Application Guidelines for PPC Coatings – Flooring

PPC Coatings Flooring System

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 Flooring 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 7 –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.

Flooring Coat

There are several different PPC Flooring Coat systems that can be utilized. All PPC Flooring Coat systems are made from the same PPC Polymorphic Resins and display the same physical properties and characteristics. PPC Flooring Coat grout is created by mixing various extenders and dry clean silica aggregates of different sizes with PPC Coatings QC Resin. Choice of PPC flooring grout and the thickness of the floor coating, are determined by the specific use and required performance of the floor to be coated.

The following are guidelines for the application of various PPC Flooring Coat systems:

General Compulsory Rules for all flooring applications:

All Areas displaying voids and spalls must be properly prepared and primed as specified above.

All Flooring Coats must only be applied to adequately prepared and primed surfaces as specified above.

PPC Resins must be mixed in their original container prior to pouring into a measuring vessel. Activator must be added to all PPC Resins and mixed, prior to adding extenders/Fillers/aggregates to resin.

All extenders, fillers, silica, sand, or aggregate can be of any size as well as blended together, but must always be clean and dry.

QC Resin should not be mixed together with more than BY WEIGHT, 1 Part QC Resin to Four Parts Aggregate. The ratio of grout mixture should be determined by the trowel applicator.

All extenders, fillers, and aggregate must be thoroughly mixed into activated Resin to create a wet grout. No dry aggregate should be present in grout prior to application.

Surface of applied flooring grout should look wet once applied and cured.

Once Grout has commenced to gel and cure, do not continue to apply or disturb if applied to a floor.

Expansion joints and control joints must be maintained. Mark joints on the floor, trowel over joints, and saw cut once coating is complete.

Always leave a straight finish line (90 degree butt edge) between breaks of application. Edges of coatings should not be left feathered.

An anchor pattern must always be used at the edges of the coating or when a feathered edge is applied.

Consecutive coats can be applied once the prior applied coat to is dry to touch.

Anti-skid material is applied by broadcasting onto wet Final Coat.

A colored Final Coat may be made available upon request.

Light Trafic Resin Coat Only Floor Coating (pedestrian and rubber wheel carts and cars, parking decks):

Two or three consecutive coats of QC Resin may be applied to Prime Coat. The application thickness of each QC Resin coat is 10 Mils. The approximate coverage rate of each coat is 150 sq/ft per gallon. QC Resin may be applied by brush, roller or spray.

Light Traffic Floor Coating (pedestrian, rubber wheel carts and cars, light service docks):

IC-Q is applied with a roller, to create a smooth monolithic floor surface. The application thickness is 60-80 mils. The Final Coat must be applied on top of IC-Q . The approximate coverage rate is 20-25 sq/ft per gallon

Medium Traffic Floor Coat (light trowel, medium mechanical abrasion, light industrial traffic):

IC-Q is mixed together with aggregate. Add no more BY WEIGHT, 1 part IC-Q Resin to two parts aggregate. The application thickness is 100 – 120 Mils. The approximate coverage rate is 10-15 sq/ft per gallon, applied by trowel.

Trowel Down Industrial Floor (heavy industrial abrasive traffic, loading docks, industrial floors):

QC Resin is mixed together with aggregate. Add No More BY WEIGHT 1 part QC Resin to 4 parts aggregate.

The application thickness is ¼ inch to 1 inch (high abrasion and impact floor demand a thicker coating.)

The approximate coverage rate, at a 1 inch thickness of QC Resin, mixed at a 1: 4 aggregate ratio is 4 sq/ft per gallon, applied by trowel.

High Abrasive Impact Floors (very high abrasion, very high impact, dumpster areas):

QC Resin is mixed together with alumina oxide, or other high abrasive resistant mineral at no more than BY WEIGHT 1 part QC Resin to 2.5 parts alumina oxide. Grout must be thoroughly mixed and no dry parts of alumina oxide should be apparent in grout. The approximate coverage rate, at a 1 inch thickness of QC Resin mixed with alumina oxide as a grout, is 2 sq/ft per gallon applied by trowel.

Final Coat

Once the Flooring Coat has cured, Final Coat may be applied. 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. Final Coat must be applied to a clean dry surface. 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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