BUILDING TRUST

PRODUCT DATA SHEET

SikaEmaco® OneMix™ Base Material

(formerly MEmaco OneMix™ Base Material)

VERSATILE CONCRETE REPAIR MORTAR INCORPORATING POWER PAKS™ THAT CREATE MULTIPLE PRODUCT SOLUTIONS

PRODUCT DESCRIPTION

SikaEmaco® OneMix™ Base Material is a multi-purpose repair mortar. When mixed alone with water produces a quality vertical, overhead and horizontal repair material. Using our proprietary Power Pak System enhances the performance characteristics of the OneMix system.

USES

- Interior and exterior
- Large-volume structural repairs
- Repair or replacement of concrete elements
- Formed horizontal, vertical, and overhead repairs
- Above and below grade
- Spalls or holes in concrete
- Deteriorated edges

Substrates:

- Concrete
- Masonry
- Structural Concrete

CHARACTERISTICS / ADVANTAGES

Vertical and horizontal repairs only require the addition of potable water for many applications. The addition of SikaEmaco® OneMix™ Power Paks adds versatility and provides enhanced performance as follows:

- Self Consolidation Power Pak creates form and pour material
- Accelerator Power Pak speeds up setting time
- Retarder Power Pak slows down setting time
- Polymer Power Pak increases adhesion and improves finishability
- Corrosion Power Pak provides protection for re-enforcing steel
- Fiber Power Pak reduces plastic shrinkage cracking and improves non-sag properties

PRODUCT INFORMATION

Packaging	Base Bag 50 lb (22.69 kg) polyethylene bags Each Power Pak come 6 Power Paks in a polyethylene bag inside the pouch; 20 Pouches in a box; 120 total power paks in a box
Shelf Life	Base bag:12 months when properly stored Power Paks: 12 months when properly stored
Storage Conditions	Store in unopened containers in a cool, clean, dry area

TECHNICAL INFORMATION

Compressive Strength

BASE MATERIAL	AT 50 °F (10 °C)	AT 73 °F (23 °C)	AT 90 °F (32 °C)
1 Day Compressive Strength	1000 psi (6.9 MPa)	3000 psi (20.7 MPa)	3000 psi (20.7 MPa)
7 Day Compressive Strength	6000 psi (41.4 MPa)	6000 psi (41.4 MPa)	6000 psi (41.4 MPa)
28 Day Compressive Strength	7500 psi (51.7 MPa)	7500 psi (51.7 MPa)	7500 psi (51.7 MPa)

Modulus of Elasticity in Compression

Compressive Modulus (28 days)
4.30x10^6 psi (2.96X10^4 MPa) (ASTM C469)

Flexural Strength

Flexural Strength (1 day)	800 psi (5.5 MPa)	(ASTM C293)
Flexural Strength (7 days)	950 psi (6.5 MPa)	
Flexural Strength (28 days)	1100 psi (7.5 MPa)	

Tensile Strength

Direct Tensile Bond Strength (28 days)	275 psi (1.8 MPa)	(ASTM C1583)
Direct Tensile Strength to Concrete (7 days)	200 psi (1.37 MPa)	

Splitting tensile strength

Split Tensile Strength (7 days)	300 psi (2.0 MPa)	(ASTM C496)
Split Tensile Strength (28 days)	500 psi (3.4 MPa)	

Crack Bridging Ability

Crack Reduction Ratio (CRR)	N/A	(ASTM C1579)

Shear Strength

Slant Shear Bond Strength (1 day)	1300 psi (8.9 MPa)	(ASTM C882)
Slant Shear Bond Strength (7days)	2000 psi (13.7 MPa)	
Slant Shear Bond Strength (28 days)	2200 psi (15.1 MPa)	

Shrinkage

Drying Shrinkage (28 days)	<0.1%	(ASTM C157)

Expansion

Expansion (28 days)	<0.1%	(ASTM C157)

Freeze-Thaw Stability

Freeze-Thaw Resistance (28 days)	99%	(ASTM C666)

Design Considerations

Note: All results determine at 11.5 % water content and at 73 °F (23 °C)

SYSTEM INFORMATION

System Structure

Power Pak Options (can be used in combination)	
Accelerator	Speeds up cure rate of mix
Polymer	Improves finishing and reduces cracking
SCC	Required for self-consolidating, form and pour/pump applications
Corrosion Inhibitor	Protects steel reinforcement from corrosion
Fibers	Improves non-sag and tensile properties
Retarder	Slows down cure rate of mix

APPLICATION INFORMATION

Coverage

0.39 ft^3 per 50 lb bag (0.011 m^3 /22.69 kg)

Mixing Ratio

Water Requirements (field conditions may require minor adjustments)

Vertical	Horizontal	Self-Consolidating (SCC)
2.5 Quarts (2.37L)	2.75 Quarts (2.60L)	3.0 Quarts (2.84L)
Power Pak Optional	Power Pak Optional	Power Pak SCC Required

Thinner

BASE MATERIAL	AT 50 °F (10 °C)	AT 73 °F (23 °C)	AT 90 °F (32 °C)
Working Time (minutes)	60	55	30

Set Time

BASE MATERIAL	AT 50 °F (10 °C)	AT 73 °F (23 °C)	AT 90 °F (32 °C)
Initial Set (minutes)	283	163	142

Final set time

BASE MATERIAL	AT 50 °F (10 °C)	AT 73 °F (23 °C)	AT 90 °F (32 °C)
Final Set (minutes)	480	266	183

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

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

APPLICATION INSTRUCTIONS

NOTES ON INSTALLATION

For Best Performance

- Recommended ambient, surface, and material temperature is 40-90 °F (4-32 °C).
- Do not mix longer than 5 minutes.
- Minimum application thickness is 0.5” (13mm) for horizontal repairs, 0.25" (6mm) for vertical and overhead repairs.
- Do not mix partial bags.
- Do not vibrate.
- Do not add other additives other than the recommended Power Pak.
- For professional use only; not for sale to or use by the general public.
- Make certain the most current versions of product data sheet and SDS are being used; visit usa.sika.com to verify the most current versions
- Proper application is the responsibility of the user. Field visits by Sika personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the job site.

SURFACE PREPARATION

Concrete

1. Concrete must be structurally sound and fully cured (28 days).
2. Saw cut the perimeter of the area being repaired into a square with a minimum depth of ½" (13 mm) for horizontal repairs and ¼" (6mm) for vertical and overhead repairs.
3. Refer to current ICRI Guideline no. 310.2R for surface prep requirements to permit proper bond.

Reinforcing Steel

1. Remove all oxidation and scale from the exposed reinforcing steel in accordance with ICRI Technical Guideline No. 310.1R.
2. For additional protection from future corrosion, coat the prepared reinforcing steel with Sikagard® P 8100 AP.

MIXING

1. Precondition material to 70 °F +- 5°(21 °C +- 3°) before mixing.
2. Add recommended potable water for the intended application to the mixing container for each bag of SikaEmaco® OneMix™. If required, add the correct amount of aggregate to the mixer.
3. Add Power Pak directly to mix water. There is no need to open Power Pak.
4. Add the base powder to the water while continuously mixing with a slow-speed drill and paddle, mortar mixer, or other forced action mixer.
5. Mix for a minimum of 3 minutes until fully homogeneous.

APPLICATION

Vertical Application

1. Dampen the surface with potable water; it must be saturated surface-dry (SSD) with no standing water.
2. With a gloved hand, scrub a small quantity of mixed material into the SSD substrate. Thoroughly key in and work the material throughout the cavity to promote bond. Do not apply more of the bond coat than can be covered with mortar before the bond coat dries.
3. Apply material in lifts of ¼–2" (6–51 mm). Avoid featheredging. For optimum mechanical bond between successive lifts, thoroughly score each lift and allow to reach initial set before the next layer is applied. Placement time is 20–30 minutes at 70 °F (21 °C) and 50% relative humidity.
4. Trowel, shave, or shape the material to the desired finish after the initial set.
5. The recommended application range of SikaEmaco® OneMix™ is from 40 to 90 °F (4 to 32 °C). Follow ACI 305 and 306 for hot or cold weather guidelines.

Form and Pour Application

1. Build forms in accordance with ACI 347R. Keep the unrestrained surface area of the repair to a minimum.
2. Saturate the prepared concrete substrate by filling the prepared formwork with clean water 24 hours before placement.
3. Immediately before the placement of SikaEmaco® OneMix™, completely drain this water and seal the drainage outlets, leaving the substrate saturated surface-dry (SSD) with no ponded water remaining.
4. In jobsite circumstances where the formwork cannot be filled with water to achieve an SSD surface, the prepared concrete substrates must be thoroughly hosed down with clean water to achieve an equal level of saturation. Apply the repair material with sufficient pressure to ensure intimate contact with the substrate.
5. Alternatively, a long open-time bonding agent may be used in place of a saturated substrate. In such a case, place the SikaEmaco® OneMix™ before the bonding agent becomes tack-free.
6. Immediately after mixing, pump or pour the SikaEmaco® OneMix™ into the formed area. The material does not require vibrating.
7. The recommended temperature range for application of SikaEmaco® OneMix™ is 40 to 90 °F (4 to 32 °C). Follow ACI 305 and 306 for hot or cold weather guidelines.

Screed Application

1. Dampen the surface with potable water; it must be saturated surface-dry (SSD) with no standing water.
2. After removing all standing water, thoroughly scrub a thin layer of bond coat into the saturated surface with a stiff-bristled broom or brush. Do not dilute the bond coat with water. Do not apply more bond coat than can be covered with mortar before the bond coat dries. Do not retemper the bond coat.
3. Immediately place the repair mortar from one side of the prepared area to the other. Work the material firmly into the bottom and sides of the patch to ensure good bond. Level the SikaEmaco® OneMix™ and screed it to the elevation of the existing concrete. Apply the appropriate finish.
4. Finish the completed repair, as required, taking care not to overwork the surface.
5. The recommended application range of SikaEmaco® OneMix™ is from 40 to 90 °F (4 to 32 °C). Follow ACI 305 and 306 for hot or cold weather.
6. A maximum of 15 minutes should be allowed to mix, place and finish SikaEmaco® OneMix™ at 70 °F (21 °C).

Aggregate Extension

1. For repair areas 2–6" (51–150 mm) in depth, the minimum recommended addition is 15–25 lbs. (6.8–11.4 kg) of ⅜" (9 mm) washed, graded, rounded, SSD, low absorption, highdensity aggregate per 50 lbs. (22.6 kgs) bag.
2. For areas greater than 6" (150 mm) in depth, the recommended addition is 25 lbs. (11.4 kgs) of ⅜" (9 mm) washed, graded, rounded, SSD, low absorption, high-density aggregate per 50 lbs. (22.69 kgs) bag.
3. Aggregate must comply with the requirements of ASTM C 33.

CURING TREATMENT

1. Leave the formwork in place until the compressive strength reaches 2,500 psi (17.2 MPa) or a strength specified by the engineer.
2. Cure with an approved curing compound compliant

with ASTM C 309 or preferably ASTM C 1315. If the repair area will receive a coating, wet curing is recommended.

CLEANING OF TOOLS

Clean tools and equipment with clean water immediately after use. Cured material must be removed mechanically.

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.

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