



**SPECIAL PROVISIONS
FOR
COLORED SEALER REPAINTING**

**Story County
NHSN-030-5(267)--2R-85**

**Effective Date
July 17, 2018**

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150401.01 DESCRIPTION.

Clean, prepare and repaint the colored sealer coated concrete surfaces of the bridge as designated in the plans using a colored high silicone-content acrylic sealer coating for concrete. The Contractor shall satisfactorily submit coating material information, protect surrounding areas, prepare surfaces, and apply the coating in accordance with this specification.

150401.02 MATERIALS.

A. Use one of the following products, or an approved equal:

Sherwin-Williams SWD DOT Bridge and Highway Sealer B-97 Series
The Sherwin-Williams Company
10132 Buxton
Houston, TX 77017
281-615-7571
(Note: Substitution of SW H&C Shield Plus Ultra Concrete Stain is acceptable for dark colors requiring ultradeep base.)

Anvil Siliconized Acrylic Concrete Opaque Sealer
Anvil Paints and Coatings
1255 Starkey Road
Largo, FL 33771
800-822-6776

Advanced Concrete Stain Pigmented Sealer
Advanced Surfaces Inc.
2000 Banks Road
Margate, FL 33063
954-973-4528

- B. Submit alternate products and suppliers to the Engineer for approval prior to material acquisition and application.
- C. Refer to the bridge plans for specified coating colors and locations. Prior to ordering materials, submit product specification sheets and color draw-downs on 8 1/2 inch by 11 inch cards for each color to be used including prime coat color to the Iowa DOT, Aesthetics Coordinator, Office of Bridges and Structures, Ames, IA, for approval. Coated concrete samples are not required. Test sections on the bridge are not required.
- D. The following guidelines are in addition to the manufacturer's product recommendations. Do not violate the manufacturer's recommendations:

An applicator with 3 or more years of experience applying similar coatings to concrete surfaces shall apply the product. If questions arise relative to any part of the cleaning, surface preparation, surface readiness testing, environmental conditions, or product application requirements, obtain assistance from a qualified coating product manufacturer's representative and alert the Engineer regarding any discrepancies or proposed process modifications prior to beginning work.

150401.03 CONSTRUCTION.

A. Pre-application surface preparation.

1. Surface cleaning of existing coated concrete surfaces, at a minimum, requires the use of 3000 psi high-pressure water washing at a flow rate of 3 to 14 gallons per minute. Use only clean, potable water. Allow to dry for a minimum of 24 hours prior to coating application.
2. Following water-blasting, use hand cleaning methods and tools such as stiff bristle or wire brush on concrete efflorescence, tire scuff marks, bird droppings, etc. that were not removed by water-blasting. Mild detergents may be used if in accordance with the coating manufacturer's recommendations. Rinse areas with potable water after hand cleaning.
3. If the concrete cannot be adequately cleaned using the above methods, use combined sand-and-water-blasting or light sandblasting (brush blast). Wash surfaces with clean water following sandblasting and allow to dry completely.
4. After water-blasting or final rinsing, blot dry all spalled concrete areas and pockets deeper than 1/8 inch with lint-free towels or air blast with oil-free compressed air to promote drying.
5. Ensure all surfaces are clean, dry, and free of grease, oil, concrete efflorescence, bird droppings, tire scuff marks, incompatible paints, or any other material that would prevent a stable bond between the concrete sealer coating and the surface.
6. Immediately notify the Engineer if any steel reinforcing is exposed by the surface preparation process.
7. Protect the public, passing vehicles, the bridge, adjacent waterways and vegetation, and all surfaces from harm during surface preparation. Do not solvent-clean, blast-clean or acid-etch any galvanized or painted metal surfaces. Any damage to galvanized or painted metal surfaces that occurs as a result of surface preparation shall be repaired according to Iowa DOT specifications at the expense of the Contractor. Following surface preparation, remove residue and other debris related to cleaning process and leave the work area broom clean.

