



## **Application Guidelines for PPC Coatings QC Resin System – Aquaculture**

### **PPC Coatings QC Resin System for the protection of old and new concrete.**

The PPC Coatings QC Resin System described below, is an alternative and equal coating system to the PPC Three Coat system, that can be applied by brush, roller, trowel and spray.

### **General Objective**

The objective of this specification is to describe the material and workmanship necessary to achieve desired results for the PPC Coatings protection system. All application procedures shall be performed in a manner satisfactory to the owner, strictly adhering to all safety regulations and manufactures instructions, including surface preparation, coating procedure, safety instructions, storage and handling of coating materials.

### **Description of Coating Material**

PPC Coatings QC Resin System is a highly modified, two component rapid curing thermoset resin, 100% solids without solvent entrapment after cure, which meets or is well below the maximum VOC emissions requirements. PPC Coatings can be applied year round, from temperatures ranging from minus 40°F to 160°F without the need for external heat, with full return to service of coated substrate within an hour of curing, with no limitation of a recoat time window. The Resin will exhibit no adhesion interfering shrinkage on curing. Coefficient of Expansion will be similar to that of concrete. Coating will provide resistance to a broad range of corrosive chemicals, high abrasion and impact. Flexural strength of up to 17,000 PSI, Compressive strength of up to 20,000 PSI, Tensile strength of up to 10,000 PSI. System will consist of a Prime Coat, that once cured will form a sealed surface, filling and sealing Bug Holes, Holidays, and Concrete Voids. QC Resin Intermediate and, or, Seal coat applied onto the Prime Coat at a total coating thickness of no less than, but not limited to, 60 mils, exhibiting a smooth surface, required for cleaning efficiency, and minimizing injury to the aquatic habitants. The PPC Coatings application system is suitable for coating and sealing submerged and exposed concrete substrates for aqua cultural and aquatic purposes.

### **Preparation Prior To Coating**

1. If required, drain pool/tank /raceways etc. with pumps other than owners. Use extreme caution when controlling hydrostatic water pressure from underneath the structure, and use whatever means necessary, no matter how elaborate to curtail water pressure under structure. Pool/tank/raceway etc. can be drained in any manner desired. Utilization of the facility pumping system is allowed, but not recommended.
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. Inspect surface for cracks. If present, seal cracks after surface has been prepped and Prime Coated.

### **Preparation of Concrete Surface**

Proper adequate preparation of 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 PPC Coatings technician prior to application. Both old and new concrete substrates shall be 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 shall 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. Required coarse surface profile shall be at least similar to that of a # 40 Grit sandpaper, 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. Concrete surface must be tested for Ph, and fall in a Ph range of 5 – 9 prior to coating with Prime Coat. Surface must be dry, not exceeding 5% moisture, prior to coating of PPC QC Resin Prime Coat. If required, test moisture according to ASTM D 4263 taped down plastic film test or any other approved moisture testing system. Substrate Temperatures must be above the Dew Point prior to application.

### **Application of PPC Coatings System**

#### **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. QC Resin must be mixed in its original container prior to application. PPC Resin must be measured and an activator must accordingly be added to QC Resin and thoroughly mixed together prior to application on substrate to be coated. PPC Coatings QC Resin Prime Coat can be applied by Roller, Brush, Trowel or Spray, to the required prepared course, clean and dry substrate.

Apply a generous amount of activated QC Resin onto prepared substrate. While QC Resin is still in a wet uncured resin form, asserting pressure, Back Trowel into the substrate, filling and sealing all bug holes, holidays, and concrete voids. Deep spalled areas in the concrete substrate must be Prime Coated. Any Exposed rebar must be Prime Coated. Once coating is dry, inspect the Prime Coated Surface. All dry spots or dry areas must be recoated. Once Prime Coat has cured and is dry to touch, next coat can be applied. Thickness of Prime Coat should be no less, but not limited to 7 mils. PPC Coatings QC Resin Prime Coat coverage rate will vary according to the condition of the substrate.



