

# SikaTop<sup>®</sup> 111 PLUS

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

**Description** SikaTop 111 PLUS is a two-component, polymer-modified, portland-cement, fast-setting, screed mortar. It is a performance repair mortar for horizontal, vertical and overhead applications or form and pour application. It offers the additional benefit of FerroGard 901, a penetrating corrosion inhibitor.

**Where to Use**

- On grade, above, and below grade on concrete and mortar.
- On horizontal, vertical and overhead surfaces.
- As a structural repair material for parking facilities, industrial plants, walkways, bridges, tunnels, and dams.
- Free-flowing repair mortar for hard-to-reach areas.
- Filler for voids and cavities.
- Overlay in cathodic protection systems.

**Advantages**

- High compressive and flexural strengths.
- High early strengths.
- Opens to traffic fast; foot in 4-6 hours, pneumatic tire in 8-12 hours (73°F).
- Superior abrasion resistance over conventional portland cement mortar.
- Increased freeze/thaw durability and resistance to deicing 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.
- USDA approved.
- ANSI/NSF Standard 61 potable water approved.

**Yield** Approximately 0.5 cu. ft./unit. Approximately 0.75 cu. ft./unit (SikaTop 111 + 42 lbs. of 3/8" pea gravel).

**Packaging** **Component 'A'** - 1-gal. plastic jug; 4/carton. **Component 'B'** - 61.5-lb. multi-wall bag.

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

<b>Shelf Life</b>	One year in original, unopened packaging.		
<b>Storage Conditions</b>	Store dry at 40°-95°F (4°-35°C). <b>Condition material to 65°-75°F before using.</b> Protect Component 'A' from freezing. If frozen, discard.		
<b>Color</b>	Concrete gray when mixed.		
<b>Mixing Ratio</b>	Plant-proportioned kit, mix entire unit.		
<b>Application Time</b>	Approximately 30 minutes.		
<b>Finishing Time</b>	50-120 minutes. <b>Note:</b> All times start after adding Component 'B' to Component 'A' and are highly affected by temperature, relative humidity, substrate temperature, wind, sun, and other job site conditions.		
<b>Flexural Strength (ASTM C-293)</b>	<b>28 days</b>	1,500 psi	(10.3 MPa)
<b>Splitting Tensile Strength (ASTM C-496)</b>	<b>28 days</b>	700 psi	(4.8 MPa)
<b>Bond Strength* (ASTM C-882 modified)</b>	<b>28 days</b>	2,500 psi	(17.2 MPa)
<b>Compressive Strength (ASTM C-109) (mortar)</b>			
	<b>1 day</b>	2,500 psi	(17.2 MPa)
	<b>7 days</b>	5,500 psi	(37.9 MPa)
	<b>28 days</b>	7,000 psi	(48.3 MPa)
<b>Permeability (AASHTO T-277)</b>	<b>28 days</b>	Approx. 500 Coulombs	Electrical resistivity (ohm-cm) 35,000
<b>Freeze/Thaw Resistance (ASTM C-666)</b>	<b>300 cycles</b>	98%	
<b>Corrosion Testing for FerroGard 901</b>			
<b>Cracked Beam Corrosion Tests:</b>	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 1/2 in. in depth. Preparation work should be done by high pressure water blast, scabber or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1/16 (CSP-6) in for neat ST III PLUS (1/8 in. for extended ST III PLUS). 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).

<b>Priming</b>	<b>Concrete Substrate:</b> 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 SikaTop 111 Plus can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.									
<b>Mixing</b>	Pour approximately 7/8 of Component 'A' into the mixing container. Add Component 'B' (powder) while mixing continuously. Mix mechanically with a low speed drill (400-600 rpm) and mixing paddle or mortar mixer. Add remaining Component 'A' (liquid) to mix if a more loose consistency is desired. 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. <b>For SikaTop 111 PLUS concrete:</b> Pour all of Component 'A' into mixing container. Add all of Component 'B' while mixing, then introduce 3/8 inch coarse aggregate at desired quantity. Mix to uniform consistency, maximum 3 minutes. Addition rate is 42 lbs. per bag (approx. 3.0 to 3.5 gal. by loose volume). The aggregate must be non-reactive (reference ASTM C1260, C227 and C289), clean, well-graded, saturated surface dry, have low absorption and high density, and comply with ASTM C33 size number 8 per Table 2. <b>note:</b> Variances in the quality of the aggregate will affect the physical properties of SikaTop 111 PLUS. The yield is increased to 0.75 cu. ft./unit with the addition of the aggregate (42 lbs.). Do not use limestone aggregate.									
<b>Application &amp; Finish</b>	<b>Horizontal:</b> Mortar or concrete <b>must be scrubbed</b> into the substrate, filling all pores and voids. After filling repair, screed the material. Allow mortar or concrete to set to desired stiffness, then finish with wood or sponge float for a smooth surface, or broom or burlap-drag for a rough finish. <b>Form and pour or pump applications:</b> Pre-wet surface to SSD. Vibrate form while pouring or pumping. Pump with a variable pressure pump. Continue pumping until a 3 to 5 psi increase in normal line pressure is evident then STOP pumping. Form should not deflect. Vent to be capped when steady flow is evident, and forms stripped when appropriate.									
<b>Curing</b>	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 layers of mortar, leveling mortar or protective coatings. Moist curing should commence immediately after finishing. Protect newly applied material from direct sunlight, wind, rain and frost. <small>*Pretesting of curing compound is recommended.</small>									
<b>Limitations</b>	<table border="0"> <tr> <td style="vertical-align: top;"><b>Application thickness:</b></td> <td style="text-align: center;"><b>Min.</b></td> <td style="text-align: center;"><b>Max. inches one lift</b></td> </tr> <tr> <td style="padding-left: 20px;">Neat</td> <td style="text-align: center;">1/2 inch (12 mm)</td> <td style="text-align: center;">1 inch (25 mm)</td> </tr> <tr> <td style="padding-left: 20px;">Extended</td> <td style="text-align: center;">1 inch (25 mm)</td> <td style="text-align: center;">6 inches (150 mm)</td> </tr> </table> <ul style="list-style-type: none"> <li>■ Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application.</li> <li>■ Addition of coarse aggregates may result in variations of the physical properties of the mortar.</li> <li>■ Do not use solvent-based curing compound.</li> <li>■ 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.</li> </ul>	<b>Application thickness:</b>	<b>Min.</b>	<b>Max. inches one lift</b>	Neat	1/2 inch (12 mm)	1 inch (25 mm)	Extended	1 inch (25 mm)	6 inches (150 mm)
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Extended	1 inch (25 mm)	6 inches (150 mm)								
<b>Caution</b>	<b>Component 'A' - Irritant</b> - 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. <b>Component 'B' - Irritant; suspect carcinogen</b> - 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, use an appropriate NIOSH approved respirator. Remove contaminated clothing.									
<b>First Aid</b>	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.									
<b>Clean Up</b>	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. <b>Mixed components:</b> Uncured material can be removed with water. Cured material can only be removed mechanically.									

KEEP CONTAINER TIGHTLY CLOSED  
NOT FOR INTERNAL CONSUMPTION  
CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION

KEEP OUT OF REACH OF CHILDREN  
FOR INDUSTRIAL USE ONLY

Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current technical data sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor.

NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES.

Visit our website at [www.sikausa.com](http://www.sikausa.com)

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