

## SECTION 05 7310

### FSC FRAMELESS WINDSCREEN / RAILING SYSTEM TEMPERED GLASS ASSEMBLIES

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDES

- A. Frameless Glass Windscreen / Railing with Bottom Clamps (Spiggots).

##### 1.2 RELATED SECTIONS

- A. Section 05500 - Metal Fabrications
- B. Section 05720 - Ornamental Handrails & Railings
- C. Section 08800 – Glazing

##### 1.3 REFERENCES

- A. ASTM C 1048 – Standard Specification for Heat Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass
- B. NAAMM Metal Finishes Manual; National Association of Architectural Metal Manufacturers
- C. AAMA CW-12-84 Structural Properties of Glass
- D. ASTM E 2358-04 Standard specification for the Performance of Glass in Permanent Glass Railing Systems, Guards and Balustrades.

##### 1.4 SYSTEM DESCRIPTION

- A. Performance Requirements for Windscreen Assembly:  
The frameless windscreen is intended for use in locations where fall protection is not required. The maximum panel length should not exceed 5 feet (1.5 m). Allowable loading for given panel height shall be in accordance with manufacturer's engineering reports. The clamps (spiggots) should be installed at 1/4 the panel length from each end. The windscreen is designed for the following loading conditions:

50 plf load along glass at no higher than 48" (1219 mm) above finish floor horizontal or windload as shown in manufacturer's engineering reports for specified panel size.

**NOTE:** The frameless windscreen clamps may be used for fall protection in single family residential occupancies when limited to 42" (1067 mm) total height (38" [965 mm] glass height), maximum panel length of 5 feet (1.5 m) and installed with a top rail capable of spanning 10 feet (3 m). For these conditions the system will support the above stated loads or a 200 lb concentrated load on the top rail, vertically or horizontally with a factor of safety of 4.0 against glass failure. For these conditions the railing meets all requirements of the 2006 and 2009 International Building Code and 2007 and 2010 California Building Code and 2010 California Residential Code.

##### 1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.

- B. Product Data: Submit Manufacturer's technical product data for railing components and accessories.
- C. Shop Drawings: Dimensioned drawings of railing assemblies indicating the following:
  - 1. Elevations; include joint locations, transitions, and terminations.
  - 2. Glass light fabrication plans with dimensions, holes and finishes.
  - 3. Point support layout, details and attachment to support structure.
  - 4. Manufacturer's installation and maintenance instructions.
- D. Engineering Design Report: Calculations showing point support reactions and glass stresses.
- E. Samples of manufacturer's finishes (As selected by Architect.)

## 1.6 QUALITY ASSURANCE

- A. Components and installation are to be in accordance with state and local building codes.
- B. All components and fittings are furnished by the same manufacturer.
- C. All glass to be fabricated by an approved temperer to a tolerance of 1/32" for the light size and hole locations.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials properly protected against damage to finished surfaces during transit.
- B. Inspect materials upon delivery for damage. Unless minor defects can be made to meet the Architect's specifications and satisfaction, damaged parts shall be removed and replaced.
- C. Store materials at building site under cover in a dry location.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: **C.R. Laurence Co., Inc. (CRL)**  
**Tel: (800) 421-6144 Fax: (800) 587-7501**  
**Email: [railings@crlaurence.com](mailto:railings@crlaurence.com)**  
**[www.crlaurence.com](http://www.crlaurence.com)**
- B. Manufacturers of equivalent products will be considered for substitution in accordance with provisions of Section 01630 - Product Substitution Procedures.

### 2.2 MATERIALS

- A. Basis of Design is FSC Frameless Glass Clamp Railing System.

- B. Stainless Steel Components: Conforming to ASCE 8-02, Specification for the Design of Cold-Formed Stainless Steel Structural Members.
- C. Glass Components: Conforming to GANA Glazing Manual, Tempered Glass Engineering Standards Manual and Laminated Glazing Reference Manual.

