SECTION 05080CPPR – FACTORY APPLIED METAL COATINGS

PART 1 - GENERAL

1.01 This Section specifies hot-dip galvanizing and architectural finish for all miscellaneous and structural steel exposed to the weather, moisture, or corrosive atmosphere. Factory Applied Coatings are required throughout the University for exposed conditions and all exterior ferrous metal items integral to the building unless the Brown University Project Manager approves the exception in writing.

1.02 All metal work shall be carefully reviewed to identify which items shall be galvanized and which items shall be shop primed and shop finished.

1.03 Reference standards include the American Galvanizers Association, Inc. (AGA), and the American Society for Testing and Materials (ASTM).

1.04 RELATED WORK

A. Section 00100 General Conditions for as-built samples

PART 2 - PRODUCTS

2.01 COPPER

A. Coating shall be used for roofing and other areas subject to significant water exposure.

1. Coated architectural metal shall be lead coated copper; lead-free coatings such as Revere “Freedom” shall be considered and used where approved.

2. Minor work shall match existing metal and coatings.

B. Pre-patinated copper shall be acceptable for exterior use.

C. Plain copper shall only be used if approved in writing by the Brown University Project Manager.

2.02 ALUMINUM

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1 Listing of related sections is for convenience and is not all-inclusive. Affected sections or drawings where specific design requirements are to be specified, or related sections where applicable Brown University Design and Construction Guidelines may appear, are indicated. 00100 sections means all related 00100 sections including any sections from 00100 through 00199.
A. Factory applied anodized or kyner fluoropolymer two-coat system shall be acceptable.

B. Powder coat shall be used in interior only.

C. Mill finish is not allowed.

2.03 FERROUS METALS

A. For the purpose of establishing a standard of quality and performance, the Deltagalv system is used, as provided by Duncan Galvanizing, 69 Norman Street, Everett, MA 02149 (617-389-8440) (800-389-6721) (617-389-6721 Fax), contact: Howard Levine. Substitutions may be submitted for approval.

B. Provide coating for iron and steel fabrications applied by the hot-dip process, Deltagalv by Duncan Galvanizing. Comply with ASTM A123 for fabricated products and ASTM A153 for hardware. Provide thickness of galvanizing specified in reference standards. The galvanizing bath shall contain .05-.09% nickel and other earthly materials.

C. When the galvanized item is to be primed for future field painting or finish coat; the coatings shall be applied by the galvanizer at same facility, within twelve (12) hours of galvanizing.

D. Hot-Dip Galvanizing: Provide coating for iron and steel fabrications applied by the hot-dip process, Deltagalv by Duncan Galvanizing. The galvanizing bath shall contain .05-.09% nickel. Immediately before galvanizing, the steel shall be immersed in a bath of zinc ammonium chloride. The use of the set kettle process is prohibited. Comply with ASTM A123 for fabricated products and ASTM A153 for hardware. Provide thickness of galvanizing specified in referenced standards.

E. Dunnage for mechanical equipment is not required to be factory treated or galvanized. Appropriate paint system to be applied per section 9900.

2.04 FACTORY-APPLIED PRIMER OVER HOT-DIP GALVANIZING

A. Factory-Applied Universal Primer: Provide factory-applied polyamide epoxy primer, 2.0 mils dry film thickness minimum, Primergalv by Duncan Galvanizing. Apply primer within twelve (12) hours after galvanizing at the galvanizer’s plant in a controlled environment meeting applicable environmental regulations, and as recommended by coating manufacturer. After 12 hours of exposure to oxygen a maximum amount of Zinc Hydroxide will form. This coating shall be removed for proper adherence of the primer.
2.05 FACTORY-APPLIED ARCHITECTURAL FINISH OVER PRIMER AND HOT-DIP GALVANIZING

A. Factory-Applied High-Performance Architectural Finish: Provide factory-applied polyurethane color coating, 2.5 mils dry film thickness minimum, Colorgalv by Duncan Galvanizing. Apply at the galvanizer’s plant, after application of the prime coat, in a controlled environment meeting applicable environmental regulations, and as recommended by coating manufacturer. Engage the services of a galvanizing facility, which will assume single-source responsibility for galvanizing, priming and finish coating. There is no time requirement for when to apply the top coat after the prime coat has been applied.

PART 3 – EXECUTION

3.01 Galvanize materials in accordance with referenced standards.

3.02 COATING SYSTEM

A. For all exposed structural steel, misc. metal, and ornamental iron exposed to the weather, moisture, or other corrosive conditions the following thickness applies to the indicated coating system:

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Description</th>
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<tbody>
<tr>
<td>3 to 4 Mils min.</td>
<td>Galvanize</td>
</tr>
<tr>
<td>3 Mils min.</td>
<td>Factory primed for field applied topcoat</td>
</tr>
<tr>
<td>2.5 Mils min. epoxy</td>
<td>Factory primed with factory applied topcoat</td>
</tr>
<tr>
<td>3 Mils min. urethane</td>
<td>Factory primed with factory applied topcoat</td>
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</tbody>
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3.03 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-primed or factory-finished materials.

3.04 Touch-Up and Repair: For damaged and field-welded metal coated surfaces, clean welds, bolted connections and abraded areas.

A. At galvanized surfaces, apply organic zinc repair paint complying with requirements of ASTM A780. Galvanizing repair paint shall have 95 percent zinc by weight, ZIRP by Duncan Galvanizing. Touch-up of galvanized surfaces with aerosol spray, silver paint, bright paint, or aluminum paints are not acceptable.

B. At factory-primed or factory-finished surfaces, touch-up finish in conformance with manufacturer’s recommendations.