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PRODUCT DATA SHEET: PPC MLS

PPC MLS is Kwik Bond's hybrid polymer multi-layer bridge deck overlay system designed to seal concrete bridge decks, improve coefficient of friction, and reduce corrosion to bridge decks. PPC MLS is easily mixed with common drill mixers and applied with notched squeegees, or with current automated installation equipment. Because the hybrid polymer system gains strength so quickly, multiple layers can be applied rapidly and yet return traffic within a normal production shift.

Additionally, the MLS system includes Kwik Bond Polymers' KBP 204 penetrating primer, which adds the insurance of a material that penetrates bridge deck cracks and re-bonds (heals) the cracks using a 100% reactive healer/sealer primer.

SPECIAL FEATURES

- PPC MLS exceeds the specifications established in AASHTO T-34 Task Force Guidelines
- High compression and tensile properties
- PPC MLS develops high friction numbers for skid resistance
- When properly mixed and applied, PPC MLS can return traffic safely within 2 hours at temperatures down to 40 F.
- Superior adhesion to concrete through use of healer/sealer primer
- Impermeable to the intrusion of moisture and chlorides

PHYSICAL PROPERTIES - KBP PPC MLS	
Viscosity	1000-2000 cps
Tensile Strength (ASTM D-638)	2650 psi – 5,000psi
Tensile Elongation at Break (ASTM D-638)	40-80%
Compressive Strength (ASTM C-579)	>5000psi
Flexural Strength (ASTM D-790)	4000-4600psi
Bond Strength (ASTM C-1583)	>250psi

SURFACE PREPARATION

Surface Prep:
Shotblasting and sandblasting are required to remove surface contaminants from concrete decks prior to applying 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).

MLS APPLICATION

KBP 204 Primer:

1. Using a drill mixer, premix the entire container of KBP 204 Pro Prime to ensure that monomer is well mixed before portioning out material to be mixed.
2. Mix 1-gallon KBP 204 Pro Prime "healer/sealer" primer with 3 fluid ounces of Cumene Hydro Peroxide (also known as CHP, or Trigonox K90) and stir for approximately 30 seconds. Next mix in Z-Cure accelerator if needed. (4 gallons KBP 204 Pro Prime, 12oz CHP is a convenient size batch for overlay work.)

(For customers not using the pre-promoted Pro Prime, add 3oz of 6% Cobalt to 1-gallon KBP 204, mix well and then add CHP and Z Cure as indicated above.)

Immediately empty the entire pail contents onto the substrate surface. Application rate ranges from 70-100 sf/gal depending on porosity and surface texture of the deck. Evenly distribute the primer using a paint brush for small areas or rollers, squeegees, or brooms for larger areas. Wet-out the entire surface of the area to be repaired or overlaid. KBP 204 is very fluid and will wet the surface quickly. The excess will build-up at the lowest points in the prepared area. Excess primer is undesirable, but some build-up is unavoidable. Before proceeding with placement of PPC MLS, ensure that any dry areas which have soaked up material are saturated. Allow approximately 20-60 minutes of dwell time before placing PPC MLS material.

PPC MLS Layer 1: Mix 2.5 gallons of PPC MLS Binder Resin with 5-8 fluid ounces of MEKP (also referred to as DDM9). Add Z-Cure accelerator according to the chart below, dependent upon temperature. Use a battery-operated drill motor mixer for mixing. Mix for 30 seconds or so. Pour material on primed area. Spread material using notched squeegees (or automated mixing equipment) at a

rate of 2.5 gallons per 100 square feet. As soon as possible and prior to gelling, broadcast the graded aggregate at a rate of approximately 10-12 lbs per square yard. As soon as Layer 1 gains sufficient strength to retain the aggregate, the excess can be removed by air sweeping, power brooming and/or vacuuming.

PPC MLS Layer 2: Mix 5 gallons of PPC MLS Binder Resin with 8-15 fluid ounces of MEKP. Follow the same mixing procedures as the first step. Spread the mixed material using a notched squeegee (or automated mixing equipment) at a rate of 5 gallons per 100 square feet. As soon as possible and prior to gelling, broadcast aggregate at the rate of 14-15 lbs per square yard.

Mix Guidance for KBP PPC MLS to Achieve 30 minute Thin Film Gel Time

Substrate Temperature		Zcure Addition Level		
Fahrenheit	Celsius	Zcure (%Wt)	Zcure (oz/gal)	Zcure (ml/gal)
41	5	2	2.8	83
50	10	1.25	1.7	50
60	15	0.75	1	30
68	20	0.4	0.6	18
77	25	0.175	0.25	7
86	30	0.15	0.2	6
95	35	0.075	0.1	3
104	40	0.05	0.03	1
113	45	0	0	0

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

A minimum gel time of 25 minutes is required for maximum aggregate adhesion and bond strength.

Aggregates must be cleaned, washed, kiln- dried with a maximum moisture content of 1.2%. Angular quartz aggregates, basaltic materials, or emery with a Moh hardness of 6 or greater are acceptable.

STANDARD PACKAGING

PPC MLS Components

- PPC MLS Binder Resin: 4-gallon and 55-gallon containers
- MEKP(DDM9):1-gallon containers
- Z Cure: pre-packaged bottles, 1-gal pails, 5-gal pails

KBP 204 Pro Prime Primer

- KBP 204 Pro Prime primer: 4-gallon pails, 50-gallon drums, 250-gallon totes
- CHP: 1-gallon bottles
- Z Cure: pre-packaged bottles, 1-gal cans, 5-gal pails

SAFETY & STORAGE

Follow all OSHA, and other guidelines as well as all applicable fire codes. Refer to SDS for storage, handling, and use. Gloves, eye protection, and other protective clothing should be worn while working with PPC MLS Binder Resin and KBP ProPrime. Respirator with Organic Vapor cartridges may be desired while working with PPC MLS Binder Resin. Dust protection must be worn while working with neat aggregates. If liquid components come in direct contact with skin, wash off with soap and water. If any component gets in eyes, flush immediately with eye wash. If customer requests to have Cobalt promoter supplied separately from HMWM resin, extra care must be taken to avoid contact between Cobalt promoter and peroxide catalysts as a violent exothermic reaction will occur.

Store all components in a cool, dry location out of direct sunlight and in their original containers. Always protect components from moisture. Minimum shelf life is 12 months when properly stored.