

SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Shop Drawings showing details of fabrication and installation.

PART 2 - PRODUCTS

2.1 METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, Type 304.
- C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.
- D. Rolled Steel Floor Plate: ASTM A 786/A 786M.
- E. Steel Tubing: Cold-formed steel tubing complying with ASTM A 500.
- F. Steel Pipe: ASTM A 53, standard weight (Schedule 40), black finish.
- G. Cast Iron: ASTM A 48/A 48M, Class 30.
- H. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T6.
- I. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, Alloy 6061-T6.
- J. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.

2.2 GROUT

- A. Nonshrink, Nonmetallic Grout: ASTM C 1107; recommended by manufacturer for exterior applications.

2.3 FABRICATION

- A. General: Shear and punch metals cleanly and accurately. Remove burrs and ease exposed edges. Form bent-metal corners to smallest radius possible without impairing work.
- B. Welding: Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. At exposed connections, finish welds and surfaces smooth with contour of welded surface matching those adjacent.

- C. Fabricate steel pipe columns with 1/2-inch (12-mm) steel base plates and 1/4-inch (6-mm) steel top plates welded to pipe with continuous fillet weld same size as pipe wall thickness. Drill top plates for connection bolts and base plates for 5/8-inch (16-mm) anchor bolts.
- D. Fabricate loose lintels from steel angles and shapes. Size to provide bearing length at each side of openings equal to one-twelfth of clear span, but not less than 8 inches (200 mm).

2.4 STEEL AND IRON FINISHES

- A. Hot-dip galvanize steel fabrications at exterior locations.
- B. Prepare uncoated ferrous metal surfaces to comply with SSPC-SP 3, "Power Tool Cleaning," and paint with a fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack.
- B. Fit exposed connections accurately together to form hairline joints.
- C. Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

END OF SECTION 05500

SECTION 05520 – METAL RAILINGS**PART 1 - GENERAL****1.1 SECTION REQUIREMENTS**

- A. **Structural Performance:** Provide railings capable of withstanding structural loads required by ASCE 7.
- B. **Submittals:** Shop Drawings.

PART 2 - PRODUCTS**2.1 METALS****A. Exterior Railing**

- 1. **Basis of Design:** King Architectural Metals; molded steel
- 2. **Top Rail:** No. 45-905
- 3. **Pickets:** 5/8" square; No. 13-45026-00
- 4. **Intermediate posts:** 1" square tube; No. 13-47028-000
- 5. **Rail Ends:** No. 45-6-XL at pitched rail; No. 45-S at straight rail.
- 4. **Remainder of components:** See drawings.
- 5. **Finish:** Primed ready for finish painting.

- B. **Brackets, Flanges, and Anchors:** Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

2.2 OTHER MATERIALS

- A. **Nonshrink, Nonmetallic Grout:** ASTM C 1107; recommended by manufacturer for exterior applications.

2.3 FABRICATION

- A. **Assemble railing systems in shop to the greatest extent possible. Use connections that maintain structural value of joined pieces.**
- B. **Form changes in direction of railing members by bending.**
- C. **Fabricate railing systems and handrails for connecting members by welding.**

- D. Provide manufacturer's standard wall brackets, flanges, miscellaneous fittings, and anchors to connect handrail and railing members to other construction.
- E. Provide mitered wall returns at ends of wall-mounted handrails. Provide lamb's tongue at ends of rails not terminated at a post or wall-mounted.

2.4 FINISHES

- A. Steel Railings: Cleaned and shop primed.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Fit exposed connections accurately together to form tight, hairline joints.
- B. Set railings accurately in location, alignment, and elevation and free of rack.
- C. Anchor posts in concrete by forming or core-drilling holes 6 inches (125 mm) deep and 3/4 inch (20 mm) greater than OD of post. Fill annular space between post and concrete with nonshrink, nonmetallic grout.
- D. Attach handrails to wall with wall brackets.

END OF SECTION 05520