BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET

SikaEmaco®-1061 EX

(formerly MEmaco T 1061EX)

Low-dust, rapid-setting, cement-based, pre-extended, concrete repair mortar with increased working time

PRODUCT DESCRIPTION

SikaEmaco®-1061 EX is a one component, shrinkage-compensated, very rapid-setting, cement-based, pre-extended mortar with increased working time. SikaEmaco®-1061 EX is designed for the repair of horizontal, flat concrete surfaces in applications ranging from 38 mm (1.5 in) thick to full depth.

WHERE TO USE

- Interior and exterior applications
- On grade, above and below grade concrete repairs
- Horizontal, flat surfaces
- Applications requiring high early strength gain
- Structural concrete repairs for concrete roadways, parking facilities, industrial floors, walkways, bridge decks, balconies, etc.
- Partial and full depth concrete repairs
- Filling voids and cavities

CHARACTERISTICS / ADVANTAGES

- Factory pre-extended with coarse aggregates to guarantee quality and reduce the contractor's workload
- Low-dust mortar for added worker safety and comfort
- Increased working time after mixing
- Extra low permeability to minimize chloride intrusion
- Rapid-setting mortarl making it ideal for quick turnaround repairs
- Low residual moisture enabling the material to be prepared and coated in as little as 6 h at 23 °C (73 °F)
- Excellent freeze/thaw resistance
- Formulated to minimize cracking from drying shrinkage; reduced stress at the bond line
- Adheres to carbonated and non-carbonated concrete substrates thanks to proprietary Portland cement-based blend

APPROVALS / CERTIFICATES

- Meets ASTM C928 Type R2 (Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs) requirements

PRODUCT INFORMATION

Composition / Manufacturing	Blend of Portland cement, graded aggregates, shrinkage compensating agents and set control admixtures
Packaging	22.7 kg (50 lb) polyethylene lined bags
Appearance / Colour	Powder / Grey
Shelf Life	12 months from date of production if stored properly in original, unopened

	and undamaged packaging
Storage Conditions	Store in unopened packaging in cool, clean, dry conditions at temperatures between 4 °C and 35 °C (40 °F and 95 °F). Protect from moisture. If damp, discard material.

SUSTAINABILITY INFORMATION

Health and safety	**Dust Reduction**	SikaEmaco®-1061 EX vs control: 70 %	(DIN 55992-2)

TECHNICAL INFORMATION

Compressive Strength	3 hours	20.7 MPa (3000 psi)	(ASTM C109) 23 °C (73 °F), 50 % R.H.
	1 day	27.6 MPa (4000 psi)	
	28 days	55.2 MPa (8000 psi)	
	28 days	51.0 MPa (7400 psi)	(ASTM C39) 75 mm x 150 mm (3 in x 6 in) cylinders
Modulus of Elasticity in Compression	28 days	41.8 GPa (6.07 x 10^6 psi)	(ASTM C469) 23 °C (73 °F), 50 % R.H.
Tensile Strength in Flexure	1 day	5.2 MPa (755 psi)	(ASTM C348) 23 °C (73 °F), 50 % R.H.
	28 days	7.4 MPa (1070 psi)	
Shear Strength	**Bond Strength by Slant Shear**		
	1 day	15.8 MPa (2300 psi)	(ASTM C882 modified per ASTM C928) 23 °C (73 °F), 50 % R.H.
	28 days	17.9 MPa (2600 psi)	
	Mortar scrubbed into mechanically-prepared, SSD substrate		
Shrinkage	28 days (air-cured)	- 0.03 %	(ASTM C157 modified per ASTM C928) 23 °C (73 °F), 50 % R.H.
Expansion	28 days (wet-cured)	+ 0.01 %	(ASTM C157 modified per ASTM C928) 23 °C (73 °F), 50 % R.H.
Coefficient of Thermal Expansion	13.0 x 10^{-6} mm/mm/°C (7.2 x 10^{-6} in/in/°F)		(CRD-C 39)
Freeze Thaw De-Icing Salt Resistance	28 days	No scaling	(ASTM C672) 25 cycles
Resistance to Weathering	28 days	95.6 %	(ASTM C666) Procedure A
	Relative Dynamic Modulus (RDM) at 300 cycles		
Splitting Tensile Strength	1 day	2.9 MPa (425 psi)	(ASTM C496) 23 °C (73 °F), 50 % R.H.
	28 days	3.6 MPa (525 psi)	

Chloride Ion Diffusion Resistance	28 days	565 Coulombs	(ASTM C1202) 23 °C (73 °F), 50 % R.H.

