

## SECTION 08 4236

### ALL GLASS BALANCED DOOR ENTRANCES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Balanced door and frame assemblies.
- B. Adjacent sidelights/transoms.

##### 1.02 RELATED REQUIREMENTS

- A. Section 07 9005 -Joint Sealers: Perimeter sealant and back-up materials.
- B. Section 08 4229 -Automatic Entrances: Other than balanced doors.
- C. Section 08 7100 -Door Hardware: Hardware items other than specified in this section.
- D. Section 08 8000 -Glazing: Glass and glazing accessories.

##### 1.03 REFERENCE STANDARDS

- A. AAMA CW-10 -Care and Handling of Architectural Aluminum From Shop to Site; American Architectural Manufacturers Association; 2012.
- B. AAMA 611 -Voluntary Specification for Anodized Architectural Aluminum; American Architectural Manufacturers Association; 2012.
- C. AAMA 612 -Voluntary Specification, Performance Requirements and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Organic Coatings on Architectural Aluminum; 2002.
- D. AAMA 2603 -Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels; 2002.
- E. AAMA 2604 -Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels; 2010.
- F. AAMA 2605 -Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2011.
- G. ASTM B221 -Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2012.
- H. ASTM B221M -Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2012.
- I. BHMA A156.18 -American National Standard for Materials and Finishes; Builders Hardware Manufacturers Association, Inc.; 2012 (ANSI/BHMA A156.18).
- J. SSPC-Paint 20 -Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings; 2002 (Ed. 2004).
- K. SSPC-Paint 25 -Zinc Oxide, Alkyd, Linseed Oil Primer for Use Over Hand Cleaned Steel, Type I and Type II; Society for Protective Coatings; 1997 (Ed. 2004).

##### 1.04 SUBMITTALS

- A. See Section 01 3000 -Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related Work, expansion and contraction joint location and details, and field welding required.
- C. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.
- D. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing balanced doors with minimum three years of documented experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to metal when exposed to sunlight or weather.

**1.07 FIELD CONDITIONS**

- A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C). Maintain this minimum temperature during and 48 hours after installation.

**1.08 WARRANTY**

- A. See Section 01 7800 -Closeout Submittals, for additional warranty requirements.
- B. Provide door manufacturer's warranty on balanced door mechanisms for ten years after Date of Substantial Completion.

**PART 2 PRODUCTS****2.01 MANUFACTURERS**

- A. Balanced Door Entrances:
  - 1. C.R. Laurence Co., Inc; U.S. Aluminum Balancer Series All Glass Balanced Doors: [www.crl-arch.com](http://www.crl-arch.com).

**2.02 BALANCED DOORS AND FRAMES**

- A. Doors: All Glass Balanced Doors:
  - 1. Heavy-duty 2 inches (51 mm) doors, 0.188 inch (5mm) wall thickness; glazing pockets accepting 1/2 inch (12 mm) to 3/4 Inch (19 mm) tempered glass.
  - 2. Top Rails:
    - a. 4 inches (102 mm).
    - b. 6 inches (152 mm).
  - 3. Bottom Rails:
    - a. 4-3/4 inches (121 mm).
    - b. 6 inches (152).
    - c. 10 inches (254 mm).
  - 4. Mini Stiles:
    - a. 1 inch (25 mm).
- B. Glazing Thickness: 1/2 inch (12 mm) or 3/4 inch (19 mm) tempered glass.
  - 1. Exposed glass edge: Flat polished.
- C. Hinge shaft exposed or concealed in jamb of frame.
- D. Frame Jambs: 2-1/2 inches face width, 5 inches deep (63 mm face width, 127 mm deep) or 2 inches face width, 4-1/2 inches deep (50 mm face width, 114 mm deep).
- E. Headers: Same depth as jambs by 2-7/8 inches (73 mm) height.
- F. Finish: Cladding over aluminum is available In 18 gauge stainless steel and bronze.
  - 1. Stainless steel, BHMA 629, #4 polished.
  - 2. Bronze, BHMA 605 #8 polished, lacquered.
  - 3. Aluminum, Class I natural anodized.
  - 4. Aluminum, Class I color anodized, black.
  - 5. Aluminum with high performance organic coating, color as selected from manufacturer's standard selection.
  - 6. Same as storefront.

## 2.03 BALANCED HARDWARE

### A. Operation:

1. Manual operation: Manual balanced door system. The customized cast iron hydraulic speed control with back checking feature is manufactured by LCN. This unit meets ANSI standards and is designated as a "Grade 1" speed control. The speed control is concealed in the head frame and has latch, general, and back check adjustments. The speed control is removable without requiring the removal of the door, head frame or any other structural members of the balanced door system.

