BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET

SikaEmaco® 425 Gel Patch

(formerly MEmaco N 425)

NON-SAG CONCRETE REPAIR MORTAR WITH INTEGRAL CORROSION INHIBITOR FOR VERTICAL AND OVERHEAD APPLICATIONS

PRODUCT DESCRIPTION

SikaEmaco® 425 Gel Patch is a trowel-grade, lightweight, polymer-modified, silica fume-enhanced repair mortar with an integral corrosion inhibitor

WHERE TO USE

- Interior and exterior
- Vertical and overhead
- Above and below grade
- Spalls or holes in concrete
- Deteriorated edges

Substrates

- Concrete
- Masonry
- Structural Concrete

CHARACTERISTICS / ADVANTAGES

- Non-sag consistency able to be placed in 51 mm (2 inches) thick lifts
- Readily sculpted, shaved, and finished to match the existing substrate
- Very low chloride permeability and an integral corrosion inhibitor protect reinforcing steel
- Only requires the addition of potable water
- Low shrinkage produces a stable, durable bond
- Lightweight microscopic beads improve vertical and overhead workability
- Polymer modification improves adhesion and provides increased freeze/thaw stability

PRODUCT INFORMATION

Composition / Manufacturing	SikaEmaco® 425 Gel Patch is composed of crystalline (quartz) silica and Portland cement.
Packaging	19.5 kg (43 lb) polyethylene-lined bags
Shelf Life	12 months when properly stored
Storage Conditions	Store in unopened containers in a cool, clean, dry area

TECHNICAL INFORMATION

Compressive Strength	1 day	14.8MPa (2,150psi)		(ASTM C 109, modified*)
	7 days	38.6MPa (5,600psi)		
	28 days	46.5MPa (6,750psi)		
	*At 50% relative humidity			
Tensile Strength in Flexure	1 day	3.4MPa (500psi)		(ASTM C 348, modified*)
	7 days	5.5MPa (800psi)		
	28 days	7.7MPa (1,110psi)		
Splitting Tensile Strength	1 day	2.1MPa (310psi)		(ASTM C 496, modified* (wetcure))
	7 days	3.9MPa (560psi)		
	28 days	4.2MPa (610psi)		
Shear Strength	**Bond Strength**			
	1 day	6.2MPa (900psi)		(ASTM C 882, modified*(mortar scrubbed into substrate))
	7 days	13.1MPa (1,900psi)		
	28 days	16.9MPa (2,450psi)		
Modulus of Elasticity in Shear	3,861MPa (5.6 x 10^5psi)			(ASTM C 215)
Expansion	1 day	+0.019% wet cure	−0.026% dry cure*	(ASTM C 157)
	7 days	+0.028% wet cure	−0.11% dry cure*	
	28 days	+0.034% wet cure	−0.15% dry cure*	
Coefficient of Thermal Expansion	**Linear coefficient of thermal expansion**			
	9,5 x 10^{-5} mm/mm/° C (5.3 × 10^{-6}in/in/° F)			(ASTM C 531)
Water Absorption	4% at 28 days			(ASTM C 642)
Chloride Ion Diffusion Resistance	Very low range			(AASHTO T-277 (According to ASTM C 1202, table 1))
Freeze thaw resistance	98.8% RDM			(ASTM C 666 A)
Freeze Thaw De-Icing Salt Resistance	**Scaling Resistance**			
	0.0 kg/m² (0.0 lbs/ft²) No Scaling at 50 cycles			(ASTM C 672)

APPLICATION INFORMATION

Yield	0.012 m^3 (0.43 ft^3)per 19.5 kg (43 lb) bag per bag
Setting Time	**Working Time** 20-30 min at 21° C (70° F)

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

NOTES ON INSTALLATION

- Do not bridge moving cracks or joints.
- Do not overwork material
- Do not add plasticizers, accelerators, retarders, or other additives.
- Do not extend with aggregate.
- Bonding agents are recommended for large areas as well as permanently damp areas.
- Protect from freezing for 24 hours after application.
- For professional use only; not for sale to or use by the general public.
- Make certain the most current versions of the product data sheet and SDS are being used.
- 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 jobsite.

SURFACE PREPARATION

1. The substrate 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 6 mm (¼ inches) .
3. The surface to be repaired must be clean, free of laitance, and saturated surface-dry (SSD) following ICRI Guideline no. 310.2 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 21° C ±3° (70° F ±5°) before mixing.
2. Mechanically mix at a slow speed with a 19 mm (3/4 inche) drill and mixing paddle
3. Add approximately 2.6 L (0.68 US Gallon) of potable water into a clean mixing container. Gradually sift in powder 1/3 at a time while mixing continuously at a slow speed (high speeds may entrain air). Mix for a minimum of 3 minutes to ensure a uniform, lump-free consistency. Do not exceed a total of 2.8 L (0.74 Gallon) of mixing water per 19.8 kg (43 lb) bag.

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
3. coat dries.
4. Apply material in lifts of 6–51 mm (1/4–2 inches) . Avoid feather edging. For optimum mechanical bond on successive lifts, thoroughly score each lift and allow it to reach the initial set before the next layer is applied. Placement time is 20–30 minutes at 21° C (70° F) and 50% relative humidity.
5. Trowel, shave, or shape the material to the desired finish after the initial set.
6. The recommended application range of SikaEmaco® 425 Gel Patch is from 4 to 32° C (40 to 90° F) . Follow ACI 305 and 306 for hot or cold weather guidelines.

CURING TREATMENT

Cure with an approved water-based curing compound compliant with ASTM C 309 or preferably ASTM C 1315. If the repair area will receive a coating, wet curing is recommended.

CLEAN UP

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

LEGAL NOTES

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

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