Specification – 21POLY Composite Marine Coating Water-Based Composite Coating

Part 1: General

1. System Description

A two-part water-based composite coating that is designed specifically for protection and encapsulation of wooden marine pilings. The coating must have the ability to encapsulate CCA preservatives (up to 2.5 lbs./cbf) that are within the wooden piles and impart a durable, long-lasting finish. The coating must be tintable to any color that is chosen by the client. Repairs to the coating must be achievable by applying a repair coat of the same coating to the damaged area. Such coating must be low VOC (<50g/L) and capable of being applied in-situ at the jobsite. Such coating must have a minimum of 100,000 square feet in service with no failures.

The coating must comply with ASTM D 3359-90 and ASTM 4060-07 as evidenced by independent third-party test results provided by the manufacturer. Additionally, upon the request of the customer or engineer, the manufacturer must provide a copy of a leachate report that contains a signed written statement by the individual or entity that conducted such test verifying the test method used and the result. Additional information, including a list of installations, must be provided, upon request to the engineer, stating each installation and the square footage at each location. A written verification of VOC content must also be provided to the Engineer.

2. Submittals

A. MSDS

Most current copy of manufacturer's Material Safety Data Sheet must be present and readily available at all times.

B. Product Data Sheets Current edition of manufacturer's product data sheet pertaining to products employed which includes physical data, surface preparation and application instructions.

- Samples and Color Compliance
 A sample of the coating in the specified color and applied to a substrate sample consistent with the application shall be supplied prior to starting the project.
- D. Testing

A copy of required ASTM and test data shall be provided. All testing must be performed by an ISO 9001 facility and data shall be provided on such facility's letterhead. See Section 2.02 herein for required test methods. A copy of the CCA leachate test shall be provided on request.

- E. Warranty Information
 - 1. Standard manufacturer's warranty
 - 2. Applicator's standard warranty
- F. Applicator's Qualification Assurance: Submit list of completed projects using the coating material bid, ones of similar size, and complexity of work. Include for each project:
 - 1. Project Name and Location
 - 2. Name of Owner

- 3. Name of contractor
- 4. Name of architect
- 5. Name of coating manufacturer
- 6. Square footage of coating applied
- 7. Date of completion
- G. All materials specified herein are manufactured by Encore Coatings, LLC, Cartersville, GA www.encorecoatings.com. (678) 716-0537 Fax. Contact: Jeff Moreau. jeff@encorecoatings.com (770) 330-7260 direct.
- H. Equivalent Materials of Other Manufacturers: None

3. **Quality Control**

- A. Qualifications
 - 1. Applicator shall have a minimum of 3 years experience in the preparation and application of fluid coatings to wood and/or concrete floors and be properly trained or advised by the manufacturer.
- B. Pre-Estimate Conference
 - 1. Applicators, Engineer, and Manufacturer's Representative shall conduct a conference prior to estimate to review all aspects of the application, including, but not limited to: surface preparation, application and cleanup.
- C. Packaging and Shipping
 - 1. All materials are to be delivered intact to the job site in the manufacturer's original packaging with labels or other items clearly identifying:
 - a. Coating or material name.
 - b. Manufacturer.
 - c. MSDS
- D. Storage and Protection
 - 1. All non-mixed material is to be stored in a cool dry place away from direct sunlight
 - 2. All material is to be kept sealed until ready for use.
 - 3. All mixed material shall be tightly re-sealed in the original container and stored in a cool dry place.
 - 4. All material must be kept from freezing temperatures.

4. Work Conditions

- A. Environmental Requirements
 - 1. Product can be applied with air temperatures between 38° 85° F.
 - 2. Maintain proper ventilation through fans and/or venting systems within the work environment.
 - 3. Maintain adequate lighting throughout the work environment.
 - 4. Take every precaution to prevent overspray or roller slag from harming the environment by placing a tarp or other protective material under work product.
 - 5. Properly dispose of any waste in accordance with applicable regulations.
- B. Safety Requirements
 - 1. Applicators should thoroughly review all pertinent technical data and MSDS sheets prior to application.
 - 2. Caution or work zone notices/tape shall be placed on the perimeter of work zone prior to work commencing.
 - 3. Applicators shall be required to wear eye and basic respiratory protection when mixing materials.

- 4. Applicators shall maintain a container (large enough to immerse their application tools) of clean water on sight in order to respond to a cleanup quickly.
 - Only work related staff shall be allowed to enter the work area.

Part 2: Products

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2.01 **Products**

- A. Manufacturer: Encore Coatings, LLC, Cartersville, GA, 770-330-7260, www.encorecoatings.com
- B. Encore_{tm} Pretreat_{tm} is a water-based adhesive primer that is designed to create dimensional stability and added adhesion to the substrate to which it is applied. Pretreat is applied using a pump-up hand-held sprayer. The use of Pretreat on the substrate is required.
- C. 21POLY is a low VOC (< 50g/L) water-based plural component system that combines with acrylic paint to produce a durable monolithic coating that prevents marine borer attack and eliminates CCA leachate. 21POLY is available in a 2.5 gallon quantity, but is packaged in a standard 5-gallon pail. 21POLY can be tinted to any desired color by adding one (1) gallon of acrylic paint (in the desired color) to the 2.5 gallon kit.

21POLY has excellent outdoor properties and is highly resistant to UV rays, adhesion and wear, and mechanical impact. It encapsulates the CCA preservative in the wood pilings and also provides a continuous barrier against marine borer attack.

