

SECTION 084213 – ALUMINUM-FRAMED ENTRANCES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Aluminum-framed entrance door systems, including hardware.

B. Related Sections:

1. Section 061000 – Rough Carpentry.
2. Section 079200 – Joint Sealants.
2. Section 088111 – Door Hardware (Descriptive Specification).
3. Section 088000 – Glazing.

C. Reference and Industry Standards

1. The following reference standards are applicable to this Section:
 - a. The current Enterprise Green Communities (EGC) Criteria, and the current New York City Overlay.
 - b. Accessibility: ICC/ANSI A117.1 current edition.
2. Industry Standards
 - ASTM (American Society for Testing and Materials).
 - BHMA (Builders Hardware Manufacturers Association).
 - ICC (International Code Council).
 - SSPC (Society for Protective Coatings).

D. The current NYC Overlay of the current Enterprise Green Communities Criteria:

1. Mandatory Requirements: See the NYC Overlay of the EGC reference standard for full specifications.
 - a. All projects must achieve compliance with the mandatory criteria measures that are applicable:
 - Criterion 6.10: Construction Waste Management
2. Optional Project Requirements for Certification Points
 - a. Additionally, rehab projects are required to achieve **55** optional points. Criteria with optional points related to this Specification Section include, but may not be limited to:
 - Criterion 6.1: Ingredient Transparency for Material Health

- Criterion 6.2: Recycled Content and Ingredient Transparency
- Criterion 6.7: Regional Materials
- Criterion 6.10: Construction Waste Management

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Include plans, elevations, sections, full-size details, and attachments to other work.
 - 1. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
 - 2. Include point-to-point wiring diagrams.
- C. Samples: For each type of exposed finish required.

1.4 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Field quality-control reports.
- C. Sample warranties.
- D. Documentation for Enterprise Green Communities Criteria.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.6 WARRANTY

- A. Special Finish Warranty, Factory-Applied Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of baked-enamel, powder-coat, or organic finishes within specified warranty period.
 - 1. Warranty Period: Five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ALUMINUM-FRAMED ENTRANCE DOOR SYSTEMS

- A. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing or automatic operation.

1. Door Construction: **[1-3/4-inch overall thickness, with minimum 0.125-inch-]** **[2-inch overall thickness, with minimum 0.188-inch-]** **[2- to 2-1/4-inch overall thickness, with minimum 0.125-inch-]** thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.
 2. Door Design: **[Narrow stile; 2-1/8-inch nominal width]** **[Medium stile; 3-1/2-inch nominal width]** **[Wide stile; 5-inch nominal width]** **<Insert description>**.
 3. Glazing Stops and Gaskets: **[Beveled]** **[Square]** **<Insert description>**, snap-on, extruded-aluminum stops and preformed gaskets.
 - a. Provide non-removable glazing stops on outside of door.
 4. Door Finish: **[Clear anodic finish]** **[Color anodic finish]** **[Baked-enamel or powder-coat finish]**.
- B. Framing Members: Manufacturer's standard extruded aluminum, minimum 0.125 inch thick and reinforced as required to support imposed loads.
1. Nominal Size: **[1-3/4 by 4-1/2 inches]** **[1-3/4 by 6 inches]** **<Insert nominal size>**.
 2. Exterior Framing Construction: Non-thermal.
 3. Interior Vestibule Framing Construction: Non-thermal.
 4. Finish: Match door finish.
- C. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.
- D. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with non-staining, nonferrous shims for aligning system components.
- E. Materials:
1. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
 - a. Sheet and Plate: ASTM B209.
 - b. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221.
 - c. Structural Profiles: ASTM B308.
 2. Steel Reinforcement:
 - a. Structural Shapes, Plates, and Bars: ASTM A36.
 - b. Cold-Rolled Sheet and Strip: ASTM A1008.
 - c. Hot-Rolled Sheet and Strip: ASTM A1011.
 3. Steel Reinforcement Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods in accordance with recommendations in SSPC-SP COM, and prepare surfaces in accordance with applicable SSPC standard.