APPLICATION INFORMATION

Mixing Ratio	1.54 L (0.41 US gal) of clean, potable water / 22.7 kg (50 lb) bag		
Yield	0.011 m^3 (0.38 ft^3)		
Layer Thickness	**Minimum** 38 mm (1.5 in)	**Maximum per lift** 203 mm (8 in)	
	Thicker applications may be possible. Contact Sika Canada Technical Services for more information.		
Product Temperature	18 °C to 24 °C (65 °F to 75 °F)		
Ambient Air Temperature	Minimum 4 °C (40 °F) / Maximum 35 °C (95 °F)		
Substrate Temperature	Minimum 4 °C (40 °F) / Maximum 35 °C (95 °F)		
Application Time	SikaEmaco®-1061 EX must be placed within 25 minutes after mixing.		
Initial Set Time	Approx. 50 minutes		(ASTM C191) 23 °C (73 °F), 50 % R.H.
Final Set Time	Approx. 80 minutes		(ASTM C191) 23 °C (73 °F), 50 % R.H.
Consistency	Initial Slump	Approx. 76 mm to 127 mm (3 in to 5 in)	(ASTM C143) 23 °C (73 °F), 50 % R.H
Fresh Mortar Density	2.37 g/cm^3 (148 lb/ft^3)		

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

LIMITATIONS

The user is responsible for the proper use of the product. Site visits by Sika personnel are for the sole purpose of providing technical recommendations and are in no way intended to supervise or control the quality of work on site.

- Recommended minimum ambient and substrate temperature is 4 °C (40 °F) and rising.
- Do not mix partial bags. Do not add plasticizers, accelerators, retarders or other additives.
- Consult paint or coating system manufacturer for substrate requirements prior to overcoating.
- Do not use Sika® Armatec products as a bonding primer with this rapid-hardening product. Bonding adhesives typically are not required on well-prepared, saturated surface dry (SSD) substrates when a scrub coat of SikaEmaco®-1061 EX is applied.
- 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, parts, etc. with an appropriate epoxy such as Sikadur®-32 Hi-Mod.

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

SUBSTRATE QUALITY

Concrete substrate must be clean, structurally sound and sufficiently cured.

SURFACE PREPARATION

Concrete: Remove all deteriorated concrete, dirt, oil, grease, contaminants and other bond inhibiting materials from the area to be repaired. Preparation work should be done by high pressure water jetting, sand blasting or other appropriate mechanical means to obtain an exposed aggregate surface profile of a minimum CSP - 7. Refer to current ICRI Guideline no. 310.2R for surface preparation requirements to permit proper bond. Saw-cutting of edges with a minimum depth of 38 mm (1.5 in) is recommended, and a dovetail cut is preferred. Substrate should be saturated surface dry (SSD) with clean water prior to application. No standing water or frost should remain during scrub coat and installation of product.

Steel: Remove all rust and scale from exposed reinforcing steel in accordance with ICRI Technical Guideline No. 310.1R. Thoroughly prepare by mechanical means to a bright, clean and dry condition. For additional protection from future corrosion, treat the prepared reinforcing steel with Sika® Armatec®-110 EpoCem®. Consult the current product data sheets for additional information.

MIXING

Precondition SikaEmaco®-1061 EX at temperature between 18 °C and 24 °C (65 °F and 75 °F) before mixing. Add 1.85 L (0.49 US gal) of potable water for each bag of SikaEmaco®-1061 EX to a clean, appropriate mixing container. Do not overwater. Slowly add the entire contents of the bag to the water while continuously mixing with a low-speed rotary drill (400 - 600 rpm) and mortar paddle, or appropriate mortar mixer. Mix for a minimum of three (3) minutes until uniformly blended and fully homogeneous. Do not mix for longer than five (5) minutes. Do not overmix.

APPLICATION

After removing all standing water and frost from the mechanically prepared surfaces, thoroughly scrub a thin layer of SikaEmaco®-1061 EX into the saturated surface with a stiff-bristled broom or brush.

Do not dilute the scrub coat with water. Do not apply more scrub coat than can be covered with mortar before it dries. Do not retemper scrub coat.
Immediately place the thickness of SikaEmaco®-1061 EX needed to complete the repair onto the wet scrub coat from one side of the prepared area to the other. Work the material firmly into the bottom and sides of the repair area to ensure a good bond. Be sure to work into all pores and voids. Level SikaEmaco®-1061 EX and screed to the elevation of the existing concrete. Finish the completed repair, as required, taking care not to overwork the surface. To assist in the finishing process, use Sika® Film finishing aid. Consult the current product data sheet for additional information.

Note: The recommended application temperature range of SikaEmaco®-1061 EX is from 4 °C to 35 °C (40 °F to 95 °F). Refer to ACI 305, the '*Guide to Hot Weather Concreting*' and ACI 306, the '*Guide for Cold Weather Concreting*' when extreme ambient and substrate temperatures prevail. Thinner placements will be more sensitive to temperature conditions.

CURING TREATMENT

Per ACI recommendations for Portland cement-based concrete, moist curing of exposed surfaces is required. Protect freshly applied SikaEmaco®-1061 EX from direct sunlight, wind, rain and frost. To prevent from freezing, cover with insulting material (e.g. curing blanket). Moist cure surfaces after finishing with wet burlap and polyethylene, a fine mist of water, or with a water-based, compatible* curing compound compliant with ASTM C309 or preferably ASTM C1315.

** Pretesting of non-Sika®, water-based curing compound is recommended.*

CLEAN UP

Uncured material can be cleaned and removed from tools, equipment and surfaces with clean water immediately after placement. 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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