

BRIDGE DECK & ROADWAY REHABILITATION SYSTEMS

PRODUCT DATA SHEET: PPC™ MLS, MLS+

PRODUCT DESCRIPTION

PPC™-MLS is Kwik Bond's polyester-based multi-layer bridge deck overlay system designed for rapid strength gain, and ease of application by maintenance forces. PPC™-MLS is easily mixed with battery operated drill motor mixes, and applied with rollers and/or notched squeegees. Because the polyester-based 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 conforms to the specifications established in AASHTO T-34 Task Force Guidelines
- PPC™-MLS has high strength characteristics in both compression and tensile properties
- PPC™-MLS develops high friction numbers for anti-skid
- PPC™-MLS polyester binder resin has a long history of performance (In use since 1987)
- PPC™-MLS, when mixed and applied properly, can return traffic safely within 2 hours at temperatures down to 50 F.
- PPC™-MLS has superior adhesion to PCC concrete

PPC™-MLS is designed to seal PCC bridge decks, improve coefficient of friction, and reduce salt damage to PCC decks. PPC™-MLS is best suited as part of a bridge deck maintenance strategy for increased life expectancy of bridge decks.

Additionally, the MLS system can be turned into MLS + by adding, as part of the system, Kwik Bond's KBP 204 penetrating primer. The two materials are totally compatible. The + side of this approach adds the insurance of a material that penetrates, by gravity, PCC bridge deck cracks deeply and re-bonds (heals) the cracks. Competitive alternatives do not have this flexibility in design.

PHYSICAL PROPERTIES-Kwik Bond MLS		
Weight per gallon(resin binder only)	9.0-9.2	lbs./gal
Viscosity	500-1000	cps
Flash Point (Seta flash)	89	F
Adhesion (Cal-Trans Test Method 551)	>500	psi
Tensile Strength (ASTM D-638, 1/4" specimen)	2500	psi
Tensile Elongation (ASTM D-638, 1/8" specimen)	>40%	min
Meets California Air Resource Board Regulations		

PHYSICAL PROPERTIES - PPC™-MLS System		
Compressive Strength (ASTM C-579)@ 24 hours	>5000	psi
Adhesive Strength (ACI 503 R)	>250	psi
Permeability to Chloride Ion (AASHTO T-277)	max. 100	coulombs

TYPICAL APPLICATIONS

Thin overlay-nominal ¼"-3/8" for friction and crack sealing

- Bridge Decks
- Parking Garages
- Sidewalks

TYPICAL AGGREGATE GRADATION	
Screen Size	% Passing
No. 4	100
No. 8	30-75
No. 16	0-5
No. 30	0-1

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. Slight variations in the sieve analysis indicated above are acceptable.

OVERLAY PREPARATION

Surface Preparation-Shot-blasting, sandblasting, and/or hydro-blasting are normally used to remove surface contaminants from PCC 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. The unsound areas must be removed and repaired until a sound concrete base is established.

Patching Steps: Saw cut (dry blade) a minimum ¾" depth shoulder around the edge of the prepared area

1. Chip out the delaminated, unsound PCC areas
2. Blow off (sweep away) 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 AASHTO Task Force 34-polymer overlay systems for rehabilitation of bridge decks, the following steps are outlined:

PPC™-MLS Layer 1: Mix 2.5-3.0 gallons of PPC™ MLS Binder Resin with 5-8 fluid ounces of MEKP-DDM9. Use a battery operated drill motor mixer for mixing. Mix for 30 seconds or so. Pour material on primed area. Spread material using rollers and /or notched squeegees at a rate of 2.5-3 gallons per 100 square feet. As soon as possible and prior to gelling, broadcast the graded, quartz sand 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 sand 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-DDM9.

Follow the same mixing procedures as the first step. Spread the mixed material using a notched or flat blade squeegee at a rate of 5 gallons per 100 square feet. Broadcast sand at the rate of 14-15 lbs per square yard.

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

PACKAGING

PPC™ “EASY” Patch

- .43 cf Pre-Packaged Patch Kit
- Larger kits available upon request

+ VERSION

KBP 103/204™-Primer

- KBP 103/204 primer-available in 4 gallon pails, 50 gallon drums
- 6% Cobalt Drier-available in pre-packaged bottles, 1-gallon cans, 4-gallon pails
- Cumene Hydro Peroxide- available in 1-gallon bottles, or 4-gallon cases
- Z Cure- available in pre-packaged bottles, 1 gal cans, 5 gal pails

PPC™-MLS Components

- PPC™ MLS Binder resin-available in 4 gallon and 55 gallon containers
- MEKP-DDM9- available in 1 gallon containers

SAFETY

PPC™ MLS and PPC™ 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.

KBP 103/204 primer is a three-component system. The 6% Cobalt Drier and the Cumene Hydro Peroxide are INCOMPATIBLE materials. They must NEVER be mixed together by themselves! A FLASH FIRE WILL OCCUR! To safely mix the KBP 103/204 primer, follow the mixing instructions EXACTLY! Follow the mixing instructions outlined in this product data sheet and safety will be maintained.

STORAGE

Aggregates, PPC™ MLS Resin, PPC™ “EASY” Patch, KBP 204 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.

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. 2-1-2009