### **Spalled Areas and Concrete Voids**

Concrete surfaces, spalled areas and concrete voids that were not sufficiently filled and sealed with a Prime Coat that require filling, must be Primed coated as described. Areas required to be filled, can be patched, filled and sealed to create a monolithic even surface by applying a PPC Grout. PPC Grout is formed by adding and mixing a filler into an activated PPC QC Resin, creating a thixotropic grout that can be troweled to seal and patch vertical, horizontal and ceiling areas. When numerous Deep Spalls and Voids are apparent on the surface, the entire surface can be troweled and built up to create a monolithic surface at the required specified coating thickness. Thickness of PPC Grout is not limited. PPC Filler Grout can be applied in multiple coats. PPC Filler Grout must be coated and sealed with QC resin. Once PPC Grout has been applied, and is dry to touch, next coat can be applied. Horizontal floors that have deep spalled voided areas can be filled with PPC Grout, created by mixing PPC QC Resin that has been activated, together with a clean dry aggregate of any size. All areas to be patched are filled with the aggregate grout to create a monolithic surface. Entire horizontal surface can be troweled and built up with PPC grout to the required specified coating thickness. Next coat if required, can be applied once coating has cured and is dry to touch. Horizontal surfaces can as well be filled and sealed with PPC Thixotropic Grout as applied to vertical surfaces.

**Expansion Joints:** PPC Coating must be keyed into the substrate by Saw cutting, within one inch, and no less than a quarter of an inch distance from the expansion joint, at a depth of at least a quarter inch below the surface. Saw cut grooves are to be filled with PPC coating during the coating application process.

### **PPC Coatings QC Resin Intermediate and Seal Coat**

PPC Coatings QC Resin Intermediate and or Seal Coat shall be applied over cured, clean and dry Prime Coat, and grouted areas if applied. This coat shall consist of QC Resin, with or without Color Pigment. QC Resin is a unique modified and formulated resin that can be built up to the required thickness by application with a Roller, Brush, Trowel or Spray. PPC QC Resin must be activated prior to application on substrate. PPC QC Resin can be applied at a thickness to meet the specified coating system thickness. PPC QC Resin can be applied in consecutive coats. If Required, next coat can be applied once the undercoat has cured and is dry to touch. Final Seal Coat must have a smooth uniform surface, limiting injury to the aquatic habitants, buildup of algae and ease of cleaning. If an anti-skid surface is required, broadcast beads onto top coat, or incorporate anti-skid material into QC Resin. Approximate coverage rate of a 60 mil PPC QC Resin application system is 26 sq/ft. per gallon.

### **General Application**

- \* PPC Coatings may only be applied by factory trained and approved skilled applicators.
- \* Comply and follow all safety and application regulations and requirements in accordance with Local, State, Federal, OSHA, NIOSH, MSHA, or any other applicable safety administration, prior to, and during PPC application procedure.
- \* PPC Coatings Safety Data Sheet must be read and understood prior to opening of PPC Coatings containers and application. SDS for all chemicals, to include PPC Coatings Resins shall be available on site.
- \* Sufficient ventilation is required when applying PPC Coatings. Protective equipment, clothing and respiratory requirements must be followed in accordance with the PPC Coatings SDS, as well as with the requirements and regulations of all safety and regulatory entities as stated above.



- \* PPC Coating Resins are supplied in 5 Gallon Pails. Custom packaging available upon request.
- \* All materials will be brought to the job site in the original manufacturer's containers and shall be subject to inspection by the engineer.
- \* PPC Coatings must be stored in a cool shaded dry area, out of direct sunlight, in sealed containers.
- \* Activator must be added to PPC Coatings QC Resin Prior to Application.
- \* The applicator shall mix, and activate 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. Coating must be dry and clean prior to recoat.
- \* DOT regulation classification for PPC Coatings Resin – UN 1866 Resin Solution ; Flammable 3 ; PG 3 ; Class 55

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