

Sika CarboDur®

Carbon fiber laminate for structural strengthening

Construction

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
 - 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

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)



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	<p>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.</p> <p>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.</p> <p>Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture.</p> <p>CarboDur - Wipe clean with appropriate cleaner (e.g. MEK).</p> <p>Cutting the CarboDur Laminate:</p> <p>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.</p> <p>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 (see Caution).</p>
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.
Caution	<p>CarboDur strips are non-reactive and fully cured. They do not require a material safety data sheet. However, caution must be used when handling the CFRP laminates since a fine "carbon dust" may be present on the strips. Gloves must therefore be worn to protect against skin irritation.</p> <p>Caution must also be used when cutting CarboDur laminates to protect against airborne carbon dust generated by the cutting procedure. Use of an appropriate, properly fitted NIOSH approved respirator is recommended.</p>

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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	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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.)

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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.



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How to Use	
Substrate	Concrete, mortar, and masonry products.
Surface Preparation	<p>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, scabblor, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of $\pm 1/8$ in. (CSP-7). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application.</p> <p>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).</p>
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 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 & 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	<ul style="list-style-type: none"> ■ 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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APPROVED

By Farrukh Sayeed at 8:13 pm, Apr 04, 2023

Sikadur® Crack Weld

Crack Injection Kit

Construction

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	<ul style="list-style-type: none"> ■ Low pressure injection of cracks in structural concrete and solid masonry. ■ Gravity feed cracks in horizontal concrete and horizontal solid masonry.
Advantages	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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 (68.9)	9000 (62.1)	10,000 (68.9)	10,000
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	



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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.



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	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	<ul style="list-style-type: none"> ■ 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

Sikaflex[®]-2c NS EZ Mix

APPROVED

By Farrukh Sayeed at 8:13 pm, Apr 04, 2023

TWO-COMPONENT, NON-SAG, POLYURETHANE ELASTOMERIC SEALANT

PRODUCT 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 S, Grade NS, Class 25, use T, NT, M, G, A, O, I and Federal specification TT-S-00230 C Type II, Class A. Meets Canada Standard CAN/CGSB 19.24 - M90.

USES

- 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.

CHARACTERISTICS / 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 (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.

ENVIRONMENTAL INFORMATION

- LEED[®] EQc 4.1
- SCAQMD, Rule 1168
- BAAQMD, Reg. 8, Rule 51

APPROVALS / STANDARDS

- Certified to NSF/ANSI standard 61 for portable water
- 2-hour UL Fire Rated Joint System Nos. FF-S-1034, FW-S-1020, HW-S-1018, WW-S-1037.

PRODUCT INFORMATION

Packaging	1.5 gal. unit, 3 gal unit.
Color	A wide range of architectural colors are available. Special colors available on request.
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.

TECHNICAL INFORMATION

Shore A Hardness	25 ± 5	(73 °F (23 °C) and 50 % R.H.) (ASTM D-2240)		
Tensile Strength	95 psi	(73 °F (23 °C) and 50 % R.H.) (ASTM D-412)		
Tensile Stress at Specified Elongation	70 psi at 100 %	(73 °F (23 °C) and 50 % R.H.) (ASTM D-412)		
Elongation at Break	300 %	(73 °F (23 °C) and 50 % R.H.) (ASTM D-412)		
Adhesion in Peel	Substrate Concrete	Peel Strength >15 lb.	Adhesion loss 0%	(73 °F (23 °C) and 50 % R.H.) (Fed Spec. TT-S-00227E)
Tear Strength	45 lbs./in.	(73 °F (23 °C) and 50 % R.H.) (ASTM D-624)		
Chemical Resistance	Good resistance to water, diluted acids, diluted alkalines, and residential sewage. Consult Technical Service at 1-800-933-SIKA for specific data.			
Resistance to Weathering	Excellent			
Service Temperature	-40 °F to 170 °F (-40°C to 75 °C).			

APPLICATION INFORMATION

Coverage	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	38.4	51.3
	1"			38.5
	1.25"			30.8
	1.5"			25.7
Ambient Air Temperature	40 °F to 100 °F Sealant should be installed when joint is at mid-range of its anticipated movement.			
Substrate Temperature	40 °F to 100 °F Sealant should be installed when joint is at mid-range of its anticipated movement.			
Pot Life	Sikaflex®-2c NS EZ Mix Working Time (hours)			
		73 °F	100 °F	40 °F
	Sikaflex-2c NS	4–6	3	6
	w/ 1 booster	2	1	2–3
	w/ 2 boosters	1	<1	1.5

APPLICATION INSTRUCTIONS

SUBSTRATE 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 METHOD / TOOLS

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.

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 Sikaflex 2c NS 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.

BASIS OF PRODUCT 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.

LOCAL RESTRICTIONS

See Legal Disclaimer.

ENVIRONMENTAL, HEALTH AND SAFETY

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Product Data Sheet
Sikaflex®-2c NS EZ Mix
October 2018, Version 01.01
020511050000000002

Sikaflex-2cNSEZMix-en-US-(10-2018)-1-1.pdf



PRODUCT DATA SHEET

Sikaflex[®]-11 FC

APPROVED

By Farrukh Sayeed at 8:14 pm, Apr 04, 2023

ONE PART ADVANCED POLYURETHANE, ELASTOMERIC SEALANT/ADHESIVE

PRODUCT 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 that meets ASTM C920 Type S, Grade NS, Class 12.5, Use NT, I, M, G, A, O. and Federal Specification TT-S-00230C.

USES

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.

CHARACTERISTICS / 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.

