Application Guidelines for PPC Coatings – Waste Water

PPC Coatings Three Coat System for the protection of old and new concrete

General Objective

The objective of this specification is to describe the material and workmanship necessary to achieve desired results for the application of PPC Coatings resin protection system. All application procedures shall be performed in a safe and responsible manner and strictly adhering to manufacturer's instructions, including surface preparation, coating procedure, as well as storage and handling of coating materials.

Description of Coating Material

The PPC Coatings Three Coat System is a highly modified, two component rapid curing thermoset resin, and 100% solids without solvent entrapment after cure, which meets or is well below the maximum VOC emissions requirements. PPC is a rapid curing system that can be applied year round from temperatures ranging from minus 40^{o}F to 160^{o}F without the need for external heat assistance. A substrate applied with PPC can be returned to full service within an hour. The resin will exhibit no adhesion interfering shrinkage on curing. PPC Coatings have a coefficient of thermal expansion similar to that of concrete, and will provide outstanding impact and abrasion resistance. The coating will provide resistance to a broad range of corrosive chemicals, and will exhibit flexural strength of up to 17,000 PSI, compressive strength of up to 20,000 PSI, and tensile strength of up to 10,000 PSI. The system will consist of three coats; Prime Coat, Intermediate Coat, and Final Coat.

Preparation of Concrete Surface

Proper adequate preparation of the surface substrate is essential to the success of PPC Coatings. New concrete should be cured for at least 28 days. For concrete enhanced curing systems, or Pre Cast concrete that will fully hydrate and cure in less than 28 days, please consult a PPC Coatings technician prior to application. Both old and new concrete substrates must be properly prepared by removing any existing cement surface (concrete laitance,) creating an open, coarse, porous exposed aggregate substrate, free of all loose and spalled concrete. The exposed concrete surface must be sound, dry and clean, free from all dirt, dust, grease, oil, release agents, dew, or any substance that will contaminate the surface and prevent direct contact of PPC Prime Coat with the concrete surface. All previous coatings, concrete sealants or hardeners must be fully removed. The required coarse surface profile shall be at least similar to that of a # 40-50 Grit sandpaper, with a profile depth of at least 1mm, reference ICR CSP 5-6. Any exposed oxidized rebar must be cleaned and sand blasted to obtain a "white metal" SSPC-5 profile. The concrete surface must be tested for Ph, and fall within a range of 5 – 9 prior to coating with Prime Coat. The surface must be dry prior to applying Prime Coat, with a maximum moisture level of 5%. If required, test moisture according to ASTM D 4263 taped down plastic film test. The substrate temperature should be at least 5 Degrees F above Dew Point.

Application of PPC Coating

Prime Coat

PPC Prime Coat must be applied to all surfaces to be coated, including any voids or areas that are not flush with the surface. PPC Prime Coat is applied with PPC Coatings QC Resin. Resin must be mixed in its original container prior to pouring into a measuring vessel. PPC Resin activator must be added to QC Resin and mixed prior to application. PPC Prime Coat must be applied by working the resin thoroughly into the course substrate. No ponding of resin should occur. All dry spots or dry areas must be recoated. Primed surface should look wet and glazed after resin has cured. Any exposed rebar must be Prime Coated. The thickness of Prime Coat should be between 6 –10 mils, with an approximate coverage rate of 150-160 sq/ft per gallon. Once Prime Coat has cured and is dry to touch, Intermediate Coat can be applied.

Prime Coat can be applied by Brush, Roller or Spray.

Bug Holes and Holidays, Spalled Areas and Concrete Voids

All Areas to be patched must be properly prepared and primed as specified above.

Any concrete surface displaying a Bug Hole and Holiday must be patched and sealed to create a monolithic surface. A Bug Hole, Holiday, or area that has a void and is on a vertical surface must be patched by mixing PPC IC-Q Resin with an activator, and then adding and mixing powder filler to the activated resin, creating a paste-like thixotropic grout that can be easily troweled to seal and patch the required area. When numerous Bug Holes, Holidays or Voids are apparent on the surface, the entire surface can be troweled as an intermediate second coat, filling the holes and creating a built up monolithic surface in one application, without the need for a underlayment base coat. The thickness of the Intermediate Coat when troweled should be no less than 60 mils. Once all holes have been filled or the surface troweled, the next coat can be applied once the prior coating is dry to touch.