21POLY is a multi-coat (2) system. The initial coat is a heavy coat, that must fill in check or splits in the wood substrate. Apply the first coat perpendicular to the grain to produce the best repair.

Once dry, the second coat, or "finish" coat is applied. The finish coat may be applied in the direction of the grain.

D. RustOx is a low VOC DTM/DTR coating designed for use on bare or galvanized steel components. RustOx should be applied to all steel components (nails, fasteners, etc.) after the second coat of 21POLY has been applied.

(See Section 3.03 Application for specific procedure)

2. Specification Properties

A. Encore Composite Coating for Wood

1. Adhesion Tests:

The adhesion test must be conducted in accordance with ASTM D 3359-09. This test is to be conducted on samples that were produced to simulate conditions that are consistent with typical field conditions. The sample is to be coated with one coat of the test material and allowed to dry. Thereafter, a second coat is applied, producing a total dry mil thickness of 10-14 mils.

Result: Minimum rating of 5B (0% adhesion lost).

2. Abrasion Testing

The abrasion test must be conducted in accordance with ASTM 4060-07 Taber Wheel Abrasion Test. The test must be conducted on a sample that was produced to simulate conditions that are consistent with typical field conditions.

Final Wear Point (Average) 1,250 cycles/mil

3. **Dry Mil Finish**

The finished dry mil thickness shall be no less than .0100.

Part 3: Execution

1. Inspection

- A. General
 - 1. Examine the environment and weather conditions present on the job site and take note of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until satisfactory conditions are present and accepted by the contractor and the engineer.

2. Preparation

- A. Anticipate Weather Conditions and protect surrounding area
 - 1. Do not commence work until it has been determined that rainfall is not in the local 24 hour forecast either before, during or following the scheduled start and finish dates.
 - 2. The contractor shall have weatherproof tarps on-hand to protect the prepared or newly coated surfaces from unexpected weather.
 - 3. Protect surrounding areas and surfaces from damage during the application of coatings.
 - 4. Place tarp or paper on the ground to protect the environment from overspray or coating slag.
 - 5. Apply 21POLY in temperatures between 38-85°F.
- B. Substrate Preparation
 - 1. Prior to application, all surfaces must be thoroughly cleaned and all loose materials removed using whatever means required.
 - 2. Substrate must be dry.

3. Application

- A. General
 - 1. The 21POLY system shall be installed in the order annotated below:
 - a. Remove loose splinters from the pilings and insure that the pilings are free from dirt or other contaminant that could interfere with 21POLY's ability to adhere to the pilings.
 - b. Protection of surrounding environment.
 - c. Install a control sample that will be coated simultaneously with the coating of the pilings.
 - d. Apply Encore Pretreat to the piling and control sample.
 - e. Application of 21POLY first coat to piling and control sample. (Applied before Pretreat is fully dry.)
 - f. Inspection of first coat. Touchup.
 - g. Application of second coat to piling and control sample.
 - h. Inspection of second Coat. Touchup.

- i. Apply two coats of RustOx (in same color as the 21POLY) to all metal components after the second coat of 21POLY has dried or once all wood structures are fully assembled.
- j. Clean up.
- B. Inspection of Prepared Wood Surface
 - Before the application of Pretreat or 21POLY, the substrate must be clean, free from dust and debris, free from any bond inhibiting agents, and completely dry. Loose splinters must be removed.
- C. Mixing

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- 1. The handling and mixture of materials shall be in strict accordance with guidelines provided by the manufacturer.
- D. Collection of Control Samples
 - 1. Mil thickness of the coating shall be verified through the use and collection of control samples that are coated simultaneously with the first and second coat procedures. A control sample shall be collected for each day of production, and marked with the date, time, and name of applicator and shall be set aside for submittal to the Engineer.
- E. Daily Application of Materials
 - 2. Using a pump-up hand-held sprayer, apply Encore Pretreat to the prepared surface and allow time for the polymer system to penetrate below the surface. Ambient temperature plays a major role in drying time. Do not allow the polymer to dry before moving to Step 2 below.
 - 3. Working from the 5-gallon pail, using a ³/₄" nap roller, apply the first coat perpendicular to the grain. Insure that 21POLY fills in all checks and splits. Apply evenly and allow the first coat to dry.
 - 4. Insure that the control sample receives a representative application of the first coat.
 - 5. Conduct inspection and touchup areas that are not uniformly coated.
 - 6. Working parallel or with the grain, apply the second Coat. Allow to dry.
 - 7. Insure that the control sample receives a representative application of the second coat.
 - 8. Final mil thickness of the two coats shall average between 10-14 mils.
 - 9. Conduct inspection and touchup areas that are not uniformly coated.
 - 10. Allow to dry thoroughly.
 - 11. Set control sample aside.
- F. Clean Up
 - 12. Immediately seal the pail containing unused coating.
 - 13. Clean tools with water.
 - 14. Remove tape or other materials that were used to protect surrounding surfaces.
 - 15. Dispose of job materials according to applicable regulations.

4. **Project Completion and Quality Control**

- A. Return to Service
 - 1. Coated pilings shall not be handled or installed within 48 hours from the time of the complete drying of coating.
 - 2. The following tests and records shall be performed and recorded by the applicator during the application and submitted to the Engineer:
 - a. Air Temperature
 - b. Substrate Temperature
 - c. Dew Point
 - d. Control Sample