F (23°C)** 5 hours	**90°F (32°C)** 2.5 hours
Traffic Time	6-8 hours		

Tensile Properties (ASTM D-638)		**Mortar 1:3**	**Neat**
14 day	Tensile Strength	2,200 psi (15.2 MPa)	5,700 psi (39.3 MPa)
	Elongation at Break	-	>30 %
	Modulus of Elasticity	4.78×10^5 psi (3,240 MPa)	1.9×10^5 psi (1,310 MPa)
	(Neat tested @ 0.5 in/min.)		
Tensile Strength (ASTM C307)		**Mortar 1:3**	**Neat**
14 day		1400 psi (9.7MPa)	2800 psi (19.3 MPa)
Shear Strength (ASTM D-732)		**Mortar 1:3**	**Neat**
7 day	Shear Strength	3,000 psi (22.7 MPa)	5,700 psi (37.2 MPa)
Water Absorption (ASTM D-570)			**Neat**
7 day	(24 hour immersion)		0.26 %
Direct Tensile (ASTM C-1503; ACI 503):		**Mortar 1:3**	**Neat**
7 day		510 psi concrete fail	570 psi concrete fail
Abrasion (Taber Abrader)		**Mortar 1:3**	**Neat**
14 day	Weight loss, 1,000 cycles	1.8 gm	.030 gm
	(H-22 wheel; 1,000 gm weight)		

Construction

Compressive Properties (ASTM D-695) Mortar 1:3

Compressive Strength, psi (MPa)

	40°F* (4°C)	73°F * (23°C)	90°F* (32°C)	73°F* (23°C) NEAT
8 hour	-	1,900 (13.1)	2,800 (19.3)	-
16 hour	-	4,300 (29.6)	5,000 (34.5)	-
1 day	2,200 (15.2)	5,200 (35.9)	5,200 (35.9)	480 (3.3)
3 day	6,500 (44.8)	6,800 (46.9)	5,900 (40.7)	2,200 (15.2)
7 day	7,900 (59.5)	7,200 (49.6)	6,100 (42.1)	3,400 (23.4)
14 day	8,800 (60.7)	7,600 (52.4)	6,100 (42.1)	3,400 (23.4)
28 day	9,500 (65.5)	7,900 (54.5)	6,100 (42.1)	3,400 (23.4)

Compressive Modulus

28 day 6.6 x 10^4 psi (455 MPa)

* Material cured and tested at the temperatures indicated.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants.

Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface (CSP 3-4 as per ICRI) by blast cleaning or equivalent mechanical means.

Steel - Should be cleaned and prepared thoroughly by blast cleaning to white metal finish.

Mixing

Proportion equal parts by volume of Component 'A' and 'B' into clean pail. Mix thoroughly for 3 min. with Sika paddle on low-speed (400-600 rpm) drill until uniformly blended. Mix only that quantity that can be used within pot life.

To prepare epoxy mortar - Slowly add 5 parts by loose volume of oven-dried sand to 1 part of mixed Sikadur® 22 Lo-Mod until uniform in consistency.

Application

Broadcast Overlay - Prime the prepared substrate with Sikadur® 22 Lo-Mod. While primer is still tacky, spread mixed Sikadur® 22 Lo-Mod with a 3/16 in. notched squeegee. When material levels, broadcast the oven-dried aggregate slowly allowing it to settle in the epoxy binder. Ultimately the broadcast aggregate should be applied to excess at a rate of 2 lbs./ft² Remove excess broadcast aggregate after epoxy has set. Priming is an optional step in the broadcast overlay applications.

Epoxy Mortar - Prime prepared substrate with mixed Sikadur® 22 Lo-Mod or Sikadur® 21 Lo Mod LV. While primer is still tacky, apply epoxy mortar by trowel or vibrating screed. Finish with finishing trowel. Priming is mandatory when using the 22 Lo Mod as an epoxy mortar.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C).
- For on grade, split-slab and unvented metal pan deck, please consult Sika Technical Service regarding moisture limitations.
- Minimum age of concrete before application is 21-28 days depending upon curing and drying conditions.
- Do not use on exterior slab on grade.
- Maximum thickness 1/2 in. (13 mm) exterior exposed to thermal change.
- Do not dilute. Addition of solvents will prevent proper cure.
- Use oven-dried aggregates only.
- Material is a vapor barrier after cure.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® Epoxy Broadcast Overlay System

Description	Sikadur Epoxy Broadcast Overlay System is a 2-component, moisture-tolerant, 100% solids epoxy resin binder for a traffic-bearing, skid-resistant, seamless, protective, overlay system for application by the broadcast method. The Sikadur Epoxy Broadcast Overlay System uses Sikadur 22 Lo-Mod as the binder coat. Sikadur Epoxy Broadcast overlay System can be used with and without a primer as needed. The system conforms to the current ASTM C-881 and AASHTO M-235 specifications.
Where to Use	Use for exterior, above grade, i.e., bridge decks, parking structures, ramps and interior applications requiring a protective, abrasion- and skid-resistant overlay with long-term durability and performance.

Typical Data *[Material and curing conditions @ 73°F (23°C) and 50% R.H.]*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4-35°C). **Condition material to 65°-85°F (18-29°C) before using.**
Color	Clear, light amber.
Mixing Ratio	Component 'A' : Component 'B' 1:1 by volume.
Viscosity (Mixed)	Approximately 2,500 cps.
Pot Life	Approximately 30 minutes (200 gram mass)
Tack-Free Time	**40°F (4°C):** 21 hrs. **73°F (23°C):** 4 hrs. **90°F (32°C):** 2 hrs.
Open Time	Light foot traffic: 4-6 hrs. Rubber-wheel traffic: 8-10 hrs.

		Broadcast 1:2.25
Tensile Properties (ASTM D-638)		
14 day	Tensile Strength	2,200 psi (15.2 MPa)
	Elongation at Break	1.1%
	Modulus of Elasticity	4.7×10^5 psi (3,240 MPa)
Flexural Properties (ASTM D-790)		
14 day	Flexural Strength (Modulus of Rupture)	4,300 psi (29.7 MPa)
	Tangent Modulus of Elasticity in Bending	9.0×10^5 psi (6,205 MPa)
Shear Strength (ASTM D-732)14 day		3,300 psi (22.7 MPa)
Bond Strength (ASTM C-882): Hardened Concrete to Hardened Concrete		
2 day (dry cure)	Bond Strength	1,100 psi (7.5 MPa)
14 day (moist cure)	Bond Strength	1,600 psi (11 MPa)

Abrasion (Taber Abrader) (H-22 wheel; 1,000 gm weight)
14 day Weight loss, 1,000 cycles 1.61 gm

Compressive Properties (ASTM D-695)
Compressive Strength, psi

		Broadcast (1:2.25)	
	40°F* (4°C)	**73°F* (23°C)**	**90°F* (32°C)**
8 hour	-	70 (0.48)	3,500 (24.1)
16 hour	-	1,850 (12.8)	4.400 (30.3)
1 day	60 (0.4)	3,150 (21.7)	4,600 (31.7)
3 day	1,700 (11.7)	6,900 (47.6)	5,000 (34.5)
7 day	6,700 (46.2)	7,500 (51.7)	5,400 (37.2)
14 day	8,400 (58.0)	7,800 (53.8)	5,900 (40.7)
28 day	8,450 (58.3)	7,850 (54.1)	6,300 (43.4)

Compressive Modulus **7 day:** 1.25×10^5 psi (862 MPa) **28 day:** 1.66×10^5 psi (1,145 MPa)

*Material cured and tested at the temperatures indicated.

Construction

Advantages

- System is moisture-tolerant before, during, and after cure.
- Excellent adhesive properties to most substrates.
- Convenient, easy mix ratio A:B = 1:1 by volume.
- Superior, long-term abrasion resistance and durability even at elevated temperatures.
- Easy care, skid-resistant overlay for bridge decks, parking structures, ramps, loading docks, industrial floors, etc.

Coverage

Prime coat: approximately 200-250 sq. ft./gal. **Binder coat:** approximately 32 sq. ft./gal. (50 mils). **Broadcast aggregate:** 2 lb./sq. ft. to excess. **Seal coat:** approximately 150-200 sq. ft. /gal.

Packaging

Sikadur 22 Lo-Mod 4-gal. units.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles and disintegrated materials.

Preparation Work: Concrete - Sandblast or use other approved mechanical means.

Steel - Should be cleaned and prepared thoroughly by blast cleaning.

Mixing

Pre-mix each component. Proportion equal parts by volume of Components 'A' and 'B' into a clean mixing container. Mix with a low-speed (400-600 rpm) drill and Sika paddle for 3 minutes, until uniform. Mix only that quantity that can be used within its pot life.

Application

Priming: Use of primer is optional but highly recommended. Primer should be used where sealing of non-moving existing cracks is desired. Sikadur 21 Lo-Mod LV or Sikadur 22 Lo-Mod can be used as primer coats. Prime the prepared substrate with neat Sikadur 21, Lo-Mod LV or Sikadur 22, Lo-Mod using a roller or flat squeegee. Coverage should be approximately 200-250 sq. ft./gal. While the primer is still tacky, apply the binder material with a 3/16 in. notched-rubber squeegee. Allow the binder to self-level.

Cracks: Static (non-moving) cracks ≤1/8 in., gravity feed with an appropriate sealer/healer material. Dynamic cracks ≥1/8 in. should be treated as joints and sealed with an appropriate joint sealer.

Broadcast: Slowly broadcast an oven-dried sand so that the sand falls vertically into the binder (at a rate of 2 lbs./sf). Other sources of aggregate may be used but must conform to the minimum gradation standard. Continue to broadcast lightly making several passes, allowing the binder to bleed through the sand before making next pass. Cover completely with sand before binder becomes tack-free.

Typical gradation:

Mesh	16	20	30	40	50	70
%	0-5	35-50	40-55	3.0-8.0	≥1	≥.75

Hardness: Mohs scale, min. ≥ 6

After broadcast system has reached sufficient cure as not to be damaged, remove excess sand (this will be dependent on material, air and substrate temperatures). After all excess sand has been removed apply a seal coat of neat Sikadur 22, Lo Mod**** over the entire area. Care should be exercised to eliminate voids or bare spots. Sealer coat of Sikadur 22, Lo Mod may be applied at recommended coverage of 150-200 sq. ft./gal.) or to desired finish. Unless otherwise specified, a seal coat is optional, especially on surfaces where a reduction in skid resistance is not optimal (i.e. bridge decks, ramps).

****Aliphatic urethanes or other compatible sealer coats may be used. Please contact Sika's Technical Service Department before use.

When applying multiple courses: The subsequent binder coat is applied to the preceding course after it has reached sufficient cure, so as not to be damaged and the excess broadcast aggregate has been removed. Note that the consumption and coverage rate of the additional binder coat will vary depending upon the type, size and gradation of the aggregate being used. A reduction factor of approximately 10-20% is customary.

Limitations

- To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperature.
- For on grade, split-slab and unvented metal pan deck, please consult Sika Technical Service regarding moisture limitations.
- Minimum substrate and ambient temperature 40°F (4°C).
- Do not store materials outdoors exposed to sunlight for prolonged periods.
- Use properly graded, oven dried aggregates only.
- Do not apply over wet, glistening surface.
- Material is a vapor barrier after cure.
- Minimum age of concrete prior to application is 21-28 days, depending on curing and drying conditions.
- Do not apply to exterior, on-grade substrates, unvented metal pan decks, split/sandwich slabs, or buried membrane conditions.
- Use oven-dried aggregate only.
- Do not thin with solvents.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.
- Any repairs required to achieve a level surface must be performed prior to application (consult a

Construction

Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.

- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is imminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.
- When applying over existing coatings, compatibility and adhesion testing is recommended.
- Opening prior to final cure may result in loss of aggregate, or permanent staining and subsequent premature failure.
- Vehicle fluids and some high performance tires can stain the coating. Fluid spills should be removed promptly as the coating can in some cases be damaged from prolonged exposure.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 22 Lo-Mod FS

Low-modulus, fast setting, medium-viscosity, epoxy resin binder

Description	Sikadur® 22, Lo-Mod FS is a 2-component, 100% solids, moisture-tolerant, fast setting epoxy resin binder. It conforms to the current ASTM C-881 and AASHTO M-235 specifications.
Where to Use	Use neat as the binder resin for a skid-resistant broadcast overlay. Use also as the binder resin for epoxy mortar and concrete for patching and overlays.
Advantages	■ Fast Setting for quick turn around. ■ Meets 3 hr/1000 psi requirement when mixed as an epoxy mortar. ■ Tolerant to moisture both before and after cure. ■ Convenient easy mix ratio A:B = 1:1 by volume. ■ Excellent strength development. ■ Leveling viscosity for easy, efficient application of a broadcast overlay. ■ Successfully used in HFST applications. Refer to local DOT specs. for product acceptance.
Coverage	1 gal. yields 231 in^3 **Mortar Binder** - 1 gal. of mixed Sikadur® 22 Lo-Mod FS with the addition of 5 gal. by loose volume of an oven dried sand, yields approximately 808 cu. in. of epoxy mortar.
Cure Mechanism	Chemical.
Packaging	4 gallon units / 110 gallon unit / 660 gallon totes. **Note: Part A of the Sikadur 22 Lo-Mod, Sikadur 22 Lo-Mod FS and Sikadur 21 Lo-Mod LV is a universal component of these three products.**

How to Use

Typical Data *[Material and curing conditions @ 73°F (23°C) and 50% R.H.]*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.		
Storage Conditions	Store dry at 40°-95°F (4°-35°C).		
Condition material	65°-85°F (18°-29°C) before using.		
Color	Clear to light amber.		
Mixing Ratio	Component 'A':Component 'B' = 1:1 by volume.		
VOC:	<20 g/L		
Viscosity	Approximately 2,000 cps.		
Pot Life	Approximately 15-20 minutes (60 gram mass; ASTM C881).		
Tack-Free Time	**40°F (4°C)** 150 min.	**73°F (23°C)** 85 min.	**90°F (32°C)** 75 min.
Traffic Time	8 hours	3 hours	2 hours
Tensile Properties (ASTM D-638)	**Mortar 1:3**	**Neat**	
7 day Tensile Strength, psi	1200	2650	
Elongation at Break	40%	55%	
Shear Strength (ASTM D-732)			
7 day Shear Strength, psi	2600	3430	
Water Absorption (ASTM D-570)		<0.20%	
7 day (24 hour immersion)			
Abrasion (Taber Abrader)			
14 day Weight loss, 1,000 cycles, grams (H-22 wheel; 1,000 gm weight for mortar/ C-17 wheel, 1,000 gm wt for neat)	2.0	0.030	
Hardness (ASTM D-2240: Shore D)		72	
Rapid Chloride Permeability (AASHTO T-277)		0 coulombs	
Direct Pull Off Bond Test (ASTM C1583; ACI 503R)			
1 day		>550 psi (concrete failure)	
7 day		>570 psi (concrete failure)	

Construction

Thermal Compatibility (ASTM C884)		Pass	
Compressive Strength (ASTM C-579), psi			
	40°F* (4°C)	**73°F * (23°C)**	**90°F* (32°C)**
3 hour	-	1750 psi	3600 psi
8 hour	2000 psi	4400 psi	6400 psi
1 day	4500 psi	6500 psi	8000 psi
3 day	5500 psi	7500 psi	8500 psi
7 day	8500 psi	8500 psi	9000 psi
14 day	9000 psi	9000 psi	9000 psi
28 day	9000 psi	9000 psi	9000 psi
Compressive Modulus			
7 day		40,000 psi	
28 day		40,000 psi	

*** Material cured and tested at the temperatures indicated.**

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants.

Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means.

Steel - Should be cleaned and prepared thoroughly by blast cleaning to white metal finish.

Mixing

Mixing Pre-mix each component. Proportion equal parts by volume of Component 'A' and 'B' into clean pail. Mix thoroughly for 3 min. with Sika paddle on low-speed (400-600 rpm) drill until uniformly blended. Mix only that quantity that can be used within pot life.

To prepare epoxy mortar - Slowly add 5 parts by loose volume of oven-dried sand to 1 part mixed resin

Application

Broadcast Overlay - Prime the prepared substrate with Sikadur 22 Lo-Mod FS. While primer is still tacky, spread mixed Sikadur 22 Lo-Mod FS with a 3/16 in. notched squeegee. When material levels, broadcast the oven-dried aggregate slowly allowing it to settle in the epoxy binder. Ultimately the broadcast aggregate should be applied to excess at a rate of 2 lbs./sq. ft.

Remove excess broadcast aggregate after epoxy has set. Priming is an optional step in the broadcast overlay applications.

Epoxy Mortar - Prime prepared substrate with mixed Sikadur 22 Lo-Mod FS. While primer is still tacky, apply epoxy mortar by trowel or vibrating screed. Finish with finishing trowel. Priming is mandatory when using the 22 Lo Mod FS as an epoxy mortar.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C).
- Minimum age of concrete before application is 21-28 days depending upon curing and drying conditions.
- For on grade, split-slab and unvented metal pan deck, please consult Sika Technical Service regarding moisture limitations.
- Maximum thickness 1/2 in. (13 mm) exterior exposed to thermal change.
- Do not dilute. Addition of solvents will prevent proper cure.
- Use oven-dried aggregates only.
- Material is a vapor barrier after cure.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.
- For HFST applications, system and application details are governed by local DOT & AASHTO specification.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

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601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 25 Lo-Mod

Description	Sikadur 25 Lo-Mod is a 2-component, 100% solids, moisture-tolerant, low viscosity, epoxy-urethane resin binder. It conforms to the current ASTM C-881, Type III, Grade 1, Class-C specifications.
Where to Use	Use neat as the binder resin for a skid-resistant broadcast overlay or high friction surface on bridges or roadways. Use also as the binder resin for epoxy mortar and concrete for patching and overlays.
Advantages	■ Tolerant to moisture both before and after cure. ■ Convenient easy mix ratio A:B = 1:1 by volume. ■ Excellent strength development. ■ Leveling viscosity for easy, efficient application of a broadcast overlay. ■ Material is USDA-certifiable.
Coverage	1 gal. yields 231 cu. in. Mortar Binder - 1 gal. of mixed Sikadur 25 Lo-Mod with the addition of 5 gal. by loose volume of an ovendried sand, yields approximately 808 cu. in. of epoxy mortar.
Packaging	4 gallon units

Typical Data [Material and curing conditions @ 73°F (23°C) and 50% R.H.]

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.			
Storage Conditions	Store dry at 40°-95°F (4°-35°C).			
Condition Material	65°- 85°F (18°-29°C) before using.			
Color	Clear to light amber.			
Mixing Ratio	Component 'A':Component 'B' = 1:1 by volume.			
VOC	<50gm/L			
Viscosity	Approximately 1,500 cps.			
Pot Life	Approximately 15-20 minutes (60 gram mass;ASTM C881).			
Tack-Free Time	**40°F (4°C)** 8 hours	**73°F (23°C)** 2.5-3 hours	**90°F (32°C)** 2 hours	
Traffic Time	24 hours	3.5 hours	2.5 hours	
Tensile Properties (ASTM D-638) **3 day**	Tensile Strength Elongation at Break			**Neat** 3000 psi (20.7MPa) >30%
Water Absorption (ASTM D-570) **7 day**	(24 hour immersion)			**Neat** <0.20 %
Abrasion (Taber Abrader) **14 day**	Weight loss, 1,000 cycles	**Mortar 1:3** 2.0 gm H-22 wheel; 1,000 gm weight		**Neat** .030 gm C-17 wheel; 1,000 gm weight
Hardness (ASTM D-2240)				**Neat** 72
Chloride Permeability		**0 coulombs**		
Direct Pull Off Bond Test (ASTM C1583; ACI 503R) **1 Day**		**Mortar 1:3** >550 psi (concrete failure)		
Thermal Compatibility (ASTM C884)				Pass

Compressive Properties (ASTM D-695)	Mortar 1:3		
Compressive Strength, psi (MPa)			
	40°F* (4°C)	**73°F * (23°C)**	**90°F* (32°C)**
3 hour		800	3,600
8 hour	2,000	2,000	6,400
1 day	4,500	5,000	8,000
3 day	5,500	7,500	8,500
7 day	8,500	8,500	9,000
14 day	9,000	9,000	9,000
28 day	9,000	9,000	9,000
Compressive Modulus			
7 day	40,000 psi		
28 day	40,000 psi		

* Material cured and tested at the temperatures indicated.

How to Use

Surface Preparation

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants.
Preparation Work: Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blastcleaning or equivalent mechanical means. **Steel -** Should be cleaned and prepared thoroughly by blastcleaning or equivalent mechanical means to white metal finish.

Mixing

Pre-mix each component. Take care as premixing of unfilled resins may entrain excessive air. Proportion equal parts by volume of Component 'A' and 'B' into clean pail. Mix thoroughly for 3 min. with Sika paddle on low-speed (400-600 rpm) drill until uniformly blended. Mix only that quantity that can be used within pot life. **To prepare epoxy mortar -** Slowly add 5 parts by loose volume of oven-dried sand to 1 part of mixed Sikadur 22 Lo-Mod until uniform in consistency.

Application

Broadcast Overlay- Prime the prepared substrate with Sikadur 25 Lo-Mod. While primer is still tacky, spread mixed Sikadur 25 Lo-Mod with a 3/16 in. notched squeegee. When material levels, broadcast the oven-dried aggregate slowly allowing it to settle in the epoxy binder. Ultimately the broadcast aggregate should be applied to excess at a rate of 2 lbs./sq. ft. Remove excess broadcast aggregate after epoxy has set. Priming is an optional step in the broadcast overlay applications.

Epoxy Mortar - Prime prepared substrate with mixed Sikadur 25 Lo-Mod. While primer is still tacky, apply epoxy mortar by trowel or vibrating screed. Finish with finishing trowel. Priming is mandatory when using the Sikadur 25 Lo Mod as an epoxy mortar.

Limitations

- Minimum substrate and ambient temperature 40°F (4°C)
- For on grade, split-slab and unvented metal pan deck, please consult Sika Technical Service regarding moisture limitations.
- Minimum age of concrete before application is 21-28 days depending upon curing and drying conditions.
- Do not use on exterior slab on grade.
- Maximum thickness 1/2 in. (13 mm) exterior exposed to thermal change.
- Do not dilute. Addition of solvents will prevent proper cure.
- Use oven-dried aggregates only.
- Material is a vapor barrier after cure.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® Balcony System

Description

Sikadur Balcony System is a 2-component, moisture-tolerant, solvent free epoxy resin binder for slip resistant, seamless, protective overlay system, applied by the broadcast method. The Sikadur Balcony System uses Sikadur 21, Lo-Mod LV as the primer, Sikadur 22, Lo-Mod as the binder coat, and Sikalastic 748 PA as the sealer coat. The Sikadur Balcony System can be used with or without primer as needed. The Sikadur Balcony System conforms to the current ASTM C-881 and AASHTO M-235 specifications.

Typical Data *[Material and curing conditions @ 73°F (23°C) and 100% R.H.]*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 2 years in original, unopened containers.

Storage Conditions Store dry at 40°-95°F (4°-35°C). **Condition material to 65°-85°F (18°-2°9C) before using.**

Color Depends on aggregate selection.

Mixing Ratios Component 'A': Component 'B' 1:1 by volume for Sikadur 21, Lo-Mod LV and Sikadur 22, Lo-Mod; Sikalastic 748 PA.

	Sikadur 21, Lo-Mod LV	Sikadur 22, Lo-Mod
Viscosity (Mixed)	1,000 cps	2,500 cps
Pot Life (200 g mass)	25 min.	30 min.
Tack-Free Time	3 hrs.	4 hrs.

Open Time Light foot traffic: 24 hrs. after final sealer coat.

Compressive properties of Sikadur 22 (ASTM D-695)

Compressive Strength, psi (MPa)	**Broadcast (1:2.25)**		
	40°F* (4°C)	**73°F* (23°C)**	**90°F* (32°C)**
8 hour	-	70 (0.48)	3,500 (24.1)
16 hour	-	1,850 (12.8)	4,400 (30.3)
1 day	60 (0.41)	3,150 (21.7)	4,600 (31.7)
3 day	1,700 (11.7)	6,900 (47.6)	5,000 (34.5)
7 day	6,700 (46.2)	7,500 (51.7)	5,400 (37.2)
14 day	8,400 (58.0)	7,800 (53.8)	5,900 (40.7)
28 day	8,450 (58.3)	7,850 (54.1)	6,300 (43.4)

*Material cured and tested at the temperatures indicated.

Compressive Modulus **7 day:** 1.25 x 10^5 psi (862 MPa) **28 day:** 1.66 x 10^5 psi (1,145 MPa)

Tensile Properties of Sikadur 22, Lo-Mod (ASTM D-638)

14 day

Tensile Strength	2,200 psi (15.2 MPa)
Elongation at Break	1.1%
Modulus of Elasticity	4.7 x 10^5 psi (3,240 MPa)

Flexural Properties of Sikadur 22, Lo-Mod (ASTM D-790)

14 day	Flexural Strength (Modulus of Rupture)	4,300 psi (29.7 MPa)
	Tangent Modulus of Elasticity in Bending	9.0 x 10^5 psi (6,205 MPa)

Shear Strength (ASTM D-732) 14 day 3,300 psi (22.8 MPa)

Bond Strength (ASTM C-882) Hardened Concrete to Hardened Concrete

2 day (dry cure)	1,100 psi (7.5 MPa)
14 day (moist cure)	1,600 psi (11.0 MPa)

Abrasion (Taber Abrader) (H-22 wheel; 1,000 gm weight)

14 day Weight loss, 1,000 cycles 1.61 gm

Water Absorption Neat (ASTM D-570)

14 day (24 hour immersion) 0.23%

Construction

Where to Use

Use for interior or exterior, above grade application requiring a protective, decorative, abrasion- and slip-resistant overlay with long-term durability and performance.

Advantages

- System is moisture tolerant before, during and after cure.
- Excellent adhesion to most substrates.
- Convenient, easy mix A:B 1:1 ratio by volume for Sikadur 21 Lo-Mod LV and Sikadur 22 Lo-Mod.
- Superior, long-term abrasion resistance and durability.
- Easy care, slip-resistant overlay for balconies.
- Can be combined with solid or blended colored aggregates for large color selection.

Coverage

Prime coat: 200-250 sq. ft./gal. **Binder coat:** 80-100 sq. ft./gal. (15-20 mils).
Broadcast aggregate: 0.5 lbs./sq. ft. **Sealer coat:** 65-75 sq. ft./gal. Allowance must be made for surface profile, unavoidable variations in application thickness, loss and waste.

Packaging

Sikadur 21, Lo-Mod LV - 4 gal. units. Sikadur 22, Lo-Mod - 4 gal. units. Sikalastic 748 PA - 4 gal. units.

How to Use

Surface Preparation

Surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles and disintegrated materials or any bond breaking materials.

Preparation Work: Concrete-Should be cleaned and prepared to achieve a laitance and contaminant-free, open textured surface by blastcleaning or equivalent mechanical means. All projections, rough spots, etc. should repaired to achieve a uniform surface prior to the application.
Surface should be level for best cosmetic finish.

Mixing

Sikadur 21 Lo-Mod LV & Sikadur 22 Lo-Mod: Pre-mix each component. Proportion equal parts by volume of Component 'A' and 'B' into a clean mixing container. Mix with a low-speed (400-600 rpm) drill and Sika paddle for 3 minutes, until uniform. Mix only that quantity that can be used within its pot life. Do not whip in air during mixing.

Application

Priming: Use of primer is optional but highly recommended. Primer should be used where sealing of non-moving existing cracks is desired.

Prime the prepared substrate with neat Sikadur 21, Lo-Mod LV, using a roller. Coverage should be 200-250 sq. ft./gal. While the primer is still tacky, apply the binder material with a roller to approximately 80-100 sq. ft./gal. (15-20 mils) or to desired thickness.

Cracks: Static (non-moving) cracks ≤1/8 in. wide gravity feed with an appropriate sealer healer material. Dynamic cracks ≥1/8 in. should be treated as joints and sealed with appropriate joint sealant.

Broadcast: Slowly broadcast oven-dried colored aggregate* so that the sand falls vertically and uniformly into the binder coat (at a rate of 0.5 lbs./sf). **(Sources of aggregate must conform to Sika requirements for broadcast aggregate; please contact our Technical Service Department.)** (Broadcast Quartz Blends from Sika can also be considered.) Continue to broadcast lightly making several passes, allowing the binder to bleed through the sand before making next pass. Cover completely with sand before binder becomes tack-free.

*Typical Gradation

Mesh	20	30	40	50	70
%	9	12.4	54	22	1.9

After broadcast system has reached sufficient cure as not to be damaged (this will be dependent on material, air, and substrate temperatures), remove excess sand. **Seal Coat:** After **all** excess sand has been removed apply a roller seal coat of Sikalastic 748 PA** over the entire area. Care should be exercised to eliminate voids or bare spots. Sealer coat of Sikalastic 748 PA may be applied at recommended coverage (75-125 sq. ft./gal.) or to desired finish; remove all excess with a clean, dry roller. Heavy seal coat will produce smoother but less slip resistant system. The type and size of the aggregate will influence the coverage.

**Aliphatic urethanes or other compatible sealer coats may be used. Please contact Sika's Technical Service Department before use. Refer to the current Technical Data Sheet for Sikalastic 748 PA for additional application information.

Removal

Collect with absorbent material; flush area with water. Dispose of in accordance with current, applicable local, state and federal regulations. Uncured material can be removed with approved solvent. Cured material can only be removed mechanically.

Limitations

- Minimum substrate temperature for application is 40°F (4°C) and rising.
- Do not apply over wet or damp surfaces.
- Material is a vapor barrier after cure.
- Do not apply to porous surfaces exhibiting moisture-vapor transmission during the application. Consult Technical Service.
- Minimum age of concrete prior to application is 21-28 days, depending on curing and drying conditions.
- Refer to the current individual product Technical Data Sheets for Sikadur 21, Lo-Mod LV, Sikadur 22 Lo-Mod and Sikalastic 748 PA for application and use warnings.
- Do not apply to exterior, on-grade substrates.
- Use oven-dried, broadcast aggregate only.
- Do not thin with solvents.
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

Construction

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard® Duochem 7500

Chemical Resistant, Epoxy-Novolac Floor Coating, Topping or Containment Lining

Description

Sikagard® Duochem 7500 is a two-component, high solids, epoxy-novolac coating/topping/lining which possesses outstanding resistance to strong inorganic acids, concentrated sulfuric acid and oxygenated solvents.

Where to Use

- As a smooth, chemical-resistant lining on concrete or steel substrates subject to concentrated acids.
- Protection of containment tanks, machine bases, plant floors and walls exposed to aggressive chemicals.
- As a broadcast, build-up system to provide a slip resistant and durable wearing surface in pedestrian areas where aggressive chemicals are present.

Advantages

- The material is convenient to proportion, 2:1 by volume, Component A to Component B ratio.
- Sikagard® Duochem 7500 may be applied as a smooth system or as a broadcast build-up system incorporating silica sand.
- Sikagard® Duochem 7500 provides a high build and effective barrier of protection for concrete and steel against a wide range of aggressive substances.
- Sikagard® Duochem 7500 exhibits excellent Adhesion, Hardness, Abrasion Resistance, and Compressive Strength values.
- The systems provide excellent protection for steel and concrete against a wide range of chemicals. See product specific Chemical Resistance Guide located on usa.sika.com or by contacting Sika Technical Services.

Packaging

3 gal. (11.34 l) unit

Coverage

106 ft²/gal. (2.6 m²/l) for neat application; 80 ft²/gal. (2 m²/l) for broadcast application

Typical Data (Material and curing conditions @ 75°F (24°C) and 50% RH)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, \ APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Packaging	3 US gal. (11.34 L) units		
Color	RAL 7046 Tele Grey, RAL 3009 Oxide Red, Clear		
Yield Concrete Substrates Smooth Coating			
Primer Coat	Sikadur® WDE Primer	160 ft²/US gal. (4 m²/L)	10 mils w.f.t.
1st Coat	Sikagard® Duochem 7500	106 ft²/US gal. (2.6 m²/L)	15 mils w.f.t.
2nd Coat	Sikagard® Duochem 7500	106 ft²/US gal. (2.6 m²/L)	15 mils w.f.t.
Maximum build per coat for Sikagard® Duochem 7500 on vertical surfaces:			
7 mils w.f.t. Three coats may be required for the smooth coating to be produced vertically.			
Broadcast Build-Up System			
Primer Coat	Sikadur® WDE Primer	160 ft²/US gal. (4 m²/L)	10 mils w.f.t.
Broadcast Coat	Sikagard® Duochem 7500	80 ft²/US gal. (2 m²/L)	20 mils w.f.t.
Aggregate	Oven dried silica sand #32 mesh (spherical) 0.3 - 0.85 mm or #16 mesh (angular) 0.6 - 2.0 mm	0.6 - 1 lb/ft² (3 - 5 kg/m²)	
Top Coat	Sikagard® Duochem Colored or Clear	7500 80 - 106 ft²/US gal. (2 - 2.6 m²/L) 15 - 20 mils w.f.t.	
Steel Substrates Smooth Coating			
1st Coat	Sikagard® Duochem 7500	106 ft²/US gal. (2.6 m²/L)	15 mils w.f.t.
2nd Coat	Sikagard® Duochem 7500 Colored or Clear	106 ft²/US gal. (2.6 m²/L) 15 mils w.f.t.	
Maximum build per coat for Sikagard® Duochem 7500 on vertical surfaces:			
7 mils. Three coats may be required for the smooth coating finish to be produced vertically.			

Construction

Broadcast Build-Up System

Primer Coat	Sikagard® Duochem 7500	106 ft²/US gal. (2.6 m²/L)	15 mils w.f.t.
Broadcast Coat	Sikagard® Duochem 7500	80 ft²/US gal. (2 m²/L)	20 mils w.f.t.
Aggregate	Oven dried silica sand	0.6 - 1 lb/ft² (3 - 5 kg/m²)	
	#32 mesh (spherical)	0.3 - 0.85 mm	
	or #16 mesh (angular)	0.6 - 2.0 mm	
Top Coat	Sikagard® Duochem 7500	80 - 106 ft²/US gal. (2 - 2.6 m²/L)	
	Colored or Clear	15 - 20 mils w.f.t.	

For Optimum Chemical Resistance for all Systems

Optional 3rd /	Sikagard® Duochem 7500	106 ft²/US gal. (2.6 m²/L)
Barrier Coat	(Clear)	15 mils w.f.t

Actual coverage rates and material consumption will depend upon porosity and profile of substrates. Allowance must be also made for variation in film thickness or number of coats required to achieve opacity with light (ie white) or bright colors (ie reds and yellows) and dark substrates. Test sections are recommended to establish correct coverage.

Shelf Life	2 years when stored in original, unopened packaging.	
Store	dry at 41 - 90°F (5 - 32°C).	
Condition	product between 65 - 86°F (18 - 30°C) before use.	
Mix Ratio	A:B= 2:1 by volume	
Waiting Time Between Coats at 23°C (73°F)	Minimum Dry to the Touch	Maximum 24 hours
Properties at 25°C (77°F)		
Solids Content		
	By volume	Approx. 95 %
	By weight	Approx. 96 %
Pot Life	8.8 oz (250 g)	Approx. 60 min
Drying Times		
	Foot traffic	1 day
	Light traffic	2 days
	Full chemical resistance	7 days

Drying times will vary according to air and substrate temperature and humidity.

Properties at 28 days	**SMOOTH COATING**	**BROADCAST SYSTEM***
Tensile Strength ASTM D638, Type IV	2,960 psi (20.4 MPa)	1,595 psi (11.0 MPa)
Elongation at Break ASTM D638, Type IV	28%	8.4%
Compressive Strength ASTM D695	8,380 psi (57.8 MPa)	3,435 psi (23.7 MPa)
Water Absorption ASTM D570		
24 h	0.42%	0.11%
7 days	1.02%	0.34%
2 h boiling water	-0.57%	-0.10%
Bond Strength to Concrete ASTM D4541	406 psi (2.8 MPa) substrate failure	520 psi (3.6 MPa) substrate failure
Abrasion Resistance ASTM D4060		
Taber Abraser, CS-17 and H-22 Wheels/ 1000 g (2.2 lb)/1000 cycles	170 mg (CS-17)	833 mg ** (H-22)
Impact Resistance ASTM D3029		
Microscopic cracks	51.3 lb/in (5.8 J)	15.2 lb/in (1.5 J)
Major cracks	54.8 lb/in (6.2 J)	91.9 lb/in (10.5 J)
Hardness (Shore D) ASTM D2240	67	72
Water Vapor Transmission ASTM E96		
(Water method)	0.00062 oz./hr/ft² (0.19 g/hr/m²) 30 mils film	0.00023 oz./hr/ft² (0.07 g/hr/m²) 64 mils film
Water Permeance ASTM E96		
(Water method)	0.48 perm 30 mils film	0.12 perm 64 mils film
Thermal Compatibility with Concrete ASTM C884 (from -23 to 23°C)	Substrate Failure ***	Substrate Failure ***
Static Coefficient of Friction ASTM C1028		
Dry surface	0.75	1.26
Wet surface	0.55	0.94
Linear Shrinkage ASTM C531	-	0.20
Coefficient of Linear Thermal Expansion ASTM C531, in/in/°F	-	1.25 x 10-5/°F
cm/cm/°C	-	2.26 x 10-5/°C

*24 mesh silica sand used for broadcasting.

**Standard 4,060 psi (28 MPa) concrete exhibits 3,872 mg loss when tested as per this procedure.

***Failure occurs in underlying concrete.

Construction

How To Use

Surface Preparation

Concrete: Concrete substrates must be clean and sound. Remove any dust, laitance, grease, oil, dirt, curing agents, impregnations, wax, foreign matter, coatings and any loose particles from the surface by appropriate mechanical means, in order to achieve a profile equivalent to ICRI CSP 3-4. The compressive strength of the concrete substrate should be at least 3,500 psi (24 MPa) at 28 days and at least 215 psi (1.5 MPa) in tension at the time of application of Sikadur® WDE Primer & Sikagard® Duochem 7500.

Steel: All steel to be coated must be dry, clean and stable before applying the primer or coating. Remove all existing treatments such as coatings, sealers, wax, and contaminants (i.e. dirt, dust, grease, oils, and foreign matter) which will interfere with the adhesion of Sikagard® Duochem 7500. Prepare steel substrates by appropriate mechanical means such as abrasive blast-cleaning. Achieve clean white metal profile equivalent to SSPC-SP10, Near White Metal, 2 to 4 mils anchor profile. Apply primer or coating immediately, before oxidation of the steel occurs.

Mixing

Thoroughly pre-mix each component separately to ensure that all solids are distributed throughout and components are consistent within themselves. Empty the complete contents of Component B into the partially filled Component A container. When mixing a partial unit, ensure that the components are proportioned in the correct ratio and empty both into a suitably sized, clean mixing vessel.

Mix the combined components for at least 3 minutes, using a low-speed drill (200-300 rpm) to minimize entrapping air. Use an Exomixer type or Jiffy mixing paddle (recommended model) suited to the volume of the mixing container. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once, to ensure complete mixing. When completely mixed, Sikagard® Duochem 7500 should be uniform in color and consistency. Mix only that quantity which can be used within its pot life.

Never use a thickening agent such as Sikafloor® Extender T, Cabosil or any other filler to increase product viscosity as this will greatly reduce chemical resistance.

Application

Concrete:

Smooth Coating:

Primer Coat: Apply Sikadur® WDE Primer onto prepped concrete substrates using a brush, roller or squeegee to a uniform coverage without ponding. Refer to the current product data sheet for Sikadur® WDE Primer for published recommendations and further information.

1st Coat: Once the primer is tack free apply Sikagard® Duochem 7500 using a brush, roller or squeegee to a uniform coverage without ponding.

2nd Coat: Once first coat is tack free, apply a second coat of Sikagard® Duochem 7500 using a brush, roller or squeegee to a uniform coverage without ponding.

Broadcast Build-Up System:

Primer Coat: Apply Sikadur® WDE Primer onto prepped concrete substrates using a brush, roller or squeegee to a uniform coverage without ponding. Refer to the current product data sheet for Sikadur® WDE Primer for published recommendations and further information.

Broadcast Coat: Once the primer is tack free apply the broadcast coat of Sikagard® Duochem 7500 using a notched squeegee or trowel and backroll to a uniform coverage. Broadcast the selected sand (shape and size to be selected in accordance with required texture/slip resistance) into the wet resin to rejection.

Top Coat: Once the broadcast coat has sufficiently cured to allow foot traffic, sweep-up and vacuum-off all loose, unbounded sand. Apply the top coat of Sikagard® Duochem 7500 using a squeegee, followed by back rolling to provide a uniform texture and finish.

Steel: Priming, consolidation or sealing of common steel substrates with Sikadur® WDE Primer is not usually required under typical circumstances. However, due to variations in steel quality, surface condition, surface preparation and ambient conditions, reference test areas are recommended to determine whether priming is required to prevent the possibility of issues with adhesion, compatibility, or other defects. Consult Sika Technical Services for advice.

Application of Sikagard® Duochem 7500 onto properly prepared steel surfaces is typically the same procedure as outlined above for smooth coatings and broadcast build-up systems onto concrete, excluding the use of Sikadur® WDE primer, unless determined otherwise.

See Typical Data section of this product data sheet above for coverage rates, specific application thicknesses and number of coats recommended.

Construction

Limitations

- Sikagard® Duochem 7500, as a primary or secondary containment coating system, is best installed by skilled and experienced applicators. Consult Sika Technical Services for advice and recommendations.
- Not recommended for use on slab-on-grade concrete substrates.
- Minimum/Maximum substrate temperature; 59°F /86°F (15°C /30°C).
- Observe minimum application temperature of 15°C (59°F) and product conditioning temperatures of 65° - 86°F (18° - 30°C) as high viscosity coatings exhibit reduced smoothing properties and greater tendency to display application marks at low temperatures.
- Substrate temperature must be at least 5.5°F (3°C) above the measured dew point.
- Moisture content of concrete substrates must be < 6% (Tramex CME/CMExpert type concrete moisture meter measurement) before application of Sikadur® WDE Primer other wise use Sikagard® 75 EpoCem as an initial barrier.
- Do not apply onto porous surfaces where moisture vapor transmission will occur during application.
- Maximum relative humidity during application and cure; 85%.
- Do not hand mix Sikagard® materials; mechanically mix only.
- Should maximum waiting time between coats be exceeded, abrade surface of applied material (removing all gloss) vacuum-off all dust and debris, and wipe with solvent. Allow solvent to completely flash off and dry before proceeding with subsequent coats.
- Protect from dampness, condensation and water contact during the initial 24 hour cure period (curing times will be lengthened at cold temperatures and protection should therefo remain for longer).
- Not recommended for areas subject to frequent thermal cycles.
- Surface may discolor in areas exposed to ultraviolet light.
- Not designed as an aesthetic product.

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Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard® Duochem 7500 Thixo

Chemical-Resistant, Epoxy-Novolac-Based and Textured Floor Coating

Description	Sikagard® Duochem 7500 Thixo is a two-component, high solids, epoxy-novolac based, textured floor and wall coating. It possesses outstanding resistance to strong inorganic acids, concentrated sulfuric acid and oxygenated solvents. The integral, "orange peel" texture provides slip resistance while still allowing ease of cleaning and maintenance.
Where to Use	■ As a textured, chemical-resistant lining on concrete or steel substrates subject to concentrated acids. ■ Protection of containment tanks, machine bases, plant floors and walls exposed to aggressive chemicals. ■ Protection against ground water contamination resulting from uncontained chemical spills. ■ As a broadcast, build-up system to provide a slip resistant and durable wearing surface in pedestrian areas where aggressive chemicals are present.
Advantages	■ The material is convenient to proportion, 2:1 by volume, Component A to Component B ratio. ■ Sikagard® Duochem 7500 Thixo exhibits excellent Adhesion, Hardness, Abrasion Resistance, and Compressive Strength values. ■ Provides excellent protection for steel and concrete against a wide range of chemicals. See product specific Chemical Resistance Guide.
Coverage	106 ft²/gal. (2.6 m²/l)
Packaging	3 gal. (11.34 l) unit
Chemical Resistance	See Chemical Resistance Chart available at usa.sika.com or by contacting Sika Technical Services

Typical Data (Material and curing conditions @ 73°F (22.7°C) and 50% RH)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Packaging	3 US gal. (11.34L)		
Color	RAL 7038 Agate Grey		
Yield Concrete Substrates Smooth Coating			
Primer Coat	Sikadur® WDE Primer	160 ft²/US gal. (4 m²/L)	10 mils w.f.t.
1st Coat	Sikagard® Duochem 7500	106 ft²/US gal. (2.6 m²/L)	15 mils w.f.t.
2nd coat	Sikagard® Duochem 7500	106 ft²/US gal. (2.6 m²/L)	15 mils w.f.t.
Steel Floors			
1st Coat	Sikagard® Duochem 7500	106 ft2/US gal. (2.6 m2/L)	15 mils w.f.t.
2nd Coat	Sikagard® Duochem 7500 Thixo	106 ft2/US gal. (2.6 m2/L)	15 mils w.f.t.

Actual coverage rates and material consumption will depend upon porosity and profile of substrates. Allowance must be also made for variation in film thickness or number of coats required to achieve opacity with light (ie white) or bright colors (ie reds and yellows) and dark substrates. Test sections are recommended to establish correct coverage.

Shelf Life	2 years when stored in original, unopened packaging.		
Store	dry at 41 - 90°F (5 - 32°C).		
Condition	product between 65 - 86°F (18 - 30°C) before use.		
Mix Ratio	A:B= 2:1 by volume		
Waiting Time Between Coats@ 23°C (73°F)	Minimum Touch Dry		Maximum 24 hours
Properties at 25°C (77°F)			
Solids Content	By volume	Approx. 95 %	
	By weight	Approx. 96 %	
Pot Life	8.8 oz (250 g)	Approx. 60 min	
Drying Times	Foot traffic	1 day	
	Light traffic	2 days	
	Full chemical resistance	7 days	

Drying times will vary according to air and substrate temperature and humidity.

Properties at 28 days	
Tensile Strength ASTM D638, Type IV	2,960 psi (20.4 MPa)
Elongation at Break ASTM D638, Type IV	28%
Compressive Strength ASTM D695	8,380 psi (57.8 MPa)

Construction

Water Absorption ASTM D570		
24 h	0.42%	
7 days	1.02%	
2 h boiling water	-0.57%	
Bond Strength to Concrete ASTM D4541	406 psi (2.8 MPa) substrate failure	
Abrasion Resistance ASTM D4060		
Taber Abraser, CS-17 and H-22 Wheels	170 mg	
	1000 g (2.2 lb)/1000 cycles	(CS-17)
Impact Resistance ASTM D3029		
Microscopic cracks	51.3 lb/in (5.8 J)	
Major cracks	54.8 lb/in (6.2 J)	
Hardness (Shore D) ASTM D2240	67	
Water Vapor Transmission ASTM E96		
(Water method)	0.19 g/hr/m^2	30 mils film
Water Permeance ASTM E96		
(Water method)	0.48 perm	30 mils film
Thermal Compatibility with Concrete ASTM C884 (from -9 to 73°F [-23 to 23°C])	Substrate Failure *	
Static Coefficient of Friction ASTM C1028		
Dry surface	0.75	
Wet surface	0.55	

*Failure occurs in underlying concrete.
Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

How To Use

Surface Preparation

Concrete: Concrete substrates must be clean and sound. Remove any dust, laitance, grease, oil, dirt, curing agents, impregnations, wax, foreign matter, coatings and any loose particles from the surface by appropriate mechanical means, in order to achieve a profile equivalent to ICRI CSP 3-4. The compressive strength of the concrete substrate should be at least 3,500 psi (24 MPa) at 28 days and at least 215 psi (1.5 MPa) in tension at the time of application of Sikadur® WDE Primer & Sikagard® Duochem 7500 Thixo.

Steel: All steel to be coated must be dry, clean and stable before applying the primer or coating. Remove all existing treatments such as coatings, sealers, wax, and contaminants (i.e. dirt, dust, grease, oils, and foreign matter) which will interfere with the adhesion of Sikagard® Duochem 7500 Thixo. Prepare steel substrates by appropriate mechanical means such as abrasive blast-cleaning. Achieve clean white metal profile equivalent to SSPC-SP10, Near White Metal, 2 to 4 mils anchor profile. Apply primer or coating immediately, before oxidation of the steel occurs.

Mixing

Thoroughly pre-mix each component separately for 30 seconds to ensure that all solids are distributed throughout and components are consistent within themselves.

Empty the complete contents of Component B into the partially filled Component A container. When mixing a partial unit, ensure that the components are proportioned in the correct ratio and empty both into a suitably sized, clean mixing vessel.

Mix the combined components for at least 3 minutes, using a low-speed drill (200-300 rpm) to minimize entrapping air. Use an Exomixer type or Jiffy mixing paddle (recommended model) suited to the volume of the mixing container. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once, to ensure complete mixing. When completely mixed, Sikagard® Duochem 7500 Thixo should be uniform in color and consistency. Mix only that quantity which can be used within its pot life.

Never use a thickening agent such as Sikafloor® Extender T, Cabosil or any other filler to increase product viscosity as this will greatly reduce chemical resistance.

Application

Concrete:

Primer Coat**:** Apply Sikadur® WDE Primer onto prepped concrete substrates using a brush, roller or squeegee to a uniform coverage without ponding. Refer to the current product data sheet for Sikadur® WDE Primer for published recommendations and further information.

1st Coat: Once the primer is tack free apply Sikagard® Duochem 7500 Thixo using a brush, roller or squeegee to a uniform coverage without ponding.

2nd Coat: Once first coat is tack free, apply a second coat of Sikagard® Duochem 7500 Thixo using a brush, roller or squeegee to a uniform coverage without ponding.

Steel: Priming, consolidation or sealing of common steel substrates with Sikadur® WDE Primer is not usually required under typical circumstances. However, due to variations in steel quality, surface condition, surface preparation and ambient conditions, reference test areas are recommended to determine whether priming is required to prevent the possibility of issues with adhesion, compatibility, or other defects. Consult Sika Technical Services for advice.

Construction

Application of Sikagard® Duochem 7500 Thixo onto properly prepared steel surfaces is typically the same procedure as outlined for Sikagard® Duochem 7500 for smooth coatings and broadcast build-up systems onto concrete, excluding the use of Sikadur® WDE primer, unless determined otherwise. Similarly, Sikagard® Duochem 7500 Thixo, is applied onto Sikagard® Duochem 7500 using the same technique and tools as for producing a textured coating onto concrete substrates.

See Typical Data section of this product data sheet above for coverage rates, specific application thicknesses and number of coats recommended.

Limitations

- Not suitable for use on exterior, slab-on-grade concrete substrates.
- Minimum / Maximum substrate temperature; 60°F / 85°F (15°C / 30°C).
- Observe minimum application temperature of 59°F (15°C) and product conditioning temperatures of 65° - 85°F (18° - 30°C) as high viscosity coatings exhibit reduced smoothing properties and greater tendency to display application marks at low temperatures.
- Substrate temperature must be at least 5.5°F (3°C) above the measured dew point.
- Moisture content of concrete substrates must be < 6% (Tramex CME/CMExpert type concrete moisture meter measurement) before application of Sikadur®WDE Primer otherwise use Sikagard® 75 Epo-Cem as an initial barrier up to a maximum moisture content of 12%.
- Do not apply onto porous surfaces where moisture vapor transmission will occur during application.
- Maximum relative humidity during application and cure; 85%.
- Do not hand mix Sikagard® materials; mechanically mix only.
- Should maximum waiting time between coats be exceeded, abrade surface of applied material (removing all gloss) vacuum-off all dust and debris, and wipe with solvent. Allow solvent to completely flash off and dry before proceeding with subsequent coats.
- Protect from dampness, condensation and water contact during the initial 24 hour cure period (curing times will be lengthened at cold temperatures and protection should therefore remain for longer).
- Not recommended for areas subject to frequent thermal cycles.
- Surface may discolor in areas exposed to ultraviolet light.
- Not designed as an aesthetic product.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Product Data Sheet
Edition 10.30.2015
Sikadur WDE Primer

Sikadur® WDE Primer

Moisture Intensive Epoxy Resin

Description
Sikadur WDE Primer a two-component, high solids epoxy resin with excellent moisture-insensitive characteristics and fast cure at low temperatures.

Where to Use
Sikadur WDE Primer is the primer to use with Sikagard Duochem 7500 and 7500 Thixo.
It is also especially performing on damp surfaces prior to Sika epoxy system applications.

Advantages
- Cures down to 32°F (0°C).
- Can be used in cold rooms.
- Ideal for shutdown or fast turnaround projects.
- Good resistance to a wide variety of chemicals, acids, organic acids and alkalis.

How to Use

Surface Preparation
Surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application. Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by shot blasting or equivalent mechnical means (CSP-3 as per ICRI guidelines). Sweep and vacuum any remaining dirt and dust with a wet/dry vacuum. Removing residual dust will help ensure a tenacious bond between the primer and substrate. Whenever “shot-blasting” is utilized, be careful to leave concrete with a uniform texture. Over “blasting” will result in reduced coverage rates of the primer and/or subsequent topcoats. It is also possible that the texture of the “shot-blast” pattern may show through the last coat. This is known as “tracking”. The compressive strength of the concrete substrate should be at least 3500 psi (24 MPa) at 28 days and at least 250 psi (1.7 MPa) in tension at the time of application of Sikadur WDE Primer.

Mixing
Empty component B into component A container. Mix the combined components for at least 3 min using a low-speed drill (300-450 rpm) to minimize entrapping air. Use an Exomixer type mixing

Typical Data (Material and curing conditions @ 74°F (22°C) and 40% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Packaging
2 gal (8 L)
Component A: 2 x 1 gallon plastic pail (short filled 2.5 gal. pails)
Component B: 2 x 1 pint plastic container (short filled 1 gal. cans)

Colors
Clear

Shelf Life
2 years in unopened packaging. Store dry at 40° - 90°F (5° -32°C). Condition product between 65° - 85°F (18° - 30°C) before using.

Mixing Ratio
A:B = 3:1 by volume

Properties at 77°F (25°C) and 50% R.H.

Component	Resin A	Hardener B	Mixed A+B
Specific gravity, lb/gal. (kg/L)	9.34 (1.12)	8.73 (1.05)	9.19 (1.1)
Viscosity	600 cps	2000 cps	900 cps
Solids by weight	-	-	100%
Pot Life, 7.05 oz (200 g)			8 min

Waiting time between coats, 70°F (21°C)		**Minimum**	**Maximum**
WDE Primer on WDE Primer	Neat	6 hrs.	24 hrs.
	Broadcast	4 hrs.	indefinite
Sika epoxy systems on WDE Primer		6 hrs.	24 hrs.
Sikadur WDE Primer mortar on WDE Primer			4 hrs.

-

*Note - If it is over-coated too quickly with Sikagard Duochem 7500 or 7500 Thixo, it may be softened. Be cautious and if in doubt do a spot check.

Construction

	paddle (recommended model) suited to the volume of the mixing container. During the mixing operations, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing. Mix only that quantity that can be used within its pot life.
Application	**Primer** - The mixed resin should be applied at 160 ft²/gal. (4 m²/L) using a brush or roller when used as a primer for other Sika products. When it is used as a first coat of a build up system it is normal to broadcast Barnes # 51 or # 71 sand to saturation at a rate of 2-3 lb/10 ft² (1-1.5 kg/m²) and allow to dry before proceeding to the next step.
Limitations	■ Do not thin with solvents. ■ Not recommended for repairs applied underwater. ■ Minimum/Maximum substrate temperature: 32°/85° (0°/30°). ■ Maximum relative humidity: 85%. ■ Substrate temperature must be at least 5° (3°) above measured dew point. ■ Conduct quantitative anhydrous calcium chloride testing in accordance with ASTM-F1869. Maximum acceptable test result is 3 pounds per 1,000 ft2 per 24 hours. Determine the surface moisture content by using an impedance moisture meter designed for use on concrete as detailed in ASTM E-1907. Acceptable test results shall be 4% by mass or less. If over, use Sikafloor EpoCem 81/82. ■ Freshly applied Sikadur WDE Primer should be protected from dampness, condensation and water for at least 24 hrs. ■ Do not thin this product. Addition of thinners will slow the cure and reduce the ultimate properties of this product. ■ This product is not designed for exterior use, immersion, or any use where moisture can reach the underside of the resurfacer. ■ Will discolor over time when exposed to sunlight (UV) and under certain artificial lighting conditions. UV resistant, light stable topcoats are available where ultimate color/clarity retention is required.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800-933-7452. NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTION FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard® 616

Versatile Epoxy for use as a Primer, High Build Protective Coating and for Decorative Quartz and Flake Application

Description	Sikagard® 616 is a 2 component, low odor, 100% solids, epoxy resin coating system primarily designed for high build coatings and decorative quartz applications. Sikagard® 616 may be used as a clear primer.
Where to Use	Sikagard® 616 is ideal as a broadcast clear, low odor top coat or intermediate coat over decorative quartz or vinyl flake floor broadcast systems. Sikagard® 616 can also be top coated with an aliphatic urethane when increased chemical and abrasion resistance are required. When used as a primer, Sikagard® 616 can be considered where ≤ 4% moisture content by mass (pbw – part by weight) is measured on concrete substrate with Tramex® CME/CMExpert type concrete moisture meter.
Advantages	■ Tough, smooth, non-porous surface is easy to clean. ■ Durable, impermeable and seamless. ■ Attractive, high gloss, reflective coating ■ Good chemical and mechanical resistance. ■ 100% solids as supplied. ■ Easily applied with brush, roller or squeegee. ■ Good Abrasion Resistance. ■ Excellent Impact Resistance.
Coverage	**Smooth finish coating:** Prime Coat: 160 - 200 ft²/US gal (3.9 – 4.9 m²/L) at 8 - 10 mils (0.20 – 0.25 mm) wet film thickness (w.f.t.) Wear coat: 105 - 135 ft²/US gal (2.6 - 3.3 m²/L) at 12 - 15 mils (0.30 – 0.38 mm) wet film thickness (w.f.t.).
Packaging	Component A: 3 US gal. (8.5 L); Component B: 1.50 US gal. (5.7 L); Components A+B: 4.5 US gal. (14.2 L). (Ready to mix unit).

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H. unless otherwise noted)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 2 years in original unopened container under proper storage.

Storage Conditions Precondition material for at least 24 hours between 65° to 75°F (18° to 24°C).

Color Clear

Pot life material

Temperature	Time
+50°F (10°C)	~ 50 minutes
+68°F (20°C)	~ 25 minutes
+86°F (30°C)	~ 15 minutes

Waiting / Recoat Times Before applying second coat of Sikagard® 616 allow:

Ambient & substrate Temperature	Minimum	Maximum
+50°F (10°C)	24 hours	3 days
+68°F (20°C)	12 hours	2 days
+86°F (30°C)	6 hours	1 day

Before applying Sikafloor Epoxy or Polyurethane on Sikagard 616 allow

Ambient & substrate Temperature	Minimum	Maximum
+50°F (10°C)	24 hours	3 days
+68°F (20°C)	12 hours	2 days
+86°F (30°C)	6 hours	1 day

Cure Times Ambient & substrate Temperature	Foot traffic	Light traffic	Full cure
+50°F (10°C)	~ 24 hours	~ 6 days	~ 10 days
+68°F (20°C)	~ 12 hours	~ 4 days	~ 7 days
+86°F (30°C)	~ 6 hours	~ 2 days	~ 5 days

Construction

Properties Tested at 73°f (23°c) and 50 % R.h:	
Solid content ~ 100% (by volume) / ~ 100% (by weight)	
Compressive strength ASTM C579 Resin (filled 1:0,9 with F34)	7,250 psi (50 N/mm²) (28 days)
Flexural strength ASTM C580 Resin (filled 1:0,9 with F34)	2,900 psi (20 N/mm²) (28 days)
Pull-off strength ASTM D4541	> 400 psi (2.7 MPa) (100% concrete failure)
Viscosity (mixed) Components A + B:	292 (SP1/100)
Shore D hardness (7 days) ASTM D2240	78 - 82
VOC content ASTM D2369	≤ 50 g/L
Chemical Resistance:	Please consult Sika Technical Services.

How to Use

Surface Preparation

Surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds, Preparation bond inhibiting impregnations, waxes and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application.

Concrete - Should be cleaned and prepared to achieve a laitance-free and contaminant-free, open textured surface by shot blasting or equivalent mechanical means (CSP-3 to CSP-4 as per ICRI guidelines). Sweep and vacuum any remaining dirt and dust with a wet/dry vacuum. Removing residual dust will help ensure a tenacious bond between the primer and substrate. Whenever “shot-blasting” is utilized, be careful to leave concrete with a uniform texture. “Overblasting” will result in reduced coverage rates of the primer and/or subsequent topcoats. The “shotblast” pattern may show through the last coat, known as “tracking”. The compressive strength of the concrete substrate should be at least 3,500 psi (24 MPa) at 28 days and at least 215 psi (1.5 MPa) in tension at the time of application. For other substrates, please contact Sika Technical Services.

Mixing

Mixing Ratio - 1.5 : 1 by volume. Premix each component separately. Empty Component B (Hardener) in the correct mix ratio into Component A (Resin). Mix the combined components for at least 3 minutes using a low speed drill (300 - 450 rpm) and Exomixer or Jiffy type paddle suited to the volume of the mixing container to minimize entrapped air. Be careful not to introduce any air bubbles while mixing. Make sure the contents are completely mixed to avoid any weak or partially cured spots in the coating. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing.

Do not mix more material than can be applied within the working time limits (i.e. pot life) at the actual field temperature.

Application

As primer: Apply Sikagard® 616 by squeegee at the rate of 160 - 200 ft²/US gal (3.9 – 4.9 m²/L) at 8 - 10 mils (0.20 – 0.25 mm) wet film thickness (w.f.t.) and back roll with pressure after 15 minutes. Coverage will vary depending on the porosity of the prepared floor. Product has a limited Pot Life, see Typical Data. Do not apply by dipping roller into mixing container. Pour a bead of product in the form of a ribbon on the surface to be coated, then spread with squeegee and back roll. Ensure that the coating is pore-free and pinhole-free and provides uniform and complete coverage over the entire concrete substrate. If necessary, apply an additional coat to ensure the coating is pore-free and pinhole-free and provides uniform and complete coverage over the entire concrete substrate.

As sealer/intermediate: Sikagard® 616 is applied with a 40 mil (1 mm) notched squeegee over a smooth surface and a flat squeegee over a rough or decorative quartz surface. Back rolling is typically done with an 18 inch (455 mm) wide 3/8 inch (10 mm) short nap, solvent-resistant roller cover. Back roll the Sikagard® 616 only to level the squeegee applied material. Over-rolling and late back rolling may cause bubbling and leave roller marks.

Limitations

Notes on Limitations: Prior to application, measure and confirm Substrate Moisture Content, Ambient Relative Humidity, Ambient and Surface Temperature and Dew Point. During installation, confirm and record above values at least once every 3 hours, or more frequently whenever conditions change (e.g. Ambient Temperature rise/fall, Relative Humidity increase/decrease, etc.).

Substrate Moisture Content: Moisture content of concrete substrate must be ≤ 4% by mass (pbw – part by weight) as measured with a Tramex® CME/CMExpert type concrete moisture meter on mechanically prepared surface according to this product data sheet (preparation to CSP-3 to CSP-4 as per ICRI guidelines). Do not apply to concrete substrate with moisture levels > 4% mass (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter. If moisture content of concrete substrate is > 4% by mass (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter, use Sikalastic® MT Primer or Sikafloor® 81 EpoCem.

When relative humidity tests for concrete substrate are conducted per ASTM F2170 for project specific requirements, values must be ≤ 85%. If values are > 85% according to ASTM F2170 use Sikalastic® MT Primer or Sikafloor® 81 EpoCem.

ASTM F2170 testing is not a substitute for measuring substrate moisture content with a Tramex® CME/CMExpert type concrete moisture meter as described above.

Material Temperature: Precondition material for at least 24 hours between 65° to 75°F (18° to 24°C).

Construction

Ambient Temperature: Minimum/Maximum 50°/85°F (10°/30°C).

Substrate Temperature: Minimum/Maximum 50°/85°F (10°/30°C). Substrate temperature must be at least 5°F (3°C) above measured Dew Point.

Mixing and Application attempted at Material, Ambient and/or Substrate Temperature conditions less than 65°F (18°C) will result in a decrease in product workability and slower cure rates.

Relative Ambient Humidity: Maximum ambient humidity 85% (during application and curing).

Dew Point: Beware of condensation!
The substrate must be at least 5°F (3°C) above the Dew Point to reduce the risk of condensation, which may lead to adhesion failure or "blushing" on the floor finish. Be aware that the substrate temperature may be lower than the ambient temperature.

Mixing: Do not hand mix Sikagard® materials. Mechanically mix only. Do not thin this product. Addition of thinners (e.g. water, solvent, etc.) will slow cure and reduce ultimate properties of this product. Use of thinners will void any applicable Sika warranty.

Application: If used as a primer. Apply the primer/coating to the prepared substrate using a squeegee and back roll to provide uniform coverage. Ensure that the substrate is pore-free and pinhole-free and provides uniform and complete coverage over the entire concrete substrate. If necessary, apply an additional coat to ensure the substrate is pore-free and pinhole-free and provides uniform and complete coverage over the entire substrate.

- Do not apply while ambient and substrate temperatures are rising, as pinholes may occur. Ensure there is no vapor drive at the time of application. Refer to ASTM D4263, may be used for a visual indication of vapor drive.
- Freshly applied material should be protected from dampness, condensation and water for at least 72 hrs.
- Will discolor over time when exposed to sunlight (UV) and under certain artificial lighting conditions. Use of clear UV resistant top coat may not prevent discoloration of underlying coatings.
- Do not apply Sikagard® to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below the Sikagard® product after application. If concrete substrate has or is suspected to have ASR (Alkali Silica Reaction) present, do not proceed. Consult with design professional prior to use.
- Any aggregate used with Sikagard® systems must be non-reactive and oven-dried.
- This product is not designed for negative side waterproofing
- Use of unvented heaters and certain heat sources may result in defects (e.g. blushing, whitening, debonding, etc.).
- Beware of air flow and changes in air flow. Introduction of dust, debris, and particles, etc. may result in surface imperfections and other defects.

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikagard® 664

Versatile Epoxy for High Performance Protective Coatings

Description	Sikagard® 664 is a pigmented, two part low viscosity, self-priming, epoxy coating/binder used for smooth and textured coatings and/or broadcast overlayments.
Where to Use	Roller coat and self-leveling slurry for concrete and cement screeds with normal up to medium heavy wear (e.g. storage, hallways, corridors and assembly halls, maintenance workshops, garages and loading ramps), or as a seal coat for broadcast systems. When used as a primer, Sikagard® 664 can be considered when ≤ 4% moisture content by mass (pbw – part by weight) is measured on the concrete substrate with a Tramex® CME/CMExpert type concrete moisture meter.
Advantages	■ Good chemical and mechanical resistance. ■ Easily applied with brush, roller or squeegee. ■ Glossy aesthetic finish ■ Slip resistant surface possible. ■ Durable, impermeable and seamless. ■ Solvent-free, neutral odor. ■ Low mixed viscosity.
Coverage	**Smooth Finish Coating:** Prime coat: 160 - 200 ft²/US gal (3.9 – 4.9 m²/L) at 8 – 10 mils (0.20 – 0.25 mm) wet film thickness (w.f.t.). Wear coat: 105 - 135 ft²/US gal (2.6 - 3.3 m²/L) at 12 - 15 mils (0.30 – 0.38 mm) wet film thickness (.f.t.).
Packaging	Component A: 3.0 US gal. (11.4 L); Component B: 1.5 US gal. (5.7 L) Components A+B: 4.5 US gal. (17 L) (Ready to mix unit).
Cure Mechanism	See Typical Data.
Chemical Resistance	Please consult Sika Technical Service.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 2 years in unopened container. Store dry between 40°-90°F (4°-32°C).

Storage Conditions Precondition material for at least 24 hours between 65° to 75°F (18° to 24°C).

