

564.06 08 PAINTING GALVANIZED POST ASSEMBLIES

DESCRIPTION: This work shall consist of painting newly galvanized post assemblies.

MATERIALS:

Paint For Use On Galvanized Surfaces.

PAINT. Paint shall be a two coat system with a polyamide epoxy primer and an aliphatic urethane, suitable for exterior use. The paints shall have a VOC level below 340g/L, shall be produced by the same manufacturer, and the prime and top coat shall be compatible. The primer shall be specifically formulated for use over galvanized surfaces.

BASIS OF ACCEPTANCE. The material shall be accepted with the submission of the technical data sheets and the manufacturer's certification ensuring compliance with this specification.

Paints.

A. Data Sheets. At least five work days prior to the start of work, the Contractor shall supply the Engineer with one copy of the paint manufacturer's current technical data and materials safety data sheets for each coat to be applied. If manufacturer's recommendations are more restrictive or require additional effort not defined in this specification, then the manufacturer's recommendations shall be followed.

B. Storage. Paint in storage shall be protected from damage and maintained in accordance with manufacturer's recommendations. Paint will be considered in storage if it is onsite for more than 8 hours prior to application.

C. Color. The color of the primer will be the Contractor's option. However, it shall contrast with the underlying substrate. The color of the topcoat shall be in accordance with the contract documents. A 'Rustic' color shall be Weathered Brown.

D. Labeling. Paint arriving at the work site in new, unopened containers and labeled with the manufacturer's name, product name, component part, batch number, color and shelf life date shall be used. Paint in containers having expired shelf life dates shall not be used. They shall be immediately removed from the work site.

Water for Pressure Washing. Water shall be clean, fresh potable water.

Abrasive for Sweep Blasting Galvanizing Surfaces. Abrasive size shall range between 200 and 500 microns, and shall have a Mohr's hardness of 5 or less.

Paint Inspection Equipment. Prior to the start of and throughout the duration of the work, the Contractor shall ensure that the Engineer, or Inspector, is supplied with the following equipment in good working order:

- One bound copy of the Steel Structures Painting Council surface preparation specification, SSPC - SP COM "Surface Preparation Commentary for Steel and Concrete Substrates"

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- One bound copy of the Steel Structures Painting Council surface preparation specification, SSPC SP-1 - "Solvent Cleaning"
- One bound copy of the Steel Structures Painting Council surface preparation specification, SSPC-SP 7, Brush-Off Blast Cleaning
- One bound copy of the Steel Structures Painting Council method SSPC-PA2, Paint Application Specification No. 2 - Measurement of Dry Film Thickness With Magnetic Gages.
- ASTM A 123 Standard Specification for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products
- ASTM D 4417 Test Method for Field Measurement of Surface Profile of Blast Cleaned Steel
- ASTM D 4285 Test Method for Indicating Oil or Water in Compressed Air
- One Air Thermometer, pocket type, -10°C to +40°C.
- One Magnetic Dry Film Thickness Gage, Type 2 (fixed probe),
- Two Wet Film Thickness Gages, Prong Type, capable of measuring 25 µm to 250 µm in 25 µm increments.
- Sling Psychrometer and US Weather Bureau Psychrometric Tables

CONSTRUCTION DETAILS:

Surface Preparation of Surfaces.

All surfaces to be painted shall be pressure washed, using equipment operating at a minimum pressure of 21 MPa, and a minimum flow of 15 L/minute. The nozzle shall be held at a distance of 150 mm to 300 mm from the surface.

When the washing is completed, the cleaned surfaces shall be free of dust, dirt, oil and grease, animal waste, salts, and other debris. Oil and grease shall be removed by solvent cleaning as described in SSPC SP1. The areas shall be pressure washed again following this cleaning.

Once cleaned, all galvanized surfaces shall receive a light sweep blast using abrasive blasting equipment. All compressed air used to satisfy the requirements of this specification shall be clean. The cleanliness shall be verified with a white blotter test according to ASTM D 4285 at least once per shift.

