



SECTION 08 35 13.13  
ALUMINUM BI-FOLD DOORS

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Aluminum-framed bi-fold doors.

1.2 RELATED SECTIONS

- A. Section 05 52 17 - Roof Fall Protection.
- B. Section 08 41 13 - Aluminum-Framed Entrances and Storefronts.
- C. Section 08 43 26 - All-Glass Storefronts.
- D. Section 08 43 33 - Folding Glass Wall System.
- E. Section 08 44 13 - Glazed Aluminum Curtain Walls.

1.3 REFERENCES

- A. American Architectural Manufacturers Association (AAMA):
  - 1. AAMA/NWWDA 101/I.S. 2-97 - Voluntary Specification, Performance Requirements and Test Procedures for Air Leakage Resistance, Water Penetration Resistance, Structural Loading, Forced Entry Resistance.
  - 2. AAMA 1304 - Voluntary Specification for Forced-Entry Resistance of Side-Hinged Door Systems.
  - 3. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- B. ASTM International (ASTM):
  - 1. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
  - 2. ASTM E 283 - Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences across the Specimen.
  - 3. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
  - 4. ASTM E 331 - Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
  - 5. ASTM E 547 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference
  - 6. ASTM E 1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.

7. ASTM E 1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
  8. ASTM E 2068 - Standard Test Method for Determination of Operating Force of Sliding Windows and Doors.
  9. ASTM F 842 - Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact.
- C. National Fenestration Rating Council (NFRC):
1. NFRC-100 - Procedure for Determining Fenestration Product U-factors.
  2. NFRC-200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.

#### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- 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: Provide configuration lay-out and details for installation, maintenance and operation.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
- B. Installer Qualifications: Minimum 2 year experience installing similar products.
- 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 is approved by Architect.
  3. Refinish mock-up area as required to produce acceptable work.

#### 1.6 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

#### 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 recommended limits.

## 1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: PRL Glass Systems, Inc., which is located at: 13644 Nelson Ave.; City of Industry, CA 91746; Toll Free Tel: 800-433-7044; Fax: 626-968-9256; Email:[request info \(info@prlglass.com\)](mailto:requestinfo@prlglass.com); Web:<https://prlglass.com>
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

### 2.2 CONFIGURATION

- A. Product: Accordion Bifold System PRL Glass Systems, Inc.
- B. Bifold Configuration: As indicated or required by drawings.
  - 1. Maximum Single Direction Design:
    - a. Maximum Panel Weight: 220 lbs (100 kg) each panel.
    - b. Minimum Panel Width: 24 inches (610 mm).
    - c. Maximum Panel Width: 42 inches (1067 mm).
    - d. Maximum Panel Height: 120 inches (3048 mm).
    - e. Door Thickness: 2-1/2 inches (64 mm).
    - f. Maximum Number of Doors: 8 each way (16 panels, 45 feet (13716 mm) total)
- C. Design:
  - 1. 3-1/2 inches (89 mm) top and bottom rail.
  - 2. 3/4 inch (19 mm) "H" floor guide.
  - 3. Integral weather seal interlock.
- D. Performance:
  - 1. Rating: SP-PG45 with test sample of 7 feet - 11 inches x 6 feet - 11 inches (2413 mm x 2108 mm) test size.
  - 2. Design Pressure: +/- 45.11 psf (+/-2160 Pa).
  - 3. Operating Force per ASTM E 2068:
    - a. Initiate motion: 46.7 N (10.5 lbf).
    - b. Maintain Motion: 8.9 N (2.0 lbf).
    - c. Force to latch: 71.2 N (16.0 lbf).
    - d. Locks: 11.1 N (2.5 lbf).
  - 4. Air Infiltration at 1.57 psf per ASTM E 283: 0.09 cfm/sf(2) (0.45 l/s/m(2)).
  - 5. Air Infiltration at 6.27 psf per ASTM E 283: 0.21 cfm/sf(2) (1.05 l/s/m(2)).
  - 6. Water Resistance at 6.89 psf (330 Pa) per ASTM E 547 and ASTM E 331: Pass - no leakage.
  - 7. Uniform Load Structural per ASTM E 330 taken at lock stile:
    - a. +3240 Pa (+67.67 psf): 0.3 mm (0.01 inch).
    - b. -3240 Pa (-67.67 psf): < 0.3 mm (< 0.01 inch).
  - 8. Forced Entry Resistance per ASTM F 842, Type A- Grade 10: Pass No entry.
  - 9. Forced Entry Resistance per AAMA 1304: Pass No entry.
- E. Missile/Wind Zone Compliance Testing:

1. Tested samples met the performance standards ASTM E1886 and ASTM E1996 for Missile Level D and Wind Zone 2. Refer to manufacturer provided test results for test size, construction and glazing applied.

## 2.3 FABRICATION

- A. Extrusions: Aluminum 6063-T5.
- B. Hardware:
  1. Stainless steel components.
  2. Lever Lock Sets: F-1 Set 316 Stainless Steel.
  3. Lever Lock Sets: F-2 Set Powder Coat over Brass.
  4. Multi-point locks, faceplate, latch and hooks.
- C. Finish:
  1. Clear anodized finishes Class 1.
  2. Bronze anodized finishes Class 1.
  3. Standard mill finish.
  4. Powder coat white finish.
  5. Wood grain finish. Refer to Drawings.
  6. Custom finish. Refer to drawings.

## 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