B. Pre-application surface tests for exposed concrete.

The following tests shall be performed on all fully exposed, raw concrete surfaces that exceed one square foot in area. Prior to the commencement of any coating, check raw concrete surfaces for pH level and moisture content. Also check for the presence of sealers, oils, curing compounds, or other possible bond breakers. Use the following methods and techniques:

1. pH test.

The prepared raw concrete is to have a pH level between 6 and 10. Perform pH testing according to ASTM D 4262 prior to coating the surface. An acid-etch complying with the coating product manufacturer's recommendations may be added to the water wash to reduce the pH. If acid-etch is used, rinse surfaces prior to re-testing the pH level.

2. Water penetration test.

Test dry, raw concrete surfaces for the presence of sealers, oils, curing compounds not approved by the concrete sealer coating manufacturer. Perform testing by visual inspection and by wetting with fine mist water spray. Properly prepared, porous surfaces shall show no water beading after 1 minute. If beading of water is apparent after 1 minute, clean the surface of sealing agents. This may require further high-pressure washing, combined sand-and-water-blasting, or light sandblasting (brush blast).

3. Moisture content test.

Follow the requirements of ASTM E 1907 to test for moisture content and readiness of the raw concrete surface to receive the coating. Acceptable test methods include electrical resistance or electrical impedance testing.

C. Product application.

1. Do not apply colored sealer coating material to any surface previously coated with acrylic paint or cementitious acrylic masonry coating. Apply colored sealer coating only to raw concrete or surfaces previously coated with high-silicone content colored sealer coating. See the limits of the coating as described in the plans.
2. Apply a minimum of two coats. Additional finish coats may be necessary in order to adequately cover graffiti, tire scuff marks or other blemishes to the satisfaction of the Engineer.
3. Apply under dry conditions only. Do not apply coating if condensation is present on the surfaces. Do not apply if rain is expected within 12 hours following application.
4. Air and surface temperature shall be between 50°F and 90°F during and for 24 hours following application, unless the coating manufacturer's recommendations allow for lower minimum or higher maximum temperatures. Do not violate the manufacturer's recommendations.
5. Follow manufacturer's recommendations for coating thickness. Do not over-apply. No drips, runs, or sags are allowed during the application or in the final results.
6. Stir product thoroughly before and during application.
7. The following application methods are allowed if in accordance with the manufacturer's recommendations:
 - a. Brush: Use a natural bristle brush.
 - b. Roller: Use a 3/8 to 1/2 inch nap lambswool or other solvent-resistant cover.
 - c. Spray: Airless sprayer with a pressure of 1500 psi and a 0.013 to 0.017 inch tip opening.

8. Prime coat: Prime coat color shall contrast with both the existing coating color(s) and the topcoat color(s). Apply first coat evenly, working in one direction. Do not overwork, as brushing or rolling back over partially dried material may cause lifting of the coating from the surface.
9. Second coat: Allow at least 12 hours between coats. For best coverage apply the second coat perpendicular to the first coat.
10. Third coat: Apply if needed to eliminate brush or roller marks that are evident in the finish, or to fully cover graffiti, tire scuff marks or other blemishes to the satisfaction of the Engineer. Apply in the same direction as the first coat.
11. Do not apply coating to embedded steel junction boxes, signage, or any other steel bridge components or attachments.
12. Protect areas adjacent to surfaces to receive the colored sealer coating from splash, staining, dripping, or over-rolling of the coating during application. To prevent staining, immediately and thoroughly remove coating material applied to surfaces not intended to receive the coating. The Contractor shall be responsible for the cleanup of any spills.

150401.04 METHOD OF MEASUREMENT.

Square yards shown in the contract documents.

150401.05 BASIS OF PAYMENT.

- A. Payment will be the contract unit price per square yard for Colored Sealer Repainting.
- B. Payment is full compensation for furnishing all labor, equipment, and materials used to prepare surfaces, test surfaces for readiness, and apply all coats of the paint.