



COMMERCIAL PRODUCTS

SECTION 05520

TREX SIGNATURE® RAILING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Trex Signature Railings (Picket).

1.2 RELATED SECTIONS

- A. Section 05510 - Metal Stairs: Metal handrails other than those specified in this section.
- B. Section 05521 - Aluminum Handrails and Railings.
- C. Section 05522 - Glass Railings.
- D. Section 05710 - Decorative Metal Stairs.
- E. Section 05720 - Ornamental Handrails and Railings.

1.3 REFERENCES

- A. Aluminum Association (AA): AA DAF-45 Designation System for Aluminum Finishes.
- B. ASTM B 26/B 26M - Standard Specification for Aluminum-Alloy Sand Castings; 2005.
- C. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2004.
- D. ASTM B 210 - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes; 2004.
- E. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2005.
- F. ASTM B 247 - Standard Specification for Aluminum and Aluminum-Alloy Die Forgings, Hand Forgings, and Rolled Ring Forgings; 2000.
- G. ASTM B 429 - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube; 2002.

- H. ASTM C 1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink); 2002.
- I. ASTM E 488 - Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements; 1996.
- J. American Welding Society (AWS):
 - 1. ANSI/AWS D1.1/D1.1M Structural Welding Code - Steel.
- K. Americans with Disabilities Act (ADA).
- L. International Code Council (ICC): International Building Code.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Handrails and railings shall withstand structural loading as determined by allowable design working stresses of materials.
- B. Structural Performance: Provide handrails and railings capable of withstanding the following structural loads without exceeding allowable design working stress of materials for handrails, railings, anchors and connections:
 - 1. Top Rail of Guards: Shall withstand the following loads:
 - a. Concentrated load of 200 lbf (0.89kN) applied at any point and in any direction.
 - b. Uniform load of 50 lbf-ft. (0.07kN-m) applied horizontally
 - c. Concentrated and uniform loads above need not be assumed to act concurrently.
 - 2. Handrails Not Serving As Top Rails: Shall withstand the following loads:
 - a. Concentrated load of 200 lbf (0.89kN) applied at any point and in any direction
 - b. Uniform load of 50 lbf-ft. (0.07kN-m) applied in any direction
 - c. Concentrated and uniform loads above need not be assumed to act concurrently.
 - 3. Guards Infill Area: Shall withstand the following loads:
 - a. Concentrated horizontal load of 50 lbf (0.89 kN) applied to a 1sq. ft. at any point in system, including panels, intermediate rails, balusters, or other elements composing infill area. Loads need not be assumed to act concurrently, with loads on top rails in determining stress on guard.
- C. Thermal Movements: Design handrails and railings to allow for movements resulting from 120 degree F (49 C) changes in ambient and 180 degree F (82 C) surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttimes-sky heat loss.
- D. Corrosion Resistance: Separate incompatible materials to prevent galvanic corrosion.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Submit plan, section, elevation and perspective drawings as necessary to depict the proper configuration, assembly and installation and

termination of each product specified in this section.

- D. Verification Samples: For each finish product specified, two samples, representing actual product, color, and finish.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of five (5) years experience.
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.
- C. Store products indoors in temperature controlled facility.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY

- A. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Trex Commercial Products, which is located; at: 7008 Northland Dr. Suite 150 ; Brooklyn Park, MN 55428; Toll Free Tel: 877-215-7245
Email: info@trexcommercial.com; Web: www.trexcommercial.com
- B. Substitutions: Not permitted.

2.2 PICKET RAILINGS

- A. Trex Signature Series Picket Railing: Picket railing designed and constructed using vertical picket panels and tubular posts.
 - 1. Materials: Pre-Assembled Aluminum

2. Components:
 - a. Rails: 1 3/4" x 1 1/2" extruded upper rail, 1 3/4" x 1 1/4" extruded lower rail
 - b. Pickets: 3/4" x 3/4" extruded square tubing
 - c. Brackets: Formed from die-cast zinc with powder coat factory finish
3. Fasteners: All nuts, bolts, screws and washers shall be stainless steel
4. Finish: Powder coat factory finish
 - a. Color: Matte Black
5. Guardrail Height: 42 inches (1067mm).
6. Attachment:
 - a. Concrete: Epoxy or mechanical post-installed anchors shall be stainless steel
 - b. Wood/Composite: Lag screw or through bolts shall be stainless steel

2.3 FABRICATION

- A. Posts to be pre-fabricated weldments with post and base plate to withstand the loads required
- B. Panels to be pre-assembled and modified to width on site
- C. Mechanical Connections: Fabricate handrails and railings by connecting members with railing manufacturer's standard mechanical fasteners and fittings, unless otherwise indicated. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
- D. Brackets, Flanges, Fittings and Anchors: Provide manufacturer's standard wall brackets, flanges, miscellaneous fittings and anchors to connect handrail and railing members to other construction.
- E. Provide inserts and other anchorage devices to connect handrails and railings to concrete or masonry. Fabricate anchorage devices capable of withstanding loads imposed by handrails and railings. Coordinate anchorage devices with supporting structure.
- F. Provide mounted handrails wall returns at wall ends unless otherwise indicated. Close ends of returns, unless clearance between end of railing and wall is 1/4 inch (6mm) or less.

2.4 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for applying and designating finishes.
- B. Appearance of Finished Work:
 1. Variations in appearance of abutting or adjacent units are acceptable if they are within one-half of the range of approved samples. Noticeable variations in the same unit are not acceptable.
 2. Variations in appearance of other components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of

unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION