

SECTION 05500

METAL FABRICATIONS

1. GENERAL

1.1 REFERENCES

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 specifications, apply to work in this section.
- B. Rough Carpentry: Section 06100
- C. Finish Carpentry: Section 06200
- D. Roofing and Flashing: Section 07300
- E. Painting: Section 09900
- F. American Society of Testing Materials (ASTM)
- G. Steel Structures Painting Council (SSPC)
- H. National Association of Architectural Metal Manufacturers (NAAMM)

1.2 DESCRIPTION OF WORK

- A. Extent of Metal Fabrications is shown on the drawings and includes deck railings and metal grills.
- B. Elevator pit metal ladder.

1.3 QUALITY ASSURANCE

- A. Refer to Section 01631, Products and Substitutions, for general provisions covering product selection, substitutions, material storage, and installation.
- B. Refer to Section 01400, Quality Control Services, for provisions for testing and inspection.

1.4 SUBMITTALS

- A. Issue submittals in accordance with Section 01300, Submittals.
- B. Submittals under this section include:
 - 1. Shop drawings showing details of fabrication, assembly, and installation showing all connections to other work.
 - 2. Samples of materials and finished products as may be requested by the Architect.

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2. PRODUCTS

2.1 MATERIALS

1. Railing assembly shall withstand a minimum concentrated load of 200 lbs. applied in any direction at any point on top rail. Intermediate rails, balusters, and panel fillers shall be designed for uniform load of not less than 25 lbs./sq. ft. over gross area of guard. Assembly shall comply with all provisions of the applicable Building Codes.
2. Accurately miter and cope intersections, and weld all around. Form rail-to-end post connections and changes in rail direction with mitered corners or radius bends, as detailed. Form elbow bends and wall returns to uniform radius, free from buckles and twists.

3. EXECUTION

3.1 FABRICATION

A. GENERAL

1. Use materials of size and thickness shown, or if not shown, of required size, grade, and thickness to produce strength and durability in finished product.
2. Provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes on exposed surfaces.
3. Form metalwork to required shapes and sizes, with true lines, curves and angles. Provide necessary rebates, lugs and brackets for assembly and installation. Use concealed fasteners wherever possible. Mill joints to tight hairline fit; cope or miter corners.
4. Welding:
 - a. Weld corners and seams continuously; grind exposed welds smooth and flush.
 - b. Welding Electrodes and Filler Metal: Type and alloy to match metal to be welded.
5. Anchors and Inserts: Furnish as required for installation in other work. Use copper, cadmium or galvanized anchors and inserts for exterior work.
6. Fasteners
 - a. Type and alloy to match metal to be fastened; use Phillips flat-head screws for exposed fasteners if not otherwise indicated.
 - b. Provide bolts, nuts, lag bolts, machine screws, wood screws, toggle bolts, masonry anchorage devices, lock washers as required for application indicated and complying with applicable Federal standards. Hot-dip galvanize fasteners for exterior applications to comply with ASTM A 153.

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7. Shop Finishing

- a. All exterior railing to be powder coated.
- b. Comply with NAAMM "Metal Finishes Manual".
- c. Apply shop primer to surface of metal fabrications except those embedded in concrete or galvanized; comply with SSPC-PA1.
- d. Surface Preparation: Comply with SSPC-SP6 "Commercial Blast Cleaning" for exterior work, and with SSPC-SP3 "Power Tool Cleaning" for interior work.
- e. Shop Primer: Fabricator's standard, fast-curing, lead-free, "universal" primer complying with performance requirements of FS TT-P-645.
- f. Stripe paint edges, corners, crevices, bolts, welds and sharp edges.
- g. Protect finished metal items.

3.2 INSTALLATION

- A. Perform cutting, drilling and fitting required for installation; set work accurately in location, alignment and elevation, measured from established lines and levels.
- B. Provide anchorage devices and fasteners where necessary for installation to other work.
- C. Repair or replace damaged items as directed by the Architect.
- D. Touch-up shop paint after installation. Clean field welds, bolted connections and abraded areas, and apply same type paint as used in shop.
- E. Restore damaged protective coverings after installation. Maintain until other work in same areas is completed. Remove protective coverings and clean exposed surfaces prior to final inspection.

END OF SECTION