SikaTop® 111 PLUS

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

Description
SikaTop® 111 PLUS is a two-component, polymer-modified, portland cement-based, fast-setting, screed mortar. It is a high performance repair mortar for horizontal, vertical and overhead surfaces in form and pour applications. It offers the additional benefit of Sika FerroGard® 901, a penetrating corrosion inhibitor included in its formulation.

Where to Use
- On grade, above and below grade on concrete and mortar substrates.
- On horizontal, vertical and overhead surfaces.
- As a structural repair material for parking structures, industrial plants, walkways, bridges, tunnels, dams, floors, etc.
- Approved for repairs over cathodic protection systems.
- Free-flowing repair mortar for hard-to-reach areas.
- Filler for voids and cavities.

Advantages
- Extremely low shrinkage proven by four industry standard test methods.
- High compressive and flexural strengths.
- Increased freeze/thaw durability and resistance to deicing salts.
- Compatible with coefficient of thermal expansion of concrete - Passes ASTM C 884.
- Increased density - improved carbon dioxide resistance (carbonation) without adversely affecting water vapor transmission (not a vapor barrier).
- Enhanced with Sika FerroGard® 901, a penetrating corrosion inhibitor - reduces corrosion even in the adjacent concrete.
- USDA certifiable for incidental food contact.
- ANSI/NSF Standard 61 potable water compliant.

Coverage
0.5 cu. ft./unit. Approximately 0.75 cu. ft./unit concrete (mixed mortar + 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 (23°C) and 50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (wet mix)</td>
<td>ASTM C 138</td>
<td>lbs./ft²</td>
<td>136</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>ASTM C 293</td>
<td>days</td>
<td>1,400</td>
</tr>
<tr>
<td>Split Tensile</td>
<td>ASTM C 496</td>
<td>days</td>
<td>600</td>
</tr>
<tr>
<td>Bond Strength</td>
<td>ASTM C 882 (modified)</td>
<td>days</td>
<td>2,000</td>
</tr>
<tr>
<td>Compressive Strength</td>
<td>ASTM C 109</td>
<td>days</td>
<td>2,500</td>
</tr>
<tr>
<td>Shrinkage</td>
<td>ASTM C 157 (mod. ICRI 320.3R)</td>
<td>days</td>
<td>0.022%</td>
</tr>
<tr>
<td>Specimen Size 1&quot; x 1&quot; x 11-1/4&quot;</td>
<td>ASTM C 151</td>
<td>days</td>
<td>&lt;0.05%</td>
</tr>
<tr>
<td>Specimen Size 3&quot; x 3&quot; x 11-1/4&quot;</td>
<td>ASTM C 151</td>
<td>days</td>
<td>0.022%</td>
</tr>
<tr>
<td>Ring Test</td>
<td>ASTM C 1581</td>
<td>days</td>
<td>&gt;70</td>
</tr>
<tr>
<td>Ring Test - Average Max Strain</td>
<td>ASTM C 1581</td>
<td>days</td>
<td>-16</td>
</tr>
<tr>
<td>Ring Test - Average Stress Strain</td>
<td>ASTM C 1581</td>
<td>days</td>
<td>1.46 psi/day</td>
</tr>
<tr>
<td>Ring Test - Potential for Cracking</td>
<td>ASTM C 1581</td>
<td>days</td>
<td>Low</td>
</tr>
<tr>
<td>Baenzinger Block</td>
<td>ASTM C 666</td>
<td>days</td>
<td>No cracking</td>
</tr>
<tr>
<td>Freeze/Thaw Durability (300 cycles)</td>
<td>ASTM C 1202</td>
<td>days</td>
<td>98%</td>
</tr>
<tr>
<td>CI Permeability</td>
<td>ASTM C 1202</td>
<td>&lt;500 Coulombs.</td>
<td></td>
</tr>
<tr>
<td>Direct Bond Strength</td>
<td>ASTM C 1583</td>
<td>days</td>
<td>&gt;500 psi</td>
</tr>
<tr>
<td>Modulus of Elasticity</td>
<td>ASTM C 531</td>
<td>days</td>
<td>3.00 x 10⁶ psi</td>
</tr>
<tr>
<td>Initial Set Time (min)</td>
<td>ASTM C 266</td>
<td>days</td>
<td>40-70</td>
</tr>
<tr>
<td>Final Set Time (min)</td>
<td>ASTM C 266</td>
<td>days</td>
<td>&gt;90</td>
</tr>
</tbody>
</table>

