SECTION 08 41 13: ALUMINUM FRAMED ENTRANCES AND STOREFRONTS

This specification has been developed using the current edition of the Construction Specification Institute (CSI) “Manual of Practice”, including the recommendations for the CSI three-part Section Format and the CSI Page Format. Additionally, the development concept and organizational arrangement of the American Institute of Architects (AIA) MasterSpec® Program has been followed in the preparation of this specification.

EDITOR NOTE: Instructions to the editor appear in RED and should be removed prior to incorporation into project specifications.

PART 1 GENERAL

1.1 SUMMARY

A. This Section covers Facades USA Aluminum Entrances including glass and glazing, door hardware, and components.

B. Types of Entrances Include:
EDITOR NOTE: Choose Aluminum Entrance Type from below list based on project requirements. Delete types that do not apply to project.

1. 100 Narrow Stile Door
   a. Vertical Stile: 2”
   b. Top Rail: 2-3/8”
   c. Bottom Rail: 3-3/4”
   d. Depth: 1-3/4”
   e. Moderate Traffic Applications

2. 200 Medium Stile Door
   a. Vertical Stile: 3-3/4”
   b. Top Rail: 3-3/4”
   c. Bottom Rail: 6”
   d. Depth: 1-3/4”
   e. High Traffic Applications

3. 300 Wide Stile Door
   a. Vertical Stile: 5”
   b. Top Rail: 4-7/8”
   c. Bottom Rail: 10”
   d. Depth: 1-3/4”
   e. Heavy Traffic Applications

1.2 RELATED SECTIONS

A. 072700: Air Barriers
B. 079200: Joint Sealants
C. 083213: Sliding Aluminum-Framed Glass Doors
D. 084313: Aluminum-Framed Storefronts
E. 084329: Sliding Storefronts
F. 084413: Glazed Aluminum Curtain Walls
G. 084433: Sloped Glazing Assemblies
H. 085113: Aluminum Windows
I. 086300: Metal-Framed Skylights
J. 088000: Glazing
K. 280000: Electronic Safety and Security

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1.3 DEFINITIONS

A. For fenestration industry standard terminology and definitions, refer to the Fenestration & Glazing Industry Alliance (FGIA) Glossary (AAMA AG-13).

1.4 PERFORMANCE REQUIREMENTS

A. General Performance

1. Aluminum-framed entrance system shall withstand the effects of the following performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.

B. Wind Loads

1. The aluminum entrance door system shall include anchorage that is capable of withstanding the following wind load design pressures:
   EDITOR NOTE: Provide wind load design pressure in PSF and include applicable Building Code and Year Edition.
2. Inward: [_____] psf
3. Outward: [_____] psf
4. The design pressures are based on the [_____] Building Code, [_____] Edition.

C. Air Leakage

1. For single-acting offset pivot or butt-hung entrances in the closed and locked position, the test specimen shall be tested in accordance with ASTM E 283 at a pressure differential of 1.57 psf (75 Pa) for single doors and pairs of doors.
2. A single 3'0" x 7'0" (915 mm x 2134 mm) entrance door and frame shall not exceed 1.0 cfm/ft2.
3. A pair of 6'0" x 7'0" (1830 mm x 2134 mm) entrance doors and frame shall not exceed 1.0 cfm/ft2.

1.5 SUBMITTALS

A. Product Data

1. For each type of product indicated, include:
   a. Construction details
   b. Material descriptions
   c. Dimensions of individual components and profiles
   d. Finishes

2. Recycled Content
   a. Provide documentation that aluminum has a minimum of 50% mixed pre- and post-consumer recycled content.
   b. Provide a sample document illustrating project-specific information that will be provided after product shipment.
   c. After product has shipped, provide project-specific recycled content information:
      1. Indicate recycled content, including the percentage of pre- and post-consumer recycled content per unit of product.
      2. Indicate the relative dollar value of recycled content product to the total dollar value of product included in the project.
      3. Indicate the location for recovery of recycled content.
      4. Indicate the location of the manufacturing facility.

B. Shop Drawings

1. Plans
2. Elevations
3. Sections
4. Full-size details
5. Attachments to other work

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C. Samples
   1. Samples for Initial Selection:
      a. Provide samples for units with factory-applied color finishes.
   2. Samples for Verification:
      a. Provide a verification sample for each type of exposed finish required, in manufacturer's standard sizes.

D. Product Test Reports
   1. Provide test reports for aluminum entrance door systems.
   2. Test reports must be based on evaluation of comprehensive tests performed by a qualified preconstruction testing agency.
   3. Test reports must indicate compliance with performance requirements.

