KEMKO® 186 EPOXY HEALER/SEALER

COATING – EPOXY/ACRYLIC HYBRID GRAVITY FILLER OF CRACKED and POROUS CONCRETE

TECHNICAL DATA SHEET

PRODUCT IS ONLY AVAILABLE TO KEMKO® APPLICATORS IN U.S., CANADA, AND INTERNATIONAL CUSTOMERS

KEMKO®186 Epoxy Healer/Sealer is a two-component, very fast curing, extremely low viscosity Epoxy/Acrylic hybrid penetrating product with resistance to vehicle oils, greases, and deicing road salts. It is designed for topical application on porous and/or cracked concrete including bridge decks, elevated highways, loading docks, and high use industrial floors. KEMKO®186 provides a high degree of surface wetting for excellent penetration into cracks as fine as 2 mils (0.05 mm) and voids of stressed or worn substrates. Healer/Sealer horizontal concrete substrate flood coat placed at 80 to 125 sq. ft. (7.48 to 11.15 sq.m.) per gallon (3.79 lt.). For skid-resistance broadcast a US Sieve Size 30 – 50 mesh aggregate, uniformed in size, washed, dried, and bagged. It also functions as an excellent fast-set primer for bonding of rigid, semi-rigid, or elastomeric for polymer coatings or overlayment. The high epoxy hybrid formulation allows for recoating months after installation with cleaning (not abrading). It contains no VOC's (volatile organic compounds).

FEATURES

The physical properties of the product allow its use in applications requiring resistance to creep and stress relaxation, maintenance of mechanical properties at high ambient temperatures, high load bearing strength and excellent adhesion under adverse application conditions, e.g., cold temperature substrate, wet concrete. KEMKO®186 cures to a tough, resilient polymer and has excellent load transfer capability. Exceptional substrate wetting ensures penetration and filling of fine fissures and tributary cracks as narrow as 2 mils (0.05 mm) width. It has a convenient 4:1 (by vol.) mixing ratio and employs special colorants for contrasting component color.

TYPICAL USES

KEMKO® 186 Epoxy Healer/Sealer exhibits excellent resistance to water, aqueous salt solutions, and vehicular fuels and oils, as well as deicing salts.

- It does not embrittle when exposed to sunlight for long periods of time.
- It is environmentally safe.
- It has a convenient 4:1 (by vol.) mixing ratio and is formulated for single coating applications.
- It has extremely low viscosity without volatile solvents.
- The fast cure minimizes downtime and traffic disruption.
- It has a much higher flash point and lower odor, is less brittle after cured, and greater strength than HMWM (high molecular weight methacrylate).
- It is not subject to UV "inhibition of cure" which affects HMWM materials.
- It can be used on polyester-based polymer concrete overlays.
- Do no thin with solvents.

TECHNICAL DATA

7 days 73°F (23°C) unless otherwise indicated. Compressive strength of cement mortar 4,500 psi (13.0 MPa).

PHYSICAL PROPERTIES		TEST METHOD	VALUE
Mix Ratio by Volume			4:1
Mix Ratio by Weight			100:23.4
Color		Visual	Clear Amber
Weight per Gallon	**Part A** **Part B** **Mixed**	ASTM D1475	9.5 lbs. (4.2 kg) 8.7 lbs. (3.6kg) 9.4 lbs. (4.0 kg)
Viscosity Poise	**Part A** **Part B** **Mixed**	ASTM D2393	93 cp 11 cp 75 cp
Gel Time, 60 gr.		ASTM C881	13 minutes
Thin Film Tack Free Time		ASTM D1640	5.5 to 6.5 Hours
Thin Film Tack Free Time at 50 mils (1.7 mm)		ChemCo Test	5.5 Hours
Compressive Yield Strength		ASTM D695	14,990 psi (103.4 MPa)
Tensile Strength		ASTM D638	7,800 psi (53.8 MPa)
Elongation at Break		ASTM D638	4.5 %
Hardness, Shore D, 1 Day		ASTM D2240	74
Hardness, Shore D, 3 Day		ASTM D2240	83
Heat Deflection Temperature		ASTM D648	120°F (48.9°C)
Bond Pull-Off Strength		ASTM C1583	400 psi (2.8 MPa)

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LIMITATIONS

The minimum substrate temperature for cure Is 35°F (1.7°C).

- When a 100% solids epoxy must be used, use ultra-low viscosity KEMKO® 068 LoVis IR.
- When a 2:1 mix ratio is required use rapid setting KEMKO® 322 ULV IR at installation temperatures 35°F - 65°F (1.7°C – 18.3°C).
- The maximum in-service temperature should be 20°F (10°C) below the HDT (Heat Deflection Temperature) in bonding structural applications subjected to substantial and sustained shear stresses that may cause creep.
- For the best penetration, apply when substrate is the coldest because the cracks and pores will be at their widest.
- Do not add solvents or otherwise thin this material.

PACKAGING

Standard kit sizes of Part A + Part B are 1,5, 50, and 500 gallon (3.78, 18.9, 189 and 1892.7 l.) kits.

