KWIK BOND POLYMERS

BRIDGE DECK & ROADWAY REHABILITATION SYSTEMS

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PRODUCT DATA SHEET: PPC™ MLS

PRODUCT DESCRIPTION

PPC™- MLS is Kwik Bond Polymers' unique hybrid polymer, multi-layer bridge deck overlay resin binder system designed for rapid strength gain and ease of application. PPC™-MLS is easily mixed with a drill motor mixer and applied with a serrated squeegee, 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 with a normal production shift. PPC™-MLS has the following performance advantages:

- PPC™-MLS- meets, or exceeds most State DOT standards for Thin-Polymer Bridge Deck Overlay.
- PPC™-MLS has high strength characteristics in both compression and tensile properties while maintaining flexibility during long terms of UV exposure and thermal cycling
- PPC™-MLS is designed to provide a high friction, durable wearing course that will extend the life of a steel-reinforced, concrete bridge deck when properly applied.
- PPC™-MLS when mixed and applied properly can return traffic safely within 2 hours at temperatures as low as 40˚F (5˚C).
- PPC™-MLS has superior adhesion to Portland cement concrete
- PPC™-MLS polymer resin is impermeable to the intrusion of moisture and chlorides

PPC™-MLS is designed to provide a protective wearing course for Portland cement concrete bridge decks. PPC™-MLS will improve coefficient of friction and reduce damage exacerbated by the intrusion of de-icing chemicals, moisture, carbonation and other effects. PPC™-MLS is best suited as part of a bridge deck preservation strategy for increased life expectancy.

PHYSICAL PROPERTIES - KBP PPC MLS	
Weight per gallon	9.5 lbs
Viscosity	1000-2000 cps
Tensile Strength (ASTM D-638)	2650 psi – 3,900psi
Tensile Elongation at Break (ASTM D-638)	30-40%
Compressive Strength (ASTM C-579)	>5000psi
Flexural Strength (ASTM D-790)	4000-4600psi
Bond Strength (ASTM C-1583)	>250psi

TYPICAL APPLICATIONS

Thin polymer overlay system designed for protecting structures from the intrusion of moisture, de-icing chemicals and other deleterious compounds:

- Bridge Decks
- Pedestrian Bridges
- Sidewalks

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

SURFACE PREPARATION

Surface Prep:
Prior to any installation, it is important to ensure that the bridge deck condition has been properly assessed for this application. Shot-blasting, or other approved mechanical methods are required to remove surface contaminants from Portland cement concrete decks prior to applying polymeric overlay systems. Follow by a high pressure air blast of the area with clean, oil-free, compressed air until all surface contaminants are removed and the clean, open pore structure of the concrete is clearly visible. 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. The unsound areas must be removed and repaired until a sound concrete base is established.

Patching Steps: Saw cut (dry blade) a minimum 3/4" depth shoulder around the edge of the prepared area

1. Chip out the delaminated, unsound PCC areas
2. Blow off dust from saw cutting operations and chipping operations
3. Patch unsound areas with PPC™ "EASY" Patch
4. Fill the prepared area to rough grade; strike-off to final grade

MLS APPLICATION

In conformance with many State agency specifications for the Thin-Polymer Overlay of bridge decks, when the following steps are followed:

PPC™-MLS Layer 1: Mix 2.5 gallons of PPC™-MLS Binder Resin with 5-8 fluid ounces of MEKP-DDM9. When installing in temperatures below 70°F(21°C), warm or pre-condition the PPC™-MLS Binder Resin to 70°F(21°C) prior to installation. When mixing by hand use a drill motor mixer and a JIFFY® mixer blade, or similar bladed mixer for mixing to minimize the entrainment of air. Once mixed, apply evenly with the proper serrated squeegee at a rate of 2.5 gallons per 100 square feet. (See temperature chart below for Z-Cure accelerator recommendations) Without delay and prior to gelling, broadcast the graded aggregate at a minimum rate of 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 sweeping, power brooming and/or vacuuming.

PPCTM-MLS Layer 2: Mix 5 gallons of PPC™-MLS Binder Resin with 8-15 fluid ounces of MEKP-DDM9. Follow the same mixing procedures as the first step. Once mixed, apply evenly with the proper serrated squeegee (or automated mixing equipment) at a rate of 5 gallons per 100 square feet. Without delay broadcast aggregate at a minimum rate of 14-15 lbs. per square yard, or until refusal.

For automated mixing equipment application resin and aggregate spread rates for each layer may be adjusted with manufacturer's approval to achieve final spread rate of approximately 6.75-7.5 gals/100SF of resin binder and 24-27 lbs. per square yard of aggregate.

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. Swept aggregate may be reused if not contaminated.

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

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

STANDARD PACKAGING

PPC™-MLS Components
- PPC™ MLS Binder resin-available in 4 gallon and 55 gallon drums, 250 gallon totes and tankers
- MEKP-DDM9- available in 1 gallon containers

PPC™ "EASY" Patch
- .43 cf Pre-Packaged Patch Kit
- Larger kits available upon request

STORAGE

Aggregates, PPC™-MLS Resin, PPC™ "EASY" Patch and catalyst components should be stored in a cool, dry location and in their original containers. The shelf life for these materials, properly stored at temperatures 80 F and below, greater than 12 months. At elevated temperature, storage shelf life is reduced. Store all bagged aggregates in a clean, dry location away from moisture.

SAFETY

PPC™-MLS and PPC™ "EASY" Patch systems consist of polymer materials that have been used safely for over 20 years. However, there are certain safety issues that need to be readily understood. PPC™-MLS Resin and "EASY" patch Binder Resin are FLAMMABLE! Safety equipment and protective gear should be available for those unexpected emergency situations. Emergency equipment includes clean water for accidental contact in the eyes, fire extinguishers, 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.

The technical data furnished is true and accurate to the best of our knowledge. However, no guarantee of accuracy is given or implied. We suggest that customers evaluate these recommendations and suggestions in conjunction with their specific application. Kwik Bond Polymers, LLC warrants its products to be free from manufacturing defects conforming to its most recent material specifications. In the event of defective materials, Kwik Bond Polymers, LLC.'s liability will be limited to the replacement of material or the material value only at the sole discretion of Kwik Bond Polymers, LLC. Kwik Bond Polymers, LLC assumes no responsibility for coverage, suitability of application, performance or injuries resulting from use. 6-16-2015