E. Fabrication Sample:
   1. Provide a fabrication sample of a corner, consisting of a door stile and rail and using full-size components that show details of the following:
      a. Joinery,
      b. Glazing

F. Provide a fabrication sample of a corner, consisting of a door stile and rail and using full-size components that show details of the following:
   1. Joinery,
   2. Glazing

1.6 QUALITY ASSURANCE

A. Installer Qualifications
   1. Installer must have successfully installed the same or similar systems required for the project and other projects of similar size and scope.

B. Manufacturer Qualifications
   1. Manufacturer must be capable of fabricating aluminum entrance doors that meet or exceed the stated performance requirements.

C. Source Limitations
   1. Obtain aluminum entrance door system through one source from a single manufacturer.

D. Product Options
   1. Information on drawings and in specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
   2. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

E. Pre-Installation Conference
   1. Conduct conference at project site to comply with requirements in Division 01 Project Management and Coordination Section.

1.7 PROJECT CONDITIONS

A. Field Measurements
   1. Verify actual dimensions of aluminum-framed entrance door openings by field measurements before installation.

1.8 WARRANTY

A. Submit manufacturer's standard warranty for owner's acceptance.
B. Warranty Period:
   1. Two years from Date of Substantial Completion of the project provided however that in no event shall the Limited Warranty begin later than six months from date of shipment by manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS
A. Basis of Design Product
   1. Facades USA Entrance Doors
      EDITOR NOTE: Choose Aluminum Entrance Type from below list based on project requirements. Delete types that do not apply to project.
      a. 100 Narrow Stile Door
         1. Vertical Stile: 2”
         2. Top Rail: 2-3/8”
         3. Bottom Rail: 3-3/4”
         4. Depth: 1-3/4”
         5. Moderate Traffic Applications

      b. 200 Medium Stile Door
         1. Vertical Stile: 3-3/4”
         2. Top Rail: 3-3/4”
         3. Bottom Rail: 6”
         4. Depth: 1-3/4”
         5. High Traffic Applications

      c. 300 Wide Stile Door
         1. Vertical Stile: 5”
         2. Top Rail: 4-7/8”
         3. Bottom Rail: 10”
         4. Depth: 1-3/4”
         5. Heavy Traffic Applications

B. Substitutions
   1. The drawing and specifications have been designed to conform to Facades USA. Substitutions must be made 2 weeks in advance of the project bid date and must be requested in accordance with the substitution request format detail in the general conditions of the specification for substitutions to be considered. Without prior approval to the project bid date and an addendum issued to all bidders a substitution is not permitted.

   2. To be considered for substitution prior to bid the product must comply with substitution request procedures and demonstrate the product meets the performance requirements listed in 1.4 Performance Requirements of this specification; in conjunction with the request the following must be submitted: Calculations that certify the product does meet the performance requirements in ASCE/SEI 7 and a full size sample for review.

2.2 MATERIALS
A. Extrusions
   1. Alloy and temper recommended by aluminum entrance door manufacturer for strength, corrosion resistance, and application of required finish
   2. Not less than 0.070" (1.8 mm) wall thickness at any location for the main frame

B. Fasteners

1. Aluminum, nonmagnetic stainless steel or other materials must be non-corrosive and compatible with aluminum members, trim hardware, anchors, and other components.

C. Anchors, Clips, and Accessories
   1. Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating.
   2. Anchors, clips, and accessories shall provide sufficient strength to withstand the design pressure indicated.
   3. When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.

D. Sealant
   1. For sealants required within aluminum entrance door system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.

E. Glazing Gaskets:
   1. Gaskets to meet requirements of ASTM C864.

F. Spacers and Setting Blocks:
   1. Manufacturer's standard elastomeric type

G. Component Cladding (Infill):
   EDITOR NOTE: Select Component Cladding(s) (Infill) From List Below.
   1. Glass
      a. Monolithic Glass
         1. 1/4” Thick [EDITOR NOTE: This is the most common monolithic glass thickness]
         2. 1/2” Thick
      b. Insulated Glass Unit (IGU)
         1. 1” Thick [EDITOR NOTE: This is the most common IGU thickness]

2.3 HARDWARE

A. General Hardware Requirements:
   1. Provide manufacturer's standard hardware.
   2. Hardware shall be fabricated from aluminum, stainless steel, or other corrosion-resistant material that is compatible with aluminum.
   3. Hardware shall be designed to smoothly operate, tightly close, and securely lock aluminum-framed entrance doors.

