

SPECIAL PROVISION 901-S-814-3
PAINTING EXISTING METAL STRUCTURES
PROJECT NO. _____
_____ COUNTY

OFFICE OF STATE AID ROAD CONSTRUCTION
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

DATE: June 1, 1993

SUBJECT: PAINTING EXISTING METAL STRUCTURES

Section S-814, Painting Metal Structures, Mississippi Standard Specification for State Aid Road and Bridge Construction, 1989 Edition, is hereby deleted in toto and replaced as follows:

901-S-814.01--Description: The work shall consist of the furnishing of all materials and labor for the cleaning and painting of the existing steel beams, piling, bridge handrails, cross members, etc. and shall include the preparation of all metal surfaces, the application, protection and drying of the paint coatings applied to the prepared metal surfaces. The contractor shall supply all tackle, scaffolding, and other essentials necessary to complete the work in reasonably close conformity with these specifications and as indicated on the plans for the entire work.

901-S-814.02--Pollution Control During Surface Preparation and Repainting: Generated debris must be confined to the immediate area of the bridge structure. Appropriate screens and barriers must be erected to protect pedestrian and vehicular traffic during waterblasting and painting operations. Overspray must be kept to a minimum.

CONSTRUCTION REQUIREMENTS

901-S-814.03--Preparation of Surface: It is the intent of this provision to use the minimum amount of surface preparation necessary to remove loose paint, paint chalk, dirt, oil, grease, loose or flaking rust, and other foreign matter from the surface of the steel. Surface preparation will include waterblasting the entire surface followed by spot-cleaning with hand tools as per Steel Structures Painting Council (SSPC) Surface Prep. Spec. No. 2 to remove any remaining loose or flaking paint or rust.

Areas containing a heavy coating of oil, grease or soot which cannot be cleaned by waterblasting, should be cleaned with BIOACT AE-O, or an approved biodegradable solvent that is an environmental equivalent. Brush or mop the solvent on the surface with a rubbing action to loosen the film. Wipe off with a clean dry rag and then rinse the surface off by waterblasting. If necessary, repeat the process until clean. All loosely bonded paint, flaking paint and peeling paint must be removed. A paint film that can be easily removed with a putty knife or dull knife blade is considered loosely bonded. Tightly bonded paint is not to be removed.

901-S-814.03.01--Waterblasting: The Waterblasting unit must be capable of operating at pressures up to 4,000 psi at a water flow rate up to 10 gpm. The unit must be equipped with a water filter, pressure gauge, nozzle (1/8-inch orifice or one that will provide a jet stream of water), and sufficient length of hydraulic hose. The unit shall be equipped with a deadman control valve or other control valves that will provide automatic shut-off by release of the trigger. Water for blasting must be potable water to prevent damage to the pump, and to insure a clean surface on the steel. After waterblasting, remove any remaining loose paint, loose rust and rust scale with wire brushes or other methods as necessary. Using the waterblast unit or compressed air, remove the loose debris generated from the hand tool cleaning operation. To prevent recontamination of the steel surface, the surface preparation operation should not be completed more than 8 hours in advance of the painting operation. Should any recontamination occur prior to painting, repeat surface preparation procedures as necessary for removal. Before painting, the surfaces must be clean and dry. To enhance drying of the surfaces, compressed air may be used. During waterblasting operation, wood, insulation, electrical, instrumentation, etc., must be protected.

901-S-814.03.02--Painting: Apply the paint in a continuous sweeping motion. Start and stop the spray during the sweeping motion to prevent paint runs and sags from applying too much paint in one spot. Apply the paint to the Wet Film Thickness (WFT) that will obtain the Dry Film Thickness (DFT) required for the paint film being applied. The DFT required for each paint film in an approved coating system is set out in the Mississippi Department of Transportation "APPROVED LIST OF MATERIALS". The coating system selected must be lead-free, VOC compliant, and must be listed on the Mississippi Department of Transportation "APPROVED LIST OF MATERIALS". Each approved coating system contains an approved primer coat paint, intermediate coat paint and a top coat paint.

The substitution of a primer, intermediate or top coat paint from one approved coating system to another is not permitted. The integrity of each approved coating system must be maintained. Two of the approved systems are as follows:

1. The Sherwin Williams Company Coating System

Primer Coat: B42N8 Latex Metal Primer, 3.0 - 5.0 mils DFT,
Reddish Brown in color

Intermediate Coat: DTM Acrylic Gloss, B66 Series,
3.0 - 5.0 mils DFT, White in color

Top Coat: DTM Acrylic Gloss, B66 Series, 3.0 - 5.0 mils DFT,
Color Gray (No. B66W101) shaded to MC-71

2. The Carboline Company Coating System

Primer Coat: Carbomastic 15 L.O. Epoxy Mastic, 5.0 - 6.0 mils DFT,
Red (M500) in color

Intermediate Coat: Carbomastic 3350 Acrylic Latex
2.0 - 3.0 mils DFT, White in color

Top Coat: Carboline 3350 Acrylic, 2.0 - 3.0 mils DFT,
Gray in color

901-S-814-04--Safety and Clean-Up: The contractor is advised that during the cleaning of the existing steel he may be dealing with a hazardous material and that he is responsible for the health and safety of his employees. He shall provide such items as protective clothing and respirators and make certain that they are used. He shall also be responsible for the maintenance and/or replacement of these items. The contractor is advised that safety precautions for workers during each phase of work shall be in compliance with present OSHA Standards.

The contractor shall take necessary precautions to prevent excessive removed materials from falling beneath the structure. General debris must be confined to the immediate area of the bridge structure. Appropriate measures shall be taken to protect the traveling public during surface preparation and painting operations.

The contractor shall clean the area of excessive debris generated from cleaning and properly dispose of it at an approved landfill.

The contractor shall inform himself of any applicable Federal, State or local regulations and take the necessary actions for compliance when applicable to any portion of the required work.

901-S-814.05--Testing and Certification: All testing shall be performed by a qualified commercial testing laboratory acceptable to the Testing Engineer, or by the Central Laboratory of the Mississippi Department of Transportation.

Before each shipment of paint is supplied on the project, the contractor must furnish the Engineer a certificate from the manufacturer attesting that the commercial product furnished conforms to the same formula as that previously subjected to the specified tests, and approved. Copies of the current test reports shall be attached.

The contractor may, at the direction of the Engineer, be required to furnish new certified test reports, made at the supplier's expense, from an approved independent testing laboratory if there is reason to believe that the paint does not conform to the quantitative requirements and performance tests.

The Central Laboratory reserves the right to check the materials for compliance with the requirements set out herein. Should the Central Laboratory perform this testing, the test results will be final unless proved in error by the National Bureau of Standards, Washington, D.C.

COMPENSATION

901-S-814.06--Method of Measurement: This work will be measured as a unit (lump sum) quantity to clean and paint all the existing metal surfaces, beams, bridge handrails, steel piling, cross members, etc.

901-S-814.07--Basis of Payment: Cleaning and painting of all existing metal surfaces, beams, bridge handrails, steel piling, cross members, etc., will be paid for at the contract lump sum price, which shall be full compensation for completing the work specified.

Payment will be made under:

Pay Item No. 901-S-814: Painting Existing Metal Structures--Lump Sum.