



PRODUCT DATA SHEET

Sika MonoTop[®]-410 F

ONE-COMPONENT, POLYMER-MODIFIED, FIBRE-REINFORCED HORIZONTAL, OVERHEAD AND VERTICAL REPAIR AND REPROFILING MORTAR WITH INTEGRAL CORROSION INHIBITOR

PRODUCT DESCRIPTION

Sika MonoTop[®]-410 F is a one-component, polymer modified, fibre-reinforced and early strength-gaining, cementitious mortar for horizontal, vertical and overhead concrete repair and reprofiling. Once applied, it hardens to a light gray mortar. It may be applied by manual or spray application (contact Sika Canada).

WHERE TO USE

Sika MonoTop[®]-410 F may only be used by experienced professionals.

- For structural concrete repairs
- On grade, above grade, and below grade concrete
- On horizontal surfaces (e.g. for spall repairs on flat work)
- On vertical and/or overhead surface repairs
- Exterior and interior applications

CHARACTERISTICS / ADVANTAGES

- Ready-to-use, one component material
- Easy to mix, just add clean water
- Excellent freeze/thaw resistance
- Silica fume enhanced
- Fiber reinforced
- Can be installed by hand trowel
- Can be sprayed (contact Sika Canada)
- Superior workability
- Superior abrasion resistance
- Great adhesion
- Increased resistance to deicing salts
- High early strengths

PRODUCT INFORMATION

Packaging	22.7 kg (50 lb) multi-wall bag.
Appearance / Colour	Light Gray.
Shelf Life	12 months in original, unopened packaging.
Storage Conditions	Store dry, ensuring that product is not exposed to rain, condensation or high humidity. For best results, condition product at temperatures between +18 and +29 °C (+65 and +84 °F) before using.
Density	> 1,950 kg/m ³ (121.7 lb/ft ³) (ASTM C185)
Volatile organic compound (VOC) content	0 g/L (0 lb/gal. US)
CSC MasterFormat [®]	03 01 00 MAINTENANCE OF CONCRETE

TECHNICAL INFORMATION

Compressive Strength	24 hours	18 MPa (2,610 psi)	(ASTM C109 - modified)
	7 days	40 MPa (5,800 psi)	
	28 days	45 MPa (6,530 psi)	

Compressive strength ASTM C109 - modified, tested with SikaCem Accelerator

Temperature	Dosage	24 hours	3 days	7 days	28 days
5 °C	1 bottle (150 mL)	5 MPa (725 psi)	25 MPa (3,626 psi)	28 MPa (4,061 psi)	50 MPa (7,252 psi)
	2 bottles (300 mL)	9 MPa (1,305 psi)	27 MPa (3,916 psi)	27 MPa (3,916 psi)	48 MPa (6,962 psi)
10 °C	1 bottle (150 mL)	8 MPa (1,160 psi)	29 MPa (4,206 psi)	41 MPa (5,947 psi)	49 MPa (7,107 psi)
	2 bottles (300 mL)	6 MPa (870 psi)	28 MPa (4,061 psi)	38 MPa (5,511 psi)	41 MPa (5,947 psi)
23 °C	1 bottle (150 mL)	27 MPa (3,916 psi)	35 MPa (5,076 psi)	47 MPa (6,817 psi)	54 MPa (7,732 psi)
	2 bottles (300 mL)	27 MPa (3,916 psi)	35 MPa (5,076 psi)	48 MPa (6,961 psi)	51 MPa (7,396 psi)

Tensile Strength in Flexure	7 days	6 MPa (870 psi)	(ASTM C348)
	28 days	11 MPa (1,595 psi)	

Freeze Thaw De-icing Salt Resistance	< 0,5 kg/m ² (0.1 lb/ft ²)	(ASTM C672)
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Shear Adhesion Strength	24 hours	7 MPa (1,015 psi)	(ASTM C882)
	7 days	10 MPa (1,450 psi)	
	28 days	14 MPa (2,030 psi)	

Freeze thaw resistance	> 90% RDM at 300 cycles	(ASTM C666)
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APPLICATION INFORMATION

Mixing Ratio	2.5 - 2.7 L (0.66 - 0.71 US gal.) per bag. For sprayable application, contact Sika Canada.
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Yield	Approx. 12.9 L (0.45 ft ³) per 22.7 kg (50 lb) bag.
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Layer Thickness	Horizontal	Min. 10 mm (3/8 in) Max. 100 mm (4 in)
	Vertical	Min. 3 mm (1/8 in) Max. 100 mm (4 in)
	Overhead	Min. 3 mm (1/8 in) Max. 50 mm (2 in)

If repair requires multiple lifts, each lift should be applied as soon as the previous lift develops enough initial strength to support it.

