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PRODUCT DATA SHEET: KBP Epoxy LM

KBP Epoxy LM is Kwik Bond Polymers' low modulus, epoxy resin system designed for use as a binder resin for High Friction Surface Treatments (HFST) and thin polymer overlays (TPO). KBP Epoxy LM is easily mixed with a drill motor mixer and applied with serrated squeegees, or with current automated installation equipment.

SPECIAL FEATURES

BRIDGES:

- Meets or exceeds most State DOT standards for Thin Polymer Bridge Deck Overlay resin binder.
- When used with specified aggregate it is designed to provide a durable wearing course that will extend the life of a steel-reinforced, concrete bridge deck.
- Minimize the intrusion of moisture, de-icing chemicals, carbonation, and other potential sources of premature degradation of concrete bridge decks.
- KBP Epoxy LM is best suited as part of a bridge deck preservation strategy for increased life expectancy.

HIGH FRICTION SURFACE TREATMENT (HFST):

- Superior adhesion to asphalt and concrete pavements as specified for High Friction Surface Treatments (HFST)
- Bonds well with durable high friction aggregates
- Designed to work with rigid and flexible pavement surfaces

PHYSICAL PROPERTIES – KBP Epoxy LM	
Mix Ratio	1:1
Viscosity (ASTM D2196)	1400-1800 cps
Tensile Strength (ASTM D638)	2800- 3,200 psi
Tensile Elongation (ASTM D638)	50-60%
Compressive Strength (ASTM C579)	>5000psi
Durometer Hardness (ASTM D2240)	70
Bond Strength (ASTM C1583)	>250psi or substrate failure
Thermal Compatibility (ASTM C884)	Pass
Chloride Ion Permeability (AASHTO T277)	0 coulombs
Shelf Life	2 years

SURFACE PREPARATION

Surface Prep:

For Portland cement concrete substrates, shotblasting, or other approved mechanical methods are recommended to create the specified roughened surface profile, and to remove surface contaminants prior to applying any/all polymeric overlay systems. The final surface should be clean, free of oils, dirt, curing compounds, and other materials that may affect the adhesion of the polymer system. Unsound concrete areas should be located by using a chain-drag or hammer. Any unsound concrete shall be removed and replaced (PPC 1121 recommended).

For asphalt pavement air-wash with oil-free, compressed air; a high-pressure air compressor fitted with an oil trap and air lance is recommended. Remove all trapped dust, dirt and debris from the pavement surface. Pavement markings within the application area should be removed by grinding or other approved method. Remove any oil, grease, or other contaminants prior to installation. Shotblasting of asphalt pavement is sometimes specified by the owner's agency.

KBP Epoxy LM APPLICATION

Prior to use, pre-condition material to 65°-85°F (18°-29°C) as a best practice for mixing and proportioning. Pre-mix components (A) and (B) individually prior to mixing together.

Bridge Deck Overlay Application:

KBP Epoxy LM Layer 1: Mix the KBP Epoxy LM resin binder at a 1:1 ratio of component (A) to component (B). Use a drill motor with a "jiffy" style mixer and mix for a minimum of 3 minutes at 300-600 rpm. Keep the mixer below the surface of the resin binder to minimize any entrainment of air during the mixing process. Pour all material on prepared area immediately. Spread material using a properly serrated squeegee (or automated mixing equipment) at an approximate rate of 40ft²/gal. (1m²/L). As soon as possible and prior to gelling, broadcast the graded aggregate at a rate of approximately 10-12 lbs. per square yard, or until refusal. As soon as Layer 1 gains sufficient strength to retain the aggregate, the excess can be removed by power brooming and/or vacuuming.

KBP Epoxy LM Layer 2: For mixing, follow the same mixing procedures as the first step. Pour all material on prepared area immediately. Spread the mixed material using a properly serrated squeegee (or automated mixing equipment) at an approximate rate of at a coverage rate of 20ft²/gal. (0.5 m²/L). As soon as possible and prior to gelling, broadcast aggregate at the rate of 14-15 lbs. per square yard.

When the final coat has achieved sufficient strength to hold the aggregate, sweep or vacuum up any excess remaining on the surface. Traffic can typically be safely returned within 45 to 90 minutes after final sweeping.

CURE CHART – KBP Epoxy LM		
Temperature (F)	**Sweep (Hours after placement)**	**Open to Traffic (Hours after placement)**
50	6	6
75	2	3.5
100	1.25	1.75

High Friction Surface Treatment Application:

KBP Epoxy LM: For hand mixing application, mix the KBP Epoxy LM epoxy resin binder at a 1:1 ratio of component (A) to component (B). Use a drill motor with a "jiffy" style mixer and mix for a minimum of 3 minutes at 300-600 rpm. Keep the mixer below the surface of the resin binder to minimize and entrainment of air during the mixing process. Pour all material on prepared area immediately. Apply evenly using the proper serrated squeegees at a rate of 25-32 sf. /gal., or 50-65 wet mils in thickness. As soon as possible and prior to gelling, evenly broadcast the graded aggregate until refusal at a minimum rate of 11-15 lbs. per square yard.

General Application Notes:

For automated or machine-applied applications, a pump system and automated application equipment must be calibrated and tested prior to installation. Testing and calibration are recommended to ensure proper coverage rates of the resin binder and aggregate. Apply materials at recommended coverage rates, or as specified by the governing agency.

Once the system has achieved sufficient strength to hold the aggregate, sweep or vacuum up any loose or remaining aggregate on the surface. Traffic can safely be returned when the embedded aggregate no longer moves within the cured/hardened resin binder It is recommended to sweep again after 24 hours to remove any additional loose aggregate.

Broadcast aggregates must be cleaned, washed, and kiln-dried with a maximum moisture content of 1.2%. Follow the specifying agencies requirements for gradation and durability properties of aggregates that have been tested and approved for use, or as recommended by the manufacturer.

STANDARD PACKAGING

KBP Epoxy LM Components

- KBP Epoxy LM Binder Resin: 8-gallon kits,110-gallon kits, 500-gallon kits and tankers.

STORAGE

Aggregates, KBP Epoxy LM Resin and hardener, should be stored in a cool, dry location and in their original containers. Store all bagged aggregates in a clean, dry location away from moisture.

LIMITATIONS

New concrete must be a minimum of 28 days old. New asphalt pavements must be a minimum of 30 days old. Surface and ambient temperature must be a minimum of 50°F (10°C). Do not dilute KBP Epoxy LM with solvents, or other additives. Do not apply KBP Epoxy LM on unsound concrete, or incompatible patching materials. Contact a KBP technical representative with any concerns regarding the compatibility of underlying patching materials. Do not apply if moisture is present on the surface of the concrete at the time of application.

SAFETY & STORAGE

READ KBP Epoxy LM SDS PRIOR TO USING. Follow all OSHA, and other guidelines as well as all applicable fire codes. Safety equipment and protective gear should be available for those emergency situations. Emergency equipment includes clean water for accidental contact in the eyes, and emergency center addresses, phone numbers, protective clothing, eye protection, and chemical resistant gloves. Organic vapor respirators are not normally required. For individuals highly sensitive to chemical vapors, organic vapor respirators are suggested.

Properly dispose any unused materials in accordance with the requirements of state, local and federal agencies.