TESTED PER ICRI GUIDELINE FOR INORGANIC REPAIR MATERIAL DATA SHEET PROTOCOL GUIDELINE NO. 320.3R

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

SikaTop® 111 PLUS is a two-component, polymer-modified, portland cement-based, fast-setting, screed mortar. It is a high performance repair mortar for horizontal, vertical and overhead surfaces in form and pour applications. It offers the additional benefit of Sika FerroGard® 901, a penetrating corrosion inhibitor included in its formulation.

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT’S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT HTTP://USA.SIKA.COM/ OR BY CALLING SIKA’S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.
## How to Use

### Substrate
Concrete, mortar, and masonry products.

### Surface Preparation
Remove all deteriorated concrete, dirt, oil, grease and all bond inhibiting materials from surface. Be sure repair area is not less than 1/2 inch in depth. Preparation work should be done by high pressure water blast, scabbler, or other appropriate mechanical means to obtain an exposed aggregate surface with a minimum surface profile of ±1/16 inch (CSP-5); ±1/8 inch (CSP-6). Saturation 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 Sikar® Armatec® 110 EpoCem (consult Product Data Sheet).

### Priming Concrete Substrate
Prime the prepared substrate with a brush or sprayed applied coat of Sikar® Armatec® 110 EpoCem (consult Product Data Sheet). Alternatively, 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.

### Mixing
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. Thorough mixing and proper proportioning of the two components is necessary.

For SikaTop 111 PLUS concrete: 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 C 1260, C 227 and C 289), clean, well-graded, saturated surface dry, have low absorption and high density, and comply with ASTM C 33 size number 8 per Table 2.

Note: 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.

### Application

#### Horizontal
Mortar or concrete must be scrubbed into the substrate, filling all pores and voids. After filling repair, screed the substrate. 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.

Form and pour or pump applications: 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.

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 (ASTM C 309 compliant). 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.

*Premixing of curing compound is recommended.

### Tooling and Finishing

#### Application thickness:

<table>
<thead>
<tr>
<th>Description</th>
<th>Min.</th>
<th>Max. inches one lift</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neat</td>
<td>½ inch (12 mm)</td>
<td>1 inch (25 mm)</td>
</tr>
<tr>
<td>Extended</td>
<td>1 inch (25 mm)</td>
<td>6 inches (150 mm)</td>
</tr>
</tbody>
</table>

- Minimum ambient and surface temperatures 45°F (7°C) and rising at time of application.
- Addition of coarse aggregates may result in variations of the physical properties of the mortar.
- Do not use solvent-based curing compound.
- 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.

### Limitations

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product’s most current product data sheet, product label and safety data sheet which are available online at [http://usa.sika.com/](http://usa.sika.com/) or by calling Sika’s Technical Service Department at 800.933.7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instructions for each Sika product as set forth in the current product data sheet, product label and safety data sheet prior to product use.

Keep container tightly closed. Keep out of reach of children. Not for internal consumption. For industrial use only. For professional use only.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product’s most current Product Data Sheet, product label and Safety Data Sheet which are available online at [http://usa.sika.com/](http://usa.sika.com/) or by calling Sika’s Technical Service Department at 800.933.7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instructions for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

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 Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks.

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For SikaTop 111 PLUS concrete:

- Addition of coarse aggregates may result in variations of the physical properties of the mortar.
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### Regional Information and Sales Centers
For the location of your nearest Sika sales office, contact your regional center.