

## SECTION 05 7310

## TAPER-LOC® DRY GLAZE GLASS RAILING SYSTEMS

PART 1 GENERAL

## 1.1 SECTION INCLUDES

A. Monolithic Tempered Glass Dry Glazed Railing Assemblies.

## 1.2 RELATED SECTIONS

- A. Section 05 5000 - Metal Fabrications
- B. Section 05 7000 - Ornamental Handrails & Railings
- C. Section 05 7300 – Handrails and Railings
- D. Section 08 8000 - Glazing

## 1.3 REFERENCES

- A. ESR-3269 ICC-ES Evaluation Report, International Code Council Standards for Glass Balustrade Guard Rail Applications
- B. ASTM C 1048 – Standard Specification for Heat Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass
- C. NAAMM Metal Finishes Manual; national Association of Architectural Metal Manufacturers

## 1.4 SYSTEM DESCRIPTION

- A. Performance Requirements for Handrail Assembly:
  - 1. Support distributed load of 50 pounds per linear foot (0.73kN/M), applied horizontally at right angles in any direction to the handrail.
  - 2. Support concentrated horizontal load of 200 pounds (0.89kN), applied in any direction at any point along handrail system.
  - 3. 50 lbs (0.22kN) on 1 sf (0.093m<sup>2</sup>) perpendicular to guard at any location
  - 4. Wind loads 25 psf or as otherwise specified.
  - 5. Distributed loads and concentrated loads not to be applied simultaneously.

## 1.5 SUBMITTALS

- A. Submit under provisions of Section 01 3300.
- 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. Manufacturer's installation and maintenance instructions.

D. 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.

## 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 should be removed and replaced.
- C. Store materials at building site under cover in 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 01 2500 - Product Substitution Procedures.

### 2.2 MATERIALS

- A. Aluminum Components: Conforming to ASTM B 221/ASTM B221M, Alloy 6063- T52
- B. Stainless Steel Components: Conforming to ASTM A 666, Type 304
- C. Brass Components: Conforming to ASTM B 248, No. 260, Yellow Brass

### 2.3 COMPONENTS

- A. Glazing: Fully tempered ASTM C 1048 Kind FT, Quality q3. As specified in Section

## 08 8000

1. Monolithic Tempered Thickness: 1/2 inch (12 mm). (Architect to specify)
  2. Monolithic Tempered Thickness: 5/8 inch (15 mm). (Architect to specify)
  3. Monolithic Tempered Thickness: 3/4 inch (19 mm). (Architect to specify)
  4. Color: Clear, or tint. (Architect to specify)
  5. Architect to specify edge type on exposed glass edges. (See section 08 8000.)
- B. Internal Handrail Cap Connection Sleeves: Metal tube, material compatible with handrail cap material.
- C. TAPER-LOC® Dry Glazing System: Each TAPER-LOC® Set consists of two Tapers, and one L-Setting Block. Designed for B5A, B5S, B5T, B6S, and B7S Shoe Bases. Patent Pending.
- D. Shoe Base: (Architect to specify)
1. Profile: **CRL Part # B5A**; 2-1/2 inches (63.5 mm) wide by 4-1/4 inches (106.4 mm) high rectangular cross-section. Designed to work with CRL's TAPER-LOC® Dry Glazed System with 1/2" (12 mm) monolithic tempered glass.
  2. Profile: **CRL Part # B5S**; 2-1/2 inches (63.5 mm) wide by 4-1/8 inches (104.8 mm) high rectangular cross-section. Designed to work with CRL's TAPER-LOC® Dry Glazed System with 1/2" to 5/8" (12 to 16 mm) monolithic tempered glass.
  3. Profile: **CRL Part # B5T**; 2-1/2 inches (63.5 mm) wide by 4-1/8 inches (104.8 mm) high tapered cross-section. Designed to work with CRL's TAPER-LOC® Dry Glazed System with 1/2" to 5/8" (12 to 16 mm) monolithic tempered glass.
  4. Profile: **CRL Part # B6S**; 2-5/8 inches (63.5 mm) wide by 4-1/8 inches (104.8 mm) high rectangular cross-section. Designed to work with CRL's TAPER-LOC® Dry Glazed System with (15 mm) monolithic tempered glass.
  5. Profile: **CRL Part # B7S**; 2-3/4 inches (69.8 mm) wide by 4-1/8 inches (104.7 mm) high rectangular cross-section. Designed to work with CRL's TAPER-LOC® Dry Glazed System with 3/4" (19 mm) monolithic tempered glass.
  6. Material: Aluminum 6063-T52
  7. Finish: (Architect to specify.)
    - a. Base Cladding: Sheet metal cladding added to exposed shoe base sections. Adhere with double-sided tape and/or silicone adhesive. Provide end caps where ends of shoe base sections are exposed.
    - b. 304 Brushed Stainless (Architect to specify)
    - c. 304 Polished Stainless (Architect to specify)
    - d. C260 Polished Brass (Architect to specify)
    - e. C260 Satin Brass (Architect to specify)
    - f. 5052 Satin Anodized (Architect to specify)
    - g. 5052 Dark Bronze Anodized (Architect to specify)
- E. Metal Cap Railing: (Architect to specify)
1. Profile: **Part # GRL10**, low profile 11 gauge u-channel 1-5/16 inches (33.3 mm) high.

