

**PORTSMOUTH-KITTERY  
16189B**

April 5, 2021

**SPECIAL PROVISION**

**SECTION 556 -- PAINTING EXISTING STRUCTURAL STEEL**

**PART I of III -- PROJECT-SPECIFIC REQUIREMENTS**

This special provision applies to the coating of existing structural steel as shown on the plans or otherwise specified to be painted. This special provision is intended to direct the Contractor for touch-up and repair of the High Level Bridge coating. There are three parts. Part I amends the project specific requirements, Part II amends the general requirements and Part III contains section 708, Paints and Table 1-Containment Criteria.

This document is intended to address the repair of coatings involved in the installation of ITS components and their attachments to the bridge. The Department's Special Provision for 556 has been modified by retaining only wording that applies specifically to this project. Paragraph numbering reflects this spec reduction.

**Amend** 1.1.2 to read:

**1.1.2 DESCRIPTION OF BRIDGE(S)**

**1.1.2.2** The bridge is the I-95 Piscataqua River Bridge located in the City of Portsmouth, NH and the Town of Kittery, ME. Three separate projects were constructed since 2000 to clean and paint all three portions of the Piscataqua River Bridge, namely, (1) the three-span truss; (2) the NH approach spans; and (3) the Maine approach spans.

**1.1.2.4** The pre-2000 original coatings contained hazardous concentrations of toxic metals. All of these original coatings were removed except some areas within the hollow members of the truss. All coatings applied after 2000 are considered lead-free.

All three portions of the Piscataqua River Bridge were repainted with a three-coat Wasser system (listed in Section 708 as Paint System C), except that the fascia surfaces of fascia girders in the approach spans were given an additional topcoat of Wasser MC-Antigraffiti.

**1.1.3 SCOPE OF WORK.**

**1.1.3.1 Surfaces to be Painted.**

1. Any existing structural steel surfaces which are damaged during the installation of ITS accessories shall be cleaned and painted as described in 1.1.3.2. See Table 1.1.3.

**1.1.3.2 Required Work.**

1. All structural steel surfaces to be painted require the following options: (See Table 1.1.3)
  - a. Repair Areas requires the Maintenance Overcoat-Level 2 Option.

2. Options

- a) Maintenance Overcoat-Level 2 requires the following:
- preparing spot areas of corrosion, deteriorated coatings, and other detrimental areas to bare metal in accordance with SSPC-SP15 (3.2.5.9);
  - the cleaning of all surfaces to be painted to an SSPC-SC2 condition (3.2.5.11); and
  - prime spot areas of bare metal, and a full overcoat application of the intermediate and finish coats of the paint system to all areas to be painted (1.1.3.3).

**1.1.3.3 Required Paint System**

**1.1.3.3.1** Use the following paint system(s) for the work required in 1.1.3.2 (see Table 1.1.3):

- d) Maintenance Overcoat-Level 2 requires that areas prepared to an SP15 condition receive a spot primer application of the prime coat at 2-4 mils DFT and all surfaces to be painted receive one full application each of the intermediate and finish coats of paint system C using Finish #1). Fascia surfaces of fascia beams shall also receive a coat of Finish #3.

Item 556.xx - Scope of Work - Summary Table 1.1.3				
Area	Surfaces to be painted 556.1.1.3.1	Required Work 556.1.1.3.2	Required Paint System 556.1.1.3.3	Final Color 556.2.2.1.2 (9)
#1	<u>All</u> steel surfaces requiring coating repair	<u>Maintenance Overcoat Level 2</u> SP15 & SC2	3 coats - system C (with Finish #1) - (Fascia surfaces of approach span exterior beams add Finish #3)	Dark Green Fed #24109

**Add** the following to 2.2.1.2 Coatings:

12. The percentage of total lead in each coating shall be reported to the Department and shall not exceed 0.01 percent (100 ppm).
13. A written certificate of conformance shall be submitted to the Department for the coatings supplied stating that the paint is “lead-free”.

**Amend** 3.2.7.7.1 last sentence, to read:

1. Brush application. Use brushes or daubers to apply stripe coats and to work the coating into cracks, crevices, blind areas of all rivets and bolts, **all other limited access areas**, and areas inaccessible to spray application, **prior to the application of the full coat**.

**Add** emphasis to **3.3.3.1**:

**3.3.3.1** Do not weld, cut, drill, or otherwise alter the bridge members in order to attach or remove the containment. **Drilling is not permitted** in concrete bridge superstructure or substructure components.

**PART II of III -- GENERAL REQUIREMENTS**

**1.6 REFERENCE STANDARDS**

**1.6.1** The latest edition of the following standards and regulations in effect at the time of the Bid form a part of this Specification. Maintain at the job site, a copy of the reference standards applicable to the work of the Contractor.

