

PRODUCT DATA SHEET

SikaTop®-123 Plus

Polymer-modified, non-sag, cementitious mortar containing silica fume plus migrating corrosion inhibitor



PRODUCT DESCRIPTION

SikaTop®-123 Plus is a high performance, polymer-modified, 2-component, fast-setting, non sag cementitious mortar. It is designed especially for repair of overhead and vertical surfaces and is formulated with a migrating corrosion inhibitor to reduce corrosion.

WHERE TO USE

- On grade, above, and below grade on concrete and mortar
- For structural concrete repairs on vertical and overhead surfaces
- For building facades, soffits, parking structures, industrial plants, walkways, bridges, tunnels, dams and ramps

CHARACTERISTICS / ADVANTAGES

- High compressive and flexural strengths
- Bond strength ensures superior adhesion
- Increased density: excellent carbon dioxide resistance (carbonation) without adversely affecting water vapour transmission (not a vapour barrier)
- Enhanced with Sika FerroGard®-901, a migrating corrosion inhibitor

- Compatible with coefficient of thermal expansion of concrete
- Excellent freeze/thaw and salt scaling resistance
- Formulated with inert, non-reactive aggregates to eliminate potential Alkali-Aggregate Reactivity (AAR)

ENVIRONMENTAL INFORMATION

- Conformity with LEED®v4 MR Credit (Option 1): Building Product Disclosure and Optimization - Environmental Product Declarations
- Conformity with LEED®v4 MR Credit (Option 1): Building Product Disclosure and Optimization - Material Ingredients
- Conformity with LEED®v4 MR Credit (Option 1): Building Product Disclosure and Optimization - Sourcing of Raw Materials

APPROVALS / CERTIFICATES

- Meets CFIA and USDA requirements for use in food plants
- Complies with NSF-ANSI standard 61 for potable water contact (special order only)
- Meets MTO specification for patching materials
- Meets AT B391 specification for patching materials
- Approved by the Ontario Ministry of Transportation and is qualified by The Road Authority (TRA)
- Approved by the Ministère des Transports du Québec (MTQ)
- Recognized by the the British Columbia Ministry of Transportation and Infrastructure (BC MoT)

PRODUCT INFORMATION

Packaging

20.5 kg (45 lb) unit - (A) 3.5 L jug + (B) 17 kg bag

Appearance / Colour	Concrete Grey when mixed	
Shelf Life	Component A : 12 months in original, unopened packaging. Component B : 12 months in original, unopened bag.	
Storage Conditions	Store dry at temperatures ranging between 5 °C to 32 °C (41 °F to 89 °F). For best results, condition product between 15 °C to 24 °C (59 °F to 75 °F) before using. Protect Component A from freezing. If frozen, discard.	
Density	2 000 kg/m ³ (125 lb/ft ³)	(ASTM C185)
CSC MasterFormat®	03 01 00 MAINTENANCE OF CONCRETE	

TECHNICAL INFORMATION

Compressive Strength	24 hours		~ 20 MPa (2 900 psi)			(ASTM C109)
	7 days		~ 37 MPa (5 366 psi)			
	28 days		~ 50 MPa (7 250 psi)			
	* Compressive Stength (tested with SikaCem® Accelerator)					
	Temperature	Dosage	24 hours	2 days	3 days	28 days
	0 °C (32 °F)	1 bottle (150 mL)	~1 MPa (145 psi)	~17 MPa (2465 psi)	~24 MPa (3480 psi)	~42 MPa (6091 psi)
	0 °C (32 °F)	2 bottles (300 mL)	~2 MPa (290 psi)	~22 MPa (3190 psi)	~30 MPa (4351 psi)	~47 MPa (6816 psi)
	10 °C (50 °F)	1 bottle (150 mL)	~20 MPa (2900 psi)	~34 MPa (4931 psi)	~40 MPa (5800 psi)	~54 MPa (7832 psi)
	10 °C (50 °F)	2 bottles (300 mL)	~28 MPa (4061 psi)	~38 MPa (5511 psi)	~42 MPa (6091 psi)	~56 MPa (8122 psi)
	23 °C (73 °F)	1 bottle (150 mL)	~27 MPa (3916 psi)	~34 MPa (4931 psi)	~40 MPa (5800 psi)	~56 MPa (8122 psi)
	23 °C (73 °F)	2 bottles (300 mL)	~31 MPa (4496 psi)	~37 MPa (5366 psi)	~42 MPa (6091 psi)	~58 MPa (8412 psi)
Modulus of Elasticity in Compression	7 days		~17 GPa (2.4 x 10 ⁶ psi)			(ASTM C496)
	28 days		~26 GPa (3.7 x 10 ⁶ psi)			
Shear Strength	24 hours		~7 MPa (1015 psi)			(ASTM C882)
	28 days		~17 MPa (2465 psi)			
Pull-Out Resistance	28 days		Greater than concrete			(ASTM C1583)
Chemical Resistance	Contact Sika Canada Inc.					
Chloride Ion Diffusion Resistance	28 days		Very low - between 100 and 1000 Coulombs			(ASTM C1202)
Freeze thaw resistance	300 cycles		Module of elasticity greater than 90%			(ASTM C666)
Splitting Tensile Strength	21 days		~5 MPa (725 psi)			(ASTM C496)

