

SECTION 08 42 36

BALANCED DOOR ENTRANCES

SPECIFIER'S NOTE: USE THIS SECTION WHEN SPECIFYING BALANCED DOOR ENTRANCES.

Balanced Doors to be fabricated in an ISO 9001:2008 plant to ISO International Standards following strict Operating and Quality procedures as outlined in the ISO 9001:2008 Quality.

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Work included: Entrance, vestibule doors and frames are integral "Balanced Door" units consisting of doors, jambs, frames (sidelite and transoms where applicable), thresholds, operating mechanism (power operators where applicable), and all finish hardware as shown on the drawings and specified herein.

1.02 RELATED REQUIREMENTS

- A. Division 01 - LEED Documentation.
- B. Section 03 30 00 - Cast-in-Place Concrete.
- C. Section 07 90 05 - Joint Sealers.
- D. Section 08 40 00 – Entrances, Storefronts, and Curtain Walls.
- C. Section 08 71 00 - Door Hardware: Cylinders for Dead Locks.
- D. Section 08 80 00 - Glazing.
- E. Section 26 27 17 - Equipment Wiring.

1.03 SUBMITTALS

- A. Shop drawings: include elevations and plans, full or half size detail sections of typical composite members, hardware arrangement details, and interaction with surrounding material.
- B. Product Data:
 - 1. LEED: Completed "LEED Criteria Worksheet" for each product, or assembly
 - a. Credit MR 4.1 and Credit MR 4.2, Recycled Content: For products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content. Include a statement indicating costs for each product or assembly having recycled content.

- b. Credit MR 5.1 and Credit MR 5.2, Local/Regional Materials: Product Data indicating location of material manufacturer and point of extraction for regionally extracted, processed, and manufactured materials.
 - 1) If only a fraction of the material is extracted and manufactured locally, indicate the percentage by weight.
 - 2) Include a printed statement of cost for each regionally extracted, processed, and manufactured material.
- 2. Standard components, sizes, shapes, electrical characteristics, and hardware description, including operating features and limitations.
- C. Samples: (4) samples illustrating color and texture of metal finish.
- D. Manufacturer's Warranty: Copies of properly prepared warranty documents.

1.04 QUALITY ASSURANCE

- A. The manufacturer has been regularly engaged in the manufacture and installation of "Balanced Doors" and "Balanced Door Hardware" for a period of no less than ten (10) years.
- B. Door, frame, and balanced hardware is engineered and fabricated by the same manufacturer (excluding LCN speed control).
- C. Automatic door requirement: the operator is designed solely for a balanced door, is an integral part of the system, and is a product of the door manufacturer.
- D. The manufacturer must have a quality system registered to the ISO9001 Standard 9001-2008

1.05 WARRANTY

- A. Finished hardware and material not fabricated by C.R. Laurence carry manufacturer's standard warranty.
- B. U.S. Aluminum Balanced hardware designed by Wikk, manufactured material furnished and installed in this section, including manual door operating mechanisms, is warranted against defective material and workmanship for a period of ten (10) years after completion of installation.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- A. U.S. Aluminum (CRL) 2200 E. 55th St., Los Angeles, CA 90058-3488
 Tel: (800) 262-5151
 Fax: (866) 262-3299
 Email: usalum@crlaurence.com
www.crlaurence.com
www.crl-arch.com

2.02 BALANCED DOORS AND FRAMES

A. U.S. Aluminum Balanced Doors:

1. Material: U.S. Aluminum offers heavy duty doors, 0.188 inch (5 mm) wall thickness; 1-7/8 inches (48 mm) deep for 1/4 inch (6 mm) glazing and 1-7/8 inches (48 mm) deep for 1 inch (25 mm) insulating glazing, in two frame widths:



SERIES	CHOICE OF STILES	CHOICE OF TOP RAIL	BOTTOM RAIL	TRAFFIC APPLICATIONS
Balancer™	3-1/2" (88.9)	3-11/32" (84.9)	6-1/2" (165.1)	Extremely Heavy Traffic (Institutional Buildings, Schools, Sports Arenas)
Premium	5" (127)	5-1/2" (139.7)		
A.D.A. Bottom Rail Option for Either Series			9-1/2" (241.3)	A.D.A.

B. Finishes:

1. Clear Anodized (#11)
2. Dark Bronze Anodized (#22)
3. Black Anodized (#33)
4. Paint (*Architect Specify*)

Cladding over aluminum is available in stainless steel and bronze.

1. Polished
2. Brushed
3. Non-Directional
4. Oil Rubbed Bronze

2.03 MATERIALS

A. Aluminum:

1. ASTM B221, alloy 6063-T5 for extrusions; ASTM B209, alloy 5005-H34 for sheets; or other alloys and temper recommended by manufacturer appropriate for specified finish.

