



SikaTop® 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 (73F).
- ▲ 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.

HOW TO USE

SUBSTRATE

Concrete, mortar, and masonry products.

SURFACE PREPARATION

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

TYPICAL DATA FOR SIKATOP 111 PLUS (Material and curing conditions @ 73F and 50% R.H.)

SHELF LIFE	One year in original, unopened packaging.
STORAGE CONDITIONS	Store dry at 40-95F (4-35C). Condition material to 65-75F before using. Protect Component 'A' from freezing. If frozen, discard.
COLOR	Concrete gray when mixed.
MIXING RATIO	Plant-proportioned kit, mix entire unit.
APPLICATION TIME	Approximately 30 minutes.
FINISHING TIME	50-120 minutes.
Note: All times start after adding Component 'B' to Component 'A' and are highly affected by temperature, relative humidity, substrate temperature, wind, sun, and other jobsite conditions.	
FLEXURAL STRENGTH (ASTM C-293) 28 days	1,500 psi (10.3 MPa)
SPLITTING TENSILE STRENGTH (ASTM C-496) 28 days	700 psi (4.8 MPa)
BOND STRENGTH* (ASTM C-882 modified): 28 days	2,500 psi (17.2 MPa)
COMPRESSIVE STRENGTH (ASTM C-109) (mortar) 1 day 7 days 28 days	2,500 psi (17.2 MPa) 5,500 psi (37.9 MPa) 7,000 psi (48.3 MPa)
PERMEABILITY (AASTHO T-277) 28 days	Approx. 500 Coulombs Electrical resistivity (ohm-cm) 35,000
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.

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, scabblor 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).

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 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. Manual mixing can be tolerated only for less than a full unit. 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 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.

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 & FINISH

Horizontal: Mortar or concrete must be scrubbed 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.

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.

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 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.

*Pretesting of curing compound is recommended.

LIMITATIONS

▲ Application thickness:

	Min.	Max. inches one lift
Neat	1/2 inch (12 mm)	1 inch (25 mm)
Extended	1 inch (25 mm)	6 inches (150 mm)

- ▲ Minimum ambient and surface temperatures 45F (7C) 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 Hi-Mod 32.

CAUTION

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.

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, use an appropriate NIOSH/MSHA approved respirator. Remove contaminated clothing.

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.

**KEEP CONTAINER TIGHTLY CLOSED
NOT FOR INTERNAL CONSUMPTION**

**KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY**

CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION

Sika warrants its products to be free from manufacturing defects and to meet Sika's current published properties when applied in accordance with Sika directions and tested in accordance with ASTM and Sika Standards. User determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product and excludes labor or the cost of labor. Any claim for breach of this warranty must be brought within one year of the date of purchase.

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