B. Standard Hardware
   1. Weather-Stripping:
      a. Meeting stiles on pairs of doors shall be equipped with an adjustable astragal using wool pile with polymeric fin.
      b. The door weathering on a single-acting offset pivot or butt hung door and frame (single or pairs) shall be comprised of a thermoplastic elastomer weathering on a tubular shape with a semi-rigid polymeric backing.

   2. Sill Sweep Strips:
      a. EPDM blade gasket sweep strip in an aluminum extrusion applied to the interior exposed surface of the bottom rail with concealed fasteners (necessary to meet specified performance tests).

   3. Threshold:
      a. Extruded aluminum
      b. One piece per door opening
      c. Ribbed surface

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4. Hinges/Pivots
   EDITOR NOTE: Select Hinges/Pivots from List Below.
   a. Butt Hinge: Hager A793, [2 or 3] hinges per leaf
   b. Continuous Geared Hinge: Hager 780-112-SD
   c. Offset Pivot Hinge: Imperial USA TH1118, [2 or 3] hinges per leaf

5. Push-Pull Hardware
   EDITOR NOTE: Select Hinges/Pivots from List Below.
   a. Aluminum Push and Offset Pull Set: CRL 2958A
   b. Concealed Rod: Falcon 1990
   c. Rim Latch: Falcon 2090
   d. Concealed Rod: Falcon 1690
   e. Rim Latch: Falcon 1790

2.4 FABRICATION

A. Extrude or form aluminum shapes before finishing.

B. Fabricate components that, when assembled, have the following characteristics:
   1. Profiles that are sharp, straight, and free of defects or deformations
   2. Accurately fitted joints
   3. Physical and thermal isolation of glazing from framing members
   4. Accommodations for thermal and mechanical movements of glazing and framing that maintain required glazing edge clearances
   5. Provisions for field replacement of glazing from exterior
   6. Fasteners, anchors, and connection devices that are concealed from view to the greatest extent possible

C. Aluminum Entrance Doors:
   1. Fabricate components for assembly following manufacturer's standard installation instructions.
   2. After fabrication, clearly mark components to identify their locations in project according to shop drawings.

2.5 FINISHES

A. Finishes General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.

B. Aluminum Finishes:
   1. High-Performance Organic Finish: Three-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      EDITOR NOTE: Insert Selected Color Below.
      a. Color and Gloss: To Match Sherwin Williams Fluropon [_____]

C. Warranty: Provide written 10 year warranty against loss of film integrity, chalking, fading, non-uniformity, and corrosion.

PART 3 EXECUTION

3.1 EXAMINATION

A. With installer present, examine areas for compliance with requirements for installation tolerances and other conditions affecting performance of the work.

B. Proceed with installation only after correcting unsatisfactory conditions.

3.2 INSTALLATION

A. Aluminum Entrance Door System Installation:
   1. Install aluminum entrance door systems plumb, level, and true to line, without warp or rack of frames, within manufacturer's prescribed tolerances, and complying with installation instructions.
   2. Provide support and anchor in place.
   3. Dissimilar Materials:
      a. Provide separation of aluminum materials from sources of corrosion or electrolytic action contact points.
   4. Glazing:
      a. Glass shall be outside-glazed.
   5. Glass shall be held in place with extruded aluminum pressure plates anchored to the mullion using stainless steel fasteners that are spaced no more than 9" (228.6 mm) on center.
   6. Water Drainage
      a. Each light of glass shall be compartmentalized using joint plugs and silicone sealant to divert water to the horizontal weep locations.
      b. Weep holes shall be located in the horizontal pressure plates and covers to divert water to the exterior of the building.

B. Related Products Installation:
   1. Sealants (Perimeter):
      a. Refer to Joint Treatment (Sealants) Section.
   2. Glass:
      a. Refer to Glass and Glazing Section.
      b. Reference: ANSI Z97.1, CPSC 16 CFR 1201, and GANA Glazing Manual.

3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Services:
   1. Upon owner's written request, provide periodic site visit by manufacturer's field service representative.

3.4 ADJUSTING, CLEANING AND PROTECTION

A. Adjusting:
   1. Not applicable

B. Cleaning:
   1. Repair or replace damaged installed products.
   2. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance.
   3. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.
   4. Remove construction debris from project site and legally dispose of debris.

C. Protection:
   1. Protect installed product's finish surfaces from damage during construction.
   2. Protect aluminum entrance door system from damage from grinding and polishing compounds, plaster, lime, acid, cement, or other harmful contaminants.

END OF SECTION 08 41 13

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