PRODUCT INFORMATION

Packaging	Disposable 10.1 fl. oz., moisture-proof composite cartridges, 24/case.
Color	White
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.

Volatile organic compound (VOC) content 28.5 g/L

TECHNICAL INFORMATION

Shore A Hardness	40–45	(73 °F (23 °C) and 50 % R.H.) (ASTM D-2240)
Tensile Strength	225 psi	(73 °F (23 °C) and 50 % R.H.) (ASTM D-412)
Elongation at Break	600 %	(73 °F (23 °C) and 50 % R.H.) (ASTM D-412)
Elastic Recovery	>90 %	(73 °F (23 °C) and 50 % R.H.) (ASTM C-719)
Lap Shear Strength	165 psi	(73 °F (23 °C) and 50 % R.H.) (ASTM D-1002 modified, glass substrate)
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.	
Service Temperature	-40 °F to 170 °F	
Resistance to Weathering	Excellent	

APPLICATION INFORMATION

Coverage	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	

Product Temperature

Ambient Air Temperature 40 °F to 100 °F.
Sealant should be installed when joint is at mid-range of its anticipated movement.

Curing Rate

Tack-free Time (TT-S-00230C)	1 to 2 hours depending on climate
Final Cure	3 to 5 days

APPLICATION INSTRUCTIONS

SUBSTRATE 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.

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 informa-

tion on priming.

APPLICATION METHOD / TOOLS

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 or 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.

BASIS OF PRODUCT 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.

LOCAL RESTRICTIONS

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Product Data Sheet
Sikaflex®-11 FC
October 2018, Version 01.01
020513010000000008

Sikaflex-11FC-en-US-(10-2018)-1-1.pdf



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	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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



How to Use	
Surface Preparation	<p>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, scabber 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.</p> <p>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.</p>
Priming:	<p>Reinforcement Steel: For priming of reinforcement steel use Sika® Armatec® 110 EpoCem (Consult Technical Data Sheet).</p> <p>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.</p>
Mixing	<p>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.</p> <p>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.</p> <p>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.</p>
Application	<p>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.</p>
Tooling and Finishing	<p>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.</p> <p>* Pretesting of curing compound is recommended.</p>
Removal	<p>Cured product must be removed mechanically.</p>
Over Painting	<p>Acrylic waterbased systems - 4 hrs Epoxy/PU based systems - 6 hrs Compatibility and adhesion testing is always recommended.</p>
Limitations	<ul style="list-style-type: none"> ■ 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

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/](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.

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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/](http://usa.sika.com/) OR BY CALLING 201-933-8800.

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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	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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 complaint.
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./ft ³ (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%
CI 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		3.00x10 ⁶ psi
Initial Set Time (min)	ASTM C 266		40-70



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How to Use										
Substrates	Concrete, mortar, and masonry products.									
Surface Preparation	<p>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, scabblor, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of $\pm 1/16$ inch (CSP-5); $\pm 1/8$ inch (CSP-6). Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application.</p> <p>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).</p> <p>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.</p>									
Mixing	<p>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.</p> <p>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: Variations 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.</p>									
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	<table border="1"> <thead> <tr> <th>Application thickness:</th> <th>Min.</th> <th>Max. in one lift</th> </tr> </thead> <tbody> <tr> <td>Neat</td> <td>1/8 inch (3 mm)</td> <td>1 inch (25 mm)</td> </tr> <tr> <td>Extended</td> <td>1 inch (25 mm)</td> <td>4 inches (100 mm)</td> </tr> </tbody> </table> <ul style="list-style-type: none"> ■ 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. 	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)
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)								

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DIVISION 7 - THERMAL AND MOISTURE PROTECTION
Section 07900 Joint Sealers
Elastomeric and non-Elastomeric Sealant

Part 1 - General

1.01 Summary

- A. This specification describes the sealing of joints and cracks with a two-component, non-sag, elastomeric polyurethane sealant.

1.02 Quality Assurance

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001:2008 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.
- B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
- C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

- A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.
- B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
- C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

- A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 40°F (5°C) and rising.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified coating.

1.05 Submittals

- A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS)

1.06 Warranty

- A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturers

- A. **Sikaflex-2c NS EZ**, as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, OH 43302 is considered to conform to the requirements of this specification.

2.02 Materials

- A. Polyurethane sealant:
 - 1. The joint sealant shall be a two-component, non-sag , polyurethane-base material. It shall be applicable in horizontal, vertical, and overhead joints. The sealant shall be principally a chemical cure to form an elastomeric substance. The color shall be introduced through a "Color-pak" system or be pretinted from the manufacturer.
- B. Any primers, as required, recommended by the manufacturer of the specified product, approved by the engineer.
- C. Backer rod or bond breaker tape as approved by engineer.

2.03 Performance Criteria

- A. Properties of the mixed polyurethane sealant:
 - 1. Initial Cure (Tack-Free Time): 8-10 hours
 - 2. Consistency: non-sag
 - 3. Color: 35 standard colos. Additional architectural colors available through color matching system
- B. Properties of the cured polyurethane sealant:
 - 1. Tensile Properties (ASTM D-412) at 14 days

	<u>Non-sag EZ</u>
a. Tensile Strength at break: minimum	95 psi
b. Tensile Elongation: minimum	300%
c. Modulus of Elasticity - 100% Elongation	70 psi, min.
 - 2. Shore A Hardness (ASTM D-2240) at 14 days:
 - a. Non-sag EZ: 25 +/-5
 - 3. Tear Strength (ASTM D-624) at 14 days: non-sag 45 lbs./in
 - 4. Adhesion in Peel (TT-S-00227E, ASTM C-794) at 21 days
 - a. Concrete: >15 lb. min. 0% Adhesion Loss
 - 5. Service Range: -40° to 170°F (-40° to 77°C)
 - 6. The sealant shall conform to Federal Specification TT-S-00227E, Type II, Class A.
 - 7. The sealant shall conform to ASTM C-920, Type M, Grade NS, Class 25.
 - 8. The sealant shall be capable of ±25% of the average joint width when tested in accordance to the durability bond test of Federal Specification TT-S-00227E and ASTM C-719.
 - 9. The sealant shall be non-staining.
 - 10. Final Cure: 3 days max.

