

## SECTION 055119 - METAL GRATING STAIRS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Industrial-type stairs with steel grating treads.
- B. See Division 5 Section "Pipe and Tube Railings" for pipe and tube railings.

#### 1.2 SUBMITTALS

- A. Submit in accordance with Section 013300 and the Submittal Schedule.

#### 1.3 COORDINATION

- A. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

### PART 2 - PRODUCTS

#### 2.1 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces without blemishes.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Wire Rod for Grating Crossbars: ASTM A 510.
- D. Iron Castings: Either gray iron, ASTM A 48/A 48M, Class 30, or malleable iron, ASTM A 47/A 47M, unless otherwise indicated.
- E. Uncoated, Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, either commercial steel, Type B, or structural steel, Grade 30.
- F. Expanded Metal, Carbon Steel: ASTM F 1267, Class 1 (uncoated).

#### 2.2 MISCELLANEOUS MATERIALS

- A. Cast-Metal Abrasive Nosings: Cast gray iron, Class 20, with an integral abrasive finish.
- B. Fasteners: Provide zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 25 for exterior use, and Class Fe/Zn 5 where built into exterior walls.
- C. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.

#### 2.3 FABRICATION

- A. Provide complete stair assemblies, including metal framing, hangers, struts, railings, clips, brackets, bearing plates, and other components necessary to support and anchor stairs and platforms on supporting structure.

1. Join components by welding, unless otherwise indicated. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercut or overlap. Remove welding flux immediately. At exposed connections, finish exposed welds smooth and blended.
  2. Use connections that maintain structural value of joined pieces.
  3. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
  4. Form bent-metal corners to smallest radius possible without impairing work.
  5. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Locate joints where least conspicuous.
- B. Stair Framing: Fabricate stringers of steel plates or channels. Construct platforms of steel plate or channel headers and miscellaneous framing members.
1. If using bolts, fabricate and join so bolts are not exposed on finished surfaces.
  2. Where masonry walls support metal stairs, provide temporary supporting struts designed for erecting steel stair components before installing masonry.
- C. Traction Grate Stairs: McNICHOLS Quality TRACTION TREAD™ Grating
1. Galvanized Mill-Galv ASTM A525, 13 Gauge, 12" Traction Tread, 2" Channel Depth, Mill Finish Surface, Plank, 12.0000" Width
  2. Perforations shall provide slip resistance and allow drainage of water.
  3. Perforation size shall comply with ICC/ANSI A117.1 "Accessible and Usable Buildings and Facilities Standards."

## 2.4 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Finish metal stairs after assembly.
- B. Hot-dip galvanize items indicated to be galvanized. Comply with ASTM A 123/A 123M or ASTM A 153/A 153M as applicable.
- C. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with requirements indicated below for environmental exposure conditions of installed products:
1. Exterior Stairs (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
- D. Apply shop primer to uncoated surfaces of metal stair components. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Perform cutting, drilling, and fitting required for installing metal stairs. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.
- B. Install metal stairs by welding stair framing to steel structure or to weld plates cast into concrete, unless otherwise indicated.

- C. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- D. Adjusting and Cleaning:
  - 1. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting.
  - 2. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

**END OF SECTION 055119**