

SECTION 081116
ALUMINUM DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A Flush aluminum doors with aluminum face sheets.
- B Aluminum frames.
- C Flush door panels.

1.02 RELATED REQUIREMENTS

- A Section 087100 - Door Hardware: Hardware for aluminum doors.

1.03 REFERENCE STANDARDS

- A AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document) 2015.
- B AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- C ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- D ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- E ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.
- F ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- G ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- H ASTM C1363 - Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus 2019.
- I ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.
- J ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2023).
- K ASTM E2112 - Standard Practice for Installation of Exterior Windows, Doors and Skylights 2019c.
- L ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

1.04 SUBMITTALS

- A Product Data: Manufacturer's descriptive literature for each type of door; include information on fabrication methods.
- B Shop Drawings: Include elevations of each opening type.
 - 1. Verify dimensions by field measurements before fabrication and indicate on shop drawings.

- C Selection Samples: Complete set of color and finish options, using actual materials, for Architect's selection.
- D Test Report: Certified test reports from qualified independent testing agency indicating doors comply with specified performance requirements.
- E Manufacturer's qualification statement.

1.05 QUALITY ASSURANCE

- A Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with not less than five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A Deliver aluminum components in manufacturer's standard protective packaging, palletted, crated, or banded together.
- B Inspect delivered components for damage and replace. Repaired components will not be accepted.
- C Store components in clean, dry, indoor area, under cover in manufacturer's packaging until installation.
- D Protect materials and finish from damage during handling and installation.

1.07 WARRANTY

- A Correct defective Work within a five year period after Date of Substantial Completion.
- B Manufacturer Warranty: Provide 10-year manufacturer warranty for defects in workmanship and materials. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A Flush Aluminum Doors with Aluminum Face Sheets:
 1. Basis of Design: Kawneer Company, Inc.
 2. Other acceptable manufacturers:
 - a. United States Aluminum Corp.
 - b. Vistawall Architectural Products.
 - c. Or Approved Equal.
- B Aluminum Frames: Same as door manufacturer.

2.02 DOORS AND FRAMES

- A Accessibility: Comply with ICC A117.1 and ADA Standards.
- B Flush Aluminum Doors with Aluminum Face Sheets: Aluminum internal framing and faces; no steel components.
 1. Thickness: 1-3/4 inches, nominal.
 2. Facing: Seamless aluminum sheet, 0.062 inch, smooth texture, laminated to foam panel core.
 3. Finish: High performance organic coating.
 4. Texture: Smooth.
 5. Weatherstripping: Replaceable pile type; at jambs and head of exterior doors.
- C Aluminum Frames for Doors, Sidelights, or Transoms: Extruded aluminum, thermally broken hollow or C-shaped sections; no steel components.

1. Frame Depth: 4-1/4 inches.
 2. Finish: Same as doors.
 3. Weatherstripping: Replaceable pile type; at jambs and head.
- D Dimensions and Shapes: As indicated on drawings; dimensions indicated are nominal.
1. Provide the following clearances:
 - a. Hinge and Lock Stiles: 1/8 inch.
 - b. Between Meeting Stiles: 1/4 inch.
 - c. At Top Rail and Bottom Rail: 1/8 inch.

2.03 COMPONENTS

- A Flush Door Panels: Without visible seams on face sheet.
1. Framing and Hardware Backup: Extruded aluminum tubing, 1/8 inch minimum thickness.
 2. Perimeter Edges: Extruded aluminum cap.
 3. Insulating Panel Thickness: 1 inch overall thickness.
 4. Exterior Doors Thermal Transmittance: U-value of 0.50, nominal, when tested in accordance with ASTM C1363.
 5. Core: Rigid insulating material of not less than 2.0 lb/cu ft density.
 6. Laminating Adhesive: Manufacturer's standard low-VOC materials.
- B Frames: Extruded aluminum shapes, not less than 0.062 inch thick, reinforced at hinge and strike locations.
1. Corner Brackets: Extruded aluminum, fastened with stainless steel screws.
 2. Trim: Extruded aluminum, not less than 0.062 inch thick, removable snap-in type without exposed fasteners.

2.04 PERFORMANCE REQUIREMENTS

- A Provide door assemblies that have been designed and fabricated in compliance with specified performance requirements.
- B Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at differential pressure of 7.5 psf.
- C Air Leakage: Maximum of 0.1 cu ft/min/sq ft at 6.27 psf differential pressure, when tested in accordance with ASTM E283/E283M.

2.05 MATERIALS

- A Aluminum Sheet: ASTM B209/B209M, alloy 5005, temper H14, stretcher leveled.
- B Extruded Aluminum: ASTM B221 (ASTM B221M), alloy 6063, temper T5, or alloy 6463, temper T5.

2.06 FINISHES

- A High Performance Organic Coatings: Multiple coats, thermally cured fluoropolymer system with minimum dry film thickness (DFT) of 1.2 mils, 0.0012 inch over aluminum extrusions and panels; AAMA 2604.
- B Color: As selected by Architect from manufacturer's standard line.
- C Touch-Up Materials: As recommended by coating manufacturer for field application.

2.07 ACCESSORIES

- A Fasteners: Aluminum, non-magnetic stainless steel, or other material warranted by manufacturer as non-corrosive and compatible with aluminum components.
- B Brackets and Reinforcements: Manufacturer's high-strength aluminum units where feasible, otherwise, non-magnetic stainless steel or steel hot-dip galvanized in compliance with ASTM A123/A123M.
- C Bituminous Coating: Cold-applied asphaltic mastic, compounded for 30-mil thickness per coat.

PART 3 EXECUTION

3.01 EXAMINATION

- A Verify that wall surfaces and openings are ready to receive frames and are within tolerances specified in manufacturer's instructions.

3.02 PREPARATION

- A Perform cutting, fitting, forming, drilling, and grinding of frames as required for project conditions.
- B Replace components with damage to exposed finishes.
- C Separate dissimilar metals to prevent electrolytic action between metals.

3.03 INSTALLATION

- A Install doors and frames in accordance with manufacturer's instructions and approved shop drawings.
- B Install exterior doors and frames in accordance with ASTM E2112.
- C Set frames plumb, square, level, and aligned to receive doors. Anchor frames to adjacent construction in strict accordance with manufacturer's recommendations and within specified tolerances.
- D Where aluminum surfaces contact metals other than stainless steel, zinc, or small areas of white bronze, protect from direct contact by painting dissimilar metal with heavy coating of bituminous paint.
- E Hang doors and adjust hardware to achieve specified clearances and proper door operation.
- F Install door hardware. See Section 087100.

3.04 CLEANING

- A Upon completion of installation, thoroughly clean door and frame surfaces in accordance with AAMA 609 & 610.
- B Do not use abrasive, caustic, or acid cleaning agents.

3.05 PROTECTION

- A Protect products of this section from damage caused by subsequent construction until Date of Substantial Completion.
- B Replace damaged or defective components that cannot be repaired to a condition indistinguishable from undamaged components.

END OF SECTION