

ITEM 11572.0101 M - COATING OF STRUCTURAL STEEL

DESCRIPTION

Under this item the Contractor shall furnish and apply coating to all structural steel, including driven bearing piles, except when otherwise indicated on the Plans.

MATERIALS

The coating shall be coal tar epoxy-polyamide conforming to Steel Structures Painting Council specification SSPC Paint 16; color black.

CONSTRUCTION DETAILS

A. *SUBMITTALS*: Submit certificates of conformance for Coal Tar Epoxy-Polyamide for approval.

B. *ENVIRONMENTAL CONDITIONS*: Apply coating only when ambient and curing temperatures are within limits of coating manufacturer's recommendations and at least 9 degrees C above dew point temperature.

C. *SAFETY AND HEALTH PRECAUTIONS*: Materials listed in this section contain coal tar pitch volatiles, which are toxic. Follow safety procedures as recommended by manufacturer. Work in a well-ventilated area. Provide, and require workers to use, impervious clothing, gloves, face shields (8-inch minimum), and other appropriate protective clothing necessary to prevent eye and skin contact with coating materials. Keep coatings away from heat, sparks and flames.

D. *CLEANING AND PREPARATION OF SURFACES*:

1. Solvent Cleaning: Solvent-clean surfaces in accordance with SSPC SP 1. Remove visible oil, grease, and drawing and cutting compounds by solvent cleaning.
2. Blast Cleaning: After solvent cleaning, complete surface preparation by near-white blast cleaning in accordance with SSPC SP 10. Remove residual dust from blasted surfaces by blowing with dry, oil-free air, vacuuming, or sweeping. Provide surface profile of at least 0.064 mm (2.5 mils).

E. *PROPORTIONING AND MIXING OF COATING SYSTEM*:

1. Proportioning of Coal Tar Epoxy-Polyamide System: Coal tar epoxy-polyamide shall consist of a two-component system. Component A shall contain a refined coal tar pitch, polyamide resin, and a polyamine promoter to accelerate curing rate. Component B shall be an epoxy resin. Mix both

ITEM 11572.0101 M - COATING OF STRUCTURAL STEEL

components at a ratio of 4 parts of Component A to 1 part of Component B by volume, unless otherwise indicated in the product manufacturer's written instructions. Do not thin coatings when doing so will result in the total of volatile organic compounds exceeding limits enacted by local air pollution control districts. When thinning is allowed and is necessary for proper application, use xylene or the coating manufacturer's recommended thinner, to a maximum of 1 liter per 10-liter batch.

2. **Mixing of Coal Tar Epoxy-Polyamide System:** Power-stir components to a smooth, uniform consistency. Stir coating periodically during induction period. Follow coating manufacturer's requirements for induction time and pot life of mixed batches.

F. COATING APPLICATION:

1. **General:** Apply primer coating to dry surfaces not more than 4 hours after near-white blast cleaning. Apply coats of each system so that finished surfaces are free from runs, sags, brush marks and variations in color.

2. **Application Method for Coal Tar Epoxy-Polyamide System:** Unless otherwise specified by manufacturer's recommendations, do not allow drying time between coats to exceed 72 hours. Under conditions of direct sunlight, or elevated ambient temperatures of 32 degrees C or greater, limit inter-coat drying period to a maximum of 24 hours.

3. **Repair of Defects:** Repair detected coating holidays, thin areas, and exposed areas damaged prior to, or during installation, by surface treatment and application of additional coating, or per the manufacturer's recommendations. Allow a period of at least 72 hours to pass following final coating.

4. **Dry-Film Thickness:** Provide total system minimum dry film-thickness of 0.406mm (16 mils). Measure thickness using a magnetic gage.

G. SURFACES TO BE COATED: Unless otherwise stated, coat all steel work except hardware. Coating shall cover all steel surfaces, except as otherwise indicated in Item No. 11551.1001M Steel Pipe Piles..

H. FIELD TESTS: Conduct the following tests in the presence of the Engineer:

1. **Holiday Testing:** Prior to installation, test for holidays in total coating system. Use a low-voltage holiday detector of less than 90 volts in accordance with manufacturer's instructions. After repair of holidays by surface treatment and application of additional coating, or in accordance with the manufacturer's recommendations, retest with a low-voltage holiday detector.

ITEM 11572.0101 M - COATING OF STRUCTURAL STEEL

2. Dry-Film Thickness: Measure dry-film thickness as directed using a magnetic dry-film thickness gage in accordance with ASTM D1186 and ASTM E376.

METHOD OF MEASUREMENT:

Lump Sum.

BASIS OF PAYMENT

The Lump Sum Bid Price shall include the cost of all labor, materials and equipment necessary to coat all structural steel, and 12 meter-lengths of each driven steel bearing pile.