B. Internal Reinforcing:

1. ASTM A36 for carbon steel; or ASTM B308 for structural aluminum.
2. Shapes and sizes to suit installation.
3. Shop coat steel components after fabrication with alkyd type zinc chromate primer complying with FS TT-P-645.

C. Anchorage Devices:

1. Manufacturer's standard formed or fabricated steel or aluminum assemblies of shapes, plates, bars or tubes.

D. Fasteners:

1. Aluminum, non-magnetic stainless steel or other materials warranted by manufacturer to be non-corrosive and compatible with components being fastened.
 2. Do not use exposed fasteners, except where unavoidable for application of hardware.
 3. For exposed locations, provide countersunk Phillips head screws with finish matching items fastened.
 4. For concealed locations, provide manufacturer's standard fasteners.
 5. Provide nuts or washers of design having means to prevent disengagement; deforming of fastener threads is unacceptable.
- E. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt anchors.
- F. Protective Coatings: Cold-applied asphalt mastic complying with SSPC-Paint 12, compounded for 30 mil (0.77 mm) thickness for each coat; or alkyd type zinc chromate primer complying with FS TT-P-645.
- G. Glazing Gaskets:
1. Compression type design, replaceable, molded or extruded, of neoprene, or ethylene propylene diene monomer (EPDM).
 2. Conform to ASTM C509 or C864.
 3. Profile and hardness as required to maintain uniform pressure for watertight seal.
 4. Provide in manufacturer's standard black color.
- H. Weatherstripping:
1. Wool pile conforming to AAMA 701.2; or extruded EPDM elastomeric conforming to ASTM C509 or C864.
 2. Provide EPDM or vinyl-blade gasket weatherstripping in bottom door rail, adjustable for contact with threshold.
- I. Internal Sealants: Types recommended by sealant manufacturer.
- J. "Anti-Walk" Edge Blocking: "W" shaped EPDM blocks for use in keeping glazing material stationary under vibration or seismic loading.
- K. Baffles (at weep holes): Type as recommended by system manufacturer and shown in published installation instructions A.

2.04 Balanced Hardware (Wikk by C.R. Laurence):

- A. Operation:
1. Manual operation: Manual balanced door system. The customized cast iron hydraulic speed control with back checking feature is manufactured by LCN for Wikk Industries, Inc. 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 or automatic operator 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 (44mm) diameter with 3/16 inch (4.8mm) minimum wall thickness. Hinge shaft is furnished complete with integral closing force spring: adjustments are made with a cast worm gear at the floor 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 (158.8kg), 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. (3.63kg) spring tension adjustment at pull handle. The clear opening is a minimum of 32 inches (812mm) 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 (76.2mm) 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)*
 3. Material and finish as specified. Custom push-pull hardware also available - consult factory for compatibility.
 - a. Panic hardware (if required) is furnished by the door supplier.
 - b. Hardware is finished to match doors or as specified.

2.05 Source Quality Control:

- A. Prior to leaving factory, balanced doors and immediate framing is assembled and “hung”. At this time, adjustments are made to provide proper perimeter clearance between door and frame, and all coordination between door, frame and finish hardware is tested.

PART 3 - EXECUTION**3.01 EXAMINATION**

- A. Verify rough openings are ready to receive balanced door frames, hardware and doors.
- B. Verify that electrical service is available, properly located and of proper type, if electric strike or automatic operators are being installed.

3.02 PREPARATION

- A. Coordinate dimensions, tolerances, and method of attachment with other work.

3.03 INSTALLATION

- A. Install balanced door entrances in accordance with manufacturer's instructions.
- B. Use attachments to structure to permit sufficient adjustment to accommodate construction tolerances and irregularities.
- C. Provide alignment attachments and shims required to fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Install glass in accordance with Section 08 80 00, using exterior combination [dry] method of glazing.
- F. Install perimeter sealant, backing materials, and to installation requirements in accordance with Section 07 90 05.
- G. Install doors, with operators and controls, in accordance with manufacturer's instructions. Coordinate installation with electric service.
- H. Aluminum shall be isolated from concrete, mortar, plaster, and dissimilar metals with gaskets or bituminous coatings.

3.04 ADJUSTING

- A. Adjust doors to proper operation after glazing installation and re-adjust when necessary prior to substantial completion.

3.05 PROTECTION

- A. The contractor is required to protect all doors and frames at the construction period to ensure that the doors and frames will be without damage or deterioration, other than normal weathering, at the time of substantial completion.

END OF SECTION