Color Gray, Red & Tan

Pot life material	Temperature	Time
	+50°F (10°C)	~ 50 minutes
	+68°F (20°C)	~ 25 minutes
	+86°F (30°C)	~ 15 minutes

Waiting / Recoat Times Before applying second coat of Sikagard 664 on Sikagard 664 allow:

Ambient & Substrate	**Temperature**	**Minimum**	**Maximum**
	+50°F (10°C)	24 hours	3 days
	+68°F (20°C)	8 hours	2 days
	+86°F (30°C)	6 hours	1 day

Before applying Sikagard Epoxy or Polyurethane on Sikagard 616 allow:

Ambient & Substrate	**Temperature**	**Minimum**	**Maximum**
	+50°F (10°C)	24 hours	3 days
	+68°F (20°C)	8 hours	2 days
	+86°F (30°C)	6 hours	1 day

Cure Times Ambient & Substrate	**Temperature**	**Foot traffic**	**Light traffic**	**Full cure**
	+50°F (10°C)	~ 24 hours	~ 3 days	~ 10 days
	+68°F (20°C)	~ 12 hours	~ 2 days	~ 7 days
	+86°F (30°C)	~ 8 hours	~ 1 days	~ 5 days

Compressive Strength (ASTM C579) - 28 days	7,250 psi (50 N/mm²)
Flexural Strength (ASTM C580) - 28 days	2,900 psi (20 N/mm²)

Construction

Pull-Off Strength (ASTM D4541)	>400 psi (2.7 N/mm^2) (100% concrete fail)
Shore D Hardness (ASTM D2240) - 7 days	76
VOC Content (ASTM D2369)	<30 g/l

How to Use

Surface Preparation

Surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application.

Concrete - Should be cleaned and prepared to achieve a laitance-free and contaminant-free, open textured surface by shot blasting or equivalent mechanical means (CSP-3 to CSP-4 as per ICRI guide-lines). Sweep and vacuum any remaining dirt and dust with a wet/dry vacuum. Removing residual dust will help ensure a tenacious bond between the primer and substrate. Whenever "shot-blasting" is utilized, be careful to leave concrete with a uniform texture. "Over-blasting" will result in reduced coverage rates of the primer and/or subsequent topcoats. The "shotblast" pattern may show through the last coat, known as "tracking". The compressive strength of the concrete substrate should be at least 3,500 psi (24 MPa) at 28 days and at least 215 psi (1.5 MPa) in tension at the time of application. For other substrates, please contact Sika Technical Services.

Primer or Smooth Finish Coating: Priming the concrete substrate is required. Prime with Sikagard® 616 or Sikalastic® MT Primer. Allow the primer to cure (varies with temperature and humidity) until tack free before applying subsequent coats. Ensure that the primer is pore-free, pinhole-free and provides uniform and complete coverage over the entire substrate. Sikagard® 664 may be used as primer on concrete substrates for Sikagard® coating systems subjected to light traffic use.

Mixing

Mixing Ratio - 2 : 1 by volume.
Primer and Wear Coat: Premix each component separately. Empty Component B (Hardener) in the correct mix ratio into Component A (Resin). Mix the combined components for at least 3 minutes using a low speed drill (300 - 450 rpm) and Exomixer or Jiffy type paddle suited to the volume of the mixing container to minimize entrapped air. Be careful not to introduce any air bubbles while mixing. Make sure the contents are completely mixed to avoid any weak or partially cured spots in the coating. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing.

Self-leveling Slurry: Premix each component separately. Empty Component B (Hardener) in the correct mix ratio into Component A (Resin). Mix the combined components for at least 1 minute using a low speed drill (300 - 450 rpm) and Exomixer or Jiffy type paddle suited to the volume of the mixing container to minimize entrapped air. Add Sikadur® 504 type filler and mix for additional 2 minutes. Be careful not to introduce any air bubbles while mixing. Make sure the contents are completely mixed to avoid any weak or partially cured spots in the slurry. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing.

Do not mix more material than can be applied within the working time limits (i.e. pot life) at the actual field temperature.

Application

As Primer: Apply primer by squeegee at the rate of 160 - 200 ft^2/US gal (3.4 – 4.9 m^2/L) at 8 – 10 mils (0.20 – 0.25 mm) wet film thickness (w.f.t.) and back roll with pressure after 15 minutes. Coverage will vary depending on the porosity of the prepared floor. Product has a limited Pot Life, see Typical Data. Do not apply by dipping roller into mixing container. Pour a bead of product in the form of a ribbon on the surface to be coated, then spread with squeegee and back roll. Ensure that the coating is pore-free and pinhole-free and provides uniform and complete coverage over the entire concrete substrate. If necessary, apply an additional coat to ensure the coating is pore-free and pinhole-free and provides uniform and complete coverage over the entire concrete substrate.

As Wear and Sealer Coat: Sikagard® 664 is applied with a 40 mil (1 mm) notched squeegee over a smooth surface and a flat squeegee over a rough or broadcast quartz surface. Back rolling is typically done with an 18 inch (455 mm) wide 3/8 inch (10 mm) short nap, solvent-resistant roller cover. Back roll the Sikagard® 664 only to level the squeegee applied material. Over-rolling and late back rolling may cause bubbling and leave roller marks.

Smooth Finish Self-Leveling Slurry: Pour a bead of product to the surface to be coated, then spread with a notched squeegee or pin rake to the desired thickness. Roll immediately (within max. 10 minutes of application) in two directions with a spiked roller to ensure even thickness and the removal of entrapped air. To obtain a higher aesthetic finish, spike roll in two directions at a 90 degree angle by passing only once in each direction. The product has a limited Pot Life, see Typical Data.

Construction

Limitations

Notes on Limitations: Prior to application, measure and confirm Substrate Moisture Content, Ambient Relative Humidity, Ambient and Surface Temperature and Dew Point. During installation, confirm and record above values at least once every 3 hours, or more frequently whenever conditions change (e.g. Ambient Temperature rise/fall, Relative Humidity increase/decrease, etc.).

Substrate Moisture Content: Moisture content of concrete substrate must be ≤ 4% by mass (pbw – part by weight) as measured with a Tramex® CME/CMExpert type concrete moisture meter on mechanically prepared surface according to this product data sheet (preparation to CSP-3 to CSP-4 as per ICRI guidelines). Do not apply to concrete substrate with moisture levels > 4% mass (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter. If moisture content of concrete substrate is > 4% by mass (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter, use Sikalastic® MT Primer or Sikafloor® 81 EpoCem.

When relative humidity tests for concrete substrate are conducted per ASTM F2170 for project specific requirements, values must be ≤ 85%. If values are > 85% according to ASTM F2170 use Sikalastic® MT Primer or Sikafloor® 81 EpoCem.

ASTM F2170 testing is not a substitute for measuring substrate moisture content with a Tramex® CME/CMExpert type concrete moisture meter as described above.

Material Temperature: Precondition material for at least 24 hours between 65° to 75°F (18° to 24°C).

Ambient Temperature: Minimum/Maximum 50°/85°F (10°/30°C).

Substrate Temperature: Minimum/Maximum 50°/85°F (10°/30°C). Substrate temperature must be at least 5°F (3°C) above measured Dew Point.

Mixing and Application attempted at Material, Ambient and/or Substrate Temperature conditions less than 65°F (18°C) will result in a decrease in product workability and slower cure rates.

Ambient Relative Humidity: Maximum ambient humidity 85% (during application and curing).

Dew Point: Beware of condensation!
The substrate must be at least 5°F (3°C) above the Dew Point to reduce the risk of condensation, which may lead to adhesion failure or "blushing" on the floor finish. Be aware that the substrate temperature may be lower than the ambient temperature.

Mixing: Do not hand mix Sikagard® materials. Mechanically mix only. Do not thin this product. Addition of thinners (e.g. water, solvent, etc.) will slow cure and reduce ultimate properties of this product. Use of thinners will void any applicable Sika warranty. Improper mixing procedure or incorrect mixing ratio may result in moisture sensitivity, whitening, slow cure, soft spots, and other defects.

Application: If used as a primer apply material to the prepared substrate using a squeegee and back roll to provide uniform coverage. Ensure that the substrate is pore-free and pinhole free and provides uniform and complete coverage over the entire substrate. If necessary, apply an additional coat to ensure the substrate is pore-free and pinhole-free and provides uniform and complete coverage over the entire substrate. ■ Do not apply while ambient and substrate temperatures are rising, as pinholes may occur. Ensure there is no vapor drive at the time of application. Refer to ASTM D4263, may be used for a visual indication of vapor drive.

- Freshly applied material should be protected from dampness, condensation and water for at least 72 hrs.
- Will discolor over time when exposed to sunlight (UV) and under certain artificial lighting conditions. Use of clear UV resistant top coat may not prevent discoloration of underlying coatings.
- Do not apply Sikagard® to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below the Sikagard® product after application. If concrete substrate has or is suspected to have ASR (Alkali Silica Reaction) present, do not proceed. Consult with design professional prior to use.
- Any aggregate used with Sikagard® systems must be non-reactive and oven-dried.
- This product is not designed for negative side waterproofing
- Typically not recommended for exterior slabs on grade where freeze/thaw conditions may exist.
- Use of unvented heaters and certain heat sources may result in defects (e.g. blushing, whitening, debonding, etc.).
- Beware of air flow and changes in air flow. Introduction of dust, debris, and particles, etc. may result in surface imperfections and other defects.

Construction

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800-933-7452. NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTION FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Regional Information and Sales Centers. For the location of your nearest Sika sales office contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Product Data Sheet
Edition 10.16.2014
Sikagard® 600

Sikagard® 600

Chemical Resistant Protective Coating

Description	A two component, high solids, novolac epoxy with exceptional chemical resistance. Sikagard® 600 can be installed as a stand-alone coating. Its versatility allows Sikagard® 600 to be applied as a topcoat or used as a binder in a slurry/broadcast system.
Where to Use	Designed for use as a medium to heavy coat epoxy resurfacer in areas subjected to chemical spillages. Ideal for use in chemical processing, chemical storage areas, and battery charge stations.
Advantages	■ Low odor. ■ Very good chemical resistance. ■ Easy application.
Coverage	Approximately 80 - 130 ft²/US gal (1.9 - 3.2 m²/L) at 12 to 20 mils (0.3 – 0.5 mm) wet film thickness (w.f.t) or 240 - 390 ft²/US gal (5.9 - 9.6 m²/L) per 3 gallon unit over primed, relatively smooth, dense concrete surfaces. (The above figures do not allow for surface profile or wastage).
Packaging	Component A: 2.0 US gal. (7.6 L); Component B: 1 US gal. (3.8 L); Component A+B: 3.0 US gal. (11.3 L) (Ready to mix unit).

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H. unless otherwise noted)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 2 years in original unopened container under proper storage conditions. Store dry between 40° - 90°F (4°- 32°C).

Color Gray

Pot life material

Temperature	Time
+50°F (10°C)	~ 50 minutes
+68°F (20°C)	~ 25 minutes
+86°F (30°C)	~ 15 minutes

*Do not apply after indicated pot life is exceeded. end of pot life is not visible.

Waiting / Recoat Times Before applying second coat of Sikagard 600 allow:

Ambient & substrate Temperature	minimum	maximum
+50°F (10°C)	24 hours	3 days
+68°F (20°C)	12 hours	2 days
+86°F (30°C)	6 hours	1 day

Cure Times

Ambient & substrate Temperature	foot traffic	light traffic	full cur
+50°F (10°C)	~ 36 hours	~ 6 days	~ 10 days
+68°F (20°C)	~ 24 hours	~ 4 days	~ 7 days
+86°F (30°C)	~ 18 hours	~ 2 days	~ 5 days

Properties Tested at 73°f (23°c) and 50 % R.H:

Compressive strength ASTM D695 9:	400 psi (28 days)
Pull-off strength ASTM D4541:	> 400 psi (2.76 MPa) (100% concrete failure)
Elongation ASTM D638:	24%
Shore D hardness ASTM D2240:	85 - 88
Impact Resistance ASTM D2794:	160 in-lbs.
Abrasion Resistance ASTM D4060:	25 mg loss
Flammability ASTM D635 Film is Self Extinguishing	
VOC content ASTM D2369:	≤ 50 g/L
Tensile strength ASTM D638:	4,340 psi (7 Days)
Chemical Resistance:	Please consult SikaTechnical Services.

Construction

How to Use

Surface Preparation

Surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds, Preparation bond inhibiting impregnations, waxes and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application.

Concrete - Should be cleaned and prepared to achieve a laitance-free and contaminant-free, open textured surface by shot blasting or equivalent mechanical means (CSP-3 to CSP-4 as per ICRI guidelines). Sweep and vacuum any remaining dirt and dust with a wet/dry vacuum. Removing residual dust will help ensure a tenacious bond between the primer and substrate. Whenever "shot-blasting" is utilized, be careful to leave concrete with a uniform texture. "Over blasting" will result in reduced coverage rates of the primer and/or subsequent topcoats. The "shotblast" pattern may show through the last coat, known as "tracking". The compressive strength of the concrete substrate should be at least 3,500 psi (24 MPa) at 28 days and at least 215 psi (1.5 MPa) in tension at the time of application. For other substrates, please contact Sika Technical Services.

Priming - Priming for concrete substrate is required. Prime with either Sikagard® 616 or Sikalastic® MT Primer. Allow the primer to cure (varies with temperature and humidity) until tack free before applying subsequent coats. Ensure that the primer is pore-free, pinhole-free and provides uniform and complete coverage over the entire substrate. Please refer to the individual most current and respective Product Data Sheet for specific and detailed information

Mixing

Mix Ratio - 2 : 1 by volume. Pre-mixed each component separately. Empty Component B (Hardener) in the correct mix ratio into Component A (Resin). Mix the combined components for at least 3 minutes using a low speed drill (300 - 450 rpm) and Exomixer or Jiffy type paddle suited to the volume of the mixing container to minimize entrapped air. Be careful not to introduce any air bubbles while mixing. Make sure the contents are completely mixed to avoid any weak or partially cured spots in the coating. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature

Application

Pour a thin approximately 6 – 12 in. wide bead of Sikagard® 600 in the form of a ribbon on the surface and spread the material at a rate of approximately 130 ft^2/US gal (3.2 m^2/L) with a notched squeegee, flat squeegee, or trowel. Apply as evenly as possible, working from left to right, and then back. Back rolling is typically done with an 18 inch (454 mm) wide short nap, 3/8" (10 mm), solvent-resistant roller cover. Back roll the Sikagard® 600 only to level the squeegee applied material. Over-rolling and late back rolling may cause bubbling and leave roller marks.

Limitations

Notes on Limitations: Prior to application, measure and confirm Substrate Moisture Content, Ambient Relative Humidity, Ambient and Surface Temperature and Dew Point. During installation, confirm and record above values at least once every 3 hours, or more frequently whenever conditions change (e.g. Ambient Temperature rise/fall, Relative Humidity increase/decrease, etc.).

Substrate Moisture Content: Moisture content of concrete substrate must be ≤ 4% by mass (pbw – part by weight) as measured with a Tramex® CME/CMExpert type concrete moisture meter on mechanically prepared surface according to this product data sheet (preparation to CSP-3 to CSP-4 as per ICRI guidelines). Do not apply to concrete substrate with moisture levels > 4% mass (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter. If moisture content of concrete substrate is > 4% by mass (pbw part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter, use Sikalastic® MT Primer or Sikafloo ® 81 EpoCem.

When relative humidity tests for concrete substrate are conducted per ASTM F2170 for project specific requirements, values must be ≤ 85%. If values are > 85% according to ASTM F2170 use Sikalastic® MT Primer or Sikafloor® 81 EpoCem.

ASTM F2170 testing is not a substitute for measuring substrate moisture content with a Tramex® CME/CMExpert type concrete moisture meter as described above.

Material Temperature: Precondition material for at least 24 hours between 65° to 75°F (18° to 24°C).

Ambient Temperature: Minimum/Maximum 50˚/85˚F (10˚/30˚C).

Substrate Temperature: Minimum/Maximum 50˚/85˚F (10˚/30˚C). Substrate temperature must be at least 5˚F (3˚C) above measured Dew Point.

Mixing and Application attempted at Material, Ambient and/or Substrate Temperature conditions less than 65˚F (18˚C) will result in a decrease in product workability and slower cure rates.

Relative Ambient Humidity: Maximum ambient humidity 85% (during application and curing).

Dew Point: Beware of condensation!
The substrate must be at least 5˚F (3˚C) above the Dew Point to reduce the risk of condensation, which may lead to adhesion failure or "blushing" on the floor finish. Be aware that the substrate temperature may be lower than the ambient temperature.

Mixing: Do not hand mix Sikagard® materials. Mechanically mix only. Do not thin this product. Addition of thinners (e.g. water, solvent, etc.) will slow cure and reduce ultimate properties of this product. Use of thinners will void any applicable Sika warranty.

Construction

Application: Apply the coating to the prepared substrate which should be pore-free and pinhole free. If necessary, apply an additional coat of a suitable material to ensure the substrate is pore free and pinhole-free and provides uniform and complete coverage over the entire substrate.

- Do not apply while ambient and substrate temperatures are rising, as pinholes may occur. Ensure there is no vapor drive at the time of application. Refer to ASTM D4263, may be used for a visual indication of vapor drive.
- Freshly applied material should be protected from dampness, condensation and water for at least 72 hrs.
- Will discolor over time when exposed to sunlight (UV) and under certain artificial lighting conditions. Use of clear UV resistant top coat may not prevent discoloration of underlying coatings.
- Do not apply Sikagard to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below the Sikagard® product after application. If concrete substrate has or is suspected to have ASR (Alkali Silica Reaction) present, do not proceed. Consult with design professional prior to use.
- Any aggregate used with Sikagard® systems must be non-reactive and oven-dried.
- This product is not designed for negative side waterproofing
- Use of unvented heaters and certain heat sources may result in defects (e.g. blushing, whitening, debonding, etc.).
- Beware of air flow and changes in air flow. Introduction of dust, debris, and particles, etc. may result in surface imperfections and other defects.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® AnchorFix-1

High performance, two component adhesive anchoring system

Description	Sikadur® AnchorFix-1 adhesive anchoring system has been specially formulated as a high-performance, two component adhesive anchor system for threaded and reinforcing bars in uncracked concrete.
Where to Use	■ Uncracked concrete ■ Hard natural stone ■ Solid rock ■ Solid masonry
Advantages	■ Fixing close to free edges. ■ Versatile range of embedment depths. ■ Anchoring without expansion forces. ■ Component volume ratio of 10:1. ■ Extended working time.
Coverage	See below.
Packaging	10.1 fl.oz. (300 ml) or 28.7 fl.oz. (850 ml) cartridge
Approvals	European Technical Approval (ETA) according to ETAG001-5 for threaded bars only.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life — When stored correctly, the shelf life will be from 12 months from the date of manufacture.

Storage Conditions — Cartridges should be stored in their original packaging, the correct way up, in cool conditions (+41°F to +77°F) out of direct sunlight.

Working & Loading Times

Cartridge Temperature*	T Work (minutes)	Base Material Temperature	T Load (minutes)
+41°F to +50°F	18	+41°F to +50°F	145 minutes
+50°F to +68°F	10	+50°F to +68°F	85 minutes
+68°F to +77°F	6	+68°F to +77°F	50 minutes
+77°F to + 86°F	5	+77°F to + 86°F	40 minutes
+86°F	4	+86°F	35 minutes

T Work is the typical time to gel at the highest temperature in the range
T Load is the typical time to reach full capacity

*Cartridge temperature must be maintained at a minium of +41°F.

Installation Specification								
Property	Symbol	Unit						
Threaded Rod Diameter	d_a	in	5/16	3/8	1/2	5/8	3/4	1
Drill Bit Diameter	d_o	in	3/8	1/2	9/16	11/16	13/16	1-1/16
Cleaning Brush Size	d_b	in	0.551		0.787		1.142	
Minimum Embedment Depth	$h_{ef,min}$	in	2-1/2	3	4	5	6	8
Maximum Embedment Depth	$h_{ef,max}$	in	3-3/4	4-1/2	6	7-1/2	9	12
Minimum Concrete Thickness	h_{min}	in	h_{ef} + 1-1/4 in ≥ 4 in				h_{ef} + 2 d_o	
Critical Anchor Spacing	S_{cr}	in	4.0 h_{ef}			3.0 h_{ef}		
Critical Edge Distance	c_{ac}	in	2.0 h_{ef}			1.5 h_{ef}		
Maximum Tightening Torque	T_{inst}	ft.lb	7.5	15	25	55	80	120

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Allowable Steel Strength for Threaded Rods									
		Carbon Steel ASTM F 1554 Grade 36 (A307 Gr.C)		Carbon Steel ASTM A 193 B7		Stainless Steel ASTM F 593 CW		Stainless Steel ASTM F 593 SH	
Anchor Diameter (in)		Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}
3/8”	lb	2,110	1,080	4,550	2,345	3,360	1,870	4,190	2,160
	kN	9.4	4.8	20.2	10.4	16.1	8.3	18.6	9.6
1/2”	lb	3,750	1,930	8,100	4,170	6,470	3,330	7,450	3,840
	kN	16.7	8.6	36.0	18.5	28.8	14.8	33.1	17.1
5/8”	lb	5,870	3,030	12,655	6,520	10,130	5,220	11,640	6,000
	kN	26.1	13.5	56.3	29.0	45.1	23.2	51.8	26.7
3/4”	lb	8,460	4,360	18,220	9,390	12,400	6,390	15,300	7,880
	kN	37.6	19.4	81.0	41.8	55.2	28.4	68.1	35.1
7/8”	lb	11,500	5,930	24,800	12,780	16,860	8,680	20,830	10,730
	kN	51.2	26.4	110.3	56.8	75.0	38.6	92.7	47.7
1”	lb	15,020	7,740	32,400	16,690	22,020	11,340	27,210	14,020
	kN	66.8	34.4	144.1	74.2	97.9	50.4	121.0	62.4
1 - 1/4”	lb	23,480	12,100	50,640	26,070	34,420	17,730	38,470	19,820
	kN	104.4	53.8	225.1	116.0	153.1	78.9	171.1	88.2

Allowable Tension, N_{all} = 0.33 x f_u x nominal cross sectional area
Allowable Shear, V_{all} = 0.17 x f_u x nominal cross section area
*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Allowable Steel Strength for Rebar			
		Carbon Steel ASTM A 615 Grade 60	
Rebar Size		Allowable Tension, N_{all}	Allowable Shear, V_{all}
#3	lb	3,280	1,690
	kN	14.6	7.5
#4	lb	5,831	3,004
	kN	25.9	13.4
#5	lb	9,111	4,693
	kN	40.5	20.9
#6	lb	13,121	6,759
	kN	58.4	30.1
#7	lb	17,859	9,200
	kN	79.4	40.9
#8	lb	23,326	12,016
	kN	103.8	53.4
#10	lb	37,623	19,381
	kN	167.4	86.2

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Allowable Steel Strength for Rebar			
		Carbon Steel CAN/CSA-G30.18 Gr.400	
Rebar Size		Allowable Tension, N_{all}	Allowable Shear, V_{all}
10M	lb	4,016	2,069
	kN	17.9	9.2
15M	lb	8,052	4,148
	kN	35.8	18.5
20M	lb	11,960	6,161
	kN	53.2	27.4
25M	lb	19,975	10,290
	kN	88.9	45.8
30M	lb	28,121	14,486
	kN	125.1	64.4
35M	lb	40,089	20,652
	kN	178.3	91.9

Tension = 0.33 x f_u x nominal cross sectional area
Shear = 0.17 x f_u x nominal cross section area
*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

1. Above values for reinforcing steel assume the design method is the same as a post-installed adhesive anchor,under the principles of anchor design (failure modes will be concrete breakout, pryout, steel failure, or adhesive bond) and not under the principles of reinforcing steel design (failure modes are typically splitting failure, inadequatebar development etc.). CONSULT AN ENGINEERING DESIGN PROFESSIONAL PRIOR TO USE.

Anchor diameter	Embedment Depth	Allowable Concrete Capacity / Bond Strength					
		Tension (lb)			Shear (lb)		
		f'_c = 2,500 psi	f'_c = 4,000 psi	f'_c = 8,000 psi	f'_c = 2,500 psi	f'_c = 4,000 psi	f'_c = 8,000 psi
5/16”	2-1/2”	1,517	1,590	1,704	2,022	2,120	2,272
	3-1/8”	1,896	1,987	2,130	2,528	2,650	2,840
	3-3/4”	2,275	2,385	2,556	3,033	3,179	3,408
3/8”	3”	1,785	1,871	2,005	2,380	2,494	2,673
	3-3/4”	2,231	2,338	2,506	2,975	3,118	3,342
	4-1/2”	2,677	2,806	3,007	3,570	3,741	4,010
1/2”	4”	3,276	3,434	3,680	4,368	4,578	4,907
	5”	4,095	4,292	4,600	5,460	5,723	6,134
	6”	4,914	5,151	5,520	6,552	6,867	7,360
5/8”	5”	5,427	5,688	6,096	7,236	7,584	8,128
	6-1/4”	6,784	7,110	7,620	9,045	9,480	10,160
	7-1/2”	8,140	8,532	9,144	10,854	11,376	12,193
3/4”	6”	6,801	7,128	7,640	9,068	9,505	10,187
	7-1/2”	8,501	8,911	9,550	11,335	11,881	12,733
	9”	10,202	10,693	11,460	13,602	14,257	15,280
1”	8”	11,270	11,812	12,660	15,027	15,750	16,880
	10”	14,088	14,766	15,825	18,783	19,687	21,100
	12”	16,905	17,719	18,990	22,540	23,625	25,320

1. The above values represent mean ultimate values and allowable w orking loads. The allowable working loads have been reduced us ing a safety factor of 4.0 for tension and 3.0 for shear , however, in some cases, such as life safety, safety factors of 10.0 or higher may be necessary.
2. Allowable loads must be checked against steel capacity. The lowest value controls.
3. Tabulated data is applicable to single anchors in normal weight concrete unaffected by edge or spacing reduction factors. V alues are valid for anchors installed into dry concrete in holes drilled with a hammer drill and ANSI carbide drill bit.
4. Service temperatures should remain approximately constant. The maximum long term temperature being 122°F and the maximum short term temperature being 176°F. Short term temperatures are those that occur over brief inte rvals, for example, diurnal cycling.
5. Linear interpolation is allowed.
*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Coverage

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	7/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	2 3/8	2 3/8	2 3/4	3 1/8	3 3/4	4	5
Estimated Number of Fixing *	Cartridge Volume	300 ml	83	47	53	15	9	5	2

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	3 1/8	3 3/4	5	6 1/4	7 1/2	10	12 1/2
Estimated Number of Fixing *	Cartridge Volume	300 ml	63	29	17	7	4	2	1

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	3 3/4	4 1/2	6	7 1/2	9	12	15
Estimated Number of Fixing *	Cartridge Volume	300 ml	53	24	14	6	4	1	0

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Application

Solid Substrate Installation Method

1. Drill the hole to the correct diameter and depth. This can be done with either a rotary percussion or rotary machine depending upon the substrate.

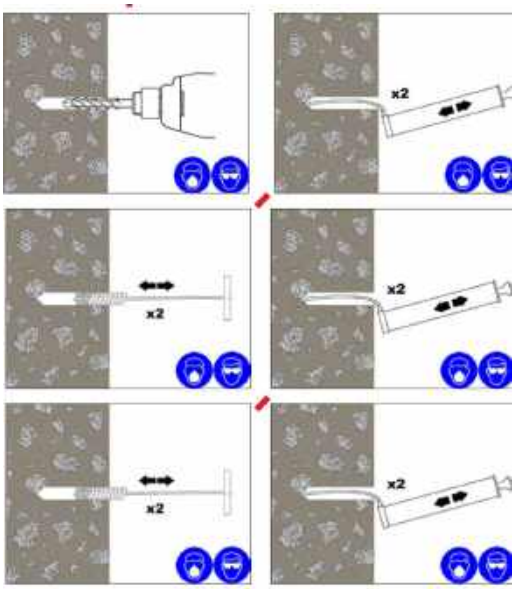
2. Thoroughly clean the hole in the following sequence using the 2K DF Brush with the required extensions and a source of clean compressed air. For holes of 15 3/4" (400mm) or less deep, a 2K Blow Pump may be used:

Blow Clean x2.
Brush Clean x2.
Blow Clean x2.
Brush Clean x2.
Blow Clean x2.

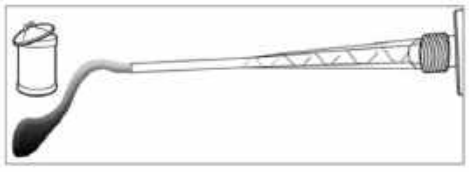
3. Select the appropriate static mixer nozzle for the installation, open the cartridge/foil and screw onto the mouth of the cartridge. Insert the cartridge into a good quality applicator.

4. Extrude the first part of the cartridge to waste until an even color has been achieved without streaking in the resin.

5. If necessary, cut the extension tube to the depth of the hole and push onto the end of the mixer nozzle, and (for rebars 5/8" (16mm) dia. or more) fit the correct resin stopper to the other end. Attach extension tubing and resin stopper.



If the hole collects water after the initial cleaning, this water must be removed before injecting the resin.



6. Insert the mixer nozzle (resin stopper /extension tube if applicable) to the bottom of the hole. Begin to extrude the resin and slowly withdraw the mixer nozzle from the hole ensuring that there are no air voids as the mixer nozzle is withdrawn. Fill the hole to approximately ½ to ¾ full and withdraw the nozzle completely.

7. Insert the clean threaded bar, free from oil or other release agents, to the bottom of the hole using a back and forth twisting motion ensuring all the threads are thoroughly coated. Adjust to the correct position within the stated working time (see table on page 1).

8. Any excess resin should be expelled from the hole evenly around the steel element showing that the hole is full.

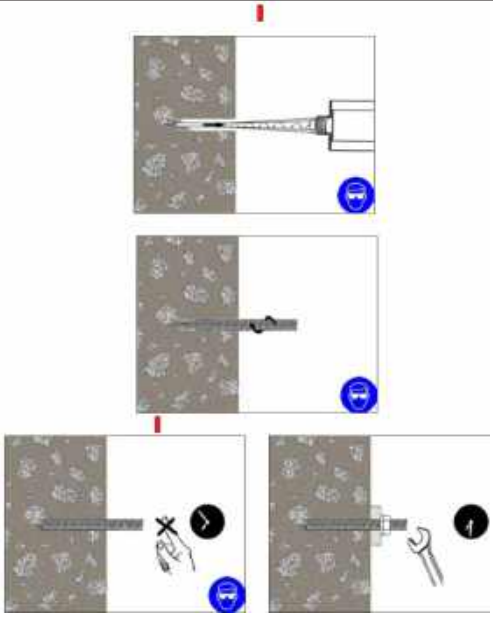
This excess resin should be removed from around the mouth of the hole before it sets.

9. Leave the anchor to cure.

Do not disturb the anchor until the appropriate loading/curing time, on page 1, has elapsed depending on the substrate conditions and ambient temperature.

10. Attach the fixture and tighten the nut to the recommended torque.

Do not overtighten.



Hollow Substrate Installation Method

1. Drill the hole to the correct diameter and depth. This should be done with a rotary percussion drilling machine to reduce spalling.

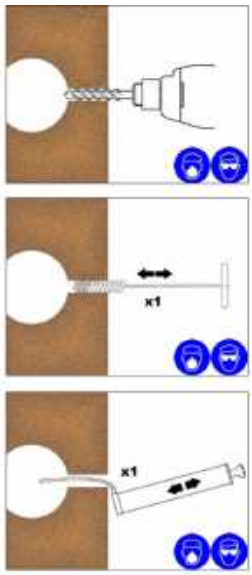
2. Thoroughly clean the hole in the following sequence using a brush with the required extensions and a source of clean compressed air. For holes of 15 3/4" (400mm) or less deep, a blow pump may be used:

Brush Clean x1.
Blow Clean x1.

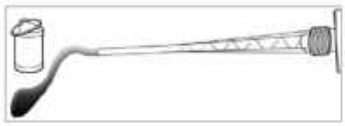
3. Select the appropriate static mixer nozzle for the installation, open the cartridge/foil and screw onto the mouth of the cartridge. Insert the cartridge into a good quality applicator.

4. Extrude the first part of the cartridge to waste until an even color has been achieved without streaking in the resin.

5. Select the appropriate perforated sleeve and insert into the hole.



If the hole collects water after the initial cleaning, this water must be removed before injecting the resin.



6. Insert the mixer nozzle to the bottom of the perforated sleeve, withdraw 1/12" (2-3mm) then begin to extrude the resin and slowly withdraw the mixer nozzle from the hole ensuring that there are no air voids as the mixer nozzle is withdrawn. Fill the perforated sleeve completely and remove the mixer nozzle and cartridge completely.

7. Insert the clean threaded bar, free from oil or other release agents, to the bottom of the hole using a back and forth twisting motion ensuring all the threads are thoroughly coated. Adjust to the correct position within the stated working time (see table on page 1).

8. Any excess resin should be expelled from the hole evenly around the steel element showing that the hole is full.

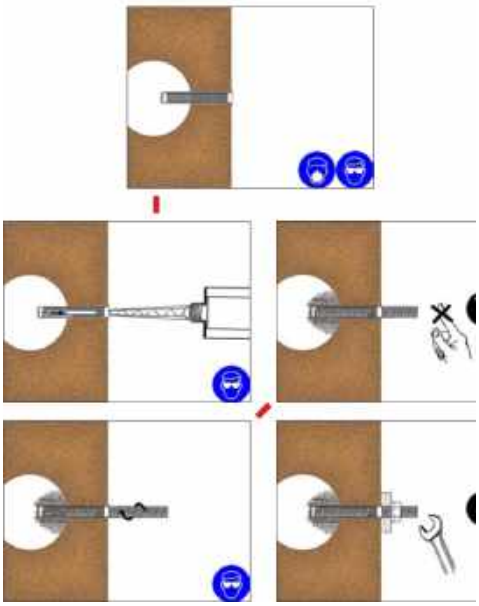
This excess resin should be removed from around the mouth of the hole before it sets.

9. Leave the anchor to cure.

Do not disturb the anchor until the appropriate loading/curing time, on page 1, has elapsed depending on the substrate conditions and ambient temperature.

10. Attach the fixture and tighten the nut to the recommended torque.

Do not overtighten.



Limitations

THE NTSB HAS STATED THAT THIS PRODUCT IS APPROVED FOR SHORT TERM LOADS ONLY AND SHOULD NOT BE USED IN SUSTAINED TENSILE LOAD ADHESIVE ANCHORING APPLICATIONS WHERE ADHESIVE FAILURE COULD RESULT IN A PUBLIC SAFETY RISK. CONSULT A DESIGN PROFESSIONAL PRIOR TO USE.

*The design professional on the job is ultimately responsible for the interpretation of the data provided on the product data sheet.

- Not for use in overhead applications.
- Not for use in cracked concrete.
- Minimum Application Temperature 14°F (-10°C)
- Maximum Application Temperature 86°F (30°C)

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® AnchorFix-2

High performance, two component adhesive anchoring system

Description	Sikadur® AnchorFix-2 adhesive anchor system has been specifically formulated as a high performance, two component adhesive anchor system for threaded bars in uncracked concrete.
Where to Use	■ Uncracked concrete ■ Hard natural stone ■ Solid rock ■ Solid masonry
Advantages	■ Fixing close to free edges. ■ Versatile range of embedment depths. ■ Anchoring without expansion forces. ■ Component volume ratio of 10:1. ■ Extended working time.
Packaging	10.1 fl.oz. (300 ml) or 28.7 fl.oz. (850 ml) cartridge
Approvals	■ EESR to AC308 by ICC-ES PENDING. ■ ESR to AC308 by IAPMO-UES Report #0327 for threaded bars only. ■ Certified to ANSI / NSF - 61 by UL.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	When stored correctly, the shelf life will be 15 months from the date of manufacture.
Storage Conditions	Cartridges should be stored in their original packaging, the correct way up, in cool conditions (+41°F to +77°F) out of direct sunlight.

Working & Loading Times

Cartridge Temperature	T Work (minutes)	Base Material Temperature	T Load (hours)
Minimum +41°F	12	+14°F to +32°F**	24 hours
	12	+32°F to +41°F	180 minutes
+41°F to +50°F	8	+41°F to +50°F	100 minutes
+50°F to +68°F	4	+50°F to +68°F	70 minutes
+68°F to +77°F	3	+68°F to +77°F	40 minutes
+77°F to +86°F	2	+77°F to +86°F	40 minutes
+86°F	1	+86°F	40 minutes

T Work is the typical time to gel at the highest temperature in the range
T Load is the typical time to reach full capacity

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Installation Specification								
Property	Sym-bol	Unit						
Threaded Rod Diameter	d_a	in	5/16	3/8	1/2	5/8	3/4	1
Drill Bit Diameter	d_o	in	3/8	1/2	9/16	11/16	13/16	1-1/16
Cleaning Brush Size	d_b	in	0.551		0.787		1.142	
Minimum Embedment Depth	$h_{ef,min}$	in	2-3/8	2-3/4	3-1/8	3-3/4	4	4
Maximum Embedment Depth	$h_{ef,max}$	in	6-1/4	7-1/2	10	12-1/2	15	20
Minimum Con-crete Thickness	h_{min}	in	$1.5\ h_{ef}$					
Critical Anchor Spacing	S_{cr}	in	$2.0\ c_{ac}$					
Critical Edge Distance	c_{ac}	in	$c_{ac}=h_{ef} * (t_{k,\ uncr}/1160)^{0.4} * \max[3.1 - 0.7(h/h_{ef}); 1.4]$					
Maximum Tightening Torque	T_{inst}	ft.lb	7.5	15	25	55	80	120

**The design professional on the job is ultimately responsible for the interpretation of the data provided above.*

Allowable Steel Strength for Threaded Rods									
		Carbon Steel ASTM F 1554 Grade 36 (A307 Gr.C)		Carbon Steel ASTM A 193 B7		Stainless Steel ASTM F 593 CW		Stainless Steel ASTM F 593 SH	
Anchor Diameter (in)		Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}
3/8”	lb	2,110	1,080	4,550	2,345	3,630	1,870	4,190	2,160
	kN	9.4	4.8	20.2	10.4	16.1	8.3	18.6	9.6
1/2”	lb	3,750	1,930	8,100	4,170	6,470	3,330	7,450	3,840
	kN	16.7	8.6	36.0	18.5	28.8	14.8	33.1	17.1
5/8”	lb	5,870	3,030	12,655	6,520	10,130	5,220	11640	6,000
	kN	26.1	13.5	56.3	29.0	45.1	23.2	51.8	26.7
3/4”	lb	8,460	4,360	18,220	9,390	12,400	6,390	15,300	7,880
	kN	37.6	19.4	81.0	41.8	55.2	28.4	68.1	35.1
7/8”	lb	11,500	5,930	24,800	12,780	16,860	8,680	20,830	10,730
	kN	51.2	26.4	110.3	56.8	75.0	38.6	92.7	47.7
1”	lb	15,020	7,740	32,400	16,690	22,020	11,340	27,210	14,020
	kN	66.8	34.4	144.1	74.2	97.9	50.4	121.0	62.4
1 - 1/4”	lb	23,480	12,100	50,610	26,070	34,420	17,730	38,470	19,820
	kN	104.4	53.8	225.1	116.0	153.1	78.9	171.1	88.2

Allowable Tension, $N_{all} = 0.33 \times f_u \times$ nominal cross sectional area
Allowable Shear, $V_{all} = 0.17 \times f_u \times$ nominal cross section area
**The design professional on the job is ultimately responsible for the interpretation of the data provided above.*

Allowable Steel Strength for Rebar			
		Carbon Steel ASTM A 615 Grade 60	
Rebar Size		Allowable Tension, N_{all}	Allowable Shear, V_{all}
#3	lb	3,280	1,690
	kN	14.6	7.5
#4	lb	5,831	3,004
	kN	25.9	13.4
#5	lb	9,111	4,693
	kN	40.5	20.9
#6	lb	13,121	6,759
	kN	58.4	30.1
#7	lb	17,859	9,200
	kN	79.4	40.9
#8	lb	23,326	12,016
	kN	103.8	53.4
#10	lb	37,623	19,381
	kN	167.4	86.2

**The design professional on the job is ultimately responsible for the interpretation of the data provided above.*

Allowable Steel Strength for Rebar			
		Carbon Steel CAN/CSA-G30.18 Gr.400	
Rebar Size		Allowable Tension, N_{all}	Allowable Shear, V_{all}
10M	lb	4,016	2,069
	kN	17.9	9.2
15M	lb	8,052	4,148
	kN	35.8	18.5
20M	lb	11,960	6,161
	kN	53.2	27.4
25M	lb	19,975	10,290
	kN	88.9	45.8
30M	lb	28,121	14,486
	kN	125.1	64.4
35M	lb	40,089	20,652
	kN	178.3	91.9

Tension = 0.33 x f_u x nominal cross sectional area
Shear = 0.17 x f_u x nominal cross section area
**The design professional on the job is ultimately responsible for the interpretation of the data provided above.*

1. Above values for reinforcing steel assume the design method is the same as a post-installed adhesive anchor,under the principles of anchor design (failure modes will be concrete breakout, pryout, steel failure, or adhesive bond) and not under the principles of reinforcing steel design (failure modes are typically splitting failure, inadequate bar development etc..). CONSULT AN ENGINEERING DESIGN PROFESSIONAL PRIOR TO USE.

Allowable Load Data in Tension and Shear							
		Allowable Concrete Capacity / Bond Strength					
Anchor Diameter	Embedment Depth	Tension (lb)			Shear (lb)		
		f'_c = 2,500 psi	f'_c = 4,000	f'_c = 8,000	f'_c = 2,500	f'_c = 4,000	f'_c = 8,000
5/16”	2-3/8”	1,390	1,457	1,562	1,854	1,943	2,082
	3-1/16”	1,793	1,879	2,014	2,390	2,505	2,685
	3-3/4”	2,195	2,301	2,466	2,927	3,068	3,288
3/8”	2-3/8”	1,507	1,579	1,693	2,009	2,106	2,257
	3-7/16”	2,181	2,286	2,450	2,908	3,048	3,266
	4-1/2”	2,855	2,992	3,207	3,806	3,990	4,276
1/2”	2-3/4”	2,397	2,513	2,693	3,197	3,350	3,591
	4-3/8”	3,814	3,998	4,285	5,085	5,330	5,713
	6”	5,231	5,482	5,876	6,974	7,310	7,835
5/8”	3-1/8”	3,065	3,212	3,443	4,087	4,283	4,591
	5-5/16”	5,210	5,461	5,853	6,947	7,281	7,804
	7-1/2”	7,356	7,710	8,263	9,808	10,280	11,017
3/4”	3-1/2”	3,495	3,663	3,926	4,659	4,884	5,234
	6-1/4”	6,240	6,541	7,010	8,320	8,721	9,347
	9”	8,986	9,418	10,094	11,981	12,558	13,459
1”	4”	5,378	5,637	6,042	7,171	7,516	8,056
	8”	10,757	11,274	12,084	14,342	15,033	16,112
	12”	16,135	16,912	18,125	21,514	22,549	24,167

1. The above values represent mean ultimate values and allowable working loads. The allowable working loads have been reduced using a safety factor of 4.0 for tension and 3.0 for shear, however, in some cases, such as life safety, safety factors of 10.0 or higher may be necessary.
2. Allowable loads must be checked against steel capacity. The lowest value controls.
3. Tabulated data is applicable to single anchors in normal weight concrete unaffected by edge or spacing reduction factors. Values are valid for anchors installed into dry concrete in holes drilled with a hammer drill and ANSI carbide drill bit.
4. Service temperatures should remain approximately constant. The maximum long term temperature being 122°F and the maximum short term temperature being 176°F. Short term temperatures are those that occur over brief intervals, for example, diurnal cycling.
5. Linear interpolation is allowed.
**The design professional on the job is ultimately responsible for the interpretation of the data provided above.*

Coverage

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	2 3/8	2 3/8	2 3/4	3 1/8	3 3/4	4	5
Estimated Number of Fixing *	Cartridge Volume	300 ml	83	47	32	15	9	5	2
		850 ml	254	143	97	48	29	16	8

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	3 1/8	3 3/4	5	6 1/4	7 1/2	10	12 1/2
Estimated Number of Fixing *	Cartridge Volume	300 ml	63	29	17	7	4	2	1
		850 ml	193	90	53	24	14	6	3

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	3 3/4	4 1/2	6	7 1/2	9	12	15
Estimated Number of Fixing *	Cartridge Volume	300 ml	53	24	14	6	4	1	0
		850 ml	161	75	44	20	12	5	2

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Application

Solid Substrate Installation Method

1. Drill the hole to the correct diameter and depth. This can be done with either a rotary percussion or rotary hammer drilling machine depending upon the substrate.

2. Thoroughly clean the hole in the following sequence using the 2K DF Brush with the required extensions and a source of clean compressed air. For holes of 15 3/4" (400mm) or less deep, a 2K Blow Pump may be used:

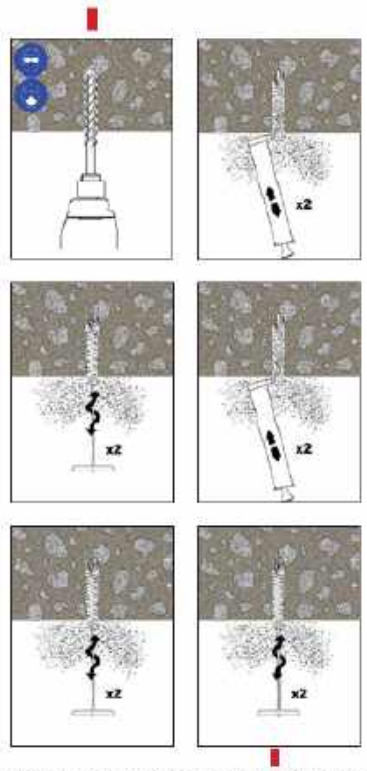
Blow Clean x2.
Brush Clean x2.
Blow Clean x2.
Brush Clean x2.
Blow Clean x2.

3. Select the appropriate static mixer nozzle for the installation, open the cartridge/foil pack and screw nozzle onto the mouth of the cartridge. Insert the cartridge into a good quality applicator.

4. Extrude the first part of the cartridge (at least dispense three full strokes) to waste until an even color has been achieved without streaking in the resin before injecting the resin into the drilled hole.

5. If necessary, cut the extension tube to the depth of the hole and push onto the end of the mixer nozzle, and (for rebars 8" (16mm) dia. or more) fit the correct resin stopper to the other end. Attach extension tubing and resin stopper.

6. Insert the mixer nozzle (resin stopper/extension tube if applicable) to the bottom of the hole. Begin



hole collects water after the initial cleaning, this must be removed before injecting the resin.

Construction

to extrude the resin and slowly withdraw the mixer nozzle from the hole ensuring that there are no air voids as the mixer nozzle is withdrawn. Fill the hole to approximately ½ to ¾ full and withdraw the nozzle completely.

7. Insert the clean threaded bar, free from oil or other release agents, to the bottom of the hole using a back and forth twisting motion ensuring all the threads are thoroughly coated. Adjust to the correct position within the stated working time (see table on page 1).

8. Any excess resin will be expelled from the hole evenly around the steel element showing that the hole is full. This excess resin should be removed from around the mouth of the hole before it sets.

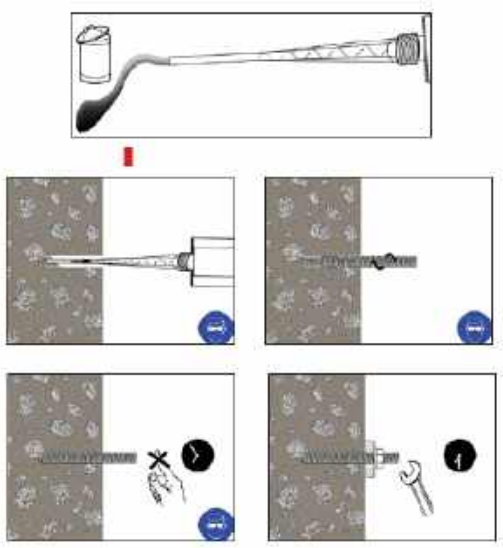
9. Leave the anchor to cure.

Do not disturb the anchor until the appropriate loading time, on page 1, has elapsed depending on the substrate conditions and ambient temperature.

10. Attach the fixture and tighten the nut to the recommended torque.

Do not overtighten as it could adversely affect product performance.

NOTE: Please refer to figure 5A & 5B of the IAPMO Report No. 0327 for detailed installation instructions.



Note for decreased installation temperature: *When installing EASF at decreased installation temperature (+32°F < T < 50°F (0°C < T < +10°C)) the cartridge must be conditioned to +68°F (+20°C)*

Note for use of RM nozzle:
The RM nozzle consists of two pieces: the component containing the mixer elements, and an extension piece. The extension piece must be snapped off the component containing the mixer elements before use. The two pieces are then pushed together until a positive engagement is felt.

Limitations

THE NTSB HAS STATED THAT THIS PRODUCT IS APPROVED FOR SHORT TERM LOADS ONLY AND SHOULD NOT BE USED IN SUSTAINED TENSILE LOAD ADHESIVE ANCHORING APPLICATIONS WHERE ADHESIVE FAILURE COULD RESULT IN A PUBLIC SAFETY RISK. CONSULT A DESIGN PROFESSIONAL PRIOR TO USE.
*The design professional on the job is ultimately responsible for the interpretation of the data provided on the product data sheet.

- Not for use in overhead applications.
- Not for use in cracked concrete.
- Please refer to section 5.0 for conditions of use in the IAPMO Evaluation Report #0327. This report is available on Sika and IAPMO's websites.
- Minimum Application Temperature 14°F (-10°C)
- Maximum Application Temperature 86°F (30°C)

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Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® AnchorFix-2 Arctic

High performance, two component, low temperature adhesive anchor system

Description	Sika® AnchorFix-2 Arctic adhesive anchor system has been specifically formulated as a high performance, two component, low temperature adhesive anchor system for threaded bars in uncracked concrete.
Where to Use	■ Uncracked concrete ■ Hard natural stone ■ Solid rock ■ Solid masonry
Advantages	■ Fixing close to free edges. ■ Versatile range of embedment depths. ■ Anchoring without expansion forces. ■ Component volume ratio of 1:1. ■ Extended working time.
Packaging	28.7 fl.oz. (850 ml) cartridge
Approval	European Technical Approval (ETA) according to ETAG001-5.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life When stored correctly, the shelf life will be for a minimum of 12 months from the date of manufacture.

Storage Conditions Cartridges should be stored in their original packaging, the correct way up, in cool conditions (+32°F to +77°F) out of direct sunlight.

Working & Loading Times

Cartridge Temperature	T Work (minutes)	Base Material Temperature	T Load
Minimum +23°F	15	-14.8°F - +14°F*	36 hours
	15	+14°F to +23°F	12 hours
	15	+23°F to +32°F	100 minutes
+23°F to +41°F	10	+32°F to +41°F	75 minutes
+41°F to +50°F	5	+41°F to +50°F	50 minutes
+50°F to +68°F	2.5	+50°F to +68°F	50 minutes
+68°F	100 seconds	+68°F	20 minutes

T Work is the typical time to gel at the highest temperature in the range
T Load is the typical time to reach full capacity

**This application is not covered by the scope of the ETA or any other approval for this product.*
***The design professional on the job is ultimately responsible for the interpretation of the data provided above.*

Installation Specification									
Property	Symbol	Unit							
Threaded Rod Diameter	d_a	in	5/16	3/8	1/2	5/8	3/4	1	1-1/4
Drill Bit Diameter	d_o	in	3/8	1/2	9/16	11/16	13/16	1-1/16	1-1/2
Cleaning Brush Size	d_b	in	0.551		0.787		1.142		1-2/3
Minimum Embedment Depth	$h_{ef,min}$	in	2-1/2	3	4	5	6	8	10
Maximum Embedment Depth	$h_{ef,max}$	in	6-1/4	7-1/2	10	12-1/2	15	20	25
Minimum Concrete Thickness	h_{min}	in	h_{ef} + 1-1/4 in ≥ 4 in				h_{ef} + 2 do		
Critical Anchor Spacing	S_{cr}	in	3.0 h_{ef}						
Critical Edge Distance	c_{ac}	in	1.5 h_{ef}						
Maximum Tightening Torque	T_{inst}	ft.lb	7.5	15	25	55	80	120	200

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Allowable Steel Strength for Threaded Rods									
		Carbon Steel ASTM F 1554 Grade 36 (A307 Gr.C)		Carbon Steel ASTM A 193 B7		Stainless Steel ASTM F 593 CW		Stainless Steel ASTM F 593 SH	
Anchor Diameter (in)		Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}
3/8”	lb	2,110	1,080	4,550	2,345	3,360	1,870	4,190	2,160
	kN	9.4	4.8	20.2	10.4	16.1	8.3	18.6	9.6
1/2”	lb	3,750	1,930	8,100	4,170	6,470	3,330	7,450	3,840
	kN	16.7	8.6	36.0	18.5	28.8	14.8	33.1	17.1
5/8”	lb	5,870	3,030	12,655	6,520	10,130	5,220	11,640	6,000
	kN	26.1	13.5	56.3	29.0	45.1	23.2	51.8	26.7
3/4”	lb	8,460	4,360	18,220	9,390	12,400	6,390	15,300	7,880
	kN	37.6	19.4	81.0	41.8	55.2	28.4	68.1	35.1
7/8”	lb	11,500	5,930	24,800	12,780	16,860	8,680	20,830	10,730
	kN	51.2	26.4	110.3	56.8	75.0	38.6	92.7	47.7
1”	lb	15,020	7,740	32,400	16,690	22,020	11,340	27,210	14,020
	kN	66.8	34.4	144.1	74.2	97.9	50.4	121.0	62.4
1 - 1/4”	lb	23,480	12,100	50,640	26,070	34,420	17,730	38,470	19,820
	kN	104.4	53.8	225.1	116.0	153.1	78.9	171.1	88.2

Allowable Tension, N_{all} = 0.33 x f_u x nominal cross sectional area.
Allowable Shear, V_{all} = 0.17 x f_u x nominal cross section area.
*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Allowable Steel Strength for Rebar			
		Carbon Steel ASTM A 615 Grade 60	
Rebar Size		Allowable Tension, N_{all}	Allowable Shear, V_{all}
#3	lb	3,280	1,690
	kN	14.6	7.5
#4	lb	5,831	3,004
	kN	25.9	13.4
#5	lb	9,111	4,693
	kN	40.5	20.9
#6	**lb**	**13,121**	**6,759**
	kN	**58.4**	**30.1**
#7	**lb**	**17,859**	**9,200**
	kN	**79.4**	**40.9**
#8	**lb**	**23,326**	**12,016**
	kN	**103.8**	**53.4**
#10	**lb**	**37,623**	**19,381**
	kN	**167.4**	**86.2**

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Allowable Steel Strength for Rebar			
		Carbon Steel CAN/CSA-G30.18 Gr.400	
Rebar Size		Allowable Tension, N_{all}	Allowable Shear, V_{all}
10M	lb	4,016	2,069
	kN	17.9	9.2
15M	lb	8,052	4,148
	kN	35.8	18.5
20M	lb	11,960	6,161
	kN	53.2	27.4
25M	lb	19,975	10,290
	kN	88.9	45.8
30M	lb	28,121	14,486
	kN	125.1	64.4
35M	lb	40,089	20,652
	kN	178.3	91.9

Tension = 0.33 x f_u x nominal cross sectional area
Shear = 0.17 x f_u x nominal cross section area
*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

1. Above values for reinforcing steel assume the design method is the same as a post-installed adhesive anchor,under the principles of anchor design (failure modes will be concrete breakout, pryout, steel failure, or adhesive bond) and not under the principles of reinforcing steel design (failure modes are typically splitting failure, inadequatebar development etc..). CONSULT AN ENGINEERING DESIGN PROFESSIONAL PRIOR TO USE.

Anchor diameter	Embedment Depth	Allowable Concrete Capacity / Bond Strength					
		Tension (lb)			Shear (lb)		
		f'_c = 2,500 psi	f'_c = 4,000 psi	f'_c = 8,000 psi	f'_c = 2,500 psi	f'_c = 4,000 psi	f'_c = 8,000 psi
5/16”	2-1/2”	1,517	1,590	1,704	2,022	2,120	2,272
	3-1/8”	1,896	1,987	2,130	2,528	2,650	2,840
	3-3/4”	2,275	2,385	2,556	3,033	3,179	3,408
3/8”	3”	1,785	1,871	2,005	2,380	2,494	2,673
	3-3/4”	2,231	2,338	2,506	2,975	3,118	3,342
	4-1/2”	2,677	2,806	3,007	3,570	3,741	4,010
1/2”	4”	3,276	3,434	3,680	4,368	4,578	4,907
	5”	4,095	4,292	4,600	5,460	5,723	6,134
	6”	4,914	5,151	5,520	6,552	6,867	7,360
5/8”	5”	5,427	5,688	6,096	7,236	7,584	8,128
	6-1/4”	6,784	7,110	7,620	9,045	9,480	10,160
	7-1/2”	8,140	8,532	9,144	10,854	11,376	12,193
3/4”	6”	6,801	7,128	7,640	9,068	9,505	10,187
	7-1/2”	8,501	8,911	9,550	11,335	11,881	12,733
	9”	10,202	10,693	11,460	13,602	14,257	15,280
1”	8”	11,270	11,812	12,660	15,027	15,750	16,880
	10”	14,088	14,766	15,825	18,783	19,687	21,100
	12”	16,905	17,719	18,990	22,540	23,625	25,320

1. The above values represent mean ultimate values and allowable working loads. The allowable working loads have been reduced using a safety factor of 4.0 for tension and 3.0 for shear , however, in some cases, such as life safety, safety factors of 10.0 or higher may be necessary.
2. Allowable loads must be checked against steel capacity. The lowest value controls.
3. Tabulated data is applicable to single anchors in normal weight concrete unaffected by edge or spacing reduction factors. Values are valid for anchors installed into dry concrete in holes drilled with a hammer drill and ANSI carbide drill bit.
4. Service temperatures should remain approximately constant. The maximum long term temperature being 122°F and the maximum short term temperature being 176°F. Short term temperatures are those that occur over brief intervals, for example, diurnal cycling.
5. Linear interpolation is allowed.
*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Coverage

Anchor size:		(in.)	5/16	3/18	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	2 3/8	2 3/8	2 3/4	3 1/8	3 3/4	4	5
Estimated Number of Fixing *	Cartridge Volume	850 ml	254	143	97	48	29	16	8

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	3 1/8	3 3/4	5	6 1/4	7 1/2	10	12 1/2
Estimated Number of Fixing *	Cartridge Volume	850 ml	193	90	53	24	14	6	3

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	3 3/4	4 1/2	6	7 1/2	9	12	15
Estimated Number of Fixing *	Cartridge Volume	850 ml	161	75	44	20	12	5	2

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Application

Installation Method (Solid Substrates)

1. Drill the hole to the correct diameter and depth. This can be done with either a rotary percussion or rotary machine depending upon the substrate.

2. Thoroughly clean the hole in the following sequence using a brush with the required extensions and a source of clean compressed air. For holes of 15.8 in. (400mm) or less deep, a Blow Pump may be used:

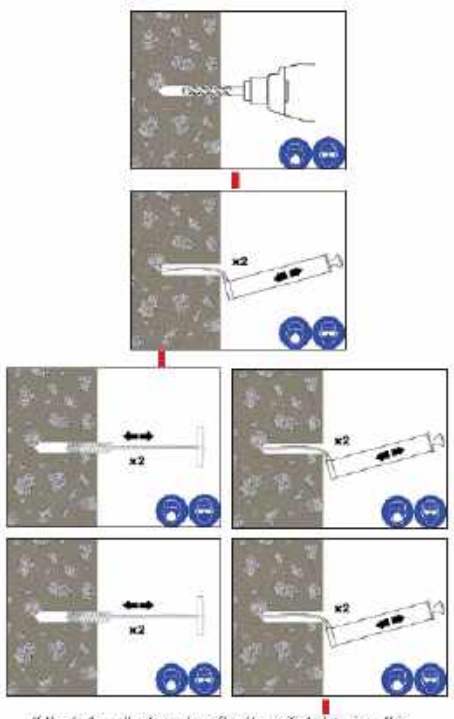
Blow Clean x2.
Brush Clean x2.
Blow Clean x2.
Brush Clean x2.
Blow Clean x2.

3. Select the appropriate static mixer nozzle for the installation, open the cartridge/foil and screw onto the mouth of the cartridge. Insert the cartridge into a good quality applicator.

4. Extrude the first part of the cartridge (at least dispense three full strokes) to waste until an even color has been achieved without streaking in the resin before injecting the resin into the drilled hole.

5. If necessary, cut the extension tube to the depth of the hole and push onto the end of the mixer nozzle, and (for rebars .6 in. dia. or more) fit the correct resin stopper to the other end. Attach extension tubing and resin stopper.

6. Insert the mixer nozzle (resin stopper / extension tube if applicable) to the bottom of the hole. Begin to extrude the resin and slowly withdraw the mixer



If the hole collects water after the initial cleaning, this water must be removed before injecting the resin.

nozzle from the hole ensuring that there are no air voids as the mixer nozzle is withdrawn. Fill the hole to approximately ½ to ¾ full and withdraw the nozzle completely.

7. Insert the clean threaded bar, free from oil or other release agents, to the bottom of the hole using a back and forth twisting motion ensuring all the threads are thoroughly coated. Adjust to the correct position within the stated working time (see table on page 4).

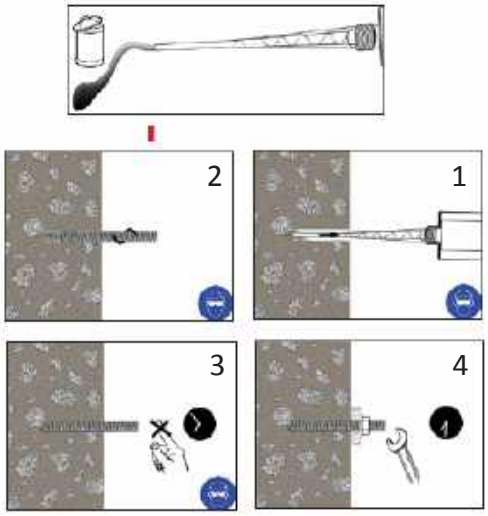
8. Any excess resin should be expelled from the hole evenly around the steel element showing that the hole is full.

This excess resin should be removed from around the mouth of the hole before it sets.

9. Leave the anchor to cure.

Do not disturb the anchor until the appropriate loading/ curing time, on page 4, has elapsed depending on the substrate conditions and ambient temperature.

10. Attach the fixture and tighten the nut to the recommended torque, **do not overtighten.**



Hollow Substrate Installation Method

1. Drill the hole to the correct diameter and depth. This should be done with a rotary percussion drilling machine to reduce spalling.

2. Thoroughly clean the hole in the following sequence using the 2K DF Brush with the required extensions and a source of clean compressed air. For holes of 15.6 in. (400mm) or less deep, a Blow Pump may be used:

Brush Clean x1.
Blow Clean x1.

3. Select the appropriate static mixer nozzle for the installation, open the cartridge/foil and screw onto the mouth of the cartridge. Insert the cartridge into a good quality applicator.

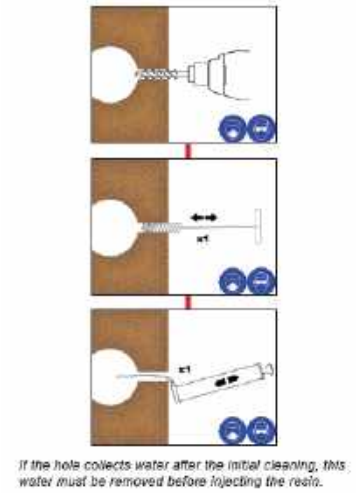
4. Extrude the first part of the cartridge (at least dispense three full strokes) to waste until an even color has been achieved without streaking in the resin before injecting the resin into the drilled hole.

5. Select the appropriate perforated sleeve and insert into the hole.

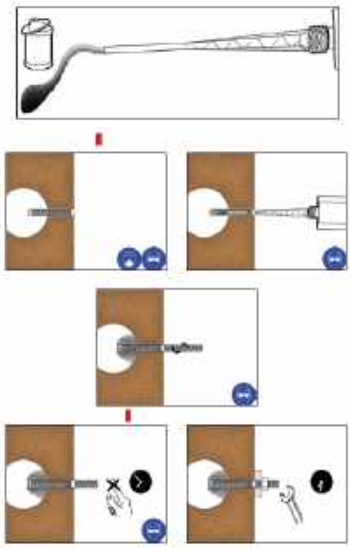
6. Insert the mixer nozzle to the bottom of the perforated sleeve, withdraw 0.07 - 0.1 in. (2-3mm) then begin to extrude the resin and slowly withdraw the mixer nozzle from the hole ensuring that there are no air voids as the mixer nozzle is withdrawn. Fill the perforated sleeve completely and remove the mixer nozzle and cartridge completely.

7. Insert the clean threaded bar,free from oil or other release agents, to the bottom of the hole using a back and forth twisting motion ensuring all the threads are thoroughly coated. Adjust to the correct position within the stated working time (see table on page 1).

8. Any excess resin should be expelled from the hole evenly around the steel element showing that the hole is full.



If the hole collects water after the initial cleaning, this water must be removed before injecting the resin.



Construction

This excess resin should be removed from around the mouth of the hole before it sets.

9. Leave the anchor to cure.

Do not disturb the anchor until the appropriate loading/ curing time, on page 4, has elapsed depending on the substrate conditions and ambient temperature.

10. Attach the fixture and tighten the nut to the recommended torque, **do not overtighten.**

Limitations

THE NTSB HAS STATED THAT THIS PRODUCT IS APPROVED FOR SHORT TERM LOADS ONLY AND SHOULD NOT BE USED IN SUSTAINED TENSILE LOAD ADHESIVE ANCHORING APPLICATIONS WHERE ADHESIVE FAILURE COULD RESULT IN A PUBLIC SAFETY RISK. CONSULT A DESIGN PROFESSIONAL PRIOR TO USE.

*The design professional on the job is ultimately responsible for the interpretation of the data provided on the product data sheet.

- Not for use in overhead applications.
- Not for use in cracked concrete.
- Minimum Application Temperature -14.8°F (-26°C)
- Maximum Application Temperature 68°F (20°C)

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Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® AnchorFix 500

High Performance, two component adhesive anchor system

Description	Sika® AnchorFix 500 adhesive anchor system has been specially formulated as a high performance, two component adhesive anchor system for threaded rods and reinforcing bars in uncracked concrete to suit transport applications.
Where to Use	■ Adhesive anchoring and doweling into uncracked concrete substrates ■ As a pick-proof sealant around windows, doors, lock-ups, etc. inside correctional facilities, schools, hospitals, and other institutions.
Advantages	■ Fixing close to free edges. ■ Versatile range of embedment depths. ■ Anchoring without expansion forces. ■ Component volume ratio of 1:1. ■ Extended working time.
Packaging	20 & 55 fl. oz. cartridges.
Testing	Sika AnchorFix-500 has been tested according to ASTM C 881 and found to meet the requirements of Types I, II and IV, Grade 3, Class C.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	When stored correctly, the shelf life will be for 24 months from the date of manufacture.
Storage Conditions	Cartridges should be stored in their original packaging, the correct way up, in cool conditions (+50°F to +77°F) out of direct sunlight.