**1.6.6 Society for Protective Coatings (SSPC)**

1. SSPC-SP 15 / NACE No. 5, Commercial Grade Power Tool Cleaning
2. SSPC-PA 1, Shop, Field, and Maintenance Painting
3. SSPC-PA 2, Measurement of Dry Film Thickness with Magnetic Gages
4. SSPC QP1, "Standard Procedure for Evaluating Painting Contractors (Field Application to Complex Industrial Structures)", August 1, 1998
5. SSPC QP2, "Standard Procedure for Evaluating the Qualifications of Painting Contractors to Remove Hazardous Paint", August 1, 1995.

**1.7 SUBMITTALS.**

**1.7.2.1 Surface Preparation/Painting Plan.** Provide the following surface preparation / painting plan to the Department for approval in accordance with 105.02.

1. Provide written procedures for the preparation of surfaces, the remediation of chlorides, and coating application and repair. Include a description of the equipment that will be used for surface preparation and painting.
2. Include the name, experience, and qualifications (as required by SSPC QP1) of the quality control person who will be performing QC observations and documentation.

**MATERIALS**

**2.1 GENERAL**

**2.2.1.2 Coatings.**

1. Provide the type and quantity of coating materials, thinners, and cleaning solvents needed to paint all surfaces as required (see Part I, Table 1.1.3). A listing of pre-approved coating systems is found in Section 556 Part III, 708 Paint.

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**COATING AND FILM THICKNESS TABLE**

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**PAINT SYSTEM C:**

Primer:	708-NH 1.40 Single-component moisture-cure zinc-rich polyurethane	3-5 mils DFT	(75-125 microns)
Intermediate:	708-NH 2.40 Single-component moisture-cure aromatic polyurethane with micaceous iron oxide	3-5 mils DFT	(75-125 microns)
Stripe coat:	(Intermediate coat)	Uniform Coat	Uniform Coat
Finish #1: or	708-NH 3.41 Single-component moisture-cure aliphatic polyurethane with micaceous iron oxide	2-4 mils DFT	(50-100 microns)
Finish #3:	708-NH 4.42 Single-component moisture-cure aliphatic polyurethane clear antigrffiti finish	1-2 mils DFT	(25-50 microns)
Total system thickness			

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9. The finish color, as specified in Part I Table 1.1.3, shall match the required Federal Standard 595 Color number as follows:

DARK (DARTMOUTH) GREEN

24109

## CONSTRUCTION REQUIREMENTS

### 3.1 GENERAL.

#### 3.1.1 SPECIFICATIONS.

**3.1.1.1** The construction of the work shall be performed in conformance with the requirements of the reference standards (1.6) except as modified by this specification and the manufacturer's specifications, whichever is most stringent.

#### 3.1.2 CONTRACTOR QUALIFICATIONS.

**3.1.2.1** All painting contractors and painting subcontractors painting structural steel which involves the removal or overcoating of non-lead or lead-based paint shall be certified by SSPC to QP1 and QP2 before the day of bid opening and shall maintain certification and certified representation on site throughout the duration of the project until final acceptance of the work.

**3.2.5.9 Surface Cleaning Requirements -Steel Substrates.** Section 556 Part I 1.1.3.2 and Table 1.1.3, identifies the degree of cleaning required for the project. The required cleaning method(s) apply to all surfaces specified. Definitions for the specified degree(s) of cleaning are provided below:

#### 10. SSPC-SP15/ Commercial Grade Power Tool Cleaning

- a) Use power tools such as MBX<sup>®</sup> Bristle Blaster<sup>®</sup>, or similar tools to thoroughly clean all surfaces specified in 1.1.3, Scope of Work. Comply with the requirements of SSPC-SP 15 to remove all visible oil, grease, dirt, rust, coating, oxides, mill scale, corrosion products, and other foreign matter, except as noted. Random staining shall be limited to no more than 33% of each unit area. Staining may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, mill scale, previously applied coating. Slight residues of rust and paint may also be left in the bottoms of pits if the original surface is pitted.
- b) Produce or retain a minimum surface profile of 1 mil (25 microns) on all prepared surfaces or a profile of greater depth if required by the coating manufacturer or the Department. Measure the surface profile using the Testex Replica Tape in accordance with ASTM D4417 Method C, noting that the appearance of a profile resulting from a power tool cleaning is different from one created by abrasive blast cleaning.
- c) Feather the coating surrounding each prepared area with a non-woven open-web abrasive disc to provide a smooth tapered transition into the surrounding existing intact coating. Verify that the edges of the coating around the periphery of the prepared areas are tight and intact by probing with a putty knife in accordance with the requirements of SSPC-SP3.
- d) SSPC-VIS 3 does not currently have guidance photographs. SP15 differs from SP11 in that stains of rust, paint, or mill scale may remain on the surface.

#### 3.2.7 COATING APPLICATION

**3.2.7.1 Painting Plans.** Apply all coatings in accordance with the requirements of this Item, the coating manufacturer's instructions, and the approved Surface Preparation/Painting Plan provided under 1.7 Submittals.

**3.2.7.6 Ambient Conditions During Coating Application.** Apply coatings under the following conditions unless the requirements of the coating manufacturer are more restrictive. Do not apply coatings under less restrictive conditions without written approval of the coating manufacturer, and specific written authorization from the Department.

