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Technical Bulletin

Epoxy Primer - K-049

Description:

Epoxy Primer K-049 is a 100 % solids, low viscosity, two-part epoxy for use in restoring concrete floors and concrete surfaces prior to application of new toppings/coatings. Epoxy Primer K-049 ensures strong adhesion between an epoxy topcoat and the substrate. Epoxy Primer K-049's unique chemistry permits rapid displacement of substrate moisture, allowing for use on damp surfaces without diminishing performance. **DO NOT APPLY EPOXY PRIMER K-049 OVER STANDING WATER!**

Product Advantages:

- ADHESION TO DAMP CONCRETE
- STRENGTHENS POROUS SUBSTRATES
- BONDS NEW CONCRETE TO OLD
- 100 % SOLIDS, NO VOC'S
- CONVENIENT MIX RATIO
- B.G.E.[1] FREE

Handling Properties:

COLOR	Straw		
MIXING RATIO, pbv	2/1		
WORKING TIME, min	15-25		
GEL TIME, min	30-40		ASTM D 2471
MIXED VISCOSITY, cps	500-800		ASTM D 2196
TACK-FREE TIME			
(@ 72 °F), h	6-9		
(@ 90 °F), h	5-7		
(@ 50 °F), h	12-16		
FULL CURE (Light Traffic, @ 72 °F), h	16-24		
COVERAGE*@ 5 mil (0.13 mm), ft^2/gal (m^2/l)	320	(7.84)	

* Varies with porosity of concrete

Physical Properties:

SHORE HARDNESS, D scale	78		ASTM D 2240
COMPRESSIVE STRENGTH, psi (MPa)	12,000**	(83)	ASTM D 695
TENSILE STRENGTH, psi (MPa)	3,350	(23)	ASTM D 638
ELONGATION @ BREAK, %	20		ASTM D 638
ADHESION TO CONCRETE, psi (ASTM D4541	$\geq$ 500	(concrete failure)	

** Lower modulus materials often do not exhibit a definite yield point. The compressive strength stated was recorded at a loading speed of 0.5in/min and at a point in which samples had been deeply compressed. The samples had not yet fractured at the point testing was discontinued.

Surface Preparation:

Epoxy Primer K-049 is used to strengthen and seal a porous concrete substrate, therefore, adhesion is paramount. To achieve excellent adhesion, the substrate should be free of all loose and foreign material and should be roughened slightly to provide a coarse profile by shot blasting or other mechanical method.

Before blasting, any contaminates on/in the concrete must be identified. Oils, grease fats, waxes or other contaminates must be removed prior to roughening the concrete. These can be removed with an application of warm (120-140 °F or 49-60 °C) caustic detergent, steam cleaning or pressure washing. Degrease the floor; follow with a hot water rinse. Repeat this procedure until the water does not "bead up" on the concrete.

Shot blasting using self-propelled, self-contained equipment is the recommended preparation method. NEW CONCRETE MUST CURE A MINIMUM OF 28 DAYS PRIOR TO THE APPLICATION OF ANY EPOXY. CONCRETE MUST BE TESTED FOR MOISTURE AND VAPOR TRANSMISSIONS BEFORE COATING.

1 - Butyl Glycidyl Ether. The EPA (SARA Title III, section 312) lists BGE as "Toxic" (per ANSI Z129.1) by skin absorption and an immediate health hazard.

Mixing:

Epoxy Primer K-049 is a two component system. Both components (liquids A and B) should be at 70-90 °F (21-32 °C) prior to mixing. Pour the hardener (B side) into the resin (A side) and blend thoroughly using a mixing paddle and slow speed hand drill for 3 minutes. Mix at slow speeds (less than 500 rpm's) to avoid air entrainment. Do not mix more material than can be used within the stated working time. Remember - you will have less working time at higher temperatures.

Epoxy Primer K-049, before it has hardened, can be removed from tools with Enviro-Clean or warm soapy water.

Application:

Relative humidity and dew point must be known before application to avoid adhesion failures. The dew point is used to predict the substrate temperature at which air begins to condense, in the form of water, on the substrate. Never apply a coating unless the concrete surface temperature is 5 °F (2 °C) above the dew point. A dew point calculation chart is available from a Copps Technical Representative.

Epoxy Primer K-049 can be applied by brush or short nap roller. When the primer has "tacked up" in approximately 6-9 hours, apply the epoxy topcoats. Copps epoxy topcoat can be applied in as little as 7 hours at 72 °F (22 °C). Do not thin primer! Do not apply to concrete colder than 50 °F (10 °C) as insufficient curing may result.

BONDING FRESH CONCRETE TO HARDENED CONCRETE: In accordance with ACI 503R (7.2.6). Apply K-049 to the hardened "old" concrete by spray or short nap roller. Apply the fresh concrete to the wet or tacky primer; do not apply concrete to hardened primer. **NOTE:** When vibrators are used it is essential to allow the primer to reach a "tacky" stage, since vibration can, by emulsifying the liquid primer, displace it from the existing concrete; this will result in a weak bond.

Packaging:

K-049 Epoxy Primer is conveniently packaged in a pre-measured 3.0 (11.4L) or 15.0 (63.4) gallon kits containing a Resin (Part A) and a Hardener (Part B); larger bulk quantities are also available.

SAFETY PRECAUTIONS

Avoid breathing of vapors. Forced local exhaust is recommended to effectively minimize exposure. NIOSH approved, organic vapor respirators and forced exhaust are recommended in confined areas, or when conditions (such as heated polymers, sanding) may cause high vapor concentrations. Do not weld on, burn or torch on or near any epoxy material. Hazardous vapor is released when an epoxy is burned. Avoid skin or eye contact. Wash skin with soap and water if contact occurs. If eye contact occurs flush with water for 15 minutes and obtain medical attention. Read and understand all cautions on can labels and safety data sheets before using this material.

WARRANTY AND DISCLAIMER