Working & Loading Times

Cartridge Temperature	T Work (minutes)	T Load (hours)
+50°F	75	24
+68°F	30	8
+86°F	15	4
+104°F	7.5	4

T Work is the typical time to gel at the highest temperature in the range
T Load is the typical time to reach full capacity

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Construction

Typical Physical Properties		
Property	Result	Method
Consistency	Pass	ASTM C 881
Gel Time	30 minutes	ASTM C 881
Bond Strength (2 day cure)	2000 psi	ASTM C 882
Bond Strength (14 day cure)	2500 psi	ASTM C 882
Compressive Strength (7 day)	>10,000 psi	ASTM D 695
Compressive Modulus (7 days)	400000 psi	ASTM D 695
Water Absorption	0.08%	ASTM D 570
Heat Deflection Temperature	122°F	ASTM D 468
Linear Coefficient of Shrinkage	0.0003 in/in	ASTM D 2566
Shore D Hardness	80-85	ASTM D 2240

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Installation Specification									
Property	Sym-bol	Unit							
Threaded Rod Diameter	d_a	in	3/8	1/2	5/8	3/4	7/8	1	1-1/4
Drill Bit Diameter	d_o	in	1/2	9/16	3/4	7/8	1	1-1/8	1-3/8
Cleaning Brush Size	d_b	-	S14H/F	S16H/F	S22H/F	S24H/F	S27H/F	S31H/F	S38H/F
Rebar Size	d_a	in	#3	#4	#5	#6	#7	#8	#10
Drill Bit Diameter	d_o	in	9/16	5/8	3/4	7/8	1	1-1/8	1-3/8
Cleaning Brush Size	d_b	-	S16H/F	S18H/F	S22H/F	S27H/F	S31H/F	S35H/F	S43H/F
Minimum Embedment Depth	$h_{ef,min}$	in	3	4	5	6	7	8	10
Maximum Embedment Depth	$h_{ef,max}$	in	4 1/2	6	7 1/2	9	10 1/2	12	15
Minimum Con-crete Thickness	h_{min}	in	$2.0\ h_{ef}$						
Critical Anchor Spacing	S_{cr}	in	$2.0\ c_{ac}$						
Critical Edge Distance	c_{ac}	in	$c_{ac} = h_{ef} * (t_{k,uncr} / 1160)^{0.4} * \max[3.1 - 0.7(h / h_{ef}); 1.4]$						
Maximum Tightening Torque	T_{inst}	ft.lb	15	30	60	100	125	150	200

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Allowable Steel Strength for Threaded Rods									
		Carbon Steel ASTM F 1554 Grade 36 (A307 Gr.C)		Carbon Steel ASTM A 193 B7		Stainless Steel ASTM F 593 CW		Stainless Steel ASTM F 593 SH	
Anchor Diameter (in)		Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}
3/8"	lb	2,110	1,080	4,550	2,345	3,630	1,870	4,190	2,160
	kN	9.4	4.8	20.2	10.4	16.1	8.3	18.6	9.6
1/2"	lb	3,750	1,930	8,100	4,170	6,470	3,330	7,450	3,840
	kN	16.7	8,6	36.0	18.5	28.8	14.8	33.1	17.1
5/8"	lb	5,870	3.030	12,655	6,520	10,130	5,220	11,640	6,000
	kN	26.1	13,5	56.3	29.0	45.1	23.2	51.8	26.7
3/4"	lb	8,460	4.360	18,220	9,390	12,400	6,390	15,300	7,880
	kN	37.6	19.4	81.0	41.8	55.2	28.4	68.1	35.1
7/8"	lb	11,500	5,930	24,800	12,780	16,860	8,680	20,830	10,730
	kN	51.2	26.4	110.3	56.8	75.0	38.6	92.7	47.7
1"	lb	15,020	7,740	32,400	16,860	22,020	11,340	27,210	14,020
	kN	66.8	34.4	144.1	74.2	97.9	50.4	121.0	62.4
1 - 1/4"	lb	23,480	12,100	50,610	26,070	34,420	17,730	38,470	19,820
	kN	104.4	53.8	225.1	116.0	153.1	78.9	171.1	88.2

Allowable Tension, N_{all} = 0.33 x f_u x nominal cross sectional area
Allowable Shear, V_{all} = 0.17 x f_u x nominal cross section area
*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Allowable Steel Strength for Rebar			
		Carbon Steel ASTM A 615 Grade 60	
Rebar Size		Allowable Tension, N_{all}	Allowable Shear, V_{all}
#3	lb	3,280	1,690
	kN	14.6	7.5
#4	lb	5,831	3,004
	kN	25.9	13.4
#5	lb	9,111	4,693
	kN	40.5	20.9
#6	lb	13,121	6,759
	kN	58.4	30.1
#7	lb	17,859	9,200
	kN	79.4	40.9
#8	lb	23,326	12,016
	kN	103.8	53.4
#10	lb	37,623	19,381
	kN	167.4	86.2

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Allowable Steel Strength for Rebar			
		Carbon Steel CAN/CSA-G30.18 Gr.400	
Rebar Size		Allowable Tension, N_{all}	Allowable Shear, V_{all}
10M	lb	4,016	2,069
	kN	17.9	9.2
15M	lb	8,052	4,148
	kN	35.8	18.5
20M	lb	11,960	6,161
	kN	53.2	27.4
25M	lb	19,975	10,290
	kN	88.9	45.8
30M	lb	28,121	14,486
	kN	125.1	64.4
35M	lb	40,089	20,652
	kN	178.3	91.9

Tension = 0.33 x f_u x nominal cross sectional area
Shear = 0.17 x f_u x nominal cross section area
*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

1. Above values for reinforcing steel assume the design method is the same as a post-installed adhesive anchor,under the principles of anchor design (failure modes will be concrete breakout, pryout, steel failure, or adhesive bond) and not under the principles of reinforcing steel design (failure modes are typically splitting failure, inadequate bar development etc.). CONSULT AN ENGINEERING DESIGN PROFESSIONAL PRIOR TO USE.

Coverage

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	2 3/8	2 3/8	2 3/4	3 1/8	3 3/4	4	5
Estimated Number of Fixing *	Cartridge Volume	600 ml	176	99	67	33	20	11	6
		1500 ml	455	256	175	86	53	30	16

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	3 1/8	3 3/4	5	6 1/4	7 1/2	10	12 1/2
Estimated Number of Fixing *	Cartridge Volume	600 ml	134	62	37	16	10	4	2
		1500 ml	346	162	96	43	26	12	6

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

Application

Installation Method (Solid Substrates)

1. Drill hole to required depth using a hammer drill with the drill bit that is appropriate to match the hole diameter as stated.

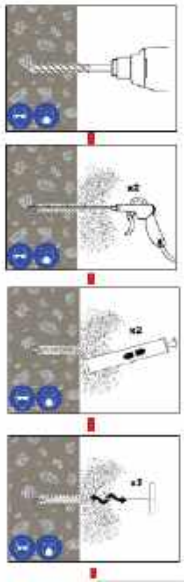
2. Insert the air lance to the bottom of the hole and depress the trigger for 2 seconds. The compressed air used should be at a minimum pressure of 6bar / 90psi and should be free from oil and / or water. Repeat the operation. If using the hand pump, give two blowing operations.

3. Select the correct size brush (see page 9, Installation Accessories). Ensure that the brush is in good condition and check that the diameter of the brush is correct for the size of the drilled hole. Insert the brush to the bottom of the hole and pull out using a back and forth twisting motion. Repeat the operation.

4. Repeat 2

5. Repeat 3

6. Repeat 2

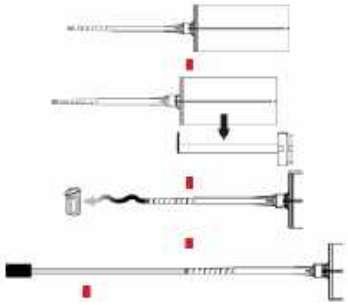


7. Select the appropriate static mixer nozzle for the installation and screw onto the mouth of the cartridge. Insert the cartridge into a good quality extrusion gun after checking that the extrusion gun is in good working order.

8. Extrude the first part of the cartridge to waste until an even colour has been achieved without streaking in the resin.

9. If necessary, attach extension tubing and resin stopper.

10. Insert the mixer nozzle to the bottom of the hole. Begin to extrude the resin and slowly withdraw the mixer nozzle from the hole ensuring that there are no air voids as the mixer nozzle is withdrawn. Fill the hole to approximately ½ to ¾ full and remove the mixer nozzle and cartridge completely.



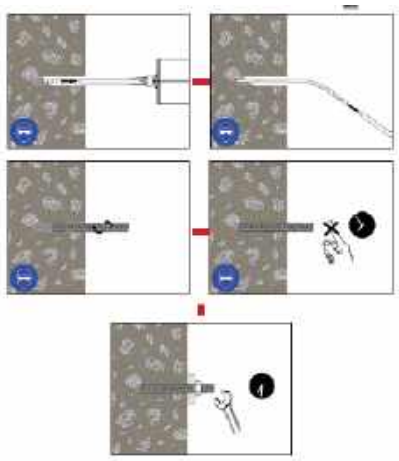
11. Take the steel element of the anchor. This should be

free from oil or other release agents. Insert the steel element to the bottom of the hole using a back and forth twisting motion. Any excess resin should be expelled from the hole evenly around the steel element.

12. Clean any excess resin from around the mouth of the hole.

13. Leave the anchor to cure. Do not disturb the anchor until the appropriate working time has elapsed depending on the substrate conditions and ambient temperature.

14. Attach the fixture as required.



Overhead Substrate Installation Method

1. Using the SDS Hammer Drill with a carbide tipped drill bit of the appropriate size, drill the hole to suit the anchor.

2. *a)* Select the correct Air Lance, insert to the bottom of the hole and depress the trigger for 2 seconds. The compressed air must be clean – free from water and oil – and at a minimum pressure of 90psi (6bar). Perform the blowing operation twice. *b)* If a Manual Pump is to be used, complete the blowing operation as above using the full stroke of the pump and blow the hole clean twice.

3. Select the correct size Hole Cleaning Brush. Ensure that the brush is in good condition and the correct diameter. Insert the brush to the bottom of the hole and withdraw with a twisting motion. There should be positive interaction between the steel bristles of the brush and the sides of the drilled hole. Perform the brushing operation twice.

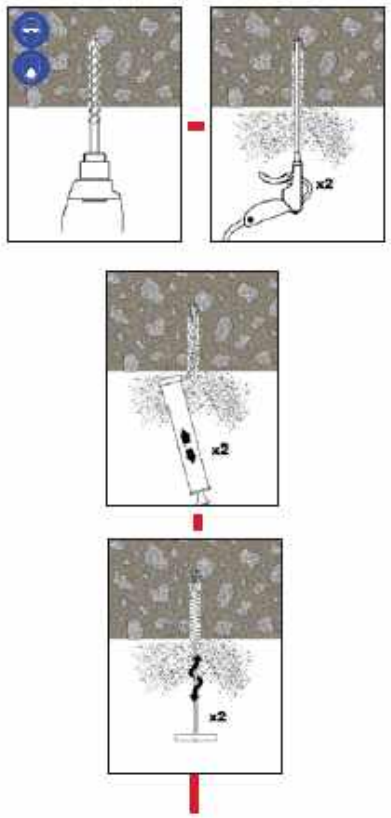
4. Repeat 2 (a) or (b)

5. Repeat 3

6. Repeat 2 (a) or (b)

7. Select the appropriate static mixer nozzle and attach to the cartridge. Check the Dispensing Tool is in good working order. Place the cartridge into the dispensing tool.

Note: The QH nozzle is in two sections. One section contains the mixing elements and the other section is an extension piece. Connect the extension piece



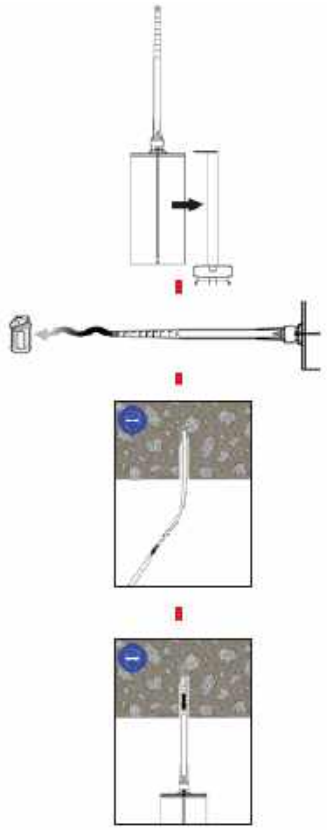
Construction

to the mixing section by pushing the two sections firmly together until a positive engagement is felt.

8. Extrude some resin to waste until an even-colored mixture is extruded, The cartridge is now ready for use.

9. As specified in the Installation Accessories Table, attach an extension tube with resin stopper (if required) to the end of the mixing nozzle with a push fit. (The extension tubes may be pushed into the resin stoppers and are held in place with a coarse internal thread).

10. Insert the mixing nozzle to the bottom of the hole. Extrude the resin and slowly withdraw the nozzle from the hole. Ensure no air voids are created as the nozzle is withdrawn. Inject resin until the hole is approximately ¾ full and remove the nozzle from the hole.



Limitations

THE NTSB HAS STATED THAT THIS PRODUCT IS APPROVED FOR SHORT TERM LOADS ONLY AND SHOULD NOT BE USED IN SUSTAINED TENSILE LOAD ADHESIVE ANCHORING APPLICATIONS WHERE ADHESIVE FAILURE COULD RESULT IN A PUBLIC SAFETY RISK. CONSULT A DESIGN PROFESSIONAL PRIOR TO USE.

- Do not use in expansion (i.e. moving) joints.

*The design professional on the job is ultimately responsible for the interpretation of the data provided on the product data sheet.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® AnchorFix-3001

High performance, 2 component adhesive anchor system use in cracked & uncracked concrete

Description	Sika AnchorFix-3001 adhesive anchor system has been specially formulated as a high performance, two component adhesive anchor system for threaded bars and reinforcing bars in both cracked and uncracked concrete.
Where to Use	■ Cracked & uncracked concrete ■ Hard natural stone ■ Solid rock ■ Solid masonry
Advantages	■ Fixing close to free edges ■ Versatile range of embedment depths ■ Anchoring without expansion forces
Packaging	20.2 fl. oz. (600 ml) or 50.7 fl. oz. (1500 ml) cartridges
Approvals	■ ESR to AC308 by ICC-ES (ESR-3608) ■ Certified to ANSI /NSF - 61 by IAPMO-R&T (file N-7858) ■ Sikadur AnchorFix-3001 has been tested according to ASTM C 881 Type I, IV, Class C, Grade 3

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life When stored correctly, the shelf life will be for 24 months from the date of manufacture.

Storage Conditions Cartridges should be stored in their original packaging, the correct way up, in cool conditions (+50°F to +77°F) out of direct sunlight.

Working & Loading Times

Cartridge Temperature	T Work (minutes)	Base Material Temperature	T Load (hours)
+50°F to +59°F	20	+40°F to +49°F	24
		+50°F to +59°F	12
+59°F to +72°F	15	+59°F to +72°F	8
+72°F to +77°F	11	+72°F to +77°F	7
+77°F to +86°F	8	+77°F to +86°F	6
+86°F to +95°F	6	+86°F to +95°F	5
+95°F to +104°F	4	+95°F to +104°F	4
+104°F	3	+104°F	3

T Work is the typical time to gel at the highest temperature in the range
T Load is the typical time to reach full capacity

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Physical Properties		
Property	Result	Method
Consistency	Pass	ASTM C 881
Gel Time	10 minutes**	ASTM C 881
Bond Strength (2 day cure)	2,500 psi	ASTM C 882
Bond Strength (14 day cure)	2,700 psi	ASTM C 882
Compressive Strength (7 day)	>13,000 psi	ASTM D 695
Compressive Modulus (7 days)	420,000 psi	ASTM D 695
Water Absorption	0.08%	ASTM D 570
Heat Deflection Temperature	122°F	ASTM D 468
Linear Coefficient of Shrinkage	0.0003 in/in	ASTM D 2566

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.
**Note: Per section 5.2 "The purchaser may specify a minimum gel time of 5 minutes for Types I and IV when automatic proportioning, mixing and dispensing equipment are used."

Installation Specification									
Property	Symbol	Unit							
Threaded Rod Diameter	d_a	in	3/8	1/2	5/8	3/4	7/8	1	1-1/4
Drill Bit Diameter	d_o	in	1/2	9/16	3/4	7/8	1	1-1/8	1-3/8
Cleaning Brush Size	d_b	-	S14H/F	S16H/F	S22H/F	S24H/F	S27H/F	S31H/F	S38H/F
Nozzle Type	-	-	Q	Q	Q /QH	QH	QH	QH	QH
Extension Tube Required?	-	-	Y1 > 3.5" h_{ef}	Y1 > 3.5" h_{ef}	Y2 > 10" h_{ef}	Y2 > 10" h_{ef}	Y2 > 10" h_{ef}	Y2 > 10" h_{ef}	Y2 > 10" h_{ef}
Resin Stopper Required?	-	-	NO	NO	RS18 > 10" h_{ef}	RS18 > 10" h_{ef}	RS22 > 10" h_{ef}	RS22 > 10" h_{ef}	RS30 > 10" h_{ef}
Rebar Size	d_a	in	#3	#4	#5	#6	#7	#8	#10
Drill Bit Diameter	d_o	in	9/16	5/8	3/4	7/8	1	1-1/8	1-3/8
Cleaning Brush Size	d_b	-	S16H/F	S18H/F	S22H/F	S27H/F	S31H/F	S35H/F	S43H/F
Nozzle Type	-	-	Q	Q	Q /QH	QH	QH	QH	QH
Extension Tube Required?	-	-	Y1 > 3.5" h_{ef}	Y1 > 3.5" h_{ef}	Y2 > 10" h_{ef}	Y2 > 10" h_{ef}	Y2 > 10" h_{ef}	Y2 > 10" h_{ef}	Y2 > 10" h_{ef}
Resin Stopper Required?	-	-	NO	NO	RS18 > 10" h_{ef}	RS18 > 10" h_{ef}	RS22 > 10" h_{ef}	RS22 > 10" h_{ef}	RS30 > 10" h_{ef}
Maximum Tightening Torque	T_{inst}	ft.lb	15	30	60	100	125	150	200

Y1 - requires 3/8" diameter extension tube fitted to Q nozzle
Y2 requires 9/16" diameter extension tube fitted to QH nozzle
RS22 - use 22mm diameter resin stopper
RS30 - use 30mm diameter resin stopper
***The design professional on the job is ultimately responsible for the interpretation of the data provided above.**

Allowable Steel Strength for Threaded Rods									
		Carbon Steel ASTM F 1554 Grade 36 (A307 Gr.C)		Carbon Steel ASTM A 193 B7		Stainless Steel ASTM F 593 CW		Stainless Steel ASTM F 593 SH	
Anchor Diameter (in)		Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}	Allowable Tension, N_{all}	Allowable Shear, V_{all}
3/8”	lb	2,110	1,080	4,550	2,345	3,360	1,870	4,190	2,160
	kN	9.4	4.8	20.2	10.4	16.1	8.3	18.6	9.6
1/2”	lb	3,750	1,930	8,100	4,170	6,470	3,330	7,450	3,840
	kN	16.7	8.6	36.0	18.5	28.8	14.8	33.1	17.1
5/8”	lb	5,870	3,030	12,655	6,520	10,130	5,220	11,640	6,000
	kN	26.1	13.5	56.3	29.0	45.1	23.2	51.8	26.7
3/4”	lb	8,460	4,360	18,220	9,390	12,400	6,390	15,300	7,880
	kN	37.6	19.4	81.0	41.8	55.2	28.4	68.1	35.1
7/8”	lb	11,500	5,930	24,800	12,780	16,860	8,680	20,830	10,730
	kN	51.2	26.4	110.3	56.8	75.0	38.6	92.7	47.7
1”	lb	15,020	7,740	32,400	16,690	22,020	11,340	27,210	14,020
	kN	66.8	34.4	144.1	74.2	97.9	50.4	121.0	62.4
1 - 1/4”	lb	23,480	12,100	50,640	26,070	34,420	17,730	38,470	19,820
	kN	104.4	53.8	225.1	116.0	153.1	78.9	171.1	88.2

Allowable Tension, N_{all} = 0.33 x f_u x nominal cross sectional area
Allowable Shear, V_{all} = 0.17 x f_u x nominal cross section area
*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Allowable Steel Strength for Rebar			
		Carbon Steel ASTM A 615 Grade 60	
Rebar Size		Allowable Tension, N_{all}	Allowable Shear, V_{all}
#3	lb	3,280	1,690
	kN	14.6	7.5
#4	lb	5,831	3,004
	kN	25.9	13.4
#5	lb	9,111	4,693
	kN	40.5	20.9
#6	lb	13,121	6,759
	kN	58.4	30.1
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	kN	79.4	40.9
#8	lb	23,326	12,016
	kN	103.8	53.4
#10	lb	37,623	19,381
	kN	167.4	86.2

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Allowable Steel Strength for Rebar			
		Carbon Steel CAN/CSA-G30.18 Gr.400	
Rebar Size		Allowable Tension, N_{all}	Allowable Shear, V_{all}
10M	lb	4,016	2,069
	kN	17.9	9.2
15M	lb	8,052	4,148
	kN	35.8	18.5
20M	lb	11,960	6,161
	kN	53.2	27.4
25M	lb	19,975	10,290
	kN	88.9	45.8
30M	lb	28,121	14,486
	kN	125.1	64.4
35M	lb	40,089	20,652
	kN	178.3	91.9

Tension = 0.33 x f_u x nominal cross sectional area
Shear = 0.17 x f_u x nominal cross section area
*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

1. Above values for reinforcing steel assume the design method is the same as a post-installed adhesive anchor,under the principles of anchor design (failure modes will be concrete breakout, pryout, steel failure, or adhesive bond) and not under the principles of reinforcing steel design (failure modes are typically splitting failure, inadequatebar development etc..). CONSULT AN ENGINEERING DESIGN PROFESSIONAL PRIOR TO USE.

Anchor Diameter	Embedment Depth	Allowable Concrete Capacity /Bond					
		Tension (lb)			Shear (lb)		
		f^2_c=2,500psi	f^2_c=4,000psi	f^2_c=8,000psi	f^2_c=2,500psi	f^2_c=4,000psi	f^2_c=8,000psi
3/8" or #3	2-3/8"	1,939	2,032	2,178	2,585	2,710	2,904
	4-15/16"	4,031	4,225	4,528	5,375	5,633	6,038
	7-1/2"	6,123	6,418	6,878	8,164	8,557	9,171
1/2" or #4	2-3/4"	2,527	2,649	2,839	3,369	3,531	3,785
	6-3/8"	5,858	6,140	6,581	7,811	8,187	8,774
	10"	9,186	9,631	10,323	12,252	12,842	13,764
5/8" or #5	3-1/8"	3,889	4,076	4,368	5,185	5,434	5,824
	7-13/16"	9,722	10,189	10,921	12,962	13,586	14,561
	12-1/2"	15,555	16,303	17,473	20,739	21,737	23,298
3/4" or #6	3-3/4"	5,200	5,450	5,841	6,933	7,267	7,788
	9-3/8"	13,000	13,625	14,603	17,333	18,167	19,471
	15"	20,799	21,800	23,365	27,732	29,067	31,153
1" or #8	4"	8,407	8,811	9,444	11,209	11,749	12,592
	12"	25,221	26,434	28,332	33,628	35,246	37,776
	20"	42,035	44,057	47,219	56,046	58,743	62,959
1-1/4" or #10	5"	10,529	11,036	11,828	14,039	14,715	15,771
	15"	31,588	33,108	35,484	42,117	44,144	47,312
	25"	52,646	55,180	59,140	70,195	73,573	78,853

1. The above values represent mean ultimate values and allowable w orking loads. The allowable working loads have been reduced us ing a safety factor of 4.0 for tension and 3.0 for shear , however, in some cases, such as life safety, safety factors of 10.0 or higher may be necessary.
2. Allowable loads must be checked against steel capacity. The lowest value controls.
3. Tabulated data is applicable to single anchors in normal weight concrete unaffected by edge or spacing reduction factors. V alues are valid for anchors installed into dry concrete in holes drilled with a hammer drill and ANSI carbide drill bit.
4. Linear interpolation is allowed.

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

In - Service Temperature	Reduction Factor*
40°F	1.0
68°F	1.0
110°F	0.9
130°F	0.7
150°F	0.5
168°F	0.4
176°F	0.3

*The design professional on the job is ultimately responsible for the interpretation of the data provided above.

**For intermediate temperatures, linear interpolation is allowed. Values must not be extrapolated.

Coverage

Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	2 3/8	2 3/8	2 3/4	3 1/8	3 3/4	4	5
Estimated Number of Fixing *	Cartridge Volume	600 ml	176	99	67	33	20	11	6
		1500 ml	455	256	175	86	53	30	16

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

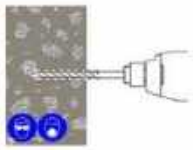
Anchor size:		(in.)	5/16	3/8	1/2	5/8	3/4	1	1 1/4
Drill Hole Diameter:		(in.)	3/8	1/2	9/16	3/4	7/8	1 1/8	1 3/8
Embedment Depth:		(in.)	3 1/8	3 3/4	5	6 1/4	7 1/2	10	12 1/2
Estimated Number of Fixing *	Cartridge Volume	600 ml	134	62	37	16	10	4	2
		1500 ml	346	162	96	43	26	12	6

*Number of fixings assumes 30ml wastage in initial extrusion and holes filled to 3/4 full

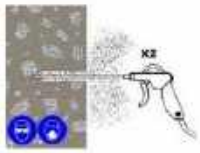
Application

Installation Method (Solid Substrates)
Always refer to MPII on ICC-ESR-3608

1. Using the SDS Hammer Drill in rotary hammer mode for drilling, with a carbide tipped drill bit conforming to ANSI B212.15-1994 of the appropriate size, drill the hole to the specified hole diameter and depth.

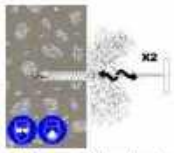


2. Select the correct Air Lance, insert to the bottom of the hole and depress the trigger for 2 seconds. The compressed air must be clean – free from water and oil – and at a minimum pressure of 90 psi (6 bar).



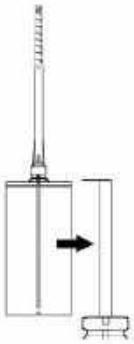
Perform the blowing operation twice.

3. Select the correct size Hole Cleaning Brush. Ensure that the brush is in good condition and the correct diameter. Insert the brush to the bottom of the hole, using a brush extension if needed to reach the bottom of the hole and withdraw with a twisting motion. *There should be positive interaction between the steel bristles of the brush and the sides of the drilled hole.*



Perform the brushing operation twice.

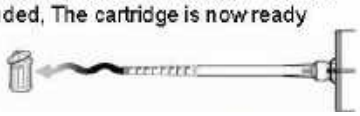
4. Repeat 2 (blowing operation) twice.
5. Repeat 3 (brushing operation) twice.
6. Repeat 2 (blowing operation) twice.
7. Select the appropriate static mixer nozzle, checking that the mixing elements are present and correct **(do not modify the mixer)**. Attach mixer nozzle to the cartridge. Check the Dispensing Tool is in good working order. Place the cartridge into the dispensing tool.



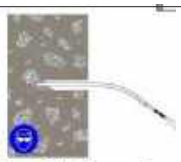
Note: The SAF-Q2 nozzle is in two sections. One section contains the mixing elements and the other section is an extension piece. Connect the extension piece to the mixing section by pushing the two sections firmly together until a positive engagement is felt.

Note: AnchorFix®-3001 may only be installed between the temperatures of 40°F and 104°F. The product must be conditioned to a minimum of 50°F. For gel and cure time data, refer to Table 14.

8. Extrude some resin to waste until an even-colored mixture is extruded. The cartridge is now ready for use.



9. As specified in Figure 2, Table 11, and Table 12 , attach an extension tube with resin stopper (if required) to the end of the mixing nozzle with a push fit.
(The extension tubes may be pushed into the resin stoppers and are held in place with a coarse internal thread).

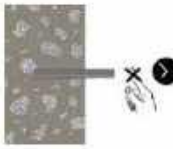


10. Insert the mixing nozzle to the bottom of the hole. Extrude the resin and slowly withdraw the nozzle from the hole. **Ensure no air voids are created** as the nozzle is withdrawn. Inject resin until the hole is approximately ¾ full and remove the nozzle from the hole.

11. Select the steel anchor element ensuring it is free from oil or other contaminants, and mark with the required embedment depth. Insert the steel element into the hole using a back and forth twisting motion to ensure complete cover, until it reaches the bottom of the hole. Excess resin will be expelled from the hole evenly around the steel element and there shall be no gaps between the anchor element and the wall of the drilled hole.

12. Clean any excess resin from around the mouth of th hole.

13. Do not disturb the anchor until at least the minimum cure time has elapsed. Refer to the Table 14 Gel and Cure Times to determine the appropriate cure time.



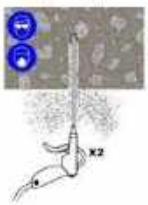
14. Position the fixture and tighten the anchor to the appropriate installation torque.

Do not over-torque the anchor as this could adversely affect its performance.

Overhead Substrate Installation Method
Always refer to MPII on ICC-ESR-3608

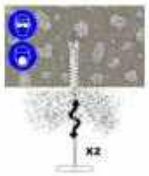
1. Using the SDS Hammer Drill in rotary hammer mode for drilling, with a carbide tipped drill bit conforming to ANSI B212.15-1994 of the appropriate size, drill the hole to the specified hole diameter and depth.

2. Select the correct Air Lance, insert to the bottom of the hole and depress the trigger for 2 seconds. The compressed air must be clean – free from water and oil – and at a minimum pressure of 90 psi (6 bar).



Perform the blowing operation twice.

3. Select the correct size Hole Cleaning Brush. Ensure that the brush is in good condition and the correct diameter. Insert the brush to the bottom of the hole, using a brush extension if needed to reach the bottom of the hole, and withdraw with a twisting motion. *There should be positive interaction between the steel bristles of the brush and the sides of the drilled hole.*



Perform the brushing operation twice.

4. Repeat 2 (blowing operation) twice.

5. Repeat 3 (brushing operation) twice.

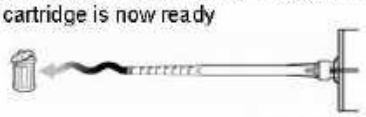
6. Repeat 2 (blowing operation) twice.

7. Select the appropriate static mixer nozzle checking that the mixing elements are present and correct **(do not modify the mixer)**. Attach mixer nozzle to the cartridge. Check the Dispensing Tool is in good working order. Place the cartridge into the dispensing tool.

Note: The SAF-Q2 nozzle is in two sections. One section contains the mixing elements and the other section is an extension piece. Connect the extension piece to the mixing section by pushing the two sections firmly together until a positive engagement is felt.

Note: AnchorFix®-3001 may only be installed between the Temperatures of 40°F and 104°F. The product must be Conditioned to a minimum of 50°F. For gel and cure time data, refer to Table 14.

8. Extrude some resin to waste until an even-colored mixture is extruded, The cartridge is now ready for use.



9. As specified in Figure 2, Table 11, and Table 12, attach an extension tube with resin stopper (if required) to the end of the mixing nozzle with a push fit. (The extension tubes may be pushed into the resin stoppers and are held in place with a coarse internal thread).

10. Insert the mixing nozzle to the bottom of the hole. Extrude the resin and slowly withdraw the nozzle from the hole. **Ensure no air voids are created** as the nozzle is withdrawn. Inject resin until the hole is approximately ¾ full and remove the nozzle from the hole.

11. Select the steel anchor element ensuring it is free from oil or other contaminants, and mark with the required embedment depth. Insert the steel element into the hole using a back and forth twisting motion to ensure complete cover, until it reaches the bottom of the hole.
Excess resin will be expelled from the hole evenly around the steel element and there shall be no gaps between the anchor element and the wall of the drilled hole.

12. Clean any excess resin from around the mouth of the hole.

13. Do not disturb the anchor until at least the minimum cure time has elapsed. Refer to the Working and Load Timetable to determine the appropriate cure time.

14. Position the fixture and tighten the anchor to the appropriate installation torque.

Do not over-torque the anchor as this could adversely affect its performance.

Limitations

The design professional on the job is ultimately responsible for the interpretation of the data provided above.

Note: Sika AnchorFix-3001 has been qualified for resisting long-term leads through the ICC-ES AC308 creep test for which an anchor is loaded and monitored for movement over time. According to AC308, anchors that pass the creep test are determined to be suitable for resisting long- term tensile loads.

- Installation of anchors in horizontal or upwardly inclined orientations to resist sustained tension loads shall be performed by personnel certified by an application certification program in accordance with ACI 318 D.9.2.2 or D.9.2.3
- Please refer to section 5.0 for conditions of use in the ICC Evaluation Report #3608. This report is available on Sika and ICC's websites.
- For a complete list of tools and accessories, refer to ICC ESR #3608
- Minimum application temperature: 40°F (4°C)
- Maximum application temperature: 104°F (40°C)

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

D - Grouting and Grout Aids

Sikadur 42 Grout-Pak	D10
Sikadur 42 Grout-Pak PT	D20
Sikadur 42 Grout-Pak LE	D30
SikaGrout 212	D40
SikaGrout 328	D50
SikaGrout 428 FS	D60
Intraplast-N	usa.sika.com
SikaGrout Aid	usa.sika.com

Construction

Sikadur® 42, Grout-Pak

Pre-proportioned, epoxy, baseplate grouting system

Description	Sikadur® 42, Grout-Pak is a 3-component, 100% solids, moisture-tolerant, epoxy baseplate grouting system.
Where to Use	■ Precision seating of baseplates. ■ Precision grouting of wind turbine tower bases requiring rapid strength gain. ■ Grouting under equipment, including heavy impact and vibratory machinery, reciprocating engines, compressors, pumps, presses, etc. ■ Grouting for "pour-back" anchorage on post tensioning projects (e.g. segmental bridge). ■ Grouting under crane rails.
Advantages	■ Ready to mix, pre-proportioned kit. ■ Moisture-tolerant. ■ Corrosion and impact resistant. ■ Stress and chemical resistant. ■ Long working time. ■ High vibration resistance. ■ Fast strength gain. ■ Low peak exothermic system for large pours. ■ High effective bearing area. ■ Excellent flowability. ■ USDA certifiable for incidental food contact.
Packaging	**0.5 ft³ kit:** Contains 0.9 gal. epoxy (Component A and Component B in a 5 gal. pail separated with a topliner), and 50 lbs. aggregate (Component C) in a multi-wall bag. **1.5 ft³ kit:** Contains 2.7 gal. epoxy (Component A in a 5 gal. pail and Component B in a 2 gal. pail) and 150 lbs. aggregate (Component C) in three 50 lb. multi-wall bags.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 2 years in original, unopened containers.

Storage Conditions Store dry at 40°-95°F (4°-35°C). Condition material to 65°-85°F (18°-29°C) before using. Component C must be kept dry.

Color Concrete gray

Consistency Flowable

Application Life Approximately 90 minutes

Tensile Properties (ASTM C-307) **7 day** Tensile Strength 2,300 psi (15.8 MPa)

Flexural Properties (ASTM C-580)

7 day	Flexural Strength (Modulus of Rupture)	4,000 psi (27.6 MPa)
	Tangent Modulus of Elasticity	1.30 x 10^6 psi (8,963 MPa)

Water Absorption (ASTM C-413) **7 day** (2-hour boil) 0.04%

Bond Strength (ASTM C-882 modified)

7 day	Bond Strength to Concrete	4,200 psi (29.0 MPa)
	Bond Strength to Steel	3,800 psi (26.2 MPa)

Coefficient of Thermal Expansion (ASTM C-531) 24.5 x 10^{-6} in./in./°F (13.7x10^{-6} mm/mm/°C)

Thermal Compatibility (ASTM C-884) passes test

Effective Bearing Area[1] >95%

Compressive Properties (ASTM C-579B): Compressive Strength, psi (MPa)

	40°F* (4°C)	73°F* (23°C)	90°F* (32°C)
8 hour	-	-	5,500 (37.9)
16 hour	-	9,600 (66.2)	9,800 (67.6)
1 day	-	12,200 (84.1)	11,500 (79.3)
3 day	4,800 (33.1)	14,000 (96.6)	14,000 (96.6)
7 day	13,700 (94.5)	14,900 (102.8)	14,800 (102.1)
14 day	13,900 (95.9)	15,000 (103.4)	15,200 (104.8)
28 day	13,900 (95.9)	15,200 (104.8)	15,600 (107.6)

* Material cured and tested at the temperatures indicated.
[1] Percent final surface area of grout in contact with bearing plate

Construction

How to Use

Surface Preparation

Substrate and baseplate contact area must be clean, sound, and free of standing water. Remove dust, laitance, oils, grease, curing compounds, waxes, impregnations, foreign particles, coatings and disintegrated materials by mechanical means (i.e., sandblasting, bush hammering). Sandblast metal baseplates to a commercial white finish for maximum adhesion. Apply grout immediately to prevent re-oxidizing. Concrete substrate must have reached its desired strength (3,000 psi minimum) and must be dimensionally stable.

Mixing

0.5 ft³ kit: Pour the entire contents of Components 'A' & 'B' into an appropriate mixing vessel (e.g. 5 gal. bucket) and mix for 30 seconds with a 1/2 in. Jiffy mixing paddle (5 in. blade diameter) on a low-speed (400 - 600 rpm) 3/4 in. drive rotary drill, taking care not to entrain air during mixing. Do not over-mix. It is critical to the performance of the grout that there be no appreciable air bubbles in the resin. Slowly add the entire contents of Component 'C' and mix until uniformly blended (approx. 5 minutes).

1.5 ft³ kit: Pour the entire contents of Components 'A' & 'B' into an appropriate mixing vessel (e.g. 5 gal. bucket) and mix for 30 seconds with a 1/2 in. Jiffy mixing paddle (5 in. blade diameter) on a low-speed (400 - 600 rpm) 3/4 in. drive rotary drill, taking care not to entrain air during mixing. Do not over-mix. It is critical to the performance of the grout that there be no appreciable air bubbles in the resin. Transfer the mixed resin to an appropriate mixing vessel. Slowly add the entire 3 bags of Component 'C' and mix until uniformly blended (approx. 5 minutes).

Application

Pour the mixed grout into the prepared forms from one side only to eliminate air entrapment. Baseplate should have vent holes around periphery to prevent air pockets from developing. Maintain the liquid head to ensure intimate contact with the base plate. Plungers may be used to ease placement. Place sufficient epoxy adhesive grout in the forms to rise slightly above the underside of the base plate. Grout depth of 1 in. (25 mm) minimum required.

Tooling & Finishing

Forming: The flowable consistency of the epoxy adhesive grout system requires the use of forms to contain the material around the baseplates. In order to prevent leakage or seepage, completely seal all forms. Apply polyethylene film or wax to all forms to prevent adhesion of the grout. Prepare form work to maintain a 2 in. (50 mm) liquid head to facilitate placement. A grout box that can be attached to the form will enhance the grout flowability. Projected anchor bolts should be wrapped with neoprene foam rubber (or similar) to prevent grout from adhering to the bolts. The use of expansion joints is recommended on large pours to minimize the potential for cracking in the epoxy grout (maximum 3-4 ft. spacing in each direction).

Limitations

- Minimum substrate and ambient temperature is 40°F (4°C).
- Do not thin. Addition of solvents will prevent proper cure.
- Material is a vapor barrier after cure.
- Minimum grout depth is 1 in. (25 mm).
- Baseplate should be shielded from direct sunlight and rain for a minimum of 24 hours before epoxy grouting, and 48 hours after grouting.
- Maximum grout depth is 4 in./lift (101 mm).
- Component C must be kept dry.
- Cold material may require chaining, rodding, and pushing during placement.
- For proper seating, allow grout to rise above the bottom of the base plate.
- **Do not batch. Mix complete units.**
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 42, Grout-Pak PT

Pre-proportioned, epoxy, anchorage protection system

Description	Sikadur® 42, Grout-Pak PT is a 3-component, 100% solids, moisture-tolerant, epoxy anchorage protection system.
Where to Use	■ To protect the anchorages of post-tensioning tendons or bars (i.e. pour-back box) on segmental bridge projects.
Advantages	■ Ready to mix, pre-proportioned kit. ■ Excellent adhesion. ■ Impermeable and resistant to chemicals, corrosion, impact and stress. ■ Moisture-tolerant. ■ Low heat development/low peak exothermic system for large pours. ■ High compressive strength. ■ Long working time. ■ High vibration resistance. ■ Fast strength gain. ■ Minimal shrinkage/expansion. ■ High effective bearing area. ■ Good flowability.
Packaging	0.5 cu. ft. kit consists of epoxy resin (Component 'A' and 'B') and 50 lb. aggregate. (Component 'C') in a multi-wall bag.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 2 years in original, unopened containers.

Storage Conditions Store dry at 40°-95°F (4°-35°C). Condition material to 75°-85°F (24°-29°C) before using. Component 'C' must be kept dry.

Color Dark Gray

Consistency Flowable (when conditioned properly)

Application (Pot) Life Approximately 90 minutes

Gel Time (ASTM D-2471) Approximately 3.25 hrs.

Tensile Strength (ASTM C-307) **7 day** 2,200 psi (15.1 MPa)

Flexural Properties (ASTM C-580)

7 day	Flexural Strength (Modulus of Rupture)	3,700 psi (25.5 MPa)
	Tangent Modulus of Elasticity	1,400 ksi (9,655 MPa)

Water Absorption (ASTM C-413) **7 day** Total Water Absorption (2-hour boil) 0.04%

Bond Strength (ASTM C-882 modified)

7 day	Bond Strength to Concrete (wet cure)	3,100 psi (21.3 MPa)
	Bond Strength to Steel (wet cure)	3,600 psi (24.8 MPa)

Coefficient of Thermal Expansion (ASTM C-531)

73° - 212°F (23°-100°C)	19.2 x 10^{-6} in./in./ЉF	(10.0 x10^{-6} mm/mm/ЉC)
0° - 160°F (-18°-71°C)	12.6 x 10^{-6}in./in./ЉF	(6.8 x10^{-6} mm/mm/ЉC)

Peak Exotherm (ASTM D-2471) 118°F (48°C)
Specimen Size Tested: 13 in. x 10 in. x 6 in. (330 mm x 254 mm x 152 mm)

Thermal Compatibility (ASTM C-884) Passes test (5 cycles)

Linear Shrinkage (ASTM C-531) 7 day 0.022%

Effective Bearing Area (ASTM C-1339) >95% final surface area of grout in contact with bearing plate

Compressive Creep (ASTM C-1181), 400 psi (2.7 MPa) @ 140°F (60°C)

1 day	0.0085 in./in. (0.0085 mm/mm)
7 day	0.0086 in./in. (0.0086 mm/mm)
28 day	0.0093 in./in. (0.0093 mm/mm)

Heat Deflection Temperature (ASTM D-648) 125°F (52°C)
7 day [fiber stress loading = 264 psi (1.8 MPa)]

Construction

Compressive Properties (ASTM C-579B)
Compressive Strength, psi (MPa)

	40°F* (5°C)	73°F* (23°C)	90°F* (32°C)
8 hour	-	-	8,200 (56.5)
16 hour	-	10,000 (68.9)	13,000 (89.6)
1 day	-	11,000 (75.8)	14,000 (96.5)
3 day	6,500 (44.8)	14,200 (97.9)	15,000 (103.4)
7 day	7,200 (49.6)	15,000 (103.4)	15,000 (103.4)
14 day	9,000 (62.1)	16,000 (110.4)	16,500 (113.9)
28 day	11,000 (75.9)	17,000 (117.3)	17,500 (120.8)

Compressive Modulus (ASTM C-469) **7 day** 2,600 ksi (17,940 MPa)

* Material cured and tested at the temperatures indicated.

How to Use

Surface Preparation

Substrate and other contact areas must be clean, sound, and free of standing water. Remove dust, laitance, oils, grease, curing compounds, waxes, impregnations, foreign particles, coatings and disintegrated materials by mechanical means (i.e. sandblasting, bush hammering). Sandblast metal contact surfaces to a commercial white finish for maximum adhesion. Apply grout immediately to prevent re-oxidizing. Concrete substrate shall have reached its desired strength [3,000 psi (20.7 MPa) minimum] and must be dimensionally stable.

Mixing

Pour the entire contents of Components 'A' & 'B' into an appropriate mixing vessel (e.g. 5 gal. bucket) and mix for 30 seconds with a 1/2 in. Jiffy mixing paddle (5 in. blade diameter) on a **low-speed** (400 - 600 rpm) 3/4 in. drive rotary drill, taking care not to entrain air during mixing. **It is critical to the performance of the grout that there be no appreciable air bubbles in the resin**. Slowly add the **entire** contents of Component 'C' and mix until uniformly blended (approx. 5 minutes).

Application

Pour the mixed epoxy grout into the prepared forms from one side only to eliminate air entrapment. Pour back box should have vent holes around periphery to prevent air pockets from developing. Maintain the liquid head to ensure intimate contact with the pour-back box. Plungers may be used to ease placement. Place sufficient epoxy grout in the forms to rise slightly above the underside of the base plate. Grout depth of 1 in. (25 mm) minimum required.

Tooling & Finishing

Forming: The flowable consistency of the epoxy grout system requires the use of forms to contain the material. In order to prevent leakage or seepage, completely seal all forms. In applications where forms will be stripped, apply polyethylene film or bond breaker to all forms to prevent adhesion of the grout. Prepare form work to maintain a 2 in. (50 mm.) liquid head to facilitate placement. A grout box that can be attached to the form will enhance the grout flowability. In base plate applications, projected anchor bolts should be wrapped with neoprene foam rubber (or similar) to prevent grout from adhering to the bolts. The use of expansion joints is recommended on large pours to minimize the potential for cracking in the epoxy grout [maximum 3-4 ft. (0.9-1.2 m.) spacing in each direction].

Limitations

- Minimum substrate and ambient temperature should be 40°F (5°C).
- Do not thin. Addition of solvents will prevent proper cure.
- Material is a vapor barrier after cure.
- Minimum grout depth should be 1 in. (25 mm.). Maximum grout depth should be 12 in. (305 mm).
- Anchorage pour-back box should be shielded from direct sunlight and rain for a minimum of 24 hours before epoxy grouting, and after grouting until tack free.
- Component 'C' must be kept dry.
- Cold material may require chaining, rodding and pushing during placement.
- For applications requiring good self-leveling and better flow capabilities, use **Sikadur® 42, Grout-Pak** (standard formulation - product code 0335-30N).
- For proper seating in base plate applications, allow grout to rise above the bottom of the base plate.
- **Do not batch. Mix complete units.**
- Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
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Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikadur® 42, Grout-Pak LE[US]

Pre-Proportioned, Precision Epoxy Grouting System

Description

Sikadur 42 Grout-Pak LE[US], is a high strength, multi purpose, three-component, low exotherm, low dusting, solvent-free, moisture-insensitive, epoxy grouting system designed to seat and support high demand equipment.

Where to Use

- Precision seating of baseplates.
- Grouting under equipment, including heavy impact and vibratory machinery, reciprocating engines, compressors, pumps, presses, etc.
- Grouting under crane rails.

Advantages

- Meets API Standard 686
- Low peak exotherm
- Low dusting, ready-to-mix, pre-portioned kits
- Moisture tolerant
- Corrosion and impact resistant
- Stress and chemical resistant
- High compressive, tensile and shear strengths
- High vibration resistance

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.	
Storage Conditions	Store dry at 41°-89°F (5°-32°C). **Condition material to 73°-95°F (23°-35°C) before using.**	
Color	Dark Brown	
Mix Ratio	A:B:C by weight	3:1:34
	solid/liquid by weight	8:5:1
Density	144 lb/ft³ (2300 kg/m³)	
Pot Life	Mix 3:1 (A:B 300 g)	2 hrs. 20 min.
Tensile Strength (ASTM D-638)		5,000 psi (34.5 MPa)
Tensile Strength (ASTM D-307)		2,000 psi (13.8 MPa)
Flexural Strength (ASTM C-580)		6,400 psi (44.1 MPa)
Tangent Modulus of Elasticity in Bending (ASTM C-580)		5.24 x 10^6 psi (36 MPa)
Coefficient of Thermal Expansion (ASTM C-531)		
	-22° to 86°F (-30°C to 30°C)	1.6 x 10^{-5}/°F (2.8 x 10^{-5}/°C)
	75° to 212°F (24°C to 100°C)	2.1 x 10^{-5}/°F (3.8 x 10^{-5}/°C)
Bond Strength (ASTM C-882)		
	7 Days	> 2,500 psi (40 MPa) concrete failure
Creep Test (ASTM C-1181)		
	600 psi, 140°F (4.1 MPa, 60ºC)	7.2 x 10^{-3}
	400 psi, 140°F (2.7 MPa, 60ºC)	5.3 x 10^{-3}
Linear Shrinkage (ASTM C-531)		0.045%
Thermal Compatibility (ASTM C-884)		No delamination/pass
Exotherm (ASTM D-2471)		94.3°F (34.6°C)
Effective Bearing Area (ASTM C-1339)		~90% (High)

Compressive Strength (ASTM C-579), psi (MPa)

	73°F* (23°C)
24 hours	5,000 psi (34.5 MPa)
2 days	9,000 psi (62.1 MPa)
3 days	10,000 psi (69.0 MPa)
7 days	11,000 psi (75.8 MPa)
28 days	13,300 psi (91.7 MPa)

* Material cured and tested at the temperatures indicated.

	■ Low coefficient of thermal expansion; compatible with concrete ■ Material does not require heated transportation
Packaging	2.0 cu. ft. Unit = Component A: 22.6 lbs. (10.28 kg) Component B: 7.5 lbs. (3.42 kg) Component C: 4 x 64 lbs. (29.03 kg)
Coverage	2 ft^3 (56,640 cm^3), 15 gallons (56.6 liters)

How to Use

Surface Preparation	**Note:** For optimum results when grouting in critical items of equipment, it is recommended that the surface preparation requirements of the latest edition of Chapter 5, API Recommended Practice 686 be followed. This document is the "Recommended Practices for Machinery Installation and Installation Design" published by the American Petroleum Institute. Surface and base plate contact area must be clean and sound. For best results, the substrate should be dry. Remove dust, laitance, oils, grease, curing compounds, impregnations, waxes, foreign particles, coatings, and disintegrated materials by mechanical means(i. e. chipping with a chisel, sandblasting). All anchor pockets or sleeves must be void of water. Sandblast metal base plates to a commercial white finish (SP-10) for maximum adhesion. Apply grout immediately to prevent re-oxidizing.
Forming	The consistency of the epoxy grout system requires the use of forms to contain the material around the base plates. In order to prevent leakage or seepage, all forms must be sealed. Apply polyethylene film or wax to all forms to prevent adhesion of the grout. Prepare form work to maintain more than 4 in. (100mm) liquid head to facilitate placement. A grout box equipped with an inclined trough attached to the form will enhance the grout's flowability and minimize air entrapment.
Mixing	Thoroughly pre-mix each Component A and Component B, distributing any settled solids and achieving an even consistency throughout each component. Mix the entire contents of components A and B in the component A pail for 30 seconds with a 1/2 in. Jiffy mixing paddle (5 in. blade diameter) on a low-speed (400 - 600 rpm) 3/4 in. drive rotary drill, taking care not to entrain air during mixing. During the mixing operation, scrape down the sides and bottom of the mixing pail with a flat or straight edge trowel at least once, to ensure complete mixing of A and B components. Avoid entrapment of air during mixing. Entrapped air can result in effecting the physical properties of the mixed grout. Empty entire contents of mixed A and B components into an appropriate mortar mixer ensuring that walls and bottom of mixing pail are scraped clean and all of mixed epoxy resin is added to mortar mixer. Slowly add the entire content of component C and mix until uniformly blended (approx. 5 minutes). Add all component C unless a reduction is directed by the Sika Representative. Mixed grout should be kept agitated prior to placement.
Application	Pour the mixed grout into the prepared forms from one or two adjacent sides only, to eliminate air entrapment. Maintain the liquid head to ensure intimate contact to the base plate. Place sufficient epoxy grout in the forms to rise slightly above the underside [1/8 in (3 mm)] of the base plate. The minimum void depth beneath the base-plate should be 1 in (25 mm), but 1.5 in (38 mm) is preferred. Where the void beneath the base plate is greater than 18 in (450 mm), place the epoxy grout in successive 18 in (450 mm) lifts or less, once the preceding lift has cooled and achieved and initial set.
Limitations	■ If material is subject to cold or freezing temperatures during transportation to and from storage on a job site, care must be taken to properly precondition Components, A, B and C prior to beginning grouting operations. ■ Cold ambient, substrate or material temperatures will inhibit the flow and curing characteristics of Sikadur 42 Grout-Pak LE^{US}. For temperatures below 73.4°F (23°C), call Sika Technical Services. ■ Grouting material must be stored in an area with ambient temperature between 73° and 86°F (23° and 30°C) for a minimum of 48 hours before use. ■ Should ambient, substrate or material temperatures exceed 86F (30C), contact Sika Technical Services for guidance as excessive heat can influence the properties of epoxy polymer grouts. ■ Material is a vapor barrier after cure. ■ Do not thin with solvents. Solvents will prevent proper cure. ■ Minimum grout thickness: 1 in. (25 mm). ■ Maximum grout thickness: 18 in. (450 mm) per lift. For grout thickness between 12-18 in. (300-450 mm), contact Sika Technical Services. ■ Component C must be kept dry. ■ For bolt grouting applications, contact Sika Technical Services.

Construction

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Fax: 52 442 2250537

Construction

SikaGrout® 212

High performance, cementitious grout

Description	SikaGrout® 212 is a non-shrink, cementitious grout with a unique 2-stage shrinkage compensating mechanism. It is non-metallic and contains no chloride. With a special blend of shrinkage-reducing and plasticizing/water-reducing agents, SikaGrout® 212 compensates for shrinkage in both the plastic and hardened states. A structural grout, SikaGrout® 212 provides the advantage of multiple fluidity with a single component. SikaGrout ® 212 meets ASTM C-1107 (Grade C).
Where to Use	▪ Use for structural grouting of column base plates, machine base plates, anchor rods, bearing plates, etc. ▪ Use on grade, above and below grade, indoors and out. ▪ Multiple fluidity allows ease of placement: ram in place as a dry pack, trowel-apply as a medium flow, pour or pump as high flow.
Advantages	▪ Easy to use, just add water. ▪ Multiple fluidity with one material. ▪ Non-metallic, will not stain or rust. ▪ Low heat build-up. ▪ Excellent for pumping: Does not segregate, even at high flow. No build-up on equipment hopper ▪ Superior freeze/thaw resistance. ▪ Resistant to oil and water. ▪ Meets ASTM C-1107 (Grade C). ▪ Shows positive expansion when tested in accordance with ASTM C-827. ▪ SikaGrout® 212 is USDA-approved.
Coverage	Approximately 0.44 cu. ft./bag at high flow.
Packaging	50-lb. multi-wall bags

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life		One year in original, unopened bags.		
Storage Conditions		Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.		
Color		Concrete gray		
Flow Conditions (ASTM C-109, Plastic & Flowable; ASTM C-939, Fluid)		**Plastic[1]**	**Flowable[1]**	**Fluid[2]**
Typical Water Requirements:		6 pt.+	6.5 pt.	8.5 pt.
Set Time (ASTM C-266):	**Initial**	3.5-4.5 hr.	4.0-5.0 hr.	4.5-6.5 hr.
	Final	4.5-5.5 hr.	5.5-6.5 hr.	6.0-8.0 hr.
Tensile Splitting Strength, psi (ASTM C-496)				
	28 day	600 (4.1 MPa)	575 (3.9 MPa)	500 (3.4 MPa)
Flexural Strength, psi (ASTM C-293)				
	28 day	1,400 (9.6 MPa)	1,200 (8.2 MPa)	1,000 (6.8 MPa)
Bond Strength, psi (ASTM C-882 modified): Hardened concrete to plastic grout				
	28 day	2,000 (13.7 MPa)	1,900 (13.1 MPa)	1,900 (13.1 MPa)
Expansion % (CRD C-621)	**28 day**	+0.021%	+0.056%	+0.027%
Compressive Strength, psi (CRD C-621)				
	1 day	4,500 (31 MPa)	3,500 (24.1 MPa)	2,700 (18.6 MPa)
	7 day	6,100 (42 MPa)	5,700 (39.3 MPa)	5,500 (37.9 MPa)
	28 day	7,500 (51.7 MPa)	6,200 (42.7 MPa)	5,800 (40 MPa)

[1]CRD C-227: 100-124% (plastic), 124-145% (flowable)

[2]CRD C-611: 10-30 sec efflux time.

How to Use

Surface Preparation

Remove all dirt, oil, grease, and other bond-inhibiting materials by mechanical means. Anchor bolts to be grouted must be de-greased with suitable solvent. Concrete must be sound and roughened to a CSP 4 or higher to promote mechanical adhesion. Prior to pouring, surface should be brought to a saturated surface-dry condition. Steel should be cleaned and prepared thoroughly by blastcleaning to a white metal finish. Follow standard industry and Sika guidelines for use as an anchoring epoxy.

For pourable grout, construct forms to retain grout without leakage. Forms should be lined or coated with bond-breaker for easy removal. Forms should be sufficiently high to accommodate head of grout. Where grout-tight form is difficult to achieve, use SikaGrout® 212 in dry pack consistency.

Mixing

Mix manually or mechanically. Mechanically mix with low-speed drill (400-600 rpm) and Sika mixing paddle or in appropriately sized mortar mixer.

Make sure all forming, mixing, placing, and clean-up materials are on hand. Add appropriate quantity of clean water to achieve desired flow. Add bag of powder to mixing vessel. Mix to a uniform consistency, minimum of 2 minutes. Ambient and material temperature should be as close as possible to 70°F If higher, use cold water; if colder, use warm water.

Product Extension: For deeper applications, SikaGrout® 212 (plastic and flowable consistencies only) may be extended with 25 lbs. of 3/8" pea gravel. The aggregate must be nonreactive, clean, well-graded, saturated surface dry, have low absorption and high density, and comply with ASTM C33 size number 8 per Table 2. Add the pea gravel after the water and SikaGrout® 212.

Application

Within 15 minutes after mixing, place grout into forms in normal manner to avoid air entrapment. Vibrate, pump, or ram grout as necessary to achieve flow or compaction. SikaGrout® 212 must be confined in either the horizontal or vertical direction leaving minimum exposed surface. SikaGrout® 212 is an excellent grout for pumping, even at high flow. For pump recommendations, contact Technical Service. Wet cure for a minimum of 3 days or apply a curing compound which complies with ASTM C-309 on exposed surfaces.

Tooling & Finishing

After grout has achieved final set, remove forms, trim or shape exposed grout shoulders to designed profile

Limitations

- Minimum ambient and substrate temperature 45°F and rising at time of application.
- Minimum application thickness: 1/2 in.
- Maximum application thickness (neat): 2 in. However, thicker applications can be achieved. Contact Sika's Technical Services Department (800-933-7452) for further information.
- Do not use as a patching or overlay mortar or in unconfined areas.
- Material must be placed within 15 minutes of mixing.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Sika ViscoCrete® Technology

SikaGrout® 328

High performance, precision, grout with extended working time

Construction

Description	SikaGrout® 328 is a non-shrink, non-metallic, cementitious precision grout powered by ViscoCrete technology. This grout provides extended working time and exceptional physical performance at fluid consistency. A structural, precision grout, SikaGrout® 328 can be placed from fluid to dry pack over a temperature range of 40°-95°F. SikaGrout® 328 meets the ASTM-C 1107 (Grade B & C) and Corps of Engineers Specification CRD-C621.
Where to Use	▪ Where exceptional one day and ultimate compressive strengths are required. ▪ Applications requiring a pumpable grout. ▪ Non-shrink grouting of machinery and equipment, base plates sole plates, precast panels, beams, columns and curtain walls. ▪ Applications where a non-shrink grout is needed for maximum effective bearing area to transfer optimum load. ▪ For underwater application in conjunction with Sikament® 100SC. Consult Technical Service for dosage information. Independent test data is available however on site testing is recommended to confirm performance under actual field conditions. ▪ For grouting rebar, bolts, dowels and pins, etc.
Advantages	▪ Multiple fluidity with one material. ▪ Reaches 10,000 psi in dry pack consistency. ▪ Outstanding performance in fluid state. ▪ Extended working time. ▪ Excellent fluidity - sufficient time for placement. ▪ Contains premium quality quartz aggregate. ▪ Hardens free of segregation. ▪ Non-metallic, will not stain or rust. ▪ Meets CRD C-621 & ASTM C-1107 (Grade C). ▪ Shows positive expansion. ▪ SikaGrout® 328 is USDA-approved.
Coverage	Approximately 0.44 cu. ft./bag at high flow.
Packaging	Multi-wall bags; 50 lbs. per bag.

Typical Data ***(Material and curing conditions @ 73°F (23°C) and 50% R.H.)***

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life		9 months in original, unopened bags.			
Storage Conditions		Store dry at 40°-95°F (4°-35°C). Recommend conditioning material to 65°-75°F before using.			
Color		Concrete gray			
Flow Conditions		**Dry Pack** (10-25%)	**Plastic** (100-125%)	**Flowable**[1] (124-145%)	**Fluid** [2] (20-60 sec)
Typical Water Requirements:		5.5 -6.0 pts.	6.5 -7.0 pts.	7.0 -7.5 pts.	8.0 -8.5 pts.
Set Time (ASTM C-191):	***Initial***	<15mins	> 2 hr.	> 3 hr.	> 4 hr.
	Final	< 2 hrs	< 6 hr.	< 7 hr.	< 8 hr.
Compressive Strength, psi ASTM-C-109					
1 day		5,000	4,500	4,000	3,500
3 day		8,000	6,500	6,000	5,500
14 day		9,200	7,000	6,700	6,500
28 day		10,000	8,200	8,000	7,500
Splitting Tensile, psi (ASTM C-496)					
3 day					350
7 day					400
28 day					650
Flexural Strength, psi (ASTM C-78)					
3 day					1,100
7 day					1,200
28 day					1,300

Bond Strength, psi (ASTM C-882 modified):

Hardened concrete to plastic grout	
3 day	950
7 day	1750
28 day	2000

Freeze Thaw Cycles Procedures - (ASTM - C-666)

300 Cycles RDF 99%

[1]CRD C-227: 100-124% (plastic), 124-145% (flowable)
[2]CRD C-611: 10-30 sec efflux time.

How to Use

Surface Preparation

Remove all dirt, oil, grease, and other bond-inhibiting materials by mechanical means. Anchor bolts to be grouted must be de-greased with suitable solvent. Concrete must be sound and roughened to promote mechanical adhesion. Prior to pouring, surface should be brought to a SSD (saturated surface dry) condition.

Forming: For pourable grout, construct forms to retain grout without leakage. Forms should be lined or coated with bond-breaker for easy removal. Forms should be sufficiently high to accommodate head of grout. Where grout-tight form is difficult to achieve, use SikaGrout® 328 in dry pack consistency.

Mixing

Mechanically mix with a low speed drill (400-600 rpm) for at least 5 minutes using a Sika mixing paddle or a jiffy paddle. SikaGrout® 328 can be mixed in an appropriately sized mortar mixer. Mixing should continue until a homogenous mixture is achieved.

Product Extension: For deeper applications, SikaGrout® 328 (plastic and flowable consistencies only) may be extended with 25 lbs. of 3/8" pea gravel. The aggregate must be non-reactive (Reference ASTM C1260, C227 and C289), clean, well-graded, saturated surface dry, have low absorption and high density, and comply with ASTM C33 size number 8 per Table 2. Add the pea gravel after the water and SikaGrout® 328.

Mixing Procedure: Make sure all forming, mixing, placing, and clean-up materials are on hand. Add appropriate quantity of clean water to achieve desired flow. Add bag of powder to mixing vessel. Mix to a uniform consistency, minimum of 5 minutes. Ambient and material temperature should be as close as possible to 70°F. If higher, use cold water; if colder, use warm water. Use only the amount of water required to achieve desired consistency. DO NOT OVER WATER!

Application

Within 60 minutes after mixing, place grout into forms in normal manner to avoid air entrapment. Vibrate, pump, or ram grout as necessary to achieve flow or compaction. SikaGrout® 328 must be confined leaving minimum exposed surface. After grout has achieved final set, remove forms, trim or shape exposed grout shoulders to designed profile. SikaGrout® 328 is an excellent grout for pumping, even at high flow. For pump recommendations, contact Technical Service. Wet cure for a minimum of 3 days or apply a curing compound which complies with ASTM C-309 on exposed surfaces.

Limitations

- Minimum ambient and substrate temperature 45°F and rising at time of application.
- Minimum application thickness: 1/2 in.
- For application thicknesses of 6 inches or greater, consult Sika's Technical Service Department.
- Do not use as a patching or overlay mortar or in unconfined areas.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc.with an appropriate epoxy such as Sikadur 32 Hi-Mod.

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Sika ViscoCrete® Technology

SikaGrout® 428 FS

High performance, fast setting, non-shrink, cement grout

Construction

Description	SikaGrout 428 FS is a non-shrink, non-metallic, cementitious precision grout powered by ViscoCrete technology. SikaGrout 428 FS is designed to achieve high early strength and exceptional ultimate strengths at a fluid consistency. A structural, precision grout, SikaGrout 428 FS can be placed from plastic to fluid over a temperature range of 40°-90°F and meets ASTM-C 1107, Grade C.
Where to Use	■ For quick turnaround applications, when rate of strength gain is a significant consideration. ■ Grouting of foundations, windmills, compressors, etc. ■ Non-shrink grouting of machinery and equipment, base plates, sole plates, precast panels, beams, columns and curtain walls. ■ Applications where a non-shrink grout is needed for maximum effective bearing area. ■ To transfer optimum load. ■ For grouting rebar, bolts, dowels and pins, etc.
Advantages	■ Quick rate of strength gain. ■ Multiple fluidity with one material ■ Outstanding performance in fluid state ■ Excellent fluidity, sufficient time for placement ■ Nonmetallic, will not stain or rust. ■ ASTM C-1107 (Grade C). ■ Shows positive expansion as per ASTM C-827.
Coverage	Approximately 0.50 cu. ft./bag
Packaging	65 lb. bag

Typical Data ***(Material and curing conditions @ 73°F (23°C) and 50% R.H.)***

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	One year in original, unopened bags.
Storage Conditions	Store dry at 35°-95°F (4°-35°C). Recommend conditioning material to 65°-75°F before using.
Color	Concrete gray

	40°F	73°F	90°F
Compressive Strength - ASTM C-109 Plastic @ 6.5 pts./bag			
5 hours	750	2,500	6,000
6 hours	1,000	3,500	7,000
1 day	4,000	7,000	9,000
3 day	5,500	9,500	11,000
7 day	7,500	12,000	12,000
28 day	11,000	13,000	13,000
Compressive Strength - ASTM C-109 Flowable @ 7.0 pts./bag			
5 hours	500	2,000	5,000
6 hours	750	3,000	5,500
1 day	3,500	7,000	7,000
3 day	5,000	9,000	9,500
7 day	7,000	11,000	11,000
28 day	10,500	12,500	12,500
Compressive Strength - ASTM C-109 Fluid @ 1 gal./bag			
5 hours	< 200	1,000	4,000
6 hours	< 500	3,000	6,000
1 day	3,250	7,500	8,000
3 day	6,000	8,500	8,500
7 day	7,500	10,000	10,000
28 day	10,000	12,000	12,000
Bond Strength - ASTM C-882			
1 Day		1,800	
7 Days		2,200	
28 Days		2,500	

Direct Tensile Bond-ACI 503	40°F	73°F	90°F
1 Day	200	>400	>450
7 Day	400	>500	>500
28 Day	450	>550	>550
Flow	<45 sec	>30 sec	>30 sec
Effective Bearing Area	>95%	>95%	>95%
Initial Set		30 minutes	
Final Set		45-60 minutes	
Expansion			
1 Day	Positive	Positive	Positive
7 Day	Positive	Positive	Positive
28 Day	Positive	Positive	Positive
Permeability			
ASTM C-1202, 28 days at 60 volts		<1,000	

How to Use

Surface Preparation

Remove all dirt, oil, grease, and other bond-inhibiting materials by mechanical means. Anchor bolts to be grouted must be de-greased with suitable solvent. Concrete must be sound and roughened to promote mechanical adhesion. Prior to pouring, surface should be brought to a SSD (saturated surface-dry) condition.

Forming: For pourable grout, construct forms to retain grout without leakage. Forms should be lined or coated with bond-breaker for easy removal. Forms should be sufficiently high to accommodate head of grout. Where grout-tight form is difficult to achieve, use SikaGrout 428 FS in dry pack consistenc .

Mixing

Mechanically mix with a low speed drill (400-600 rpm) for at least 3 minutes using a Sika mixing paddle or a jiffy paddle. SikaGrout 428 FS can be mixed in an appropriately sized mortar mixer. Mixing should continue until a homogenous mixture is achieved. Do not over mix. Once all the powder is added the mix time should be approximately 3 minutes.

Product Extension: For deeper applications, SikaGrout 428 FS (plastic and flowable consistencies only) may be extended with 30 lbs. of 3/8" pea gravel. The aggregate must be non-reactive (Reference ASTM C1260, C227 and C289), clean, well-graded, saturated surface dry, have low absorption and high density, and comply with ASTM C33 size number 8 per Table 2. Add the pea gravel after the water and SikaGrout 428 FS.

Mixing Procedure: Make sure all forming, mixing, placing, and clean-up materials are on hand. Add ap-proximately one gallon of clean water to achieve desired flow. Add bag of powder to mixing vessel. Mix to a uniform consistency, maximum of 3 minutes. Condition product to room temperatures. For warmer temperatures use cold water and for colder temperatures use warm water. Use only amount of water necessary to achieve homogeneous mixture. DO NOT OVER WATER!

Application

Within no more than 10 minutes after mixing, place grout into forms in normal manner to avoid air entrapment. Mixed grout in mass will result in faster than expected setting times. Plan jobs accordingly so that the grout can be placed right after mixing. Vibrate, ram grout as necessary to achieve flow or compaction. SikaGrout 428 FS must be confined leaving minimum exposed surface. After grout has achieved final set, remove forms, trim or shape exposed grout shoulders to designed profile. Wet cure for a minimum of 3 days or apply a water based curing compound which complies with ASTM C-309 on exposed surfaces.

Limitations

- Minimum ambient and substrate temperature 40°F and rising at time of application.
- Minimum application thickness: 1/2 in.
- Typical max. application for neat grout is 2 in. For deeper pours, extending grout with recommended aggregate is advised. For extended applications, min. application thickness will be 1 in. and the max. would be 6 in.
- Do not use as a patching or overlay mortar or in unconfined areas.
- Material must be placed within 10 minutes of mixing.
- Warmer ambient and storage temperatures will result in reduced working time and can effect fluidity of the grout.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur 32 Hi-Mod.
- For cold temperature start with 7/8 of a gallon and add remaining 1/8, only if needed for fluid consistency.
- Refer to ACI 306 Guidelines when there is a need to place this grout in cold & hot temperatures.

Construction

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

E - Total Corrosion Management

Sika FerroGard 650, 670, 675	E10
Sika FerroGard 903	A400
Sika FerroGard 908	A410
Sika Ebonex	usa.sika.com

Product Data Sheet
Edition 1.8.2016
Sika® FerroGard®

Sika® FerroGard® 650, 670, 675

Embedded Galvanic Anode

Description	Sika FerroGard® Galvanic Anodes are engineered zinc anodes used for the protection of reinforcing steel in concrete. Anode grade zinc is encased in a proprietary mortar designed to optimize performance.
Where to Use	Patch repairs within concrete or along joints between new and existing concrete. Effective in chloride contaminated and carbonated concrete. Used to prevent the "Halo" or "Ring" anode Corrosion effect.
Advantages	■ **Encasing Mortar -** uses proprietary technology that provides excellent transport of reactants to the surface of the zinc anode and corrosion products away from the surface of the zinc, using a chelation process. The encasing mortar will not cause corrosion of reinforcing steel. ■ **Proven technology** – supported by 10+ years of development and testing. ■ **Cost Effective –** lowers Life Cycle Cost of repairs. ■ **Auto-Corrosion** – encasing mortar maintains performance but does not auto- or self-corrode the zinc anode. ■ **Ease of Installation** – uses standard attachment methods known to industry. ■ **Self-Powered / Self Regulating** – creates own protective current that adjusts to demand. ■ **Maintenance Free** – requires no monitoring or maintenance. ■ **Safe to Use** – protects conventional and pre-stressed / post-tension reinforcing steel; moderate pH safe to handle without PPE. ■ **Tie Wires** – galvanized steel tie wires (annealed) are pre-twisted to form a cradle that accepts reinforcing steel, enables a better electrical contact and extends "throwing power". ■ **Service Life** – capable of 10+ years of protection depending on design and conditions.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Zinc Anode: **Conforms to ASTM B418 Type II, Standard Specification for Cast and Wrought Galvanic Zinc Anodes.**

High Surface Area for optimum performance:

Sika® FerroGard® 650:	**21 in²**
Sika® FerroGard® 670:	**40 in²**
Sika® FerroGard® 675:	**42 in²**

Shelf Life	Nominal shelf life of 5 years.
Storage Conditions	Avoid temperatures >100°F
Electro-Potential:	-850 to -1150 mV, CSE (water saturated)
Capacity:	738 A-hr/kg
Auto-Corrosion:	<0.1 mm / year
pH:	~11.5

	Anode Mass
FerroGard® 650	65 g
FerroGard® 670	105 g
FerroGard® 675	160 g

Construction

How to Use

Spacing

Multiple factors must be considered to determine the spacing of the FerroGard® anode, including the structure's temperature, moisture content, chloride content, the steel surface area and placement. In most applications, the spacing should not exceed 30 inches. A design engineer should always be consulted to confirm final requirements. Consult FerroGard® Anode Calculation sheet for engineered designs or refer to the Maximum Anode Spacing Chart below.

Installation

Surface Preparation: All loose and spalled concrete should be removed in accordance with ICRI Guideline No. 310.1R-2008 Guideline for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion. The Sika FerroGard® anode positioning should be considered when removing the existing concrete.

Positioning: In most applications, the FerroGard® anode should be positioned at the perimeter of the repair and on plane with the reinforcing steel to provide a proper level of cover. Anodes must be positioned so that the entire anode and the wire connections to the reinforcing steel are totally covered by the encasement material once the repair is complete. Note: Do not modify the shape of the anode to fit a hole.

Preparation: For correct electrical connection and anode function, the surface of the reinforcing steel should be untreated and cleaned to a near white surface condition in areas designated for the connection of the FerroGard® anode. Refer to SSPC SP-10. Note, pre-soaking the SIKA FerroGard® anodes in clean water for several minutes prior to installation is recommended to minimize dehydration of the repair mortar.

Continuity: The reinforcing steel within the patch area should be tested for continuity: DC resistance between bars should be ≤ 1 Ω. Make continuity corrections, if needed, by welding steel bonding wire between bars to achieve a DC resistance ≤ 1 Ω.

Attaching: Tighten the two pairs of pre-twisted wires around the reinforcing steel in a double wrap pattern to achieve a sound electrical bond. The pre-twisted wire connectors provide a sound base, good electrical contact and proper spacing from the reinforcing steel to which the anode is attached. No additional form of attachment or electrical connection is necessary. Note: Use only the connector wires attached to the anode; do not use supplementary connection methods between the connector loops and the rebar nor use a twisting tool to tighten the wires.

Verification: Verify sound electrical connection of the FerroGard® system to the reinforcing steel by checking for a DC resistance ≤ 1 Ω.

Note: Conventional, commercially available repair mortars should be used to repair the concrete and encase the FerroGard® anodes. The mix should have a resistivity of ≤20,000 Ω-cm. High polymer content and silica fume should not be used in the mix. If the repair design requires a mix with resistivity >20,000 Ω-cm, encase the anode and bridge the area between the anode and the existing concrete with SikaRepair® 222 (with water)or SikaRepair® 223 (with water). Place encasement materials in accordance with conventional techniques to assure good consolidation.

Do not use any form of battery or impressed current in association with the FerroGard® anode or apply an electrical current to the reinforcing steel prior to or after the repair. Do not install a preformed high resistivity or non-conductive barrier between the FerroGard® anode and the reinforcing steel. Do not apply corrosion inhibitors directly on the FerroGard® anode body or connecting wires, especially on or near the wire connection point with the reinforcing steel.

Maximum Anode Spacing for Moderate-Low Corrosion Risk Environment Cl content <1% by weight of cement, or Steel Potential more positive than -350 mV, CSE			
	FerroGard® 650	**FerroGard® 670**	**FerroGard® 675**
Steel Density Ratio	inches	inches	inches
<0.2	28	30	31
0.21-0.46	25	27	28
0.47-0.70	22	25	27
0.71-0.93	20	23	25
0.94-1.15	18	22	24
1.16-1.36	16	20	22
1.37-1.56	15	19	21
1.57-1.75	14	19	21
1.75-1.93	13	18	20
1.94-2.1	12	17	19

Maximum Anode Spacing for High Corrosion Risk Environment Cl content >1% by weight of cement, or Steel Potential more negative than -350 mV, CSE			
	FerroGard® 650	**FerroGard® 670**	**FerroGard® 675**
Steel Density Ratio	inches	inches	inches
<0.2	25	27	28
0.21-0.46	22	24	25
0.47-0.70	19	22	24
0.71-0.93	17	20	22
0.94-1.15	15	19	21
1.16-1.36	13	17	19
1.37-1.56	12	16	18
1.57-1.75	11	16	18
1.75-1.93	10	15	17
1.94-2.1	9	14	16

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
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F - Liquid Applied Roofing & Waterproofing

Sikalastic Protective Waterproofing

Sikalastic DeckPro Traffic Systems

1 Component

2 Component

Decorative

Hybrid

Primers

Sikalastic RoofPro

Resins

Reinforcements

Primers

Insulations and Cover Boards

Adhesives and Fasteners

Vapor Barriers and Primers

Accessories

Product Data Sheet
Edition 7.26.2016
Identification no.
Sikalastic® 320

Sikalastic® 320 NS/SL

Single Component, Bitumen Modified Waterproofing Membrane

Description	Sikalastic® 320 is a single component, liquid applied, bitumen modified, coal tar free, moisture cured polyurethane waterproofing membrane available in self-leveling and non-sag consistencies.
Where to Use	▪ Planters ▪ Green and Inverted Roofs ▪ Between Slabs ▪ Plazas and Pavers ▪ Foundation Walls ▪ Bridges and Tunnels

Advantages	▪ Easy Application
	▪ Applies on green and damp concrete
	▪ Alkali Resistant
	▪ Quick Re-coat time
	▪ Ability to catalyze with water
	  ▪ Faster cure rate
	  ▪ Reduce chance of pinholes from concrete out-gassing
	  ▪ Apply at any thickness horizontally

Packaging	5 gallon (18.9 liter) pail. 55 gallon drum, net fill 50 gallons (189 liters)

Typical Data (Material and curing conditions @ 75°F (24°C) and 50% RH)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	One year from date of manufacture in original, factory-sealed containers
Storage Conditions	Store indoors at temperatures between 60-95°F (15-35°C).
Colors	Black
Coverage	50 ft^2/gal results in 30 ± mils DFT 25 ft^2/gal results in 60 ± mils DFT (standard) 18 ft^2/gal results in 90 ± mils DFT 13 ft^2/gal results in 120 ± mils DFT
Total Volume Solids (ASTM D-2697)	96 ± 2%
Total Weight Solids (ASTM D-236)	95 ± 2%
VOCs (ASTM D-2369-81)	48 g/L
Tensile Strength (ASTM D-412)	500 psi ± 50 psi 2.1 ± 0.3 Mpa
Elongation at Break (ASTM D-412)	350% ± 50%
Tear Resistance (Die C, ASTM D-624)	50 ± 10 psi
Hardness (ASTM D-2240)	92 Shore A
Specific Gravity	1.2 ± 0.2
Viscosity at 80°F (27°C)	25-45 cps (SL) 150-250 cps (NS)
Service Temperature	-25°F to 200°F (-31.7°C to 93.3°C)
Application on Green Concrete	
Horizontal	48 hours or walkable conditions
Vertical	24 hours after forms removed

Construction

How To Use

Surface Preparation

Surfaces may be dry or damp, but must be sound and free of standing water, dust, laitance, grease, curing compounds, impregnations, waxes and any other contaminants. Some warranties require one coat of Sikalastic PF Lo-VOC Primer on horizontal surfaces before application of Sikalastic 320.

Mixing

Before application, Sikalastic® 320 should be thoroughly mixed using a mechanical mixer and jiffy style paddle at slow speed for 1.5 minutes minimum to ensure a homogeneous material. Take care not to allow entrapment of air into the material. Do not mix in an up and down motion.

Using Optional Water Catalyst: Before application, mix Sikalastic®320 using a mechanical mixer and jiffy style mixing paddle at a slow speed. At a ratio 1 part of water to no less than 40 parts Sikalastic® 320. For a 5 gal pail, add 1 pint (16 oz) of water (less water may be used to extend working time). Use care not to allow the entrapment of air into the mixture. Do not mix in an up and down motion. Once water is mixed with Sikalastic® 320 apply within 20 minutes.

Application

Sikalastic® 320 may be applied with a brush, squeegee, trowel, or roller up to 90 mils vertically and 120 mils horizontally per coat. Mix Sikalastic® 320 with water to greatly reduce the chance of pinhole formation from concrete out-gassing and improve cure rate. Cured membrane must be pinhole free after application to validate warranty.

Flood Test: After Sikalastic® 320 has cured, plug drains and provide proper means to contain flood water. Flood deck with a 2" head of water and allow to stand for 24 hours. Check for leaks and immediately make repairs if required. Retest after any repairs have been made. If a flood test cannot be completed in within 3 days of application, cover Sikalastic® 320 with a protection course to prevent damage from other trade work until a successful flood test is completed.

Membrane Protection: As soon as possible after completion of a successful water test, visual inspection and/or repairs, cover all horizontal membranes with an approved drainage mat and optional protection board. Sikalastic® 320 should not be exposed to sunlight or UV radiation for more than 14 days. For all vertical membranes, cover immediately after cure with a protection course.

Joints, Cracks and Flashing: For all cracks up to 1/16" in width apply a 4" wide, 30 mil stripe coat of Sikalastic® 320 centered over the crack. All cracks over 1/16" in width must be routed to at least ¼" by ¼" sealed with the appropriate Sikaflex® sealant and coated with a 4" wide, 30 mil stripe coat centered on the sealant. When sealing green concrete, use Sikaflex® 1a+. Reinforcing fabric may be required for metal flashing transitions, plywood seams, and expansion joints by embedding reinforcing in 15 mils of membrane then coating with another 15 mils of membrane. Metal surfaces should be primed with Sikalastic® EP Primer the day before application of Sikalastic® 320 detail coats.

Curing and Recoating: At 75°F (24°C) and 50% relative humidity, allow each coat of Sikalastic®320 to cure 16-24 hours* minimum. When using water as a catalyst: allow Sikalastic®320 to cure a minimum of 2-4 hours* before proceeding to subsequent coats. If more than 48 hours pass between coats the surface must be solvent wiped and primed with Sikalastic EP Primer.

Removal/ Equipment Cleanup

Equipment should be immediately cleaned with an environmentally safe solvent, as permitted under local regulations.

Limitations

- *Higher temperatures and/or high humidity will accelerate the cure time. In cold weather conditions,use pail warmers or preconditioning to assist in workability.
- Sikalastic® 320 should not be submerged or subject to ponding for more than 72 hours.
- Containers that have been opened must be used as soon as possible.
- Not recommended for Oriented Strand Board (OSB) or asphalt surfaces.
- Membrane should not be applied under thin set tile. Mortar beds applied above Sikalastic® 320 should be at least 2" thick.
- Do not apply to porous or damp surfaces where moisture vapor transmission will occur during application and cure. Exposure to direct sunlight can exacerbate vapor transmission during cure. Apply Sikalastic® 320 in shaded areas and/or during falling temperatures or contact Sika for use of a suitable primer in this situation

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Lyndhurst, NJ 07071
Phone: 800-933-7452
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Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920

Product Data Sheet
Edition 7.18.2016
Sikalastic 710/715/735 AL Traffic System

MIAMI-DADE COUNTY APPROVED

SEALANT • WATERPROOFING & RESTORATION INSTITUTE
Issued to: Sika Corporation
Product: Sikalastic 710/715/735 AL Traffic System Seal

ASTM D 412: Tensile Strength of Topcoat — Pass ✓
Sikalastic 715 Topcoat: Tensile Strength: 3,068 psi; Elongation: 227%

ASTM D 412: Tensile Strength of Topcoat — Pass ✓
Sikalastic 735 Topcoat: Tensile Strength: 3,900 psi; Elongation: 260%

ASTM D 4541: Adhesion of Base Coat — Pass ✓
Sikalastic 710 Base: Pull-off Adhesion: 451 psi

ASTM D 4060: Abrasion Resistance of Topcoat — Pass ✓
Sikalastic 715 Topcoat: Abrasion Resistance: 6 mgms loss – mgms loss/1,000 cycles

ASTM D 4060: Abrasion Resistance of Topcoat — Pass ✓
Sikalastic 735 Topcoat: Abrasion Resistance: 16 mgms loss – mgms loss/1,000 cycles

Validation Date: 10/12/15-10/11/20

No. 1015—SL710715735

DECK COATING VALIDATION
www.swrionline.org

Sikalastic® 710/715/735 AL Traffic System

Single component, elastomeric, crack-bridging, waterproofing traffic system

Description

The Sikalastic 710/715/735 Traffic System is a single component, aromatic, moisture cured, elastomeric polyurethane coating system designed for use as a waterproofing membrane for pedestrian and vehicular traffic bearing surfaces. Optional aliphatic top coat provides enhanced UV resistance and color stability. System components are:
Sikalastic FTP primer (see separate data sheet)
Sikalastic MT primer (moisture-tolerant primer - see separate data sheet)
Sikalastic 710 Base one-component aromatic polyurethane base coat
Sikalastic 715 Top one-component aromatic polyurethane top coat (suitable for UV exposure)
Sikalastic 735 AL Top, one-component aliphatic polyurethane UV-resistant top coat
Sikalastic 700 ACL optional accelerator

Where to Use

Sikalastic 710/715/735 AL Traffic System is suitable for use on structurally sound concrete, cementitious or plywood surfaces exposed to vehicular or pedestrian traffic.
- Multi-story parking garages
- Parking decks and ramps
- Foot bridges and walkways
- Mechanical rooms
- Stadiums and arenas
- Plaza and rooftop decks
- Balconies

Advantages

- Excellent crack-bridging properties and flexibility, even at low temperatures
- Outstanding resistance to abrasion and wear
- Impervious to water and deicing salts
- Range of standard colors

Coverage

Coverage rates provided are intended to achieve required wet film thickness under optimal conditions. Additional material may be required depending on substrate surface roughness and porosity, material and substrate temperatures, and other site-dependent factors. This will result in a lower coverage rate.

See Sikalastic Aliphatic Decorative Top Coats data sheet for decorative quartz/flake systems.

Cure Mechanism

Moisture Cure

Packaging

Sikalastic 710 Base and 715 Top: 5 gal. pails, 50 gal. (net) drums
Sikalastic 735 AL Top: 5 gal. pails (4.65 gal. pails - tint base)
Sikalastic 700 ACL: 1 quart cans (6 cans per carton)

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% RH)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	1 year in original, unopened containers		
Storage Conditions:	Store dry at 40-95 F (4-35 C).		
Product Conditioning:	Condition material to 65-85 F (18-30 C) before using.		
Colors: Sikalastic 710 Base:	Gray		
Sikalastic 715 Top:	Gray, Charcoal and Tan		
Sikalastic 735 Top:	Gray, Charcoal and Tan. Custom colors available		
	710 Base Coat	**715 Top Coat**	**735 AL Top Coat**
Viscosity:	6500 ± 3000 cps	1500 ± 500 cps	2500 ± 700 cps
Total Volume Solids (ASTM D-2697):	71%	72%	74%
VOC Content (ASTM D-2369-81):	240 g/l	243 g/l	225 g/l
Tensile Strength (ASTM D-412):	800 ± 100 psi	3200 ± 300 psi	4200 ± 300 psi
Elongation at Break (ASTM D-412):	500 ± 50 %	375 ± 50 %	300 ± 50 %
Tear Resistance (Die C, ASTM D-624):	170 ± 25 pli	350 ± 50 pli	400 ± 50 pli
Hardness (ASTM D-2240):	55 ± 5 Shore A	85 ± 5 Shore A	90 ± 5 Shore A
Adhesion:	425 psi	n/a	n/a
Abrasion Resistance (ASTM D-4060): Test 1000 cycles, 1000g and CS-17 wheel	n/a	6 mg	16 mg
UV Resistance and Recivery from Elongation (ASTM C-957)	n/a	n/a	**PASS**

Construction

How to Use

Surface Preparation

Surface must be clean, dry and sound with an open texture. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes, and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to application.

Concrete- Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means (CSP 3-4 per ICRI guidelines).

Route out all cracks and joints as part of surface preparation.

Plywood- Should be clean and smooth, APA and exterior grade, not less than 1/2" thick, and spaced and supported according to APA guidelines. Joints should be sealed and detailed following deck priming, and may need embedded fabric reinforcement.

Metal- Should be thoroughly cleaned by grinding or blast cleaning.

Application

Priming

Primer Selection - Determine maximum moisture content of concrete substrate by weight with a Tramex CME or CMExpert type concrete moisture meter.

Sikalastic FTP Primer – For concrete decks with a maximum moisture content of 4% by weight, and for plywood decks, apply Sikalastic FTP Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Sikalastic FTP Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Sikalastic FTP Lo-VOC Primer - For exterior exposed concrete decks with a maximum moisture content of 4% by weight, interior protected concrete decks with a maximum moisture content of 5% by weight, and plywood decks, apply Sikalastic FTP Lo-VOC Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. For exterior exposed concrete decks with a maximum moisture content of 5% by weight, two applications of Sikalastic FTP Lo-VOC Primer are required. Sikalastic FTP Lo-VOC Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Sikalastic PF Lo-VOC Primer - For concrete and plywood decks with a porous or rough surface, and for metal flanges and penetrations, use Sikalastic PF Lo-VOC Primer. For exterior exposed concrete decks with a maximum moisture content of 4% by weight, interior protected concrete decks with a maximum moisture content of 5% by weight, and plywood decks, apply Sikalastic PF Lo-VOC Primer with a flat squeegee or phenolic resin core roller at approximately 200 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. For exterior exposed concrete decks with a maximum moisture content of 5% by weight, two applications of Sikalastic PF Lo-VOC Primer are required. Refer to separate primer data sheet for additional information.

Sikalastic MT Primer - For concrete with a maximum moisture content of 5% by weight, and for metal flanges and penetrations, apply Sikalastic MT Primer with a flat squeegee or roller at approximately 175 sf/gal. For concrete decks with a maximum moisture content of 6% by weight, apply two applications of Sikalastic MT Primer with a flat squeegee or phenolic resin roller at approximately 175 sf/gal per application. Work primer well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Refer to separate primer data sheet for additional information.

Sikalastic Recoat Primer – For existing polyurethane coatings, incidental exposed concrete deck areas, and as an interlaminate primer, apply Sikalastic Recoat Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work will into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Sikalastic Recoat Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Primer Mixing

Sikalastic FTP Primer – Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Sikalastic FTP Part B is dark olive green in color and may appear black in the container. Sikalastic FTP Part A is light amber in color. Add the 1 gallon of Sikalastic FTP Part A to the 1.25 gallons of Part B in the short filled Part B pail. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). This mixture will appear as a light olive green color. Slowly add 1.25 gallons of potable water to the mixture under agitation. Mix for an additional 2 minutes until the mixture is fully dispersed. Fully dispersed material will appear as light yellow to white in color.

Sikalastic FTP Lo-VOC Primer - Premix Part A (blue liquid) and Part B (yellow liquid) components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. For the 3 gallon kit, pour Part B into Part A slowly and while mixing scrape the side of the container, For the 15 gallon kit, pour Part A into a separate mixing vessel and then pour part B into Part A. Mixing ratio is 2 parts A to 1 part B. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic PF Lo-VOC Primer - Premix Part A (black liquid) and Part B (white liquid) components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. For both the 2 and 10 gallon kits, pour Part A into a separate mixing vessel and then pour part B into Part A. Mixing ratio is 1 part A to 1 part B. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic MT Primer - Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A slowly and while mixing scrape the side of the container, Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic Recoat Primer – Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Pour Part A into a separate container. Pour Part B into Part A slowly and while mixing scrape the side of the container. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). In the event that a faster cure is required, Sikalastic Recoat Primer can be applied with Sikalastic 700 ACL as an accelerator. Add two quarts Sikalastic 700 ACL into 10 gallons of mixed primer. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Detailing

Non-structural cracks up to 1/16 inch - Apply a detail coat of Sikalastic® 710 Base at 32 wet mils, 4” wide, centered over the crack. Allow to become tack free before overcoating.

Cracks and joints over 1/16 up to 1 inch - Rout and seal with Sikaflex® 2c or 1a sealant and allow to cure. Apply a detail coat of Sikalastic® 710 Base at 32 mils, 4’’ wide, centered over the crack. Allow to become tack free before over coating.

Joints over 1 inch - Should be treated as expansion joints and brought up through the Sikalastic® 710 Base waterproofing membrane and sealed with Sikaflex® 2c or 1a sealant.

Fabric Reinforcement – An optional 3” or 6” wide Sikalastic Flexitape Heavy fabric strip may be embedded within the base coat. Flexitape width shall be chosen such that a minimum of 1” tape is embedded on either side of the crack/joint. Apply additional coating as required to fully embed the Flexitape in the coating.

Panelized Joints - Panelized joints that are restrained across the joint and without differential movement may be sealed and the deck coating, including detail coat, applied over the joint.

NOTE: movement within panelized joints may cause deterioration of the aggregated wear coat, in which case the joints should be treated as expansion joints and brought up through the Sikalastic Traffic System and sealed with Sikaflex® 2c or 1a sealant. For additional questions please contact Sika Technical Services.

Base Coat

Thoroughly mix Sikalastic 710 Base using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed until a homogenous mixture and color is obtained. Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 1/4” notched squeegee or trowel and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and control joints. Allow coating to cure a minimum of 16 hours at 70 degrees F and 50% RH or until tack free before top coating.

Top Coats

Thoroughly mix Sikalastic 715 Top and Sikalastic 735 AL using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed until a homogenous mixture and color is obtained. Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16” notched squeegee or trowel, or phenolic resin core roller, and backroll. Apply aggregate evenly distributed at the appropriate rate immediately into wet coating and backroll if required (see System Guide). Allow coating to cure a minimum of 16 hours at 70 degrees F and 50% RH or until tack free between coats, and a minimum of 72 hours before opening to vehicular traffic.

Aggregate

Use clean, rounded, oven dried quartz sand with a minimum gradation of 16-30 or 12-20 mesh for vehicular traffic and 20-40 mesh for pedestrian traffic, and a minimum hardness of 6.5 per the Moh’s scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. Seeding of aggregate means and even, light broadcast short of to refusal. Any loose aggregate must be removed prior to recoating. Backroll aggregate only where indicated.

Accelerator

Sikalastic 700 ACL may be added to Sikalastic 710 Base or 715 Top in order to speed cure time particularly in cold weather conditions. **The use of Sikalastic 700 ACL is required for all Sikalastic 715 and 735 AL applications exceeding 19 wet mils**. Mix thoroughly prior to application. Add a maximum of 1 quart to 5 gallons (or 1:20 ratio) and only to material that will be applied the same day.

System Guide	Pedestrian Traffic	Heavy Pedestrian /Light Vehicular	Heavy Vehicular Traffic - Seed and Lock	Heavy Vehicular Traffic - Seed and Backroll
Primer	Sikalastic FTP - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.			
710 Detail Coat	32 mils wet over properly treated cracks and joints.			
710 Base Coat	32 mils wet (23 mils dry) - 50 sf/gal.			
715 / 735 AL Top Coat I	14 mils wet (10 mils dry) - 115 sf/gal	11 mils wet (8 mils dry) - 145 sf/gal	11 mils wet (8 mils dry) - 145 sf/gal	22* mils wet (16 mils dry) - 73 sf/gal (See NOTE)
Aggregate	5-10 lbs/100 sf -seeded/ backrolled	10-15 lbs/100 sf -seeded/ backrolled	10-15 lbs/100 sf -seeded	15-20 lbs/100 sf -seeded/ backrolled
715 / 735 AL Top Coat II		16 mils wet (12 mils dry) - 100 sf/gal	16 mils wet (12 mils dry) - 100 sf/gal	22* mils wet (16 mils dry) - 73 sf/gal (See NOTE)
Aggregate			10-15 lbs/100 sf -seeded	15-20 lbs/100 sf -seeded/ backrolled
715/735 AL Top Coat III			16 mils wet (12 mils dry) - 100 sf/gal	
Total Thickness	33 mils dry (excluding aggregate)	43 mils dry (excluding aggregate)	55 mils dry (excluding aggregate)	55 mils dry (excluding aggregate)
See separate Sikalastic® Aliphatic Top Coats data sheet for DecoQuartz® and DecoFlake® systems.				
NOTE**:** *Requires use of 700 ACL Accelerator with 715 Top Coat, and 735 AL Top Coat				
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.				

Recoat Windows

In the event of an unforeseen rain event or delays beyond the stated recoat window referenced in each product's current PDS, observe the following.

Product	Recoat Window	Required Surface Preparation After Recoat Window is Exceeded
Sikalastic FTP	Tack-free to 48 hours	Heavily abrade and reprime
Sikalastic FTP Lo-VOC	Tack-free to 16 hours	Heavily abrade and reprime
Sikalastic PF Lo-VOC	Tack-free to 16 hours	Heavily abrade and reprime
Sikalastic MT	Tack-free to 48 hours	Heavily abrade and reprime
Sikalastic Recoat	Tack-free to 12 hours	Heavily abrade and reprime
Sikalastic Recoat with 700 ACL Accelerator	Tack-free to 6 hours	Heavily abrade and reprime
Sikalastic 710	Tack-free to 48 hours	Clean and solvent wipe **or** Clean and Sikalastic Recoat Primer
Sikalastic 710 with 700 ACL Accelerator	Tack-free to 24 hours	Clean and solvent wipe **or** Clean and Sikalastic Recoat Primer
Sikalastic 715	Tack-free to 48 hours	Clean and solvent wipe **or** Clean and Sikalastic Recoat Primer
Sikalastic 715 with 700 ACL Accelerator	Tack-free to 24 hours	Clean and solvent wipe **or** Clean and Sikalastic Recoat Primer
Sikalastic 735 AL	Tack-free to 48 hours	Abrade, clean and solvent wipe **or** Abrade, clean and Sikalastic Recoat Primer
Sikalastic 735 AL with 700 ACL Accelerator	Tack-free to 24 hours	Abrade, clean and solvent wipe **or** Abrade, clean and Sikalastic Recoat Primer

Notes:

1. Heavy abrasion of epoxy-based materials is intended to achieve an open, porous surface and to remove any amine blush that may interfere with bonding.
2. Abrasion of polyurethane-based materials is intended to achieve an open, porous surface.

3. Cleaning is intended to remove dirt, debris, contaminants, and residue from mechanical surface preparation methods.
4. Recommended solvents include high quality xylene and acetone. Handling and use of all solvents must be done in accordance with the manufacturer's warnings and instructions for use.

Removal

Remove liquid resin immediately with dry cloth. Once cured, resin can only be removed by mechanical means.

Maintenance/Repair

Clean with non-sudsing detergent and water and inspect regularly for mechanical damage. Snow removal equipment must have shoes, rubber tips or small skis to prevent ruptures. The use of metal blades without protection is not recommended. Damaged areas should be repaired promptly. Remove delaminated coating back to well adhered material and reinstall patch according to procedures described above. Do not use asphalt or tar modified products. Consult a Sika representative for recommendations on top coat or wearing surface restoration.

Limitations

- To avoid dew point conditions during application relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperature.
- Maximum moisture content of concrete substrate by weight when measured with a Tramex CME or CMExpert type concrete moisture meter: 4% for Sikalastic FTP Primer; 4% for exterior exposed decks with one application of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for exterior exposed decks with two applications of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for interior protected decks with one application of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo- VOC Primer; 5% for exterior and interior decks with one application of Sikalastic MT Primer; 6% for exterior and interior decks with two applications of Sikalastic MT Primer. (see separate Primer product data sheets).
- Minimum ambient and substrate temperature during application and curing of material is 40°F (4°C); maximum is 95°F (35C). Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane coatings. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it.
- Coating materials will become more viscous at lower application temperatures and be more difficult to spread, which may affect yield.
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.
- Do not thin with solvents.
- Use properly graded, oven dried aggregates only.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- Precautions should be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.
- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is imminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.
- When applying over existing coatings compatibility and adhesion testing is recommended.
- Opening prior to final cure may result in loss of aggregate, or permanent staining and subsequent premature failure.
- Vehicle fluids and some high performance tires can stain the coating. Fluid spills should be removed promptly as the coating can in some cases be damaged from prolonged exposure.
- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications where chained or studded tires may be used should not be coated with Sikalastic Traffic Systems.
- Unvented metal pan decks or decks containing a between-slab membrane require further technical evaluation and priming with a moisture-tolerant primer - contact Sika regarding recommendations.
- Do not subject to continuous immersion**.** Ponding water up to 72 hours duration is not considered to be continuous immersion.
- Sikalastic 710 Base coat is not UV stable and must be top coated.
- Sikalastic 715 Top coat is UV resistant, but will chalk, fade or discolor over time when exposed to UV and under certain artificial lighting conditions. Sikalastic 735 AL aliphatic top coat provides superior color and gloss retention.
- Base and intermediate coats must be kept clean and re-coated within 48 hours, or within 24 hours if Accelerator is used. If this recoat window is exceeded, contact Sika for recommendations.
- Mockups to verify application methods and substrate conditions as well as desired skid resistance and aesthetics are highly recommended.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® 710 Lo-VOC/715 Lo-VOC/736 AL Lo-VOC Traffic System

Single component, low VOC, elastomeric, crack-bridging, waterproofing traffic system

Description

The Sikalastic 710 Lo-VOC/715 Lo-VOC/736 AL Lo-VOC Traffic System is a single component, aromatic, low VOC, moisture cured, elastomeric polyurethane coating system designed for use as a waterproofing membrane for pedestrian and vehicular traffic bearing surfaces. Optional Booster provides fast-cure performance similar to two-component products. Optional aliphatic top coat provides enhanced UV resistance and color stability. System components are:
Sikalastic FTP Primer (see separate data sheet)
Sikalastic FTP Lo-VOC primer (see separate data sheet)
Sikalastic PF Lo-VOC primer (see separate data sheet)
Sikalastic MT primer (moisture-tolerant primer - see separate data sheet)
Sikalastic 710 Base Lo-VOC one-component aromatic polyurethane base coat with optional Booster
Sikalastic 715 Top Lo-VOC one-component aromatic polyurethane top coat with optional Booster (suitable for UV exposure)
Sikalastic 736 AL Lo-VOC, optional one-component aliphatic polyurethane UV-resistant top coat
Sikalastic 700 ACL optional accelerator

Where to Use

Sikalastic 710 Lo-VOC/715 Lo-VOC/736 AL Lo-VOC Traffic System is suitable for use on structurally sound concrete, cementitious or plywood surfaces exposed to vehicular or pedestrian traffic.

- Multi-story parking garages
- Parking decks and ramps
- Foot bridges and walkways
- Mechanical rooms
- Stadiums and arenas
- Plaza and rooftop decks
- Balconies

Advantages

- Fast turnaround with optional Booster
- Excellent crack-bridging properties and flexibility, even at low temperatures
- Outstanding resistance to abrasion and wear
- Impervious to water and deicing salts
- Range of standard colors

Coverage

Coverage rates provided are intended to achieve required wet film thickness under optimal conditions. Additional material may be required depending on substrate surface roughness and porosity, material and substrate temperatures, and other site-dependent factors. This will result in a lower coverage rate.

See Sikalastic Aliphatic Decorative Top Coats data sheet for decorative quartz/flake systems.

Cure Mechanism

Moisture Cure

Packaging

Sikalastic 710 Base Lo-VOC and 715 Top Lo-VOC: 4.75 gal. (net) pails, 50 gal. (net) drums
Sikalastic 710 Base Lo-VOC Booster and 715 Top Lo-VOC Booster: 1 quart cans (4 cans per carton)
Sikalastic 736 AL Lo-VOC: 5 gal. pails (4.65 gal. pails-tint base)
Sikalastic 700 ACL: 1 quart cans (6 cans per carton)

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% RH)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	1 year in original, unopened containers
Storage Conditions:	Store dry at 40°-95°F (4°-35°C).
Product Conditioning:	Condition material to 65°-85°F (18°-30°C) before using.
Colors: Sikalastic 710 Base Lo-VOC:	Gray
Sikalastic 715 Top Lo-VOC:	Gray, Charcoal and Tan
Sikalastic 736 AL Lo-VOC:	Gray, Charcoal and Tan. Custom colors available
UV Resistance and Recovery from Elongation (ASTM C-957)	PASS

	710 Base Lo-VOC w/o Booster	710 Base Lo-VOC w/ Booster	715 Top Lo-VOC w/o Booster	715 Top Lo-VOC w/ Booster	736 AL Lo-VOC
Viscosity	6500 ± 3000 cps	6500 ± 3000 cps	4000 ± 2000 cps	4000 ± 2000 cps	3500 ± 700 cps
Total Volume Solids (ASTM D-2697):	89%	89%	89%	88%	83%
VOC Content (ASTM D-2369-81):	93 g/L	100 g/L	96 g/L	100 g/L	99 g/L
Tensile Strength (ASTM D-412):	1200 ± 300 psi	1350 ± 300 psi	3400 ± 300 psi	3400 ± 300 psi	4000 ± 300 psi
Elongation at Break (ASTM D-412):	450 ± 50%	500 ± 50%	450 ± 50%	450 ± 50%	250 ± 50%
Tear Resistance (Die C, ASTM D-624):	195 ± 25 pli	195 ± 25 pli	350 ± 50 pli	350 ± 50 pli	400 ± 50 pli
Hardness (ASTM D-2240):	75 ± 5 Shore A	60 ± 5 Shore A	85 ± 5 Shore A	80 ± 5 Shore A	90 ± 5 Shore A

How to Use

Surface Preparation

Surface must be clean, dry and sound with an open texture. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes, and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to application.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means (CSP 3-4 per ICRI guidelines).

Route out all cracks and joints as part of surface preparation

Plywood - Should be clean and smooth, APA and exterior grade, not less than 1/2" thick, and spaced and supported according to APA guidelines. Seams should be sealed with Sikaflex 2c or 1a and detailed and may need embedded fabric reinforcement.

Metal - Should be thoroughly cleaned by grinding or blast cleaning to near white metal (SSPC SPS-10).

Application

Priming

Primer Selection - Determine maximum moisture content of concrete substrate by weight with a Tramex CME or CMExpert type concrete moisture meter.

Sikalastic FTP Primer – For concrete decks with a maximum moisture content of 4% by weight, and for plywood decks, apply Sikalastic FTP Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Sikalastic FTP Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Sikalastic FTP Lo-VOC Primer - For exterior exposed concrete decks with a maximum moisture content of 4% by weight, interior protected concrete decks with a maximum moisture content of 5% by weight, and plywood decks, apply Sikalastic FTP Lo-VOC Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. For exterior exposed concrete decks with a maximum moisture content of 5% by weight, two applications of Sikalastic FTP Lo-VOC Primer are required. Sikalastic FTP Lo-VOC Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Sikalastic PF Lo-VOC Primer - For concrete and plywood decks with a porous or rough surface, and for metal flanges and penetrations, use Sikalastic PF Lo-VOC Primer. For exterior exposed concrete decks with a maximum moisture content of 4% by weight, interior protected concrete decks with a maximum moisture content of 5% by weight, and plywood decks, apply Sikalastic PF Lo-VOC Primer with a flat squeegee or phenolic resin core roller at approximately 200 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. For exterior exposed concrete decks with a maximum moisture content of 5% by weight, two applications of Sikalastic PF Lo-VOC Primer are required. Refer to separate primer data sheet for additional information.

Sikalastic MT Primer - For concrete with a maximum moisture content of 5% by weight, and for metal flanges and penetrations, apply Sikalastic MT Primer with a flat squeegee or roller at approximately 175 sf/gal. For concrete decks with a maximum moisture content of 6% by weight, apply two applications of Sikalastic MT Primer with a flat squeegee or phenolic resin roller at approximately 175 sf/gal per application. Work primer well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Refer to separate primer data sheet for additional information.

Sikalastic Recoat Primer – For existing polyurethane coatings, incidental exposed concrete deck areas, and as an interlaminate primer, apply Sikalastic Recoat Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work will into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Sikalastic Recoat Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Primer Mixing

Sikalastic FTP Primer – Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Sikalastic FTP Part B is dark olive green in color and may appear black in the container. Sikalastic FTP Part A is light amber in color. Add the 1 gallon of Sikalastic FTP Part A to the 1.25 gallons of Part B in the short filled Part B pail. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). This mixture will appear as a light olive green color. Slowly add 1.25 gallons of potable water to the mixture under agitation. Mix for an additional 2 minutes until the mixture is fully dispersed. Fully dispersed material will appear as light yellow to white in color.

Sikalastic FTP Lo-VOC Primer - Premix Part A (blue liquid) and Part B (yellow liquid) components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. For the 3 gallon kit, pour Part B into Part A slowly and while mixing scrape the side of the container, For the 15 gallon kit, pour Part A into a separate mixing vessel and then pour part B into Part A. Mixing ratio is 2 parts A to 1 part B. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic PF Lo-VOC Primer - Premix Part A (black liquid) and Part B (white liquid) components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. For both the 2 and 10 gallon kits, pour Part A into a separate mixing vessel and then pour part B into Part A. Mixing ratio is 1 part A to 1 part B. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic MT Primer - Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A slowly and while mixing scrape the side of the container, Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic Recoat Primer – Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Pour Part A into a separate container. Pour Part B into Part A slowly and while mixing scrape the side of the container. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). In the event that a faster cure is required, Sikalastic Recoat Primer can be applied with Sikalastic 700 ACL as an accelerator. Add two quarts Sikalastic 700 ACL into 10 gallons of mixed primer. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Detailing

Non-structural cracks up to 1/16 inch - Apply a detail coat of Sikalastic® 710 Lo-VOC Base (with Booster if required) at 26 wet mils, 4" wide, centered over the crack. Allow to become tack free before overcoating.

Cracks and joints over 1/16 up to 1 inch - Rout and seal with Sikaflex® 2c or 1a sealant and allow to cure. Apply a detail coat of Sikalastic® 710 Lo-VOC Base at 26 mils, 4'' wide, centered over the crack. Allow to become tack free before over coating.

Joints over 1 inch - Should be treated as expansion joints and brought up through the Sikalastic® 710 Lo-VOC Base waterproofing membrane and sealed with Sikaflex® 2c or 1a sealant.

Fabric Reinforcement – An optional 3" or 6" wide Sikalastic Flexitape Heavy fabric strip may be embedded within the base coat. Flexitape width shall be chosen such that a minimum of 1" tape is embedded on either side of the crack/joint. Apply additional coating as required to fully embed the Flexitape in the coating.

Panelized Joints - Panelized joints that are restrained across the joint and without differential movement may be sealed and the deck coating, including detail coat, applied over the joint.

NOTE: movement within panelized joints may cause deterioration of the aggregated wear coat, in which case the joints should be treated as expansion joints and brought up through the Sikalastic Traffic System and sealed with Sikaflex® 2c or 1a sealant. For additional questions please contact Sika Technical Services.

Base Coat

Thoroughly mix Sikalastic 710 Base Lo-VOC using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed until a homogenous mixture and color is obtained. Add Sikalastic 710 Base Lo-VOC Booster (if required) into premixed coating and continue mixing until homogenous mixture and color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 1/4" notched squeegee or trowel and backroll using a phenolic resin core

roller. Extend base coat over entire area including previously detailed cracks and control joints. Allow coating to cure a minimum of 16 hours (6 hours with Booster) at 70°F and 50% RH or until tack free before top coating.

Top Coats

Thoroughly mix Sikalastic 715 Top Lo-VOC using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed until a homogenous mixture and color is obtained. Add Sikalastic 715 Top Lo-VOC Booster (if required) into premixed coating and continue mixing until homogenous mixture and color is obtained (typically 3 minutes). Add a maximum of 1 quart to 4.75 gallons (or 1:19 ratio) and only to material that will be applied in the next hour. Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel, or phenolic resin core roller, and backroll. Apply aggregate evenly distributed at the appropriate rate immediately into wet coating and backroll if required (see System Guide). Allow coating to cure a minimum of 16 hours (6 hours with Booster) 70 degrees F and 50% RH or until tack free between coats, and a minimum of 72 hours (36 hours with Booster) before opening to vehicular traffic.

Thoroughly mix Sikalastic 736 AL Lo-VOC using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed until a homogenous mixture and color is obtained. Add Sikalastic 700 ACL accelerator in order to speed cure time particularly in cold weather conditions (if required) into premixed coating and continue mixing until homogenous mixture and color is obtained (typically 3 minutes). Add a maximum of 1 quart to 5 gallons (or 1:20 ratio) and only to material that will be applied the same day. Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel, or phenolic resin core roller, and backroll. Apply aggregate evenly distributed at the appropriate rate immediately into wet coating and backroll if required (see System Guide). Allow coating to cure a minimum of 16 hours (6 hours with Accelerator at) 70 degrees F and 50% RH or until tack free between coats, and a minimum of 72 hours (36 hours with Accelerator) before opening to vehicular traffic.

Aggregate

Use clean, rounded, oven dried quartz sand with a minimum gradation of 16-30 or 12-20 mesh for vehicular traffic and 20-40 mesh for pedestrian traffic, and a minimum hardness of 6.5 per the Moh's scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. Seeding of aggregate means and even, light broadcast short of to refusal. Any loose aggregate must be removed prior to recoating. Backroll aggregate only where indicated.

Boosters

Sikalastic 710 Lo-VOC Booster may be added to Sikalastic 710 Lo-VOC Base in order to speed cure time. Sikalastic 715 Lo-VOC Booster may be added to Sikalastic 715 Lo-VOC Top in order to speed cure time. **The use of Sikalastic 715 Lo-VOC Booster is required for all Sikalastic 715 Lo-VOC applications exceeding 19 wet mils.** Boosters are product specific – use Sikalastic 710 Lo-VOC Booster with Sikalastic 710 Lo-VOC Base, and use Sikalastic 715 Lo-VOC Booster with Sikalastic 715 Lo-VOC Top. Mix thoroughly prior to application. Add a maximum of 1 quart to 4.75 gallons (or 1:19 ratio) and only to material that will be applied within 45 minutes typical.

Accelerator

Sikalastic 700 ACL may be added to Sikalastic 736 AL Lo-VOC in order to speed cure time particularly in cold weather conditions. **The use of Sikalastic 710 ACL is required for all Sikalastic 736 AL Lo-VOC applications exceeding 19 wet mils.** Mix thoroughly prior to application. Add a maximum of 1 quart to 5 gallons (or 1:20 ratio) and only to material that will be applied the same day.

System Guide	Pedestrian Traffic	Heavy Pedestrian / Light Vehicular - Seed and Lock	Heavy Pedestrian / Light Vehicular Seed and Backroll**	Heavy Vehicular Traffic - Seed and Lock	Heavy Vehicular Traffic - Seed and Backroll
Primer	Sikafloor FTP - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.				
710 Base Lo-VOC Detail Coat	26 mils wet over properly treated cracks and joints.				
710 Base Lo-VOC Base Coat	26 mils wet (23 mils dry) - 61 sf/gal.				
715 Top Lo-VOC /736 AL Lo-VOC Top Coat I*	11/12 mils wet (10 mils dry) - 145/133 sf/gal	9/10 mils wet (8 mils dry) - 178/160 sf/gal	23**/24** mils wet (20 mils dry) - 69/67 sf/gal (see NOTE)	9/10 mils wet (8 mils dry) - 178/160 sf/gal	18/19 mils wet (16 mils dry) - 89/84 sf/gal
Aggregate	5-10 lbs/100 sf -seeded/backrolled	10-15 lbs/100 sf -seeded	15-20 lbs/100 sf - seeded/backrolled	10-15 lbs/100 sf -seeded	15-20 lbs/100 sf -seeded/backrolled
715 Top Lo-VOC /736 AL Lo-VOC Top Coat II*		13/14 mils wet (12 mils dry) - 123/114 sf/gal		13/14 mils wet (12 mils dry) - 123/114 sf/gal	18/19 mils wet (16 mils dry) - 89/84 sf/gal
Aggregate				10-15 lbs/100 sf -seeded	15-20 lbs/100 sf -seeded/backrolled
715 Top Lo-VOC /736 AL Lo-VOC Top Coat III*				13/14 mils wet (12 mils dry) - 123/114 sf/gal	
Total Thickness	33 mils dry (excluding aggregate)	43 mils dry (excluding aggregate)	43 mils dry (excluding aggregate)	55 mils dry (excluding aggregate)	55 mils dry (excluding aggregate)
NOTE: *Wet mil and coverage information provided separately for both 715 Top Lo-VOC/736 AL Lo-VOC Top Coats					
NOTE: **Requires use of 715 Top Lo-VOC Booster with 715 Top Lo-VOC Top Coat, and 700 ACL Accelerator with 736 AL Lo-VOC Top Coat					
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.					

Recoat Windows

In the event of an unforeseen rain event or delays beyond the stated recoat window referenced in each product's current PDS, observe the following.

Product	Recoat Window	Required Surface Preparation After Recoat Window is Exceeded
Sikalastic FTP	Tack-free to 48 hours	Heavily abrade and reprime
Sikalastic FTP Lo-VOC	Tack-free to 16 hours	Heavily abrade and reprime
Sikalastic PF Lo-VOC	Tack-free to 16 hours	Heavily abrade and reprime
Sikalastic MT	Tack-free to 48 hours	Heavily abrade and reprime
Sikalastic Recoat	Tack-free to 12 hours	Heavily abrade and reprime
Sikalastic Recoat with 700 ACL Accelerator	Tack-free to 6 hours	Heavily abrade and reprime
Sikalastic 710 Lo-VOC	Tack-free to 48 hours	Clean and solvent wipe or Clean and Sikalastic Recoat Primer
Sikalastic 710 Lo-VOC with 710 Lo-VOC Booster	6-24 hours	Clean and solvent wipe or Clean and Sikalastic Recoat Primer
Sikalastic 715 Lo-VOC	Tack-free to 48 hours	Clean and solvent wipe or Clean and Sikalastic Recoat Primer
Sikalastic 715 Lo-VOC with 715 Lo-VOC Booster	6-24 hours	Clean and solvent wipe or Clean and Sikalastic Recoat Primer
Sikalastic 736 AL Lo-VOC	48 hours	Abrade, clean and solvent wipe or Abrade, clean and Sikalastic Recoat Primer
Sikalastic 736 AL Lo-VOC with 700 ACL Accelerator	24 hours	Abrade, clean and solvent wipe or Abrade, clean and Sikalastic Recoat Primer

Notes:

1. Heavy abrasion of epoxy-based materials is intended to achieve an open, porous surface and to re move any amine blush that may interfere with bonding.
2. Abrasion of polyurethane-based materials is intended to achieve an open, porous surface.
3. Cleaning is intended to remove dirt, debris, contaminants, and residue from mechanical surface preparation methods.
4. Recommended solvents include high quality xylene and acetone. Handling and use of all solvents must be done in accordance with the manufacturer's warnings and instructions for use.

Construction

Removal

Remove liquid resin immediately with dry cloth. Once cured, resin can only be removed by mechanical means.

Maintenance/Repair

Clean with non-sudsing detergent and water and inspect regularly for mechanical damage. Snow removal equipment must have shoes, rubber tips or small skis to prevent ruptures. The use of metal blades without protection is not recommended. Damaged areas should be repaired promptly. Remove delaminated coating back to well adhered material and reinstall patch according to procedures described above. Do not use asphalt or tar modified products. Consult a Sika representative for recommendations on top coat or wearing surface restoration.

Limitations

- To avoid dew point conditions during application relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperature.
- Maximum moisture content of concrete substrate by weight when measured with a Tramex CME or CMExpert type concrete moisture meter: 4% for Sikalastic FTP Primer; 4% for exterior exposed decks with one application of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for exterior exposed decks with two applications of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for interior protected decks with one application of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for exterior and interior decks with one application of Sikalastic MT Primer; 6% for exterior and interior decks with two applications of Sikalastic MT Primer. (see separate Primer product data sheets).
- Minimum ambient and substrate temperature during application and curing of material is 40°F (4°C); maximum is 95°F (35°C**)**. Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane coatings. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it.
- Coating materials will become more viscous at lower application temperatures and be more difficult to spread, which may affect yield.
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.
- Do not thin with solvents.
- Use properly graded, oven dried aggregates only.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- Precautions should be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.
- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is imminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.
- When applying over existing coatings compatibility and adhesion testing is recommended.
- Opening prior to final cure may result in loss of aggregate, or permanent staining and subsequent premature failure.
- Vehicle fluids and some high performance tires can stain the coating. Fluid spills should be removed promptly as the coating can in some cases be damaged from prolonged exposure.
- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications where chained or studded tires may be used should not be coated with Sikalastic Traffic Systems.
- Unvented metal pan decks or decks containing a between-slab membrane require further technical evaluation and priming with a moisture-tolerant primer - contact Sika regarding recommendations.
- Do not subject to continuous immersion**.**
- Base coat is not UV stable and must be top coated.
- Sikalastic 715 Top Lo-VOC is UV resistant, but will chalk, fade or discolor over time when exposed to UV and under certain artificial lighting conditions. Sikalastic 736 AL Lo-VOC aliphatic top coat provides superior color and gloss retention.
- Base and intermediate coats must be kept clean and re-coated within 48 hours, or 24 hours if Accelerator or Boosters are used.
- Mockups to verify application methods and substrate conditions as well as desired skid resistance and aesthetics are highly recommended.

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Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® 710 NP Base

Single component, elastomeric, crack-bridging, primerless, waterproofing base coat

Description	Sikalastic® 710 NP is a single component, aromatic, moisture cured, elastomeric polyurethane coating intended for use as the waterproofing base coat under polyurethane or epoxy wearing surfaces for pedestrian and vehicular traffic bearing applications, and as the waterproofing base coat under a separate wearing course such as concrete, and tile in a setting bed. Sikalastic 710 NP is a direct replacement for Sikalastic 710 in all applications.
Where to Use	■ Multi-story parking garages ■ Parking decks and ramps ■ Foot bridges and walkways ■ Mechanical rooms ■ Stadiums and arenas ■ Plaza and rooftop decks ■ Balconies
Advantages	■ Excellent crack-bridging properties and flexibility, even at low temperatures ■ Primer not required for typical applications ■ Resistant to water and deicing salts ■ Alkaline resistant
Coverage	50 ft²/gal. @ 32 wet mils (23 dry mils). NOTE: Coverage rates provided are optimal and are not guaranteed. Coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.
Cure Mechanism	Moisture Cure
Chemical Resistance	Resistant to de-icing salts.
Packaging	5 gal. pails, 50 gal. (net) drums.

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% RH)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	1 year in original, unopened containers
Storage Conditions:	Store dry at 40°- 95°F (4°- 35°C).
Product Conditioning:	Condition material to 65°- 85°F (18°- 30°C) before using.
Colors:	Medium Gray
Viscosity	6500 ± 3000 cps
Total Volume Solids (ASTM D-2697):	71%
VOC Content (ASTM D-2369-81):	240 g/L
Tensile Strength (ASTM D-412):	650 ± 100 psi
Elongation at Break (ASTM D-412):	375 ± 50%
Tear Resistance (Die C, ASTM D-624):	170 ± 25 pli
Hardness (ASTM D-2240):	55 ± 5 Shore A

Construction

How to Use

Surface Preparation

Surface must be clean, dry and sound with an open texture. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes, and any other contaminants. All projections, rough spots, etc., should be dressed off to achieve a level surface prior to the application.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by shot blasting. The use of a primerless-type base coat requires that the concrete surface be sufficiently rough and open pored so that the base coat is able to penetrate the substrate surface and achieve an adequate bond. The desired surface texture (CSP 4-5 per ICRI Guidelines) is somewhat rougher than if a primer is being used. In addition, the substrate surface must be thoroughly cleaned by blowing/vacuuming to remove all particulates that may interfere with base coat bonding. The base coat will not mix and consolidate dust and particulates as will some primers, so thorough cleaning is mandatory.

Plywood – Should be clean and smooth, APA and exterior grade, not less than ½" thick, and spaced and supported according to APA guidelines. Joints should be sealed with Sikaflex 2c or 1a and detailed, and may need embedded fabric reinforcement.

Metal - Should be thoroughly cleaned by blast cleaning.

Detailing

Non-structural cracks up to 1/16 inch – Apply a detail coat of Sikalastic 710 NP Base at 32 mils wet, 4" wide, centered over the crack. Allow to become tack free before overcoating.

Cracks and joints over 1/16 up to 1 inch – Seal cracks and joints with Sika Sealant and allow to skin over and cure for 24 hours min. Apply a detail coat of Sikalastic 710 NP Base at 32 mils wet, 4" wide, centered over the crack. Allow to become tack free before overcoating.

Joints over 1 inch – Should be treated as expansion joints and brought up through the Sikalastic Traffic System and sealed with Sika sealant.

Fabric Reinforcement – An optional 3" or 6" wide Sikalastic Flexitape Heavy fabric strip may be embedded within the base coat. Flexitape width shall be chosen such that a minimum of 1" tape is embedded on either side of the crack/joint. Apply additional coating as required to fully embed the Flexitape in the coating.

Panelized Joints – Panelized joints that are restrained across the joint and without differential movement may be sealed and the deck coating, including detail coat, applied over the joint.

NOTE: movement within panelized joints may cause deterioration of the aggregated wear coat, in which case the joints should be treated as expansion joints and brought up through the Sikalastic Traffic System and sealed with Sika sealant.

Mixing

Thoroughly mix coating using a mechanical mixer (Jiffy) at slow speed until a homogenous mixture and uniform color is obtained (typically 1 minute). Use care not to allow the entrapment of air into the mixture.

Application

Apply at the recommended coverage rate (see Sikalastic 710/715/735 AL System Guide) using a notched squeegee or trowel, and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and joints. Allow coating to cure a minimum of 16 hours at 70°F and 50% RH or until tack fee before top coating. Allow coating to cure for a minimum of 72 hours before installing separate concrete pavement or tile wear course.

Removal

Remove liquid coating immediately with dry cloth. Once cured, coating can only be removed by mechanical means.

Limitations

- To avoid dew point conditions during application relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperature.
- Maximum moisture content for primerless applications of concrete substrate by weight when measured with a Tramex CME or CMExpert type when concrete moisture meter is < 4%. Please see priming section for applications where substrate moisture is between 4% and 6% maximum.
- Minimum ambient and substrate temperature during application and curing of material is 40°F (4°C); maximum is 95°F (35°C).
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.
- Do not thin with solvents.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is imminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.
- When applying over existing coatings compatibility and adhesion testing is recommended.
- Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents or other means of ingress for odors and for vapors into the building/structure during product application and cure.
- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications

where chained or studded tires may be used should not be coated with Sikalastic Traffic Systems.

- Unvented metal pan decks or decks containing a between-slab membrane require further technical evaluation and priming with a moisture-tolerant primer - contact Sika regarding recommendations.
- Waterproofing applications under overburden, including concrete pavement, and tile in a cementitious setting bed, require further technical evaluation - contact Sika regarding recommendations.
- Do not subject to continuous immersion**.**
- Sikalastic 710 NP is not UV stable and must be top coated or protected by a separate wearing course.
- Mockups to verify application methods and substrate conditions as well as desired skid resistance and aesthetics are highly recommended.

Priming

Primer Selection - Determine maximum moisture content of concrete substrate by weight with a Tramex CME or CMExpert type concrete moisture meter.

Maximum moisture content for primerless applications of concrete substrate by weight when measure with a Tramex CME or CMExpert type when concrete moisture meter is:					
≤ 4%		4% ≤ 5%		5% ≤ 6%	
Interior	Exterior	Interior	Exterior	Interior	Exterior
Primerless	Primerless	1 coat Sikalastic FTP Lo-VOC Primer or 1 coat Sikalastic PF Lo-VOC Primer	2 coats Sikalastic FTP Lo-VOC Primer or 2 coats Sikalastic PF Lo-VOC Primer	2 coats Sikalastic MT Primer	2 coats Sikalastic MT Primer
NOTE: See separate Primer product data sheets					

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Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® 715 Lo-VOC/715 Lo-VOC Traffic System

Single component, single product, low VOC, elastomeric, crack-bridging, waterproofing traffic system

Description

The Sikalastic 715 Lo-VOC/715 Lo-VOC Traffic System is a single component, single product, aromatic, low VOC, moisture cured, elastomeric polyurethane coating system designed for use as a waterproofing membrane for pedestrian and vehicular traffic bearing surfaces. Booster provides fast-cure performance similar to two-component products.
System components are:
Sikalastic FTP Primer (see separate data sheet)
Sikalastic FTP Lo-VOC primer (see separate data sheet)
Sikalastic PF Lo-VOC primer (see separate data sheet)
Sikalastic MT primer (moisture-tolerant primer - see separate data sheet)
Sikalastic 715 Top Lo-VOC one-component aromatic polyurethane base and top coat with Booster (suitable for UV exposure)

Where to Use

Sikalastic 715 Lo-VOC/715 Lo-VOC Traffic System is suitable for use on structurally sound concrete, cementitious or plywood surfaces exposed to vehicular or pedestrian traffic.

- Multi-story parking garages
- Parking decks and ramps
- Foot bridges and walkways
- Mechanical rooms
- Stadiums and arenas
- Plaza and rooftop decks
- Balconies

Advantages

- Fast turnaround with Booster
- Excellent crack-bridging properties and flexibility, even at low temperatures
- Outstanding resistance to abrasion and wear
- Impervious to water and deicing salts
- Range of standard colors

Coverage

Coverage rates provided are intended to achieve required wet film thickness under optimal conditions. Additional material may be required depending on substrate surface roughness and porosity, material and substrate temperatures, and other site-dependent factors. This will result in a lower coverage rate.

See Sikalastic Aliphatic Decorative Top Coats data sheet for decorative quartz/flake systems.

Cure Mechanism

Moisture Cure

Packaging

715 Top Lo-VOC: 4.75 gal. (net) pails, 50 gal. (net) drums
715 Top Lo-VOC Booster: 1 quart cans (4 cans per carton)

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% RH)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life: 1 year in original, unopened containers

Storage Conditions: Store dry at 40°-95°F (4°-35°C).

Product Conditioning: Condition material to 65°-85°F (18°-30°C) before using.

Colors:
Sikalastic 715 Top Lo-VOC: Gray, Charcoal and Tan

	715 Lo-VOC w/o Booster	715 Lo-VOC w/ Booster
Viscosity	4000 ± 2000 cps	4000 ± 2000 cps
Total Volume Solids (ASTM D-2697):	89%	86%
VOC Content (ASTM D-2369-81):	96 g/L	100 g/L

Tensile Strength (ASTM D-412):	3400 ± 300 psi	3400 ± 300 psi
Elongation at Break (ASTM D-412):	450 ± 50%	450 ± 50%
Tear Resistance (Die C, ASTM D-624):	350 ± 50 pli	350 ± 50 pli
Hardness (ASTM D-2240):	85 ± 5 Shore A	80 ± 5 Shore A

How to Use

Surface Preparation

Surface must be clean, dry and sound with an open texture. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes, and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to application.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means (CSP 3-4 per ICRI guidelines).

Route out all cracks and joints as part of surface preparation.

Plywood - Should be clean and smooth, APA and exterior grade, not less than 1/2" thick, and spaced and supported according to APA guidelines. Seams should be sealed with Sikaflex 2c or 1a and detailed and may need embedded fabric reinforcement.

Metal - Should be thoroughly cleaned by grinding or blast cleaning to near white metal (SSPC SPS-10).

Application

Priming

Primer Selection - Determine maximum moisture content of concrete substrate by weight with a Tramex CME or CMExpert type concrete moisture meter.

Sikalastic FTP Primer – For concrete decks with a maximum moisture content of 4% by weight, and for plywood decks, apply Sikalastic FTP Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Sikalastic FTP Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Sikalastic FTP Lo-VOC Primer - For exterior exposed concrete decks with a maximum moisture content of 4% by weight, interior protected concrete decks with a maximum moisture content of 5% by weight, and plywood decks, apply Sikalastic FTP Lo-VOC Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. For exterior exposed concrete decks with a maximum moisture content of 5% by weight, two applications of Sikalastic FTP Lo-VOC Primer are required. Sikalastic FTP Lo-VOC Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Sikalastic PF Lo-VOC Primer - For concrete and plywood decks with a porous or rough surface, and for metal flanges and penetrations, use Sikalastic PF Lo-VOC Primer. For exterior exposed concrete decks with a maximum moisture content of 4% by weight, interior protected concrete decks with a maximum moisture content of 5% by weight, and plywood decks, apply Sikalastic PF Lo-VOC Primer with a flat squeegee or phenolic resin core roller at approximately 200 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. For exterior exposed concrete decks with a maximum moisture content of 5% by weight, two applications of Sikalastic PF Lo-VOC Primer are required. Refer to separate primer data sheet for additional information.

Sikalastic MT Primer - For concrete with a maximum moisture content of 5% by weight, and for metal flanges and penetrations, apply Sikalastic MT Primer with a flat squeegee or roller at approximately 175 sf/gal. For concrete decks with a maximum moisture content of 6% by weight, apply two applications of Sikalastic MT Primer with a flat squeegee or phenolic resin roller at approximately 175 sf/gal per application. Work primer well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Refer to separate primer data sheet for additional information.

Sikalastic Recoat Primer – For existing polyurethane coatings, incidental exposed concrete deck areas, and as an interlaminate primer, apply Sikalastic Recoat Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work will into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Sikalastic Recoat Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Primer Mixing

Sikalastic FTP Primer – Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Sikalastic FTP Part B is dark olive green in color and may appear black in the container. Sikalastic FTP Part A is light amber in color. Add the 1 gallon of Sikalastic FTP Part A to the 1.25 gallons of Part B in the short filled Part B pail. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). This mixture will appear as a light olive green color. Slowly add 1.25 gallons of potable water to the mixture under agitation. Mix for an additional 2 minutes until the mixture is fully dispersed. Fully dispersed material will appear as light yellow to white in color.

Sikalastic FTP Lo-VOC Primer - Premix Part A (blue liquid) and Part B (yellow liquid) components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. For the 3 gallon kit, pour Part B into Part A slowly and while mixing scrape the side of the container, For the 15 gallon kit, pour Part A into a separate mixing vessel and then pour part B into Part A. Mixing ratio is 2 parts A to 1 part B. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic PF Lo-VOC Primer - Premix Part A (black liquid) and Part B (white liquid) components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. For both the 2 and 10 gallon kits, pour Part A into a separate mixing vessel and then pour part B into Part A. Mixing ratio is 1 part A to 1 part B. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic MT Primer - Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A slowly and while mixing scrape the side of the container, Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic Recoat Primer – Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Pour Part A into a separate container. Pour Part B into Part A slowly and while mixing scrape the side of the container. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). In the event that a faster cure is required, Sikalastic Recoat Primer can be applied with Sikalastic 700 ACL as an accelerator. Add two quarts Sikalastic 700 ACL into 10 gallons of mixed primer. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Detailing

Non-structural cracks up to 1/16 inch - Apply a detail coat of Sikalastic 715 Lo-VOC Top with Sikalastic 715 Lo-VOC Booster at 26 wet mils, 4" wide, centered over the crack. Allow to become tack free before overcoating.

Cracks and joints over 1/16 up to 1 inch – Rout and seal with Sikaflex® 2c or 1a sealant and allow to cure. Apply a detail coat of Sikalastic 715 Lo-VOC Top with Sikalastic 715 Lo-VOC Booster at 26 wet mils, 4" wide, centered over the crack. Allow to become tack free before over coating.

Joints over 1 inch - Should be treated as expansion joints and brought up through the Sikalastic 715 Lo-VOC Top with Sikalastic 715 Lo-VOC Booster waterproofing membrane and sealed with Sikaflex® 2c or 1a sealant.

Fabric Reinforcement – An optional 3" or 6" wide Sikalastic Flexitape Heavy fabric strip may be embedded within the base coat. Flexitape width shall be chosen such that a minimum of 1" tape is embedded on either side of the crack/joint. Apply additional coating as required to fully embed the Flexitape in the coating.

Panelized Joints - Panelized joints that are restrained across the joint and without differential movement may be sealed and the deck coating, including detail coat, applied over the joint.

NOTE: movement within panelized joints may cause deterioration of the aggregated wear coat, in which case the joints should be treated as expansion joints and brought up through the Sikalastic Traffic System and sealed with Sikaflex® 2c or 1a sealant. For additional questions please contact Sika Technical Services.

Base Coat

Thoroughly mix Sikalastic 715 Top Lo-VOC using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed until a homogenous mixture and color is obtained. Add Sikalastic 715 Top Lo-VOC Booster into premixed coating and continue mixing until homogenous mixture and color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 1/4" notched squeegee or trowel and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and control joints. Allow coating to cure a minimum of 6 hours at 70°F and 50% RH or until tack free before top coating.

Top Coats

Thoroughly mix Sikalastic 715 Top Lo-VOC using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed until a homogenous mixture and color is obtained. Add Sikalastic 715 Top Lo-VOC Booster (if required) into premixed coating and continue mixing until homogenous mixture and color is obtained (typically 3 minutes). Add a maximum of 1 quart to 4.75 gallons (or 1:19 ratio) and only to material that will be applied in the next hour. Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel, or phenolic resin core roller, and

backroll. Apply aggregate evenly distributed at the appropriate rate immediately into wet coating and backroll if required (see System Guide). Allow coating to cure a minimum of 16 hours (6 hours with Booster) 70 degrees F and 50% RH or until tack free between coats, and a minimum of 72 hours (36 hours with Booster) before opening to vehicular traffic.

Aggregate

Use clean, rounded, oven dried quartz sand with a minimum gradation of 16-30 or 12-20 mesh for vehicular traffic and 20-40 mesh for pedestrian traffic, and a minimum hardness of 6.5 per the Moh's scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. Seeding of aggregate means and even, light broadcast short of to refusal. Any loose aggregate must be removed prior to recoating. Backroll aggregate only where indicated.

Boosters

Sikalastic 715 Top Lo-VOC Booster may be added to Sikalastic 715 Lo-VOC Top in order to speed cure time. **The use of Sikalastic 715 Top Lo-VOC Booster is required for all Sikalastic 715 Top Lo-VOC applications exceeding 19 wet mils including use as Base Coat.** Mix thoroughly prior to application. Add a maximum of 1 quart to 4.75 gallons (or 1:19 ratio) and only to material that will be applied within 45 minutes typical.

System Guide	Pedestrian Traffic	Heavy Pedestrian / Light Vehicular - Seed and Lock	Heavy Pedestrian / Light Vehicular Seed and Backroll**	Heavy Vehicular Traffic - Seed and Lock	Heavy Vehicular Traffic - Seed and Backroll
Primer	Sikafloor FTP - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.				
715 Lo-VOC Top Detail Coat	26* mils wet over properly treated cracks and joints.				
715 Lo-VOC Top Base Coat	26* mils wet (23 mils dry) - 61 sf/gal.				
715 Top Lo-VOC	11 mils wet (10 mils dry) - 145 sf/gal	9 mils wet (8 mils dry) - 178 sf/gal	23* mils wet (20 mils dry) - 69 sf/gal (see NOTE)	9 mils wet (8 mils dry) - 178 sf/gal	18 mils wet (16 mils dry) - 89 sf/gal
Aggregate	5-10 lbs/100 sf -seeded/backrolled	10-15 lbs/100 sf -seeded	15-20 lbs/100 sf - seeded/backrolled	10-15 lbs/100 sf -seeded	15-20 lbs/100 sf -seeded/backrolled
715 Top Lo-VOC		13 mils wet (12 mils dry) - 123 sf/gal		13 mils wet (12 mils dry) - 123 sf/gal	18 mils wet (16 mils dry) - 89 sf/gal
Aggregate				10-15 lbs/100 sf -seeded	15-20 lbs/100 sf -seeded/backrolled
715 Top Lo-VOC				13 mils wet (12 mils dry) - 123 sf/gal	
Total Thickness	33 mils dry (excluding aggregate)	43 mils dry (excluding aggregate)	43 mils dry (excluding aggregate)	55 mils dry (excluding aggregate)	55 mils dry (excluding aggregate)
NOTE: **Requires use of 715 Top Lo-VOC Booster with 715 Top Lo-VOC Top Coat, and 700 ACL Accelerator with 736 AL Lo-VOC Top Coat					
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.					

Recoat Windows

In the event of an unforeseen rain event or delays beyond the stated recoat window referenced in each product's current PDS, observe the following.

Product	Recoat Window	Required Surface Preparation After Recoat Window is Exceeded
Sikalastic FTP	Tack-free to 48 hours	Heavily abrade and reprime
Sikalastic FTP Lo-VOC	Tack-free to 16 hours	Heavily abrade and reprime
Sikalastic PF Lo-VOC	Tack-free to 16 hours	Heavily abrade and reprime
Sikalastic MT	Tack-free to 48 hours	Heavily abrade and reprime
Sikalastic Recoat	Tack-free to 12 hours	Heavily abrade and reprime
Sikalastic Recoat with 700 ACL Accelerator	Tack-free to 6 hours	Heavily abrade and reprime
Sikalastic 715 Top Lo-VOC	Tack-free to 48 hours	Clean and solvent wipe or Clean and Sikalastic Recoat Primer
Sikalastic 715 Top Lo-VOC with 715 Top Lo-VOC Booster	6-24 hours	Clean and solvent wipe or Clean and Sikalastic Recoat Primer

Notes:

1. Heavy abrasion of epoxy-based materials is intended to achieve an open, porous surface and to re move any amine blush that may interfere with bonding.
2. Abrasion of polyurethane-based materials is intended to achieve an open, porous surface.
3. Cleaning is intended to remove dirt, debris, contaminants, and residue from mechanical surface preparation methods.
4. Recommended solvents include high quality xylene and acetone. Handling and use of all solvents must be done in accordance with the manufacturer's warnings and instructions for use.

Removal

Remove liquid resin immediately with dry cloth. Once cured, resin can only be removed by mechanical means.

Maintenance/Repair

Clean with non-sudsing detergent and water and inspect regularly for mechanical damage. Snow removal equipment must have shoes, rubber tips or small skis to prevent ruptures. The use of metal blades without protection is not recommended. Damaged areas should be repaired promptly. Remove delaminated coating back to well adhered material and reinstall patch according to procedures described above. Do not use asphalt or tar modified products. Consult a Sika representative for recommendations on top coat or wearing surface restoration.

Limitations

- To avoid dew point conditions during application relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperature.
- Maximum moisture content of concrete substrate by weight when measured with a Tramex CME or CMExpert type concrete moisture meter: 4% for Sikalastic FTP Primer; 4% for exterior exposed decks with one application of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for exterior exposed decks with two applications of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for interior protected decks with one application of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for exterior and interior decks with one application of Sikalastic MT Primer; 6% for exterior and interior decks with two applications of Sikalastic MT Primer. (see separate Primer product data sheets).
- Minimum ambient and substrate temperature during application and curing of material is 40°F (4°C); maximum is 95°F (35°C**)**. Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane coatings. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it.
- Coating materials will become more viscous at lower application temperatures and be more difficult to spread, which may affect yield.
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.
- Do not thin with solvents.
- Use properly graded, oven dried aggregates only.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- Precautions should be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.
- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is imminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after

rain or inclement weather as there is the potential for bonding problems.

- When applying over existing coatings compatibility and adhesion testing is recommended.
- Opening prior to final cure may result in loss of aggregate, or permanent staining and subsequent premature failure.
- Vehicle fluids and some high performance tires can stain the coating. Fluid spills should be removed promptly as the coating can in some cases be damaged from prolonged exposure.
- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications where chained or studded tires may be used should not be coated with Sikalastic Traffic Systems.
- Unvented metal pan decks or decks containing a between-slab membrane require further technical evaluation and priming with a moisture-tolerant primer - contact Sika regarding recommendations.
- Do not subject to continuous immersion**.**
- Sikalastic 715 Top Lo-VOC is UV resistant, but will chalk, fade or discolor over time when exposed to UV and under certain artificial lighting conditions. Sikalastic 736 AL Lo-VOC aliphatic top coat provides superior color and gloss retention.
- Base and intermediate coats must be kept clean and re-coated within 48 hours, or 24 hours if Boosters are used.
- Mockups to verify application methods and substrate conditions as well as desired skid resistance and aesthetics are highly recommended.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

MIAMI-DADE COUNTY APPROVED

SEALANT • WATERPROOFING & RESTORATION INSTITUTE
Issued to: Sika Corporation
Product: Sikalastic 720/745 AL Traffic System

ASTM D 412: Tensile Strength of Topcoat
Sikalastic 745 AL Topcoat
Tensile Strength: 2,912 psi;
Elongation: 254% Pass ✓

ASTM D 4541: Adhesion of Base Coat
Sikalastic 720 with Fast Track Primer
Pull-off Adhesion: 531 psi Pass ✓

ASTM D 4060: Abrasion Resistance of Top Coat
Sikalastic 745 AL Topcoat
Abrasion Resistance: 4 mgms loss – mgms loss/1,000 cycles Pass ✓

Validation Date: 10/12/15-10/11/20
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DECK COATING VALIDATION
www.swrionline.org

Sikalastic® 720/745 AL Traffic System

Two component, fast curing, solvent-free, elastomeric, crack-bridging, waterproofing traffic system

Construction

Description

Sikalastic® 720/745 AL Traffic System is a two-component, chemically cured, elastomeric polyurethane coating system designed for use as a waterproofing membrane for pedestrian and vehicular traffic bearing surfaces. System components are:

Sikalastic® FTP Primer (see separate data sheet).
Sikalastic® MT Primer - moisture tolerant primer (see separate data sheet).
Sikalastic® 720 Base two-component, high solids, fast curing polyurethane base coat.
Sikalastic® 745 AL two-component, high solids, fast curing aliphatic polyurea top coat.
Sikalastic® 735 AL, 736 AL Lo-VOC and 748 PA optional aliphatic top coats (see separate Sikalastic® Aliphatic Top Coats data sheet).

Where to Use

Sikalastic® 720/745 AL Traffic System is suitable for use on structurally sound concrete, cementitious or plywood surfaces exposed to vehicular or pedestrian traffic.

- Multi-story parking garages.
- Parking decks and ramps.
- Foot bridges and walkways.
- Mechanical rooms.
- Stadiums and arenas.
- Plaza and rooftop decks.
- Balconies.

Advantages

- Low odor and fast turnaround.
- Excellent crack-bridging properties and flexibility, even at low temperatures.
- Outstanding resistance to abrasion and wear.
- Impervious to water and deicing salts.
- Range of standard colors and decorative options.

Coverage

Coverage rates provided are intended to achieve required wet film thickness under optimal conditions. Additional material may be required depending on substrate surface roughness and porosity, material and substrate temperatures, and other site-dependent factors. This will result in a lower coverage rate.

Cure Mechanism

Chemical Cure.

Packaging

Sikalastic® 720 Base: 20 gal. kit - four 5 gal. pails (net 4 gal. each) Part A and four 1 gal. cans Part B.
Sikalastic® 745 AL:17.6 gal. kit - four 5 gal. pails (net 4 gal. each) Part A and four 1 gal. cans (net 0.4 gal.) Part B.

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% RH)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life: 1 year in original, unopened containers.

Storage: Store dry at 40°-95°F (4°-35°C).

Product Conditioning: Condition material to 65°-85°F (18°-30°C) before using.

Colors:
Sikalastic® 720 Base: Gray
Sikalastic® 745 AL: Gray, Charcoal and Tan; custom colors available.

	720 Base	745 AL
Pot Life:	10-15 minutes	20-30 minutes
Total Volume Solids (ASTM D-2697):	95%	100%
VOC Content (ASTM D-2369-81):	<10 g/l	<10 g/l
Tensile Strength (ASTM D-412):	2500 ± 100 psi	3200 ± 300 psi
Elongation at Break (ASTM D-412):	800% ± 100 %	300% ± 50 %
Tear Resistance (Die C, ASTM D-624):	300 ± 25 pli	300 ± 30 pli
Hardness (ASTM D-2240):	80 ± 5 Shore A	85 ± 5 Shore A

Adhesion:	525 psi	n/a
Abrasion Resistance (ASTM D4060): Test 1000 cycles, 1000g and CS-17 wheel	n/a	4 mg
UV Resistance and Recovery from Elongation (ASTM C-957)	n/a	PASS

How to Use

Surface Preparation

Surface must be clean, dry and sound with an open texture. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes, and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to application.

Concrete- Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means (CSP 3-4 per ICRI guidelines).

Route out all cracks and joints as part of surface preparation.

Plywood- Should be clean and smooth, APA and exterior grade, not less than 1/2" thick, and spaced and supported according to APA guidelines. Joints should be sealed and detailed following deck priming, and may need embedded fabric reinforcement.

Metal- Should be thoroughly cleaned by grinding or blast cleaning.

Application

Priming

Primer Selection - Determine maximum moisture content of concrete substrate by weight with a Tramex CME or CMExpert type concrete moisture meter.

Sikalastic FTP Primer – For concrete decks with a maximum moisture content of 4% by weight, and for plywood decks, apply Sikalastic FTP Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Sikalastic FTP Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Sikalastic FTP Lo-VOC Primer - For exterior exposed concrete decks with a maximum moisture content of 4% by weight, interior protected concrete decks with a maximum moisture content of 5% by weight, and plywood decks, apply Sikalastic FTP Lo-VOC Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. For exterior exposed concrete decks with a maximum moisture content of 5% by weight, two applications of Sikalastic FTP Lo-VOC Primer are required. Sikalastic FTP Lo-VOC Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Sikalastic PF Lo-VOC Primer - For concrete and plywood decks with a porous or rough surface, and for metal flanges and penetrations, use Sikalastic PF Lo-VOC Primer. For exterior exposed concrete decks with a maximum moisture content of 4% by weight, interior protected concrete decks with a maximum moisture content of 5% by weight, and plywood decks, apply Sikalastic PF Lo-VOC Primer with a flat squeegee or phenolic resin core roller at approximately 200 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. For exterior exposed concrete decks with a maximum moisture content of 5% by weight, two applications of Sikalastic PF Lo-VOC Primer are required. Refer to separate primer data sheet for additional information.

Sikalastic MT Primer - For concrete with a maximum moisture content of 5% by weight, and for metal flanges and penetrations, apply Sikalastic MT Primer with a flat squeegee or roller at approximately 175 sf/gal. For concrete decks with a maximum moisture content of 6% by weight, apply two applications of Sikalastic MT Primer with a flat squeegee or phenolic resin roller at approximately 175 sf/gal per application. Work primer well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Refer to separate primer data sheet for additional information.

Sikalastic Recoat Primer – For existing polyurethane coatings, incidental exposed concrete deck areas, and as an interlaminate primer, apply Sikalastic Recoat Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work will into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Sikalastic Recoat Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Primer Mixing

Sikalastic FTP Primer – Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Sikalastic FTP Part B is dark olive green in color and may appear black in the container. Sikalastic FTP Part A is light amber in color. Add the 1 gallon of Sikalastic FTP Part A to the 1.25 gallons of Part B in the short filled Part B pail. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). This mixture will appear as a light olive green color. Slowly add 1.25 gallons of potable water to the mixture under agitation. Mix for an additional 2 minutes until the mixture is fully dispersed. Fully dispersed material will appear as light yellow to white in color.

Sikalastic FTP Lo-VOC Primer - Premix Part A (blue liquid) and Part B (yellow liquid) components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color

(typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. For the 3 gallon kit, pour Part B into Part A slowly and while mixing scrape the side of the container, For the 15 gallon kit, pour Part A into a separate mixing vessel and then pour part B into Part A. Mixing ratio is 2 parts A to 1 part B. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic PF Lo-VOC Primer - Premix Part A (black liquid) and Part B (white liquid) components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. For both the 2 and 10 gallon kits, pour Part A into a separate mixing vessel and then pour part B into Part A. Mixing ratio is 1 part A to 1 part B. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic MT Primer - Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A slowly and while mixing scrape the side of the container, Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Sikalastic Recoat Primer – Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Pour Part A into a separate container. Pour Part B into Part A slowly and while mixing scrape the side of the container. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). In the event that a faster cure is required, Sikalastic Recoat Primer can be applied with Sikalastic 700 ACL as an accelerator. Add two quarts Sikalastic 700 ACL into 10 gallons of mixed primer. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Detailing

Non-structural cracks up to 1/16 inch - Apply a detail coat of Sikalastic® 720 Base at 23 wet mils, 4" wide, centered over the crack. Allow to become tack free before overcoating.

Cracks and joints over 1/16 up to 1 inch - Rout and seal with Sikaflex® 2c or 1a sealant and allow to cure. Apply a detail coat of Sikalastic® 720 Base at 23 mils, 4'' wide, centered over the crack. Allow to become tack free before over coating.

Joints over 1 inch - Should be treated as expansion joints and brought up through the Sikalastic® 720 Base waterproofing membrane and sealed with Sikaflex® 2c or 1a sealant.

Fabric Reinforcement – An optional 3" or 6" wide Sikalastic Flexitape Heavy fabric strip may be embedded within the base coat. Flexitape width shall be chosen such that a minimum of 1" tape is embedded on either side of the crack/joint. Apply additional coating as required to fully embed the Flexitape in the coating.

Panelized Joints - Panelized joints that are restrained across the joint and without differential movement may be sealed and the deck coating, including detail coat, applied over the joint.

NOTE: movement within panelized joints may cause deterioration of the aggregated wear coat, in which case the joints should be treated as expansion joints and brought up through the Sikalastic Traffic System and sealed with Sikaflex® 2c or 1a sealant. For additional questions please contact Sika Technical Services.

Base Coat

Premix mix Sikalastic® 720 Base Part A and Part B material (typically 30 seconds) using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed to obtain uniform color making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A slowly and while mixing scrape the sides of the container. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel and back roll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and joints. Allow coating to cure a minimum of 3-4 hours at 70°F and 50% RH or until tack free before top coating.

Top Coats

Premix Sikalastic® 745 AL Part A using a using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pail. Add Part B and continue mixing until a homogenous mixture and color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel, or phenolic resin core roller, and back roll. Apply aggregate evenly distributed at the appropriate rate immediately into the wet coating and back roll if required (see System Guide). Allow coating to cure a minimum of 3-4 hours at 70°F and 50% RH or until tack free between coats, and a minimum of 36 hours before opening to vehicular traffic.

Aggregate

Use clean, rounded, oven dried, quartz sand with a minimum gradation of 16-30 or 12-20 mesh for vehicular traffic and 20-40 mesh for pedestrian traffic, and a minimum hardness of 6.5 per the Moh's scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. Seeding of aggregate means and even, light broadcast short of to refusal. Any loose aggregate must be removed prior to re-coating. Back roll aggregate only where indicated.

System Guide	Pedestrian Traffic	Heavy Pedestrian /Light Vehicular	Heavy Vehicular Traffic
Primer	Sikalastic FTP - 300 ft²/gal. Consult Sika for other primer options for recover and high moisture content substrates.		
720 Detail Coat	23 mils wet over properly treated cracks and joints.		
720 Base Coat	23 mils wet (23 mils dry) - 70 ft²/gal.		
745 Top Coat I	12 mils wet (12 mils dry) - 133 ft²/gal.	18 mils wet (18 mils dry) - 90 ft²/gal.	14 mils wet (14 mils dry) - 115 ft²/gal.
Aggregate	5-10 lbs/100 ft² - seeded/back-rolled	10-20 lbs/100 sf - seeded/ backrolled	10-15 lbs/100 ft² seeded (backroll optional)
745 Top Coat II			18 mils wet (18 mils dry) - 90 ft²/gal
Aggregate			10-20 lbs/100 ft² - seeded/backrolled
Total Thickness	35 mils dry (excluding aggregate)	41 mils dry (excluding aggregate)	55 mils dry (excluding aggregate)
See separate Sikalastic® Aliphatic Top Coats data sheet for DecoQuartz® and DecoFlake® systems.			
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.			

Recoat Windows

In the event of an unforeseen rain event or delays beyond the stated recoat window referenced in each product's current PDS, observe the following.

Product	Recoat Window	Required Surface Preparation After Recoat Window is Exceeded
Sikalastic FTP	Tack-free to 48 hours	Heavily abrade and reprime
Sikalastic FTP Lo-VOC	Tack-free to 16 hours	Heavily abrade and reprime
Sikalastic PF Lo-VOC	Tack-free to 16 hours	Heavily abrade and reprime
Sikalastic MT	Tack-free to 48 hours	Heavily abrade and reprime
Sikalastic Recoat	Tack-free to 12 hours	Heavily abrade and reprime
Sikalastic Recoat with 700 ACL Accelerator	Tack-free to 6 hours	Heavily abrade and reprime
Sikalastic 720	Tack-free to 24 hours	Clean and solvent wipe **or** Clean and Sikalastic Recoat Primer
Sikalastic 745 AL	Tack-free to 24 hours	Abrade, clean and solvent wipe **or** Abrade, clean and Sikalastic Recoat Primer

Notes:

1. Heavy abrasion of epoxy-based materials is intended to achieve an open, porous surface and to remove any amine blush that may interfere with bonding.
2. Abrasion of polyurethane-based materials is intended to achieve an open, porous surface.
3. Cleaning is intended to remove dirt, debris, contaminants, and residue from mechanical surface preparation methods.
4. Recommended solvents include high quality xylene and acetone. Handling and use of all solvents must be done in accordance with the manufacturer's warnings and instructions for use.

Removal

Remove liquid resin immediately with dry cloth. Once cured, resin can only be removed by mechanical means.

Maintenance/Repair

Clean with non-sudsing detergent and water and inspect regularly for mechanical damage. Snow removal equipment must have shoes, rubber tips or small skis to prevent ruptures. The use of metal blades without protection is not recommended. Damaged areas should be repaired promptly. Remove delaminated coating back to well adhered material and reinstall patch according to procedures described above. Do not use asphalt or tar modified products. Consult a Sika representative for recommendations on top coat or wearing surface restoration.

Construction

Limitations

- To avoid dew point conditions during application relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperature.
- Maximum moisture content of concrete substrate by weight when measured with a Tramex CME or CMExpert type concrete moisture meter: 4% for Sikalastic FTP Primer; 4% for exterior exposed decks with one application of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for exterior exposed decks with two applications of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for interior protected decks with one application of Sikalastic FTP Lo-VOC Primer or Sikalastic PF Lo-VOC Primer; 5% for exterior and interior decks with one application of Sikalastic MT Primer; 6% for exterior and interior decks with two applications of Sikalastic MT Primer. (see separate Primer product data sheets).
- Minimum ambient and substrate temperature during application and curing of material is 40°F (4°C); maximum is 95°F (35°C). Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane coatings. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it.
- Coating materials will become more viscous at lower application temperatures and be more difficult to spread, which may affect yield.
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.
- Do not thin with solvents.
- Use properly graded, oven dried aggregates only.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- Precautions should be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.
- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is emminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.
- When applying over existing coatings compatibility and adhesion testing is recommended.
- Opening prior to final cure may result in loss of aggregate, or permanent staining and subsequent premature failure.
- Vehicle fluids and some high performance tires can stain the coating. Fluid spills should be removed promptly as the coating can in some cases be damaged from prolonged exposure.
- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications where chained or studded tires may be used should not be coated with Sikalastic® Traffic Systems.
- Unvented metal pan decks or decks containing between-slab membrane require further technical evaluation and priming with a moisture-tolerant primer - contact Sika regarding recommendations.
- Do not subject to continuous immersion. Ponding water up to 72 hours duration is not considered to be continuous immersion.
- Sikalastic® 720 Base coat is not UV stable and must be top coated.
- Base and intermediate coats must be kept clean and re-coated within 24 hours. If this recoat window is exceeded, contact Sika for recommendations.
- Mockups to verify application methods and substrate conditions as well as desired skid resistance and aesthetics are highly recommended.

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Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® 720 SG Base

Two-component, fast-curing, summer grade, solvent-free, crack-bridging, elastomeric polyurethane base coat

Description	Sikalastic® 720 is a two-component, aromatic, chemically cured, elastomeric polyurethane coating intended for use as the waterproofing base coat under polyurethane or epoxy wearing surfaces for pedestrian and vehicular traffic bearing applications, and as the waterproofing base coat under a separate wearing course such as concrete, and tile in a setting bed.
Where To Use	■ Multi-story parking garages. ■ Parking decks and ramps. ■ Foot bridges and walkways. ■ Mechanical rooms. ■ Stadiums and arena. ■ Plaza and rooftop decks. ■ Balconies.
Advantages	■ Low odor and fast turnaround. ■ Extended working time in warmer weather conditions. ■ Excellent crack-bridging properties and flexibility, even at low temperatures. ■ Resistant to water and de-icing salts. ■ Alkaline resistant.
Coverage	70 ft²/gal. @ 23 wet mils (23 dry mils).
Packaging	5 gal. kit - Part A (4 gal.) and Part B (1 gal.). Minumum order: 20 gal. kit (4 x 5 gal. kits)
Cure Mechanism	Chemical cure.
Chemical Resistance	Resistant to de-icing salts, and alkaline concrete and cementitious mortars/tile adhesives.

Typical Data *(Material and curing conditions at 75°F (24°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened containers.
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°- 85°F (18°- 30°C) before using.
Color	Medium Gray
Pot Life	15-20 minutes
Total Volume Solids (ASTM D-2697)	95%
VOCs (ASTM D-2369-81)	< 5 g/l
Tensile Strength (ASTM D-412)	2100 +/- 200 psi
Elongation at Break (ASTM D-412)	900 +/- 100%
Tear Resistance (Die C, ASTM D-624)	250 +/- 25 pli
Hardness (ASTM D-2240)	70 +/- 5 Shore A

Construction

How to Use

Surface Preparation

Surface must be clean, dry and sound with an open texture. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes, and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means (CSP 3-4 per ICRI guidelines).

Plywood - Should be clean and smooth, APA and exterior grade, not less than 1/2" thick, and spaced and supported according to APA guidelines. Joints should be sealed with Sikaflex® 2c or 1a and detailed and may need embedded fabric reinforcement.

Metal - Should be thoroughly cleaned by grinding or blast cleaning.

Priming

Refer to separate primer data sheets for more detailed information.

Concrete - For concrete decks with a maximum moisture content of 4% by weight, apply Sikalastic® FTP with a flat squeegee or roller at approximately 300 ft²/gal. For concrete decks with a maximum moisture content of 5% by weight, apply Sikalastic® MT with a flat squeegee or roller at approximately 150 ft²/gal. For concrete decks with a maximum moisture content of 6% by weight, apply two applications of Sikalastic® MT with a flat squeegee or roller at approximately 150 ft²/gal. per application. Work primer well into the substrate to ensure adequate penetration and sealing, and puddles are avoided.

Plywood - Apply Sikalastic® FTP with a flat squeegee or roller at approximately 300 ft²/gal, working primer well into the substrate to ensure adequate penetration and sealing, and puddles are avoided.

Metal - Consult Sika regarding primer recommendations.

Detailing

Non-structural cracks up to 1/16 inch - Apply a detail coat of Sikalastic® 720 SG at 23 wet mils, 4" wide, centered over the crack. Allow to become tack free before overcoating.

Cracks and joints over 1/16 up to 1 inch - Rout and seal with Sikaflex® 2c or 1a sealant and allow to cure. Apply a detail coat of Sikalastic® 720 SG at 23 mils, 4'' wide, centered over the crack. Allow to become tack free before over coating.

Joints over 1 inch - Should be treated as expansion joints and brought up through the Sikalastic® 720 SG waterproofing membrane and sealed with Sikaflex® 2c or 1a sealant.

Fabric Reinforcement – An optional 3" or 6" wide Sikalastic Flexitape Heavy fabric strip may be embedded within the base coat. Flexitape width shall be chosen such that a minimum of 1" tape is embedded on either side of the crack/joint. Apply additional coating as required to fully embed the Flexitape in the coating.

Panelized Joints - Panelized joints that are restrained across the joint and without differential movement may be sealed and the deck coating, including detail coat, applied over the joint.
NOTE: movement within panelized joints may cause deterioration of the aggregated wear coat, in which case the joints should be treated as expansion joints and brought up through the Sikalastic Traffic System and sealed with Sikaflex® 2c or 1a sealant. For additional questions please contact Sika Technical Services.

Mixing

Premix Part A and Part B components using a mechanical mixer (Jiffy) at slow speed to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pail. Pour part B into Part A slowly and while mixing scrape the side of the container, Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture.

Application

Apply at the recommended coverage rate (see appropriate System Guide) using a notched squeegee or trowel, and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and joints. Allow coating to cure a minimum of 3-4 hours at 70°F and 50% RH or until tack fee before top coating. Allow coating to cure for a minimum of 36 hours before installing separate wear course.

Removal

Remove liquid coating immediately with dry cloth. Once cured, coating can only be removed by mechanical means.

Limitations

- To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures.
- Maximum moisture content of substrate: 4% by weight with Sikalastic® FTP primer, and 6% by weight with Sikalastic® MT.
- Minimum ambient and substrate temperature during application and curing of material is 40°F (4°C); maximum is 95°F (35°C). Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane coatings. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it.
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.
- Do not thin with solvents.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various Sika product solutions). Surface irregularities may reflect though the cured system.

Construction

- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is imminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.
- When applying over existing coatings compatibility and adhesion testing is recommended.
- On grade, lightweight concrete, asphalt pavement, and applications where chained or studded tires may be used should not be coated with Sikalastic® traffic systems.
- Unvented metal pan decks or decks containing between-slab membranes require further technical evaluation and priming with a moisture-blocking primer - contact Sika regarding recommendations.
- Waterproofing applications under overburden, including concrete pavement, and tile in a cementitious setting bed, require further technical evaluation - contact Sika regarding recommendations.
- Do not subject to continuous immersion.
- Sikalastic® 720 SG is not UV stable and must be top coated or protected by a separate wearing course.
- Primer and base coat must be kept clean and recoated - primer within 48 hours, base coat within 24 hours. If this window is exceeded, contact Sika for recommendations.
- Mockups to verify application methods and substrate conditions as well as desired skid resistance and aesthetics are highly recommended.

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Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® 390/391/395 Traffic System

Two-component, solvent-free, elastomeric, crack-bridging, waterproofing traffic system

Description

Sikalastic 390/391/395 Traffic System is a two-component, chemically cured, elastomeric polyurethane coating system designed for use as a waterproofing membrane for pedestrian and vehicular traffic bearing surfaces. System components are:

Sikalastic MT Primer - moisture tolerant primer (see separate Sikalastic MT Primer data sheet)
Sikalastic 390 two-component, high solids, aromatic polyurethane base coat
Sikalastic 391 two-component, high solids, aromatic polyurethane intermediate and interior top coat
Sikalastic 395 two-component, high solids, aliphatic polyurethane exterior top coat

Where to Use

Sikalastic 390/391/395 Traffic System is suitable for use on structurally sound concrete, cementitious or plywood surfaces exposed to vehicular or pedestrian traffic.

- Multi-story parking garages
- Parking decks and ramps
- Foot bridges and walkways
- Mechanical rooms
- Stadiums and arenas
- Plaza and rooftop decks
- Balconies

Advantages

- Low odor and fast turnaround
- Excellent crack-bridging properties and flexibility, even at low temperatures
- Outstanding resistance to abrasion and wear
- Impervious to water, ice and snow
- Resistant to deicing salts
- Primer not required in typical concrete substrate application conditions
- Range of standard colors

Typical Data (Material and curing conditions @ 75°F (24°C) and 50% RH)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUP MENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened containers
Storage Conditions	Store dry at 41°-95° F (5°-35°C). Condition material to 65°-85°F (18°-30°C) before using.
Colors	Sikalastic 390 Base: Brown Sikalastic 391: Gray, Charcoal and Tan; custom colors available Sikalastic 395: Gray, Charcoal and Tan; custom colors available
Cure Mechanism	Chemical Cure

	390	391	395
Pot Life	15-20 minutes	35-45 minutes	35-45 minutes
Total Volume Solids (ASTM D-2697)	100%	100%	100%
VOC Content (ASTM D-2369-81)	<10 g/l	<10 g/l	<10 g/l
Tensile Strength (ASTM D-412)	1,320 psi	595 psi	2500 psi ± 300 psi
Elongation at Break (ASTM D-412)	435%	205%	400% ± 50%
Tear Resistance (Die C, ASTM D-624)	218 pli	396 pli	79 pli
Hardness (ASTM D-2240)	80 ± 5 Shore A	80 ± 5 Shore A	85 ± 5 Shore A
Abbrasion Resistance (ASTM D-4060)			
TaberAbraser, CS-17 Wheel	6mg of loss	13mg of loss	15mg of loss
Water Absorption (ASTM D-570)			
7 days immersion at room temperature	0.26%	0.34%	0.61%

Packaging

Sikalastic 390: 5 gal. two component kit, 3.33 gal. comp. A, 1.67 gal. comp. B
Sikalastic 391: 5 gal. two component kit, 3.89 gal. comp. A, 1.11 gal. comp. B
Sikalastic 395: 5 gal. two component kit, 4.5 gal. comp. A, 0.5 gal. comp. B

Approvals

Sikalastic materials tested in accordance with ASTM C957

Coverage

System Guide	Pedestrian Traffic	Heavy Pedestrian / Light Vehicular	Heavy Vehicular Traffic
Primer	No primer required for typical new and recover applications. See Limitations.		
390 Detail Coat	30 mils wet over properly treated cracks and joints.		
390 Base Coat	20 mils wet (20 mils dry) - 80 sf/gal.		
391/395 Top Coat I	15 mils wet (15 mils dry) - 107 sf/gal	20 mils wet (20 mils dry) - 80 sf/gal	15 mils wet (15 mils dry) - 107 sf/gal
Aggregate	5-10 lbs/100 sf -seeded/backrolled	10-15 lbs/100 sf -seeded/backrolled	10-15 lbs/100 sf -seeded (backroll optional)
391/395 Top Coat II			20 mils wet (20 mils dry) - 80 sf/gal
Aggregate			10-15 lbs/100 sf -seeded/backrolled
Total Thickness	35 mils dry (excluding aggregate)	40 mils dry (excluding aggregate)	55 mils dry (excluding aggregate)
Sikalastic 391 is not long term UV resistant. Use Sikalastic 395 for all top coats directly exposed to UV.			

How To Use

Surface Preparation

Surface must be clean, dry and sound with an open texture. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes, and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to application.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means (CSP 3-4 per ICRI guidelines).

Plywood - Should be clean and smooth, APA and exterior grade, not less than 1/2" thick, and spaced and supported according to APA guidelines. Seams should be sealed with Sikaflex 2c or 1a and detailed and may need embedded fabric reinforcement.

Metal - Should be thoroughly cleaned by grinding or blast cleaning.

Application

Priming

For concrete decks with a maximum moisture content of 4% by weight, no priming is required. For concrete decks with a maximum moisture content of 5% by weight, apply Sikalastic MT Primer with a flat squeegee or roller at approximately 175 sf/gal. For concrete decks with a maximum moisture content of 6% by weight, apply two applications of Sikalastic MT Primer with a flat squeegee or roller at approximately 175 sf/gal. per application. Work primer well into the substrate to ensure adequate penetration and sealing, and puddles are avoided.

Consult Sika for primer options for wood and metal substrates.

Detailing

Non-structural cracks up to 1/16 inch - Apply a detail coat of Sikalastic 390 Base at 30 wet mils, 4" wide, centered over the crack. Allow to become tack free before overcoating.

Cracks and joints over 1/16 up to 1 inch - Route and seal with Sikaflex 2c or 1a sealant and allow to cure. Apply a detail coat of Sikalastic 390 Base at 30 wet mils, 4" wide, centered over crack. Allow to skin over and become tack free before overcoating.

Joints over 1 inch - Should be treated as expansion joints and brought up through Sikalastic 390 Base and sealed with Sikaflex 2c or 1a sealant.

Fabric Reinforcement – An optional 3" or 6" wide Sikalastic Flexitape Heavy fabric strip may be embedded within the base coat. Flexitape width shall be chosen such that a minimum of 1" tape is embedded on either side of the crack/joint. Apply additional coating as required to fully embed the Flexitape in the coating.

Panelized Joints - Panelized joints that are restrained across the joint and without differential movement may be sealed and the deck coating, including detail coat, applied over the joint.

NOTE: movement within panelized joints may cause deterioration of the aggregated wear coat, in which case the joints should be treated as expansion joints and brought up through the Sikalastic Traffic System and sealed with Sikaflex® 2c or 1a sealant. For additional questions please contact

Sika Technical Services.

Base Coat

Premix mix Sikalastic 390 Base Part A and Part B components using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A slowly and while mixing scrape the sides of the container. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and joints. Allow coating to cure a minimum of 5-6 hours at 70 degrees F and 50% RH; base coat must be tack free before overcoating.

Top Coats

Premix Sikalastic 391 or 395 Part A and Part B components using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pail. Add Part B into Part A slowly and continue mixing until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel, and backroll using a phenolic resin core roller. Apply aggregate evenly distributed at the appropriate rate immediately into the wet coating and backroll if required (see System Guide). Allow coating to cure a minimum of 10 hours (Sikalastic 391) or 4 hours (Sikalastic 395) at 70 degrees F and 50% RH or until tack free between coats, and a minimum of 48 hours (Sikalastic 391) or 36 hours (Sikalastic 395) before opening to vehicular traffic.

Aggregate

Use clean, rounded or semi-angular oven dried quartz sand with a minimum gradation of 12-20 or 16-30 mesh for vehicular traffic, and 20-40 mesh for pedestrian traffic, and a minimum hardness of 6.5 per the Moh's scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. Seeding of aggregate means an even, light broadcast short of refusal. A full broadcast of aggregate means a heavy application to refusal. Any loose aggregate must be removed prior to recoating.

Backroll aggregate only where indicated.

Removal

Remove liquid coating immediately with dry cloth. Once cured, coating can only be removed by mechanical means.

Limitations

Maintenance/Repair

Clean with non-sudsing detergent and water and inspect regularly for mechanical damage. Snow removal equipment must have shoes, rubber tips or small skis to prevent ruptures. The use of metal blades without protection is not recommended. Damaged areas should be repaired promptly. Remove delaminated coating back to well adhered material and reinstall patch according to procedures described above. Do not use asphalt or tar modified products. Consult a Sika representative for recommendations on top coat or wearing surface restoration.

Limitations/Precautions

- To avoid dew point conditions during application relative humidity must be no more than 95% and substrate temperature must be at least 5˚F (3˚C) above measured dew point temperature.
- Maximum moisture content of concrete substrate by weight when measured with a Tramex CME or CMExpert type concrete moisture meter : 4% for unprimed applications; 5% with one application of Sikalastic MT primer; 6% with two applications of Sikalastic MT primer (see separate Sikalastic MT Primer product data sheet).
- Minimum ambient and substrate temperature during application and curing of material is 41˚F (5˚C); maximum is 95˚F. Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane coatings. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it.
- Coating materials will become more viscous at lower application temperatures and be more difficult to spread, which may affect yield.
- Do not store materials outdoors exposed to sunlight for prolonged periods.
- Do not thin with solvents.

- Use properly graded, oven dried aggregates only.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is imminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.
- When applying over existing coatings compatibility and adhesion testing is recommended.
- Opening prior to final cure may result in loss of aggregate, or permanent staining and subsequent premature failure.
- Vehicle fluids and some high performance tires can stain the coating. Fluid spills should be removed promptly as the coating can in some cases be damaged from prolonged exposure.
- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications where chained or studded tires may be used should not be coated with Sikalastic Traffic Systems.
- Unvented metal pan decks or decks containing between-slab membranes require further technical evaluation and priming with a moisture-tolerant primer - contact Sika regarding recommendations.
- Do not subject to continuous immersion.
- Sikalastic 390 base coat is not UV stable and must be top coated.
- Sikalastic 391 is not UV stable and must be top coated for exterior applications.
- Primer, base and intermediate coats must be kept clean and recoated within 48 hours. If this recoat window is exceeded, contact Sika for recommendations.
- Mockups to verify application methods and substrate conditions as well as desired skid resistance and aesthetics are highly recommended

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Product Data Sheet
Edition 6.29.2011
Sikalastic® 735AL/736AL Lo-VOC/748PA

Sikalastic® 735 AL, 736 AL Lo-VOC and 748 PA Aliphatic Top Coats

High performance top coats for Sikalastic 710/715 and 720/745 Traffic Systems

Description

Sikalastic Aliphatic Top Coats are optional top coats for the Sikalastic 710/715 and 720/745 Traffic Systems. They provide superior UV resistance, color stability and cleanability as well as more decorative options. The series includes:

Sikalastic 735 AL one-component, moisture cured, aliphatic polyurethane top coat

Sikalastic 736 AL Lo-VOC one-component, moisture cured, low-VOC, aliphatic polyurethane top coat

Sikalastic 748 PA two-component, chemically cured, low-VOC, aliphatic polyaspartic top coat

Sikalastic 700 ACL optional accelerator

Where to Use

Sikalastic Aliphatic Top Coats are part of Sikalastic Traffic Systems, which are suitable for use on structurally sound concrete, cementitious or plywood surfaces exposed to vehicular or pedestrian traffic.

- Multi-story parking garages
- Parking decks and ramps
- Foot bridges and walkways
- Mechanical rooms
- Stadiums and arenas
- Plaza and rooftop decks
- Balconies

Advantages

- Superior color and gloss retention and cleanability
- Outstanding resistance to abrasion and wear
- Impervious to water and deicing salts
- Range of standard colors as well as custom and decorative options

Packaging

Sikalastic 735 AL and 736 AL Lo-VOC	5 gal. pails
Sikalastic 748 PA	4 gal. unit (2, 1 gal. cans Part A and 2, 1 gal. cans Part B)
Sikalastic 700 ACL	1 quart cans (9 cans per carton)

Colors

Sikalastic 735 AL and 736 AL Lo-VOC	Gray, Charcoal and Tan; custom colors available
Sikalastic 748 PA	Clear; custom colors available

How to Use

Surface Preparation

Sikalastic Aliphatic Top Coats are designed as alternate top coats for the Sikalastic 710/715 and 720/745 Traffic Systems (see separate data sheets for substrate preparation guidelines). When applying over existing coatings surface must be clean, dry and sound. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes, and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to application.

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% RH)*

RESULTS MAy Diff ER BASED UPOn STATiSTiCAL VARiATiOnS DEPEnDing UPOn Mixing METHODS AnD EqUiPMEnT, TEMPERATURE, APPLiCATiOn METHODS, TEST METHODS, ACTUAL SiTE COnDiTiOnS AnD CURing COnDiTiOnS.

Shelf Life 1 year in original, unopened containers.

Storage Store dry at 40-95°F (4-35°C). Condition material to 65-85°F (18-30°C) before using.

	735 AL	736 AL Lo-VOC	748 PA Clear	748 PA Pigmented
Viscosity	2500 ± 700 cps	3500 ± 700 cps	200 ± 50 cps	200/300 ± 50 cps
Total Volume Solids (ASTM D-2697)	74%	83%	78%	80%
VOCs (ASTM D-2369-81)	225 g/l	99 g/l	100 g/l	95 g/l
Tensile Strength (ASTM D-412)	4200 ± 300 psi	4000 ± 300 psi	2500 ± 300 psi	2300 ± 300 psi
Elongation at Break (ASTM D-412)	230 ± 50 %	250 ± 50 %	75 ± 25 %	50 ± 20 %
Tear Resistance (Die C, ASTM D-624)	400 ± 50 pli	400 ± 50 pli	300 ± 50 pli	300 ± 50 pli
Hardness (ASTM D-2240)	90 ± 5 Shore A	90 ± 5 Shore A	50 ± 5 Shore D	50 ± 5 Shore D
Pot Life			45-60 minutes	45-60 minutes

Application

Sikalastic 735 AL, 736 AL Lo-VOC - Thoroughly mix Sikalastic 735 AL and 736 AL Lo-VOC using a mechanical mixer (Jiffy) at slow speeds until a homogenous mixture and color is obtained. Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) and backroll using a phenolic resin core roller. Apply aggregate evenly distributed at the appropriate rate immediately into wet coating. Allow coating to cure a minimum of 16 hours at 70°F and 50% RH or until tack free between coats, and a minimum of 72 hours before opening to vehicular traffic.

Sikalastic 748 PA - Premix Sikalastic 748 PA Part A and Part B before combining. Add equal amounts of Part B to Part A while mixing using a mechanical mixer (Jiffy) at medium speed. Mix until a homogenous mixture and color is obtained (at least 3 minutes) and mix frequently during application to maintain uniform color. Scrape the sides of the container to ensure that no unmixed material remains and use care not to whip air into the material as this may result in pinhole blisters or shortened pot life. Pot life is 45-60 minutes at 75°F and 50% RH. **Do not dilute under any circumstances.** Apply at the recommended coverage rate (see System Guide) and backroll using a phenolic resin core roller. Allow 2-4 hours at 70°F and 50% RH or until tack free between coats and 24-48 hours before permitting heavy pedestrian or vehicular traffic.

Aggregate - Use clean, rounded oven, dried quartz sand with a minimum size gradation of 16-30 mesh for vehicular traffic and 20-40 mesh for pedestrian traffic, and a minimum hardness of 6.5 per the Moh's scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. Seeding of aggregate means an even, light broadcast short of to refusal. Any loose aggregate must be removed prior to recoating. Backroll aggregate where indicated.

Accelerator - Sikalastic 700 ACL may be added to Sikalastic 735 AL or 736 AL Lo-VOC in order to speed cure time particularly in cold weather conditions. Mix thoroughly prior to application. Add a maximum of 1 quart to 5 gallons (or 1:20 ratio) and only to material that will applied within 2-3 hours.

System Guide - Sikalastic 710/735/748 Traffic Syste				
Product	**Pedestrian Traffi**	**Heavy Pedestrian**	**Decorative q uartz**	**Decof lake®**
Primer	Sikafloor FTP - 300 sf/gal. Consult Sika for other primer options.			
710 Detail Coat	32 mils wet over properly treated cracks and joints - see 710/715 Traffic Systems data sheet			
710 Base Coat	32 mils wet (23 mils dry) - 50 sf/gal. - see 710/715 Traffic Systems data sheet			
735 AL Top I	14 mils wet (10 mils dry) 115 sf/gal.	11 mils wet (8 mils dry) 145 sf/gal.	14 mils wet (10 mils dry) 115 sf/gal.	14 mils wet (10 mils dry) 115 sf/gal.
Aggregate	5-10 lbs/100 sf seeded/backrolled	10-15 lbs/100 sf - seeded	40-50 lbs/100 sf - broadcast	2-4 lbs/100 sf - seeded
735 AL Top II		16 mils wet (12 mils dry) 100 sf/gal.		
748 PA Top			13 mils wet (10 mils dry) 125 sf/gal.	9 mils wet (7 mils dry) 175 sf/gal.
Total Thickness	33 mils dry (excl. aggregate)	43 mils dry (excl. aggregate)	43 mils dry (excl. aggregate)	40 mils dry (excl. aggregate)

System Guide - Sikalastic 720/736/748 Traffic Syste				
Product	**Pedestrian Traffi**	**Heavy Pedestrian**	**Decorative q uartz**	**Decof lake®**
Primer	Sikafloor FTP - 300 sf/gal. Consult Sika for other primer options.			
720 Detail Coat	23 mils wet over properly treated cracks and joints - see 720/745 Traffic Systems data sheet			
720 Base Coat	23 mils wet (23 mils dry) - 70 sf/gal. - see 720/745 Traffic Systems data sheet			
736 AL Lo-VOC I	12 mils wet (10 mils dry) 133 sf/gal.	10 mils wet (8 mils dry) 160 sf/gal.	12 mils wet (10 mils dry) 133 sf/gal.	12 mils wet (10 mils dry) 133 sf/gal.
Aggregate	5-10 lbs/100 sf seeded/backrolled	10-15 lbs/100 sf - seeded	40-50 lbs/100 sf - broadcast	2-4 lbs/100 sf - seeded
736 AL Lo-VOC II		14 mils wet (12 mils dry) 115 sf/gal.		
748 PA Top			13 mils wet (10 mils dry) 125 sf/gal.	9 mils wet (7 mils dry) 175 sf/gal.
Total Thickness	33 mils dry (excl. aggregate)	43 mils dry (excl. aggregate)	43 mils dry (excl. aggregate)	40 mils dry (excl. aggregate)

Construction

Limitations

- To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures.
- Maximum moisture content of substrate: 4% by weight.
- Minimum ambient and substrate temperature during application and curing of material is 40°F (4°C); maximum is 90°F (32°C). Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane coatings. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it.
- Do not store materials outdoors exposed to sunlight for prolonged periods.
- Do not thin with solvents.
- Use properly graded, oven dried aggregates only.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is imminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.
- When applying over existing coatings, compatibility and adhesion testing is recommended.
- Opening prior to final cure may result in loss of aggregate, or permanent staining and subsequent premature failure.
- Vehicle fluids and some high performance tires can stain the coating. Fluid spills should be removed promptly as the coating can in some cases be damaged from prolonged exposure.
- On grade, unvented metal pan, split/sandwich slab and buried membrane conditions as well as light-weight concrete and asphalt or where chained or studded tires may be used should not be coated with Sikalastic Traffic Systems.
- Do not subject to continuous immersion.
- Mockups to verify application methods and substrate conditions as well as desired skid resistance and aesthetics are highly recommended.

Caution

Sikalastic 735 AL

IRRITANT. Contains Polyurethane Prepolymer (Mixture), Solvent Naphtha Petroleum (64742-95-6), n-Butyl Acetate (CAS:123-86-4) and 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate (CAS:4098-71-9). Causes eye and skin irritation.

Sikalastic 736 AL Lo-VOC

IRRITANT: Contains Quartz SiO2 (CAS: 14808-60-7), Solvent Naphtha Petroleum (64742-95-6), 4-Chloro-a,a,a-trifluorotoluene (CAS:98-56-6) and n-Butyl Acetate (CAS:123-86-4). Causes eye and skin irritation. **WARNING: This product contains a chemical known to the State of California to cause cancer.**

Sikalastic 748 PA

Part A: DANGER: FLAMMABLE, IRRITANT, SENSITIZER. Contains Hexamethylene Diisocyanate, Oligomers (CAS: 28182-81-2), 4-Chloro-a,a,a-triflourotolene (CAS: 98-56-6) and 3-Isocyanatomethylcyclo-hexyl Isocyanate (CAS:4098-71-9). **Keep away from heat, sparks, sunlight, electrical equipment, flame or other sources of ignition. VAPORS MAY IGNITE AND EXPLODE. DO NOT SMOKE.** Use only in well ventilated areas. Open doors and windows during use. Causes eye/skin/respiratory irritation. May cause skin and respiratory sensitization. Inhalation can result in headaches and dizziness. Harmful if swallowed. **intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.** Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. **intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.**

Part B: DANGERR: FLAMMABLE, CORROSiVE, IRRITANT. Avoid direct contact. Contains Cyclohexanamine, 4,4'-methylenebis-(1-methylpropyl) (CAS: 154279-60-4) and 4-Chloro-a,a,a-triflourotoluene (CAS: 98-56-6). **Keep away from heat, sparks, sunlight, electrical equipment, flame or other sources o ignition. VAPORS MAY IGNITE AND EXPLODE. DO NOT SMOKE.** Use only in well ventilated areas. Open doors and windows during use. Corrosive to eyes/skin/digestive tract. Causes burns to eyes/skin/digestive tract. Causes respiratory irritation. Inhalation can result in headaches and dizziness. Harmful if swallowed. **Deliberate misuse by inhalation of vapors may be harmful or fatal.** Strictly follow all usage, handling and storage instructions. Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. **intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.**

Construction

Handling & Storage	Avoid direct contact with eyes and skin. Wear chemical resistant gloves/goggles/clothing. Avoid breathing vapors. Use with adequate general and local ventilation. In absence of adequate ventilation, use properly fitted NIOSH approved respirator. Wash thoroughly after handling product. Store in a cool, dry, well ventilated area. Keep containers tightly closed.
f irst Aid	**Eyes** – Hold eyelids apart and flush thoroughly with water for 15 minutes. **Skin** – Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. **inhalation** – Remove to fresh air. **ingestion** – Do not induce vomiting. Dilute with water. Contact physician. **in all cases contact a physician immediately if symptoms persist.**
Clean Up	Wear chemical resistant gloves/goggles/clothing. In absence of proper ventilation use properly fitted NIOSH respirator. Confine spill, collect using absorbent material and place in properly sealed container. Dispose of excess product in accordance with applicable local, state and federal regulations.
Maintenance/Repair	Clean with non-sudzing detergent and water and inspect regularly for mechanical damage. Snow removal equipment must have shoes, rubber tips or small skis to prevent ruptures. The use of metal blades without protection is not recommended. Damaged areas should be repaired promptly. Remove delaminated coating back to well adhered material and reinstall patch according to procedures described above. Do not use asphalt or tar modified products. Consult a Sika representative for recommendations on top coat or wearing surface restoration.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800-933-7452. NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTION FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Regional Information and Sales Centers. For the location of your nearest Sika sales office contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® 22 Lo-Mod Hybrid Traffic System

Waterproofing traffic system with Sikalastic base coat and Sikadur® 22 Lo-Mod for added abrasion resistance

Description

Sikalastic 22 Lo-Mod Traffic System consists of an elastomeric, crack-bridging Sikalastic polyurethane base coat and Sikadur 22 Lo-Mod low-modulus epoxy top coat. It is designed for heavy vehicular or pedestrian traffic conditions requiring maximum abrasion resistance, such as parking garage ramps, entrance and exit areas, and loading docks. System components are:
Sikafloor FTP primer (separate data sheet available)
Sikalastic MT primer (separate data sheet available)
Option 1: Sikalastic 710 Base one-component aromatic polyurethane base coat
Option 2: Sikalastic 710 Lo-VOC one-component aromatic polyurethane base coat
Option 3: Sikalastic 720 Base two-component, high solids, fast curing polyurethane base coat
Option 4: Sikalastic 390 two-component, high solids, polyurethane base coat
Sikadur 22 Lo-Mod or Sikadur 22 Lo-Mod Fast Set, low-modulus medium viscosity epoxy resin binder
Optional top coats: Sikalastic 735 AL, 736 AL Lo-Voc, 745 AL, or Sikalastic 391 and 395.
See separate Sikadur 22 Lo-Mod, Sikalastic 710, 710 Lo-VOC 720, 735 AL, 736 AL Lo-VOC, 745 AL, and Sikalastic 391 and 395 Product Data Sheets for additional product information.

Where to Use

Sikalastic 22 Lo-Mod Traffic System is designed for use on concrete or cementitious surfaces exposed to vehicular or pedestrian traffic.
- Multi-story parking garages
- Parking decks and ramps
- Foot bridges and walkways
- Mechanical rooms
- Stadiums and arenas
- Loading docks
- Balconies
- Surfaces around turns or corners subjected to more severe traffic conditions..

Advantages

- Excellent crack-bridging properties of base coat, even at low temperatures
- Maximum resistance to abrasion and wear
- Impervious to water and deicing salts

Packaging

Sikalastic 710 Base: 5 gal. pails, 50 gal. (net) drums
Sikalastic 710 Lo-VOC Base: 4.75 gal. pails, 50 gal (net) drums
Sikalastic 720 Base: 20 gal. kit - four 5 gal. pails (net 4 gal. each) Part A and four 1 gal. cans Part B
Sikalastic 390: 5 gal. kit - 3.33 gal. Part A, 1.67 gal. Part B
Sikadur 22 Lo-Mod: 4 gal. unit - 2 gal. can Part A and 2 gal can Part B

Colors

Sikalastic 710, 710 Lo-VOC, and 720 Base: Gray
Sikalastic 390 Base: Brown
Sikadur 22 Lo-Mod: Clear to light amber

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% RH)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage Conditions Store dry at 40-95°F (4-35°C). Condition material to 65-85°F (18-30°C) before using

	Sikalastic 710 Base	Sikalastic 710 Lo- VOC Base	Sikalastic 720 Base	Sikalastic 390 Base	Sikalastic 22 LM
Shelf Life (in original unopened containers)	1 year	1 year	1 year	1 year	2 year
Viscosity / Pot Life	6500 ± 3000 cps	6500 ± 3000 cps	10-15 minutes	15-20 minutes	~2000 cps / ~30 min
Total Volume Solids (ASTM D-2697	71%	89%	100%	100%	100%
VOC Content (ASTM D-2369-81)	240 g/l	93 g/l	<10 g/l	<10 g/l	56 g/l
Tensile Strength (ASTM D-412)	800 ± 100 psi	1200 ± 300 psi	2500 ± 100 psi	1,320 psi	5700 psi (D-638)
Elongation at Break (ASTM D-412)	500 ± 50%	450 ± 50%	800 ± 100%	435%	>30% (D-638)
Tear Resistance (Die C, ASTM D-624)	170 ± 25 pli	195 ± 25 pli	300 ±25 pli	218 pli	n/a
Hardness (ASTM D-2240)	55 ± 5 Shore A	75 ± 5 Shore A	80 ± 5 Shore A	80 ± 5 Shore A	70 Shore D

Construction

How to Use

Surface Preparation

Surface must be clean, dry and sound with an open texture. Remove dust, laitance, grease, cur ing compounds, bond inhibiting impregnations, waxes, and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to application.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means (CSP 3-4 per ICRI guidelines).

Route out all cracks and joints as part of surface preparation.

Metal - Should be thoroughly cleaned by grinding or blast cleaning.

Application

Priming

Primer Selection - Determine maximum moisture content of concrete substrate by weight with a Tramex CME or CMExpert type concrete moisture meter.

Sikalastic FTP Primer – For concrete decks with a maximum moisture content of 4% by weight, and for plywood decks, apply Sikalastic FTP Primer with a flat squeegee or phenolic resin core roller at approximately 300 sf/gal. and work well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Sikalastic FTP Primer is not suitable for metal substrates. Refer to separate primer data sheet for additional information.

Sikalastic MT Primer - For concrete with a maximum moisture content of 5% by weight, and for metal flanges and penetrations, apply Sikalastic MT Primer with a flat squeegee or roller at approximately 175 sf/gal. For concrete decks with a maximum moisture content of 6% by weight, apply two applications of Sikalastic MT Primer with a flat squeegee or phenolic resin roller at approximately 175 sf/gal per application. Work primer well into the substrate to ensure adequate penetration and sealing, and puddles are avoided. Refer to separate primer data sheet for additional information.

Primer Mixing

Sikalastic FTP Primer – Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Sikalastic FTP Part B is dark olive green in color and may appear black in the container. Sikalastic FTP Part A is light amber in color. Add the 1 gallon of Sikalastic FTP Part A to the 1.25 gallons of Part B in the short filled Part B pail. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). This mixture will appear as a light olive green color. Slowly add 1.25 gallons of potable water to the mixture under agitation. Mix for an additional 2 minutes until the mixture is fully dispersed. Fully dispersed material will appear as light yellow to white in color.

Sikalastic MT Primer - Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A slowly and while mixing scrape the side of the container, Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Detailing

Non-structural cracks up to 1/16 inch – Apply a detail coat of Sikalastic 710 Base at 32 mils wet, Sikalastic 710 Lo-VOC Base at 26 mils wet, Sikalastic 720 Base at 23 mils wet, or Sikalastic 390 Base at 30 mils wet, 4" wide, centered over the crack. Allow to become tack free before overcoating.

Cracks and joints over 1/16 up to 1 inch - Rout and seal with Sikaflex® 2c or 1a sealant and allow to cure. Apply a detail coat of Sikalastic 710 Base at 32 mils wet, Sikalastic 710 Lo-VOC Base at 26 mils wet, Sikalastic 720 Base at 23 mils wet, or Sikalastic 390 Base at 30 mils wet, 4" wide, centered over the crack. Allow to become tack free before overcoating.

Joints over 1 inch – Should be treated as expansion joints and brought up through the Sikalastic 710 Base, Sikalastic 710 Lo-VOC Base, Sikalastic 720 Base, or Sikalastic 390 Base waterproofing membrane and sealed with Sikaflex® 2c or 1a sealant.

Fabric Reinforcement – An optional 3" or 6" wide Sikalastic Flexitape Heavy fabric strip may be embedded within the base coat. Flexitape width shall be chosen such that a minimum of 1" tape is embedded on either side of the crack/joint. Apply additional coating as required to fully embed the Flexitape in the coating.

Panelized Joints – Panelized joints that are restrained across the joint and without differential movement may be sealed and the deck coating, including detail coat, applied over the joint.

NOTE: movement within panelized joints may cause deterioration of the aggregated wear coat, in which case the joints should be treated as expansion joints and brought up through the Sikalastic Traffic System and sealed with Sikaflex® 2c or 1a sealant. For additional questions please contact Sika Technical Services.

Base Coats

Sikalastic 710 Base – Thoroughly mix (typically 30 seconds) using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed until a homogenous mixture and color is obtained. Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and control joints. Allow coating to cure a minimum of 16 hours at 70°F and 50% RH; base coat must be tack free before over coating.

Sikalastic 710 Lo-VOC Base – Thoroughly mix Sikalastic 710 Base Lo-VOC using a low speed (400-600 rpm drill with mechanical mixer (Jiffy) at slow speed until a homogenous mixture and color is obtained. Add Sikalastic 710 Base Lo-VOC Booster (if required) into premixed coating and continue mixing until homogenous mixture and color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a ¼" notched squeegee or trowel and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and control joints. Allow coating to cure a minimum of 16 hours (6 hours with Booster) at 70°F and 50% RH or until tack free before top coating.

Sikalastic 720 Base – Premix Part A and Part B material (typically 30 seconds) using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed to obtain uniform color. Making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A slowly and while mixing scrape the sides of the container. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and joints. Allow coating to cure a minimum of 3-4 hours at 70°F and 50% RH; base coat must be tack free before over coating. It is important to overcoat within 24 hours. Contact Sika if this window is exceeded.

Sikalastic 390 – Premix Part A and Part B material (typically 30 seconds) using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed to obtain uniform color. making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A slowly and while mixing scrape the sides of the container. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and joints. Allow coating to cure a minimum of 5-6 hours at 70°F and 50% RH; base coat must be tack free before over coating. It is important to overcoat within 48 hours. Contact Sika if this window is exceeded.

Binder Coats

Premix Sikadur 22 Lo-Mod Part A and Part B and proportion equal parts by volume into a clean mixing container. Mix with a low-speed (400-600 rpm) mechanical mixer (Jiffy), scraping the sides of the container while mixing, and using care not to allow the entrapment of air into the mixture. Mix the combined materials thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Apply at the recommended coverage rate (see System Guide) using a notched 3/16" squeegee and backroll using a phenolic resin core roller. Apply aggregate evenly distributed at the appropriate rate immediately into wet coating.

For full broadcast applications, slowly broadcast so the aggregate falls vertically into the binder making several passes, allow the binder to bleed through the sand before making the next pass. Cover completely before binder becomes tack free. Allow coating to cure a minimum of 8 hours at 70 degrees F and 50% RH or until tack free between coats. Remove all loose aggregate before top coating or opening to traffic. If no top coat is to be applied, allow coating to cure a minimum of 24 hours (720 Base, 710 Lo-VOC w/Booster), 36 hours (390), or 48 hours (710 Base, 710 Lo-VOC) before opening to vehicular traffic.

For seed and backroll applications, apply aggregate distributed at the appropriate rate immediately into wet coating and backroll. Allow coating to cure a minimum of 8 hours or until tack free before top coating.

Aggregate

Use clean, rounded, oven dried quartz sand with a minimum size gradation of 16-30 mesh for vehicular traffic and 20-40 mesh for pedestrian traffic, and a minimum hardness of 6.5 per the Moh's scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. Seeding of aggregate means an even, light broadcast short of refusal, at an application rate of 10-20 lbs. per 100 square feet, and requires backrolling. A full broadcast of aggregate means a heavy application to refusal; slowly broadcast so the aggregate falls vertically into the binder making several passes, allowing the binder to bleed through the sand before making the next pass; cover completely at a total rate of 1.25 to 1.5 lbs. per square foot before binder becomes tack free; after tack free remove all loose aggregate prior to top coating or opening to traffic.

Top Coats

Sikalastic 735 AL, 736 AL Lo-VOC – Thoroughly mix (typically 30 seconds) using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed until a homogenous mixture and color is obtained. Use care not to allow the entrapment of air into the mixture. Apply at the recommended overage rate (see System Guide) and backroll using a phenolic resin core roller. Allow coating to cure a minimum of 16 hours at 70°F and 50% RH or until tack free between coats, and a minimum of 72 hours before opening to vehicular traffic.

Sikalastic 745 AL – Premix Sikalastic 745 AL Part A with a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pail. Add Part B and continue mixing until a homogenous mixture and color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Apply at the recommended coverage rate (see System Guide) and backroll using a phenolic resin core roller. Allow coating to cure a minimum of 4 hours at 70°F and 50% RH or until tack free between coats, and a minimum of 36 hours before opening to vehicular traffic.

Sikalastic 391, 395 – Premix Sikalastic 391 or 395 Part A and Part B components using a low speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow speed to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pail. Add Part B into Part A slowly and continue mixing until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into

the mixture. Apply at the recommended coverage rate (see System Guide) using a 3/16" notched squeegee or trowel, and backroll using a phenolic resin core roller. Allow coating to cure a minimum of 48 hours (391) or 36 hours (395) before opening to vehicular traffic.

System Guides

Sikalastic 710/22 Lo-Mod Traffic System – Single Component

System Guide	Standard Vehicular Traffic - Full Broadcast	Heavy Vehicular Traffic - Full Broadcast	Extra Heavy Vehicular Traffic - Full Broadcast
Primer	Sikalastic FTP - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.		
710 Detail Coat	32 mils wet over properly treated cracks and joints.		
710 Base Coat	32 mils wet (23 mils dry) - 50 sf/gal.		
22 Lo-Mod Binder I	20 mils wet (20 mils dry) - 70 sf/gal	32 mils wet (32 mils dry) - 50 sf/gal	32 mils wet (32 mils dry) - 50 sf/gal
Aggregate I	1.25 lbs/sf broadcasted to refusal	1.5 lbs/sf broadcasted to refusal	1.5 lbs/sf broadcasted to refusal
22 Lo-Mod Binder II			32 mils wet (32 mils dry) - 50 sf/gal
Aggregate II			1.5 lbs/sf broadcasted to refusal
715/735 AL Top Coat*	23 mils wet (18 mils dry) - 70 sf/gal	23 mils wet (18 mils dry) - 70 sf/gal	23 mils wet (18 mils dry) - 70 sf/gal
Total Thickness	61 mils dry (excluding aggregate)	73 mils dry (excluding aggregate)	105 mils dry (excluding aggregate)
NOTE:* Top Coat is optional for all full broadcast systems.			
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.			

System Guide	Heavy Vehicular Traffic - Seed & Backroll	Extra Heavy Vehicular Traffic - Seed & Backroll
Primer	Sikalastic FTP - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.	
710 Detail Coat	32 mils wet over properly treated cracks and joints.	
710 Base Coat	32 mils wet (23 mils dry) - 50 sf/gal.	
22 Lo-Mod Binder I	16 mils wet (16 mils dry) - 100 sf/gal	16 mils wet (16 mils dry) - 100 sf/gal
Aggregate I	10-20 lbs/100 sf seeded & backrolled	10-20 lbs/100 sf seeded & backrolled
22 Lo-Mod Binder II		16 mils wet (16 mils dry) - 100 sf/gal
Aggregate II		10-20 lbs/100 sf seeded & backrolled
715/735 AL Top Coat	16 mils wet (12 mils dry) - 100 sf/gal	16 mils wet (12 mils dry) - 100 sf/gal
Total Thickness	51 mils dry (excluding aggregate)	67 mils dry (excluding aggregate)
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.		

System Guides

Sikalastic 710 Lo-VOC/22 Lo-Mod Traffic System – Single Component

System Guide	Standard Vehicular Traffic - Full Broadcast	Heavy Vehicular Traffic - Full Broadcast	Extra Heavy Vehicular Traffic - Full Broadcast
Primer	Sikalastic FTP Lo-VOC - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.		
710 Base Lo-VOC Detail Coat	26 mils wet over properly treated cracks and joints.		
710 Base Lo-VOC Base Coat	26 mils wet (23 mils dry) - 61 sf/gal.		
22 Lo-Mod Binder I	20 mils wet (20 mils dry) - 70 sf/gal	32 mils wet (32 mils dry) - 50 sf/gal	32 mils wet (32 mils dry) - 50 sf/gal
Aggregate I	1.25 lbs/sf broadcasted to refusal	1.5 lbs/sf broadcasted to refusal	1.5 lbs/sf broadcasted to refusal
22 Lo-Mod Binder II			32 mils wet (32 mils dry) - 50 sf/gal
Aggregate II			1.5 lbs/sf broadcasted to refusal
715 Top Lo-VOC /736 AL Lo-VOC Top Coat I*	21/23 mils wet (18 mils dry) - 76/70 sf/gal	21/23 mils wet (18 mils dry) - 76/70 sf/gal	21/23 mils wet (18 mils dry) - 76/70 sf/gal
Total Thickness	61 mils dry (excluding aggregate)	73 mils dry (excluding aggregate)	105 mils dry (excluding aggregate)
NOTE: *Top coat is optional for all full broadcast systems			
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.			