Note: Tests were performed with material and curing conditions at 71°-75°F and 45-55% relative humidity.

Part 3 - Execution

3.01 Surface Preparation

- A. The joint and adjacent substrate must be clean, dry, sound and free of surface contaminants. Remove all traces of the old sealant, dust, laitance, grease, oils, curing compounds, form release agents and foreign particles by mechanical means, i.e. – sandblasting, etc., as approved by the engineer. Blow joint free of dust using compressed air line equipped with an oil trap.

3.02 Mixing and Application

- A. Mixing of the polyurethane sealant: Pour out entire contents of Component B into pail of Component A. Add entire contents of Color-pak into pail and mix with low-speed drill (400-600 rpm) and approved paddle. Mix for 3-5 minutes to achieve a uniform color and consistency. Avoid entrapment of air during mixing.
- B. Joints:
 - 1. Placement Procedure: Prime all substrates as required based upon the recommendations of the manufacturer of the specified product, when field testing indicates need, and when the joints will be subject to immersion after cure, as approved by the Engineer.
 - 2. Install approved backer rod or bond breaker tape in all joints subject to thermal movement to prevent three-sided bonding and to set the depth of the sealant at a maximum of 1/2 in., measured at the center point of the joint width. Approval of the backer rod or bond breaker tape shall be made by the Engineer.
 - 3. Joints shall be masked to prevent discoloration or application on unwanted areas, as directed by the Engineer. If masking tape is used, it shall not be removed before tooling, yet must be removed before the initial cure of the sealant. Do not apply the masking tape until just prior to the sealant application.
 - 4. Install sealant into prepared joints when the joint is at mid-point of its expansion and contraction cycle.
 - a. Non-sag sealant: Load the sealant into a caulking gun. Place the nozzle of the gun, either hand or electric powered, into the bottom of the joint and fill entire joint. Keep the tip of the nozzle in the sealant, continue with a steady flow of sealant preceeding the nozzle to avoid air entrapment. Avoid overlapping the sealant to eliminate the entrapment of air. Tool, as required, to properly fill the joint.
 - 5. Adhere to all limitations and cautions for the polyurethane sealant in the manufacturer's printed literature.
- B. Cracks
 - 1. Non-sag sealant: For best performance, sealant should be gunned into crack to a minimum of 1/4" in depth. Place the nozzle of the gun, either hand or air or electric powered, into the bottom of the crack and fill entire crack. Keep the tip of the nozzle in the sealant, continue with a steady flow of sealant preceeding the nozzle to avoid air entrapment. Avoid overlapping the sealant to eliminate the entrapment of air. Tool as required to properly fill the crack.
 - 2. Adhere to all limitations and cautions for the polyurethane sealant as stated in the manufacturers printed literature.

3.03 Cleaning

- A. The uncured polyurethane sealant can be cleaned with an approved solvent. The cured polyurethane sealant can only be removed mechanically
- B. Leave work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-071NS Sikaflex®-2c NS EZ

Crack Filler

Figure 1 & 2 - Sikaflex-2c NS EZ (non-sag)

1. Chase crack with “V” shaped blade as required and prepare substrate per technical data sheets.
2. Gun Sikaflex-2c NS EZ into prepared crack, minimum depth $\frac{1}{4}$ ".
3. Tool as required to properly fill crack.

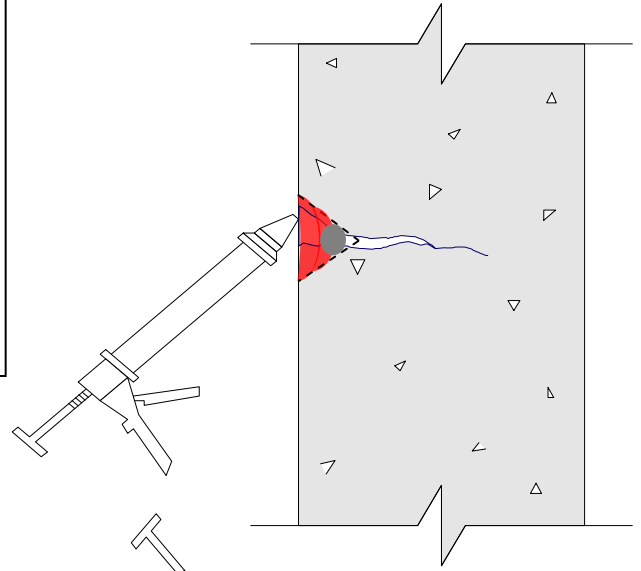
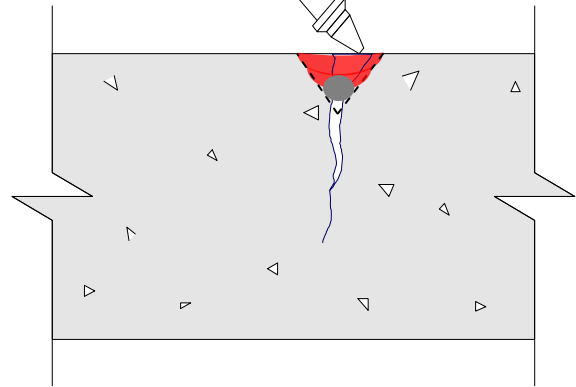


