

PRODUCT DATA SHEET

SikaTop-123 Plus

TWO-COMPONENT, POLYMER-MODIFIED, CEMENTITIOUS, NON-SAG MORTAR PLUS SIKA FERROGARD® 901 PENETRATING CORROSION INHIBITOR

PRODUCT 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.

USES

- 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

CHARACTERISTICS / 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.
- 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.
- Compatible with coefficient of thermal expansion of concrete - Passes ASTM C 884.

APPROVALS / STANDARDS

- USDA certifiable for incidental food contact
- ANSI/NSF Standard 61 potable water approved compliant.
- Tested per ICRI Guideline NO. 320.3R for inorganic repair material data sheet protocol

PRODUCT INFORMATION

Packaging	Component A	1 gal (3.68 L) jug - 4/carton
	Component B	44 lb. (20 kg) bag
Appearance / Color	Gray powder	
Shelf Life	12 months from date of production if stored properly in original, unopened and undamaged sealed packaging	
Storage Conditions	Store dry at 40–95 °F (4–35 °C). Protect Component 'B' from moisture. If damp, discard material Protect Component 'A' from freezing. If frozen, discard.	

TECHNICAL INFORMATION

Compressive Strength	1 day	3,000 psi (20.7 MPa)	(ASTM C-109)
	7 days	4,000 psi (27.6 MPa)	73 °F (23 °C)
	28 days	6,000 psi (41.4 MPa)	50 % R.H.
Modulus of Elasticity in Compression	2.94 x 10 ⁶ psi		(ASTM C-469)
Flexural Strength	28 days	1,500 psi (10.3 MPa)	(ASTM C-293) 73 °F (23 °C) 50 % R.H.
Splitting Tensile Strength	28 days	900 psi (6.2 MPa)	(ASTM C-496) 73 °F (23 °C) 50 % R.H.
Tensile Adhesion Strength	28 days	2,000 psi (13.8 MPa)	(ASTM C-882 modified)
	* Mortar scrubbed into substrate at 73 °F (23 °C) and 50 % R.H.		
Pull-Out Resistance	28 days	500 psi (3.4 MPa) Substrate failure	(ASTM C-1583)
Shrinkage	28 days	1x1x11-1/4" specimen	0.05 %
	28 days	3x3x11-1/4" specimen	0.038 %
Ring Test		>70 days	(ASTM C-1581)
	Average Max Strain	- 36 µstrain	
	Average Stress Strain	4.92 psi/day	
	Potential for Cracking	Low	
Baenziger Block	90 days	No cracking	
Freeze thaw resistance	300 cycles	98 %	(ASTM C-666)
Chloride Ion Diffusion Resistance	28 days	< 500 C	(ASTM C-1202 AASHTO T-277)

APPLICATION INFORMATION

Fresh Mortar Density	132 lb/ft ³ (2.2 kg/l)	(ASTM C-138)
Coverage	0.39 ft ³ (0.01 m ³) per bag (Coverage figures do not include allowance for surface profile and porosity or material waste)	
Layer Thickness	Min.	Max.
	1/8" (3 mm)	1.5" (38 mm)
Product Temperature	65–75 °F (18–24 °C)	
Ambient Air Temperature	> 45 °F (7 °C)	
Substrate Temperature	> 45 °F (7 °C)	
Set Time	15 - 40 min.	(ASTM C-266)
Final Set Time	< 60 min.	(ASTM C-266)

Application Time

~ 15 minutes

As the temperature will affect the pot life, application temperature:
Above 73 °F (23 °C) will reduce the pot life and workability
Below 73 °F (23 °C) will extend the pot life and workability

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.

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

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 1/8" (3 mm) in depth.
- Preparation work should be done by high pressure water blast, scabber or other appropriate mechanical means to obtain an exposed aggregate surface profile of $\pm 1/16"$ (1.6 mm) (CSP-5).
- 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.
- Substrate should be Saturated Surface Dry (SSD) with clean water prior to application. No standing water should remain during application.

Priming

- **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 PDS).
- **Concrete Substrate:** Prime the prepared substrate with a brush or sprayed applied coat of Sika® Armatec® 110 EpoCem (consult PDS). 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.

Multiple lifts

- 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.
- Substrate should be Saturated Surface Dry (SSD) with clean water prior to application. No standing water should remain during application.
- 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.

CURING TREATMENT

- 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).
- 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

- 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 on substrate preparation, refer to ICRI Guideline No. 310.2R.
- 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.

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

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 for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

ECOLOGY, HEALTH AND SAFETY

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.

DIRECTIVE 2004/42/CE - LIMITATION OF EMISSIONS OF VOC

0 g/l

(EPA method 24)

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Product Data Sheet
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