System Guide	Heavy Vehicular Traffic - Seed & Backroll	Extra Heavy Vehicular Traffic - Seed & Backroll
Primer	Sikalastic FTP Lo-VOC - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.	
710 Base Lo-VOC Detail Coat	26 mils wet over properly treated cracks and joints.	
710 Base Lo-VOC Base Coat	26 mils wet (23 mils dry) - 61 sf/gal.	
22 Lo-Mod Binder I	16 mils wet (16 mils dry) - 100 sf/gal	16 mils wet (16 mils dry) - 100 sf/gal
Aggregate I	10-20 lbs/100 sf seeded & backrolled	10-20 lbs/100 sf seeded & backrolled
22 Lo-Mod Binder II		16 mils wet (16 mils dry) - 100 sf/gal
Aggregate II		10-20 lbs/100 sf seeded & backrolled
715 Top Lo-VOC /736 AL Lo-VOC Top Coat I	13/14 mils wet (12 mils dry) - 123/114 sf/gal	13/14 mils wet (12 mils dry) - 123/114 sf/gal
Total Thickness	51 mils dry (excluding aggregate)	67 mils dry (excluding aggregate)
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.		

System Guides

Sikalastic 720/22 Lo-Mod Traffic System – Two Component

System Guide	Standard Vehicular Traffic - Full Broadcast	Heavy Vehicular Traffic - Full Broadcast	Extra Heavy Vehicular Traffic - Full Broadcast
Primer	Sikalastic FTP - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.		
720 Detail Coat	23 mils wet over properly treated cracks and joints.		
720 Base Coat	23 mils wet (23 mils dry) - 70 sf/gal.		
22 Lo-Mod Binder I	20 mils wet (20 mils dry) - 70 sf/gal	32 mils wet (32 mils dry) - 50 sf/gal	32 mils wet (32 mils dry) - 50 sf/gal
Aggregate I	1.25 lbs/sf broadcasted to refusal	1.5 lbs/sf broadcasted to refusal	1.5 lbs/sf broadcasted to refusal
22 Lo-Mod Binder II			32 mils wet (32 mils dry) - 50 sf/gal
Aggregate II			1.5 lbs/sf broadcasted to refusal
745 AL Top Coat*	18 mils wet (18 mils dry) - 89 sf/gal	18 mils wet (18 mils dry) - 89 sf/gal	18 mils wet (18 mils dry) - 89 sf/gal
Total Thickness	61 mils dry (excluding aggregate)	73 mils dry (excluding aggregate)	105 mils dry (excluding aggregate)
NOTE: *Top coat is optional for all full broadcast systems			
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.			

System Guide	Heavy Vehicular Traffic - Seed & Backroll	Extra Heavy Vehicular Traffic - Seed & Backroll
Primer	Sikalastic FTP - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.	
720 Detail Coat	23 mils wet over properly treated cracks and joints.	
720 Base Coat	23 mils wet (23 mils dry) - 70 sf/gal.	
22 Lo-Mod Binder I	16 mils wet (16 mils dry) - 100 sf/gal	16 mils wet (16 mils dry) - 100 sf/gal
Aggregate I	10-20 lbs/100 sf seeded & backrolled	10-20 lbs/100 sf seeded & backrolled
22 Lo-Mod Binder II		16 mils wet (16 mils dry) - 100 sf/gal
Aggregate II		10-20 lbs/100 sf seeded & backrolled
745 AL Top Coat	12 mils wet (12 mils dry) - 133 sf/gal	12 mils wet (12 mils dry) - 133 sf/gal
Total Thickness	51 mils dry (excluding aggregate)	67 mils dry (excluding aggregate)
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.		

System Guides

Sikalastic 390/22 Lo-Mod Traffic System – Two Component

System Guide	Standard Vehicular Traffic - Full Broadcast	Heavy Vehicular Traffic - Full Broadcast	Extra Heavy Vehicular Traffic - Full Broadcast
Primer	Sikalastic FTP - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.		
390 Detail Coat	30 mils wet over properly treated cracks and joints.		
390 Base Coat	20 mils wet (20 mils dry) - 80 sf/gal.		
22 Lo-Mod Binder I	20 mils wet (20 mils dry) - 70 sf/gal	32 mils wet (32 mils dry) - 50 sf/gal	32 mils wet (32 mils dry) - 50 sf/gal
Aggregate I	1.25 lbs/sf broadcasted to refusal	1.5 lbs/sf broadcasted to refusal	1.5 lbs/sf broadcasted to refusal
22 Lo-Mod Binder II			32 mils wet (32 mils dry) - 50 sf/gal
Aggregate II			1.5 lbs/sf broadcasted to refusal
395 AL Top Coat*	18 mils wet (18 mils dry) - 89 sf/gal	18 mils wet (18 mils dry) - 89 sf/gal	18 mils wet (18 mils dry) - 89 sf/gal
Total Thickness	58 mils dry (excluding aggregate)	70 mils dry (excluding aggregate)	102 mils dry (excluding aggregate)
NOTE: *Top coat is optional for all full broadcast systems			
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.			

System Guide	Heavy Vehicular Traffic - Seed & Backroll	Extra Heavy Vehicular Traffic - Seed & Backroll
Primer	Sikalastic FTP - 300 sf/gal. Consult Sika for other primer options for recover and high moisture content substrates.	
390 Detail Coat	30 mils wet over properly treated cracks and joints.	
390 Base Coat	20 mils wet (20 mils dry) - 80 sf/gal.	
22 Lo-Mod Binder I	16 mils wet (16 mils dry) - 100 sf/gal	16 mils wet (16 mils dry) - 100 sf/gal
Aggregate I	10-20 lbs/100 sf seeded & backrolled	10-20 lbs/100 sf seeded & backrolled
22 Lo-Mod Binder II		16 mils wet (16 mils dry) - 100 sf/gal
Aggregate II		10-20 lbs/100 sf seeded & backrolled
395 AL Top Coat	12 mils wet (12 mils dry) - 133 sf/gal	12 mils wet (12 mils dry) - 133 sf/gal
Total Thickness	48 mils dry (excluding aggregate)	64 mils dry (excluding aggregate)
NOTE: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.		

Recoat Windows

In the event of an unforeseen rain event or delays beyond the stated recoat window referenced in each product's current PDS, observe the following.

Product	Recoat Window	Required Surface Preparation After Recoat Window is Exceeded
Sikalastic FTP	Tack-free to 48 hrs.	Heavily abrade and reprime
Sikalastic MT	Tack-free to 48 hrs.	Heavily abrade and reprime
Sikalastic 710	Tack-free to 72 hrs.	Clean and solvent wipe **or** Clean and Sikalastic Recoat Primer
Sikalastic 710 Lo-VOC	Tack-free to 48 hrs.	Clean and solvent wipe **or** Clean and Sikalastic Recoat Primer
Sikalastic 710 Lo-VOC with 710 Lo-VOC Booster	6 - 24 hrs.	Clean and solvent wipe **or** Clean and Sikalastic Recoat Primer
Sikalastic 720	Tack-free to 24 hrs.	Abrade, clean and solvent wipe **or** Abrade, clean and Sikalastic Recoat Primer
Sikalastic 390	Tack-free to 48 hrs.	Abrade, clean and solvent wipe **or** Abrade, clean and Sikalastic Recoat Primer
Sikadur 22 Lo-Mod - Seeded	Tack-free to 24 hrs.	Heavily abrade and reapply
Sikadur 22 Lo-Mod – Full Broadcast	Tack-free to 72 hrs.	Clean and power dry

Notes:

1. Heavy abrasion of epoxy-based materials is intended to achieve an open, porous surface and to remove any amine blush that may interfere with bonding.

2. Abrasion of polyurethane-based materials is intended to achieve an open, porous surface.

3. Cleaning is intended to remove dirt, debris, contaminants, and residue from mechanical surface preparation methods.

4. Recommended solvents include high quality xylene and acetone. Handling and use of all solvents must be done in accordance with the manufacturer's warnings and instructions for use.

Removal

Remove liquid resin immediately with dry cloth. Once cured, resin can only be removed by mechanical means.

Maintenance /Repair

Clean with non-sudsing detergent and water and inspect regularly for mechanical damage. Snow removal equipment must have shoes, rubber tips or small skis to prevent ruptures. The use of metal blades without protection is not recommended. Damaged areas should be repaired promptly. Remove delaminated coating back to well adhered material and reinstall patch according to procedures described above. Do not use asphalt or tar modified products. Consult a Sika representative for recommendations on top coat or wearing surface restoration.

Limitations /Precautions

- To avoid dew point conditions during application relative humidity must be no more than 95% and substrate temperature must be at least 5 F (3 C) above measured dew point temperature.
- Maximum moisture content of concrete substrate by weight when measured with a Tramex CME or CMExpert type concrete moisture meter : 4% for Sikafloor FTP Primer applications; 5% with one application of Sikalastic MT Primer; 6% with two applications of Sikalastic MT Primer (see separate Sikalastic MT Primer product data sheet).
- Minimum ambient and substrate temperature during application and curing of material is 40°F (4°C); maximum is 95 F (35°C). Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane coatings. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it.
- Coating materials will become more viscous at lower application temperatures and be more difficult to spread, which may affect coverage rates.
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.
- Do not thin with solvents.
- Use properly graded, oven dried aggregates only.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents or other means of ingress for odors and/or vapors into the building/structure during product application and cure.

- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is imminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.
- When applying over existing coatings compatibility and adhesion testing is recommended.
- Opening prior to final cure may result in loss of aggregate, or permanent staining and subsequent premature failure.
- Vehicle fluids and some high performance tires can stain the coating. Fluid spills should be removed promptly as the coating can in some cases be damaged from prolonged exposure.
- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications where chained or studded tires may be used should not be coated with Sikalastic Traffic Systems.
- Unvented metal pan decks or decks containing between-slab membrane require further technical evaluation to determine substrate moisture content and priming with a moisture-tolerant primer - contact Sika regarding recommendations.
- Do not subject to continuous immersion.
- Sikalastic 710, 710 Lo-VOC, 720, and Sikalastic 390 Base coats are not UV stable and must be top coated.
- Base coats must be kept clean and recoated within 48 hours (710 Base, 710 Lo-VOC Base, 390 Base) or 24 hours (720 Base). If this recoat window is exceeded, contact Sika for recommendations.
- Sikadur 22 Lo-Mod may exhibit cracking due to excessive substrate movement and will chalk, fade, or discolor over time when exposed to UV and under certain artificial lighting conditions. Aliphatic top coats with superior color and gloss retention are available.
- Mockups to verify application methods and substrate conditions as well as desired skid resistance and aesthetics are highly recommended.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® FTP Primer

Two-component, low odor, fast curing water-based primer

Description	Sikalastic® FTP primer is a two-component, waterborne epoxy diluted with water in the field.
Where to Use	Use with Sikalastic® Traffic Systems as a primer on concrete, cementitious or plywood surfaces exposed to vehicular or pedestrian traffic. Refer to the Sikalastic® 710/715/735 AL Traffic System and Sikalastic® 720/745 Traffic System Product Data Sheets for system application instructions as well as limitations.
Advantages	■ Low VOC ■ Fast dry time ■ Low odor ■ Moisture tolerant
Packaging	Sikalastic® FTP primer is packaged in pre-proportioned kits, both diluted with water in the field. 7gal. kit - two 1 gal. cans Part A and two short-filled pails Part B (1.25 gal. each). Kit yields 7 gal. after dilution with 2.5 gal. water (see mixing instructions). 1 gal. kit - short filled can of Part A (0.28 gal.) and a short filled gallon can Part B (0.35 gal.). The kit will yield one gallon of mixed product after dilution with 0.35 gal. water. (see mixing instructions).
Coverage	Approximately 300 ft.^{2}/gal. Porous and rough substrates will increase consumption.
Chemical resistance	No Chemical Resistance Guide for this product, requires over coating with a Sika waterproofing system.
Cure Mechanism	See application info.

Typical Data *Material and curing conditions at 75° F (24°C) and 50 % RH*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	2 years in original unopened container under proper storage conditions.
Storage:	Store dry between 40°-90°F (4°-32°C). Condition material to 65°-85°F (18°-30°C) before using.
Pot Life:	Approx. 1 hour @ 77°F (25ºC) and 50% relative humidity
VOC (ASTM D2369):	< 5 g/L
Flash Point:	>200°F (93.3°C)
Recoat time:	Up to 48 hrs. @ 77°F (25ºC)
Cure time:	3-4 hrs. @ 77°F (25ºC) and 50% relative humidity

TYPICAL PHYSICAL PROPERTIES:

Bond Strength (ACI 503R, Appendix A): >400 psi (100% concrete failure)

How to Use

Surface Preparation

Concrete surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application. Concrete should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by shot blasting to a minimum of (CSP 3-4 as per ICRI guidelines). Sweep and vacuum any remaining dirt and dust with a wet/dry vacuum. Removing residual dust will help ensure a tenacious bond between the primer and substrate. The compressive strength of the concrete substrate should be at least 3500 psi at 28 days and at least 250 psi in tension at the time of application of Sikalastic® FTP primer.

Mixing

7 gal. kit: It is important to remember that this coating has a limited pot life of approximately 1 hour at 77°F (25°C) and 50% relative humidity. Do not use beyond this frame regardless of whether or not the product appears to still be usable. Review that all surface preparation is complete and application equipment is in good working order before starting the mixing sequence.

1. Premix each component. Sikalastic® FTP primer, Part B is dark olive green in color and may appear black in the container. Sikalastic® FTP primer, Part A is light amber in color.
2. Add the 1 gallon of Sikalastic® FTP primer, Part A to the 1.25 gallons of Part B in the short filled Part B pail.
3. Mix thoroughly with a low speed (300 - 500 rpm) drill with Jiffy paddle for a minimum of 3 minutes. The mixture will appear as a uniform light olive green color.
4. Slowly add 1.25 gallons of potable water to the mixture under agitation.
5. Mix for a minimum of 2 additional minutes until the mixture is fully dispersed. Fully dispersed material will appear as light yellow to white in color.

1 gal. kit: It is important to remember that this coating has a limited pot life of approximately 1 hour at 77°F (25°C) and 50% relative humidity. Do not use beyond this frame regardless of whether or not the product appears to still be usable. Review that all surface preparation is complete and application equipment is in good working order before starting the mixing sequence.

1. Premix each component. Sikalastic® FTP primer, Part B is dark olive green in color and may appear black in the container. Sikalastic® FTP primer, Part A is light amber in color.
2. Add the 0.28 gallons of Sikalastic® FTP primer, Part A to the 0.35 gallons of Part B in the short filled Part B can.
3. Mix thoroughly with a low speed (300 - 500 rpm) drill with Jiffy paddle for a minimum of 3 minutes. The mixture will appear as a uniform light olive green color.
4. Slowly add 0.35 gallons of potable water to fill the gallon can under agitation.
5. Mix for a minimum of 2 additional minutes until the mixture is fully dispersed. Fully dispersed material will appear as light yellow to white in color.

NOTE: The order that the FTP components are mixed is critical to the performance of this product. Failure to mix properly may result in an incomplete cure, despite a dry appearance.

Application

Apply with flat squeegee or roller at the recommended rate. Allow for sufficient wetting of the slab and backroll, utilizing a ¼" or ⅜" nap roller to eliminate puddles on the surface of the slab. Minimize the overlap from batch to batch or bead-to-bead applications while achieving complete slab coverage, as these areas of overlap may not bond.

Removal

Remove wet primer with MEK, xylene, or oxygenated solvents. Once cured, primer can only be removed by mechanical means. Strictly follow solvent manufacturer's warnings and instructions for use.

Over Painting

Sikalastic® FTP primer has a recoat window of up to 48 hours. Do not apply a second coat of Sikalastic® FTP primer, as it will not properly bond. There is no need for additional mechanical or chemical preparation of the Sikalastic® FTP primer prior to the installation of the topcoat, if recoated with in the recoat window, and the Sikalastic® FTP primer has not been exposed to foot or vehicular traffic or similar. If the recoat window is missed (48 hours) the surface requires grinding or screening with 80 grit, followed by a broom sweep and vacuum, prior to reapplication of Sikalastic® FTP primer.

Limitations

- Product must be protected from freezing. If frozen, discard.
- To avoid dew point conditions and prolonged cure during application, relative humidity must be no more than 85% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures.
- Minimum ambient and substrate temperature during application and curing of material is 41°F (5°C); maximum is 90°F (32°C). Frequent monitoring of ambient and substrate temperature should always be done when applying epoxy primers. Note that low temperatures will slow down the cure, and high temperatures will accelerate it.
- Do not apply on substrates with moisture content greater than 4% by weight, measured by a Tramex CME or CMExpert type concrete moisture meter.
- Minimum age of concrete must be 21-28 days depending on curing and drying conditions.
- The compressive strength of the concrete substrate should be at least 3500 psi at 28 days and at least 250 psi in tension at the time of application of Sikalastic® FTP Primer.
- Do not thin with solvents.
- Do not store materials outdoors exposed to sunlight and moisture for prolonged periods.
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D-4263 (Polyethylene Sheet method).
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems.
- Protect freshly applied primer from freezing, dampness, condensation and water prior to top coating.
- Not intended for immersion applications, or any use where moisture can reach the underside of the primed surface.
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing may occur.
- Precautions should be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
  When applying over existing coatings or membranes compatibility and adhesion testing, and subsequent approval by Technical Services is required.
- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications where chained or studded tires may be used should not be coated with Sikalastic® Traffic Systems.
- Unvented metal pan decks or decks containing between-slab membranes require further technical evaluation prior to coating with Sikalastic® Traffic Systems – the use of a moisture tolerant primer such as Sikalastic® MT primer is required - contact Sika regarding recommendations.
- Not recommended for metal substrates.
- Primer is not UV stable and must be topcoated.

Construction

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® FTP Lo-VOC Primer

Two-component high solids epoxy primer

Description	Sikalastic® FTP Lo-VOC primer is a two-component, high solids epoxy primer for use with Sikalastic traffic deck coatings.
Where to Use	Use with Sikalastic® Traffic Systems as a primer on concrete, cementitious or plywood surfaces exposed to vehicular or pedestrian traffic. Refer to the Sikalastic® 710 Lo-VOC/715 Lo-VOC/736 AL Lo-VOC, the Sikalastic 710/715/735 AL, and the Sikalastic 720/745 Traffic System Data Sheets for system application instructions as well as limitations.
Advantages	■ Low VOC ■ Fast dry time ■ Low odor ■ Moisture tolerant
Coverage	Approximately 300 s.f./gal. Porous and rough substrates will increase consumption.
Packaging	3 gal. Kit: Component A: 2 US gal. (7.57 L) Component B: 1 US gal. (3.78 L) Components A+B: 3 US gal. (11.35 L) 15 gal. Kit: Component A: 2 x 5 US gal. (2 x 18.9 L) Component B: 1 x 5 US gal. (18.9 L) Components A+B: 15 US gal. (56.7 L)

Typical Data *(Material and curing conditions at 75°F (24°C) and 50% RH)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original unopened container under proper storage conditions.
Storage Conditions	Store dry between 40° - 90°F (4°-32°C). Condition material to 65° - 85°F (18°-30°C) before using.
Color	Green transparent after mixing
Pot Life	Approx 20 - 30 minutes @ 75°F (24ºC) and 50% relative humidity
Recoat Time	Up to 16 hrs. @ 75°F (24ºC)
Cure Time	Approximately 4-6 hrs. @ 75°F (24ºC) and 50% relative humidity
Flash Point	>200°F (93.3°C)

Shore D Hardness (7 days)	ASTM D2240	70 +/- 5 Shore D
VOC Content	ASTM D2369	≤ 90 g/L
Viscosity (approx.)	Components A + B: 600 +/- cps	
Total Solids by Weight	ASTM D-2369	91%
Total Solids by Volume	ASTM D-2697	90%

Construction

How to Use

Surface Preparation

Surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant-free, open textured surface by blast cleaning or equivalent mechanical means (CSP-3-4 per ICRI guidelines). Sweep and vacuum any remaining dirt and dust with a wet/dry vacuum. Removing residual dust will help ensure a tenacious bond between the primer and substrate. The compressive strength of the concrete substrate should be at least 3500 psi at 28 days and at least 250 psi in tension at the time of application of Sikalastic® FTP Lo-VOC primer.

Plywood - Should be clean and smooth, APA and exterior grade, not less than 1/2" thick, and spaced and supported accoprding to APA guidelines. Joints should be sealed with Sikaflex 2c or 1a and detailed, and may need embedded fabric reinforcement.

Mixing

Premix Part A (blue liquid) and Part B (yellow liquid) components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. For the 3 gallon kit, pour Part B into Part A slowly and while mixing scrape the side of the container, For the 15 gallon kit, pour Part A into a separate mixing vessel and then pour part B into Part A. Mixing ratio is 2 parts A to 1 part B. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Application

Apply with flat squeegee or phenolic resin core roller at the recommended rate. Allow for sufficient wetting of the slab and backroll, utilizing a ¼" or ⅜" nap roller to eliminate puddles on the surface of the slab.

Removal

Remove wet primer with MEK, xylene, or oxygenated solvents. Once cured, primer can only be removed by mechanical means. Strictly follow solvent manufacturer's warnings and instructions for use.

Limitations

- To avoid dew point conditions and prolonged cure during application, relative humidity must be no more than 85% and substrate temperature must be at least 5 °F (3 °C) above measured dew point temperatures.
- Minimum ambient and substrate temperature during application and curing of material is 41 °F (5 °C); maximum is 95 °F (35 °C). Frequent monitoring of ambient and substrate temperature should always be done when applying epoxy primers. Note that low temperatures will slow down the cure, and high temperatures will accelerate it.
- Primer materials will become more viscous at lower application temperatures and be more difficult to spread, which may affect yield. Material not preconditioned to at least 65°F (18°C) is likely to exhibit these characteristics.
- Maximum moisture content of concrete substrate by weight when measured with a Tramex CME or CMExpert type concrete moisture meter: 4% for exterior exposed decks with one application of Sikalastic FTP Lo-VOC Primer; 5% for exterior exposed decks with two applications of Sikalastic FTP Lo-VOC Primer; 5% for interior protected decks with one application of Sikalastic FTP Lo-VOC Primer.
- Minimum age of concrete must be 21-28 days depending on curing and drying conditions.
- The compressive strength of the concrete substrate should be at least 3500 psi at 28 days and at least 250 psi in tension at the time of application of Sikalastic FTP Lo-VOC Primer.
- Do not thin with solvents.
- Do not store materials outdoors exposed to sunlight and moisture for prolonged periods.
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D-4263 (Polyethylene Sheet method).
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems.
- Protect freshly applied primer from freezing, dampness, condensation and water prior to top coating.
- Not intended for immersion applications, or any use where moisture can reach the underside of the primed surface.
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing may occur.
- Precautions should be taken to prevent vapors and/or odors from entering the building/ structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may

Construction

reflect through the cured system.

- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications where chained or studded tires may be used should not be coated with Sikalastic Traffic Systems.
- Unvented metal pan decks or decks containing between-slab membranes require further technical evaluation prior to coating with Sikalastic Traffic Systems - the use of a moisture tolerant primer such as Sikalastic MT primer is require - contact Sika regarding recommendations.
- Sikalastic FTP Lo-VOC Primer has a recoat window of 16 hours. If the recoat window is exceeded, the primed surface must be abraded (grinding or sanding), followed by a broom sweep and vacuum, prior to reapplication of Sikalastic FTP Lo-VOC Primer.
- Primer is not UV stable and must be topcoated.
- Not recommended for metal substrates.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® PF Lo-VOC Primer

Two-component high solids pore filling/ sealing epoxy primer

Description	Sikalastic® PF Lo-VOC primer is a two-component, high solids pore filling/sealing epoxy primer for use with Sikalastic traffic deck coatings.
Where to Use	Use with Sikalastic® Traffic Systems as a primer on concrete, cementitious or plywood surfaces exposed to vehicular or pedestrian traffic. May also be used to prime metal flashings and penetrations. Refer to the Sikalastic® 710 Lo-VOC/715 Lo-VOC/736 AL Lo-VOC, the Sikalastic 710/715/735 AL, and the Sikalastic 720/745 AL Traffic System Data Sheets for system application instructions as well as limitations. Use with Sikalastic® 320 NS/SL - Single Conponent, bitumen modified waterproofing membrane as primer when required.
Advantages	■ Low VOC ■ Fast dry time ■ Low odor ■ Fills and seals rough and porous substrates ■ Moisture tolerant
Coverage	Approximately 200 s.f./gal. Porous and rough substrates will increase consumption.
Packaging	2 gal. Kit: Component A: 1 US gal. (3.78 L) Component B: 1 US gal. (3.78 L) Components A+B: 2 US gal. (4.16 L) 10 gal. Kit: Component A: 5 US gal. (18.9 L) Component B: 5 US gal. (18.9 L) Components A+B: 10 US gal. (37.8 L)

Typical Data *(Material and curing conditions at 75°F (24°C) and 50% RH)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf life	1 year in original unopened container under proper storage conditions.
Storage Conditions	Store dry between 40°- 90°F (4°- 32°C). Precondition material for at least 24 hours between 65°- 75°F (18°- 24°C).
Color	Grey after mixing
Pot Life	Approx 30 - 45 minutes @ 75°F (24ºC) and 50% relative humidity
Recoat Time	Up to 16 hrs. @ 75°F (24ºC)
Cure Time	Approximately 3-5 hrs. @ 75°F (24ºC) and 50% relative humidity

Shore D Hardness (7 days)	ASTM D2240	70 +/- 5 Shore D
VOC Content	ASTM D2369	≤ 91 g/L
Viscosity (approx.)	Components A + B: 30 +/- ps	
Total Solids by Weight	ASTM D-2369	94%
Total Solids by Volume	ASTM D-2697	91%

How to Use

Surface Preparation

Surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant-free, open textured surface by blast cleaning or equivalent mechanical means (CSP-3-4 per ICRI guidelines). Sweep and vacuum any remaining dirt and dust with a wet/dry vacuum. Removing residual dust will help ensure a tenacious bond between the primer and substrate. The compressive strength of the concrete substrate should be at least 3500 psi at 28 days and at least 250 psi in tension at he time of application of Sikalastic® PF Lo-VOC primer.

Plywood - Should be clean and smooth, APA and exterior grade, not less than 1/2" thick, and spaced and supported accoprding to APA guidelines. Joints should be sealed with Sikaflex 2c or 1a and detailed, and may need embedded fabric reinforcement.

Metal - Should be thoroughly cleaned by solvent wiping, then grinding or blast cleaning to near white metal (SSPC SPC-10).

Mixing

Premix Part A (black liquid) and Part B (white liquid) components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. For both the 2 and 10 gallon kits, pour Part A into a separate mixing vessel and then pour part B into Part A. Mixing ratio is 1 part A to 1 part B. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature

Application

Apply with flat squeegee or phenolic resin core roller at the recommended rate. Allow for sufficient wetting of the slab and backroll, utilizing a ¼" or ⅜" nap roller to eliminate puddles on the surface of the slab.

Removal

Remove wet primer with MEK, xylene, or oxygenated solvents. Once cured, primer can only be removed by mechanical means. Strictly follow solvent manufacturer's warnings and instructions for use.

Limitations

- To avoid dew point conditions and prolonged cure during application, relative humidity must be no more than 85% and substrate temperature must be at least 5 °F (3 °C) above measured dew point temperatures.
- Minimum ambient and substrate temperature during application and curing of material is 41 °F (5 °C); maximum is 95 °F (35 °C). Frequent monitoring of ambient and substrate temperature should always be done when applying epoxy primers. Note that low temperatures will slow down the cure, and high temperatures will accelerate it.
- Primer materials will become more viscous at lower application temperatures and be more difficult to spread, which may affect yield. Material not preconditioned to at least 65°F (18°C) is likely to exhibit these characteristics.
- Maximum moisture content of concrete substrate by weight when measured with a Tramex CME or CMExpert type concrete moisture meter: 4% for exterior exposed decks with one application of Sikalastic PF Lo-VOC Primer; 5% for exterior exposed decks with two applications of Sikalastic PF Lo-VOC Primer; 5% for interior protected decks with one application of Sikalastic PF Lo-VOC Primer.
- Minimum age of concrete must be 21-28 days depending on curing and drying conditions.
- The compressive strength of the concrete substrate should be at least 3500 psi at 28 days and at least 250 psi in tension at the time of application of Sikalastic PF Lo-VOC Primer.
- Do not thin with solvents.
- Do not store materials outdoors exposed to sunlight and moisture for prolonged periods.
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D-4263 (Polyethylene Sheet method).
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems.
- Protect freshly applied primer from freezing, dampness, condensation and water prior to top coating.
- Not intended for immersion applications, or any use where moisture can reach the underside of the primed surface.
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing may occur.
- Precautions should be taken to prevent vapors and/or odors from entering the building/ structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.

Construction

- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications where chained or studded tires may be used should not be coated with Sikalastic Traffic Systems.
- Unvented metal pan decks or decks containing between-slab membranes require further technical evaluation prior to coating with Sikalastic Traffic Systems – the use of a moisture tolerant primer such as Sikalastic MT primer is required - contact Sika regarding recommendations.
- Sikalastic PF Lo-VOC Primer has a recoat window of 16 hours. If the recoat window is exceeded, the primed surface must be abraded (grinding or sanding), followed by a broom sweep and vacuum, prior to reapplication of Sikalastic PF Lo-VOC Primer.
- Primer is not UV stable and must be topcoated.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® MT Primer

Moisture Tolerant Primer

Description	A two component, high solids, red transparent epoxy primer. This epoxy primer is specially formulated to perform as a moisture tolerant primer.
Where to Use	Sikalastic® MT Primer is designed as a primer for Sikalastic urethane traffic coatings when the moisture content of the deck is ≥ 4% and exceeds limitations of standard primer requirements (see Sikalastic® traffic coating system data sheets). Sikalastic MT Primer is also intended as a primer for SikaLevel underlayments and patching products when the moisture content of the deck is ≥ 4%. Use of Sikalastic® MT Primer is required where a moisture content between ≥ 4 and ≤ 6% mass (pbw – part by weight) is measured on a concrete substrate with Tramex® CME or CMExpert type concrete moisture meter. Also required for non-vented concrete/steel pan composite decks and split-slab applications with encapsulated waterproofing. If moisture content exceeds 6% mass, use Sikafloor® 81 EpoCem as a pre-priming surface treatment.
Advantages	■ Excellent penetration and adhesion. ■ Moisture tolerant. ■ Low Tensile Modulus. ■ Higher Tensile Elongation. ■ Low VOC.
Cure Mechanism	Chemical Cure
Coverage	160 - 200 ft.²/gal. Note: Surface texture and porosity can affect coverage rate.
Packaging	Component A: 3 US gal. (11.3 L); Component B: 1.5 US gal. (5.7 L); Components A+B: 4.5 US. gal. (17 L)

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original unopened container under proper storage conditions.
Store	dry between 40°- 90°F (4°- 32°C)
Product Conditioning	Precondition material for at least 24 hours between 65°- 75°F (18°- 24°C)
Color	Red transparent after mixing
Coverage	**160 - 200 ft² / per mixed US gal. (4.9 – 6.4 m² / L) at 8 – 10 mils (0.20 – 0.25** mm) wet film thickness (w.f.t.). *One coat of Sikalastic® MT is required when the concrete substrate moisture is <5% (as measured with Tramex® CME/ CMExpert type concrete moisture meter) *Two coats of Sikalastic® MT are required when the concrete substrate moisture falls between ≥ 5% and < 6% (as measured with Tramex® CME/CMExpert type concrete moisture meter). Total required thickness is 16 - 20 mils.

Pot Life

Material Temperature	Time
+50°F (10°C)	~ 50 minutes
+68°F (20°C)	~ 25 minutes
+86°F (30°C)	~ 15 minutes

Waiting/ Recoat Times Before applying second coat of Sikalastic® MT allow:

Ambient & Substrate Temperature	Minimum	Maximum
+50°F (10°C)	24 hours	3 days
+68°F (20°C)	8 hours	2 days
+86°F (30°C)	6 hours	1 day

Construction

Before applying Sikalastic® 710, 720, or 390 on Sikalastic® MT allow:

	Ambient & Substrate Temperature	Minimum
Maximum	+50°F (10°C)	24 hours	3 days
	+68°F (20°C)	8 hours	2 days
	+86°F (30°C)	6 hours	1 day

Cure Times	Ambient & Substrate Temperature	Foot traffic
	+50°F (10°C)	~ 24 hours
	+68°F (20°C)	~ 8 hours
	+86°F (30°C)	~ 6 hours

Properties Tested at 73°F (23°C) and 50 % R.H:	> 400 psi (2.7 MPa)
Pull-off Strength ASTM D4541	(100% concrete failure)
Shore D Hardness (7 days) ASTM D2240	78 - 82
VOC Content ASTM D2369	≤ 50 g/L
Permeability ASTM E96	9.0 g/m² (24 hours / +75°F)
Water Absorption ASTM D570	0.14 g/h - m²
Viscosity (approx.)	822(SP2/100) Components A + B:
Chemical Resistance	Please consult Sika Technical Services.

How to Use

Surface Preparation

Surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes and any other contaminants. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant-free, open textured surface by blast cleaning or equivalent mechanical means (CSP-3-4 per ICRI guidelines). Sweep and vacuum any remaining dirt and dust with a wet/dry vacuum. Removing residual dust will help ensure a tenacious bond between the primer and substrate.

Plywood - Should be clean and smooth, APA and exterior grade, not less than 1/2" thick, and spaced and supported according to APA guidelines. Joints should be sealed with Sikaflex 2c or 1a and detailed, and may need embedded fabric reinforcement.

Metal - Should be thoroughly cleaned by solvent wiping, then grinding or blast cleaning to near white metal (SSPC SPC-3).

Mixing

Premix Part A and Part B components separately using a low speed (400-600 rpm) mechanical mixer and Jiffy Paddle at slow speed to obtain uniform color (typically 30 seconds), making sure to scrape the solids from the bottom and sides of the pail. Pour Part B into Part A slowly and while mixing scrape the side of the container, Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). Use care not to allow the entrapment of air into the mixture. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Application

Concrete - Apply primer by 1/8" squeegee at the rate of 160 - 200 ft² / US gal (3.4 – 4.9 m² /L) at 8 – 10 mils (0.20 – 0.25 mm) wet film thickness and back roll with a phenolic resin core roller with pressure after 20 minutes. Coverage will vary depending on the porosity of the prepared substrate. Apply a second primer coat by squeegee at the rate of 160 - 200 ft² / US gal (3.4 – 4.9 m² / L) at 8 – 10 mils (0.20 – 0.25 mm) wet film thickness and back roll with pressure after 20 minutes after the first primer coat is tack free, which is typically after 12 hours at +68°F (20°C). Do not apply by dipping roller into mixing container. Pour a bead of product in the form of a ribbon on the substrate to be coated and then spread with squeegee and back roll. Ensure that the second coating is pore-free and pinhole-free and provides uniform and complete coverage over the entire concrete substrate.

Plywood - Apply primer by 1/8" squeegee at the rate of 160 - 200 ft² / US gal (3.4 – 4.9 m² /L) at 8 – 10 mils (0.20 – 0.25 mm) wet film thickness and back roll with a phenolic resin core roller. Coverage will vary depending on the porosity of the prepared substrate. Do not apply by dipping roller into mixing container. Pour a bead of product in the form of a ribbon on the substrate to be coated and then spread with squeegee and back roll.

Metal - Apply primer by brush or phenolic resin core roller at the rate of 225 - 275 ft² / US gal (5.5 – 6.7 m² /L) at 6 – 7 mils (0.15 – 0.18 mm) wet film thickness.

Aggregate –Aggregate is not required for traffic coating applications if Sikalastic MT Primer is recoated within the maximum recoat window. When an extended application window is desired, or when using Sikalastic MT Primer in conjunction with SikaLevel underlayments and patching mortars, oven dried silica sand (20/30) shall be broadcast to refusal at a typical rate of 2 lbs/sf into a second coat of Sikalastic MT Primer immediately upon primer application. Remove excess sand following cure prior to underlayment/patching mortar application.

Limitations

- To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures.
- Maximum moisture content of concrete substrate by weight when measured with a Tramex CME or CMExpert type concrete moisture meter : 5% with one application of Sikalastic® MT primer; 6% with two applications of Sikalastic® MT primer.
- Primer materials will become more viscous at lower application temperatures and be more difficult to spread, which may affect yield. Material not preconditioned to at least 65°F (18°C) is likely to exhibit these characteristics.
- Minimum ambient and substrate temperature during application and curing of material is 50° F (10°C); maximum is 85°F (30°C). Frequent monitoring of ambient and substrate temperature should always be done when applying epoxy primers. Note that low temperatures will slow down the cure, and high temperatures will accelerate it.
- Do not store materials outdoors exposed to sunlight for prolonged periods.
- Do not thin with solvents.
- Minimum age of concrete must be 21-28 days, depending on curing and drying conditions.
- The compressive strength of the concrete substrate should be at least 3500 psi at 28 days and at least 250 psi in tension at the time of application of Sikalastic® MT Primer.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various Sika product solutions). Surface irregularities may reflect though the cured system.
- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface.
- Do not proceed if rain is imminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.
- On grade, lightweight concrete, asphalt pavement, or insulated split slab applications, or applications where chained or studded tires may be used should not be coated with Sikalastic® Traffic Systems.
- Unvented metal pan decks or decks containing between-slab membranes require further technical evaluation prior to priming with Sikalastic® MT Primer – contact Sika regarding recommendations.
- Do not subject to continuous immersion.
- Precautions should be taken to prevent vapors and/or odors from entering the building/ structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.
- Sikalastic® MT Primer is not UV stable and must be top coated or protected by a separate wearing course.
- Primer must be kept clean and recoated within maximum recoat period based upon ambient and substrate temperature. If this window is exceeded, contact Sika for recommendations.
- Mockups to verify application methods and substrate conditions as well as desired skid resistance and aesthetics are highly recommended.

Construction

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Regional Information and Sales Centers. For the location of your nearest Sika sales office contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® Recoat Primer

Two-Component, High Solids, Aromatic Polyurethane Primer

Description	Sikalastic Recoat Primer is a two component, high solids, liquid applied primer. Optional: Sikalastic ACL Accelerator (see separate data sheet).
Where to Use	■ Partially completed new urethane coating systems ■ Recover of existing urethane coating systems ■ Repair of existing urethane coating systems
Advantages	■ High Solids ■ Fast Re-Coat Time ■ Low Odor ■ Low Viscosity
Coverage	300 sf/gal.
Cure Mechanism	Chemical Cure

Typical Data (Material and curing conditions @ 74°F (22°C) and 40% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	1 year in original, unopened containers.
Storage:	Store dry at 60-95 °F (15-35 °C).
Product Conditioning:	Condition material to 65-85 °F (18-30 °C) before using.
Color:	Green Gray
Coverage Rate:	300 sf per gal.
Total Weight Solids (ASTM D-2697):	97.8%
Total Volume Solids (ASTM D-2697):	97.7%
VOC Content (ASTM D-2369-81):	100 g/l
Dry Film Thickness per Coat:	5 +/- 1 mils
Viscosity - Parts A & B Combined:	500 +/- 100 cps
Specific Gravity:	Part A - 1.22 Part B - 0.98

Sikalastic Recoat Primer without Sikalastic 700 ACL Accelerator

Min. Application Temp.:	40°F, and at least 3°F above the dew point
Typical Pot Life:	45 minutes @ 40°F (4°C), 50% R.H. 25 minutes @ 75°F (24°C), 50% R.H. 20 minutes @ 90°F (32°C), 50% R.H.
Min.Time to Recoat:	12 hours @ 40°F (4°C), 50% R.H. 3 hours @ 75°F (24°C), 50% R.H. 3 hours @ 90°F (32°C), 50% R.H.
Max.Time to Recoat:	12 hours @ 75°F (24°C), 50% R.H.

Sikalastic Recoat Primer with Sikalastic 700 ACL Accelerator

Min. Application Temp.:	40°F, and at least 3°F above the dew point
Typical Pot Life:	25 minutes @ 40°F (4°C), 50% R.H. 15 minutes @ 75°F (24°C), 50% R.H. 10 minutes @ 90°F (32°C), 50% R.H.
Min.Time to Recoat:	8 hours @ 40°F (4°C), 50% R.H. 80 minutes @ 75°F (24°C), 50% R.H. 40 minutes @ 90°F (32°C), 50% R.H.
Max.Time to Recoat:	6 hours @ 75°F (24°C), 50% R.H.

Construction

Packaging	10 gal. Kit, Comp. A-5 gal., Comp. B-5 gal.
How to Use	
Surface Preparation	Existing coating surface must be clean, dry and sound with an open texture. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes, and any other contaminants. All loose and flaking coating, projections, rough spots, etc. should be dressed off to achieve a well-bonded, level surface prior to the application. Mechanically abrade the existing coating as required to obtain an open, textured surface profile.
Mixing	Premix Part A and Part B components using a mechanical mixer (Jiffy) at slow speed to obtain uniform color, making sure to scrape the solids from the bottom and sides of the pail. Pour part B into Part A slowly and while mixing scrape the side of the container, Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). When mixing use care not to entrap air into the mixture. Sikalastic Recoat Primer can be applied with or without Sikalastic 700 ACL as an accelerator. In the event that Sikalastic 700 ACL is used, add two quarts Sikalastic 700 ACL into 10 gallons of mixed primer. Mix the combined material thoroughly until a homogenous mixture and uniform color is obtained (typically 3 minutes). When mixing use care not to entrap air into the mixture
Application	Apply at the recommended coverage rate, typically 1 gallon per 300 sf, using a phenolic resin core roller. Coverage rate will depend on surface roughness and porosity. Reference Typical Data section for curing and recoat guidelines.
Removal	Remove liquid primer immediately with dry cloth. Once cured, primer can only be removed by mechanical means.
Over Painting	Sikalastic Recoat Primer without Sikalastic 700 ACL should be recoated within 12 hours once tack free. Sikalastic Recoat Primer with Sikalastic 700 ACL should be recoated within 6 hours once tack free.
Limitations	■ To avoid dew point conditions during application relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperature. ■ Minimum ambient and substrate temperature during application and curing of material is 40°F (4°C); maximum is 90 F. Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane coatings. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it. ■ Do not store materials outdoors exposed to sunlight for prolonged periods. ■ Do not thin with solvents. ■ Precautions should be taken to prevent ordors and/or vapors from entering the building/ structure, including but not limited to turning off and sealing air intake vents or other means of ingress for odors and for vapors into the building/structure during product application and cure. ■ Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure. ■ Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Do not proceed if rain is eminent within 8-12 hours of application. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems. ■ When applying over existing coatings compatibility and adhesion testing is recommended. ■ Do not subject to continuous immersion. ■ Sikalastic Recoat primer is not UV stable and must be top coated. ■ Sikaflastic Recoat primer must be kept clean and overcoated within 12 hours, or within 6 hours if Sikalastic ACL accelerator is used. If this overcoat window is exceeded, contact Sika for recommendations.

Construction

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® 601 BC (US) / 621 TC (US) Roofing and Waterproofing System

Liquid-applied single component fully reinforced system with fiberglass or polyester reinforcement

Description

Sikalastic 601 BC (US) and 621 TC (US) roofing and waterproofing systems combine cold applied, aliphatic, single component, moisture-triggered polyurethane resins with fiberglass mat or polyester fleece reinforcement to create a seamless membrane and flashing system. System components are:

Sika or Sikalastic Primer - Select primer per substrate material in accordance with Priming Guide
Sikalastic 601 BC (US) - Base layer resin used for RoofPro 10 and 15 year systems with Reemat fiberglass reinforcement
Sikalastic 621 TC (US) - Top layer resin used for RoofPro 10 and 15 year systems with Reemat fiberglass reinforcement. Resin used for all other systems with both Reemat fiberglass and polyester fleece reinforcement
Sikalastic Reemat Premium - Chopped strand fiberglass mat
Sika Fleece 120, 140, 170 - Non-woven, needle-punched polyester fleece in various weights

Where to Use

Sikalastic RoofPro systems, including Sikalastic RoofPro Built Up, Direct, Plaza Deck/PMA, and Vegetated systems for both new construction and refurbishment

- Ideal for roofs displaying complex details and geometry or when accessibility is limited
- Effective and cost efficient life cycle extension of existing roofs
- Highly reflective Sikalastic 621 TC (US) in White (RAL 9016) suitable for cool roofs and solar roof assemblies.
- Suitable for use for applications such as balconies, terraces, walkways, plazas, and similar applications exposed to foot traffic when provided with a supplemental aggregated or flake surfacing.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	9 months for Sikalastic 621 TC and 9 months for Sikalastic 601 BC from date of production if stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between 40 -77° F (4-25°C).
Storage	Store dry at 35-77°F (2-25°C)
Product Conditioning	Condition material to 50-77°F (10-25°C) before using
Chemical Base	Single component, moisture-triggered, aliphatic polyurethane
Density (all values at +23 degrees C)	
601 BC (US)	11.35 lbs/gal (1.36 lg/l)
621 TC (US)	12.0 lbs/gal (1.44 kg/l)
Solids Content	
601 BC (US)	78.0 % by volume / 84.3 % by weight
621 TC (US)	81.3% by volume / 87.4% by weight
Flash Point	
601 BC (US)	138°F (59°C)
621 TC (US)	144°F (62°C)
VOC	
601 BC (US)	212 g/L
621 TC (US)	183 g/L
Service Temperature	-22 to 176°F (-30 - 80°C) intermittent
621 TC (US) White (RAL 9016)	
Solar Reflectance (Initial)	85.1% (ASTM C1549)
SRI (Solar Reflectance Index - Initial)	107 (ASTM E1980)
Thermal Emittance	0.85 (ASTM C1371)

Physical Properties – Typical Values	ASTM Test Method	RoofPro 20	RoofPro 20
Reinforcement	-----	Reemat Premium	Sika Fleece 140
Breaking Strength, psi	D751 Proc. B	1030	900
Elongation to Break, %	D751	21	82
Tear Strength, lbf/in	D624	300	200
Static Puncture Resistance	D5602	>55 lbf	>55 lbf
Note: Data for other RoofPro assemblies available upon request			

Construction

Advantages	■ Proven technology with over 25 year track record ■ Single component - no mixing and ready to use ■ Fully reinforced with highly conformable Sika Reemat or Sika Fleece ■ Moisture triggered chemistry that is rapidly weatherproof after application ■ Highly elastic and crack bridging ■ Seamless and fully adhered ■ Vapor permeable ■ UV resistant and non-yellowing ■ Abrasion and chemical resistant ■ Adheres to most common construction materials when suitable primer is used.
Approvals	FM Approval Standard 4470 for Class 1 Roof Covers ■ ASTM E-108-00 Spread of Flame meets Class A at a slope of 1 in 12 ■ Simulated wind uplift pull testing meets up to Class 1-990 ■ Simulated hail damage testing meets rating of SH - Severe Hail Miami-Dade County NOA for Roof Systems over Concrete and Steel Decks USGBC LEED rating: Conforms to LEED SS Credit 7.2 for Heat Island Effect - Roof with SRI >/=78 Energy Star approval for Sikalastic 621 TC (US) White (RAL 9016) Meets ASTM D7311-07: Standard Specification for Liquid-Applied, Single-Pack, Moisture-Triggered, Aliphatic Polyurethane Roofing Membrane.
Coverage	See Application below
Cure Mechanism	Moisture-triggered
Chemical Resistance	Strong resistance to a wide range of reagents, including paraffin, petrol, fuel oil, white spirit, acid rain, detergents and moderate solutions of acids and alkalis. Some low molecular weight alcohols can soften the material. Contact Technical Service for specific recommendations. Salt spray to ASTM B117 (1000 hours continuous exposure) and prohesion testing to ASTM G85-94: Annex A5 (1000 hours cyclic exposure)
Packaging	5 gal. pails
Colors	601 BC (US) Oxide red 621 TC (US) White (RAL 9016), Pearl Gray, Steel Gray, Mushroom, Copper Green; custom colors available with minimum order

How to Use

Surface Preparation See Application below

Application

Substrate Evaluation

Concrete and cementitious substrates
New concrete shall be allowed to cure a minimum of 28 days. Concrete shall have a minimum compressive strength of 20.7 MPa (3000 psi) and exhibit a minimum tensile bond strength of 1.4 MPa (200 psi). time. Moist or sheet curing methods should be used, as opposed to the use of curing compounds, which may interfere with the bond of the membrane. Inspect the concrete, including upstands, and all areas should be hammer tested. Concrete must be suitably finished, preferably by wood float or steel pan. A power float finish is acceptable where the surface is prepared to avoid laitance (a tamped finish is not acceptable). The surface finish must be uniform and free from defects such as laitance, voids or honeycombing.

Gypsum and Cement based sheathing
Sheathing boards shall be clean, dry and dust free, and shall be properly secured to the structure. Loose, damaged, or contaminated boards shall be removed and replaced.

Brick and stone
Mortar joints must be sound and preferably flush pointed.

Asphalt
Asphalt contains volatiles which can cause bleeding and slight non-detrimental staining. The asphalt must be carefully assessed for moisture and/or air entrapment, grade and surface finish.

Bituminous felt
Ensure that bituminous felt is firmly adhered or mechanically fixed to the substrate. Bituminous felt shall not contain badly degraded areas.

Bituminous coatings
Bituminous coatings shall not have sticky or mobile surfaces, volatile mastic coatings, or old coal tar coatings.

Metals
Metals must be in sound condition.

Wooden substrates
Plywood and timber based roof decks must be in good condition, firmly adhered and mechanically fixed. All plywood should be identified as conforming to PS 1 for construction and industrial plywood by grade, APA (American Plywood Association) trademark, or equivalent. For maximum smoothness, EXT Type APA, Grade A-C should be used, and the “A” side should be positioned to receive the Sikalastic resin.

Plywood decks to receive resin directly shall be at least 1/2 inch thick and attached and supported according to APA guidelines, using only non-rusting screw, spiral or coated nail type fasteners. A good practice would be to recess or counter sink fasteners 1/8 to 1/4 inch and fill with Sikaflex sealant. Suitable edge support to prevent differential deflection between panels shall be provided. Panel edges shall be tongue and groove or supported on solid blocking. Space panels 1/8 to 3/16 inch at panel ends.

Paints and coatings
Ensure the existing material is sound and firmly adhered.

Existing Sikalastic RoofPro System
The existing Sikalastic RoofPro System shall be soundly adhered to the substrate.

Surface Preparation

Concrete and cementitious substrates
Cementitious or mineral based substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and to achieve an open textured surface (CSP 3-5 per ICRI guidelines). Loose friable material and weak concrete must be completely removed and surface defects such as blowholes and voids must be fully exposed. The amount of embedment coat required may increase over rough or highly porous surfaces.

Repairs to the substrate, filling of joints, blowholes/voids and surface levelling must be carried out. Consult Sika for product recommendations based on project requirements. High spots must be removed by grinding or similar method.

Outgassing is a naturally occurring phenomenon of concrete that can produce pinholes in liquid applied materials. The concrete must be carefully assessed for moisture content, air entrapment, and surface finish prior to any roofing/waterproofing work. Particular requirements for priming must also be considered. Installing the primer and membrane either when the concrete temperature is falling or stable can reduce outgassing. It is generally beneficial, therefore, to apply the primer and embedment coat in the late afternoon or evening.

Gypsum and Cement based sheathing
Sheathing boards shall be clean, dry and dust free. Secure loose boards if in sound condition. Damaged or contaminated boards shall be removed and replaced.

Brick and stone
Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required.

Asphalt
Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required. All major cracks should be sealed to allow continuity of the
Sikalastic RoofPro system.

Bituminous felt
Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required. Treat blisters by star cutting and removing any underlying water.
Allow to dry and re-adhere using suitable adhesive.

Bituminous coatings
Remove any loose or degraded coatings.

Metals
Ferrous metals should be thoroughly cleaned by grinding or blast cleaning prior to priming (SSPC-SP3 to near-white metal) .

Non-ferrous metals are prepared by removing any deposits of dust and oxidation and abrading to bright metal. Wire brushing can be used for soft metal such as lead. The surface must be clean and free from grease which, if present, must be removed with a solvent wipe or wash with detergent, rinse and dry.

Wooden substrates
Timber and timber based roof decks require additional reinforcement such as the installation of plywood, approved insulation or cover board. Small timber protrusions and suitable decks may be treated directly, provided that the timber is of exterior quality, e.g. plywood. Fill joints flush with Sikaflex sealant.

Paints/Coatings
Remove any loose or degraded coatings. Ensure the surface is clean and free from grease.

Sikaplan®/Sarnafil® membranes
Clean membranes with Sarna Cleaner (PVC membranes) and Sarnafil® T Clean (TPO membranes) prior to application of primer.

Existing Sikalastic RoofPro Systems
Clean the membrane using a water jet at approximately 140bar (2000 psi) and biodegradeable non-sudsing detergent with clean water rinse. Allow to dry.

Priming

Refer to Priming Guide to select primer for properly evaluated and prepared substrate. Refer to separate primer Product Data Sheet for application methods, coverage rates, cure times and recoat windows. Always allow primer to cure thoroughly before applying detail or base resin layer.

Sikalastic RoofPro Priming Guide

Substrate	Remark	CONCRETE PRIMER	DTE EPOXY Primer	Bonding Primer	EP PRIMER/ SEALER	Consult Sika
CONCRETE	(1)	▲	▲		▲	
LIGHTWEIGHT STRUCTURAL CONCRETE	(1)		▲			▲
CONCRETE, GYPSUM BASED ROOF BOARDS		▲			▲	
BRICK, STONE	(3)			▲	▲	▲
BITUMINOUS SUBSTRATE						
-asphalt, bituminous felts, bituminous coatings, granulated or smooth SBS & APP cap sheets	(2,3)				▲	
SINGLE PLY ROOFING MEMBRANES						
-HYPALON, TPO, EPDM, PVC	(3)					▲
ROOF TILES (UNGLAZED)	(3,4)			▲	▲	▲
FIBERGLASS	(3)			▲		▲
POLYURETHANE FOAM- sprayed or slab stock				▲	▲	
METALS						
-aluminum, galvanized, cast iron, copper, lead, brass, stainless steel, steel, zinc	(3)				▲	
PRE-COATED METAL	(3)					▲
PAINTS						
- paints & coatings	(3)			▲		
- aluminized solar reflective coatings	(3)				▲	
WOOD - TIMBER & PLYWOOD	(5)			▲	▲	▲

(1) New cementitious substrates must be Portland base and be cured min. 14 days.
(2) The presence of volatiles may cause discoloration of Sikalastic if not properly primed.
(3) Surface evaluation and field adhesion testing.
(4) Glazed tile consult Sika.
(5) Pressure treated lumber consult Sika

Detailing

Non-structural cracks up to 1/16 inch- Detail application not necessary. Apply embedment/base resin layer per below.

Non-structural cracks between 1/16 inch and 1/4 inch- Rout and seal with Sikaflex sealant. Apply 40-45 mil resin layer embedded with 3 inch Sika Flexitape Heavy centered over crack. Apply embedment/base resin layer per below.

Cracks and joints between 1/4 inch and 1 inch- Rout and seal with Sikaflex sealant. Apply bond breaker tape sufficient to span width of crack or joint followed by 40-45 mil resin layer embedded with 6 inch Sika Flexitape Heavy centered over crack or joint. Apply embedment/base resin layer by terminating Sika Reemat at edges of crack or joint overlapping Sika Flexitape Heavy a minimum of 2 inch on both sides.

Joints greater than 1 inch- Treat as expansion joint. Consult Sika for recommendations.

Metal seams and plywood/coverboard joints- Apply 40-45 mil resin layer embedded with 3 or 6 inch Sika Flexitape Heavy centered over seam. Apply embedment resin layer per below.

Transitions between dissimilar materials- Apply 40-45 mil resin layer embedded with Sika Flexitape Heavy centered over edge. Apply embedment resin layer per below.

Membrane

Embedment/Base Resin Layer with Sika Reemat Reinforcement
Mixing not required. Apply either Sikalastic 601 BC or Sikalastic 621 TC at the coverage rate in the RoofPro System Guide with a 1/2 inch nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should be backrolled prior to embedding Sika Reemat. Place Sika Reemat in wet base resin layer overlapping seams a minimum of 2 inches (place frayed edge over cut edge of roll) and apply wet roller to topside to saturate completely. After approximately 5 minutes the binder will begin to dissolve allowing the fiber strands to conform to irregular surfaces. Do not over work once the fibers have conformed to the substrate. Allow to cure 12 hours at 70 degrees F and 50 % RH or until tack free before top resin layer. Keep clean and dry and apply top resin layer within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika Reactivation Primer.

Top Resin Layer with Sika Reemat Reinforcement
Mixing not required. Apply Sikalastic 621 TC at the coverage rate in the RoofPro Systems Guide with a 1/2 inch nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should also be backrolled. In the case of RoofPro 25 allow the first top resin layer to cure 12 hours at 70 degrees F and 50% RH or until tack free before applying second top resin layer. On top of the complete RoofPro system additional resin layers may be applied with aggregate for slip resistance - consult Sika for recommendations. Keep clean and dry and apply additional resin layers within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika Reactivation Primer.

Sikalastic RoofPro System Guide					
	RoofPro Metal	**RoofPro 10**	**RoofPro 15**	**RoofPro 20**	**RoofPro 25**
Substrates	Qualifying Metals	Concrete or cementitious, metals, wood, single-ply or bituminous, spray foam, stone or tile			
Primer	Required - see Substrate Priming Guide				
Detailing	Sika Flexitape Heavy centered over seams, transitions and properly treated cracks and joints				
Reinforcement	Local with Sika Flexitape	Sika Reemat Standard	Sika Reemat Premium embedded in base over entire surface		
601 BC (US)*		35 mils wet - 45 sf/gal.	45 mils wet - 35 sf/gal.		
621 TC (US)	20 mils wet - 80 sf/gal.	30 mils wet - 53 sf/gal.	30 mils wet - 53 sf/gal.	45 mils wet - 35 sf/gal.	45 mils wet - 35 sf/gal.
621 TC (US)	20 mils wet - 80 sf/gal.			30 mils wet - 53 sf/gal.	30 mils wet - 53 sf/gal.
621 TC (US)					30 mils wet - 53 sf/gal.
Total Film Thickness	32 mils dry	52 mils dry	59 mils dry	61 mils dry	84 mils dry
** May be substituted with Sikalastic 621 TC (US)*					

Wet on Wet Application with Sika Fleece Reinforcement
Mixing not required. To primed substrate apply two-thirds of the Sikalastic 621 TC specified in the RoofPro System Guide with a 1/2 inch nap phenolic resin core roller. Immediately place specified Sika Fleece into wet resin overlapping seams a minimum of 3" along the edge and 6" end-to-end. Apply wet roller to topside with light pressure to saturate fleece from bottom and ensure air pockets are completely removed. Immediately apply all of remaining one-third of Sikalastic 621 TC resin specified in the RoofPro System Guide to ensure even and complete fleece saturation from topside and uniform texture.

Sikalastic RoofPro System Guide with Sika Fleece			
	RoofPro 15	RoofPro 20	RoofPro 25
Substrates	Concrete or cementitious, metals, wood, single-ply or bituminous, spray foam, stone or tile		
Primer	Required - see Substrate Priming Guide		
Detailing	Sika Flexitape Heavy centered over seams, transitions and properly treated cracks and joints		
Reinforcement	Sika Fleece 120 (US)	Sika Fleece 140 (US)	Sika Fleece 170 (US)
621 TC (US)	70 mils wet - 23 sf/gal.	80 mils wet - 20 sf/gal.	100 mils wet - 16 sf/gal.
Total film Thickness	57 mils dry	65 mils dry	81 mils dry

Aggregated or Flake Surfacing

Supplemental aggregate and flake surfacing is required for all applications that will experience direct foot traffic such as balconies, terraces, walkways, and plazas, and is recommended for areas that experience maintenance foot traffic. Supplemental aggregate surfacing is applied in a supplemental resin layer after the Sikalastic membrane has been installed and is not applied into the roofing/waterproofing membrane itself.

Seed and Back Roll Option

The Seed and Backroll option is primarily intended for use for maintenance traffic-type applications where enhanced slip resistance is required.

Apply Sikalastic 621 TC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet seed with kiln dried, iron free aggregate. Back roll the surface to encapsulate the aggregate in the Sikalastic resin.

Full Broadcast and Seal Option

The Full Broadcast and Seal option is intended for use for applications where both enhanced slip resistance and physical protection of the roofing membrane is required.

Apply Sikalastic 621 TC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet broadcast to rejection (full broadcast, beach) with kiln dried, iron free aggregate. Remove excess aggregate after cure. Seal with an additional coat of Sikalastic resin.

Decorative Quartz and Decorative Flake Options

The Decorative Quartz and Decorative Flake options are intended for use for applications where enhanced slip resistance, physical protection of the roofing membrane, and a decorative element is required.

Apply Sikalastic 621 TC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet broadcast to rejection (full broadcast, beach) with colored quartz aggregate or synthetic flakes. Remove excess aggregate/flakes after cure. Seal with a coat of Sikalastic 748 PA at 15 mils wet film thickness.

Decorative flakes can also be seeded at less than full broadcast quantities. Remove excess aggregate/flakes after cure. Seal with a coat of Sikalastic 748 PA at 15 mils wet film thickness.

Aggregate Selection

Use clean, rounded or semi-angular, oven dried quartz sand with a minimum hardness of 6.5 per the Moh's scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. The following size gradations are recommended:

- 16-30 or 20-40 mesh for pedestrian traffic systems
- Sika DecoQuartz Blends or equivalent for Decorative Quartz systems

Flake Selection

Use virgin vinyl flakes, supplied in pre-packaged bags and free from impurities. The following is recommended:

- Sika DecoFlake Blends or equivalent for Decorative Flake systems

Tooling & Finishing	See Above
Removal	Remove liquid resin immediately with dry cloth. Once cured, resin can only be removed by mechanical means.
Over Painting	See Above
Limitations	■ To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures. ■ Minimum ambient and substrate temperature during application and curing of material is 36°F (2°C); maximum is 95°F (35°C). Surface temperatures must be no higher than 140°F (60°C). Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane resins. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it. ■ Do not apply on substrates with moisture content greater than 4% by weight, measured by Tramex Concrete Moisture Encounter meter. ■ Minimum age of concrete must be 28 days depending on curing and drying conditions. ■ Do not thin with solvents. ■ Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements. ■ Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D 4263 (Polyethylene sheet method). ■ Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems. ■ On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If ap-

plied during rising temperature pinholing or blistering may occur.

- Use sunglasses with UV filter when applying highly reflective Sikalastic 621 TC White (RAL 9016).
- Do not use for indoor applications.
- Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents or other means of ingress for odors and/or vapors into the building/structure during product application and cure.
- Not recommended for direct exposure to heavy or frequent foot traffic without a supplemental aggregated or flake surfacing application.
- Do not apply cementitious products, such as tile mortar directly onto Sikalastic 601 BC (US) or 621 TC (US). See Sikalastic 624 WP Product Data Sheet.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- When applying over existing coatings or membranes compatibility and adhesion testing and subsequent approval by Technical Services is required.
- Opening to traffic prior to cure may result in loss of aggregate or permanent staining and subsequent premature failure.
- On grade concrete decks should not be covered with Sikalastic RoofPro membrane systems.
- Unvented metal pan, split/sandwich slab with encapsulated membrane and/or insulation, cinder fill decks, and lightweight insulating concrete deck overlays should not be covered with Sikalastic RoofPro systems without additional deck evaluation and subsequent approval by Technical Services.
- Do not subject to continuous immersion, i.e., fountains, ponds, pools, or interior of tanks.
- Not recommended for use over ceramic tile.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® 624 WP Waterproofing System

Liquid applied alkaline-resistant single component fully reinforced system with fiberglass or polyester reinforcement

Description

Sikalastic 624 WP waterproofing systems combine a cold applied, aliphatic, single component, alkali resistant, moisture-triggered polyurethane resin with fiberglass mat or polyester fleece reinforcement to create a seamless membrane and flashing system. Typical applications include a separate wearing course (overlayment or overburden), but Sikalastic 624 WP is UV resistant without protection board and is therefore suitable for direct exposure waterproofing applications as well. System components are:

Sika or Sikalastic Primer - Select primer per substrate material in accordance with Priming Guide
Sikalastic 624 WP - Resin used for all systems with both Reemat fiberglass and polyester fleece reinforcement
Sikalastic Reemat Premium - Chopped strand fiberglass mat
Sika Fleece 120, 140, 170 - Non-woven, needle-punched polyester fleece in various weights

Where to Use

- Sikalastic waterproofing systems, including Sikalastic Plaza Deck/PMA and Vegetated systems for both new construction and refurbishment
- Split-slab waterproofing - between slabs
- Vegetated deck waterproofing
- Plaza decks with concrete pavers, and asphalt or concrete paving stones in a sand bed
- Waterproofing under tile in a mortar bed
- Applications involving cementitious and asphalt pavement overlays
- Waterproofing around/beneath mechanical equipment

Advantages

- Proven technology with over 25 year track record
- Single component - no mixing and ready to use
- Fully reinforced with highly conformable Sika Reemat or Sika Fleece
- Integrated flashings utilizing same resin and reinforcements
- Ideal for complex details and geometry or when accessibility is limited
- Moisture triggered chemistry that is rapidly weatherproof after application
- Highly elastic and crack bridging
- Seamless and fully adhered
- Vapor permeable
- UV resistant and non-yellowing
- Abrasion and chemical resistant
- Alkali resistant formulation
- Adheres to most common construction materials when suitable primer is used.

Approvals

Meets ASTM C836 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	9 months in original, unopened and undamaged sealed containers.
Storage	Store dry at 35-77°F (2-25°C).
Product Conditioning	Condition material to 50-77°F (10-25°C) before using for ease of application.
Color	624 WP: White, Pearl Gray; custom colors available with minimum order
Chemical Base	Single component, moisture-triggered, aliphatic polyurethane
Density (all values at +23° C)	10.8 lbs/gal (1.3 kg/l)
Solids Content	70.9 % by volume / 78.9 % by weight
Flash Point	107°F (42°C)
VOC	209 g/L
Service Temperature	-22 to 176°F (-30 to 80°C) intermittent
Solar Reflectance (Initial)	86.8% (ASTM C1549) (White)
SRI (Solar Reflectance Index - Initial)	109 (ASTM E1980) (White)
Thermal Emittance	0.87 (ASTM C1371) (White)

Reinforced Membrane Physical Properties - Typical Values	ASTM Test Method	WP 20	WP 20
Reinforcement	-	Reemat Premium	Sika Fleece 140
Breaking Strength, psi	D751 Proc. B	2450	1110
Elongation to Break, %	D751	10	78
Tear Strength, lbf/in	D624	430	300
Static Puncture Resistance	D5602	>55 lbf	>55 lbf
Note: Date for other WP assemblies available upon request			

Construction

Coverage	See Application below
Packaging	5 gal. pails
Cure Mechanism	Moisture-triggered
Chemical Resistance	Strong resistance to a wide range of reagents, including paraffin, petrol, fuel oil, white spirit, acid rain, detergents and moderate solutions of acids and alkalis. Some low molecular weight alcohols can soften the material. Contact Technical Service for specific recomendations. Salt spray to ASTM B117 (1000 hours continuous exposure) and prohesion testing to ASTM G85-94: Annex A5 (1000 hours cyclic exposure)
How To Use	
Surface Preparation	See Application Below

Application

Substrate Evaluation

Concrete and cementitious substrates

New concrete shall be allowed to cure a minimum of 28 days. Concrete shall have a minimum compresive strength of 20.7 MPa (3000 psi) and exhibit a minimum tensile bond strength of 1.4 MPa (200 psi). time. Moist or sheet curing methods should be used, as opposed to the use of curing compounds, which may interfere with the bond of the membrane. Inspect the concrete, including upstands, and all areas should be hammer tested. Concrete must be suitably finished, preferably by wood float or steel pan. A power float finish is acceptable where the surface is prepared to avoid laitance (a tamped finish is not acceptable). The surface finish must be uniform and free from defects such as laitance, voids or honeycombing.