## 2.3 COMPONENTS

- A. Glazing: Fully tempered conforming to the specifications of ANSI Z97.1, ASTM C 1048-97b and CPSC 16CFR 1201. In accordance with UBC 2406.6 or IBC 2407.1.1 glass used as structural balustrade panels shall be designed for a safety factor of 4.0. This is applicable only to structural panels (glass provides support to railing). Other locations the glass stress may increased by 33% (SF=3.0) for glass infill panels. Glass not used in guardrails may be designed for a safety factor of 2.5 in accordance with ASTM E1300-00.
  - 1. Thickness: 1/2 inch (12 mm). (Architect to specify.)
  - 2. Color: Clear, or tint. (Architect to specify.)
  - 3. Architect to specify edge type on exposed glass edges. (See section 008800.)
- B. Internal Handrail Cap Connection Sleeves: Metal tube, material compatible with handrail cap material.
- C. Cap Railing:
  - 1. Profile: **Part # GR15**, round 1-1/2 inches (38.1 mm) diameter.
  - 2. Profile: **Part # GRS15**, square 1-1/2 inches (38.1 mm).
  - 3. Profile: **Part # GR19**, round 1-7/8 inches (48.3 mm) diameter (aluminum only).
  - 4. Profile: **Part # GR20**, round 2 inches (50.8 mm) diameter.
  - 5. Profile: **Part # GRS20**, square 2 inches (50.8 mm).
  - 6. Profile: **Part # GR25**, round 2-1/2 inches (63.5 mm) diameter.
  - 7. Profile: **Part # GRS25**, square 2-1/2 inches (63.5 mm).
  - 8. Profile: **Part # GR30**, round 3 inches (76.2 mm) diameter.
  - 9. Profile: **Part # GR35**, round 3-1/2 inches (88.9 mm) diameter.
  - 10. Profile: **Part # GR40**, round 4 inches (101.6 mm) diameter.
  - 11. Profile: **Part # GR0V4**, oval 4 inches x 2-1/2 inches (101.6 mm x 63.5 mm) (aluminum only)
  - 12. Material: \_\_\_\_\_.
  - 13. Finish: (Architect to specify.)
- D. Through Glass Handrail Brackets:
  - 1. Material: Aluminum
  - 2. Material: Stainless Steel
  - 3. Material: Brass
  - 4. Fabrication: Machined
  - 5. Fabrication: Cast
  - 6. Finish: Match handrail cap finish
- E. Handrail Tubing:
  - 1. Profile: **Part # HR15**, round 1-1/2 inches (38.1 mm) diameter.
  - 2. Profile: **Part # HRS15**, square 1-1/2 inches (38.1 mm).
  - 3. Profile: **Part # HR19**, round 1-7/8 inches (48.3 mm) diameter.
  - 4. Profile: **Part # HR20**, round 2 inches (50.8 mm) diameter.
  - 5. Profile: **Part # PR1540**, round 1.9 inches (48.3 mm) 1-1/2 inch schedule 40.
  - 6. Profile: **Part # PR12540**, round 1.66 inches (42.2 mm) 1-1/4 inch schedule 40.
  - 7. Material: \_\_\_\_\_.
  - 8. Finish: (Architect to specify).

- F. Fasteners: Types and sizes indicated in shop drawings and engineering report.

## **2.4 FABRICATION**

- A. Fabricate handrail assembly components to lengths and configurations complying with shop drawings.
- B. Machine joint edges smooth and plane to produce hairline seams when site assembled; supply concealed sleeve connectors for joints.
- C. Isolate dissimilar metals to prevent electrolytic action by applying primer to concealed surfaces of metal components.

## **PART 3 - INSTALLATION**

### **3.1 GENERAL**

- A. Install in accordance with manufacturer's recommended installation instructions and approved shop drawings. All bushings, spacers, bearing pads and other components shown in the shop drawings must be properly installed.

### **3.2 CLEANING**

- A. Clean glazing surfaces after installation, complying with requirements contained in the manufacturer's instructions. Remove excess glazing sealant compounds, dirt or other substances.
- B. Remove protective films from metal surfaces.
- C. Clean railing surfaces with clean water and mild detergent. Do not use abrasive chemicals, detergents, or other implements that may mar or gouge the material.

### **3.3 PROTECTION**

- A. Institute protective measures required throughout the remainder of the construction period to ensure that all the materials do not incur any damage or deterioration.
- B. Repair components damaged by subsequent construction activities in accordance with manufacturer's recommendations; replace damaged components that cannot be repaired to Architect's acceptance.

END OF SECTION