

FACTORY-APPLIED COATING FOR METAL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. This Section specifies factory-applied metal coatings including the following:
1. Basis of design **Duragalv**[®] Hot-dip galvanizing for iron and steel fabrications.

1.2 RELATED SECTION

- A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:
1. Section 033000 - Cast-In-Place Concrete.
 2. Section 042000 - Unit Masonry.
 3. Section 051200 - Structural Steel Framing.
 4. Section 053000 - Metal Decking.
 5. Section 055000 - Metal Fabrications.
 6. Section 055100 - Metal Stairs.
 7. Section 055200 - Metal Railings.
 8. Section 057000 - Decorative Metal.
 9. Section 077100 - Roof Specialties.
 10. Section 107000 - Exterior Specialties.
 11. Section 107500 - Flagpoles.
 12. Section 129300 - Site Furnishings.
 13. Section 323000 - Site Improvements.
 14. Section 323100 - Fences and Gates.

1.3 SUBMITTALS

- A. Product Literature for Factory-Applied Metal Coatings: Submit galvanizer's product data sheets for coatings specified in this Section including physical performance test data.
- B. Certificate of Compliance for Items Coated by Galvanizer: If requested, submit notarized Certificate of Compliance with invoice for galvanizing, signed by the galvanizer, indicating compliance with requirements of specifications. Include scope of services provided, and quantity and itemized description of items processed.
- C. Certificate for review of for Shop Drawing Review by Galvanizer: If requested, submit galvanizer's certification that shop drawings for metal fabrications to receive metal coatings have been reviewed and that fabrications are acceptable to galvanizer for proper application of galvanizing and metal coatings. All drawings shall be signed by the galvanizer to indicate acceptance of design for galvanizing.
- D. Certificate of Compliance of Item Identification by Galvanizer: If required, the galvanizer shall mark all lots of material with a clearly visible tag indicating the name of the galvanizer, the type of coatings, and the applicable ASTM standards. If requested, submit certification of compliance that items have been tagged.
- E. Substitutions: If substitutions or other products are proposed, submit this specification signed by the firm proposing the other products, indicating line-by-line comparison of the proposed

substitution or equal product with test results. Substitutions proposed without comparison test results will not be accepted.

- F. Galvanizer shall have a written Quality Control/Quality Assurance manual for hot dip galvanizing and factory applied coating.
- G. Certification from the American Galvanizers Association that Galvanizer has completed all course requirements and has a certified Master Galvanizer on staff.

1.4 QUALITY ASSURANCE

- A. Galvanizer's Qualifications: Engage the services of a qualified galvanizer who has demonstrated a minimum of ten years experience in the successful application of galvanized coatings specified in this specification in the facility where the work is to be performed.
- B. Pre-Construction Conference for Metal Fabrications to Receive Factory-Applied Metal Coatings: Contractor shall schedule a meeting to be attended by Contractor, Architect, fabricator, and galvanizer. Agenda shall include the following: Project schedule, scope of services, coordination between fabricator and galvanizer, submittals, and approvals.
- C. Coordination between Fabricator and Galvanizer: Prior to fabrication and final submittal of shop drawings to Architect, direct fabricators to submit shop drawings to the galvanizer for all metal fabrications to receive factory-applied metal coatings. Direct galvanizer to review fabricator's shop drawings for suitability of materials for galvanizing and coatings and coordinate any required modifications to fabrications required to be performed by the fabricator.

PART 2 - PRODUCTS

2.1 COATING APPLICATOR

- A. Coating Applicator: For the purpose of establishing a standard of quality and performance, provide factory-applied metal coatings by Duncan Galvanizing, 69 Norman Street, Everett, MA, 02149, telephone 617-389-8440, fax 617-389-2831, www.duncangalvanizing.com.

2.2 SECTION INCLUDES

- A. Hot-Dip Galvanizing: For steel exposed to the elements, weather or corrosive environments and other steel indicated to be galvanized, provide coating for iron and steel fabrications applied by the hot-dip process. Galvanizing bath shall contain special high grade zinc and other earthy materials.
 - 1. Comply with ASTM A 123 for fabricated products and ASTM A 153 for hardware.
 - 2. Provide thickness of galvanizing specified in referenced standards.
 - 3. Fill vent holes after galvanizing, if required, and grind smooth.
 - 4. Galvanized surface shall be prepared per SSPC SP2 or SP3 to provide a smooth surface removing all runs, drips or sags.
 - 5. Galvanizing shall exhibit a rugosity (smoothness) of 25 microns or less when measured by a profilometer. Profilometer shall be capable of operating in .1 micron increments. This pertains to those elements that are less than 24 pounds per running foot.
- B. Warranty: Provide galvanizer's standard warranty that materials will be free from 10 percent or more visible rust for 20 years.

PART 3 - EXECUTION

3.1 APPLICATION OF FACTORY-APPLIED METAL COATINGS

- A. Galvanizing Application: Galvanize materials in accordance with specified standards and this specification. The dry kettle process shall be used to eliminate any flux inclusions on the surface of the galvanized material.
- B. Prior to galvanizing, the steel shall be immersed in a flux solution (zinc ammonium chloride). The flux tank must be 12 to 14 Baumé density and contain less than 0.4 percent iron. Use of the wet kettle process is not acceptable. To provide the galvanized surface required, the following procedures shall be implemented:
 - 1. A monitoring recorder shall be utilized and inspected regularly to observe any variances in the galvanizing bath temperature.
 - 2. The pickling tanks shall contain hydrochloric acid with an iron content less than 12 percent and zinc content less than 3 percent. Titrations shall be taken weekly at a minimum.
 - 3. All chemicals and zinc shall be tested at least once a week to determine compliance with ASTM standards. All testing shall be done using atomic absorption spectrometry or x-ray fluorescence (XRF) equipment at a lab in the galvanizing facility.

3.2 INSTALLATION

- A. Installation: Comply with fabricator's and galvanizer's requirements for installation of materials and fabrications, including use of nylon slings or padded cables for handling factory-coated materials.
- B. Touch-Up and Repair: For damaged and field-welded metal coated surfaces, clean welds, bolted connections and abraded areas.
 - 1. For galvanized surfaces, apply organic zinc repair paint complying with requirements of ASTM A 780, modified to 95 percent zinc in dry film. Galvanizing repair paint shall have 95 percent zinc by weight. Basis of design is ZiRP by Duncan Galvanizing. Thickness of applied galvanizing repair paint shall be not less than coating thickness required by ASTM A 123 or A 153 as applicable.
 - 2. Touch-up of galvanized surfaces with silver paint, brite paint, or aluminum paints is not acceptable.

END OF SECTION