Fig. 1

Fig. 2

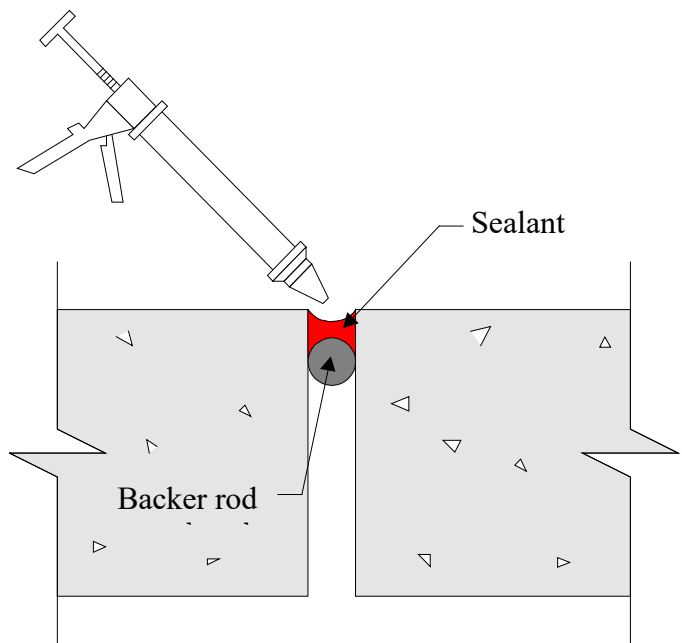
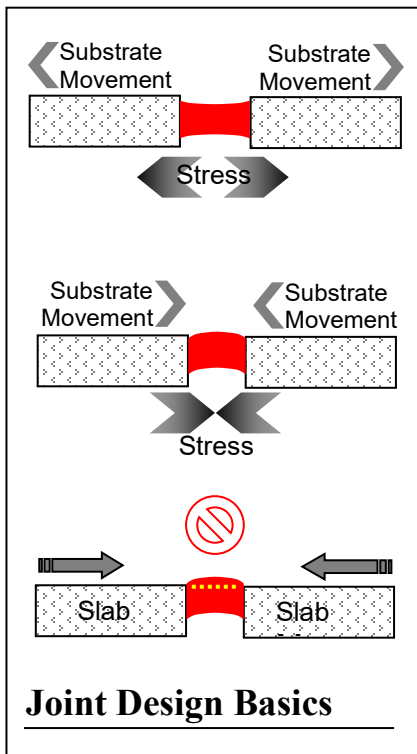
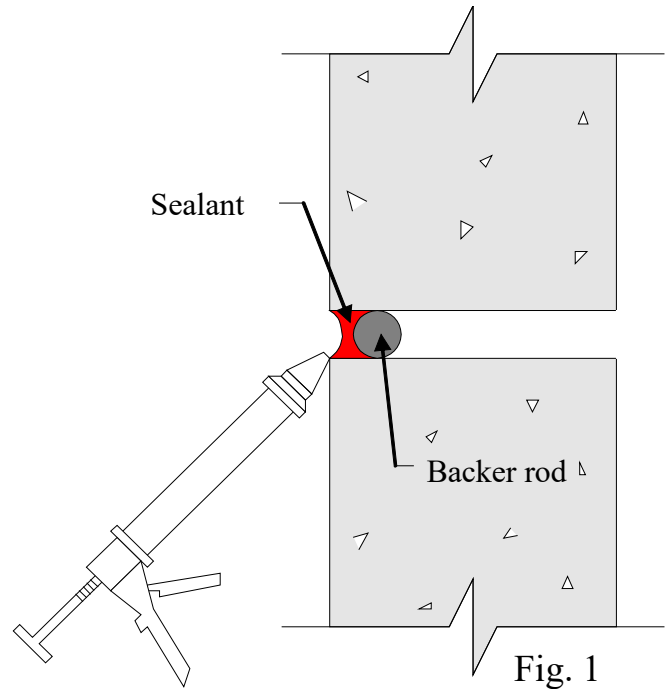


SC-071NS Sikaflex® 2c NS EZ Expansion Joint Filler

Figure 1 - Sikaflex-2c NS EZ (non-sag)

1. Install appropriate backer material to prevent three-sided adhesion and to control sealant depth.
2. **Sikaflex-2c NS EZ** should be gunned into joint at mid-point of designed expansion and contraction.
3. Tool as required to properly fill joints.

Note: **Sikaflex-2c NS EZ** is designed for all types of joints where maximum sealant depth will not exceed 1/2".



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Section 04 05 13.91 Vertical Overhead Repair Mortar

SIKA SPECIFICATION NOTE: This guide specification includes test methods, materials and installation procedures for **SikaQuick® VOH**, a fast setting, one component, cementitious, vertical and overhead repair mortar with superior high build properties. **SikaQuick® VOH** is an ideal repair material for vertical and overhead applications on parking decks, bridge decks, concrete surfaces, ramps, barriers, cooling towers, stadiums and many other concrete structures and substrates. This guide specification should be adapted to suit the needs and conditions of individual projects. It is prepared in CSI Master Format and should be included as a separate section under Division 4 – Masonry.

