

SECTION 05520

HANDRAILS AND RAILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Stair railings and guardrails.
- B. Balcony railings and guardrails.
- C. Steel pipe handrails, and fittings.

1.02 RELATED REQUIREMENTS

- A. Section 04810 - Unit Masonry Assemblies: Placement of anchors in masonry.
- B. Section 05510 - Metal Stairs: Handrails other than those specified in this section.

1.03 REFERENCE STANDARDS

- A. ASTM A 53/A 53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2007.
- B. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; 2000 (Reapproved 2006).
- C. ASTM E985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings; 2000 (Reapproved 2006).
- D. SSPC-Paint 15 - Steel Joist Shop Paint; The Society for Protective Coatings; 1999 (Ed. 2004).

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Handrails and Railings:
 - 1. P&P Artec; Product Modesto, with Horizontal Type Fill.
 - 2. Substitutions: See Section 01600 - Product Requirements.

2.02 RAILINGS - GENERAL REQUIREMENTS

- A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of ASTM E985 and applicable local code.
- B. Design railing assembly, wall rails, and attachments to resist lateral force of 75 lbs at any point without damage or permanent set. Test in accordance with ASTM E 935.
- C. Allow for expansion and contraction of members and building movement without damage to connections or members.
- D. Dimensions: See drawings for configurations and heights.
 - 1. Top Rails and Wall Rails: 1.66 inches diameter, round.
 - 2. Intermediate Rails: 1.66 inches diameter, round.
 - 3. Intermediate Rails: 5/8 inches round. (Modesto Horizontal Fill Rails).

- E. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
- F. Provide welding fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.

2.03 STEEL RAILING SYSTEM

- A. Steel Pipe: ASTM A 53/A 53M, Grade B Schedule 40, black finish.
- B. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.
- C. Rails and Posts: 1.5 inch diameter steel tubing; welded joints.
- D. Fittings: Elbows, wall brackets, escutcheons; machined steel. See drawings for areas to receive removable sections.

2.04 FABRICATION

- A. Accurately form components to suit specific project conditions and for proper connection to building structure.
- B. Fit and shop assemble components in largest practical sizes for delivery to site.
- C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.
- D. Welded Joints:
- E. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
- F. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- G. Accurately form components to suit specific project conditions and for proper connection to building structure.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.

3.03 INSTALLATION

- A. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- B. Anchor railings securely to structure.
- C. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

3.04 SCHEDULE

- A. Standard Steel Pipe Railings Plant Railings: Stair and Guard Rails @ mezzanines. Provide 42" h guard railing with two horizontals below the top rail and toe kick. Provide bolting flanges to bolt

to structure. Provide sections to be removable pipe railing section. See drawings. Painter shall field paint.

- B. Stainless Steel Office Stairs and Landings: P&P Artec Modesto, (Horizontal Type Fill). Provide stair railings both sides of stair case. Provide guard rails at landings and platforms. Provide cane detection railings under stair to satisfy the Illinois Accessibility Code and ADA requirements.

END OF SECTION