BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET

Sika MonoTop®-623 F

One-component, polymer-modified, fibre-reinforced overhead and vertical repair and resurfacing mortar with integral corrosion inhibitor

PRODUCT DESCRIPTION

Sika MonoTop®-623 F is a 1-component, polymer-modified, fibre-reinforced and early strength-gaining, cementitious mortar for overhead and vertical concrete repair and reprofiling. It is based upon Sika's internationally proven and established MonoTop® technology, designed for effective repairs and with the environment in mind.

WHERE TO USE

- On, above, and below grade.
- Horizontal and vertical defects.
- Overhead and vertical concrete and mortar.
- Cast-in-place, precast and tilt-up structures.
- Exterior and interior applications.

CHARACTERISTICS / ADVANTAGES

- Pre-bagged for quality control and predictable performance.
- Easy to prepare; just add clean potable water.
- Contains integral corrosion inhibitor based on proven technology.
- Formulated with inert, non-reactive aggregates to eliminate potential Alkali-Aggregate Reactivity (AAR).
- Heat of hydration minimized to extend working time, especially in warm conditions.
- Can be hand-placed or wet-sprayed.
- Excellent bond, tensile and flexural strengths.
- High build, yet can be feather-edged.
- High early strength.
- Shrinkage-controlled to reduce length change.
- Very easy to apply; can be shaved or sculpted and easily finished.
- Product produces light grey repairs, similar to precast concrete.

ENVIRONMENTAL INFORMATION

- Contributes towards satisfying LEED®v4 MR Credit - Building Product Disclosure and Optimization – Environmental Product Declarations (Option 1)
- Contributes towards satisfying LEED®v4 MR Credit - Building Product Disclosure and Optimization - Material Ingredients (Option 1)

PRODUCT INFORMATION

Packaging	22.7 kg (50 lb) multi-wall bag
Appearance / Colour	Light Grey

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 to 29 °C (65 to 84 °F) before using.			
Density	2030 kg/m³ (126 lb/ft³)			(ASTM C185)
Compressive Strength	24 hours	18 MPa (2610 psi)		(ASTM C109)
	7 days	30 MPa (4351 psi)		
	28 days	40 MPa (5801 psi)		
	Temperature	**Dosage**		(ASTM C109) (tested with Sikacem® Accelerator)
	23 °C (73 °F)	2 bottles (300 mL)	24 hours	25 MPa (3265 psi)
	23 °C (73 °F)	2 bottles (300 mL)	7 days	40 MPa (5800 psi)
	23 °C (73 °F)	2 bottles (300 mL)	28 days	45 MPa (6525 psi)
Modulus of Elasticity in Compression	28 days	18 GPa (2.75 x 10⁶ psi)		(ASTM C496)
Tensile Strength in Flexure	7 days	5.5 MPa (798 psi)		(ASTM C348)
	28 days	10.1 MPa (1465 psi)		
Shrinkage	28 days	< 0.06%		(ASTM C157)
Freeze Thaw De-Icing Salt Resistance	300 cycles	98 %		(ASTM C666)
Chloride Ion Diffusion Resistance	56 days	300 Coulombs		(ASTM C1202)
Splitting Tensile Strength	> 4.5 MPa (> 650 psi)			(ASTM C496/C496M) 28 days
Mixing Ratio	3.1 to 3.3 L (0.82 to 0.87 US gal.) of water per 22.7 kg (50 lb) bag.			
Yield	Approx. 12.9 L (0.45 ft³) per 22.7 kg (50 lb) bag			
Application Time	20 to 40 minutes			
Finishing Time	40 to 60 minutes			

Note: The data for Temperature 0 °C (32 °F) at a dosage of 1 bottle (150 mL) for 24 hours, 3 days, 7 days and 28 days will be available soon.

All moulds, mixing tools and powder components were pre-conditioned to the test temperatures. Prepared test specimens were cast and then cured at the indicated test temperatures until the time of testing. Sikacem® Accelerator added to mix water (water content = 3.3 L [0.87 US gal.] + 1 bottle of Sikacem® Accelerator; water content = 3.1 L [0.82 US gal.] + 2 bottles of Sikacem® Accelerator).

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) / 50 % r.h. unless stated otherwise.

LIMITATIONS

- Important: protect stored material from exposure to rain, condensation and high humidity as moisture may penetrate packaging, causing lumps.

- For best results, condition product to 18 to 29 °C (65 to 84 °F) prior to mixing and installation. Lower temperatures may result in slower strength development and longer cure times.
- Maximum lift/layer thickness: 50 mm (2 in).
- Minimum ambient and substrate temperature: 5 °C (41 °F) and rising at time of application.
- Use only clean potable water and do not overwater.

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.

SURFACE PREPARATION

Remove all deteriorated concrete, dirt, oil, grease or any contaminants or conditions that may reduce performances or proper bonding. 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. Dampen surface to be repaired with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application.

MIXING

For each 22.7 kg (50 lb) bag of material, pour approx. 3.1 L (0.82 US gal.) of clean potable water into a suitably sized and clean mixing container. Add Sika MonoTop®-623 F slowly while mechanically-mixing, using a heavy-duty, low-speed drill (300 - 450 rpm) with a Mud Mixer/Box or Propeller-type paddle. Mix to a uniform consistency for a minimum of three (3) minutes. Add additional water to the product up to maximum of 3.3 L (0,87 US gal.) and, if a more fluid consistency is desired, continue to mix beyond the initial three (3) minute mixing period.

APPLICATION

At time of application, repair sites or surfaces should be damp (saturated surface dry) but free from standing water or glistening water films. Apply a 3 mm (1/8 in) thick scrub coat of the mixed mortar into the substrate, filling all pores, voids and edges and completely covering the repair site. Onto the fresh scrub coat, force the mortar against the edge of repair, working towards the centre and observing minimum and maximum layer thicknesses. 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 the completed repair to set to desired stiffness; shave, cut or sculpt and then finish with a steel, wood or sponge float, or texture as required. If using a soft- to medium-density and dampened sponge to finish a repair, work in circular motion to remove trowel marks and merge the mortar with the parent substrate.

Note: Avoid over dampening the sponge or the face of the repair during finishing and avoid over-finishing the material.

CURING TREATMENT

As per ACI 308 recommendations for cement concrete, curing is required. To achieve performance consistent with Technical Data, 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 commence immediately after placing and finishing. Moist-curing must be maintained for the first 24 hours only. 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. Wash soiled hands and skin thoroughly in hot soapy water.

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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