Part 1 - General

1.01 Summary

This Specification shall be read as a whole by all parties concerned. Each Section may contain more or less the complete Work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their Work and coordinate overlapping Work.

1.02 System description

This specification describes the patching of interior and/or exterior vertical and overhead surfaces with a rapid setting portland cement mortar.

1.03 Related sections

Masonry Mortaring – Section 04 05 13

1.04 References

The following standards are applicable to this section:

- ASTM C-109 - Compressive Strength
- ASTM C-1583 – Direct Pull-Off Bond Strength
- ASTM C-469 - Modulus of Elasticity
- ASTM C-157 Modified per ASTM C-928 – Shrinkage
- ASTM C-293 - Flexural Strength

1.05 Quality Assurance

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.



- B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
- C. Store and apply materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Safety Data Sheets (SDS) for complete handling recommendations.

1.06 Delivery, Storage, and Handling

- A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.
- B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
- C. Condition the specified product as recommended by the manufacturer.

1.07 Job Conditions

- A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 40°F (4°C) and rising.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.08 Submittals

- A. Submit two copies of manufacturer's literature, to include: Product Data Sheets (PDS), and appropriate Safety Data Sheets (SDS).
- B. Submit copy of Certificate of Approved Contractor status by manufacturer.

1.09 Warranty

Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

SikaQuick®-VOH, as manufactured by Sika® Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

- A. Vertical Overhead repair mortar shall be **SikaQuick®-VOH**, fast setting, cementitious repair mortar manufactured by Sika® Corporation.
- B. The material shall be high build mortar made with a specialty cement blend.
- C. The material shall be a one-component repair material manufactured by Sika Corporation .

2.03 Performance Criteria

Typical Properties of the mixed polymer-modified, portland cement mortar:

Yield	0.44 ft ³ per bag
Color	Concrete gray
Mixing Ratio	6–6.5 pts (2.8-3.1 L) per bag
Application Thickness	Min 1/8" (3 mm) Max 3" (76 mm)
Application Temp	> 45 °F (7 °C)
Working Time	~ 15 minutes
Compressive Strength (ASTM C-109)	3 hours > 1,500 psi (10.3 MPa) 1 day > 3,000 psi (20.7 MPa) 28 days - 5,500 psi (37.9 MPa)
Flexural Strength (ASTM C-293)	1 day - 400 psi (2.8 MPa) 7 day – 600 psi (4.1 MPa) 28 day – 1,000 psi (6.9 MPa)
Bond Strength (ASTM C-1583)	> 250 psi (1.7 MPa) Substrate failure
Slant Shear Strength (ASTM C-882 modified*)	28 days - 2,000 psi (13.8 MPa)
Shrinkage @ 28 days (ASTM C-157 Modified per ASTM C-928)	< 0.05%
Modulus of Elasticity in Compression (ASTM C-469)	2.2x10 ⁶ psi (15.2 GPa)

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45 - 55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

- A. Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare concrete substrate to obtain a surface profile of $\pm 1/16''$ (CSP 5 or greater as per ICRI Guidelines) with a new exposed aggregate surface. Area to be patched shall not be less than 1/8" in depth.
- B. Where reinforcing steel with active corrosion is encountered, sandblast the steel to a white metal finish to remove all contaminants and rust. Where corrosion has occurred due to the presence of chlorides, the steel shall be high pressure washed after mechanical cleaning. Prime steel with 2 coats of Sika® Armatec® 110 EpoCem as per the Product Data Sheet (PDS).



3.02 Mixing and Application

- A. Mechanically mix in appropriate sized mortar mixer or with a Sika jiffy paddle and low speed (400-600 rpm) drill. Pour approximately 5 pints of water into the mixing container. Add the powder while continuing to mix. Mix to a uniform consistency for a maximum of three minutes. Add up to another ½ pint of water to mix if a greater flow is desired. Should smaller quantities be needed, be sure the proper water/powder ratio is maintained and that the dry material is uniformly blended before mixing the components together. Mix only that amount of material that can be placed in 30 minutes. Do not retemper material.
- B. Mixing of the rapid-setting portland cement concrete: Pour 6 to 6-1/2 pints of water into the mixing container. Add the powder while continuing to mix. Add correct amount of the pre-approved coarse aggregate, and continue mixing to a uniform consistency. Mixing time should be 3 minutes maximum.
- C. Placement Procedure: At the time of application, the substrate should be saturated surface dry with no standing water. Mortar and/or concrete must be scrubbed into substrate filling all pores and voids. While the scrub coat is still plastic, force material against the edge of the repair, working toward the center. After filling, consolidate, then screed. Allow mortar or concrete to set to desired stiffness, then finish with a trowel for a smooth surface. Broom or burlap drag for rough surface. Areas where the depth of the repair is less than 2" over head and 3" vertical shall be repaired with one lift of the rapid setting portland cement mortar. Areas that exceed these depths must be repaired with multiple lifts.
- A. 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. Moist curing should commence immediately after finishing and continue for 48 hours. Protect newly applied material from rain, sun, and wind until compressive strength is 70% of the 28 day compressive strength. To prevent from freezing cover with insulating material. Setting time is dependent on temperature and humidity.
 - *Pretesting of curing compound is recommended.
- B. Adhere to all procedures, limitations and cautions for the polymer-modified portland cement mortar in the manufacturers current printed Product Data Sheet (PDS) and literature.

3.02 Cleaning

- A. The uncured material can be cleaned from tools with water. The cured cement mortar can only be removed mechanically.
- B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

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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 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.



