Inline Design

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MODULAR STAINLESS STEEL RAILING SYSTEM

PART 1 - GENERAL

REFERENCES

American National Standards Institute (ANSI)

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

American Society for Testing and Materials (ASTM)

- A555: General Requirements for Stainless Steel Wire and Wire Rods
- A666: Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar
- C1048: Heat-Treated Flat Glass – Hind HS, Kind FT Coated and Uncoated Glass
- E894: Anchorage of Permanent Metal Railing Systems and Rails for Buildings
- E935: Performance of Permanent Metal Railing Systems and Rails for Buildings
- E985: Permanent Metal Railing Systems and Rails for Buildings

Americans with Disabilities Act (ADA)

- Handrails Must Be At A Consistent Height, Between 34 To 38 Inches From The Walking Surface
- Handrails Must Have A Clearance Of 1-½ Inches Between The Gripping Surface And Adjacent Surfaces.
- The Gripping Surface Of A Handrail Hand Has A Perimeter Between 1 1/4 To 1 1/2 Inches, With Exceptions For Shapes That Provide An Equivalent Surface.

STRUCTURAL REQUIREMENTS

Handrails, wall rails, and guardrail systems must be capable of withstanding a minimum concentrated load of 200 pounds applied horizontally or vertically at any point on the top rail. The infill area of the guardrail system must also be able to withstand a horizontal concentrated load of 200 pounds applied to one square foot at any point. The load on the infill shall not act simultaneously with loads on the top rail. Handrails and guards must be designed to resist a load of 50 pounds per linear foot (0.73 kN/m), applied in any direction at the top, and transfer this load through the supports to the structure.

DELIVERY, STORAGE, AND HANDLING

Materials to be delivered to the job site in good condition and properly protected from damage. Store on-site in a manner that avoids damage and prevents bending. Materials must be kept in a clean, dry location, away from uncured concrete and masonry. Protective wrapping on the railings must remain in place during transportation until installation. Limit handling on-site to prevent damage to finishes.

PROJECT CONDITIONS

Field Measurements: Verify actual dimensions of existing construction by taking accurate field measurements prior to fabrication. Include recorded measurements on the final shop drawings. If field measurements cannot be taken without delaying fabrication, obtain written guaranteed dimensions from the contractor and proceed with fabrication to avoid delays. Coordinate the fabrication and delivery schedule of the handrails with the overall construction timeline to ensure timely installation.

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PART 2 - PRODUCTS

MANUFACTURER

Manufacturer: Inline Design

MATERIALS AND FINISHES

- **Stainless Steel Tubing**: 304 or 316 stainless steel, welded ornamental tubing, either 1-5/8” round or 1-9/16” square, gauge 12 with a #6 polish finish.
- **Fittings**: 304 or 316 stainless steel. Post-side glass clips will be used for glass support.
- **Glass**: 9/16”, 1/2” or 3/8” thick, clear, laminated or tempered glass with beveled edges. All exposed edges must be ground smooth and polished.
- **Cable:** 1/8” or 5/32” of Stainless Steel AISI 316 with 1x19 Configuration
- **Grip Rail**: 1-5/8” round or 1-9/16” square, gauge 12 stainless steel with a #6 polish finish.
- **Finish**: All stainless steel components shall be finished with a #6 polish.

FASTENERS

All mechanical fasteners shall be stainless steel.

FABRICATION

- Ensure all exposed joints are butt-tight and flush.
- Use interior sleeves for typical splices.
- Fasteners are acceptable at splice connections.
- Verify all dimensions on-site before shop fabrication.
- Use epoxy glue for joiners and elbows.

PART 3 - EXECUTION

PREPARATION

Ensure blocking is in place for all mounting fasteners. Clean debris and dust from surfaces and embed holes thoroughly before installation. Prepare surfaces according to the manufacturer's recommended methods for the substrate and project conditions.

INSTALLATION

- Install railings in accordance with the manufacturer's drawings and instructions.
- Accurately align exposed connections to form tight joints, allowing for expansion where necessary.
- Set handrails in proper location, alignment, and elevation, as measured from established lines and levels.
- Set posts plumb within a tolerance of 1/8 inch (3 mm).
- Provide anchorage devices such as threaded fittings (for concrete inserts), toggle bolts, or through-bolts when fastening to existing construction. Use bushings, grommets, or washers between dissimilar materials to prevent electrolytic corrosion.

PROTECTION

Upon delivery, railings may be wrapped for protection. Immediately remove any protective wrapping after installation and clean all surfaces for inspection and approval. The General Contractor or Owner is responsible for protecting the railings during the remainder of construction. For cleaning, use plain water with mild soap or detergent. Do not use abrasive agents or harsh chemicals.