The light blast shall remove zinc oxides from the galvanizing as well as etch the surface. The light sweep blast shall not remove excessive amounts of zinc from the galvanized surface. The sweep blast shall impart to the galvanized surface an anchor profile of 25 to 40 microns as measured using profile tape and a spring loaded micrometer according to ASTM D 4417.

The initial thickness of the galvanizing prior to sweep blasting shall be established using a magnetic thickness gage, in a manner as described under ASTM A123. If the sweep blast results in a 15% or greater loss of galvanized coating, the article shall be rejected. The sweep blast shall be performed in a manner that does not result in disbonding and flaking of the galvanizing.

After sweep blasting, the galvanized surfaces shall be thoroughly blown down with clean compressed air to remove all blast residue. Any sharp, protruding defects in the galvanized surface such as that commonly found on edges and holes should be removed by hand tools.

Application of the primer shall be performed within 12 hours of sweep blasting the galvanized surface. If more than 12 hours elapse prior to priming, the galvanized

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surfaces shall be re-blasted according to this specification at no additional cost to the State. If re-blasted, the item shall not have lost 15% or more of its original galvanized coating thickness.

Painting.

A. Atmospheric Conditions. No paint shall be applied when the receiving surface and ambient temperatures are less than 5°C or greater than 38°C. If the manufacturer's recommendations for temperature are more restrictive than those listed in this specification, the manufacturer's temperature limits shall be used for application requirements. No paint shall be applied unless the receiving surface is absolutely dry.

Paint shall not be applied when the relative humidity is more than 85% unless the coating manufacturer's requirements are more stringent. No paint shall be applied during rain.

Manufacturer's recommended humidity and dew point restrictions shall be observed.

B. Mixing Paint. All paint shall be thoroughly mixed with mechanical mixers in accordance with the manufacturer's recommendations. After mixing, the bottom of the container shall be free of any unmixed pigment prior to use.

C. Solvents and Thinners. Paint may be thinned if recommended by the manufacturer and approved by the Engineer. Under no circumstance should the paint be thinned where the resulting VOC level exceeds 340 g/L. The manufacturer shall be able to advise the Contractor and Engineer as to the maximum amount of thinner allowed.

Use of unauthorized solvents and thinners, or using excess amounts of solvents and thinners is prohibited. Paint thinned excessively or incorrectly shall be removed at no additional cost.

D. Paint Application. Paint shall be shop applied. Painting shall not begin until cleaned surfaces have been inspected. The Contractor shall also provide sufficient time for the work to be inspected at various stages of completion. The item(s) shall cure in an environment that is free of airborne dust and dirt until the paint is dry to touch. Paint may be applied using brush or roller, unless otherwise indicated by the contract documents. All paint shall be applied to produce a uniform, even coating free of runs, sags, drips, ridges or other defects. Areas exhibiting these defects shall be re-cleaned at no additional cost to the State.

Brushes and rollers used to apply the paint must be of a quality to produce a smooth uniform coating and not leave fibers in the coating. The roller nap length shall be limited in accordance with the paint manufacturer's recommendation.

If surface becomes contaminated before paint is applied, the surface shall be cleaned as described in this specification at no additional cost.

E. Paint Film Thickness. Paint shall be applied to produce the specified dry film thickness as directed by the paint manufacturer's data sheets.

The actual dry film thickness shall be determined in accordance with SSPC-PA 2, Paint Application Specification No. 2 - Measurement of Dry Film Thickness with

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Magnetic Gages, using a Type 2 fixed probe magnetic gages. The gage(s) shall be properly calibrated and zeroed over the galvanized surface prior to painting.

Areas failing to meet the specified minimum dry film thickness shall be overcoated with the same type of paint to produce the total dry film thickness required. The overcoating must be performed within the paint manufacturer's specified recoat window.

METHOD OF MEASUREMENT: This work will be measured by the number of linear meters of post assembly satisfactorily painted.

BASIS OF PAYMENT: The unit price bid shall include the cost of all labor, materials, and equipment necessary to complete the work.