BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET
Edition 12.2017/v1
CSC Master Format™ 03 01 00
MAINTENANCE OF CONCRETE

SikaTop®-123 PLUS

POLYMER-MODIFIED, NON-SAG, CEMENTITIOUS MORTAR CONTAINING SILICA FUME PLUS MIGRATING CORROSION INHIBITOR

Description

SikaTop®-123 PLUS is a high performance, polymer-modified, two-component, fast-setting, non sag cementitious mortar. It is designed especially for repair of overhead and vertical surfaces and offers the additional benefit of Sika FerroGard®-901, a migrating corrosion inhibitor.

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.

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 - reduces corrosion even in the adjacent concrete.
- 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).
- Meets MTO specification for patching materials.
- Meets AT B391 specification for patching materials.
- Complies with NSF-ANSI standard 61 for potable water contact (available by special order only).
- 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).
- Meets the requirements of CFIA and USDA for use in food plants

Technical Data

Packaging	20.5 kg (45 lb) unit - (A) 3.5 L jug + (B) 17 kg bag
Colour	Concrete Grey when mixed
Yield	Approx. 10 L (0.353 ft³)
Shelf Life	Component A : 24 months in original, unopened packaging. Component B : 12 months in original, unopened bag. Store dry between 5 and 32 °C (41 and 89 °F). For best results, condition product between 15 and 24 °C (59 and 75 °F) before using. Protect Component A from freezing. If frozen, discard.
Mix Ratio	A:B = 1:5.4 by weight depending on consistency required

Properties at 23 °C (73 °F) and 50 % R.H.

Application Time	Approx. 15 min after mixing the mortar
Finishing Time	Approx. 30 - 60 min after placing the mortar
Density ASTM C185	2000 kg/m³ (125 lb/ft³)
Compressive Strength ASTM C109, MPa (psi)	
24 hours	~ 20 (2900)
7 days	~ 37 (5366)
28 days	~ 50 (7250)

***Compressive Strength ASTM C109,** MPa (psi)
(tested with Sikacem® Accelerator)

Temperature	Dosage	24 hours	2 days	3 days	28 days
0 °C (32 °F)	1 bottle (150 mL)	~ 1 (145)	~ 17 (2465)	~ 24 (3480)	~ 42 (6091)
0 °C (32°F)	2 bottles (300 mL)	~ 2 (290)	~ 22 (3190)	~ 30 (4351)	~ 47 (6816)
10 °C (50 °F)	1 bottle (150 mL)	~ 20 (2900)	~ 34 (4931)	~ 40 (5800)	~ 54 (7832)
10 °C (50 °F)	2 bottles (300 mL)	~ 28 (4061)	~ 38 (5511)	~ 42 (6091)	~ 56 (8122)
23 °C (73 °F)	1 bottle (150 mL)	~ 27 (3916)	~ 34 (4931)	~ 40 (5800)	~ 56 (8122)
23 °C (73 °F)	2 bottles (300 mL)	~ 31 (4496)	~ 37 (5366)	~ 42 (6091)	~ 58 (8412)

*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 SikaTop® "A" component jug and shaken vigorously to incorporate prior to mixing with SikaTop® "B" component.

Modulus of Elasticity ASTM C469	
7 days	~ 17 GPa (2.4 x 10^6 psi)
28 days	~ 26 GPa (3.7 x 10^6 psi)
Tensile Splitting Strength ASTM C496	
21 days	~ 5 MPa (725 psi)
Bond Strength ASTM C882	
24 hours	~ 7 MPa (1015 psi)
28 days	~ 17 MPa (2465 psi)
Bond Strength CAN A23.2-6B	
28 days	Greater than concrete
Rapid Chloride Permeability ASTM C1202	
28 days	Very low - between 100 and 1000 Coulombs
Freeze/Thaw Durability Test ASTM C666	Modulus of elasticity greater than 90% after 300 cycles
VOC Content	< 0.5 g/L
Chemical Resistance	Contact Sika Canada

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.

HOW TO USE

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. Shake Component A before using, then pour approximately 85 % of Component A in a clean mixer or pail. Add slowly Component B while continuing to mix until a uniform consistency is obtained (approx : three (3) minutes). If a wetter consistency is required, add additional A Component and continue mixing until a homogenous consistency is achieved. For a smaller quantity, make sure that each component is properly premixed and that the correct ratio is used.

Application

At time of application, the surface should be damp but saturated surface dry (SSD) with no glistening water. A thin layer of mortar of +/- 3 mm (1/8 in) must be scrubbed firmly into substrate to fill all pores and voids. 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 Component 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

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. Alternatively, the use of Sika® Ultracure DOT™ or NCF™ wet curing blankets is strongly recommended. 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 or use Sika® Hand Cleaner towels.

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.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent SAFETY DATA SHEET containing physical, ecological, toxicological and other safety-related data.

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY

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