

Product Data Sheet

Edition 5.5.2011

SikaTop 123 Plus

SikaTop® 123 PLUS

Two-component, polymer-modified, cementitious, non-sag mortar plus FerroGard 901 penetrating corrosion inhibitor

Construction

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| Description | SikaTop 123 PLUS is a two-component, polymer-modified, portland cement, fast-setting, non-sag mortar. It is a high performance repair mortar for vertical and overhead surfaces, and offers the additional benefit of FerroGard 901, a penetrating corrosion inhibitor. |
| Where to Use | <ul style="list-style-type: none"> ■ 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, water/waste water treatment facilities, roads, walkways, bridges, tunnels, dams, ramps, etc. ■ Approved for repairs over cathodic protection systems. |
| Advantages | <ul style="list-style-type: none"> ■ High compressive and flexural strengths. ■ High early strengths. ■ Increased freeze/thaw durability and resistance to de-icing salts. ■ Compatible with coefficient of thermal expansion of concrete - Passes ASTM C-884 (modified). ■ Increased density - improved carbon dioxide resistance (carbonation) without adversely affecting water vapor transmission (not a vapor barrier). ■ Enhanced with FerroGard 901, a penetrating corrosion inhibitor - reduces corrosion even in the adjacent concrete. ■ Not flammable, non-toxic. ■ Conforms to ECA/USPHS standards for surface contact with potable water. ■ USDA approved. ■ ANSI/NSF Standard 61 potable water approved. |
| Yield | 0.39 cu. ft./unit. |
| Packaging | Component 'A' - 1 gal. plastic jug; 4/carton. Component 'B' - 44 lb. multi-wall bag. |

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

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| Shelf Life | One year in original, unopened packaging. | |
| Storage Conditions | Store dry at 40°-95°F. Condition material to 65°-75°F. before using. Protect Component 'A' from freezing. If frozen, discard. | |
| Color | Concrete gray when mixed. | |
| Mixing Ratio | Plant-proportioned kit. | |
| Application Time | Approximately 15 min. after adding Component 'B' to Component 'A'. Application time is dependent on temperature and relative humidity. | |
| Finishing Time | 20 to 60 min after combining components: depends on temperature, relative humidity, and type of finish desired. | |
| Density (wet Mix) | 132 lbs./cu. ft. (2.2 kg./l) | |
| Flexural Strength (ASTM C-293) | 28 days | 2,000 psi (13.8 MPa) |
| Splitting Tensile Strength (ASTM C-496) | 28 days | 900 psi (6.2 MPa) |
| Bond Strength* (ASTM C-882 modified) | 28 days | 2,200 psi (15.2 MPa) |
| Compressive Strength (ASTM C-109) | | |
| 1 day | 3,500 psi | (24.1 MPa) |
| 7 days | 6,000 psi | (41.4 MPa) |
| 28 days | 7,000 psi | (48.3 MPa) |
| Permeability (AASHTO T-277) | | |
| 28 days | Approximately 500 Coulombs. Electrical resistivity (ohm-cm) 27,000 | |
| Freeze/Thaw Resistance (ASTM C-666) | 300 cycles | 98% |

Corrosion Testing for FerroGard 901

Cracked Beam Corrosion Tests:

Reduced corrosion rates 63% versus control specimens. ASTM G109 modified after 400 days

* Mortar scrubbed into substrate.

How to Use

Substrate Concrete, mortar, and masonry products.

Surface Preparation **Concrete/Mortar:** Remove all deteriorated concrete, dirt, oil, grease, and all



bond-inhibiting materials from surface. Be sure repair area is not less than 1/8 inch in depth. Preparation work should be done by high pressure water blast, scabblers, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of $\pm 1/16$ in. (CSP-5) Saturate surface with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application.

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 Technical Data Sheet).

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| Priming | Concrete Substrate: Prime the prepared substrate with a brush or sprayed applied coat of Sika Armatec 110 EpoCem (consult Technical Data Sheet). Alternately, a scrub coat of Sika Top 123 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 & Finish | 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. The thickness of each lift, not to be less than 1/8 inch minimum or more than 1.5 inches maximum. Where multiple lifts are required score top surface of each lift to produce a roughened surface for next lift. Allow preceding lift to reach final set, 30 minutes minimum, before applying fresh material. Saturate surface of the lift with clean water. 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 | 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. Curing compounds adversely affect the adhesion of following lifts of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. If necessary protect newly applied material from direct sunlight, wind, rain and frost. *Pretesting of curing compound is recommended. |
| Limitations | <ul style="list-style-type: none"> ■ Application thickness: Minimum 1/8 inch (3 mm). Maximum in one lift - 1.5 in. (38 mm). ■ Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application. ■ Do not use solvent-based curing compound. ■ Size, shape and depth of repair must be carefully considered and consistent with practices recommended by ACI. For additional information, contact Technical Service. ■ For additional information on substrate preparation, refer to ICRI Guideline No. 03732 Coatings, and Polymer Overlays". ■ 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 Hi-Mod 32. |
| Caution | <p>Component 'A' - Irritant - May cause skin/eye/respiratory irritation. Avoid breathing vapors. Use with adequate ventilation. Avoid skin and eye contact. Safety goggles and rubber gloves are recommended.</p> <p>Component 'B' - Irritant; suspect carcinogen - Contains portland cement and sand (crystalline silica). Skin and eye irritant. Avoid contact. Dust may cause respiratory tract irritation. Avoid breathing dust. Use only with adequate ventilation. May cause delayed lung injury (silicosis). IARC lists crystalline silica as having sufficient evidence of carcinogenicity in laboratory animals and limited evidence of carcinogenicity in humans. NTP also lists crystalline silica as a suspect carcinogen. Use of safety goggles and chemical resistant gloves is recommended. If PELs are exceeded, an appropriate, NIOSH approved respirator is required. Remove contaminated clothing.</p> |
| First Aid | In case of skin contact, wash thoroughly with soap and water. For eye contact, flush immediately with plenty of water for at least 15 minutes, and contact a physician. For respiratory problems, remove person to fresh air. |
| Clean Up | In case of spillage, scoop or vacuum into appropriate container, and dispose of in accordance with current, applicable local, state and federal regulations. Keep container tightly closed and in an upright position to prevent spillage and leakage. Mixed components: Uncured material can be removed with water. Cured material can only be removed mechanically. |

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