

SECTION 08410

ALUMINUM SWING ENTRANCES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide all necessary materials, labor, and equipment for the complete installation of the aluminum swing doors, door frames, hardware, and storefront framing system as shown on the drawings and specified herein.
- B. Section includes: Aluminum Swing Doors, including:
 - 1. Exterior locations: Model 35D Swing Entrance System by YKK AP America.
- C. Related Sections:
 - 1. 08420 - Aluminum Storefront Systems.
 - 2. 08800 - Glass and Glazing

1.02 SYSTEM PERFORMANCE DESCRIPTION-EXTERIOR LOCATION

- A. Performance Requirements: Provide aluminum single acting swing doors that comply with performance requirements indicated.
 - 1. Air Infiltration: Air infiltration shall be tested in accordance with ASTM E 283 at static pressure of 6.24psf. Infiltration shall not exceed the following:
 - a. 0.065 cfm/linear foot of crack based on a door size of 3'6" x 8' or 7'0" x 8'0".
 - 2. Water Infiltration: No uncontrolled water other than condensation on indoor face of any component when tested in accordance with ASTM E 331 at a test pressure differential of 10.3psf (479 Pa). Water test to be performed immediately after design pressure test.
 - 3. Structural: Door corner structural strength test using a dual moment loading criteria as follows:
 - a. A representative corner section consisting of a 12-inch top rail and a 24-inch long stile.
 - b. Top rail of each section is anchored to a fixed surface at 3 inches from corner joint; a load arm was subsequently mounted at 19 inches from inside edge of top rail on suspended side rail.

- c. A load was applied to the load arm at 19 inches from inside edge of side rail and amount of rotation of load arm was observed. Process was repeated at increasing loads until point of failure defined as greater than 45 degrees rotation of load arm occurred.
 - d. Test results shall be supported by an independent laboratory report as follows: 470 lbs.
- 4. Structural Uniform Load Test:
 - a. Single and double Doors:
 - (1) Wind velocity resistance classification: Assembly shall meet the American Society of Civil Engineers, ASCE 7- 1998.
- 5. Forced Entry Resistance: Tests performed simultaneously with 300 lb. forces applied to the active door panel within 3" of the locks in the direction that would tend to open the door while 150 lb. forces were applied in both perpendicular directions to the 300 lb. force simultaneously.

1.03 SUBMITTALS

- A. General: Prepare, review, approve, and submit specified submittals in accordance with Section 01340 and the following.
- B. Product Data: Submit product data for each entrance series specified.
- C. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, accessories, and finish colors.
- D. Samples: Submit verification samples for colors. Minimum 2-1/2 inch by 3 inch samples on actual aluminum substrates indicating full color range expected in installed system.
- E. Quality Assurance / Control Submittals:
 - 1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics and physical properties.
 - 2. Installer Qualification Data: Submit installer qualification data.

1.04 PRODUCT CONDITIONS / SITE CONDITIONS

- A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

1.05 WARRANTY

- A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under the Contract Documents.
 - 1. Warranty Period: 3 years for materials commencing on Date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers:
 - 1. YKK AP America, Inc.
 - 2. TRACO Windows and Doors.
 - 3. Accepted equivalent.
- B. Basis of Design: Model 35D by YKK AP America, Inc or accepted equal.
 - 1. Door: 2-inch thick , 3-15/16 inch wide top rail , 3-1/2 inch wide vertical stile, 7-15/16 inch wide bottom rail, and square glass stops.
 - 2. Major portions of the door stiles shall be minimum 3/16 inch thick and glass stop shall be 0.50 inch thick.
 - 3. Corner Construction: Fabricate door corners joined by concealed reinforcement secured with screws, and sigma deep penetration welding.
 - 4. Glazing: Manufacturer's standard glazing meeting site and local AHJ requirements with EPDM glazing gaskets to prevent water infiltration.
 - 5. Weather-stripping: Meeting stiles on pairs of doors shall be equipped with adjustable astragal utilizing wool pile.
 - 6. Sill sweep strips: EDPM blade gasket sweep strip in an aluminum extrusion applied to the interior exposed surface of the bottom rail with concealed fasteners.
 - 5. Hardware- Exterior Doors:
 - a. Exit Devices: concealed rod, complying with UL 305 and actuated by full width crash bar. Finish to be clear aluminum.

