

SECTION 08410 - ALUMINUM ENTRANCES AND STOREFRONTS

City of San Diego, CWP Guidelines

PART 1 -- GENERAL

1.1 WORK OF THIS SECTION

- A. The WORK of this Section includes providing aluminum entrance doors, storefronts, and window wall systems, sliding doors, related items and finish hardware.
- B. The WORK also requires that each door, storefront, or window wall system and its associated components and hardware such as push-bar, door-pull, and pivot hinges shall be compatible products of a single manufacturer or products designed for use within the system by the product manufacturer.

1.2 RELATED SECTIONS

- A. The WORK of the following Sections applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.
 - 1. Section 07920 Sealants and Caulking
 - 2. Section 08710 Finish Hardware
 - 3. Section 08800 Glazing
 - 4. Section 09800 Protective Coating

1.3 CODES

- A. The WORK of this Section shall comply with the current editions of the following codes as adopted by the City of San Diego Municipal Code:
 - 1. Uniform Building Code

1.4 SPECIFICATIONS AND STANDARDS

- A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section:
 - 1. AA-Finishes Aluminum Association, "Designation System for Aluminum Finishes"
 - 2. SGD-A2HP Architectural Aluminum Manufacturers Association (AAMA) Specifications
 - 3. NAAMM National Association of Architectural Metal Manufacturers
 - 4. ASTM E 283 Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors
 - 5. ASTM E 330 Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference

6. ASTM E 331 Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference
7. ANSI/AAMA-101 Voluntary Specifications for Aluminum Sliding Doors and Windows

1.5 SHOP DRAWINGS AND SAMPLES

- A. The following shall be submitted in compliance with Section 01300:
 1. Manufacturer's catalog indicating the type of products proposed for installation
 2. Elevations of each door type along with detailed cross references
 3. Finish hardware literature and samples if required by CONSTRUCTION MANAGER
 4. Details of door and frame construction along with metal gauges and fasteners
 5. Methods of anchorage
 6. Glazing and weatherstripping details
 7. Drawings showing locations of hardware and provision and reinforcement for hardware
 8. Schedule showing location of each door, sizes, frame, and swing of door
 9. Calculations by a registered civil or structural engineer showing that the doors, window walls, entrances, and storefront systems and their structural connections are designed to meet code requirements and loads.

1.6 OWNER'S MANUAL

- A. The following shall be included in the OWNER'S MANUAL in compliance with Section 01300:
 1. Detail specifications and instructions for installation, adjustments, cleaning and maintenance instructions.
 2. Test report by certified independent testing laboratory verifying compliance with test requirements.

1.7 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. **Delivery of Materials:** Products shall be delivered in original, unbroken packages, containers, or bundles bearing the name of the manufacturer.
- B. **Storage:** Products shall be carefully stored in a manner that will prevent damage and in an area that is protected from the elements.

PART 2 -- PRODUCTS

2.1 GENERAL

- A. **Structural:** Shapes and thicknesses of framing members shall be sufficient to withstand a design wind load of not less than [25] [30] [] pounds per square foot of supported area with a deflection of not more than 1/175 times the length of the member and a safety factor of not less than [1.65] [].

- B. **Air Infiltration:** When tested in accordance with ASTM E 283, air infiltration shall not exceed [0.06] [] cubic feet per minute per square foot of fixed area at a test pressure of [6.24] [] pounds per square foot.
- C. **Water Penetration:** When tested in accordance with ASTM E 331, there shall be no water penetration at a pressure of [8] [] pounds per square foot of fixed area.