Gypsum and Cement based sheathing

Sheathing boards shall be clean, dry and dust free, and shall be properly secured to the structure. Loose, damaged, or contaminated boards shall be removed and replaced.

Brick and stone

Mortar joints must be sound and preferably flush pointed.

Asphalt

Asphalt contains volatiles which can cause bleeding and slight non-detrimental staining. The asphalt must be carefully assessed for moisture and/or air entrapment, grade and surface finish.

Bituminous felt

Ensure that bituminous felt is firmly adhered or mechanically fixed to the substrate. Bituminous felt shall not contain badly degraded areas.

Bituminous coatings

Bituminous coatings shall not have sticky or mobile surfaces, volatile mastic coatings, or old coal tar coatings.

Metals

Metals must be in sound condition.

Wooden substrates

Plywood and timber based decks must be in good condition, firmly adhered and mechanically fixed. All plywood should be identified as conforming to PS 1 for construction and industrial plywood by grade, APA (American Plywood Association) trademark, or equivalent. For maximum smoothness, EXT Type APA, Grade A-C should be used, and the “A” side should be positioned to receive the Sikalastic resin.

Plywood decks to receive resin directly shall be at least 1/2 inch thick and attached and supported according to APA guidelines, using only non-rusting screw, spiral or coated nail type fasteners. A good practice would be to recess or counter sink fasteners 1/8 to 1/4 inch and fill with Sikaflex sealant. Suitable edge support to prevent differential deflection between panels shall be provided. Panel edges shall be tongue and groove or supported on solid blocking. Space panels 1/8 to 3/16 inch at panel ends.

Paints and coatings

Ensure the existing material is sound and firmly adhered.

Existing Sikalastic system

The existing Sikalastic system shall be soundly adhered to the substrate.

Surface Preparation

Concrete and cementitious substrates

Cementitious or mineral based substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and to achieve an open textured surface (CSP 3-5 per ICRI guidelines). Loose friable material and weak concrete must be completely removed and surface defects such as blowholes and voids must be fully exposed. The amount of embedment coat required may increase over rough or highly porous surfaces.

Repairs to the substrate, filling of joints, blowholes/voids and surface levelling must be carried out. Consult Sika for product recommendations based on project requirements. High spots must be removed by grinding or similar method.

Outgassing is a naturally occurring phenomenon of concrete that can produce pinholes in liquid applied materials. The concrete must be carefully assessed for moisture content, air entrapment, and surface finish prior to any waterproofing work. Particular requirements for priming must also be considered. Installing the primer and membrane either when the concrete temperature is falling or stable can reduce outgassing. It is generally beneficial, therefore, to apply the embedment coat in the late afternoon or evening.

Gypsum and Cement based sheathing

Sheathing boards shall be clean, dry and dust free. Secure loose boards if in sound condition. Damaged or contaminated boards shall be removed and replaced.

Brick and stone

Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required.

Asphalt

Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required. All major cracks should be sealed to allow continuity of the Sikalastic system.

Bituminous felt

Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required. Treat blisters by star cutting and removing any underlying water. Allow to dry and re-adhere using suitable adhesive.

Bituminous coatings

Remove any loose or degraded coatings.

Metals

Ferrous metals should be thoroughly cleaned by grinding or blast cleaning prior to priming (SSPC-SP3 to near-white metal.)

Non-ferrous metals are prepared by removing any deposits of dust and oxidation and abrading to bright metal. Wire brushing can be used for soft metal such as lead. The surface must be clean and free from grease which, if present, must be removed with a solvent wipe or wash with detergent, rinse and dry.

Wooden substrates

Timber and timber based decks require additional reinforcement such as the installation of plywood, approved insulation or cover board. Small timber protrusions and suitable decks may be treated directly, provided that the timber is of exterior quality, e.g., exterior grade plywood, etc. Fill joints flush with Sikaflex sealant.

Paints/Coatings

Remove any loose or degraded coatings. Ensure the surface is clean and free from grease.

Sikaplan®/Sarnafil® membranes

Clean membranes with Sarna Cleaner (PVC membranes) and Sarnafil® T Clean (TPO membranes) prior to application of primer.

Existing Sikalastic Systems

Clean the membrane using a water jet at approximately 140bar (2000 psi) and biodegradeable non-sudsing detergent with clean water rinse. Allow to dry.

Application

Priming

Refer to Priming Guide to select primer for properly evaluated and prepared substrate. Refer to separate primer Product Data Sheet for for application methods, coverage rates, cure times and recoat windows. Always allow primer to cure thoroughly before applying detail or base resin layer.

Substrate	Remark	Concrete Primer	DTE Epoxy Primer	Bonding Primer	EP Primer/ Sealer	Consult Sika
CONCRETE	(1)	▲	▲		▲	
LIGHTWEIGHT CONCRETE	(1)		▲			▲
BRICK, STONE	(3)			▲	▲	▲
BITUMINOUS SUBSTRATE						
-asphalt, bitumininous felts, bituminous coatings, granulated or smooth SBS & APP cap sheets	(2,3)				▲	

ROOF TILES (UNGLAZED)	(3,4)			▲	▲	▲
METALS						
-aluminum, galvanized, cast iron, copper, lead, brass, stainless steel, steel, zinc	(3)				▲	
PRE-COATED METAL	(3)					▲
PAINTS						
-paints & coatings	(3)					▲
-aluminized solar reflective coatings	(3)				▲	
WOOD- TIMBER & PLYWOOD	(3)			▲	▲	▲

(1) New cementitious substrates must be Portland base and be cured min. 28 days.
(2) The presence of volatiles may cause discoloration of Sikalastic if not properly primed.
(3) Surface evaluation and filed adhesion testing
(4) Glazed tile consult Sika
(5) Pressure treated lumber consult Sika

Detailing

Non-structural cracks up to 1/16 inch - Detail application not necessary. Apply embedment/base resin layer per below.

Non-structural cracks between 1/16 inch and 1/4 inch - Rout and seal with Sikaflex sealant. Apply 40-45 mil resin layer embedded with 3 inch Sika Flexitape Heavy centered over crack. Apply embedment/base resin layer per below.

Cracks and joints between 1/4 inch and 1 inch - Rout and seal with Sikaflex sealant. Apply bond breaker tape sufficient to span width of crack or joint followed by 40-45 mil resin layer embedded with 6 inch Sika Flexitape Heavy centered over crack or joint. Apply embedment/base resin layer by terminating Sika Reemat at edges of crack or joint overlapping Sika Flexitape Heavy a minimum of 2 inch on both sides.

Joints greater than 1 inch - Treat as expansion joint. Consult Sika for recommendations.

Metal seams and plywood/coverboard joints- Apply 40-45 mil resin layer embedded with 3 or 6 inch Sika Flexitape Heavy centered over seam. Apply embedment resin layer per below.

Transitions between dissimilar materials - Apply 40-45 mil resin layer embedded with Sika Flexitape Heavy centered over edge. Apply embedment resin layer per below.

Embedment/Base Resin Layer with Sika Reemat Reinforcement

Mixing not required. Apply Sikalastic 624 WP per WP System Guide at 45 mils with a 1/2 inch nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should be backrolled prior to embedding Sika Reemat. Place Sika Reemat in wet base resin layer overlapping seams a minimum of 2 inches (place frayed edge over cut edge of roll) and apply wet roller to topside to saturate completely. After approximately 5 minutes the binder will begin to dissolve allowing the fiber strands to conform to irregular surfaces. Do not over work once the fibers have conformed to the substrate.Allow to cure 12 hours at 70°F and 50 % RH or until tack free before top resin layer. Keep clean and dry and apply top resin layer within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika Reactivation Primer.

Top Resin Layer with Sika Reemat Reinforcement

Mixing not required. Apply Sikalastic 624 WP at the coverage rate in the AR System Guide with a 1/2 inch nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should also be backrolled. In the case of RoofPro 25 allow the first top resin layer to cure 12 hours at 70°F and 50% RH or until tack free before applying second top resin layer. On top of the complete RoofPro system additional resin layers may be applied with aggregate for slip resistance - consult Sika for recommendations. Keep clean and dry and apply additional resin layers within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika Reactivation Primer.

Sikalastic RoofPro WP System Guide with Sika Reemat			
	RoofPro 15 WP	**RoofPro 20 WP**	**RoofPro 25 WP**
Substrate	Concrete or Cementitious, metals, wood, single-ply pr bituminous stone		
Primer	Required - see Substrate Priming Guide		
Detailing	Sika Flexitape Heavy centered over seams, transitions and properly treated cracks and joints		
Reinforcement	Sika Reemat Premium embedded in base resin layer over entire surface		
Sikalastic 624 WP Base Layer	45 mils wet - 35 sf/gal.	45 mils wet - 35 sf/gal.	45 mils wet - 35 sf/gal
Sikalastic 624 WP Top Layer	30 mils wet - 53 sf/gal.	40 mils wet - 40 sf/gal.	30 mils wet - 53 sf/gal.
Sikalastic 624 WP Top Layer			30 mils wet - 53 sf/gal.
Total Film Thickness	53 mils dry	60 mils dry	75 mils dry

Wet on Wet Application with Sika Fleece Reinforcement

Mixing not required. To primed substrate apply two-thirds of the Sikalastic 624 WP specified in the WP System Guide with a 1/2 inch nap phenolic resin core roller. Immediately place specified Sika Fleece into wet resin overlapping seams a minimum of 3" along the edge and 6" end-to-end. Apply wet roller to topside with light pressure to saturate fleece from bottom and ensure air pockets are completely removed. Immediately apply all of remaining one-third of Sikalastic 624 WP resin specified in the WP System Guide to ensure even and complete fleece saturation from topside and uniform texture.

Sikalastic RoofPro WP System Guide with Sika Fleece			
	RoofPro 15 WP	**RoofPro 20 WP**	**RoofPro 25 WP**
Substrate	Concrete or Cementitious, metals, wood, single-ply pr bituminous stone		
Primer	Required - see Substrate Priming Guide		
Detailing	Sika Flexitape Heavy centered over seams, transitions and properly treated cracks and joints		
Reinforcement	Sika Fleece 120 (US)	Sika Fleece 140 (US)	Sika Fleece 170 (US)
Sikalastic 624 WP	70 mils wet - 23 sf/gal.	85 mils wet - 19 sf/gal.	105 mils wet - 15 sf/gal
Total Film Thickness	50 mils dry	60 mils dry	75 mils dry

Overburden Application

Sikalastic 624 WP membrane may be used as the waterproofing layer under a wide range of overburden materials. Depending on the overburden type, different surfacing, drainage, and protection layers may be required.

Protected Membrane Assemblies

Install Sika 420 Drain Mat over the Sikalastic 624 WP membrane prior to the installation of the extruded polystyrene insulation layer. No aggregated membrane surfacing is required.

Concrete Pavers with Pedestal Supports

Install Sika 420 Drain Mat over the Sikalastic 624 WP membrane to provide additional protection of the membrane under the pedestal supports.

Tile Adhered in a Cementitious Thin-Set Adhesive

A full aggregate broadcast surfacing is required to provide an adhesion key for the tile adhesive. Apply a supplemental 15 wet mils of Sikalastic 624 WP resin, followed by a full broadcast of 16-30 or 12-20 kiln-dried sand to refusal, typically 40-50 lbs./100 sf. Remove all loose sand once resin has cured. Do not seal the aggregated surface.

Tile in a Cementitious Setting Bed

Install Sika 720 Drain Mat over the Sikalastic 624 WP membrane prior to installation of the cementitious setting bed, which is typically 1-1/2"-3" in thickness, and which may be sloped to create positive drainage. Secure the Sika 720 Drain Mat to the Sikalastic 624 WP membrane as required to prevent shifting during setting bed installation by spot-adhering with Sikaflex 11 FC. Bi-level drains should be installed to provide drainage capability at the membrane level as well as drainage of the finished surface.

Concrete/Asphalt Pavers in a Sand Setting Bed

Install Sika 420 Drain Mat over the Sikalastic 624 WP membrane prior to installation of the sand setting bed, which is typically either graded silica sand or a mix of sand and asphalt. Secure the Sika 420 Drain Mat to the Sikalastic 624 WP membrane as required to prevent shifting during setting bed installation by spot-adhering with Sikaflex 11 FC. Bi-level drains should be installed to provide drainage capability at the membrane level as well as drainage of the finished surface.

Vegetation and Growing Media/Soil

The selection of a vegetated overburden assembly is typically project specific and specified by a qualified design professional. At a minimum, install Sika GRS Drain Mat over the Sikalastic 624 WP membrane prior to application of all other overburden components. Secure the Sika GRS Drain Mat to the Sikalastic 624 WP membrane as required to prevent shifting during vegetative overburden assembly components by spot-adhering with Sikaflex 11 FC. Bi-level drains should be installed to provide drainage capability at the membrane level as well as drainage at grade level.

Concrete Pavement

Install Sika 1000 Drain Mat over the Sikalastic 624 WP membrane prior to application of the fresh concrete. Secure the Sika 1000 Drain Mat to the Sikalastic 624 WP membrane as required to prevent shifting during concrete placement by spot-adhering with Sikaflex 11 FC. Bi-level drains should be installed to provide drainage capability at the membrane level as well as drainage of the finished surface.

Asphalt Pavement

Install Sika 1000 Drain Mat over the Sikalastic 624 WP membrane, followed by the installation of a ¼" thick asphalt protection board. Overlap the protection board at all end and side laps by 2" min. Secure the Sika 1000 Drain Mat and asphalt protection board as required to prevent shifting during asphalt pavement placement by spot-adhering with Sikaflex 11 FC. Bi-level drains should be installed to provide drainage capability at the membrane level as well as drainage of the finished surface.

Construction

Tooling and Finishing	See Above
Removal	Remove liquid resin immediately with dry cloth. Once cured, resin can be removed by mechanical means.
Over Painting	See Above
Limitations	■ To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures. ■ Minimum ambient and substrate temperature during applicaiton and curing of material is 36°F (2°C); maximum is 95°F (35°C). Surface temperatures must be no higher than 140°F (60°C). Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane resins. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it. ■ Do not apply on substrates with moisture content greater than 4% by weight, measured by Tramex Concrete Moisture Encounter meter. ■ Minimum age of concrete must be 28 days depending on curing and drying conditions. ■ Do not thin with solvents. ■ Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements. ■ Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D 4263 (Polyethylene sheet method). ■ Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems. ■ On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing or blistering may occur. ■ Do not use for indoor applications without adequate ventilation during application. ■ Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents or other means of ingress for odors and/or vapors into the building/structure during product application and cure. ■ Not recommended for direct exposure to heavy traffic; pedestrian maintenance traffic is generally acceptable aggregate surfacing is suggested. ■ Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system. ■ When applying over existing coatings or membranes compatibility and adhesion testing and subsequent approval by Technical Services is required. ■ Opening to traffic prior to cure may result in loss of aggregate or permanent staining and subsequent premature failure. ■ On grade concrete decks should not be covered with Sikalastic WP membrane systems. ■ Unvented metal pan, split/sandwich slab with encapsulated membrane and/or insulation, cinder fill decks, and lightweight insulating concrete deck overlays should not be covered with Sikalastic WP systems without additional deck evaluation and subsequent approval by Technical Services. ■ Do not subject to continuous immersion, i.e., fountains, ponds, pools, or interior of tanks. ■ Not recommended for use over ceramic tile.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic®-641 Roofing System

Liquid-applied single component fully reinforced system with fiberglass or polyester reinforcement

Description	Sikalastic-641 roofing systems combine cold applied, aliphatic, single component, moisture-triggered polyurethane resins with fiberglass mat or polyester fleece reinforcement to create a seamless membrane and flashing system. System components are: Sika or Sikalastic Primer - Select primer per substrate material in accordance with Priming Guide Sikalastic-641 - Sag and run-resistant resin used for all systems with both Reemat fiberglass and polyester fleece reinforcement Sikalastic Reemat Premium - Chopped strand fiberglass mat Sika Fleece 120, 140, 170 - Non-woven, needle-punched polyester fleece in various weights
Where to Use	■ Sikalastic RoofPro 10, 15, 20 and 25 year systems, including Sikalastic RoofPro Built Up, Direct, Plaza Deck/ PMA, and Vegetated systems for both new construction and refurbishment ■ Ideal for roofs displaying complex details and geometry or when accessibility is limited ■ Effective and cost efficient life cycle extension of existing roofs ■ Highly reflective Sikalastic-641 in White suitable for cool roofs and solar roof assemblies. ■ Suitable for use for applications such as balconies, terraces, walkways, plazas, and similar applications exposed to foot traffic when provided with a supplemental aggregated or flake surfacing.
Advantages	■ Proven technology with over 25 year track record ■ Single component - no mixing and ready to use ■ Fully reinforced with highly conformable Sika Reemat or Sika Fleece ■ Moisture triggered chemistry that is rapidly weatherproof after application ■ Low odor formulation ■ Highly elastic and crack bridging ■ Seamless and fully adhered ■ Vapor permeable ■ UV resistant and non-yellowing ■ Abrasion and chemical resistant ■ Adheres to most common construction materials when suitable primer is used.
Approvals	■ FM Approval Standard 4470 for Class 1 Roof Covers - Pending ■ Meets ASTM D7311-07: Standard Specification for Liquid-Applied, Single-Pack, Moisture-Triggered, Aliphatic Polyurethane Roofing Membrane.
Coverage	See Application Below
Packaging	5 gal. pails
Cure Mechanism	Moisture triggered
Chemical Resistance	Strong resistance to a wide range of reagents, including paraffin, gasoline, fuel oil, white spirit, acid rain, detergents and moderate solutions of acids and alkalis. Some low molecular weight alcohols can soften the material. Contact Technical Service for specific recommendations.

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	12 months in original, unopened and undamaged sealed containers
Storage Conditions	Store dry at 35-77°F (2-25°C).
Product Conditioning	Condition material to 50-77°F (10-25°C) before using for ease of application.
Colors	White, Pearl Gray, Steel Gray, Mushroom, Copper Green; custom colors available with minimum order
Chemical Base	Single component, moisture-triggered, aliphatic polyurethane
Density (all values at +23 degrees C)	11.9 lbs/gal (1.43 kg/l)
Solids Content	89.0 % by volume /92 % by weight
Flash Point	199°F (93°C)
VOC	100 g/L
Service Temperature	-22 to 176°F (-30 to 80°C) intermittent
Solar Reflectance (Initial)	61.0% (ASTM C1549)(Pearl Gray); 85.6% (ASTM C1549)(White)
SRI (Solar Reflectance Index - Initial)	72 (ASTM E1980)(Pearl Gray); 107 (ASTM E1980)(White)
Thermal Emittance	0.86 (ASTM C1371)(Pearl Gray); 0.86 (ASTM C1371)(White)

Physical Properties – Typical Values	ASTM Test Method	RoofPro 20	RoofPro 20
Reinforcement	-----	Reemat Premium	Sika Fleece 140
Breaking Strength, psi	D751 Proc. B	1030	900
Elongation to Break, %	D751	21	82
Tear Strength, lbf/in	D624	300	200
Static Puncture Resistance	D5602	>55 lbf	>55 lbf
Note: Data for other RoofPro assemblies available upon request			

Construction

How to Use

Surface Preparation

See Application below

Application

Substrate Evaluation

Concrete and cementitious substrates

New concrete shall be allowed to cure a minimum of 28 days. Concrete shall have a minimum compressive strength of 20.7 MPa (3000 psi) and exhibit a minimum tensile bond strength of 1.4 MPa (200 psi). time. Moist or sheet curing methods should be used, as opposed to the use of curing compounds, which may interfere with the bond of the membrane. Inspect the concrete, including upstands, and all areas should be hammer tested. Concrete must be suitably finished, preferably by wood float or steel pan. A power float finish is acceptable where the surface is prepared to avoid laitance (a tamped finish is not acceptable). The surface finish must be uniform and free from defects such as laitance, voids or honeycombing.

Gypsum and Cement based sheathing

Sheathing boards shall be clean, dry and dust free, and shall be properly secured to the structure. Loose, damaged, or contaminated boards shall be removed and replaced.

Brick and stone

Mortar joints must be sound and preferably flush pointed.

Asphalt

Asphalt contains volatiles which can cause bleeding and slight non-detrimental staining. The asphalt must be carefully assessed for moisture and/or air entrapment, grade and surface finish.

Bituminous felt

Ensure that bituminous felt is firmly adhered or mechanically fixed to the substrate. Bituminous felt shall not contain badly degraded areas.

Bituminous coatings

Bituminous coatings shall not have sticky or mobile surfaces, volatile mastic coatings, or old coal tar coatings.

Metals

Metals must be in sound condition.

Wooden substrates

Plywood and timber based roof decks must be in good condition, firmly adhered and mechanically fixed. All plywood should be identified as conforming to PS 1 for construction and industrial plywood by grade, APA (American Plywood Association) trademark, or equivalent. For maximum smoothness, EXT Type APA, Grade A-C should be used, and the “A” side should be positioned to receive the Sikalastic resin.

Plywood decks to receive resin directly shall be at least 1/2 inch thick and attached and supported according to APA guidelines, using only non-rusting screw, spiral or coated nail type fasteners. A good practice would be to recess or counter sink fasteners 1/8 to 1/4 inch and fill with Sikaflex sealant. Suitable edge support to prevent differential deflection between panels shall be provided. Panel edges shall be tongue and groove or supported on solid blocking. Space panels 1/8 to 3/16 inch at panel ends.

Paints and coatings

Ensure the existing material is sound and firmly adhered.

Existing Sikalastic RoofPro System

The existing Sikalastic RoofPro System shall be soundly adhered to the substrate.

Surface Preparation

Concrete and cementitious substrates

Cementitious or mineral based substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and to achieve an open textured surface (CSP 3-5 per ICRI guidelines). Loose friable material and weak concrete must be completely removed and surface defects such as blowholes and voids must be fully exposed. The amount of embedment coat required may increase over rough or highly porous surfaces.

Repairs to the substrate, filling of joints, blowholes/voids and surface levelling must be carried out. Consult Sika for product recommendations based on project requirements. High spots must be removed by grinding or similar method.

Outgassing is a naturally occurring phenomenon of concrete that can produce pinholes in liquid applied materials. The concrete must be carefully assessed for moisture content, air entrapment, and surface finish prior to any roofing work. Particular requirements for priming must also be considered. Installing the primer and membrane either when the concrete temperature is falling or stable can reduce outgassing. It is generally beneficial, therefore, to apply the primer and embedment coat in the late afternoon or evening.

Gypsum and Cement based sheathing

Sheathing boards shall be clean, dry and dust free. Secure loose boards if in sound condition. Damaged or contaminated boards shall be removed and replaced.

Brick and stone

Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required.

Asphalt

Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required. All major cracks should be sealed to allow continuity of the Sikalastic RoofPro system.

Bituminous felt

Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required. Treat blisters by star cutting and removing any underlying water. Allow to dry and re-adhere using suitable adhesive.

Bituminous coatings

Remove any loose or degraded coatings.

Metals

Ferrous metals should be thoroughly cleaned by grinding or blast cleaning prior to priming (SSPC-SP3 to near-white metal) .

Non-ferrous metals are prepared by removing any deposits of dust and oxidation and abrading to bright metal. Wire brushing can be used for soft metal such as lead. The surface must be clean and free from grease which, if present, must be removed with a solvent wipe or wash with detergent, rinse and dry.

Wooden substrates

Timber and timber based roof decks require additional reinforcement such as the installation of plywood, approved insulation or cover board. Small timber protrusions and suitable decks may be treated directly, provided that the timber is of exterior quality, e.g. plywood. Fill joints flush with Sikaflex sealant.

Paints/Coatings

Remove any loose or degraded coatings. Ensure the surface is clean and free from grease.

Sikaplan®/Sarnafil® membranes

Clean membranes with Sarna Cleaner (PVC membranes) and Sarnafil® T Clean (TPO membranes) prior to application of primer.

Existing Sikalastic RoofPro Systems

Clean the membrane using a water jet at approximately 140bar (2000 psi) and biodegradeable non-sudsing detergent with clean water rinse. Allow to dry.

Application

Priming

Refer to Priming Guide to select primer for properly evaluated and prepared substrate. Refer to separate primer Product Data Sheet for application methods, coverage rates, cure times and recoat windows. Always allow primer to cure thoroughly before applying detail or base resin layer.

Sikalastic RoofPro Priming Guide

Substrate	Remark	CONCRETE PRIMER	DTE EPOXY Primer	EP PRIMER/ SEALER	Consult Sika
CONCRETE	(1)	▲	▲	▲	
LIGHTWEIGHT STRUCTURAL CONCRETE	(1)		▲		▲
CEMENT, GYPSUM BASED ROOF BOARDS		▲		▲	
BRICK, STONE	(3)			▲	▲
BITUMINOUS SUBSTRATE					
-asphalt, bituminous felts, bituminous coatings, granulated or smooth SBS & APP cap sheets	(2,3)			▲	
SINGLE PLY ROOFING MEMBRANES					
-HYPALON, TPO, EPDM, PVC	(3)				▲
ROOF TILES (UNGLAZED)	(3,4)			▲	▲
FIBERGLASS	(3)			▲	▲
POLYURETHANE FOAM- sprayed or slab stock				▲	
METALS					
-aluminum, galvanized, cast iron, copper, lead, brass, stainless steel, steel, zinc	(3)			▲	
PRE-COATED METAL	(3)				▲
PAINTS					

- paints & coatings	(3)			▲	
- aluminized solar reflective coatings	(3)			▲	
WOOD - TIMBER & PLYWOOD	(5)			▲	▲

(1) New cementitious substrates must be Portland base and be cured min. 14 days.

(2) The presence of volatiles may cause discoloration of Sikalastic if not properly primed.

(3) Surface evaluation and field adhesion testing.

(4) Glazed tile consult Sika.

(5) Pressure treated lumber consult Sika

Construction

Detailing

Non-structural cracks up to 1/16 inch - Detail application not necessary. Apply embedment/base resin layer per below.

Non-structural cracks between 1/16 inch and 1/4 inch - Rout and seal with Sikaflex sealant. Apply 40-45 mil resin layer embedded with 3 inch Sika Flexitape Heavy centered over crack. Apply embedment/base resin layer per below.

Cracks and joints between 1/4 inch and 1 inch - Rout and seal with Sikaflex sealant. Apply bond breaker tape sufficient to span width of crack or joint followed by 40-45 mil resin layer embedded with 6 inch Sika Flexitape Heavy centered over crack or joint. Apply embedment/base resin layer by terminating Sika Reemat/Fleece at edges of crack or joint overlapping Sika Flexitape Heavy a minimum of 2 inches on both sides.

Joints greater than 1 inch - Treat as expansion joint. Consult Sika for recommendations.

Metal seams and plywood/coverboard joints- Apply 40-45 mil resin layer embedded with 3 or 6 inch Sika Flexitape Heavy centered over seam. Apply embedment/ base resin layer per below.

Transitions between dissimilar materials - Apply 40-45 mil resin layer embedded with Sika Flexitape Heavy centered over edge. Apply embedment/ base resin layer per below.

Embedment/Base Resin Layer with Sika Reemat Reinforcement

Mixing not required. Apply Sikalastic-641 at the coverage rate in the RoofPro System Guide with a 1/2 inch nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should be backrolled prior to embedding Sika Reemat. Place Sika Reemat in wet base resin layer overlapping seams a minimum of 2 inches (place frayed edge over cut edge of roll) and apply wet roller to topside to saturate completely. After approximately 5 minutes the binder will begin to dissolve allowing the fiber strands to conform to irregular surfaces. Do not over work once the fibers have conformed to the substrate. Allow to cure 12 hours at 70 degrees F and 50 % RH or until tack free before top resin layer. Keep clean and dry and apply top resin layer within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika Reactivation Primer.

Top Resin Layer with Sika Reemat Reinforcement

Mixing not required. Apply Sikalastic-641 at the coverage rate in the RoofPro System Guide with a 1/2 inch nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should also be backrolled. In the case of RoofPro 25 allow the first top resin layer to cure 12 hours at 70 degrees F and 50% RH or until tack free before applying second top resin layer. On top of the complete RoofPro system additional resin layers may be applied with aggregate for slip resistance - consult Sika for recommendations. Keep clean and dry and apply additional resin layers within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika Reactivation Primer.

Sikalastic RoofPro-641 System Guide with Sika Reemat				
	RoofPro 10	RoofPro 15	RoofPro 20	RoofPro 25
Substrates	Concrete or cementitious, metals, woods, single-ply or bituminous, stone			
Primer	Required - see Substrate Priming Guide			
Detailing	Sika Flexitape Heavy centered over seams, transistions and properly treated cracks and joints			
Reinforcement	Sika Reemat Standard	Sika Reemat Premium embedded in base resin layer over entire surface		
Sikalastic-641 Base Layer	30 mils wet - 53 sf/gal.	50 mils wet - 32 sf/gal.	50 mils wet - 32 sf/gal.	50 mils wet- 32 sf/gal.
Sikalastic-641 Top Layer	30 mils wet - 53 sf/gal.	20 mils wet - 80 sf/gal.	30 mils wet - 53 sf/gal.	23 mils wet - 69 sf/gal
Sikalastic-641 Top Layer				23 mils wet - 69 sf/gal.
Total Film Thickness	53 mils dry	62 mils dry	71 mils dry	85 mils dry
Note: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.				

Wet on Wet Application with Sika Fleece Reinforcement

Mixing not required. To primed substrate apply two-thirds of the Sikalastic-641 specified in the RoofPro System Guide with a 1/2 inch nap phenolic resin core roller. Immediately place specified Sika Fleece into wet resin overlapping seams a minimum of 3" along the edge and 6" end-to-end. Apply wet roller to topside with light pressure to saturate fleece from bottom and ensure air pockets are completely removed. Immediately apply all of remaining one-third of Sikalastic 641 resin specified in the RoofPro System Guide to ensure even and complete fleece saturation from topside and uniform texture.

Construction

Sikalastic RoofPro 641 System Guide with Fleece			
	RoofPro 15	RoofPro 20	RoofPro 25
Substrates	Concrete or cementitious, metals, woods, single-ply or bituminous, stone		
Primer	Required - see Substrate Priming Guide		
Detailing	Sika Flexitape Heavy centered over seams, transistions and properly treated cracks and joints		
Reinforcement	Sika Fleece 120 (US)	Sika Fleece 140 (US)	Sika Fleece 170 (US)
Sikalastic 641	70 mils wet - 25 sf/gal.	80 mils wet - 20 sf/gal.	95 mils wet- 16 sf/gal.
Total Film Thickness	62 mils dry	71 mils dry	84 mils dry
Note: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.			

Aggregated or Flake Surfacing

Supplemental aggregate and flake surfacing is required for all applications that will experience direct foot traffic such as balconies, terraces, walkways, and plazas, and is recommended for areas that experience maintenance foot traffic. Supplemental aggregate surfacing is applied in a supplemental resin layer after the Sikalastic membrane has been installed and is not applied into the roofing/waterproofing membrane itself.

Seed and Back Roll Option

The Seed and Backroll option is primarily intended for use for maintenance traffic-type applications where enhanced slip resistance is required.

Apply Sikalastic 641 Lo-VOC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet seed with kiln dried, iron free aggregate. Back roll the surface to encapsulate the aggregate in the Sikalastic resin.

Full Broadcast and Seal Option

The Full Broadcast and Seal option is intended for use for applications where both enhanced slip resistance and physical protection of the roofing membrane is required.

Apply Sikalastic 641 Lo-VOC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet broadcast to rejection (full broadcast, beach) with kiln dried, iron free aggregate. Remove excess aggregate after cure. Seal with an additional coat of Sikalastic resin.

Decorative Quartz and Decorative Flake Options

The Decorative Quartz and Decorative Flake options are intended for use for applications where enhanced slip resistance, physical protection of the roofing membrane, and a decorative element is required.

Apply Sikalastic 641 Lo-VOC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet broadcast to rejection (full broadcast, beach) with colored quartz aggregate or synthetic flakes. Remove excess aggregate/flakes after cure. Seal with a coat of Sikalastic 748 PA at 15 mils wet film thickness.

Decorative flakes can also be seeded at less than full broadcast quantities. Remove excess aggregate/flakes after cure. Seal with a coat of Sikalastic 748 PA at 15 mils wet film thickness.

Aggregate Selection

Use clean, rounded or semi-angular, oven dried quartz sand with a minimum hardness of 6.5 per the Moh's scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. The following size gradations are recommended:

- 16-30 or 20-40 mesh for pedestrian traffic systems
- Sika DecoQuartz Blends or equivalent for Decorative Quartz systems

Flake Selection

Use virgin vinyl flakes, supplied in pre-packaged bags and free from impurities. The following is recommended:

- Sika DecoFlake Blends or equivalent for Decorative Flake systems

Tooling & Finishing See Above

Removal Remove liquid resin immediately with dry cloth. Once cured, resin can only be removed by mechanical means.

Over Painting See Above.

Limitations

- To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures.
- Minimum ambient and substrate temperature during application and curing of material is 36 degrees F (2°C); maximum is 95°F (35°C). Surface temperatures must be no higher than 140°F (60°C). Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane resins. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it.
- Do not apply on substrates with moisture content greater than 4% by weight, measured by Tramex Concrete Moisture Encounter meter.

- Minimum age of concrete must be 28 days depending on curing and drying conditions.
- Do not thin with solvents.
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D 4263 (Polyethylene sheet method).
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems.
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing or blistering may occur.
- Use sunglasses with UV filter when applying highly reflective Sikalastic-641 White.
- Do not use for indoor applications unless sufficient air flow and ventilation are provided to prevent odors and/or vapors from leaving the immediate work area.
- Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents or other means of ingress for odors and/or vapors into the building/structure during product application and cure.
- Not recommended for direct exposure to heavy or frequent foot traffic.
- Do not apply cementitious products, such as tile mortar directly onto Sikalastic-641. See Sikalastic 624 WP Product Data Sheet.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- When applying over existing coatings or membranes compatibility and adhesion testing and subsequent ap proval by Technical Services is required.
- Opening to traffic prior to cure may result in loss of aggregate or permanent staining and subsequent premature failure.
- On grade concrete decks should not be covered with Sikalastic RoofPro membrane systems.
- Unvented metal pan, split/sandwich slab with encapsulated membrane and/or insulation, cinder fill decks, and lightweight insulating concrete deck overlays should not be covered with Sikalastic RoofPro systems without additional deck evaluation and subsequent approval by Technical Services.
- Do not subject to continuous immersion, i.e., fountains, ponds, pools, or interior of tanks.
- Not recommended for use over ceramic tile.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com/ or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® 641 Lo-VOC Roofing System

Liquid applied single component fully reinforced Lo-VOC, low-odor system with fiberglass or polyester reinforcement

Description

Sikalastic 641 Lo-VOC roofing systems combine cold applied, aliphatic, single component, moisture-triggered polyurethane resins with fiberglass mat or polyester fleece reinforcement to create a seamless membrane and flashing system. System components are:
Sika or Sikalastic Primer - Select primer per substrate material in accordance with Priming Guide
Sikalastic 641 Lo-VOC - Resin used for all systems with polyester fleece reinforcement
Sika Reemat Premium - Chopped strand fiberglass mat
Sika Fleece 120, 140, 170 - Non-woven, needle-punched polyester fleece in various weights

Where to Use

- Sikalastic RoofPro 10, 15, 20 and 25 year systems, including Sikalastic RoofPro Built Up, Direct, Plaza Deck/PMA, and Vegetated systems for both new construction and refurbishment
- Ideal for roofs displaying complex details and geometry or when accessibility is limited
- Effective and cost efficient life cycle extension of existing roofs
- Highly reflective Sikalastic 641 Lo-VOC in White (RAL 9016) suitable for cool roofs and solar roof assemblies.
- Suitable for use for applications such as balconies, terraces, walkways, plazas, and similar applications exposed to foot traffic when provided with a supplemental aggregated or flake surfacing.

Advantages

- Proven technology with over 25 year track record
- Single component - no mixing and ready to use
- Fully reinforced with highly conformable Sika Reemat or Sika Fleece
- Moisture triggered chemistry that is rapidly weatherproof after application
- Low odor formulation
- Highly elastic and crack bridging
- Seamless and fully adhered
- Vapor permeable
- UV resistant and non-yellowing
- Abrasion and chemical resistant
- Adheres to most common construction materials when suitable primer is used.

Approvals

- FM Approval Standard 4470 for Class 1 Roof Covers - Pending
- Meets ASTM D7311-07: Standard Specification for Liquid-Applied, Single-Pack, Moisture-Triggered, Aliphatic Polyurethane Roofing Membrane.

Coverage

See Application Below

Packaging

5 gal. pails

Cure Mechanism

Moisture triggered

Chemical Resistance

Strong resistance to a wide range of reagents, including paraffin, gasoline, fuel oil, white spirit, acid rain, detergents and moderate solutions of acids and alkalis. Some low molecular weight alcohols can soften the material. Contact Technical Service for specific recommendations.

Typical Data *(Material and curing conditions @ 73°F and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 12 months in original, unopened and undamaged sealed containers
Storage Conditions Store dry at 35-77°F (2-25°C).
Product Conditioning Condition material to 50-77°F (10-25°C) before using for ease of application.
Colors 641 Lo-VOC: White, Pearl Gray, Steel Gray, Mushroom, Copper Green; custom colors available with minimum order

Chemical Base Single component, moisture-triggered, aliphatic polyurethane
Density (all values at +23 degrees C)
641 Lo-VOC 11.9 lbs/gal (1.43 kg/l)
Solids Content
641 Lo-VOC 89.0 % by volume /92 % by weight
Flash Point
641 Lo-VOC 199°F (93°C)
VOC
641 Lo-VOC 38 g/L (1.43 kg/L)
Service Temperature -22 to 176°F (-30 to 80°C) intermittent
641 Lo-VOC White (RAL 9016)
Solar Reflectance (Initial) 85.8% (ASTM C1549)(White)
SRI (Solar Reflectance Index - Initial) 108 (ASTM E1980)(White)
Thermal Emittance **0.86 (ASTM C1371)(White)**

Physical Properties – Typical Values	ASTM Test Method	RoofPro 20	RoofPro 20
Reinforcement	-----	Reemat Premium	Sika Fleece 140
Breaking Strength, psi	D751 Proc. B	1030	900
Elongation to Break, %	D751	21	82
Tear Strength, lbf/in	D624	300	200
Static Puncture Resistance	D5602	>55 lbf	>55 lbf
Note: Data for other RoofPro assemblies available upon request			

Construction

How to Use

Surface Preparation See Application below

Application

Substrate Evaluation

Concrete and cementitious substrates

New concrete shall be allowed to cure a minimum of 28 days. Concrete shall have a minimum compressive strength of 20.7 MPa (3000 psi) and exhibit a minimum tensile bond strength of 1.4 MPa (200 psi). time. Moist or sheet curing methods should be used, as opposed to the use of curing compounds, which may interfere with the bond of the membrane. Inspect the concrete, including upstands, and all areas should be hammer tested. Concrete must be suitably finished, preferably by wood float or steel pan. A power float finish is acceptable where the surface is prepared to avoid laitance (a tamped finish is not acceptable). The surface finish must be uniform and free from defects such as laitance, voids or honeycombing.

Gypsum and Cement based sheathing

Sheathing boards shall be clean, dry and dust free, and shall be properly secured to the structure. Loose, damaged, or contaminated boards shall be removed and replaced.

Brick and stone

Mortar joints must be sound and preferably flush pointed.

Asphalt

Asphalt contains volatiles which can cause bleeding and slight non-detrimental staining. The asphalt must be carefully assessed for moisture and/or air entrapment, grade and surface finish.

Bituminous felt

Ensure that bituminous felt is firmly adhered or mechanically fixed to the substrate. Bituminous felt shall not contain badly degraded areas.

Bituminous coatings

Bituminous coatings shall not have sticky or mobile surfaces, volatile mastic coatings, or old coal tar coatings.

Metals

Metals must be in sound condition.

Wooden substrates

Plywood and timber based roof decks must be in good condition, firmly adhered and mechanically fixed. All plywood should be identified as conforming to PS 1 for construction and industrial plywood by grade, APA (American Plywood Association) trademark, or equivalent. For maximum smoothness, EXT Type APA, Grade A-C should be used, and the “A” side should be positioned to receive the Sikalastic resin.

Plywood decks to receive resin directly shall be at least 1/2 inch thick and attached and supported according to APA guidelines, using only non-rusting screw, spiral or coated nail type fasteners. A good practice would be to recess or counter sink fasteners 1/8 to 1/4 inch and fill with Sikaflex sealant. Suitable edge support to prevent differential deflection between panels shall be provided. Panel edges shall be tongue and groove or supported on solid blocking. Space panels 1/8 to 3/16 inch at panel ends.

Paints and coatings

Ensure the existing material is sound and firmly adhered.

Existing Sikalastic RoofPro System

The existing Sikalastic RoofPro System shall be soundly adhered to the substrate.

Surface Preparation

Concrete and cementitious substrates

Cementitious or mineral based substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and to achieve an open textured surface (CSP 3-5 per ICRI guidelines). Loose friable material and weak concrete must be completely removed and surface defects such as blowholes and voids must be fully exposed. The amount of embedment coat required may increase over rough or highly porous surfaces.

Repairs to the substrate, filling of joints, blowholes/voids and surface levelling must be carried out. Consult Sika for product recommendations based on project requirements. High spots must be removed by grinding or similar method.

Outgassing is a naturally occurring phenomenon of concrete that can produce pinholes in liquid applied materials. The concrete must be carefully assessed for moisture content, air entrapment, and surface finish prior to any roofing work. Particular requirements for priming must also be considered. Installing the primer and membrane either when the concrete temperature is falling or stable can reduce outgassing. It is generally beneficial, therefore, to apply the primer and embedment coat in the late afternoon or evening.

Gypsum and Cement based sheathing

Sheathing boards shall be clean, dry and dust free. Secure loose boards if in sound condition. Damaged or contaminated boards shall be removed and replaced.

Brick and stone

Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required.

Asphalt

Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required. All major cracks should be sealed to allow continuity of the Sikalastic RoofPro system.

Bituminous felt

Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required. Treat blisters by star cutting and removing any underlying water. Allow to dry and re-adhere using suitable adhesive.

Bituminous coatings

Remove any loose or degraded coatings.

Metals

Ferrous metals should be thoroughly cleaned by grinding or blast cleaning prior to priming (SSPC-SP3 to near-white metal) .

Non-ferrous metals are prepared by removing any deposits of dust and oxidation and abrading to bright metal. Wire brushing can be used for soft metal such as lead. The surface must be clean and free from grease which, if present, must be removed with a solvent wipe or wash with detergent, rinse and dry.

Wooden substrates

Timber and timber based roof decks require additional reinforcement such as the installation of plywood, approved insulation or cover board. Small timber protrusions and suitable decks may be treated directly, provided that the timber is of exterior quality, e.g. plywood. Fill joints flush with Sikaflex sealant.

Paints/Coatings

Remove any loose or degraded coatings. Ensure the surface is clean and free from grease.

Sikaplan®/Sarnafil® membranes

Clean membranes with Sarna Cleaner (PVC membranes) and Sarnafil® T Clean (TPO membranes) prior to application of primer.

Existing Sikalastic RoofPro Systems

Clean the membrane using a water jet at approximately 140bar (2000 psi) and biodegradeable non-sudsing detergent with clean water rinse. Allow to dry.

Application

Priming

Refer to Priming Guide to select primer for properly evaluated and prepared substrate. Refer to separate primer Product Data Sheet for application methods, coverage rates, cure times and recoat windows. Always allow primer to cure thoroughly before applying detail or base resin layer.

Sikalastic RoofPro Priming Guide

Substrate	Remark	CONCRETE PRIMER	DTE EPOXY Primer	EP PRIMER/ SEALER	Consult Sika
CONCRETE	(1)	▲	▲	▲	
LIGHTWEIGHT STRUCTURAL CONCRETE	(1)		▲		▲
CEMENT, GYPSUM BASED ROOF BOARDS		▲		▲	
BRICK, STONE	(3)			▲	▲
BITUMINOUS SUBSTRATE					
-asphalt, bituminous felts, bituminous coatings, granulated or smooth SBS & APP cap sheets	(2,3)			▲	
SINGLE PLY ROOFING MEMBRANES					
-HYPALON, TPO, EPDM, PVC	(3)				▲
ROOF TILES (UNGLAZED)	(3,4)			▲	▲
FIBERGLASS	(3)			▲	▲
POLYURETHANE FOAM- sprayed or slab stock				▲	
METALS					
-aluminum, galvanized, cast iron, copper, lead, brass, stainless steel, steel, zinc	(3)			▲	

PRE-COATED METAL	(3)				▲
PAINTS					
- paints & coatings	(3)			▲	
- aluminized solar reflective coatings	(3)			▲	
WOOD - TIMBER & PLYWOOD	(5)			▲	▲

(1) New cementitious substrates must be Portland base and be cured min. 14 days.
(2) The presence of volatiles may cause discoloration of Sikalastic if not properly primed.
(3) Surface evaluation and field adhesion testing.
(4) Glazed tile consult Sika.
(5) Pressure treated lumber consult Sika

Detailing

Non-structural cracks up to 1/16 inch - Detail application not necessary. Apply embedment/base resin layer per below.

Non-structural cracks between 1/16 inch and 1/4 inch - Rout and seal with Sikaflex sealant. Apply 40-45 mil resin layer embedded with 3 inch Sika Flexitape Heavy centered over crack. Apply embedment/base resin layer per below.

Cracks and joints between 1/4 inch and 1 inch - Rout and seal with Sikaflex sealant. Apply bond breaker tape sufficient to span width of crack or joint followed by 40-45 mil resin layer embedded with 6 inch Sika Flexitape Heavy centered over crack or joint. Apply embedment/base resin layer by terminating Sika Reemat or Sika Fleece at edges of crack or joint overlapping Sika Flexitape Heavy a minimum of 2 inches on both sides.

Joints greater than 1 inch - Treat as expansion joint. Consult Sika for recommendations.

Metal seams and plywood/coverboard joints - Apply 40-45 mil resin layer embedded with 3 or 6 inch Sika Flexitape Heavy centered over seam. Apply embedment resin layer per below.

Transitions between dissimilar materials - Apply 40-45 mil resin layer embedded with Sika Flexitape Heavy centered over edge. Apply embedment resin layer per below.

Embedment/Base Resin Layer with Sika Reemat Reinforcement

Mixing not required. Apply Sikalastic 641 Lo-VOC per RoofPro System Guide at the coverage rate in the RoofPro System Guide with a 1/2 inch nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should be backrolled prior to embedding Sika Reemat. Place Sika Reemat in wet base resin layer overlapping seams a minimum of 2 inches (place frayed edge over cut edge of roll) and apply wet roller to topside to saturate completely. After approximately 5 minutes the binder will begin to dissolve allowing the fiber strands to conform to irregular surfaces. Do not over work once the fibers have conformed to the substrate.Allow to cure 12 hours at 70 degrees F and 50 % RH or until tack free before top resin layer. Keep clean and dry and apply top resin layer within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika Reactivation Primer.

Top Resin Layer with Sika Reemat Reinforcement

Mixing not required. Apply Sikalastic 641 Lo-VOC at the coverage rate in the RoofPro System Guide with a 1/2 inch nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should also be backrolled. In the case of RoofPro 25 allow the first top resin layer to cure 12 hours at 70 degrees F and 50% RH or until tack free before applying second top resin layer. On top of the complete RoofPro system additional resin layers may be applied with aggregate for slip resistance - consult Sika for recommendations. Keep clean and dry and apply additional resin layers within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika Reactivation Primer.

Sikalastic RoofPro 641 Lo-VOC System Guide with Sika Reemat				
	RoofPro 10	**RooftPro 15**	**RoofPro 20**	**RoofPro 25**
Substrates	Concrete or cementitious, metals, woods, single-ply or bituminous, stone			
Primer	Required - see Substrate Priming Guide			
Detailing	Sika Flexitape Heavy centered over seams, transistions and properly treated cracks and joints			
Reinforcement	Sika Reemat Standard	Sika Reemat Premium embedded in base resin layer over entire surface		
Sikalastic 641 Lo-VOC Base Layer	30 mils wet - 53 sf/gal.	50 mils wet - 32 sf/gal.	50 mils wet- 32 sf/gal.	50 mils wet - 32 sf/gal.
Sikalastic 641 Lo-VOC Top Layer	30 mils wet - 53 sf/gal.	20 mils wet - 80 sf/gal.	30 mils wet - 53 sf/gal.	23 mils wet - 69 sf/gal.
Sikalastic 641 Lo-VOC Top Layer				23 mils wet - 69 sf/gal.
Total Film Thickness	53mils dry	62 mils dry	71 mils dry	85 mils dry
NOTE: Coverage rates provided are optimal - coverage rates will vary depending on temperature, surface roughness, porosity, and application technique.				

Wet on Wet Application with Sika Fleece Reinforcement

Mixing not required. To primed substrate apply two-thirds of the Sikalastic 641 Lo-VOC specified in the RoofPro System Guide with a 1/2 inch nap phenolic resin core roller. Immediately place specified Sika Fleece into wet resin overlapping seams a minimum of 3" along the edge and 6" end-to-end. Apply wet roller to topside with light pressure to saturate fleece from bottom and ensure air pockets are completely removed. Immediately apply all of remaining one-third of Sikalastic 641 Lo-VOC resin specified in the RoofPro System Guide to ensure even and complete fleece saturation from topside and uniform texture.

Sikalastic RoofPro 641 Lo-VOC System Guide with Sika Fleece			
	RoofPro 15	**RooftPro 20**	**RoofPro 25**
Substrates	Concrete or cementitious, metals, woods, single-ply or bituminous, stone		
Primer	Required - see Substrate Priming Guide		
Detailing	Sika Flexitape Heavy centered over seams, transistions and properly treated cracks and joints		
Reinforcement	Sika Fleece 120 (US)	Sika Fleece 140 (US)	Sika Fleece 170 (US)
Sikalastic 641 Lo-VOC	70 mils wet - 25 sf/gal.	80 mils wet - 20 sf/gal.	95 mils wet- 16 sf/gal.
Total Film Thickness	62 mils dry	71 mils dry	84 mils dry
NOTE: Coverage rates provided are optimal - coverage rates will vary depending on temperature, surface roughness, porosity, and application techniques.			

Aggregated or Flake Surfacing

Supplemental aggregate and flake surfacing is required for all applications that will experience direct foot traffic such as balconies, terraces, walkways, and plazas, and is recommended for areas that experience maintenance foot traffic. Supplemental aggregate surfacing is applied in a supplemental resin layer after the Sikalastic membrane has been installed and is not applied into the roofing/waterproofing membrane itself.

Seed and Back Roll Option

The Seed and Backroll option is primarily intended for use for maintenance traffic-type applications where enhanced slip resistance is required.

Apply Sikalastic 641 Lo-VOC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet seed with kiln dried, iron free aggregate. Back roll the surface to encapsulate the aggregate in the Sikalastic resin.

Full Broadcast and Seal Option

The Full Broadcast and Seal option is intended for use for applications where both enhanced slip resistance and physical protection of the roofing membrane is required.

Apply Sikalastic 641 Lo-VOC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet broadcast to rejection (full broadcast, beach) with kiln dried, iron free aggregate. Remove excess aggregate after cure. Seal with an additional coat of Sikalastic resin.

Decorative Quartz and Decorative Flake Options

The Decorative Quartz and Decorative Flake options are intended for use for applications where enhanced slip resistance, physical protection of the roofing membrane, and a decorative element is required.

Apply Sikalastic 641 Lo-VOC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet broadcast to rejection (full broadcast, beach) with colored quartz aggregate or synthetic flakes. Remove excess aggregate/flakes after cure. Seal with a coat of Sikalastic 748 PA at 15 mils wet film thickness.

Decorative flakes can also be seeded at less than full broadcast quantities. Remove excess aggregate/flakes after cure. Seal with a coat of Sikalastic 748 PA at 15 mils wet film thickness.

Aggregate Selection

Use clean, rounded or semi-angular, oven dried quartz sand with a minimum hardness of 6.5 per the Moh's scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. The following size gradations are recommended:

- 16-30 or 20-40 mesh for pedestrian traffic systems
- Sika DecoQuartz Blends or equivalent for Decorative Quartz systems

Flake Selection

Use virgin vinyl flakes, supplied in pre-packaged bags and free from impurities. The following is recommended:

- Sika DecoFlake Blends or equivalent for Decorative Flake systems

Tooling & Finishing	See Above
Removal	Remove liquid resin immediately with dry cloth. Once cured, resin can only be removed by mechanical means.
Over Painting	See Above.
Limitations	■ To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures. ■ Minimum ambient and substrate temperature during application and curing of material is 36 degrees F (2°C); maximum is 95°F (35°C). Surface temperatures must be no higher than 140°F (60°C). Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane resins. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it. ■ Do not apply on substrates with moisture content greater than 4% by weight, measured by Tramex Concrete Moisture Encounter meter.

Construction

- Minimum age of concrete must be 28 days depending on curing and drying conditions.
- Do not thin with solvents.
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect material with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D 4263 (Polyethylene sheet method).
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems.
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing or blistering may occur.
- Use sunglasses with UV filter when applying highly reflective Sikalastic 641 Lo-VOC White (RAL 9016).
- Do not use for indoor applications unless sufficient air flow and ventilation are provided to prevent odors and/or vapors from leaving the immediate work area.
- Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents or other means of ingress for odors and/or vapors into the building/structure during product application and cure.
- Not recommended for direct exposure to heavy or frequent foot traffic.
- Do not apply cementitious products, such as tile mortar directly onto Sikalastic 641 Lo-VOC. See Sikalastic 624 WP Product Data Sheet.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- When applying over existing coatings or membranes compatibility and adhesion testing and subsequent ap proval by Technical Services is required.
- Opening to traffic prior to cure may result in loss of aggregate or permanent staining and subsequent premature failure.
- On grade concrete decks should not be covered with Sikalastic RoofPro membrane systems.
- Unvented metal pan, split/sandwich slab with encapsulated membrane and/or insulation, cinder fill decks, and lightweight insulating concrete deck overlays should not be covered with Sikalastic RoofPro systems without additional deck evaluation and subsequent approval by Technical Services.
- Do not subject to continuous immersion, i.e., fountains, ponds, pools, or interior of tanks.
- Not recommended for use over ceramic tile.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic®-600 Accelerator

Description	Sikalastic®-600 Accelerator is a single component, low viscosity, accelerating agent that enhances the moisture-triggered curing characteristics of Sikalastic® 600-series saturating resins for roofing and waterproofing applications.
Where to Use	Suitable for use with all Sikalastic® 600-series saturating resins
Advantages	■ Reduces cure time of single component Sikalastic® 600-series saturating resins ■ Allows more rapid return to service ■ Avoids project delays due to lower application temperatures
Packaging	4 oz bottles (6 bottles per carton)
Coverage	1 4-oz. bottle per 5 gal. pail of resin
Cure Mechanism	Accelerates moisture-triggered cure

Application

Mixing	Thoroughly mix Sikalastic®-600 Accelerator into Sikalastic resin using a low-speed (400-600 rpm) drill with mechanical mixer (Jiffy) at slow slow speed until a homogenous mixture and uniform color is obtained (typically 1 minute). Use care not to allow the entrapment of air into the mixture.
Removal	Remove liquid accelerator immediately with dry cloth. Once cured, accelerator can only be removed by mechanical means.
Limitations	■ Precautions must be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during resin application and cure. ■ Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.

Typical Data (Material and curing conditions @ 75°F (24°C) and 50% RH)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AN EQUIPMENT TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original, unopened containers.
Storage	Store dry at 40°-95°F (4°-35°C)
Product Conditioning	Condition material to 65-85 °F (18-30 °C) before using.
Color	Clear
Mixed Resin Pot Life	45 minutes
Volume Mixing Ratio-Accelerator to Resin	1:160 (0.625%)
Viscosity	100 +/- 50 cps
Specific Gravit	0.87
VOCs (ASTM D-2369-81)	0 g/L.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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Lyndhurst, NJ 07071
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Quebec H9R 4A9
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C.P. 76920
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Fax: 52 442 2250537

Construction

Sikalastic® Clearglaze (Decothane® Clearglaze)

Water-based metal primer

Description
Sikalastic Clearglaze is a clear aliphatic, polycarbonate polyurethane coating which forms an effective barrier to water penetration and the ingress of atmospheric chemicals. Its transparent finish renders it suitable for applications where it is desirable to retain the appearance of the underlying substrate. It is particularly suitable for protecting porous stone, decorative aggregate panels and brick work against water penetration and subsequent freeze/thaw damage. In addition, it provides an effective barrier to carbon dioxide diffusion, making it ideal for protecting reinforced concrete against carbonation.

Sikalastic Clearglaze has a high solids formulation which uses moisture to trigger the curing process but, unlike conventional moisture cured systems, will not foam when excess moisture is present. Consequently, it will continue to cure normally, even in wet conditions and therefore helps to keep contract time to a minimum. The cured membrane enhances natural substrate colors producing a “wet look” finish which will not discolor with age or prolonged UV exposure.

Sikalastic Clearglaze is also suitable for use as a waterproof, anti-shatter coating over glass and roof lights. Combining toughness with excellent adhesion, the coating will prevent glass fragments from splintering in the event of an impact or explosion.

TECHNICAL DATA
RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODSAND AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, ACTUAL SITE CONDITIONS, AND CURING CONDITIONS.

Water vapor permeability
BS. 3177 (0-75%RH)
9.02 g./m²/day at 24 mils or 1308 psi
0.768 Perms

Impact resistance
BS.3900: Part E3.
Withstands 5mm or .20 inch indentation without damage to film.

g lass shatter resistance
BS.6206: Class B (unreinforced) at 11.9 mils DFT

Accelerated weathering
QUV ASM G53.77 - 5000 hours
No deterioration; clarity retained.

Service temperature
-122°F to 176°F

Chemical resistance
Resistant to standard 10% solutions of mineral acids, most alkalis, acid rain and detergents. Some oils and solvents may soften the surface. Salt spray to BS.3900 Part 4 and ASTMB117 – 500 hours. No rusting, blistering or delamination.

Anti-carbonation
Equivalent carbonation barrier to 55.36 meters or 176 feet of air at 24 mils DFT. Effective barrier = 50 meters or 159 feet.

Approximate solids content
64.9% by weight
59.5% by volume

Specific gravit
1.20

vo C content
360 g/L

Drying times
At approximately 68°F/50% R.H., touch dry at 6 to 7 hours; through cure at a minimum of 8 hours. At approximately 36°F through cure at 24 hours.

minimum application temperatures
36°F providing that this is 5ºF above dew point. When applying Sikalastic Clearglaze by spray equipment, the material must be kept above 50°F.

maximum substrate moisture content
28% wood moisture equivalent, as measured by a Protimeter.

Storage
All coatings should be kept dry and protected from frost and excessive heat. Previously opened pails should be used as soon as possible- within two or three days at most – and lids should always be replaced securely when
the product is not being applied. Do not expose material to extreme temperature differentials or store exposed to sun.

Storage temperatures
Store in dry, frost free conditions. Sikalastic Clearglaze should be stored above 35°F and below 86°F.

Pack size
5 liters

Shelf life
12 months.

Approximate dry film thicknes
12 mils (for general use)
24 mils (for anti-carbonization/anti-shatter applications).

Tensile strength
25 N/mm² or 362 psi (unreinforced)

Tensile elongation
250% (unreinforced)

Construction

Tear strength
18 N/mm² or 2610 psi.

Adhesion (to glass)
Elcometer pull off tests
>3 N/mm² or 435 psi

f ire resistance
(BS. 476 Part 6 and 7)
Class “O” rating on concrete surfaces.

Color
Clear

Sikalastic Clearglaze Site Work and Application

Asbestos cement and asbestos-free equivalents
Always ensure strict compliance with Health and Safety requirements when working with asbestos-containing materials. The coating may be applied direct provided that the surface is dry. Extra care must be taken when cleaning since any shading of the surface will show through the coating.

b ricks, blocks and stone
Clay and cement bricks may be coated directly after preparation. Stonework which is clean and free from dirt and other contaminants may be treated directly.

Cementitious materials
Concrete and screeds etc must be a minimum of 14 days old before treatment. Please consult our technical services department before applying to highly porous substrates. Adhesion tests should be carried out before over coating repair mortars.

g lass
Ensure surfaces are clean and degreased before application. Apply to plain and reinforced glass, leaded windows, glazing strips and roof lights, unless total optical clarity must be obtained. Sikalastic Clearglaze may be lapped onto painted frames but it is not recommended for fully coating external painted surfaces since the paint may discolor and/or flake, resulting in delamination.

metals
Apply direct to most metals. Please seek advice from Sika’s Technical Services Department before coating ferrous metals.

Plastics
Usual preparation procedures should be observed. Remove any oxidized layers and use localized reinforcement over joints. Any reinforcement incorporated within the membrane will be visible.

Slates, tiles etc.
Sloping slate or tile roofs may be coated directly to prevent water absorption while maintaining the original appearance of the substrate. Inspect tiles to ensure that they are firmly adhered. Degrease glazed tiles, clean and allow to dry before applying Sikalastic Clearglaze. Do not use for treating bitumen coated tiles or shingles, as staining will result.

Coverage Rates
The average rate for Sikalastic Clearglaze will depend on the intended function of the coating. Please consult our Technical Services Department for details about specific application.

System*	Coverage	Approx Wf T/mils
Unreinforced- General Weatherproofing	80 ft²/gal	20 mils
Unreinforced- Anti-Carbonation	40 ft²/gal	40 mils
Reinforced Waterproofing System (2 coats)	40 ft²/gal	40 mils

When using a partially reinforced system, the following extra quantities are required for embedment prior to over coating as above.

Reinforcement Type**	Coverage	Approx Wf T/mils	At width (in)
Sika Flexitape Light	53 ft²/gal	30 mils	2”
Sika Flexitape Heavy	32 ft²/gal	50 mils	3”

* Plus wastage/embedment allowance.
** Sika Reemat Premium reinforcement is normally used with Sikalastic Clearglaze. When using a fully reinforced system, apply an embedment coat at 40 mils WFT, 40 ft²/gallon and embed the glass fiber mesh using light pressure from a roller. Allow to dry and apply a second coat at 40 mils WFT, 40 ft²/gallon. NOTE: One coat applications – inspect cured film thoroughly for voids or thin areas. Overcoat any affected sections.

Preparation
Ensure surface is clean and sound prior to application of Sikalastic Clearglaze. Any areas contaminated with moss or lichen must be treated with Liquid Plastics’ Biocleanse to prevent re-development.

Application
Once the relevant system has been selected, please refer to the above for details of coverage rates. Rough, porous, absorbent or undulating surfaces will inevitably increase the quantity of coating required. Surface preparation for a clear coating must be thorough, particularly in relation to the removal of all organic growth. Always allow primer and any previous coat to dry/cure thoroughly before applying the following coat. Coatings will generally require curing overnight, although under optimal conditions (at higher temperatures and higher relative humidity) work may often recommence sooner. Do not thin or brush out like conventional coatings. When using brushes, the first coat should ideally be applied in one direction only, where possible, the second coat should be applied at right angles to the first.

Equipment
Roller
Use on flat or undulating surfaces but not on rough surfaces. Lay using light pressure in two coats to bring up to required coverage rate using a medium pile sheepskin roller, do not over work. In excess of 40ft²/gallon total applications, three coats may be needed to avoid slump.

b rush
Apply in two coats. Apply second coat at right angles to first coat whenever possible. Use a soft nylon or bristle brush. Application limits per coat are the same as for roller applications,

Construction

Clean up
Before curing, flush/wash equipment with MEK, cleaning solvent, xylol or cellulose thinners. Avoid any solvents containing alcohols.

DO NOT thin material unless specifically allowed by LP technical personnel.

Routine Care and maintenance
g eneral
In normal use, Sikalastic systems require no routine maintenance other than periodic inspections to check for damage by accidental impact or by building modifications. During the course of such inspections, sharp objects such as screws, stones, broken glass and other material should be removed from the surface in order to minimize the chances of accidental damage by subsequent foot traffic.

Repairs
In the event of localized damage, or to reinstate a completely seamless barrier following structural modifications, repairs can be made quickly and easily by applying more of the appropriate coating to the affected areas. If treating small punctures, the surrounding membrane should be cleaned,
primed if necessary and repaired by the application of additional material (usually by brush or roller). If treating new joints etc. embed either Sika Reemat GFM or Sika Flexitape into the wet coating and allow to cure before applying a second coat. In small cases, care should be taken to restore the dry film thickness of the original membrane.

Health and Safety

Please refer to the MSDS prior to use.

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

MIAMI-DADE COUNTY APPROVED

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Construction

Sika® Reemat Standard and Premium

Randomly oriented glass fiber reinforcement for Sikalastic® RoofPro systems

Description	Surface treated, randomly oriented glass fiber reinforcement to enhance the strength and durability of Sikalastic® RoofPro 601 BC, 621 TC, 624 WP, 641, and 641 Lo-VOC roofing and waterproofing membranes.
Where to Use	■ Ideal for roofing and waterproofing applications displaying complex details and geometry or when accessibility is limited. ■ Suitable for applications where visibility of reinforcement overlaps is an aesthetic concern.
Advantages	■ Provides maximum conformability to uneven substrates. ■ Creates strong reinforced roofing and waterproofing membranes with enhanced tensile strength. ■ Increases puncture and tear resistance.
Coverage Resistance	Standard: 51" roll: 2,788 ft² per roll (not including overlaps) Premium: 51" roll: 1,254 ft² per roll (not including overlaps) Premium: 12" roll: 295 ft² per roll (not including overlaps)
Chemical	Not intended to be directly subjected to chemical exposure without being fully saturated with liquid resin.
Packaging	Standard: 51"w x 656' l individually bagged rolls Premium: 51"w x 295' l individually bagged rolls Premium: 12"w x 295' l individually bagged rolls

Typical Data (Material and curing conditions @ 75°F (24°C) and 50% RH)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	Indefinite		
Storage Conditions:	Store flat and wrinkle-free in original, unopened and undamaged sealed packaging in dry conditions.		
Product Conditioning:	Recommended to condition material to 50°-77°F (10°-25°C) before using to match liquid resin.		
Color	Off-White		
	Standard	**Premium**	
Weight (g/m²):	225 +/- 25	225 +/- 25	
Weight (oz/yd²):	6.6 +/- 0.7	6.6 +/- 0.7	
Roll Width:	51"	51"	12''
Roll Length:	656 ft.	295 ft.	295 ft.
Total Gross Area:	2,788 ft²	1,254 ft²	295 ft²

Construction

How to Use

Surface Preparation	Substrate surfaces, including flashing substrates, shall be primed, clean and dry, in accordance with separate System Data Sheet.
Application	Apply the specified base layer resin quantity to primed substrate surface with a 1/2” nap phenolic resin core roller. Immediately place Sika® Reemat into wet resin, overlapping reinforcement 2” along the sides and at the roll ends. Apply wet roller to topside with light pressure to completely saturate the Reemat and to allow the Reemat to conform to substrate irregularities and flashing conditions. Apply additional resin as required to top of the Reemat to aid in conformity.
Removal	Remove glass mat saturated with liquid resin from substrate immediately, and wipe substrate with dry cloth. Once cured, reinforced membrane can only be removed by mechanical means.
Limitations	■ Avoid creating wrinkles and creases during storage, as they will tend to be visible in finished membrane after application. ■ Store rolls on end, and not on their side. ■ Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various Sika product solutions). Surface irregularities may reflect though the cured system. ■ Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure. ■ Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.