SHELF LIFE AND SHIPPING

Three years minimum in unopened, original containers when stored between 60°F and 90°F (15.6°C and 32.2°C) in a dry place away from sunlight. Remixing of components may be required upon long-term storage.

COLOR SELECTION

The standard color of the mixed components is amber and it is also available in florescent pink and yellow to enhance visibility.

CHEMICAL RESISTANCE

KEMKO® 186 has excellent resistance to a wide range of commonly encountered chemicals including acids and bases, aircraft and automotive fluids, petroleum fuels, cutting oils, etc. It has limited resistance to hydrocarbon solvents. Performance is a function of the specific chemical and concentration, ambient and solution temperatures, exposure times and housekeeping procedures. For information on specific chemicals and exposure conditions, contact a ChemCo Systems' Technical Representative.

SUBSTRATES

Concrete (dry, damp, and wet), masonry, stone, steel, wood, and CFRP.

SURFACE PREPARATION

Substrate surfaces must be dry or damp, sound and free of all bond-inhibiting substances for sealers used as epoxy dams. Prepare surfaces in accordance with International Concrete Repair Institute, ICRI Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair, Concrete Surface Profile, CSP 2 to CSP 4. The concrete surfaces should have a minimum strength of 250 psi (1.72 MPa) in direct tension per ASTM C1583 Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method). Steel surfaces should be cleaned to "white metal" according to SSPC-SP 5/NACE No. 1 White Metal Blast Cleaning is a standard used for white metal blast cleaning put forth by the SSPC (Society for Protective Coatings) and NACE (National Associates of Chemical Engineers) international standard.

MIXING

KEMKO® 186 is a two-component adhesive. The resin to hardener (Part A: Part B) mix ratio is 4:1, by volume. Premix the individual components before drawing from bulk packaging. Wear safety glasses and clean neoprene rubber gloves when handling the material. Transfer the appropriate quantities of Part A and Part B into a mixing container. Use quantities that can be applied before the potlife of the mixed material expires. Blend thoroughly using a Jiffy mixer blade attached to a low speed (350 - 750 rpm) electric or pneumatic drill. Proper mixing will take 2 - 3 minutes. Caution - Take care to not leave the mixed material in the bulk mixing container in excess of the gel time period. After mixing, immediately pour contents onto working surface. Due to the fast gel time of this product, a rapid exotherm (temperature rise) of the bulk material will otherwise occur. High ambient temperatures shorten gel time. Immediately spread onto the substrate before the product's viscosity increases due to rapid gel times.

INSTALLING

Pour the mixed material onto the substrate and distribute with a squeegee to a coverage rate of 80 - 125 sq. ft. (7.48 to 11.15 sq. m.) per gallon (3.79 lt.). Let the sealer penetrate for 4-6 minutes and then redistribute the excess with squeegees or a broom to refill any cracks, leaving the minimum amount of material possible on the surface. Repeat the process if the product is rapidly absorbed. Wait an additional 10 - 20 minutes, then broadcast dry, US Sieve Size 30 – 50, uniform size, washed, dried, and bagged aggregate at a rate of 2 lbs./yd for skid resistance. Remove excess sand by vacuum or sweeper prior to opening to traffic. Do not open to traffic until the treated surface is tack-free (non-oily) and aggregate adheres sufficiently to resist brushing by hand. If used as a primer for elastomeric or non-flexible topcoat, apply the topcoat within the time that tack is decreasing but before it is lost (1 - 3 hours after spreading depending on substrate temperature). Minimum temperature: installation 35°F (1.7°C) substrate temperature.

SAFETY

This bulletin does not accompany the product when sold. For hazard warnings, safe handling, and first aid instructions. CAREFULLY READ THE SAFETY DATA SHEETS AND CONTAINER WARNING LABELS.

Part A: Liquid epoxy resin, HMIS Health Hazard Rating-2 (Moderate Hazard). Warning! Causes eye and skin irritation. May cause allergic reaction. Harmful if swallowed. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Avoid prolonged or repeated contact with skin.

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Part B: Liquid epoxy hardener, HMIS Health Hazard Rating-2 (Moderate Hazard). Contains alkaline amines. Warning! Causes eye and skin irritation. May cause allergic skin and respiratory reaction. Combustible liquid, corrosive. Do not get in eyes or skin or on clothing. Avoid breathing vapor. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Keep away from heat and open flame.

CLEAN-UP / DISPOSAL

All tools and equipment must be cleaned before the mixed material cures. Cleaning can be facilitated with a solvent such as acetone or heavy-duty detergents. Cured material may be removed from equipment and tools by soaking in an epoxy stripper.

TECHNICAL SUPPORT

Additional information, technical assistance, and management services are also available from a ChemCo Systems' Technical Consultant at sales@chemcosystems.com or 650-261-3790.

The properties listed in this bulletin are typical and descriptive of the product and should not be used for specification purposes. For specification preparation, reference the specification of this product available from ChemCo Systems. This product is available only through KIP™ System (KEMKO® Injection Process) applicators.

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