



Application Guidelines for PPC Coatings - Aquaculture

PPC Coatings for old and new concrete Aquaculture applications

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 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 °F to 160 °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 surface has a smooth finish and resists algae. The system will consist of four coats; Prime Coat, Intermediate Coat, and two Final Coats.

Preparation Prior To Coating (if required)

1. If required, drain pool/tank /raceways etc, with pumps other than owners'. Use extreme caution with regard to controlling hydrostatic water pressure from underneath pool and use whatever means necessary, no matter how elaborate to curtail water pressure under pool. Pool/tank/raceway etc can be drained in any manner desired. Utilization of the facility pumping system is allowed, but not recommended. The de-watering of any hydrostatic ground water pressure is the sole responsibility of the contractor (site visit encouraged).
2. Check with local officials and the owner for discharging of water from pool/tank/raceways etc.
3. Protect all areas adjacent to pool/tank/raceway, etc (drop cloth, plywood, cardboard, etc. may be used.)
4. Mask off and protect all areas not to be coated or blasted by the surface preparation process.
5. All lights should be removed in a manner not to damage the lights or receptacles, and the lights should be protected and placed on the deck.



6. Remove drain grate, all return fittings and any other jets or pipe fittings to ensure they will not be damaged. Plug all drains and openings prior to blasting, and mask.
7. All ladders, handrails and light cords that are not removable should be protected and masked.
8. All tile not to be removed or blasted should be thoroughly protected. If applicable, all tile breaks, either painted or tiled, shall be removed and retiled as originally applied.
9. Undercut tile where necessary.
10. All areas to be coated will be "sounded" for hollows and appropriately marked. Any and all hollows are to be chipped (opened) until a solid non-cracking condition is achieved and above surface preparation is repeated, and all hollow areas patched to restore surface contour.
11. All previously located hollow areas can be filled using PPC grout. Different size aggregates can be used depending on the size of voids to be filled to ensure a smooth stable surface.

13. Oxidation:

Any existing exposed rebar either before surface preparation or after all necessary existing surface is removed shall be jack hammered out at a three hundred sixty (360) degree radius totally exposing all present oxidation. All exposed rebar or any metal must be sandblasted to SSPC-5 having a 2.5 - 4.0 mil white metal profile, and primed with PPC Prime Coat.

Note: If after restoring rebar to white metal they are less than one-third (1/3) of the original diameter, new rebar must be installed as specified by the American Steel Association.

14. Any areas that have exposed rebar will be checked closely to determine NO hairline cracks are present.

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 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.

Bug Holes, 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 smooth 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 smooth monolithic surface in one application, without the need for an 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 smooth surface with IC-Q or PPC Grout. 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 smooth 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.

Intermediate Coat

PPC Intermediate Coat must be applied over a cured prime coat, and 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 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, until a smooth uniform surface is achieved. IC-Q 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 (Two Coats)

Final Coat must be applied to a smooth, uniform, dry, clean surface.

Grey and White are standard colors of Final Coat. Other colors are available upon request.

Once the Intermediate 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.

First Coat of PPC Coatings Final Coat must completely cover the Intermediate coat (IC-Q). All areas will be checked for proper millage, uniform coverage and no pin holes. First Final Coat should be applied at a thickness of 7-10 Mils. Approximate coverage rate, 130-160 sq/ ft per gallon.

Second Final Coat is applied to the entire surface to give a smooth and shiny appearance. If anti-skid beads are required, broadcast while final coat is still wet. Second Final Coat should be applied at a thickness of 7-10 Mils. Approximate coverage rate, 130-160 sq/ ft per gallon.

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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