### B. Balanced Hardware:

1. Balanced door hardware is machined and assembled by the door and frame fabricator.
2. Cast iron hydraulic speed control and other integral parts are heavy-duty and designed to allow variation in adjustments to meet this particular job with respect to door size, door weight, and varying or internal building pressures.
3. Balanced hardware consists of the following items:
  - a. Manual speed control is concealed in the head frame. The unit is removable without requiring the removal of the door, head frame or any other hardware.
  - b. Heavy-duty steel tube hinge shaft is 1-3/4 inch (44 mm) diameter with 3/16 inch (4.8 mm) minimum wall thickness. Hinge shaft is furnished complete with integral closing force spring; adjustments are made with a floor gear box to meet ambient wind or building pressure conditions. Top and bottom arms (as specified below) are bolted to hinge shaft with expanding hardened steel wedges. When door leaf exceeds 350 pounds (158.8 kg), arms shall be welded to hinge shaft. Two-piece arms will not be acceptable except when installed at flush ceilings.
  - c. Hardware includes a spring-cushioned door roller bumper located in the guide channel. The operating mechanisms in the head include ball bearing pivots, and manual speed control guide channel. Guide roller is of self-aligning design with no lubrication needed.
  - d. Means are provided which make possible field adjustment for proper perimeter clearance of each door leaf in relation to its finished framework to accommodate on-site conditions.
  - e. Manual doors have a semi-automatic hold open device located in the bottom rail.
  - f. A.D.A. compliant openings: doors designated as handicap entrances have a maximum of 8 lbs. (3.63 kg) spring tension adjustment at pull handle. The clear opening is a minimum of 32 inches (812 mm) or greater depending on local codes. The hydraulic speed control shall be adjusted so that from an open position of 70 degrees, the door will take at least three seconds to move to a point 3 inches (76.2 mm) from the latch, measured to the leading edge of the door (optional time delay closer is available if desired; consult factory).
4. Exposed balanced hardware: pivot points in top and bottom arms contain self-aligning radial bearings and thrust bearings where applicable. Arms and pivots are one-piece stainless or bronze castings or aluminum extrusions, finished as specified

### C. Finish hardware by door manufacturer:

1. Standard locking: Adams-Rite deadlocks (or dead latches with lever handles or push paddles) and flush bolts at pair of doors. Master keyed cylinders, if required, will be furnished by others. (Most other types of mechanical locking and electronic locking also available - consult factory for compatibility.)
2. Standard push-pull hardware: **(Architect to specify)**

## 2.04 ARCHITECTURAL HARDWARE AND TRIM

### A. Stile and Rail Doors Other Than Interior Vestibule Doors:

1. Exit device on inside, door pull on outside.
2. Weatherstripping and sill sweep strip.
3. Threshold.

- B. Door Pull for Use with Exit Device: \_\_\_\_\_.
- C. Threshold: Extruded aluminum, one piece per door opening, ribbed surface.
- D. Mortise Lock Cylinders: As specified in Section 08 7100 -Door Hardware.
- E. Other Door Hardware: As specified in Section 08 7100 -Door Hardware.

## **2.05 MATERIALS**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Fasteners: Stainless steel.
- C. Exposed Flashings: 0.032 inch (0.8 mm) thick aluminum sheet; finish to match framing members.
- D. Concealed Flashings: 0.018 inch (0.5 mm) thick galvanized steel.
- E. Perimeter Sealant: Type \_\_\_\_\_ specified in Section 07 9005.
- F. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- G. Glazing Accessories: As specified in Section 08 8000.
- H. Shop and Touch-Up Primer for Steel Components: SSPC-Paint 25, zinc oxide, alkyd, linseed oil primer.
- I. Touch-Up Primer for Galvanized Steel Surfaces: SSPC-Paint 20, zinc rich.

## **2.06 ALUMINUM FINISH**

- A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating or AAMA 612 clear anodic coating with electrolytically deposited organic seal; not less than 0.7 mils (0.018 mm) thick.
- B. High Performance Organic Finish: AAMA 2604; multiple coats, thermally cured fluoropolymer system.
- C. Color: As shown on the drawings.
- D. Color: To be selected by Architect from manufacturer's standard range.
- E. Touch-Up Materials: As recommended by coating manufacturer for field application.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install units in accordance with manufacturer's instructions.
- B. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
- C. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- D. Provide alignment attachments and shims to permanently fasten to building structure.
- E. Align units plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- F. Install perimeter sealant in accordance with Section 07 9005.
- G. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

### **3.02 ADJUSTING**

- A. Adjust operating mechanisms for proper swing and closing speed.

### **3.03 CLEANING**

- A. Remove protective material from pre-finished metal surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.

### **3.04 PROTECTION**

- A. Protect installed products from damage during subsequent construction.

**END OF SECTION**