2. Profile: **Part # GRLC10**, crisp corner low profile 11 gauge u-channel 1-5/16 inches (33.3 mm) high.
3. Profile: **Part # GRUC**, u-channel 1-1/2 inches (38.1 mm).
4. Profile: **Part # GRCF**, crisp corner u-channel 1-1/2 inches (38.1 mm).
5. Profile: **Part # GRCR**, crisp corner radius top u-channel 1-1/2 inches (38.1 mm).
6. Profile: **Part # GR15**, round 1-1/2 inches (38.1 mm) diameter.
7. Profile: **Part # GRS15**, square 1-1/2 inches (38.1 mm).
8. Profile: **Part # GRSC15**, crisp corner square 1-1/2 inches (38.1 mm).
9. Profile: **Part # GR16**, round 1.66 inches (42.2 mm) diameter.
10. Profile: **Part # GR19**, round 1-7/8 inches (48.3 mm) diameter (aluminum only)
11. Profile: **Part # GR20**, round 2 inches (50.8 mm) diameter.
12. Profile: **Part # 337**, CRL-Blumcraft round 2 inches (50.8 mm) diameter.
13. Profile: **Part # GRS20**, square 2 inches (50.8 mm).
14. Profile: **Part # GRSC20**, crisp corner square 2 inches (50.8 mm).
15. Profile: **Part # GR25**, round 2-1/2 inches (63.5 mm) diameter.
16. Profile: **Part # 338**, CRL-Blumcraft round 2-1/2 inches (63.5 mm) diameter.
17. Profile: **Part # GRS25**, square 2-1/2 inches (63.5 mm).
18. Profile: **Part # GR30**, round 3 inches (76.2 mm) diameter.
19. Profile: **Part # GR35**, round 3-1/2 inches (88.9 mm) diameter.
20. Profile: **Part # GR40**, round 4 inches (101.6 mm) diameter.
21. Profile: **Part # GR0V4**, oval 4 inches x 2-1/2 inches (101.6 mm x 63.5 mm) (aluminum only)
22. Profile: **Part # 324**, CRL-Blumcraft square 1-3/8 inches (35 mm).
23. Profile: **Part # 339**, CRL-Blumcraft rectangular 1-3/4 inches x 3-1/2 inches (44.4 x 90 mm).
24. Profile: **Part # 376**, CRL-Blumcraft elliptical 2-11/16 inches (68.2 mm).
25. Profile: **Part # 398**, CRL-Blumcraft rectangular 4 inches (102 mm).
26. Profile: **Part # 636**, CRL-Blumcraft rectangular 1-3/4 inches x 4 inches (44.5 x 102 mm).
27. Profile: **Part # 637**, CRL-Blumcraft rectangular 1-3/4 inches x 5 inches (44.5 x 127 mm).
28. Profile: **Part # 638**, CRL-Blumcraft rectangular 1-3/4 inches x 6 inches (44.5 x 152 mm).
29. Material: \_\_\_\_\_.
30. Finish: (Architect to specify.)