DIVISION 3 - CONCRETE
Section 03550 - Concrete Toppings
Section 03720 - Concrete Resurfacing
Section 03730 - Concrete Rehabilitation

Part 1 – General

1.01 Summary

- A. This specification describes the patching or overlay of interior and/or exterior horizontal surfaces with a polymer-modified, portland cement mortar/concrete.

1.02 Quality Assurance

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.
- B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative
- C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

- A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.
- B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
- C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

- A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45°F (7°C) and rising.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

- A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

- A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

- A. **SikaTop 122 Plus**, as manufactured by Sika Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

- A. Polymer-modified Portland cement mortar:
1. Component A shall be a liquid polymer emulsion of an acrylic copolymer base and additives.
 - a. pH: 4.5-6.5
 - b. Film Forming Temperature: 73°F max.
 - c. Tear Strength: 950-psi min.
 - d. Elongation at Break: 500% min.
 - e. Particle Size: less than 0.1 micron
 2. Component A shall contain an organic, penetrating corrosion inhibitor which has been independently proven to reduce corrosion in concrete via ASTM G3 (half-cell potential tests). The corrosion inhibitor shall not be calcium nitrite, and shall have a minimum of 5 years of independent field testing to document performance on actual construction projects.
 3. Component B shall be a blend of selected portland cements, specially graded aggregates, admixtures for controlling setting time, water reducers for workability, and an organic accelerator.
 4. The materials shall be non-combustible, both before and after cure.
 5. The materials shall be supplied in a factory-proportioned unit.
 6. The polymer-modified, portland cement mortar must be placeable from 1/8-in. to 1-in. in depth per lift for horizontal applications.
- B. To prepare a polymer-modified portland cement concrete: aggregate shall conform to ASTM C-33. The factory-proportioned unit shall be extended with 42-lb. max. of a 3/8 in. (No.8 distribution per ASTM C-33, Table II) clean, well-graded, saturated surface dry aggregate, having low absorption and high density. Aggregate must be approved for use by the Engineer.

2.03 Performance Criteria

- A. Typical Properties of the mixed polymer-modified, portland cement mortar:
1. Working Time: Approximately 30 minutes
 2. Finishing Time: 50-120 minutes
 3. Color: concrete gray when mixed
- B. Typical Properties of the cured polymer-modified, portland cement mortar:
1. Compressive Strength (ASTM C-109 Modified)
 - a. 1 day: 3000 psi min. (20.7 MPa)
 - b. 7 day: 5500 psi min. (37.9 MPa)
 - c. 28 day: 7000 psi min. (48.3 MPa)
 2. Flexural Strength (ASTM C-293) @ 28 days: 2000 psi (13.8 MPa)
 3. Splitting Tensile Strength (ASTM C-496) @ 28 days 750 psi (5.2 MPa)
 4. Bond Strength (ASTM C-882 Modified) @ 28 days: 2200 psi (15.2 MPa)
 5. The portland cement mortar shall not produce a vapor barrier.
 6. Density(wet mix): 136 lbs. / cu. ft. (2.18 kg/l)
 7. Permeability (AASHTO T-277 @ 28 days Approximately 500 Coulombs)

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45-55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

- A. Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare the concrete substrate to obtain a surface profile of +/- 1/16" (CSP 5 or greater as per ICRI Guidelines) with a new exposed aggregate surface. Area to be patched shall not be less than 1/8" in depth.
- B. Where reinforcing steel with active corrosion is encountered, sandblast the steel to a white metal finish to remove all contaminants and rust. Where corrosion has occurred due to the presence of chlorides, the steel shall be high pressure washed after mechanical cleaning. Prime steel with 2 coats of Sika Arimatec 110 EpoCem as directed by manufacturer. (See Spec Component SC-201-0699)

3.02 Mixing and Application

- A. Mechanically mix in appropriate sized mortar mixer or with a Sika jiffy paddle and low speed (400-600 rpm) drill. Pour approximately 4/5 gal Component A into the mixing container. Add Component B while continuing to mix. Mix to a uniform consistency for a maximum of three minutes. Add remaining Component A to mix if a more loose consistency is desired. Should smaller quantities be needed, be sure the components are measured in the correct ratio and that the Component B is uniformly blended before mixing the components together. Mix only that amount of material that can be placed in 30 minutes. Do not retemper material.
- B. Mixing of the polymer-modified portland cement concrete: Pour all (1-gallon) of Component A into the mixing container. Add Component B while continuing to mix. Add correct amount of the pre-approved coarse aggregate, and continue mixing to a uniform consistency. Mixing time should be 3 minutes maximum.
- C. Placement Procedure: At the time of application, the substrate should be saturated surface dry with no standing water. Mortar and/or concrete must be scrubbed into substrate filling all pores and voids. While the scrub coat is still plastic, force material against edge of repair, working toward center. If repair area is too large to fill while scrub coat is still wet use Sika Arimatec 110 EpoCem in lieu of scrub coat (See Spec Component SC-200). After filling, consolidate, then screed. Allow mortar or concrete to set to desired stiffness, then finish with trowel, manual or power, for smooth surface. Broom or burlap drag for rough surface. Areas where the depth of the repair is less than 1-inch shall be repaired with polymer-modified portland cement mortar. In areas where the depth of the repair is greater than 1 inch, the repair shall be made with polymer-modified portland cement concrete.
- D. 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. Moist curing should commence immediately after finishing and continue for 48 hours. Protect newly applied material from rain, sun, and wind until compressive strength is 70% of the 28-day compressive strength. To prevent from freezing cover with insulating material. Setting time is dependent on temperature and humidity.

