

SECTION 05500

ALUMINUM HANDRAIL

PART 1 - GENERAL

1.1 Description

A. Description of Work

The work to be performed in accordance with this section includes furnishing and installing aluminum handrail including railing, posts, fittings and anchorage.

The work shall include the furnishing of all labor, tools, equipment, materials and performing all operations to provide a complete item in accordance with the project plans and these specifications.

B. Related Work Specified Elsewhere

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1.2 Quality Assurance

A. Reference Test Standards and Specifications

ASTM B221, Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.

ASTM B241, Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube.

ASTM B209, Specification for Aluminum and Aluminum-Alloy Sheet Pipe and Plate.

1.3 Submittals

A. Certificates of Compliance

1. Handrail Materials and Fasteners

B. Shop Drawings

1. Handrail

PART 2 - MATERIALS

2.1 Aluminum Alloy for Pipe

ASTM B241, Alloy 6061-T6 or 6063-T6.

2.2 Aluminum Alloy Tubing

ASTM B221, Alloy 6061-T6 or 6063-T6, Schedule 40, Handrail grade.

2.3 Cast Aluminum Alloy

AASHTO M193.

2.4 Aluminum Alloy Shims

ASTM B209, Alloy 1100-1.

2.5 Aluminum Anodizing

After fabrication and finishing all aluminum railings shall be brushed and given a medium chemical etch and a clear architectural class satin finish in accordance with the "Standards for Anodized Architectural Aluminum".

2.6 Fasteners

- A.** Expansion shield anchor bolts and drive pins for attaching items to concrete or masonry. Stainless steel AISI type 304:
 - 1.** Expansion anchor bolts shall be stainless steel machine bolts inserted in separate double metal wedge lead expansion shields. Minimum bolt size 3/4-inch.

PART 3 - EXECUTION

3.1 Fabrication

Fabricate aluminum railings in the most practical sections, with closely fitted, continuously welded connections, grind welds until blended into adjacent surfaces. All railing surfaces shall receive clear satin anodized coating.

A. Joints

Weld all joints in conformance with Specifications for Welding Aluminum of the AWS. All welds shall be ground smooth and brushed to match tubing finish.

3.2 Installation, General

- A.** Insofar as possible, fabricate and fit metal work in the shop, in transportable components ready for field erection.
- B.** Finished work shall conform to a straight line or flat plane to within 1/8-inch in 8 feet and to within 1/4-inch total deviation.
- C.** Curved surfaces shall conform to a true arc of a circle to within 1/16-inch.
- D.** Make proper allowance for expansion and contraction of the metals and of the materials to which they are fastened.
- E.** Where metal is fastened to concrete, make the connection by means of embedding expansion shield anchor bolts. Wood plugs, plastic plugs or powder driven studs are not acceptable.
- F.** Construct work to withstand the forces required by UBC and OSHA.
- G.** All work subjected to contact by personnel shall have all corners rounded or chamfered, all edges ground smooth.
- H.** Perform all welding in accordance with AWS manual "Welding Aluminum". Employ methods and techniques to achieve the full strength of the members joined and architectural appearance.
- I.** Field Assembly: Set members to lines and elevations indicated. Align and adjust members before making permanent conditions.

3.3 Protection

Protect the aluminum from corrosion by separating aluminum and concrete and dissimilar metal surface with a plastic separator sheet or shims as required.

PART 4 - MEASUREMENT AND PAYMENT – Not Applicable

****END OF SECTION****