

SECTION 05 52 13
PIPE AND TUBE RAILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Post-mounted stair & ramp handrails.

1.02 RELATED REQUIREMENTS

- A. Section 061000 - Rough Carpentry.
- B. Section 062000 - Finish Carpentry: Wood guards.

1.03 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.
- C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- D. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; 2013, with Editorial Revision.
- E. ASTM E985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings; 2000 (Reapproved 2006).
- F. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).

1.04 SUBMITTALS

- A. See Section 013300 - Submittals, for submittals 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 brackets:
 - 1. The Wagner Companies: www.wagnercompanies.com.
 - 2. Or approved equal.

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. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 75 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935.
- C. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935.
- D. Allow for expansion and contraction of members and building movement without damage to connections or members.
- E. Dimensions: See drawings for configurations and heights.
 - 1. Rails: 1.66 inches outer diameter (Pipe 1 1/4 Std.), round.
- F. 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.

- G. Provide slip-on non-weld mechanical 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 A53/A53M, Grade B Schedule 80, galvanized finish.
- B. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.
- C. Exposed Fasteners: Flush countersunk screws or bolts; consistent with design of railing.
- D. Galvanizing: In accordance with requirements of ASTM A123/A123M.
 - 1. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic.

2.04 FABRICATION

- A. Field measure support conditions and dimensions prior to fabrication.
- B. Accurately form components to suit specific project conditions and for proper connection to building structure.
- C. Fit and shop assemble components in largest practical sizes for delivery to site.
- D. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.
- E. Welded Joints:
 - 1. Exterior Components: Continuously seal joined pieces by intermittent welds and plastic filler. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.
 - 2. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
 - 3. 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.
- F. Brackets: For each handrail, provide minimum of (2) Wagner 3419-NSH: Handrail Bracket, welded on, to be mounted onto stair 4x4 wood posts. Spacing to be 3' maximum between brackets.
- G. Return handrails to within 1/4" of supporting wood posts.

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 in accordance with manufacturer's instructions.
- B. Install components to follow rake of stairs and, at returns, plumb and level. Accurately fit components to be free from distortion or defects, with tight joints.
- C. Install railings in compliance with ADA Standards for accessible design at applicable locations.
- D. Anchor railings securely to structure.

3.04 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION