

# **1.4 SAMPLE SPECIFICATION - PLEASANT MOUNT WELDING, INC. HANDRAIL w/ INTERNA-RAIL® FITTINGS**

## **SECTION 05500 ALUMINUM HANDRAIL**

### **1.0 General:**

#### **1.1 Description -**

Aluminum handrails to be smooth and continuous, free of burrs and protrusions, assembled by means of mechanical fittings. No pop rivets, sheet metal screws, self-tapping screws, epoxies, or welded connections will be accepted.

#### **1.2 Scope of Work -**

Supply all materials, labor, and equipment necessary to provide aluminum handrail assembled and installed complete as specified herein and detailed in project drawings.

### **2.0 Submittals:**

#### **2.1 Product Data -**

Supply all related technical data on the handrail system including: catalogs, material compliance sheets, and material safety data sheets.

#### **2.2 Samples -**

Supply a railing sample complete with top and mid-rails, multiple posts, toe plate and toe plate attachment as well as base mounting system if required by project drawings.

#### **2.3 Shop Drawings -**

Prior to fabrication of the handrail, shop drawings shall be submitted which include the following: plans showing location of handrail required for the project with all necessary dimensions, and detail drawings which show standard handrail elevations, typical railing connections, anchoring systems and expansion joints.

### **3.0 Materials:**

#### **3.1 Manufacturer -**

1. Pleasant Mount Welding, Inc. Handrail System (Carbondale, PA) using Interna-Rail fittings supplied by Hollaender Mfg. Co.
2. Or Approved Equal

#### **3.2 Performance -**

All railings shall be supplied to conform to applicable sections of the following building codes:

1. CFR 1910.29 (OSHA)
2. International Building Code (IBC)

#### **3.3 Components-**

##### **1. Rails and Posts -**

Extruded Aluminum Pipe ASTM B429  
Aluminum Alloy 6063-T6. Finish AA M10C22A41.  
Outside diameter 1.90" nominal and wall thickness 0.145", Schedule 40.

##### **2. Toe Boards -**

Beveled style, thickness .125" minimum  
Extruded aluminum alloy 6063-T6. Finish AA M10C22A41.  
Fastened to post directly by means of a two-piece bracket which locks on the pipe and fastens by means of a carriage bolt to a track that is extruded as part of the toe board.  
Bracket to mount to toe plate no higher than 3" above the walking surface to ensure the required structural integrity.

### 3. Mechanical Connectors -

Post and handrail connector fittings

Precision machined from alloy 6063-T6 or AL535

Supplied with anodize 215-R1 finish.

Design - internal double tang type activated by a reverse knurl cup point set screw. Reverse knurl required to ensure that screw does not unintentionally loosen under vibration, plain cup point set screws will not be accepted. Fittings to be fastened to pipe by means of a 5/16" tubular rivet nut and socket head cap screw. All rails shall be in the same plain as the posts, connectors which offset the rails will not be accepted.

Flanges (if required)

Sand cast from aluminum alloy 535 (ASTM B26), with an anodized finish.

Fastened directly to the post by means of two (2) reverse knurl point set screws.

Base flanges which utilize a key way and bearing plate and/or plain cup point set screws will not be accepted.

### 4. Fasteners -

All fasteners to be 304 stainless steel or anodized aluminum.

No pop rivets, sheet metal screws or self tapping screws will be accepted.

## **4.0 Expansion & Contraction:**

Allow for expansion and contraction in top rail by means of a splice at a maximum of 24' intervals.

Allow for expansion and contraction in toe board by providing mounting brackets which permit movement of the toe board. When installed, toe board should have a sufficient gap when splicing sections to allow for movement.

## **5.0 Execution:**

### 5.1 Fabrication -

Handrails shall be fabricated based on site dimensions supplied by the contractor.

All handrail sections shall be straight and true with no visible gaps in connections.

If core mounted, posts shall be supplied the proper length for 6" embedment with 1/4" diameter weep hole located 1/4" above the walking surface and coated with 6" of bituminous mastic.

### 5.2 Installation -

Handrails shall be installed in strict accordance with the manufacturer's instructions.

Once installed all handrails shall be in compliance with the requirements of the aforementioned building codes.

### 5.3 Cleaning-

Remove all stains, dirt, grease, or other substances by washing all railings thoroughly using clean water and soap; rinse with clean water.

Do not use acid solutions, steel wool and other harsh abrasives.

Remove any material which is permanently stained as well as damaged.