2.2 ENTRANCE DOOR HARDWARE

- A. General: Provide entrance door hardware and for each entrance door, to comply with requirements in this Section.
 - 1. Entrance Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and products complying with BHMA standard referenced.
 - 2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
 - 3. Opening-Force Requirements:
 - a. Accessible Exterior and Interior Doors: Not more than 5 lbf to fully open door.
- B. Pivot Hinges: BHMA A156.4, Grade 1.
 - 1. Offset-Pivot Hinges: Provide top, bottom, and intermediate offset pivots at each door leaf.
- C. Butt Hinges: BHMA A156.1, Grade 1, radius corner.
 - 1. Non-removable Pins: Provide setscrew in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while entrance door is closed.
 - 2. Exterior Hinges: **[Stainless steel, with stainless steel pin] [Nonferrous] <Insert material>**.
 - 3. Quantities:
 - a. For doors up to 87 inches high, provide three hinges per leaf.
 - b. For doors more than 87 and up to 120 inches high, provide four hinges per leaf.
- D. Continuous-Gear Hinges: BHMA A156.26.
- E. Mortise Auxiliary Locks: BHMA A156.5, Grade 1.
- F. Manual Flush Bolts: BHMA A156.16, Grade 1.
- G. Automatic and Self-Latching Flush Bolts: BHMA A156.3, Grade 1.
- H. Cylinders:
 - 1. BHMA A156.5, Grade 1.
- I. Strikes: Provide strike with black-plastic dust box for each latch or lock bolt; fabricated for aluminum framing.
- J. Operating Trim: BHMA A156.6.
- K. Closers: BHMA A156.4, Grade 1, with accessories required for a complete installation, sized as required by door size, exposure to weather, and anticipated frequency of use; adjustable to comply with field conditions and requirements for opening force.
- L. Concealed Overhead Holders and Stops: BHMA A156.8, Grade 1.

- M. Door Stops: BHMA A156.16, Grade 1, floor or wall mounted, as appropriate for door location indicated, with integral rubber bumper.
- N. Weather Stripping: Manufacturer's standard replaceable components.
 - 1. Compression Type: Made of ASTM D2000 molded neoprene or ASTM D2287 molded PVC.
 - 2. Sliding Type: AAMA 701/702, made of wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing.
- O. Weather Sweeps: Manufacturer's standard exterior-door bottom sweep with concealed fasteners on mounting strip.
- P. Thresholds: BHMA A156.21 raised thresholds beveled with a slope of not more than 1:2, with maximum height of 1/2 inch.
- Q. Finger Guards: Manufacturer's standard collapsible neoprene or PVC gasket anchored to frame hinge-jamb at center-pivoted doors.

2.3 GLAZING

- A. Glazing: Comply with *Section 088000 – Glazing*.
- B. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.
- C. Glazing Sealants: As recommended by manufacturer.
- D. Form or extrude aluminum shapes before finishing.
- E. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
- F. 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 with ends coped or mitered.
 - 3. Physical and thermal isolation of glazing from framing members.
 - 4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
 - 5. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- G. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
- H. Entrance Doors: Reinforce doors as required for installing entrance door hardware.
- I. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.

- J. After fabrication, clearly mark components to identify their locations in Project in accordance with Shop Drawings.

2.4 ALUMINUM FINISHES

- A. Clear Anodic Finish: AAMA 611, or thicker.
- B. Color Anodic Finish: AAMA 611, or thicker.
 - 1. Color: **[Light bronze] [Medium bronze] [Dark bronze] [Champagne] [Black] [As selected by Design-Professional-of-Record from full range of industry colors and color densities] [as selected by Owner from full range of industry colors and color densities]**.
- C. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils.
 - 1. Color and Gloss: **[As selected by Design-Professional-of-Record from manufacturer's full range] [As selected by Owner from manufacturer's full range]**.

2.5 INSTALLATION, GENERAL

- A. Comply with manufacturer's written instructions.
- B. Do not install damaged components.
- C. Fit joints to produce hairline joints free of burrs and distortion.
- D. Rigidly secure nonmovement joints.
- E. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
- F. Seal perimeter and other joints watertight unless otherwise indicated.
- G. Metal Protection:
 - 1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or installing nonconductive spacers.
 - 2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
- H. Set continuous sill members and flashing in full sealant bed, as specified in *Section 079200 – Joint Sealants*, to produce weathertight installation.
- I. Install joint filler behind sealant as recommended by sealant manufacturer.
- J. Install components plumb and true in alignment with established lines and grades.

2.6 INSTALLATION OF GLAZING

- A. Install glazing as specified in *Section 088000 – Glazing*.

2.7 INSTALLATION OF ENTRANCE DOORS

- A. Install entrance doors to produce smooth operation and tight fit at contact points.
 - 1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.
 - 2. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

END OF SECTION 084213