

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
COATING OF GALVANIZED LIGHTING, SIGNAL, SIGN, AND MISCELLANEOUS
SUPPORT STRUCTURES

STR:SCK

1 of 3

APPR:POJ:MJF:04-10-20
FHWA:APPR:04-13-20

a. Description. This work consists of coating galvanized structural highway appurtenances (light standards, traffic signal mast arm, strain poles, etc.) as specified in the contract and subsection 716 of the Standard Specifications for Construction except as modified herein.

b. Material. Provide a liquid or powder coating system as described below or as approved by the Engineer.

1. Coating System.

A. Provide a powder coating system with an exterior grade polyester, polyurethane, or fluoropolymer top coat; or

B. Provide a liquid coating system with an aliphatic polyurethane, polyaspartic, polysiloxane, or fluoropolymer top coat.

2. Provide top coat dry film thickness per paint manufacturer's specifications or a minimum 2 mils, whichever is greater.

3. Selected top coat must meet or exceed the requirements of *American Architectural Manufacturers Association (AAMA) 2604*.

4. Use a tie coat to promote adhesion over galvanized surfaces, if recommended by the coating manufacturer. Apply tie coat by method and thickness as recommended by the coating manufacturer.

5. Provide top coat color per plan note.

6. Provide the coating manufacturer's recommended touch-up coating as required.

The coating manufacturer must furnish certification and test results for the top coat to the Engineer to verify that the material complies with *AAMA 2604*. If the coating manufacturer also recommends a tie coat for galvanized surfaces, submit tie coat product information to the Engineer, including tie coat application method and recommended thickness.

Ensure the fabrication plant is certified by the *American Institute of Steel Construction (AISC) Sophisticated Paint Endorsement* or *Society for Protective Coatings (SSPC)-QP 3* or *Certification Standard for Shop Application of Complex Protective Coating Systems* if applying liquid coating system. Ensure fabrication plant is certified by the *Powder Coating Institute (PCI)-4000* if applying powder coating system. If the powder coating is being applied by someone other than the original

equipment manufacturer then the coating company must possess a valid PCI 3000 certification.

c. Surface Preparation. Perform surface preparation in accordance with subsection 716.03 of the Standard Specifications for Construction.

d. Coating Process for Galvanized Steel. Provide the liquid or powder coating system per the paint manufacturer's recommendations, except ensure conditions for coating are in accordance with subsection 915.04 of the Standard Specifications for Construction unless the manufacturer recommends more stringent conditions. Out gas forgiving additive in compliance with AAMA 2604 is permitted.

The powder coating applicator must carry out a preliminary test to establish whether out-gassing from the galvanizing is likely by testing parts where the zinc is thickest. Ensure the galvanized components are heated to a temperature at least 55 degrees Fahrenheit (F) higher than the coating curing temperature as provided by the coating manufacturer. Ensure the temperature is measured at the hottest point across the object during tests. If the substrate cannot be satisfactorily degassed sufficiently to minimize further out-gassing during baking, then ensure a specially formulated anti-gassing quality powder coating, or an anti-bubbling additive as per the manufacturer's recommendations, is used to minimize out-gassing.

Apply the paint system per paint manufacturer specifications including strict adherence to curing temperature and time except where the requirements listed in section 716 of the Standard Specifications for Construction are more stringent.

e. Construction. Ensure extreme care is exercised in handling the coated components in the shop, during shipping, and erecting of the structural highway appurtenances. Ensure coated pieces are not moved or handled until sufficient cure time has elapsed to ensure no damage is done to the coating. Ensure the coated components are insulated from the binding chains by softeners approved by the Engineer. Pad hooks and slings used to hoist steel. Space structural highway appurtenances in such a way that no rubbing will occur that may damage the coating during shipment and storage. Store the components on padded pallets at the job site, or by other means approved by the Engineer, so that the pieces do not rest on the ground and so that the components do not fall or rest on each other. Provide all shipping and storage details to the Engineer and ensure they are approved prior to shipment of the structural highway appurtenance.

Ensure shop and field repairs of coating are done in accordance with coating supplier's recommendations except where the requirements listed in this specification are more stringent. Submit all written procedures for shop and field repairs including the coating of nuts, bolts, and washers for approval to the Engineer prior to coating. Do not begin coating until approval is received from the Engineer. Repair or recoat surfaces which will be inaccessible for coating after erection prior to erection. When the erection work has been completed, including all connections, prepare the steel for repairs. The cost of all repairs will be borne by the Contractor.

f. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item

Pay Unit

Coating Galvanized Support Structures.....Each

Coating Galvanized Support Structures will be measured as a unit for each complete (e.g.

traffic signal mast arm and pole) highway structure that is coated and includes the cost of surface preparation, applying the tie coating, applying the complete coating system, stenciling, applying approved sealants, and shop and field repairing the complete coating system.

Galvanizing and repair of damaged galvanized surfaces is included in the pay item for furnishing the galvanized component.