2.2 MATERIALS AND FABRICATION

- A. Aluminum entrance doors, storefronts, and window wall systems shall comply with the following:
 - 1. Fabrication: Corners of frames shall be mitered and tenon-jointed. Systems shall include necessary anchors, brackets, components, and accessories.
 - 2. Finish: All exposed aluminum and hardware shall be dark bronze color. Aluminum shall be a dark bronze, 0.7-mil Architectural Class I anodized coating with integral color (AA-M21-C22-A42). No unfinished aluminum shall be visible. Finish of finish hardware shall match finish of aluminum entrance door, storefront, window wall and sliding doors to which they are attached unless otherwise indicated.
 - 3. Frames: Extruded sections shall be commercial quality aluminum alloy 6063-T5, conforming to ASTM B 221 alloy G5 10A-T5.
 - 4. Glazing Beads: Glazing beads shall be black neoprene or vinyl snap-in type complying with frame manufacturer's standards.
 - 5. Fasteners: Except as otherwise indicated, there shall be no exposed fastenings, screws, or bolts. Fasteners for aluminum-to-aluminum and aluminum-to-steel shall be noncorrosive materials compatible with the materials to which they are fastened.
 - 6. Painting: An isolation paint conforming to the requirements contained in Section 09800 shall be applied wherever aluminum is in contact with concrete, masonry, mortar, or other dissimilar materials.
 - 7. Weatherstripping: Entrance door weatherstripping is required at jambs, head, and sills and shall be metal-backed, pile cloth sweep strip. Sliding door weatherstripping shall be either metal-backed, silicone-treated wool pile free from residual wetting agent, or extruded neoprene having a minimum 60 durometer hardness.

2.3 ALUMINUM ENTRANCE DOORS

- A. Aluminum entrance door systems shall comply with the following:
 - 1. Design: Entrance doors shall be of medium stile and rail construction, 1-3/4-inch thick, mechanically fastened and welded, and flush glazed with no projecting stops. Doors shall be cut-out, reinforced, drilled, and tapped for all hardware as required and/or as necessary.
 - 2. Bottom Rails: Bottom rails shall be approximately 10 inches high.
 - 3. Corners: Corners shall be deep-penetration welded and mechanically fastened.
 - 4. Glazing Stops: Glazing stops shall be snap-in, bulb-type neoprene.

5. Exterior Stops: Exterior stops shall be tamperproof.
6. Pivots: Door pivots shall be [center pivots.] [off-set pivots.] [as specified.]
- [7. Finish Hardware: [The entrance doors shall be provided with the following finish hardware: [surface mounted [90E] [120E] [180E] closer], [concealed mounted [90E] [120E] [180E] [floor mounted [90E] [120E] [180E] closer], [push-bars], [pulls], [lockset], [panic hardware], and threshold. Hardware furnished by the CONTRACTOR as part of the entrance door shall be designed for heavy duty public usage and shall be provided with all accessories, components, and fasteners necessary for a complete product and system.]
- [7. Finish Hardware: Entrance doors shall be provided with all finish hardware as indicated in Section 08710.]
8. Glazing Gaskets: Glazing gaskets shall be black neoprene.
9. Internal Components: Concealed fastening devices, reinforcements, and other internal components shall be aluminum alloy, stainless steel, or equivalent, corrosion-resistant plated steel.
10. Screws: All screws shall be stainless steel. Exposed screws shall be heat-treated, stainless steel of color to match the aluminum finish.

2.4 ALUMINUM STOREFRONT AND WINDOW WALL SYSTEM

A. Aluminum storefront and window wall systems shall comply with the following:

1. Design: [Storefront systems shall be flush-glazed, 1-3/4-inch by 4-1/2-inch storefront system. Vents shall be provided in storefront system where openable sash is indicated.] [Storefront system shall be a flush-glazed, 2-3/4-inch by 5-1/2-inch storefront system.
2. Bottom Rails: Bottom rails shall be approximately 6-1/2 inches high.
3. Glazing stops shall be snap-in, bulb-type neoprene. Glazing gaskets shall be black neoprene.