1. Surface and Air Temperatures – Between 40°F (5°C) and 100°F (38°C). For coating system C, D, and E the low temperature is 35°F (2°C).
2. Relative Humidity – Less than 85%. For coating system C, D, and E, R.H. less than 98%.
3. Dew Point – Surface temperature above the dew point. Normal dew point restrictions apply (i.e. 5 °F (2.7°C) spread). For coating systems C, D, and E the restriction is 2°F (1°C), and do not apply the coating to surfaces that are visibly damp.
4. Frost/Rain - Do not apply coatings to surfaces containing frost or free standing water, or during rain, fog, or similar detrimental weather conditions. Apply only to surfaces that are thoroughly dry.
5. Remove and replace any paint that is exposed to unacceptable conditions (e.g. rain) prior to adequate curing.

### **3.2.8 REPAIR OF FIELD WELDS, DAMAGED AND UNACCEPTABLE NEWLY APPLIED COATINGS**

#### **3.2.8.1 Surface Preparation of Localized Areas**

1. Repair field welds, localized handling and erection damage, rigging and containment attachment points, minor coating defects, corrosion, and unacceptable coatings at no additional cost to the Department.
2. Prepare the surface by solvent cleaning in accordance with SSPC-SP 1 prior to mechanical cleaning.
3. In areas previously blast cleaned, if the damage exposes the substrate, remove all loose material and prepare the steel in accordance with SSPC-SP 15. Follow with solvent cleaning in accordance with SSPC-SP 1 to remove surface contamination.
4. [blank].
5. In all areas where rigging or containment attachment points prevented complete surface preparation and coating application or exhibits damage, remove all loose material and prepare the steel in accordance with SSPC-SP 15. Follow with solvent cleaning in accordance with SSPC-SP 1 to remove surface contamination.

#### **3.2.8.3 Feathering of Repair Areas**

1. Feather the existing coating surrounding each repair location for a distance of 1 to 2 inches (25 to 50 mm) to provide a smooth, tapered transition into the surrounding existing intact coating, using a non-woven open-web abrasive disc.

2. Verify that the edges of coating around the periphery of the repair areas are tight and intact by probing with a putty knife in accordance with the requirements of SSPC-SP 3. Roughen the existing coating in the feathered area to assure proper adhesion of the repair coats.

#### **3.2.8.4 Coating Application in Repair Areas**

1. When the bare substrate is exposed in the repair area, apply all coats of the system to the specified thicknesses.
2. When the damage does not extend to the bare substrate, apply only the affected coats.
3. Maintain the thickness of the system in overlap areas within the specified total thickness tolerances.
4. Repairs to the finish coat shall result in an acceptable uniform gloss and color on visible members.

### **METHOD OF MEASUREMENT**

**4.1 Item 556.1, Painting Existing Structural Steel**, will be measured as a unit. All labor, tools, equipment, surface preparation, paints, caulking, paint application, materials, scaffolding, supplies, plans, programs, services of the manufacturer's representative, or incidentals to properly perform and complete the Work specified, will be a unit.

### **BASIS OF PAYMENT**

**5.1** The accepted quantity of **Item 556.1, Painting Existing Structural Steel**, will be paid for at the contract lump sum price, complete in place. Partial payments will be made. The contract lump sum price will be prorated to establish the amount of each partial payment based on the percentage of the item that has been completed.

#### **PAY ITEM AND UNIT:**

556.1	Painting Existing Structural Steel	Unit
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**PART III of III -- SECTION 708 PAINTS**

**SECTION 708 - TABLE C  
PAINT SYSTEM C - SC MC Zinc Urethane/ Mio / Urethane**

The following list of paint system(s) are approved for the painting of structural steel cleaned to SP10. These coating(s) have been tested by NEPCOAT.

1. Wasser Corporation ([www.wassercoatings.com](http://www.wassercoatings.com))  
4118 B PL NW-Suite B, Auburn, Washington 98001 (800)-627-2968  
Local contact: Surfaceworx, 124 Turnpike St Unit 12, W. Bridgewater, MA 02379  
Ben Forde ([bforde@wassercoatings.com](mailto:bforde@wassercoatings.com)) (617)-366-6277  
  
Primer: Wasser MC-Zinc 100 (shop applied) or MC-Miozinc 100 (field applied)  
Intermediate: Wasser MC- Miomastic 100 (shop and field applied)  
Finish #1: Wasser MC-Ferrox A 100  
Finish #3: Wasser MC-Antigraffiti 100
  
2. Xymax Coatings Incorporated  
520 Cure Boivin, Boisbriand, PQ J7G2A7 Canada (450)-430-6780  
Contact: Marc Schondorf  
  
Primer: Xymax MonoZinc ME III  
Intermediate: Xymax MonoFerro PUR  
Finish #1: Xymax Bridge Finish (or Mono Brite for aluminum color)  
Finish #3: Xymax Maxcoat Clearcoat