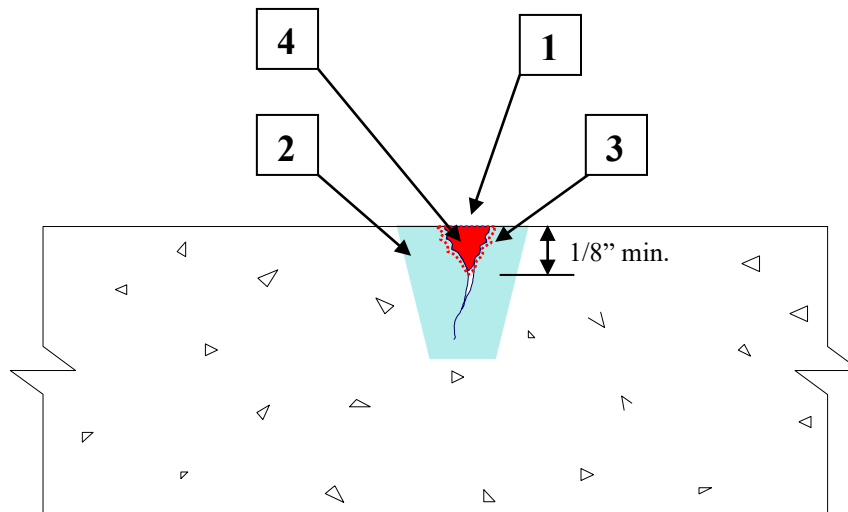
*Pretesting of curing compound is recommended.
- E. Adhere to all procedures, limitations and cautions for the polymer-modified portland cement mortar in the manufacturers current printed technical data sheet and literature.

3.05 Cleaning

- A. The uncured polymer-modified portland cement mortar can be cleaned from tools with water. The cured polymer - modified portland cement mortar can only be removed mechanically.
- B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-025

SikaTop® 122 Plus Crack Repair

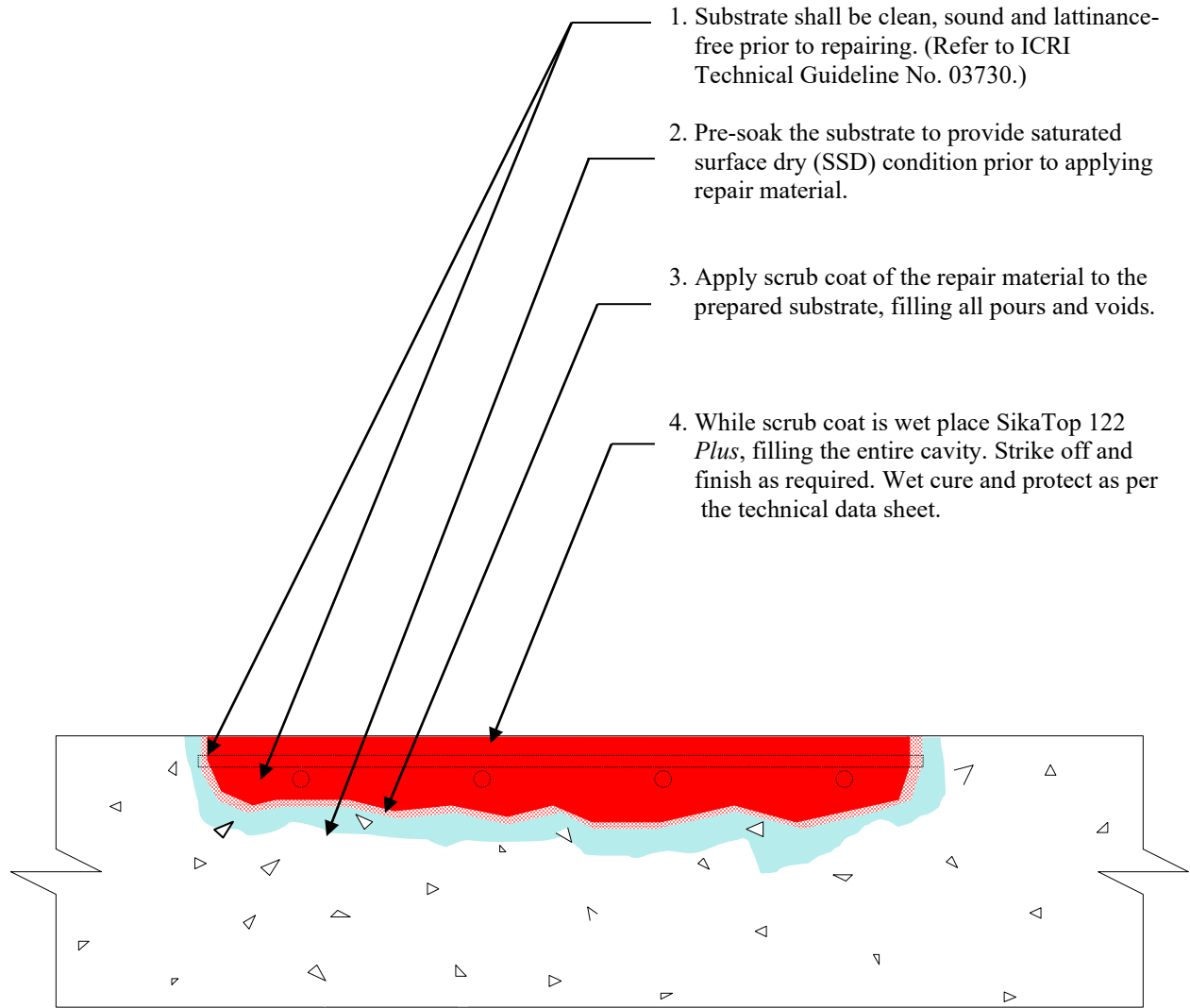


1. Substrate shall be clean, sound and lattinance-free prior to repairing.
2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material.
3. Apply scrub coat of the repair material to the prepared substrate.
4. While scrub coat is wet place SikaTop 122 Plus, filling the entire cavity. Strike off and finish as required. Wet cure and protect as per the technical data sheet.

