

## **MODULAR STAINLESS STEEL RAILING SYSTEM**

### **PART 1 - GENERAL**

#### 1.01 WORK INCLUDED

- A. Furnish supported glass stainless steel railings and components.

#### 1.02 REFERENCE

##### A. American National Standards Institute (ANSI)

1. A17.1 Accessible and Usable Buildings and Facilities.
2. A21. Safety Requirements for Floor and Wall Openings, Railings and Toe Boards.
3. A58. Minimum Design Loads in Buildings and Other Structures.
4. Z97. Safety Performance Specifications and Methods of Test for Safety Glazing Materials Used in Buildings.

##### B. American Society for Testing and Materials (ASTM)

1. A555 Standard Specification for General Requirements for Stainless Steel Wire and Wire Rods.
2. A666 Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
3. C1048 Standard Specification for Heat-Treated Flat Glass - Hind HS, Kind FT Coated and Uncoated Glass.
4. E 894 Standard Test Method for Anchorage of Permanent Metal Railing Systems and Rails for Buildings.
5. E 935 Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings.
6. E 985 Standard Specification for Permanent Metal Railing Systems and Rails for Buildings.

##### C. Americans with Disabilities Act Accessibility Guidelines (ADA).

##### D. National Association of Architectural Metal Manufacturers (NAAMM)

1. Metal Finishes Manual.
2. Pipe Railing Manual.
3. Stair Manual.

#### 1.03 STRUCTURAL REQUIREMENTS

- A. Handrail, wall rail and Guardrail assemblies and attachments shall withstand a minimum concentrated load of 200 pounds applied horizontally or vertically down at any point on the top rail. Infill area of guardrail system capable of withstanding a horizontal concentrated load of 200 pounds applied to one square foot at any point in the system. Load not to act concurrently with loads on top rail of system in determining stress on guardrail. Handrail assemblies and guards shall be designed to

resist a load of 50 pounds per linear foot (pound per foot) (0.73 kN/m) applied in any direction at the top and to transfer this load through the supports to the structure.

#### 1.04 SUBMITTALS

- A. Manufacturer to submit approval drawings to include typical elevations.

#### 1.05 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of railing through one source from a single manufacturer. Railings shall be Modular stainless steel as manufactured by Inline Design Inc.; 1420 Terry Ave #702, Seattle, WA 98101. Tel: (425) 405-5505. Fax: (866) 864-0608. <http://inlinedesign.us>

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Materials to be delivered to the job site in good condition and adequately protected against damage, as handrails are a finished product.
- B. Store on site in a location and manner to avoid damage. Stacking should be done in a manner that will prevent bending. Store material in a clean, dry location away from uncured concrete and masonry. Any protection on the railings during transportation should remain until installed.
- C. Keep handling on site to a minimum. Exercise caution to avoid damage to finishes of material.

#### 1.07 PROJECT CONDITIONS

- A. Field Measurements: Where handrails and railings are indicated to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication; show recorded measurements on final shop drawings.
- B. Where field measurements cannot be made without delaying the railing fabrication and delivery, obtain guaranteed dimensions in writing by the Contractor and proceed with fabrication of products to not delay fabrication, delivery and installation.
- C. Coordinate fabrication and delivery schedule of handrails with construction progress and sequence to avoid delay of railing installation.

## **PART 2 - PRODUCTS**

### 2.01 MANUFACTURERS

- A. Acceptable Manufacturer: Inline Design LLC.; 1420 Terry Ave #702, Seattle, WA 98101. Tel: (425) 405-5505. Fax: (866) 864-0608. Web: <http://inlinedesign.us>

### 2.02 MATERIALS AND FINISHES

#### A. Materials

- i. All Stainless Steel tubing to be 304 or 316 welded stainless steel ornamental tubing 1 5/8" round or 1 9/16" square of gauge 14 with a #6 polish.
- ii. All fittings to be 304 or 316 stainless steel. Post side glass clips will be used to support glass
- iii. Glass: 1/2" or 3/8" thick clear, tempered with beveled edges and all exposed edges ground smooth and polished.
- iv. Glass infill shall be offset from post-to-post centerline by use of point supported disks and rods.
- v. Grip rail to be 1 5/8" Round or 1 9/16" square of gauge 14 with a #6 polish.

#### B. Finishes

- i. All stainless steel tubing to receive a #6 polish.

### 2.03 FASTENERS

- A. All mechanical fasteners used shall be manufactured from stainless steel.

### 2.04 FABRICATION

- A. Make exposed joints butt tight and flush.
- B. Interior sleeves shall be used for typical splices.
- C. Fasteners are allowed at splice connection.
- D. Verify dimensions on site prior to shop fabrication.
- E. Use epoxy glue for joiners and elbows.

## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

- A. Coordinate that blocking is in place for all mounting fasteners.
- B. Clean debris and dust from surfaces and embed holes thoroughly prior to installation.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving proper results given the substrate and project conditions.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's drawings and direction.
- B. Fit exposed connections accurately together to form tight joints except as necessary for expansion.
- C. Accurately set handrails in location, alignment, and elevation, measured from established lines and levels.
- D. Set posts plumb within a tolerance of 1/8 inch (3 mm).
- E. When fastening to in-place construction, provide anchorage devices and fittings to properly secure rail to in-place construction. Examples of such devices include threaded fittings (for concrete inserts), toggle bolts and through-bolts. Separate dissimilar materials with bushings, grommets or washers to prevent electrolytic corrosion.

### **3.03 PROTECTION**

- A. Upon delivery railing may have protective wrapping. At completion of railing installation, immediately remove any protective wrapping and clean all work for inspection and approval.
- B. After installation, General Contractor or Owner shall be responsible for protection of railings during the balance of construction.
- C. When cleaning stainless steel surfaces use plain water containing a mild soap or detergent. No abrasive agents or harsh chemicals shall be used