



## COMMERCIAL PRODUCTS

### SECTION 05 73 00 DECORATIVE METAL RAILINGS **Architectural Railing System - Dot**

#### PART 1 - GENERAL

##### 1.1 SUMMARY

A. Section Includes:

1. Dot: Stainless steel railing system with glass.

B. Related Sections:

1. Section 05710 - Decorative Metal Stairs.
2. Section 05521 - Aluminum Handrails and Railings.
3. Section 05522 - Glass Railings

##### 1.2 REFERENCES

- A. American National Standards Institute (ANSI) Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.
- B. ASTM International (ASTM)
1. A240/A240M – Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
  2. A554 - Standard Specification for Welded Stainless Steel Mechanical Tubing.
  3. C1048 - Standard Specification for Heat-Treated Flat Glass-Kind HS, Kind FT, Coated and Uncoated Glass.
  4. E985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings.
  5. EE2258 – Standard Specification for the Performance in Permanent Glass Railings, Guards and Balustrades.
- C. National Association of Architectural Metal Manufacturers (NAAMM) AMP 503 - Finishes for Stainless Steel.
- D. ASTM C 1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink); 2002.

- E. ASTM E 488 - Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements; 1996.
- F. American Welding Society (AWS):
- G. ANSI/AWS D1.1/D1.1M Structural Welding Code - Steel.
- H. Americans with Disabilities Act (ADA).
- I. Americans with Disabilities Act Accessibility Guidelines (ADAAG).
- J. International Code Council (ICC): International Building Code.

### 1.3 SYSTEM DESCRIPTION

- A. General: Handrails and railings shall withstand structural loading as determined by allowable design working stresses of materials and conform to 2009 International Building Code (IBC).
- 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 (0.899kN) applied at any point and in any direction.
    - b. Uniform load of 50 lbf-ft. (0.07kN-m) applied horizontally and concurrently with uniform load of 100 lbf-ft. (0.14kN-m) applied vertically downward.
    - c. Concentrated and uniform loads above need not to 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 200 lbf (0.89kN) applied to a 1sq. ft. at any point in system, including panels, intermediate rails, balusters, or other elements composing infill area. Loads need not to 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 nighttime-sky heat loss.
- D. Corrosion Resistance: Separate incompatible materials to prevent galvanic corrosion.

## 1.4 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 and typical section detail 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.

## 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications. Trex Commercial Products, 7008 Northland Drive North, Suite 150; Minneapolis, MN 55428; Toll Free Tel: 877-215-RAIL(7245); Email: [info@trexcommercial.com](mailto:info@trexcommercial.com).
- B. 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.
- C. Railing System:
  - 1. System components: Pre-engineered, designed by licensed Professional Structural Engineer.
  - 2. Attachments to building structure: Designed by Professional Structural Engineer licensed in State in which project is located.
- D. Perform Work in accordance with ASTM E985.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Trex Commercial Products, 7008 Northland Drive North, Suite 150; Minneapolis, MN 55428; Toll Free Tel: 877-215-RAIL(7245); Email: [info@trexcommercial.com](mailto:info@trexcommercial.com).
- B. Substitutions: Not permitted.

## 2.2 MATERIALS

### A. Stainless Steel:

1. Shapes: ASTM A240/A240M, Type 316.
2. Tube: ASTM A554, Type 316.

### B. Glass Infill Panels:

1. Type: Fully Tempered.
2. Type: Laminated.
3. Thickness: [1/4] [3/8] [1/2] [3/4] inch.
4. Edges polished.

### C. Hardware

1. All fasteners substantially concealed.
2. Stainless steel hardware and fasteners.

## 2.3 ACCESSORIES

- A. Anchors: Type best suited to application, stainless steel.

## 2.4 FABRICATION

### A. Components:

1. Posts: 2 inch x 7/8 inch with 10 degree taper to 1/2 inch trapezoidal type 316 stainless steel bar.
2. Top rail: Type 316 stainless steel diameter round tubing.
  - a. Diameter: [1.5] [2] inch
  - b. Height: 42 inch
3. Handrails: Type 316 stainless steel diameter round tubing.
  - a. Diameter: [1.5] [2] inch
  - b. Height: 36 inch
4. Handrail/top rail mountings: Type 316 stainless steel.
  - a. Dot Series, disc type bracket

5. Glass mountings: Type 316 stainless steel.

a. Dot Series, disc type bracket

6. Mounting method:

a. Surface plate, rectangular

b. Fascia plate, rectangular

c. Fascia plate, oval

d. Fascia discs, node

e. Core

B. Fabricate railings in accordance with approved Shop Drawings.

C. Fabricate railings with joints tightly fitted and secured. Furnish fittings to accommodate site assembly and installation.

D. Supply components required for anchorage of railings. Fabricate anchors and related components of same material and finish as railing.

E. Conceal fastenings.

F. Accommodate for expansion and contraction of members and building movement without damage to connections or members.

## 2.5 FINISHES

A. Stainless Steel: NAAMM AMP 503; [No. 4 Brushed] [No. 6 Satin].

## PART 3 - EXECUTION

### 3.1 INSTALLATION

A. Install railing system in accordance with approved Shop Drawings.

B. Install components plumb and level, accurately fitted, free from distortion and defects.

C. Provide anchors for connecting railings to supporting construction.

D. Fit joints tight, flush, and hairline.

END OF SECTION