APPLICATION INFORMATION

Mixing Ratio	A:B = 1:5.4 by weight depending on consistency required
Yield	Approx. 10 L (0.353 ft ³)
Product Temperature	15 °C à 24 °C (59 °F to 75 °F)

Ambient Air Temperature	> 7 °C (> 45 °F)
Substrate Temperature	> 7 °C (> 45 °F)
Application Time	Approx. 15 min after mixing the mortar
Finishing Time	Approx. 30 - 60 minutes after placing the mortar

BASIS OF PRODUCT DATA

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. Properties tested at 23 °C (73 °F) and 50 % R.H. unless stated otherwise.

LIMITATIONS

- Minimum application thickness: 3 mm (1/8 in)
- Maximum layer thickness: 38 mm (1½ in)
- Minimum ambient and substrate temperature: 7 °C (45 °F) and rising at time of application, unless using Sikacem® Accelerator (refer to Technical Data section for dosage recommendations and strength values at various temperatures)
- Protect the freshly applied mortar from freezing for a period of 24 hours
- Storage is particularly important, it is essential to protect bagged material from exposure to rain, condensation and high humidity as moisture may penetrate the bag, causing lumps
- Do not use/add water to this product

ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

Remove all deteriorated concrete, dirt, oil, grease, or other bond inhibiting materials any contaminants or conditions that may affect adhesion or overall product performances. Following ICRI Guideline 310.2, the concrete surface must be clean, sound and mechanically prepared to obtain a surface profile of CSP 6 – 10 (ex : hydrodemolition, scarification, scabbling + sandblasting, etc.). Follow ICRI Guideline 310.1 for the preparation of the repair perimeter, repair area geometry and cleaning of concrete and reinforcing steel surfaces. Verify the absence of micro cracking following ICRI Guideline 310.2. To ensure optimum repair results, the effectiveness of cleaning and preparation should be

assessed by a pull-off test.

MIXING

Mix mechanically using a heavy-duty, low-speed drill (300 - 450 rpm) with a Mud Mixer/Box or Propeller-type paddle. Shake Component A before using, then pour approximately 85 % of its content in a clean mixer or pail. Add slowly Component B while continuing to mix until a uniform consistency is obtained (approx. 3 minutes). If a wetter consistency is required, add additional Comp. A and continue mixing until a homogenous consistency is achieved. For a smaller quantity, make sure that each component is properly premixed at the correct ratio.

APPLICATION

At time of application, the surface should be damp but saturated surface dry (SSD) with no glistening water films. A scrub coat should be applied prior to placement of mortar. Apply a 3 mm (1/8 in) thick scrub coat of SikaTop®-123 Plus into the substrate, filling all pores, voids and edges. Alternatively, SikaTop® Armatec-110 EpoCem® can be used as a bonding agent. Apply the desired mortar layer before bond coat dries. Force product against the edges of repair, working toward center. After filling the repair, consolidate then trim the surface flush with adjacent concrete sides. Allow mortar to reach initial set [30 – 60 min after placing at 23 °C (73 °F)], then finish with wood or sponge float for a textured surface.

For a smooth finish, use a steel trowel wiped with Comp. A during finishing.

If the repair requires several lifts (layers), apply the mortar leaving a rough profile and score the surface immediately in a crosshatch pattern using the corner of a steel trowel to a depth of approximately 6 mm (1/4 in) to provide a mechanical key (with exception to the last layer). Unfinished work from previous day must be roughened and any polymer film removed to ensure bond.

CURING TREATMENT

As per ACI 308 recommendations for cement concrete, curing is required. To achieve performance consistent with Technical Information, curing must be provided by recognized curing methods, such as wet burlap covered with white polyethylene film or approved water-based curing compound, such as Sika® Florseal WB-18 & -25.

Curing must begin immediately after placing and finishing. Moist-curing must be maintained for the first 24 hours only then apply Sika® Florseal WB curing compound. Protect freshly applied mortar from direct sunlight, wind, rain and frost.

CLEAN UP

Clean all tools and equipment after use with water. Once hardened, the product can only be removed mechanically.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

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Product Data Sheet

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