2.5 ALUMINUM SLIDING DOORS

A. Aluminum sliding doors shall comply with the following:

1. Aluminum sliding doors shall include interior screens conforming to the requirements of the indicated standards.
2. Strength and Performance: Sliding doors shall meet the structural requirements of AAMA Specification SGD-A2HP. The performance requirements of AAMA Specification SGD-A2HP shall be met by sliding doors having panel width 4 ft-11 inches or less and maximum frame height 8 ft-0 inches or less.
3. Quality Certification Labeling: AAMA "Quality Certified" labels, indicating compliance with the minimum requirements of the indicated AAMA specification shall be attached to sliding glass doors at the place of manufacture.

4. Manufacturing Requirements: Fixed and sliding panels shall have continuous vinyl glazing channels complying with Section 08800.
5. Locking Mechanisms: [Locking mechanisms shall be "maximum security" type dead lock for sliding doors]. [Locking mechanisms shall be manufacturer's heavy duty standard "maximum security" type hookbolt with inside thumbturn]. [Locking mechanisms shall comply with Section 08710.] Exterior and interior pull handles shall be manufacturer's standard extruded aluminum with surface finish matching door sections.
6. Panel and Frame Construction: Frame members shall be connected with a minimum of 2 spline screws per joint. Sill members shall have a minimum slope of 6 degrees and shall back-flash jambs to form a weather-tight connection. Sliding panels shall roll on self-contained, sealed ball bearing rollers capable of supporting a moving weight of 150 pounds each. Joints of fixed and sliding panels shall be overlapped to prevent racking and provide a positive weather seal. Sliding panels shall not be removable when in a locked position. Sliding panels shall roll on formed stainless steel track, or equal.
7. Door shall be glazed with glass indicated in [Section 08800] [Schedule], with [single thickness glass] [insulating glass units].

2.6 MANUFACTURERS

A. Products of the model indicated, shall be manufactured by one of the following (or equal):

1. Aluminum Entrance Doors:

Kawneer Co., Model Medium Stile "350"
United States Aluminum, Model "#400 Medium Stile"

2. Push and Pull Plates:

Kawneer Co., Style "L"
United States Aluminum, #PV 001 and #PV 002

3. Aluminum Storefront and Window System:

Kawneer Co., "Tri-Fab II 450"
United States Aluminum, "Center Glazing System Series 450"

4. Aluminum Sliding Doors:

Kawneer Co., Series "990"
YKK Corp., "YSD 55-1 Sliding Door"
Amarlite Architectural Products, #703 HP Sliding Door

5. Locking Mechanism:

a. Entrance Doors

Adam-Rite 1848 Jamb-proof Deadlock with Cylinder

b. Sliding Doors

PART 3 -- EXECUTION

3.1 GENERAL

- A. Workmanship and installation shall be in accordance with referenced standards. Field dimensions, conditions, and coordination with adjoining work shall be verified prior to fabrication.
- B. All framing materials shall be screwed in place using backing, anchor plugs, or straps as required.
- C. Where moldings are jointed, they shall be accurately cut and fit to result in a tightly closed joint.

3.2 INSTALLATION

- A. **General:** The doors, storefronts and window systems shall be securely anchored in a straight, plumb, and level condition without distortion of frame or panel components and in strict accordance with the manufacturer's published installation details and instructions and the following requirements:
 - 1. No unfinished aluminum shall be visible.
 - 2. Components shall be erected plumb, secure, level, square, and in proper alignment.
 - 3. Installation shall be weather-tight with all edges sealed.
- B. **Door Operation:** Doors shall operate freely, smoothly and quietly. Swing-type doors shall have standard 3/32-inch head and jamb clearances with 1/32-inch tolerance.
- C. **Trademarks:** Trademarks, nameplates, or similar items shall not be visible nor attached to the installation.
- D. **Protection:** After installation and erection, exposed surfaces and finishes shall be protected from damage.

3.3 CLEANUP AND DISPOSAL

- A. After completion of the installation, the unit shall be tested for water leaks and protected.
- B. Prior to acceptance by the OWNER, the CONTRACTOR shall clean the WORK of this Section as recommended by the product manufacturer.

** END OF SECTION **