- b. Off-set Pivots: complying with ANSI A 156.4, Grade 1 with exposed parts of cast aluminum alloy: include intermediate pivots for doors over 7'-6" high doors.
- c. Closers: ANSI 156.4, concealed single acting, grade 2 independently hung concealed arm and track, hold-open device for door no. 1 only.
- d. Thresholds: ½ inch by 6-3/4 inch clear finish aluminum.
- e. Weather stripping: flexible bulb vinyl.
- f. Pull Handles: Style CS15, finish US27.
- g. Cylinder Locks: As per section 08710.

2.02 MATERIALS

- A. Extrusions: ASTM B 221, 6063-T5 Aluminum Alloy.
- B. Aluminum Sheet:
 - 1. Clear anodized to match storefront: ASTM B 209, 3003-H14 Aluminum Alloy, 0.080 inch minimum thickness.

2.03 ACCESSORIES

- A. Manufacturer's Standard Accessories:
 - 1. Fasteners: Zinc plated steel concealed fasteners; hardened aluminum alloys or AISI 300 series stainless steel exposed fasteners, countersunk, finish to match aluminum color.
 - 2. Perimeter Sealant: Non-skinning type, AAMA 803.3.
 - 3. Glazing: Setting blocks, edge blocks, and spacers in accordance with ASTM C 864, shore durometer hardness as recommended by manufacturer. Glazing gaskets in accordance with ASTM C 864.
 - 4. Concealed flashing: 0.026 -inch thick aluminum alloy and type selected by manufacturer for compatibility with other components

2.04 FABRICATION

- A. Shop Assembly: Fabricate and assemble units with joints only at intersection of aluminum members with uniform hairline joints, rigidly secure, and sealed in accordance with manufacturer's recommendations.

1. Hardware: Drill and cut to template for hardware. Reinforce frames and door stiles to receive hardware in accordance with manufacturer's recommendations.
2. Welding: Conceal welds on aluminum members in accordance with AWS recommendations or methods recommended by manufacturer. Members showing welding bloom or discoloration on finish or material distortion will be rejected.

B. Fabrication Tolerances:

1. Material Cuts: Square to 1/32 inch off square, maximum, over largest dimension proportionate amount of 1/32 inch on other two dimensions.
2. Maximum Offset:
 - a. 1/64 inch in alignment between two consecutive members in line, end to end.
 - b. 1/64 inch between framing members at glazing pocket corners.
3. Joints (Between adjacent members in same assembly): Hairline and square to adjacent member.
4. Variation (In squaring diagonals for doors and fabricated assemblies): 1/16 inch.
5. Flatness (For doors and fabricated assemblies): +/- 1/16 inch off neutral plane.

2.05 FINISH AND COLOR

- A. Anodized: NAAMM AA-C2241, Class I, minimum 0.7 mils, natural aluminum color.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General: Install manufacturer's system in accordance with shop drawings, and within specified tolerances.
- B. Method of attachment: Provide size and number of fasteners as indicated in the Product Control Notice of Acceptance.
 1. Limit shim space as indicated in the Product Control Acceptance Notice of Acceptance.

- C. Protect aluminum members in contact with masonry surfaces from contact with lime, mortar, cement, acids, and other harmful contaminants..

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions.
 - 1. Verify location of preset anchors, perimeter fasteners, and block-outs are in accordance with shop drawings and Product Control Acceptance Notice of Acceptance.

3.03 PREPARATION

- A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.
 - 1. Aluminum Surface Protection: Protect aluminum surfaces from contact with lime, mortar, cement, acids, and other harmful contaminants.

3.04 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.

3.05 ADJUSTING AND CLEANING

- A. Adjusting: Adjust swing doors for operation in accordance with manufacturer's recommendations.
- B. Cleaning: The General Contractor shall clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance, and remove construction debris from project site. Legally dispose of debris.
- C. Protection: The General Contractor shall protect the installed product's finish surfaces from damage during construction.

END OF SECTION