F. Wood Cap Railing: (Architect to specify)

1. Profile: **Part # WCR20**, CRL round 2 inches (50.8 mm) diameter.
2. Profile: **Part # 346**, CRL-Blumcraft round 2 inches (50.8 mm) diameter.
3. Profile: **Part # 347**, CRL-Blumcraft round 2-1/2 inches (63.5 mm) diameter.
4. Profile: **Part # WCR25**, CRL round 2-1/2 inches (63.5 mm) diameter.
5. Profile: **Part # 397**, CRL-Blumcraft 1-3/4 inches x 2-1/8 inches (44.5 x 54 mm)
6. Profile: **Part # 372**, CRL-Blumcraft 2 inches x 3-3/4 inches (51 x 95.3 mm)
7. Profile: **Part # 373**, CRL-Blumcraft 4-1/2 inches x 1-5/8 inches (114.3 x 41.3 mm)
8. Profile: **Part # 631**, CRL-Blumcraft 2-1/2 inches x 4 inches (63.5 x 102 mm)

9. Profile: **Part # 632**, CRL-Blumcraft 2-1/2 inches x 6 inches (63.5 x 152 mm)
10. Profile: **Part # 633**, CRL-Blumcraft 2-1/2 inches x 8 inches (63.5 x 203 mm)
11. Profile: **Part # WCR30**, CRL round 3 inches (76.2 mm) diameter.
12. Wood Type: \_\_\_\_\_.

G. Handrail Brackets: (Architect to specify)

1. Material: Aluminum
2. Material: Stainless Steel
3. Material: Brass
4. Fabrication: Machined
5. Fabrication: Cast
6. Finish: Match handrail cap finish

H. Metal Handrail Tubing: (Architect to specify)

1. Profile: **Part # HR15**, round 1-1/2 inches (38.1 mm) diameter.
2. Profile: **Part # HRH15**, heavy-wall round 1-1/2 inches (38.1 mm) diameter
3. Profile: **Part # 583**, CRL-Blumcraft round 1-1/2 inches (38.1 mm) diameter.
4. Profile: **Part # HRS15**, square 1-1/2 inches (38.1 mm).
5. Profile: **Part # HR19**, round 1-7/8 inches (48.3 mm) diameter.
6. Profile: **Part # HR20**, round 2 inches (50.8 mm) diameter.
7. Profile: **Part # 537**, round 2 inches (50.8 mm) diameter.
8. Profile: **Part # 576**, elliptical 2 inches x 1-3/8 inches (50.8 x 35 mm).
9. Profile: **Part # PR15**, round 1.9 inches (48.3 mm) 1-1/2 inch schedule 40.
10. Profile: **Part # PR12**, round 1.66 inches (42.2 mm) 1-1/4 inch schedule 40.
11. Profile: **Part # PR2**, square 2 inches (50.8 mm).
12. Material: \_\_\_\_\_.
13. Finish: (Architect to specify).

I. Wood Handrail: (Architect to specify)

1. Profile: **Part # 597**, CRL-Blumcraft 1-3/4 inches x 2-3/4 inches (44.5 x 69.9 mm)
2. Profile: **Part # 580**, CRL-Blumcraft round 2 inches (50.8 mm) diameter.
3. Profile: **Part # 572**, CRL-Blumcraft 2 inches x 4-1/2 inches (50.8 x 114.3 mm)
4. Profile: **Part # WD15**, round 1-1/2 inches (38.1 mm) diameter
5. Profile: **Part # WD20**, round 2 inches (50.8 mm) diameter
6. Wood Type: \_\_\_\_\_.

J. Fasteners: Types and sizes indicated in shop drawings.

- A.** For concrete attachment, hole size in base shoe is to be 9/16" (14.3 mm), counter bore 7/8" (22.2 mm) x depth 1/2" (12.7 mm), center-to-center spacing of holes is 12" (304.8mm). Use Hilti HSL3 Expansion Anchors 3-3/4" (95 mm) long **CRL Part # EBA334**, Washer is included.
- B.** For steel attachment, hole size in base shoe is to be 9/16" (14.3 mm), counter bore 7/8" (22.2 mm) x depth 1/2" (12.7 mm), center-to-center spacing of holes is 12" (304.8mm). Use 1/2" – 13 x 1 stainless steel socket head cap screw **CRL Part # SHCS12X1**.

- K. Sill Angles for Tempered Glass Railing Assemblies: Steel angle profiles conforming to ASTM A 36, with anchoring devices, sizes indicated in shop drawing of section 05 5000, drilled and tapped for fastener types, sizes, and spacing indicated.

## 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

- A. Install handrails in accordance with manufacturer's recommended installation instructions and approved shop drawings.

### 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