BUILDING TRUST

PRODUCT DATA SHEET

Sika MonoTop®-4500 Geo Hybrid

HIGH PERFORMANCE VERTICAL / OVERHEAD REPAIR MORTAR WITH EXTENDED WORKING TIME

PRODUCT DESCRIPTION

Sika MonoTop®-4500 Geo Hybrid is a one-component, pre-packaged, ready-to-use, fiber reinforced, high strength, shrinkage-compensated hybrid geopolymer mortar. Formulated for application by trowel or low-pressure spray. It is designed especially for the repair of vertical and overhead surfaces where a long working time is desired and can be used in corrosive environments.

USES

- Structural repair material for water and waste water treatment plants, parking structures, industrial plants, bridges tunnels and dams, etc.
- Vertical, horizontal and overhead surfaces
- On grade, above grade, and below grade on concrete and mortar

CHARACTERISTICS / ADVANTAGES

- Ready-for-use, one-component material
- Easy to use; just add water
- Increased resistance to acids and other highly caustic environments
- can be applied using low-pressure spray
- Superior workability
- Can be troweled and screeded after application
- Superior underwater abrasion resistance vs. conventional Portland cement mortar
- High bond strength ensures superior adhesion
- Compatible with coefficient of thermal expansion of concrete
- Good freeze/thaw resistance
- Very low shrinkage
- Fiber reinforced

PRODUCT INFORMATION

Packaging	50 lb. (22.7 kg) bag
Shelf Life	12 months from date of production if stored properly in original, unopened and undamaged sealed packaging.
Storage Conditions	Store dry at 40-95 ºF (4-35 ºC) Protect from moisture. If damp, discard material.

TECHNICAL INFORMATION

Abrasion Resistance	28 Days	< 3% loss	(C1138)
Compressive Strength	24 hours	2,500 psi	(ASTM C39 - 3"x6") Air-cured
	28 days	7,500 psi	

Modulus of Elasticity in Compression	28 days	3,310,000 psi	(ASTM C469)
Flexural Strength	28 days	800 psi	(ASTM C78)
Shrinkage	28 days	<0.07%	(ASTM C157)
Chemical Resistance	Sulfuric Acid (pH 1.0)	< 1.0% mass loss	(ASTM C267)
Slant Shear Strength	3 days	2,000 psi	(ASTM C882)
Freeze-Thaw Stability		Pass	(NYS DOT)
Durability	1 year	< +0.06%	(ASTM C1012)
Splitting tensile strength	28 days	500 psi	(ASTM C496)
Rapid Chloride Permeability	28 days	Very Low (<1000 Coulombs)	(ASTM C1202)

APPLICATION INFORMATION

Mixing Ratio	5.5 - 6.5 pints
Coverage	0.40 ft³ (0.01 m³) per Neat mix 0.58 ft³ (0.02 m³) per Extended mix, containing 25 lbs (11.4kg) or 3/8 inch (10 mm) coarse aggregate (Yield figures do not include allowance for surface profile and porosity, or material waste)
Layer Thickness	3/8" - 6"
Ambient Air Temperature	40 °F (4 °C) minimum / 95 °F (35 °C) maximum
Substrate Temperature	40 °F (4 °C) minimum / 95 °F (35 °C) maximum
Set Time	60 - 70 mins (ASTM C266)
Final set time	90 - 110 mins (ASTM C266)

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

ENVIRONMENTAL, HEALTH AND SAFETY

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

- Surfaces must be clean and sound. Remove all deteriorated concrete, dirt, dust, oil, grease, contaminants and other bond-inhibiting materials from the area to be repaired
- Be sure the repair area is not less than 3/8 inch (10 mm) in depth for placement of a Neat mix. Be sure the repair area is not less than 1 inch (25 mm) in depth for placement of an Extended mix
- To ensure optimum repair results, the effectiveness of decontamination and substrate preparation can be assessed by a Pull-Off test (i.e Tensile Adhesion test per ASTM C1583)
- Saw cutting the perimeter edges of the repair area is recommended
- Remove any and all protruding material i.e brick, concrete, mortar ect.
- Ensure that any and all leaks are stopped prior to application

MIXING

- Pour 5.5 pints (2.6 liters) of clean water into a suitably sized mixing container.
- Add the entire bag's contents of Sika MonoTop®-4500 Geo Hybrid to the container while continuously mixing with a low-speed rotary drill (400 - 600 rpm) and paddle or a mortar mixer.
- Add up to an additional maximum 1 pint (0.5 liter) of water, if needed, for the desired consistency.
- Do not overwater. Excess water may cause segregation.
- Mix to a uniform consistency, maximum 5 minutes. Thorough mixing and proper proportioning are

necessary

APPLICATION

- Apply Sika MonoTop®-4500 Geo Hybrid mortar by hand trowel or spray methods for the repair of horizontal, vertical or overhead concrete surfaces.
- At the time of application, the substrate surfaces must be saturated surface dry (SSD) but hold no standing water.

Hand Trowel

- A neat mix of Sika MonoTop®-4500 Geo Hybrid mortar must initially be scrubbed into the mechanically prepared, SSD substrate. Alternately an appropriate Sika bonding agent product can be used. Be sure to fill all pores and voids.
- Apply Sika MonoTop®-4500 Geo Hybrid mortar by hand trowel while the scrub coat or bonding agent is still wet and uncured.
- Force material against edges of repair, working toward center. After filling repair area, screed off excess Sika MonoTop®-4500 Geo Hybrid mortar.
- Allow Sika MonoTop®-4500 Geo Hybrid to set to the desired stiffness. Finish with broom or with a burlap drag for a rough finish. Finish with a wood float for a granular finish. Finish with a steel trowel or a magnesium float for a smooth finish.
- To assist in the finishing process, use SikaFilm® finishing aid. Please consult the current product data sheet for additional information.
- Mixing, placing and finishing typically should not exceed 2 to 3 hours maximum.

Wet Process Spraying

- Conventional low pressure spray equipment should be used. Consult directly with the equipment manufacturer for their recommendations.
- Set up wet process spray equipment. Add liquid directly into the mixer. Start with 5.5 pints (2.6 liters) per bag. Add additional water to attain the desired consistency for the application. Do not exceed 6.5 pints (3.1 liters).
- Start the mixer in motion and add Sika MonoTop®-4500 Geo Hybrid powder while continuing to mix.
- When spraying, shoot perpendicular (i.e. at a 90° angle) to vertical or overhead surfaces. This minimizes rebound, creates the smoothest pattern (i.e. reduces "bumps") and properly encases rebar.
- After applying the material, allow it to stiffen before removing bumpy areas with a trowel.
- Before applying the next layer, allow the material to develop initial strengths. This may take anywhere from 2 - 4 hours, depending on mix consistency, ambient and substrate temperatures, wind conditions and humidity.
- Begin and finish multiple lift repairs on the same day. To assist in the finishing process of the final lift, use SikaFilm® finishing aid. Please consult the current product data sheet for additional information.
- Refer to ACI 305R the "Guide to Hot Weather Concreting" or ACI 306R the "Guide to Cold Weather Concreting" when there is a need to place this product while either hot or cold temperatures prevail. Thinner placements will be more sensitive to actual temperature conditions.

CURING TREATMENT

- Minimize applied materials exposure to sunlight and air movement that would effect curing
- When possible, cover/shade material between applications
- If applying in hot/dry conditions, the use of a wind barrier and/or fogging spray is necessary

OTHER RESTRICTIONS

See Legal Disclaimer.

LEGAL DISCLAIMER

- **KEEP CONTAINER TIGHTLY CLOSED**
- **KEEP OUT OF REACH OF CHILDREN**
- **NOT FOR INTERNAL CONSUMPTION**
- **FOR INDUSTRIAL USE ONLY**
- **FOR PROFESSIONAL USE ONLY**

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates (“SIKA”), the user must always read and follow the warnings and instructions on the product’s most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA’s Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or 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 label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

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 the product’s shelf life. User determines suitability of product for intended

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