

Type:	Two-component, solvent-free, epoxy resin I hardener.
Primary Use:	Coating concrete, steel and wood marine structure surfaces above and below the waterline.
Substrates:	Concrete, steel and wood. Dry, damp, wet, Immersed or submerged. Salt and fresh water environments.
Minimum Temp:	Installation- 50 F, Cure- 50 F (substrate temperature).
Application:	Two coats minimum using Base Coat only or one coat each Base Coat and Top Coat.
Color:	Base Coat- off-white; Top Coat- concrete gray (blue gray).
Shelf Life:	Three years minimum in sealed containers (see below for conditions).

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, Inc. This product is available only through KIP System (KEMKO Injection Process) licensee/applicators.

Description: KEMKO 036, Marine Structure coat is an epoxy coating consisting of a Base Coat and an optional use, pigmented Top Coat. Both products are two-component, solvent-free materials designed for two-coat application on concrete, steel and wooden marine structures. They may be used above and below the waterline and in both salt and fresh water environments.

Typical applications include coating of concrete piers, seawalls, dock floors, drainage ditches, abutments, sewer and outfall pipes; protection of steel structure surfaces such as pilings, drilling rigs, production platforms, ship hulls, buoys, well jackets and bulkheads; and, protective coating of wooden structures such as pilings, piers, shelters and power poles.

Features: Unlike many other marine coatings, KEMKO 036 will bond to properly prepared dry, damp, wet, immersed and submerged substrates and cures to a tough, water resistant, impervious protective surface. The coating is freeze-thaw resistant and will not embrittle but will acquire a chalky surface when exposed to sunlight. KEMKO 036 is a 100% solids product and does not contain volatile organic solvents (VOC's). It has a convenient 1:1 (by vol.) mixing ratio and is available in two standard colors, off-white (Base Coat) and concrete gray (Top Coat).

Limitations: The recommended minimum substrate temperature during application and cure is 50 deg F. In underwater and tidal zone applications, the coating may have to be applied within a relatively short period of time (30 minutes to several hours) after the substrate was cleaned to achieve an adequate bond. Wave action may displace the coating if exposure occurs before the coating has reached hard set. Do not add solvents or otherwise thin this material.

Packaging: Standard package sizes of Part A + Part B are 2, 10 and 100 gallon units.

Shelf Life: Three years minimum in unopened, original containers when stored between 60 and 90 deg F in a dry place away from sunlight. Remixing of components may be required upon long term storage.

Chemical Resistance: KEMKO 036 provides excellent resistance to salt and fresh water, salt solutions, gasoline, kerosene, crude,

fuel and mineral oil, most industrial waste solutions and many other chemicals. It has limited resistance to hydrocarbon solvents. Performance is a function of the specific chemical and concentration, ambient and solution temperature, exposure time and housekeeping procedures. For information on specific chemicals and exposure conditions, contact a ChemCo Systems, Inc, technical representative.

Color Selection: The standard color of KEMKO 036, Base coat is off-white; Top Coat is concrete gray (blue-gray). Custom colors are available and may require minimum quantities and/or slightly higher cost.

Surface Preparation: Substrate surfaces may be dry, damp, wet or submerged but must be sound and free of all bond inhibiting substances.. Wet or dry sandblast to remove all loose and deteriorated substrate material, other surface contaminants such as tars, oils, paints, waterproofing materials, rust, barnacles, etc., that may interfere with the formation of a good bond. Cleaned concrete surfaces should have a minimum strength of 200 psi in direct tension. Steel surfaces should be cleaned to 'white metal' according to SSPC SP 5.

Mixing: KEMKO 036 is a two-component adhesive. The resin to hardener (Part A: Part B) mix ratio is 1:1, by volume. Read all material safety data (MSDS) information before handling the product. Wear safety glasses and clean neoprene rubber gloves when handling the materials. Premix the individual components before drawing from bulk packaging. 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. Do not mix the material underwater.

Installing: Above the waterline Use normal techniques applicable to viscous coating materials. Apply the material after the dally substrate temperature cycle has reached its peak. When the substrate is wet, use sufficient brush pressure to displace the water with the coating. Below the waterline- Apply with a brush using slow deliberate motion and sufficient pressure to displace the water with the coating. Recoating. The recommended recoat window is 18-24 hours. Base Coat may be used for the second coat. The pigmented Top Coat is an optional use material employed when a second coat of contrasting color is desired.

Typical Properties (1)

Property	Test Method	Value		
Mix Ratio, A:B, by vol		1: 1		
by wt		100: 100		
Color:	VISUAL	Base	Top	
Part A		Off-white	Blue-gray	
Part B		Off-white	Off-white	
Mixed		Off-white	Blue-gray	
Weight per Gallon, lb:	Part A	ASTM D 1475	10.2	10.3
	Part B		10.2	10.2
	Mixed		10.2	10.3
Viscosity, poise: Part A	ASTM D 2393	370	400	
Part B		300	300	
Mixed		335	350	
Gel Time, 200 g, minutes	ASTM D 2471			45
Cure Time @ 68 F: soft gel, hours	CHEMCO			4.0
hard gel, hours				6.0
full cure, days				7
Recoat Time @ 68 F, hours	CHEMCO			18-24
Bond Strength To Immersed ASTM C 109 Cement Mortar, psi (2)	ASTM D 4541			>200 (3)

(1) Cure schedule, 7 clays at 73 ± 4 F and test temperature, 73 ± 4 F unless otherwise indicated.

(2) Test specimens conditioned, prepared and cured underwater (salt and fresh) at 68 F.

(3) Compressive strength of cement mortar, 4500 psi.

Top Coat is most often used in applications with poor work-site visibility or when a gray color is required.

Clean-up: Excess mixed product is best removed from the work area and tools before it hardens. Use of rags, solvents such as acetone or heavy duty detergents facilitate cleaning. Cured product may be removed from tools by soaking in an epoxy stripper.

Handling and Toxicity: This bulletin does not accompany the product when sold. For hazard warnings, safe handling and first aid instructions, READ CAREFULLY THE MATERIAL 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 skin reaction. Harmful if swallowed. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid prolonged or repeated contact with skin. Part B: Liquid epoxy hardener, HMIS Health Hazard Rating- 3 (Serious Hazard). Contains alkaline amines. Danger! Causes severe eye and skin burns. May cause allergic skin and respiratory reaction. Combustible, 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.

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