Horizontal floors that have spalled voided areas requiring patching, must be filled and troweled to create a monolithic surface with IC-Q. When spalls and voids in the horizontal surface are deeper than 1 inch, mix QC Resin that has been activated, together with a clean dry aggregate to create a grout. All areas to be patched must be filled with this grout to create a monolithic surface. The entire horizontal surface can be troweled with grout as an Intermediate Second Coat at a thickness of no less than 60 Mils or IC-Q can be applied to the patched surface at a thickness of no less than 50 Mils. The next coat can be applied once the prior coating has cured and is dry to touch.

Bug Holes, holidays and voids can be filled prior to application of the intermediate coat or after the intermediate has been applied.

Exposed and primed rebar must be patched and sealed in the same manner as described above but prior to application of the intermediate coat.

Joints

Once pre-cast units are in place, section joints can be coated and sealed with IC-Q grout as described above. This joint sealer grout must be applied to an adequately prepared clean and prime coated surface. If pre-cast sections are coated in the yard and delivered and placed on site, joint sections and at least one inch of coated surface on each side of the joint must be cleaned to create direct contact between the concrete surface and IC-Q Grout. When filling a joint with IC-Q grout, overlap onto the cleaned coated area next to the joint, creating a sealed and coated homogeneous surface.

Intermediate Coat

PPC Intermediate Coat must be applied over a dry cured prime coat, and all repaired areas. This coat is applied with IC-Q Resin, a unique formulated anti-pinholing material IC-Q is the second coat of the PPC Three Coat System. IC-Q must be mixed in its original container prior to pouring into a measuring vessel. PPC Resin activator must be added to IC-Q Resin and mixed prior to application. IC-Q is applied at a thickness of 40-60 mils and can be applied in consecutive coats. The next coat can be applied once the undercoat has cured and is dry to touch. The approximate coverage rate of IC-Q is 20 – 45 sq/ft per gallon.

IC-Q must be coated with a Final Coat

IC-Q can be applied by brush, roller, trowel (as described in Bug Hole section) or by dual component spray system.

Final Coat

Once the Intermediate Coat has cured, Final Coat may be applied. Final Coat must be applied to a clean, dry surface.The Final Coat must be mixed in its original container prior to pouring into a measuring vessel. PPC Resin activator must be added to Final Coat and mixed prior to application. Final Coat standard color is Industrial Grey, however other colors may be substituted upon request, subject to availability. PPC Coating QC Resin may be applied as a clear color final coat. Final Coat should be applied at a thickness of 8 -10 mils, and may be applied as consecutive coats, once the undercoat has cured and is dry to touch. The approximate coverage rate for Final Coat is 140 - 160 sq/ft per gallon.

Final Coat can be applied by brush, roller or dual component spray system.

General Application

PPC Coatings may only be applied by factory trained and approved applicators.

PPC Coating Resins are supplied in 5 gallon pails.

All materials will be brought to the job site in the original manufacturer's containers and shall be subject to inspection by the engineer.

Pails of PPC must be stored in a cool, shaded, clean, and dry area in unopened containers.

The applicator shall mix and apply the material and apply each coat at the rate and in the manner specified by the manufacturer.

Allow each coat to dry to touch before the next coat is applied.

The number of coats specified is the minimum number acceptable. Applicator shall apply the coating to the specified thickness.

All work shall be done by a technician skilled in the application of complex multi-component coating systems.

Sufficient ventilation is required when applying PPC Coatings. Protective equipment, clothing and respiratory requirements must be followed according to MSDS. All applicable safety requirements must be fulfilled prior to and during the application of all PPC Coatings.

Material Safety Data Sheets (MSDS) shall be available at the job site at all times. MSDS must be read and understood prior to opening PPC Coating Pails.

DOT regulation classification for PPC Resin is “Resin Solution” UN 1866; PG 3 ; Flammable 3.

PPC COATINGS
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