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SC-025

SikaTop® 122 Plus Hand-applied Repair



Note:

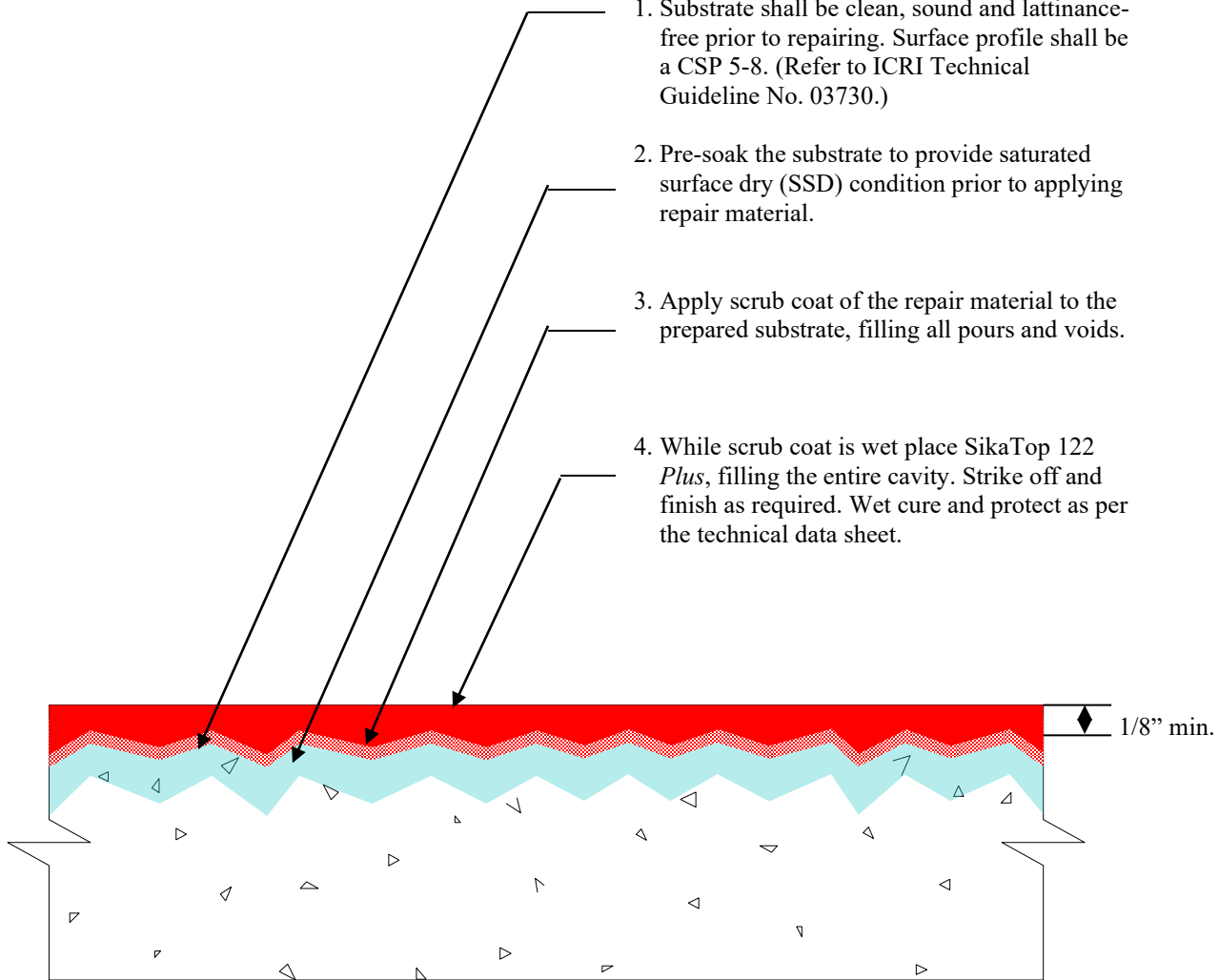
1. If repair area is too large to fill while scrub coat is still wet, use Sika Armatec 110 EpoCem in lieu of the scrub coat. (See Spec Component SC-200)
2. If reinforcing steel is located within the repair location refer to Spec Component SC-201
3. For applications greater than 1" in depth, add 3/8" coarse aggregate in accordance to the technical data sheet.

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SC-025

SikaTop® 122 Plus Overlay

1. Substrate shall be clean, sound and lattinance-free prior to repairing. Surface profile shall be a CSP 5-8. (Refer to ICRI Technical Guideline No. 03730.)
2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material.
3. Apply scrub coat of the repair material to the prepared substrate, filling all pours and voids.
4. While scrub coat is wet place SikaTop 122 Plus, filling the entire cavity. Strike off and finish as required. Wet cure and protect as per the technical data sheet.



Note:

1. If repair area is too large to fill while scrub coat is still wet, use Sika Armatec 110 EpoCem in lieu of the scrub coat. (See Spec Component SC-200)
2. If reinforcing steel is located within the repair location refer to Spec Component SC-201
3. For applications greater than 1" in depth, add 3/8" coarse aggregate in accordance to the technical data sheet.

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