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Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
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Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Product Data Sheet
Edition 5.20.2014
Identification no.
Sika Fleece 120 (US), 140 (US), and 170 (US)

Sika® Fleece 120 (US), 140 (US), and 170 (US)

Polyester fleece reinforcement for Sikalastic RoofPro systems

Description	Non-woven, needle-punched polyester fleece reinforcement to enhance the strength and durability of Sikalastic RoofPro 621 TC and 624 AR roofing and waterproofing membranes
Where to Use	■ Ideal for roofing and waterproofing applications displaying complex details and geometry or when accessibility is limited ■ Suitable for applications where visibility of reinforcement overlaps is not an aesthetic concern ■ Ideal for applications where a one-day system installation is required
Advantages	■ Permits wet on wet application of Sikalastic 621 TC (US) and Sikalastic 624 AR resins ■ Creates strong reinforced roofing and waterproofing membranes with enhanced elongation properties ■ Fleece thickness dictates membrane thickness ■ Reduces pinholing due to outgassing ■ Increases puncture and tear resistance
Coverage	600 sf per roll (not including overlaps)
Chemical Resistance	Not intended to be directly subjected to chemical exposure without being fully saturated with liquid resin
Packaging	48” w x 150’ l individually bagged rolls

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% RH)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	Indefinite
Storage Conditions:	Store flat and wrinkle-free in original, unopened and undamaged sealed packaging in dry conditions.
Product Conditioning:	Recommended to condition material to 50-77°F (10-25°C) before using to match liquid resin.

	Sika Fleece 120	Sika Fleece 140	Sika Fleece 170
Weight (g/m2):	120 +/- 15	140 +/- 17	170 +/- 20
Weight (oz/yd2)	3.5 +/- 0.4	4.0 +/- 0.5	5.0 +/- 0.6
Thickness (ASTM D-5729):	50 mils +/- 10%	60 mils +/- 10%	80 mils +/- 10%
Tensile Strength MD (ASTM D-5034):	45 lbs. min.	50 lbs. min.	55 lbs. min.
Tensile Strength CMD (ASTM D-5034):	55 lbs. min.	70 lbs. min.	75 lbs. min.
Elon gation MD (ASTM D-5034):	30 +/- 10%	42 +/- 10%	34 +/- 10%
Elongation CMD (ASTM D-5034):	28 +/- 10%	34 +/- 10%	32 +/- 10%
Roll Width:	48”	48”	48”
Roll Length:	150 ft.	150 ft.	150 ft.
Total Gross Area:	600 sf	600 sf	600 sf

Construction

How To Use

Surface Preparation	Substrate surfaces, including flashing substrates, shall be primed, clean and dry, in accordance with separate System Data Sheet.
Application	Precut Sika Fleece and dry-fit to horizontal field and vertical flashing conditions. Temporarily remove fleece. Apply approximately 2/3 of the specified resin quantity to primed substrate surface with a 1/2” nap phenolic resin core roller. Immediately fit and place Sika Fleece into wet resin, overlapping reinforcement 3” along the sides and 6” at the roll ends. Apply wet roller to topside with light pressure to saturate from bottom and to ensure that air pockets are completely removed. Immediately apply the remaining 1/3 of the specified resin quantity and apply wet roller to topside with light pressure to fully saturate the membrane and achieve an even texture and appearance.
Removal	Remove fleece saturated with liquid resin from substrate immediately, and wipe substrate with dry cloth. Once cured, reinforced membrane can only be removed by mechanical means.
Limitations	■ Avoid creating wrinkles and creases during storage, as they will tend to be visible in finished membrane after application. ■ Store rolls on their side and not on end. ■ Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various Sika product solutions). Surface irregularities may reflect though the cured system. ■ Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure. ■ Substrate must be dry prior to application. Do not apply to a frosted, wet or damp sur face. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems

CAUTION

Sika Fleece-120

Not a hazardous substance or mixture. This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Wash skin thoroughly after handling. Use personal protective equipment as required. IF INHALED: Move to fresh air. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. If eye irritation persists: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Sika Fleece-140

Not a hazardous substance or mixture. This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Wash skin thoroughly after handling. Use personal protective equipment as required. IF INHALED: Move to fresh air. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. If eye irritation persists: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Construction

Sika Fleece-170

Not a hazardous substance or mixture. This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Wash skin thoroughly after handling. Use personal protective equipment as required. IF INHALED: Move to fresh air. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. If eye irrita-tion persists: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

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Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Sika® Flexitape Heavy

Woven Nylon Reinforcing and Detailing Mesh

Construction

Description	Polyamide knitted reinforcement for use with Sikalastic RoofPro and Sikagard wall coating systems.
Where to Use	■ Moving and nonmoving cracks ■ Cold joints ■ Joints between dissimilar materials ■ Wall/deck intersections ■ Flashing reinforcement
Advantages	■ Stretches within membrane to accommodate thermal and structural movement ■ Imparts additional strength and durability ■ Conforms to substrate contours and flashing conditions
Coverage	164 lin. ft.
Chemical Resistance	Not intended to be directly subjected to chemical exposure without being fully saturated with liquid resin
Packaging:	3” or 6” w x 164’ l rolls

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% RH)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	Indefinite
Storage Conditions:	Store flat in original, unopened and undamaged sealed packaging in dry conditions.
Product Conditioning:	Recommended to condition material to 50-77°F (10- 25°C) before using to match liquid resin.
Color	Off-white
Roll Width:	3” or 6”
Roll Length:	164 ft.
Total Gross Area:	164 lin.ft.

Construction

How to Use

Surface Preparation

Substrate surfaces, including flashing substrates, shall be primed, clean and dry, in accordance with separate System Data Sheet.

Application

Non-moving j oints and Cracks

Apply liquid resin to primed substrate. Embed Flexitape into liquid resin without stretching by gentle brush or roller pressure. Apply additional liquid resin to fully encapsulate the Flexitape.

Moving j oints and Cracks

Apply 1-2” wide release tape over moving joint/crack. Apply liquid resin to primed substrate. Embed Flexitape into liquid resin without stretching, centered over joint/crack, by gentle brush or roller pressure. Apply additional liquid resin to fully encapsulate the Flexitape. Flexitape shall extend 1-1/2” minimum beyond both sides of the release tape.

Removal

Remove Flexitape saturated with liquid resin from substrate immediately, and wipe substrate with dry cloth. Once cured, reinforced membrane can only be removed by mechanical means.

Limitations

- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various Sika product solutions). Surface irregularities may reflect though the cured system.
- Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure.
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.

CAUTION

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer’s sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA’S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Joint Tape SA

Self-adhering polymeric rubberized tape with woven polyester facer

Description	Self-adhering polymeric rubberized tape with plastic release liner on underside and woven polyester facer on top side. Enhances the strength and durability of Sikalastic roofing and waterproofing membranes at joints and angle changes.
Where to Use	▪ Self-adhering, no primer required for most applications ▪ Fleece facer allows positive resin/coating bond ▪ Stretches with membrane to accomodate thermal and structural movement ▪ Imparts additional strength and durability ▪ Conforms to substrate contours and flashing conditions
Advantages	▪ Reinforcement of joints between insulation and cover boards ▪ Reinforcement of joints between plywood deck panels ▪ Reinforcement of joints and seams in metal roofing ▪ Stripping in of metal flanges to structural deck
Coverage	50 lin. ft.
Cure Mechanism	N/A
Chemical Resistance	Not intended to be directly subjected to chemical exposure without being fully coated with liquid resin.
Packaging	3" or 6" w x 50' l rolls. Carton contains 8 3" wide rolls and 4 6" wide rolls, 100 sf total.

Typical Data (Material and curing conditions @ 75°F (24°C) and 50% RH)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 Years
Storage Conditions	Store flat in original, unopened and undamaged sealed packaging in dry conditions. Do not expose to direct sunlight or other heat sources.
Product Conditioning	Recommended to condition material to 50-77 °F (10-25 °C) before using.
Color	Off-white fleece top surface, black bottom surface
Roll Width	3'' or 6''
Roll Length	50 ft.
Total Thickness	30 mils
Flash Point	110°F (43°C)

How To Use

Surface Preparation	Substrate surfaces, including flashing substrates, shall be clean and dry, free of dirt, dust, loose rust, debris, and oils. Solvent wiping metal flanges or contaminated surfaces with denatured alcohol or acetone is recommended. Priming is typically not required. Substrate surfaces that are dusty or oxidized, and cold weather applications (20°F - 40°F), require the use of Sika Joint Tape SA Primer, applied at the approximate rate of 200 - 250 sf/gal. with a natural bristle brush or a phenolic resin core roller (See separate data sheet).
Mixing	N/A

Construction

Application	**Non-moving Joints:** Apply Sika Joint Tape SA to prepared substrate. Remove 4 - 6" of release liner from underside of Sika Joint Tape SA. Position Sika Joint Tape SA centered over joint extending 1-1/2" minimum over each side of the joint, and press into place. Continue to remove release liner and press Sika Joint Tape SA onto substrate surface. Apply additional pressure to applied Sika Joint Tape SA to activate bonding process. Use a steel roofer's roller for best results. The firmer the pressure applied, the faster and stronger the bond. **Moving Joints:** Apply 1-2" wide release tape over moving joint/crack. Apply Sika Joint Tape SA to prepared substrate. Remove 4 - 6" of release liner from underside of Sika Joint Tape SA. Position Sika Joint Tape SA centered over joint extending 1-1/2" minimum over each side of the joint beyond the release tape, and press into place. Continue to remove release liner and press Sika Joint Tape SA onto substrate surface. Apply additional pressure to applied Sika Joint Tape SA to activate bonding process. Use a steel roofer's roller for best results. The firmer the pressure applied, the faster and stronger the bond. **Touch-Up:** Lance, cut or pierce air bubbles and force out the air, then press the Sika Joint Tape SA back in place. Cut open tented sections of tape, press the Sika Joint Tape SA back in place, and apply an additional layer of Sika Joint Tape SA over the cut, extending 1-1/2" minimum over the cut in all directions. Cut away bunched-up sections of tape, press the Sika Joint Tape SA back in place, and apply an additional layer of Sika Joint Tape SA over the cut, extending 1-1/2" minimum over the cut in all directions. Use a steel roofer's roller on all remedial/repair applications.
Over Painting	Sikalastic resins and coatings may be applied immediately following Sika Joint Tape SA application, and should be applied within 72 hours to a clean and dry tape surface. Priming of the Sika Joint Tape SA fleece surface is not required but also does not affect tape performance. Sika Joint Tape SA is UV-resistant but is not intended for direct exposure.
Removal	If possible, remove Sika Joint Tape SA from substrate immediately. Once pressure has been applied to initiate bond, Sika Joint Tape SA can only be removed by mechanical means.
Limitations	▪ Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various Sika product solutions). Surface irregularities may reflect though the cured system. ▪ To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures. ▪ Minimum ambient and substrate temperature during application and curing of material is 20°F (-6°C); maximum is 95°F (35°C). ▪ Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements. ▪ Do not apply to a porous or damp surface where moisture vapor transmission will occur during application and cure. ▪ Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather as there is the potential for bonding problems.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Joint Tape SA Primer

Single component primer for use with Sika Joint Tape SA

Description	Sika Joint Tape SA Primer is a single component synthetic polymer-based primer for use with Sika Joint Tape SA to enhance adhesion to dusty/oxidized/porous surfaces, and to facilitate cold weather application in temperatures of 20 °F (-6 °C) to 40 °F (5 °C).
Where to Use	▪ Dusty/oxidized EPDM and TPO single ply membranes ▪ Substrate surfaces contaminated with asphalt residue ▪ Porous masonry and concrete surfaces ▪ Wood substrate surfaces ▪ All applications with ambient and substrate temperatures below 40 °F (5 °C)
Advantages	▪ Sika Joint Tape SA Primer improves adhesion of Sika Joint Tape SA to substrate surfaces that are difficult to clean, oxidized, or too porous to provide adequate surface area for bonding ▪ Sika Joint Tape SA Primer enhances adhesion by preconditioning cold substrate surfaces ▪ Quick cure allows same-day Sika Joint Tape SA application
Coverage	200-250 sf/gallon, depending on substrate
Cure Mechanism	Evaporative cure
Chemical Resistance	Not intended for direct exposure
Packaging	1 gallon cans

Typical Data (Material and curing conditions @ 75°F (24°C) and 50% RH)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	12 months in original, unopened and undamaged sealed containers.
Storage Conditions	Store dry at 41-86 °F (5-30 °C).
Product Conditioning	N/A
Wet Film Thickness	4 mils typical
Viscosity	135 - 152 cps
VOCs (ASTM D-2369-81)	Exempt solvent
Flash Point	110°F (43°C)

How To Use

Surface Preparation	Clean substrate thoroughly by solvent wiping with denatured alcohol or acetone to remove dirt, debris, oil, and other contaminants. Allow surface to dry thoroughly for a minimum of 15 minutes at 75°F and 50% relative humidity. Surface must be clean and dry.
Mixing	Premix Sika Joint Tape SA Primer to obtain an even consistency. Stir Sika Joint Tape SA Primer frequently as application progresses.
Application	Apply a thin layer of Sika Joint Tape SA Primer with a natural bristle brush or phenolic resin core roller, ensuring 100% coverage of the surface area to be adhered to, but without puddling. Allow the primer to dry tack free. Reseal container tightly immediately after use.

Over Painting	Allow primer to cure completely tack free prior to applying Sika Joint Tape SA. Curing time is dependent on temperature and relative humidity, and can range from 10 minutes to 1 hour or longer, depending on temperature. Ideally, Sika Joint Tape SA will be applied within 2 hours of primer application. Maximum primer exposure is 12 hours.
Removal	See Label
Equipment Cleanup	See Label
Limitations	▪ To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point tempera tures. ▪ Minimum ambient and substrate temperature during application and curing of material is 20°F (-6°C); maximum is 95°F (35°C). ▪ Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect materials with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements. ▪ Existing substrate surface must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the existing substrate to dry after rain or inclement weather, as there is the potential for bonding problems. ▪ Do not use Sika Joint Tape SA Primer on PVC roofs as reactivation of some plasticizers may occur. ▪ Sika Joint Tape SA Primer is not UV-stable; apply Sika Joint Tape SA as soon as primer is cured and tack-free. ▪ Precautions should be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air condtion-ers, and other means of vapor/odor ingress during application and cure.

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201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sika® Concrete Primer

Rapid curing, high solids, solvent based primer

Description	Sika Concrete Primer is a two component, rapid curing, high solids, solvent-based primer, consisting of: a solvent-based polyurethane resin (Part A), and a hardener (Part B). It is designed for sealing cementitious substrates to reduce the incidence of outgassing. In its wet mixed state, Sika Concrete Primer is amber in color.
Where to Use	Suitable for use on most sound substrate surfaces where both a penetrative and surface-lying effect is required.
Advantages	■ Significantly reduces the likelihood of blistering and pinholing ■ Very fast curing formulation ■ Combines rapid cure time with a long pot life ■ Compatible with most concrete, masonry, and stone substrate materials
Coverage	225 to 375 sf/gal, depending on substrate profile and porosity 225 sf/gal on prepared, dry concrete and masonry (CSP3 surface preparation) **Note:** On porous/open substrates, apply as two coats, each at a maximum spread rate of 270 sf/gal.
Cure Mechanism	Chemical cure
Chemical Resistance	Not intended for direct exposure
Packaging:	4.5 L. kit (3.5 L Part A, 1.0 L.Part B); 23 L (2 x 11.5 L) kit (2 x 9.0 L Part A, 2 x 2.5 L Part B)

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	12 months in original, unopened and undamaged sealed containers.
Storage Conditions:	Store dry at 41-77°F (5-25°C).
Product Conditioning:	Condition material to 50-77°F (10-25°C) before using for ease of application.
Pot Life:	45 minutes
Total Weight Solids (ASTM D-2697):	72%
Density:	1.02 kg.l
VOCs (ASTM D-2369-81)	280 g/l
Flash Point:	Part A: 104°F (40°C) Part B: 163°F (73 °C)
Service Temperature:	-22 to 176°F (-30 to 80°C) intermittent

Construction

How to Use

Surface Preparation	All substrate surfaces shall be clean, dry and sound. Acceptable substrates include: sound concrete, masonry and stone, gypsum and cement-based cover boards. Reference separate System Data Sheet for specific surface preparation requirements. Mixing Premix Part A with low-speed drill and paddle (Jiffy-type). Pour entire contents of Part B into Part A and mix together until a homogenous mixture and uniform color is achieved (typically 3 minutes) using care to prevent entrapment of air.
Mixing	Mix ratio is 3.55:1 (A:B) by volume and 4.56:1 (A:B) by weight. Add Part B into Part A and mix with mechanical mixer (Jiffy) at low speed. Avoid adding air into the primer during mixing. When fully mixed, the primer should be free from streaks and be a uniform amber color. Do not break down kits into smaller quantities.
Application	Apply by brush or phenolic resin core roller at the recommended rate. Correct amount of primer will saturate the substrate and leave a slight film on the substrate top surface. Apply evenly without puddling.
Removal	Remove wet primer with MEK, xylene, or oxygenated solvents. Once cured, primer can only be removed by mechanical means. Strictly follow solvent manufacturer's warnings and instructions for use.
Over Painting	Allow primer to cure completely prior to applying membrane resin. Full cure: 30 minutes at 68°F Ideally, membrane resin will be applied within 24 hours of primer application. Maximum primer exposure is 48 hours. Primer exposed longer than 48 hours, and primer exposed to water during curing and exhibiting a chalky appearance, must be reprimed. Deteriorated primer must be mechanically removed before primer reapplication.

Limitations

- To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures.
- Minimum ambient and substrate temperature during application and curing of material is 41°F (5°C); maximum is 95°F (35°C). Surface temperatures must be no higher than 140°F (60°C).
- Do not apply on substrates with moisture content greater than 4% by weight, measured by Tramex Concrete Moisture Encounter Meter.
- Minimum age of concrete must be 21-28 days depending on curing and drying conditions.
- Do not thin with solvents.
- Do not store materials outdoors exposed to sunlight and moisture for prolonged periods.
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D-4263 (Polyethylene Sheet method).
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems.
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing may occur.
- Precautions should be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- When applying over existing coatings or membranes compatibility and adhesion testing, and subsequent approval by Technical Services is required.
- On grade concrete decks should not be covered with Sikalastic membrane systems.
- Unvented metal pan, split/sandwich slab with encapsulated membrane and/or insulation, cinder fill decks, and lightweight insulating concrete overlays should not be covered with Sikalastic membrane systems without additional deck evaluation to determine substrate moisture content and subsequent approval by Technical Services.
- Not recommended for metal substrates.

Construction

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800-933-7452. NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTION FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Construction

Sikalastic® DTE Primer

Damp Tolerant Epoxy Primer

Description	Sikalastic® DTE Primer consists of two components: an epoxy resin (Part A), and an activator (Part B). In its wet mixed state, it is amber in color.
Where to Use	Suitable for use on most sound concrete and masonry substrate surfaces where both a penetrative sealing and surface-lying effect is required.
Advantage	■ Low odor, low VOC formulation. ■ Seals concrete and masonry surfaces, reducing outgassing.
Coverage	200 ft²/gal on prepared, dry concrete, depending on substrate profile and porosity. 100 ft²/gal when mixed with 10 lbs. 20-40 mesh kiln-dried sand as a 30 mil slurry coat. Note: Rough, porous, or absorbent surfaces will require additional primer and will reduce yield.
Cure Mechanism	Chemical Cure.
Chemical Resistance	Not intended for direct exposure.
Packaging	1 gal. kit (0.62 gal. Part A, 0.38 gal. Part B).

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	12 months in original, unopened and undamaged sealed containers.
Storage Conditions:	Store dry at 40°-95°F (2°-35°C).
Product Conditioning:	Condition material to 50°-77°F (10°-25°C) before using for ease of application.
Pot Life:	45 minutes
Total Volume Solids (ASTM D-2697)	100%
VOCs (ASTM D-2369-81)	16 g/l
Flash Point	130°F (54°C)
Service Temperature	-22° to 176°F (-30° to 80°C) intermittent.

How to Use **Surface Preparation**	All substrate surfaces shall be clean, dry and sound. Acceptable substrates include: sound concrete and masonry. Reference separate System Data Sheet for specific surface preparation requirements.
Mixing	Mix ratio is 1.6:1 (A:B) by volume. Add Part B into Part A and mix with mechanical mixer (Jiffy) at low speed. Avoid adding air into the primer during mixing. When fully mixed, the primer should be free from streaks and of a uniform amber color. Do not break down kits into smaller quantities. For leveling/sealing slurry, add 10 lbs. 20-40 mesh kiln-dried sand to mixed primer and mix with mechanical mixer (Jiffy) until a uniform consistency is achieved.
Application	Apply by brush or phenolic resin core roller at the recommended rate. Correct amount of primer will saturate the substrate and leave a slight film on the substrate top surface. Apply evenly without puddling. Apply slurry with flat-bladed squeegee or trowel.
Removal	Remove wet primer with MEK, xylene, or oxygenated solvents. Once cured, primer can only be removed by mechanical means. Strictly follow solvent manufacturer's warnings and instructions for use.
Over Painting	Allow primer to cure completely prior to applying membrane resin. Full cure: 8 hours at 68°F. Ideally, membrane resin will be applied within 24 hours of primer application. Maximum primer exposure is 3 days. Primer exposed longer than 3 days, and primer exposed to water during curing and exhibiting a chalky appearance, must be reprimed. Deteriorated primer must be mechanically removed before primer reapplication.

Limitations

- To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures.
- Minimum ambient and substrate temperature during application and curing of material is 41°F (5°C); maximum is 95°F (35°C). Surface temperatures must be no higher than 140°F (60°C).
- Do not apply on substrates with moisture content greater than 5% by weight, measured by Tramex® Concrete Moisture Encounter Meter.
- Minimum age of concrete must be 21-28 days depending on curing and drying conditions.
- Do not thin with solvents.
- Do not store materials outdoors exposed to sunlight and moisture for prolonged periods.
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D-4263 (Polyethylene Sheet method).
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems.
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing may occur.
- Precautions should be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- When applying over existing coatings or membranes compatibility and adhesion testing, subsequent approval by Technical Services is required.
- On grade concrete decks should not be covered with Sikalastic® membrane systems.
- Unvented metal pan, split/sandwich slab with encapsulated membrane and/or insulation, cinder fill decks, and lightweight insulating concrete overlays should not be covered with Sikalastic® membrane systems without additional deck evaluation and subsequent approval by Technical Services.
- Not recommended for metal substrates.

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Fax: 201-933-6225

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Phone: 514-697-2610
Fax: 514-694-2792

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C.P. 76920
Phone: 52 442 2385800
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MIAMI-DADE COUNTY APPROVED

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Sikalastic® EP Primer/Sealer

Two component universal primer

Construction

Description	Sikalastic® Epoxy Primer consists of two components: an epoxy resin (Part A), and an activator (Part B). In its wet mixed state, it is red in color.
Where to Use	Suitable for use on most sound substrate surfaces where both a penetrative and surface-lying effect is required.
Advantage	■ Low odor, low VOC formulation. ■ Compatible with most common substrate and flashing materials.
Coverage	250 ft²/gal on non-absorbent smooth substrates. 200 ft²/gal on prepared, dry concrete. 100 ft²/gal on mineral surfaced modified bitumen. Note: Rough, porous, or absorbent surfaces will require additional primer and will reduce yield.
Cure Mechanism	Chemical Cure.
Chemical Resistance	Not intended for direct exposure.
Packaging	1 gal. kit (0.75 gal. Part A, 0.25 gal. Part B).

Typical Data *(Material and curing conditions @ 75°F (24°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	12 months in original, unopened and undamaged sealed containers.
Storage Conditions:	Store dry at 40°-95°F (2°-35°C).
Product Conditioning:	Condition material to 50°-77°F (10°-25°C) before using for ease of application.
Pot Life:	1 hour
Total Volume Solids (ASTM D-2697)	92%
VOCs (ASTM D-2369-81)	72.05 g/l
Flash Point	130°F (54°C)
Service Temperature	-22° to 176°F (-30° to 80°C) intermittent.

How to Use **Surface Preparation**	All substrate surfaces shall be clean, dry and sound. Acceptable substrates include: sound concrete and masonry, wood and plywood, modified bitumen membrane, mineralized asphaltic cap sheet, asphalt and asphalt mastic, ferrous metals, galvanized, lead, copper, aluminum, brass, and stainless steel. Reference separate System Data Sheet for specific surface preparation requirements.
Mixing	Mix ratio is 3:1 (A:B) by weight and volume. Add Part B into Part A and mix with stir stick or mechanical mixer (Jiffy) at low speed. Avoid adding air into the primer during mixing. When fully mixed, the primer should be free from streaks and of a uniform red color. Do not break down kits into smaller quantities.
Application	Apply by brush or phenolic resin core roller at the recommended rate. Correct amount of primer will saturate the substrate and leave a slight film on the substrate top surface. Apply evenly without puddling.
Removal	Remove wet primer with MEK, xylene, or oxygenated solvents. Once cured, primer can only be removed by mechanical means. Strictly follow solvent manufacturer's warnings and instructions for use.
Over Painting	Allow primer to cure completely prior to applying membrane resin. Full cure: 9 hours at 68°F. Ideally, membrane resin will be applied within 24 hours of primer application. Maximum primer exposure is 72 hours. Primer exposed longer than 72 hours, and primer exposed to water during curing and exhibiting a chalky appearance, must be reprimed. Deteriorated primer must be mechanically removed before primer reapplication.

Construction

Limitations

- To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures.
- Minimum ambient and substrate temperature during application and curing of material is 41°F (5°C); maximum is 95°F (35°C). Surface temperatures must be no higher than 140°F (60°C).
- Do not apply on substrates with moisture content greater than 4% by weight, measured by Tramex® Concrete Moisture Encounter Meter.
- Minimum age of concrete must be 21-28 days depending on curing and drying conditions.
- Do not thin with solvents.
- Do not store materials outdoors exposed to sunlight and moisture for prolonged periods.
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D-4263 (Polyethylene Sheet method).
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems.
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing may occur.
- Precautions should be taken to prevent vapors and/or odors from entering the building/structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of ingress during application and cure.
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- When applying over existing coatings or membranes compatibility and adhesion testing, subsequent approval by Technical Services is required.
- On grade concrete decks should not be covered with Sikalastic® membrane systems.
- Unvented metal pan, split/sandwich slab with encapsulated membrane and/or insulation, cinder fill decks, and lightweight insulating concrete overlays should not be covered with Sikalastic® membrane systems without deck evaluation and subsequent approval by Technical Services.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800

Construction

Sika® Reactivation Primer

Polyurethane-based primer for use with Sikalastic 600 Series liquid applied membranes

Description	Sikalastic Reactivation Primer is a single component, polyurethane based primer for the reactivation of existing Sikalastic membranes prior to overcoating, repairing, or modifying. In its wet state, it is clear.
Where to Use	Suitable for use on Sikalastic 600 Series liquid applied membranes for localized repairs, roofing modifications, continuation of work, etc.
Advantages	Provides excellent adhesion of new Sikalastic liquid applied membrane to existing Sikalastic membrane. Quick cure allows same-day membrane application in most instances.
Coverage	250 sf/gal.
Cure Mechanism	Evaporative cure
Chemical Resistance	Not intended for direct exposure
Packaging	2 gal. pail

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life:	6 months in original, unopened and undamaged sealed containers.
Product Storage:	Store dry at 41-86°F (5-30°C).
Product Conditioning:	Condition material to 50-77°F (10-25°C) before using for ease of application.
Pot Life:	Indefinite
Total Volume Solids (ASTM D-2697):	64%
Density:	1.03 kg/l
VOCs (ASTM D-2369-81):	385 g/l
Flash Point:	108°F (42°C)
Service Temperature:	-22 to 176°F (-30 to 80°C) intermittent

Construction

How to Use

Surface Preparation	Clean existing membrane thoroughly by power washing. Remove all chalking, dirt and any other physical or chemical contaminants prior to priming. Mechanical scrubbing and the use of a biocide-detergent may be required. Rinse all contaminants and detergent residue off of the membrane surface and allow to dry thoroughly.
Mixing	Mixing is not required
Application	Apply by brush or phenolic resin core roller at the recommended rate. Correct amount of primer will leave a slight film on the membrane top surface. Apply evenly without puddling.
Removal	Remove wet primer with MEK, xylene or oxygenated solvents and a clean cloth. Once cured, primer can only be removed by mechanical means. Strictly follow solvent manufacturer's warnings and instructions for use.
Over Painting	Allow primer to cure completely tack free prior to applying membrane resin. 4 hours at 68°F 6 hours at 37°F Ideally, membrane resin will be applied within 24 hours of primer application. Maximum primer exposure is 48 hours. Primer exposed longer than 48 hours, and primer exposed to water during curing and exhibiting a chalky appearance, must be reprimed. Deteriorated primer must be mechanically removed before primer reapplication.
Limitations	■ To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures. ■ Minimum ambient and substrate temperature during application and curing of material is 41°F (5°C); maximum is 86°F (30°C). ■ Do not thin with additional solvents. ■ Do not store materials outdoors exposed to sunlight and moisture for prolonged periods. ■ Existing membrane must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the membrane to dry after rain or inclement weather, as there is the potential for bonding problems. ■ Sikalastic Recoat Primer is not UV-stable; recoat with Sikalastic resin within 48 hours. ■ Precautions should be taken to prevent vapors and/or odors from entering the building/ structure, including but not limited to turning off and sealing air intake vents and through-wall air conditioners, and other means of vapor/odor ingress during application and cure.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

G - Building Envelope

Sikagard 530	G10
Sikagard 535	G20
Sika Membran 540	G30
SikaMultiSeal Plus	G40
Sikagard 510	usa.sika.com
SikaMultiSeal 515	usa.sika.com

Construction

Product Data Sheet
Edition 12.6.2013
Sikagard 530

Sikagard® 530

Liquid Applied Acrylic Vapor Permeable Air Barrier

Description

Sikagard 530 Liquid Applied Acrylic Vapor Permeable Air Barrier is a low VOC, single-component liquid applied, elastomeric membrane designed to provide a vapor permeable air and water barrier when applied to above-grade wall assemblies. It is acrylic-based and cures to a tough monolithic rubber-like membrane that resists air leakage and water penetration when applied to plywood and gypsum sheathing, concrete and concrete masonry units.

Where to Use

To be used in conjunction with SikaMultiSeal® 515 Self-Adhered Transition Seam Tape and Sikaflex® 11fc Liquid Seam Sealant. Acceptable substrates are above grade exterior wall substrates including precast concrete, cast-in place concrete, concrete block, primed steel, aluminum mill finish, anodized aluminum, galvanized metal, gypsum board and wood. **Sikagard 530 Liquid Applied Acrylic Vapor Permeable Air Barrier is appropriate for use at the wall to roof connection in conjunction with Sarnafil Roofing Systems. Consult with Sika Technical Services for details and Warranty Requirements.**

Advantages

- Approved by the Air Barrier Association of America
- Low odor, low VOC.
- Seamless, elastomeric membrane for above grade wall applications.
- Easy to install, cost effective brush, roller or spray application using common spray equipment.
- Passes ASTM E 2357.
- UV Stable for 6 month exposure.
- Water vapor permeance allows wall assemblies to dry out.
- Excellent adhesion to common construction surfaces.
- Meets industry performance standards to control air movement.
- Low surface burning characteristics as appropriate for compliance with NFPA 285

Typical Data ***(Material and curing conditions @ 74°F (22°C) and 40% R.H.)***

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage:	Store in original containers. Store at temperatures above 40°F (4°C), do not allow product to freeze.
Shelf Life:	Minimum 1 year in unopened containers.
Properties:	
Air Permeance ASTM E2178:	< 0.004 cfm/sf @ 1.57 psf (pass ABAA)
System Air Leakage ASTM 2357:	< 0.04 cfm/sf @1.56 psf (pass ABAA)
WVP ASTM E 96B:	11.5 perms
Crack Bridging/Freeze-Thaw ICC-ES AC212:	Pass
Water Resistance AATCC 127:	Pass
Fastener Sealability ASTM D1970:	Pass
Initial Elongation:	124%
Initial Tensile Strength:	300 psi
Dry Time:	Sets to Touch: 4 – 6 hours
	Recoat: 24 hours
Exposure:	6 months
Surface Burning Characteristics ASTM E 84	Flame Spread Index 20
	Smoke Development Index 25
VOC:	g/L < 50
Recycled Content by weight:	25%
Weight per Gallon:	11.2 lbs

Construction

Solids by Weight:	64 %
Solids by Volume:	52% +/- 2%
Vehicle Base:	Acrylic
Solvent:	Water
Clean up:	Warm soapy water

Coverage

Apply at a rate of 2.5 gallons per 100 ft² (40 sf per gallon) to achieve a uniform wet film thickness of 40 mils.

Packaging

5 gallon pails, 55 gallon drums

How to Use

Surface Preparation

Surfaces must be sound, clean, dry and free of frost, dirt, dust, loose concrete, grease, oil, contaminants or other foreign matter that may adversely affect the adhesion of the liquid applied vapor permeable air and water barrier membrane. Surfaces should be sound, free of voids, gaps, breaks and spalled areas. New concrete should be cured for a minimum of 7 days before Sikagard 530 Liquid Applied Acrylic Vapor Permeable Air Barrier is applied. Acceptable substrates are precast concrete, cast-in place concrete, concrete block, primed steel, aluminum mill finish, anodized aluminum, galvanized metal, gypsum board and wood. Joints between panels of exterior grade gypsum and plywood up to 1/4 inch (6 mm) wide shall be treated with a 1/16 inch (3 mm) deep x 3/4 inch (19 mm) wide cap bead application of Sikaflex 11fc Liquid Seam Sealant. Joints between panels of exterior grade gypsum or plywood wider than 1/4 inch (6 mm) shall be sealed with a strip of SikaMultiSeal 515 Self-Adhered Transition Seam Tape aligned over the joint and applied to a substrate primed with Sikagard 510 Transition Seam Tape Primer or a 10mil thick application of Sikagard 530 (refer to SikaMultiSeal 515 Product Data Sheet for further installation recommendations). Strike masonry mortar joints full flush.

Cracks in masonry and concrete up to 1/4 inch (6 mm) wide shall be sealed with a cap bead application of Sikaflex 11fc Liquid Seam Sealant. Cracks in masonry and concrete up to 1/8 inch (3 mm) wide may be filled with a trowel application of liquid air barrier membrane and allowed to cure overnight prior to field application of the liquid air barrier membrane to surface. Cracks wider than 1/4 inch should be repointed.

Transition joints between dissimilar materials at beams, columns, window and door frames and openings, etc., should be sealed with a strip of SikaMultiSeal 515 Self-Adhered Transition Seam Tape aligned over the joint and applied to a primed substrate. Provide minimum of 2 1/2 inches (63 mm) of membrane bearing on each adjacent surface. Apply Sikaflex 11fc Liquid Seam Sealant or coating of Sikagard 530 applied at 40 mils thickness over the edge along the perimeter of SikaMultiSeal 515. Mechanical fasteners used to secure sheathing boards or penetrate sheathing boards prior to membrane application shall be set flush with sheathing board and fastened into solid backing. Thinning of the liquid membrane is not permitted.

Mixing

Stir liquid membrane thoroughly prior to application.

Application

Sikagard 530 Liquid Applied Acrylic Vapor Permeable Air Barrier may be applied by brush, roller or spray. Application by conventional air assisted spray equipment in a single or dual-coat application is the preferred method. Apply liquid air barrier membrane in a continuous, monolithic application pattern to achieve a uniform coating of permeable air and water barrier membrane. Monitor applications to measure wet mil thickness and avoid creating sags or runs. Pretreat outside corners, wall openings and mechanical penetrations with SikaMultiSeal 515 Self-Adhered Transition Seam Tape. Apply liquid air barrier membrane to fully cover transition membrane applications.

Construction

Tie-in to structural beams, columns, floor slabs and intermittent floors, parapet curbs, foundation walls, roofing systems and at the interface of dissimilar materials with SikaMultiSeal 515 Self-Adhered Transition Seam Tape and or approved flashing membrane.
Mark areas off and ensure that the appropriate volume has been applied over each area. During spraying, the product should be applied in horizontal strokes, then vertical strokes in a cross-hatch method to ensure even application. Spray applications must be immediately back-rolled.
Protect wall areas covered with Sikagard 530 Liquid Applied Acrylic Vapor Permeable Air Barrier from damage due to construction activities, high wind conditions, and extended exposure to inclement weather. Review condition of Sikagard 530 Liquid Applied Acrylic Vapor Permeable Air Barrier prior to installation of cladding. Ai Repair, or remove and replace damaged sections with new membrane.
Recommend to cap and protect exposed back-up walls against wet weather conditions during and after application of membrane, including wall openings and construction activity above completed water-resistive vapor permeable air barrier installations.

Limitations	Apply at temperatures over 40°F (4°C). Do not apply when rain is forecast within the next 12 hours. Limit exposure to no greater than 6 months.
Caution	**CAUTION: IRRITANT.** Contains Propyleneglycol (CAS: 57-55-6), titanium dioxide (CAS: 13463-67-7) and glass, oxide, chemicals (CAS:65997-17-3). May cause eye/skin/respiratory irritation. May cause gastrointestinal disturbance if swallowed.
First Aid	**Eyes –** Hold eyelids apart and flush thoroughly with water for 15 minutes. **Skin –** Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. **Inhalation –** Remove to fresh air. **Ingestion –** Do not induce vomiting. Dilute with water. Contact physician. **In all cases contact a physician immediately if symptoms persist.**
Handling and Storage	Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Open doors and windows during use. Use a properly fitted NIOSH respirator if ventilation is poor. Wash thoroughly with soap and water after use. Remove contaminated clothing and launder before reuse.
Cleanup	Use personal protective equipment (chemical resistant gloves/goggles/clothing). Without direct contact, sweep up spilled or excess product and place in suitable sealed container. Dispose of excess product and container in accordance with applicable local, state, and federal regulations.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800-933-7452. NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTION FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Product Data Sheet
Edition 7.25.2014
Sikagard 535

Sikagard® 535

Liquid Applied Acrylic Vapor Permeable Air Barrier

Description	Sikagard 535 Liquid Applied Acrylic Vapor Permeable Air Barrier is a low VOC, single-component liquid applied, elastomeric membrane designed to provide a vapor permeable air and water barrier when applied to above-grade wall assemblies. It is acrylic-based and cures to a tough monolithic rubber-like membrane that resists air leakage and water penetration when applied to plywood and gypsum sheathing, concrete and concrete masonry units.
Where to Use	To be used in conjunction with SikaMultiSeal® 515 Self-Adhered Transition Seam Tape and Sikaflex® 11FC. Acceptable substrates are above grade exterior wall substrates including precast concrete, cast-in place concrete, concrete block, primed steel, aluminum mill finish, anodized aluminum, galvanized metal, gypsum board and wood.
Advantages	■ Low odor, low VOC. ■ Seamless, elastomeric membrane for above grade wall applications. ■ Easy to install, cost effective brush, roller or spray application using common spray equipment. ■ UV Stable for 6 month exposure. ■ Water vapor permeance allows wall assemblies to dry out. ■ Excellent adhesion to common construction surfaces. ■ Meets industry performance standards to control airmovement. ■ Low surface burning characteristics as appropriate for compliance with NFPA 285.
Coverage	Apply at a rate of 100 sf per gallon to achieve a uniform wet film thickness of 16 mils.
Packaging	5 gallon pails, 55 gallon drums

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage:	Store in original containers. Store dry at 40°F - 90°F (4°C - 35°C), do not allow product to freeze.
Shelf Life:	2 years in unopened containers.
Air Permeance ASTM E2178 (CFM/ft2):	0.0001
WVP ASTM E 96B:	12 perms
Water Resistance AATCC 127:	Pass
Fastener Sealability D1970:	Pass
Elongation at break ASTM D412:	100%
Tensile Strength ASTM D412:	175 psi
Dry Time:	Sets to Touch: 6 - 12 hours Recoat: 6 - 12 hours
Exposure:	6 months
Surface Burning Characteristics ASTM E 84	Flame Spread: 5 Smoke Development Index: 5 Class Rating: A
VOC:	g/L < 50
Weight per Gallon:	11.5 lbs
Solids by Weight:	62%
Solids by Volume:	55%
Vehicle Base:	Acrylic
Solvent:	Water
Clean up:	Warm soapy water

Construction

How to Use

Surface Preparation

Surfaces must be sound, clean, dry and free of frost, dirt, dust, loose concrete, grease, oil, contaminants or other foreign matter that may adversely affect the adhesion of the liquid applied vapor permeable air and water barrier membrane. Surfaces should be sound, free of voids, gaps, breaks and spalled areas. New concrete should be cured for a minimum of 14 days before Sikagard 535 Liquid Applied Acrylic Vapor Permeable Air Barrier is applied. Acceptable substrates are precast concrete, cast-in place concrete, concrete block, primed steel, aluminum mill finish, anodized aluminum, galvanized metal, gypsum board and wood. Joints between panels of exterior grade gypsum and plywood up to 1/4 inch (6 mm) wide shall be treated with a 1/16 inch (3 mm) deep x 3/4 inch (19 mm) wide cap bead application of Sikaflex 11FC. Joints between panels of exterior grade gypsum or plywood wider than 1/4 inch (6 mm) shall be sealed with a strip of SikaMultiSeal 515 Self-Adhered Transition Seam Tape aligned over the joint and applied to a substrate primed with Sikagard 510 Transition Seam Tape Primer. Apply sufficient pressure to self-adhered transition seam tape to ensure adhesion to substrate. Strike masonry mortar joints full flush. Cracks in masonry and concrete up to 1/4 inch (6 mm) wide shall be sealed with a cap bead application of Sikaflex 11FC. Cracks in masonry and concrete up to 1/8 inch (3 mm) wide may be filled with a trowel application of liquid air barrier mem- brane and allowed to cure overnight prior to field application of the liquid air barrier membrane to surface. Cracks wider than 1/4 inch should be repointed.

Transition joints between dissimilar materials at beams, columns, window and door frames, etc., should be sealed with a strip of SikaMultiSeal 515 Self-Adhered Transition Seam Tape aligned over the joint and applied to a substrate primed with Sikagard 510 Transition Seam Tape Primer. Apply sufficient pressure to self- adhered transition seam tape to ensure adhesion to substrate. Provide minimum of 2 1/2 inches (63 mm) of membrane bearing on each adjacent surface. Mechanical fasteners used to secure sheathing boards or penetrate sheathing boards prior to membrane application shall be set flush with sheathing board and fastened into solid backing. Thinning of the liquid membrane is not permitted.

Mixing

Stir liquid membrane thoroughly prior to application.

Application

Sikagard 535 Liquid Applied Acrylic Vapor Permeable Air Barrier may be applied by brush, roller or spray. Application by conventional air assisted spray equipment in a single or dual-coat application is the preferred method. Apply liquid air barrier membrane in a continuous, monolithic application pattern to achieve a uniform coating of permeable air and water barrier membrane. Monitor applications to measure wet mil thickness and avoid creating sags or runs. Pretreat outside corners, wall open- ings and mechanical penetrations with SikaMultiSeal 515 Self-Adhered Transition Seam Tape. Apply liquid air barrier membrane to fully cover transition membrane applications.

Tie-in to structural beams, columns, floor slabs and intermittent floors, parapet curbs, foundation walls, roofing systems and at the interface of dissimilar materials with SikaMultiSeal 515 Self-Adhered Transition Seam Tape and or approved flash- ing membrane.

Mark areas off and ensure that the appropriate volume has been applied over each area. During spraying, the product should be applied in horizontal strokes, then vertical strokes in a cross-hatch method to ensure even application. Spray applica- tions must be immediately back-rolled. Protect wall areas covered with Sikagard 535 Liquid Applied Acrylic Vapor Perme- able Air Barrier from damage due to construction activities, high wind conditions, and extended exposure to inclement weather. Review condition of Sikagard 535

Liquid Applied Acrylic Vapor Permeable Air Barrier prior to installation of cladding. Repair, or remove and replace damaged sections with new membrane. Recom- mend to cap and protect exposed back-up walls against wet weather conditions during and after application of membrane, including wall openings and construction activity above completed water-resistive vapor permeable air barrier installations.

Construction

Limitations

- Minimum age of SikaTop or MonoTop prior to application is three days, depending on curing and drying conditions (moisture content must be below 5%)
- Sikagard 535 should not be applied at relative humidity greater than 90%, or if rain is forecast within the specified rain resistance period
- When over-coating existing coatings, compatibility and adhesion testing is recommended
- Do not store Sikagard 535 in direct sunlight for prolonged periods
- Strong winds can cause shrinkage if material is applied at lower temperatures
- Not recommended for roofing

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KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

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SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. SALE OF SIKA PRODUCTS ARE SUBJECT SIKA'S TERMS AND CONDITIONS OF SALE AVAILABLE AT HTTP://USA.SIKA.COM/ OR BY CALLING 201-933-8800.

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Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Product Data Sheet
Edition 09.10.2015
SikaMembran®-540

SikaMembran®-540

Self-Adhesive Air / Vapor Barrier

Description	SikaMembran-540 is a self-adhering sheet membrane consisting of an engineered block-copolymer adhesive on a durable, conformable polypropylene film. The membrane is designed to be adhered to a variety of substrates and is available in rolls of various widths which may be used for full wall applications or as a penetration/flashing membrane used with other Sika air barrier systems.
Where to Use	SikaMembran-540 is designed to be used in above-grade wall assemblies including concrete, concrete masonry units (CMU), plywood, OSB and exterior gypsum sheathing. Other applications include transition tape application for door, window and other openings and to connect the air barrier to the door, window or other penetration.
Advantages	■ Fully bonded ■ Waterproof and airtight ■ Excellent adhesion to a variety of substrates ■ Compatible with Sikagard liquid air barriers ■ Tough film that resists punctures and tears ■ Conforms to irregular surfaces ■ Passes E 2178
Packaging	36” width by 75 ft. roll, 1 roll per box 18” width by 75 ft. roll, 2 rolls per box 12” width by 75 ft. roll, 3 rolls per box 6” width by 75 ft. roll, 6 rolls per box 4” width by 75 ft. roll, 9 rolls per box

Typical Data *(Material and curing conditions @ 74°F (22°C) and 40% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Storage:	Store pallets under cover at temperatures between 40°F and 100°F	
Shelf Life:	1 year in original packaging at recommended storage conditions	
Application Temperature Range:	min. 40°F and rising	
Service Temperature Range:	min. -20°F max. 150°F	
Maximum Exposure to UV:	Cover within 60 days	
Thickness:	8 mils	
Air Permeance (ASTM E 2178)	pass(<0.001 cfm)	
Resistance to Puncture (ASTM E 154)	>40 lb_f	
Tensile Strength (ASTM D 882)	20lb_f/in. (break factor) (Tensile Strength 2,000 psi)	
Elongation (ASTM D 882)	400%	
Water Resistance (AATCC 127)	pass	
Peel Strength (ASTM D 903)	Concrete = 5.5 lb_f/in.	Fiberglass Sheathing = 6.0 lb_f/in.
Lap Adhesion (ASTM D 3330)	Concrete = 2.0 lb_f/in.	Fiberglass Sheathing = 2.5 lb_f/in.
Lap Adhesion (ASTM D 1876)	7.0 lb/in.	
Low Temperature Flexibility (ASTM D 1970)	pass	
Self Sealability (ASTM D 1970)	pass	
Pull Adhesion (ASTM D 4541)		Fiberglass Sheathing = 16 lb_f/in.
Tear Initiation and Propagation (ASTM D 4073)	20lb_f	
Crack Bridging (ASTM 1305)	pass	
Water Vapor Permeance (ASTM E 96)	Method A(desiccant) = 0.09 perms	Method B(water) = 0.13 perms

How to Use

Surface Preparation

Acceptable substrates include concrete, concrete masonry units, primed steel, aluminum, mill finish, anodized aluminum, galvanized metal, exterior gypsum board and wood. Primer may be required for CMU or if adhesion is inadequate on substrates due to surface conditions beyond the control of the installer. Sika Latex R may be used for priming if required.

Surfaces must be sound, clean, dry and free of frost, dirt, dust, loose concrete, grease, oil, contaminants or other foreign matter that may adversely affect the adhesion of the membrane. Surfaces should be free of voids, gaps, breaks and spalls. New concrete should cure a minimum of 7 days, masonry mortar joints should be full and flush, holes or cracks greater than ¼" should be filled in with an appropriate mortar if static or with a suitable sealant or filler if required to move. Gypsum, plywood and OSB sheathing boards shall be properly fastened, flush at the joints with gaps according to building codes and sheathing board manufacturer.

Moisture content should be checked using a Tramex® moisture meter with a 4% maximum allowable measurement.

Application

Horizontal applications should start at the bottom and proceed upward, offset vertical seams 12". Vertical applications should start at the top and unroll the membrane down the wall, offset horizontal seams 12". Lap at all seams should be 2". Sequence the installation, including detailing at wall openings such as windows and doors, to provide a continuous install with shingled laps.

Cut membrane to a manageable length and position for alignment. Remove protective film and press firmly into place avoiding wrinkles and air pockets. Go over recently installed sheet with a hand roller in order to ensure continuous and intimate contact with the substrate.

For masonry ties and anchors use the 18" wide sheet. Run the upper edge of the membrane along the underside of the tie or anchor. Working up the wall, install the next sheet in a similar manner. The 18" membrane will overlap the membrane below by 2" and will require a slot or cut at each tie or anchor at the bottom of the sheet in order to be fully laid in place. Seal the penetration using Sikaflex 11fc.

Seal leading edges susceptible to moisture ingress such as non water leading edges and edges resulting from partially completed walls at the end of a day, with Sikaflex 11fc.

Coordinate installation with the roofing trade to ensure continuity between the roof and air barrier systems.

Protect membrane from damage and do not cover until inspected according to the project requirements. Make repairs to the membrane using SikaMembran-540. Extend beyond the damage by at least 3". Seal the edges of the patch with Sikaflex 11fc.

Adhesion tests should be carried out before the project install commences and should be checked periodically at least once per day on each substrate type throughout the project installation to verify proper adhesion and application.

Limitations

- SikaMembran-540 is a vapor barrier. Design professional shall determine appropriate use in project wall assemblies.
- Maximum permitted exposure is 60 days.
- Do not install on roofs.

Construction

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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LIMITED WARRANTY: Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Technical Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

Visit our website at www.sikausa.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Version 3/31/14

Sika® MultiSeal Plus

High Tack Ethylene Propylene Copolymer Self-Adhering Tape and Flashing Sheet with UV Resistant TPO Top Film Membrane

Technical Product Data (typical values) *Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

Chemical base		Ethylene Propylene Copolymer
Mastic Color		Gray
UV Resistant TPO Top-Film Membrane Colors		White, Gray
Total Thickness		37 mil (nominal) (TPO Top-Film Membrane Thickness = 5 mil)
Total solids (ASTM C 771)		100 %
Penetration (ASTM D 217) (mastic only) +/- 2°F/ 300 gr.	cone at 77°F	84 to 110 (8.4 to 11.0 mm)
Flexibility (ASTM C 765)		No cracking or loss of adhesion at -22°F (-30°C) when bent around 3/8" mandrel (9.5mm)
Elongation[1] (ASTM D-412)		700 % minimum
Membrane Tensile Strength (ASTM D412)		3800 psi
Vehicle bleed out (ASTM C 772)	158°F (70°C) for 21 days	No exudation of vehicle on Whatman No.40 filter paper.
Tensile adhesive strength[1] (ASTM C 907)		13 psi (typical failure mode 100% cohesive)
Measured Flow (ASTM D5147)		Pass
Low Temperature Flexibility -22°F (30°C) (CGSB 37-GP-56M)		Pass
Moisture Absorption (ASTM D903)		Pass (1g absorption)
Application Temperature	Standard Applications Thru-Wall Applications	40°F to 90°F (4°C to 32°C) 25°F to 90°F (-4°C to 32°C)
Adhesion to Concrete (ASTM D903)		6 lbf/in
Adhesion to DensGlass® Gold (ASTM D903)		6 lbf/in
Weatherability (ASTM G 53) (1000 h exposure)		Excellent condition; no loss of adhesion, flexibility or softness, no loss of rubbery characteristics.
Service temperature	permanent	-22°F to 180°F (-30°C to 82°C)
Shelf life (storage below 80°F (27°C))		18 months

[1] 77°F (25°C)

Description

Sika® MultiSeal Plus Ethylene Propylene Copolymer Tape and Flashing Sheet is a high performance, industrial grade self-adhered tape & flashing sheet. Sika® MultiSeal Plus consists of a non-release UV resistant TPO top film membrane laminated to at high tack, non-drying and non-hardening reinforced rubber compound with inert inorganic, non-asbestos fillers. It is specially designed for use as a waterproof barrier and thru-wall flashing membrane.

Sika MultiSeal® has superior weathering characteristics and retains adhesion and elasticity for prolonged periods. Sika® MultiSeal Plus is manufactured in accordance with ISO 9001 / 14001 quality assurance system and the Responsible Care Program.

Product Benefits

- Very tacky adhesion
- Good green strength
- Adheres to a variety of substrates
- Low VOC's
- Almost odorless
- Can be laminated to a variety of substrates for diverse applications
- Wide temperature service range
- Tough, durable tear-resistant, UV resistance, flexible membrane
- Priming is not required on concrete or Densglass® Gold

Areas of Application

Sika® MultiSeal Plus Tape & Flashing Sheet is specifically formulated to seal joints and provide a waterproof barrier when applied over prepared substrates. Acceptable substrates include EPDM, TPO, metals, Kynar steel, and substrates typically found on trucks, trailers, RV's, metal buildings, storage tanks, HVAC cabinets and duct work. Sika® This product is not recommended for sealing PVC sheeting. MultiSeal Plus Tape & Flashing Sheet is also intended to be used as a thru-wall flashing membrane in cavity wall construction when used in conjunction with Sikagard 530 and other Sika Liquid Applied Vapor Permeable Air Barrier Systems. This product is suitable for experienced professional users only. Tests with actual substrates and conditions have to be performed by the end user to ensure adhesion, function, durability, and material compatibility. Applications involving water immersion may require special substrate pre-treatment. See the Limitation section.

Chemical Resistance

Excellent resistance to water, ozonated water, water vapor and alcohols. Fair to weak resistance for acids and bases. Poor resistance to organic solvents. The above information is offered for general guidance only. Advice on specific applications will be given on request.

Method of Application

Repair Tape

Specific advise on use as a repair tape only is available from the Technical Service Department of Sika Industry at tsmh@sika.us.com.

Thru-Wall Application

Acceptable substrates are precast concrete, cast-in place concrete, concrete block, primed steel, aluminum mill finish, anodized aluminum, galvanized metal, gypsum board, wood and Sikagard® 530 Liquid Applied Vapor Permeable Air Barrier Systems. All surfaces to receive Sika® MultiSeal Plus Tape & Flashing Sheet must be clean of oil, dust and excess mortar. Strike masonry joints flush. Concrete surfaces must be smooth and without large voids, spalled areas or sharp protrusions. Concrete must be cured a minimum of 14 days and must be dry before Sika® MultiSeal Plus Tape & Flashing Sheet is applied.

Sika® MultiSeal Plus Tape & Flashing Sheet is designed for permanent exposure and may be installed direct to concrete or Densglass Gold without the aid of primers or other surface conditioners. Alternatively, Sikagard® 510 or Sikagard® 530 may be used for priming. Applications to wood require the use of Sikagard® 510 or Sikgard® 530 as a primer. Material should be conditioned at room temperature for ease of application. Cut the desired length of Sika® MultiSeal Plus Tape & Flashing Sheet, remove release paper, position into place and apply positive pressure using a roller. Use care to avoid blisters or wrinkles. Overlap all joints by 2 inches. Keep Sika® MultiSeal Plus Tape & Flashing Sheet back about ½ inch from outside face of wall or veneer. At all laps, seams, penetrations, and along top edges of membrane apply a continuous bead of Sikaflex®-11 FC sealant as termination seal**.** Form end dams as required with same sealant. Apply under dry conditions when air and surface temperatures are above 25 degrees F. Top or leading edge of Sika® MultiSeal Plus Tape & Flashing Sheet should be sealed with a Sikaflex Sealant to limit rainwater from migrating behind the membrane.

Further information available at:
www.sikausa.com

Sika Corporation
Industry Division
30800 Stephenson Highway
Madison Heights, MI 48071
USA
Tel. 248 577 0020
Fax 248 577 0810

For further advice on use as a thru-wall flashing, contact Sika Technical Services at 1-800-933-SIKA(7452)

Limitation

Substrate must be clean, dry and free of frost and all contaminants
Verify priming requirements before the start of each project.

Applications involving water immersion may require special priming of substrates.

Removal

Sika® MultiSeal Plus may be removed from tools and equipment with mineral spirit or another suitable solvent. **STRICTLY FOLLOW SOLVENT MANUFACTURER'S WARNINGS AND INSTRUCTIONS FOR USE.** Following use wash hands with soap and water. Do not use solvents on hands!

CAUTION: IRRITANT.

Slight Irritant: No respiratory effects known, however may be slightly irritating to the skin and can be a mechanical irritant if contacted with eye. Can cause discomfort if ingested.

HMIS

Health	1
Flammability	1
Reactivity	0
Personal Protection	B

First Aid Measures

Wash with soap and water if skin irritation develops. Guard against further contact. Rinse eyes with water to remove material.

Further Information

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related

data. It is highly recommended to read the actual Safety Data Sheet before using the product.

- **KEEP OUT OF REACH OF CHILDREN**
- **NOT FOR INTERNAL CONSUMPTION**
- **FOR INDUSTRIAL USE ONLY**
- **KEEP CONTAINER TIGHTLY CLOSED**
-

Copies of the following publications are available on our website www.sikausa.com:
- Safety Data Sheets
- Product Data Sheet

In case of emergency call:
Chemtrec: 800-424-9300
International: 703-527-3887

Packaging Information

Rolls	Multiple sizes
Thru-Wall Packaging	Rolls of 12.5" x 50', 2 rolls per carton, color - white (#410595) Other sizes are available, certain restrictions may apply

Value Basis
All technical data stated on this Product Data Sheet are based on the results of laboratory tests only. Actual measured data in the field may vary due to site specific conditions which are not known to Sika and beyond our control.

Clean Up
Scrape up and put into suitable container. Dispose of in accordance with Federal, State and Local environmental regulations.

Limited Material Warranty
SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES IMPLIED OR EXPRESS SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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Further information available at:
www.sikausa.com

Sika Corporation
Industry Division
30800 Stephenson Highway
Madison Heights, MI 48071
USA
Tel. 248 577 0020
Fax 248 577 0810

H - Special Additives and Accessories

Rugasol-S	usa.sika.com
SikaFilm	usa.sika.com
SikaLatex	usa.sika.com
SikaLatex R	usa.sika.com
Sikament 100 SC	usa.sika.com

I - Tables and Warranty

BUILDING TRUST

COVERAGE TABLES

Coverages for Joint Sealing (Linear feet per specified packaging)

10.1 oz Cartridge: Yield in Linear feet

		Depth (in.)		
		1/4"	3/8"	1/2"
Width	1/4"	24.3		
	3/8"	16.2	10.8	
	1/2"	12.1	8.1	6.1
	3/4"	8.1	5.4	4.0
	1"			3.0
	1.25"			2.4
	1.5"			2.0

29 oz Cartridge: Yield in Linear feet

		Depth (in.)		
		1/4"	3/8"	1/2"
Width	1/4"	69.8		
	3/8"	46.5	31.0	
	1/2"	34.9	23.3	17.4
	3/4"	23.3	15.5	11.6
	1"			8.7
	1.25"			7.0
	1.5"			5.8

20 oz Sausage: Yield in Linear feet

		Depth (in.)		
		1/4"	3/8"	1/2"
Width	1/4"	48.1		
	3/8"	32.1	21.4	
	1/2"	24.1	16.0	12.0
	3/4"	16.0	10.7	8.0
	1"			6.0
	1.25"			4.8
	1.5"			4.0

1 gallon: Yield in Linear feet

		Depth (in.)		
		1/4"	3/8''	1/2''
Width	1/4"	307.9		
	3/8"	205.3	136.8	
	1/2"	153.9	102.6	77.0
	3/4"	102.6	68.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7

(Theoretical) Coverages for Coating or Membranes

Thickness of coating applied (1000 mils = 1 in.)	Coverage per U.S. Gallon 100% Solids System
1/4 in. = 250.000 mils	6.4 sq. ft.
3/16 in. = 187.500 mils	8.5 sq. ft.
1/8 in. = 125.000 mils 100.000 mils	12.8 sq. ft. 16.0 sq. ft.
1/16 in. = 62.500 mils 50.000 mils	25.7 sq. ft. 32.1 sq. ft.
1/32 in. = 31.250 mils 20.000 mils	51.3 sq. ft. 80.2 sq. ft.
1/64 in. = 15.625 mils 10.000 mils 5.000 mils 1.000 mils	102.7 sq. ft. 160.4 sq. ft. 320.8 sq. ft. 1604.2 sq. ft.

Note: If a coating contains a solvent which will evaporate, the thickness of the coating will be reduced by the same percentage as the solvent loss.

TABLES & ESTIMATING DATA FOR EPOXY MORTARS

Epoxy Mortar Yield per Gallon of Epoxy Binder

Epoxy Binder, gal.	Aggregate, gal.*	Mortar, gal.
1	1	1.6
1	2	2.2
1	3	2.8
1	4	3.4
1	5	4.0
*Flint shot approximately 12-14 lb./gal. With other aggregates, figures will vary with mesh size and amount of entrained air.		

Coverage per Gallon of Epoxy Mortar
(Epoxy Binder + Sand)

Epoxy Mortar, gal.	Thickness, in.	Coverage, sq. ft.
1	1/16	25.7
1	1/8	12.8
1	3/16	8.6
1	1/4	6.4
1	3/8	4.3
1	1/2	3.2

CONVERSION TABLES

WATER

U.S. Gallons	Pounds
1	8.35
2	16.69
3	25.04
4	33.38
5	41.73
6	50.07
7	58.42
8	66.76
9	75.11
10	83.45
11	91.80
12	100.14
13	108.49
14	116.83
15	125.18
16	133.52
17	141.87
18	150.21
19	158.56
20	166.90
21	175.25
22	183.59
23	191.94
24	200.28
25	208.63
26	216.97
27	225.32
28	233.66
29	242.01
30	250.35
31	258.70
32	267.04
33	275.39
34	283.73
35	292.08
36	300.42
37	308.77
38	317.11
39	325.46
40	333.80
41	342.15
42	350.49
43	358.84
44	367.18
45	375.53

CEMENT

Bags	Pounds
.25	23.5
0.50	47
0.75	70.5
1.00	94
1.25	117.5
1.50	141
1.75	164.5
2.00	188
2.25	211.5
2.50	235
2.75	258.5
3.00	282
3.25	305.5
3.50	329
3.75	352.5
4.00	376
4.25	399.5
4.50	423
4.75	446.5
5.00	470
5.25	493.5
5.50	517
5.75	540.5
6.00	564
6.25	587.5
6.50	611
6.75	634.5
7.00	658
7.25	681.5
7.50	705
7.75	728.5
8.00	752

TEMPERATURE

Fahrenheit	Celsius
0	-17.8
5	-15.0
10	-12.2
15	-9.4
20	-6.7
25	-3.9
30	-1.1
32	0
35	1.7
40	4.4
45	7.2
50	10.0
55	12.8
60	15.6
65	18.3
70	21.1
75	23.9
80	26.7
85	29.4
90	32.2
95	35.0
100	37.8
105	40.6
110	43.3
115	46.1
120	48.9
125	51.7
130	54.4
135	57.2
140	60.0
145	62.8
150	65.6
155	68.3
160	71.1
165	73.9
170	76.7
175	79.4
180	82.2
185	85.0
190	87.8
195	90.6
200	93.3
205	96.1
210	98.9
212	100.0

CONVERSION TABLES

Concrete Mix Design

Material	US Customary		Multiply by		SI (Metric)		Multiply by		US Customary
Sand, Stone, Cement	lb./yd^3	x	0.5933	=	kg/m^3	x	1.686	=	lb./yd^3
Water	gal./yd^3	x	4.951	=	kg/m^3	x	0.2020	=	gal./yd^3
Admixture	fl.oz./100 lbs. cement	x	65.2	=	ml/100 kg cement	x	0.0153	=	fl.oz./100 lbs. cement
Admixture	fl.oz./yd^3	x	0.03868	=	L/m^3	x	25.85	=	fl.oz./yd^3

Concrete Properties

Material	US Customary		Multiply by		SI (Metric)		Multiply by		US Customary
Slump	in.	x	2.54	=	cm	x	0.394	=	in.
Temperature	°F	x	(°F-32) ÷1.8	=	°C	x	(°Cx1.8)+32	=	°F
Unit Weight	pcf	x	16.02	=	kg/m^3	x	0.0624	=	pcf
Compressive Strength	psi	x	0.006895	=	MPa (N/mm^2)	x	145.0	=	psi
Flexural Strength	psi	x	0.006895	=	MPa (N/mm^2)	x	145.0	=	psi
Air Content	%		---		%		---		%

Conversion factors

Where accuracy is important conversion factors should be rounded off to four significant figures. This provides sufficient accuracy for regular concrete practices such as mix design, batching etc. If greater accuracy is required, please refer to ASTM C-380.

CONVERSION TABLES

Linear Conversions (Approximate)

US Measure		Multiply by		SI (Metric)		Multiply by		US Customary
inches	x	25.4	=	Mm	x	0.039	=	in.
inches	x	2.5	=	cm	x	0.39	=	in.
feet	x	30.5	=	cm	x	3.28	=	ft.
yards	x	0.91	=	m	x	1.09	=	yds.
miles	x	1.61	=	km	x	0.62	=	miles

Area Conversions (Approximate)

US Measure		Multiply by		SI (Metric)		Multiply by		US Customary
in^2	x	6.5	=	cm^2	x	0.16	=	in^2
ft^2	x	0.092	=	m^2	x		=	
yd^2	x	0.84	=	m^2	x	1.2	=	yd^2
$mile^2$	x	2.6	=	km^2	x	0.38	=	$mile^2$

English Units

12 inches = 1 foot
3 feet = 1 yard
144 in^2 = 1ft^2
1728 in^3 = 1 ft^3
27 ft^3 = 1 yd^3
8 fl.oz. = 1 cup
2 cups = 1 pint
4 quarts = 1 gallon
1 gallon = 231 in.
1 ft = 7.48 gallons

CONVERSION TABLES

Comparison of Typical Concrete Quantities

Metric to US Customary				US Customary to Metric		
1 MPa	=	145 psi		1 ft.	=	0.3 m
1 m3	=	1.3 yd^3		1 in.	=	2.5 cm
1 liter/ m3	=	0.2 gal./ yd^3		1 fl.oz/ 100 lbs.cement	=	65 ml/100 kg cement
1 kg	=	2.2 lbs.		1 lb./yd^3	=	0.6 kg/m^3
1 kg/m3	=	1.686 lbs/yd^3		1 yd^3	=	0.7646 m^3
Unit weight (water)	=	1 kg/L		1 fl.oz	=	30 ml
1 metric ton (1000 kg)	=	2205 lbs.		1 gal.	=	3.8 liter

Comparison of Typical (Approximate) Concrete Values

Typical value	US Customary	Metric
Weight: bag of cement	94 lb	± 43 kg
Typical Design Strength	3000 psi	21 MPa
High Strength Concrete	6000 psi	41 MPa
Cement Content 5 bag mix 6 bag mix 7 bag mix	 470 lbs/yd^3 564 lbs/yd^3 658 lbs/yd^3	 279 kg/m^3 335 kg/m^3 390 kg/m^3
Concrete Density	145 lb./ft^3	2323 kg/m^3
Slump	3 - 4 in.	7.5 - 10 cm
Slab thickness	4 in.	10 cm

CONVERSION TABLES

Volume Conversions (approximate)

US Measure		Multiply by		SI (Metric)		Multiply by		US Customary
in^3	x	16.0	=	ml	x	0.06	=	$in.^3$
fl. oz.	x	29.6	=	ml	x	0.03	=	fl. oz.
cups	x	0.24	=	liters	x	0.036	=	cups
pints	x	0.47	=	liters	x	2.1	=	pints
quarts	x	0.95	=	liters	x	1.06	=	quarts
gallons	x	3.79	=	liters		0.26	=	gallons
ft.	x	0.028	=	m		35.3	=	ft.
yds^3	x	0.76	=	ft.		1.31	=	yds^3
ft^3	x	28.3	=	liters			=	
yds^3	x	764.5	=	liters			=	

Comparison of Typical Concrete Quantities

US Measure		Multiply by		SI (Metric)		Multiply by		US Customary
oz.	x	28.3	=	grams	x	0.035	=	oz.
lbs.	x	0.45	=	kg	x	2.2	=	lbs.
short tons	x	0.91	=	Metric Tons	x	1.1	=	short tons

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NOTES:

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FOR MORE INFORMATION:

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 201-933-8800
Fax: 201-933-6225
www.usa.sika.com

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