Ambient Air Temperature	min	5 °C (41 °F)
	max	30 °C (86 °F)

Substrate Temperature	min	5 °C (41 °F)
	max	30 °C (86 °F)
Application Time	30 minutes	
Initial Set Time	110 - 150 minutes	(ASTM C266)
Final Set Time	140 - 190 minutes	(ASTM C266)
Consistency	From a trowable consistency for horizontal applications to a cohesive consistency for vertical applications, depending on water content.	

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.

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

NOTES ON INSTALLATION

- Avoid application in direct sunlight, during precipitation and/or when strong winds prevail.
- Use only clean, potable water.
- Do not use solvent-based curing compounds.
- Sika MonoTop®-410 F does not form a vapor barrier when cured.
- 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.
- Elevated temperatures will decrease working time and slump.
- Rate of strength gain will be reduced at colder temperatures.
- On site testing is recommended.

SURFACE PREPARATION

- 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, the repair area geometry and for the

- cleaning of the concrete and reinforcing steel surfaces.
- Verify the absence of micro cracking following ICRI Guideline 310.2.

MIXING

- Mix using a heavy duty low speed electric drill/mixer (300 - 450 rpm) and mixing paddle (Jiffy or Exomixer®/spiral type) or a mortar mixer.
- Pour approx. 2.5 L (0.66 US gal.) of potable water in a clean mixer or pail. Add Sika MonoTop®-410 F slowly while continuing to mix.
- Mix to a uniform consistency for a maximum of three (3) minutes.
- Add additional water up to 2.7 L (0.71 US gal.) if a wetter consistency is desired.
- Do not overwater. Excessive water/cement ratios may cause severe bleeding and retardation and will reduce the strength and performance of the mortar.
- For sprayable application, contact Sika Canada.

APPLICATION

- Apply Sika MonoTop®-410 F mortar by hand trowel for the repair of horizontal, vertical or overhead concrete surfaces.
- At the time of application, the substrate surfaces must be saturated surface dry (SSD) but hold no standing water.
- A neat mix of Sika MonoTop®-410 F mortar must initially be scrubbed into the mechanically prepared, SSD substrate. Be sure to fill all pores and voids.
- Apply Sika MonoTop®-410 F mortar by hand trowel while the scrub coat is still wet and uncured.
- Force material against edges of repair, working toward center. After filling repair area, screed off excess Sika MonoTop®-410 F mortar.
- If the repair requires several lifts (layers), apply the mortar, leaving a rough profile, and then score the surface immediately in a cross-hatch pattern to a depth of approximately 6 mm (1/4 in) to provide a key. Allow the layer to achieve initial set and then apply subsequent layers as soon as the previous lift will support it without being displaced.
- Allow Sika MonoTop®-410 F to set to the desired stiffness. Finish with broom or with a burlap drag for a rough finish. Finish with a wood float for a granular finish. Finish with a steel trowel or a magnesium float for a smooth finish.
- Mixing, placing and finishing typically should not

- exceed 2 to 3 hours maximum.
- For sprayable application, contact Sika Canada.

CURING TREATMENT

- As per ACI 308 recommendations for Portland-cement concrete, curing is required.
- Moist curing must commence immediately after finishing.
- Moist cure for the first 24 hours only with wet burlap and/or polyethylene film or a fine mist of water may be used.
- Alternatively, apply a water-based, compatible curing compound meeting ASTM C309, such as Sika® Florseal WB-18 & -25.
- Curing compounds may adversely affect the adhesion of following layers of mortar, leveling mortars or protective coatings.
- Protect newly applied material from direct sunlight, wind, rain and frost. To prevent from freezing, cover with insulating material (e.g. curing blanket).

CLEAN UP

- Clean all tools and equipment after use with water.
- Once hardened, Sika MonoTop®-410 F can only be removed mechanically.
- Wash soiled hands and skin thoroughly in hot soapy water or use Sika® Hand Cleaner towels.

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

Sika Canada Inc.

Head Office
601, avenue Delmar
Pointe-Claire, Quebec
H9R 4A9
1-800-933-SIKA
www.sika.ca

Other locations

Boisbriand (Quebec)
Brantford; Cambridge;
Sudbury; Toronto (Ontario)
Edmonton (Alberta)
Surrey (British Columbia)

Product Data Sheet

Sika MonoTop®-410 F
December 2024, Version 01.05
020302040030000450

