

SECTION 083213 SLIDING ALUMINUM-FRAMED GLASS DOORS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the work for exterior sliding aluminum-framed glass doors as indicated on the drawings and/or specified herein.

1.3 RELATED SECTIONS

- A. Door Hardware - Section 087100.
- B. Glass and Glazing - Section 088000.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain aluminum-framed glass doors through one source from a single manufacturer.
- B. Installer Qualifications: An experienced installer who has completed aluminum-framed glass door installations similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in- service performance.
- C. Shop Assembly: Preassemble items in shop to greatest extent possible. Disassemble units only to extent necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- D. Installed framing shall have a deflection limit of $L/240$ when subject to a 5 psf uniform lateral load and a concentrated load of 200 lbs.

1.5 PERFORMANCE REQUIREMENTS

- A. Doors shall conform to the "Voluntary Specification for Aluminum Prime Windows & Sliding Glass Doors" as published by ANSI/AAMA 101/I.S.2-97 unless more stringent requirements are specified.
 - 1. Doors shall conform to minimum project specific performance criteria outlined in this section.
- B. Performance and Testing: Except as otherwise indicated, comply with air infiltration tests, water resistance tests and applicable load tests specified in ANSI/AAMA 101/I.S.2-97 for type and classification of window units required in each case.
 - 1. Testing: Where manufacturer's standard doors comply with requirements and have been tested in accordance with specified tests, provide certification by manufacturer to the Architect and Owner showing compliance with such tests; otherwise, perform required

- tests through an AAMA-accredited testing laboratory or agency, and provide certified test results to the Architect and Owner.
2. Test reports shall be not more than four years old.
 3. Sample submitted for tests shall be manufacturer's standard construction and whose overall dimensions shall be at least the lay-out size door unit required for this Project. Sequence of test shall be optional between manufacturer and the testing laboratory except that in all cases, air infiltration test shall be performed before water resistance test. Sash in sample shall contain the approximate configuration as that of windows to be tested.
 4. To evaluate testing and measure product performance, testing shall be conducted on manufacturer's standard product glazed with type of glazing material specified herein.
- C. Air Infiltration: Maximum air leakage through fixed glazing and framing areas of 0.30 cfm/sq. ft. of fixed wall area as determined according to ASTM E 283 at a minimum static-air-pressure differential of 6.24 lbf/sq. ft.
- D. Water Resistance Test: No water leakage at 15 psf static air pressure differential as determined according to ASTM E 331 and ASTM E 547.
- E. Uniform Load Deflection Test: ASTM E 330, at static air pressure of +/- 50 psf. No member shall deflect more than 1/175 of its span.
- F. Uniform Load Structural Test: ASTM E 330, at static air pressure of +/- 75 psf.
- G. Operating Force: In accordance with ASTM E 2068.
- H. Forced Entry Resistance: Conform to ASTM F 842.
- I. A thermal transmittance test and a condensation resistance test shall be conducted according to AAMA 1503-04, "Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections." Standard test conditions as specified in Section 9.1 of the 1503.1-04 shall be used. Doors shall meet the following minimum criteria:
1. Condensation Resistance Test: Condensation Resistance Factor (CRF) shall be not less than 50.0.
 2. Thermal Transmittance Test (Conductive U-Value): Conductive thermal transmittance (U-value) shall be not more than 0.40 BTU/hr/sf/deg. F.
- J. Life Cycle Testing: When tested in accordance with AAMA 910, there is to be no damage to fasteners, hardware parts, support arms, activating mechanisms or any other damage which would cause the door to be inoperable at the conclusion of testing. Air infiltration and water resistance tests shall not exceed the primary performance requirements specified.
- K. Design Wind Loads: Refer to Structural Documents.

1.6 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components, installation instructions, and finishes for aluminum-framed glass doors.
- B. Shop Drawings: Submit shop drawings for fabrication and erection of door and frame assemblies which are not fully described by manufacturer's data. Show anchorage and accessory items and finishes.

1. Include elevations and details indicating frame types, profiles, conditions at openings, methods and locations of anchoring, glazing requirements, hardware locations, reinforcements for hardware, details of connections to special construction, and other custom features.
 - C. Samples for Verification: For each type of aluminum-framed glass door indicated.
 1. Include hardware and accessory Samples to verify color selected.
 2. Size: 12 inches square.
 - D. Qualification Data: For Installer.
 - E. Warranty: Special warranty specified in this Section.
- 1.7 PROJECT CONDITIONS
- A. Field Measurements: Verify aluminum-framed glass door openings by field measurements before fabrication and indicate measurements on Shop Drawings.
- 1.8 DELIVERY, STORAGE, AND HANDLING
- A. Deliver door and frame components cartoned or crated to provide protection during transit and job storage.
 - B. Inspect partition components upon delivery for damage. Minor damages may be repaired, provided finish items are equal to new work and acceptable to Architect. Remove and replace damaged items as directed.
 - C. Store door and frame components on raised platforms in vertical positions with blocking between units to allow air circulation. Keep stored material covered and protected from damage.
- 1.9 WARRANTIES
- A. Warrant against defects in manufacturing of materials for a period of 2 years from date of substantial completion.
 - B. Warrant framing finish against defects, including cracking, flaking, blistering, peeling, and excessive fading, chalking and non-uniformity in finish appearance for a period of 5 years.
 - C. Warrant aluminum and glass doors for life of door against corner construction failure, causing wracking of door beyond acceptable tolerances.
 - D. Warranty shall specifically stipulate the performance criteria relative to air infiltration, water infiltration, structural requirements and accommodation of movement as outlined in this Section.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Sliding Aluminum-Framed Glass Doors: Subject to compliance with requirements, provide products by Kawneer Company, Inc., "Series 1040 Sliding Mall Front" doors, or approved equal.

2.2 MATERIALS

- A. Aluminum: Alloy and temper recommended by sliding storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.090" wall thickness at any location for the main frame and sash members.
- B. Fasteners: Nonmagnetic stainless steel.
- C. Anchors, Clips and Accessories: Nonmagnetic stainless steel.
- D. Reinforcing Members: Nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.
- E. Sliding-Type Weather Stripping: Provide woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 701/702.
 - 1. Weather Seals: Provide weather stripping with integral barrier fin or fins of semi-rigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 701/702.
 - 2. Sealant: For sealants required within fabricated sliding storefront, provide sliding storefront manufacturer's standard, permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.
- F. Glass and Glazing
 - 1. Glass types shall be as indicated on the drawings. Furnish sliding glass doors that have a rabbet specifically designed to accommodate glass thickness and configuration as shown on drawings.
 - 2. Glazing System: Glazing method shall be a channel type PVC gasket (marine glazed) compatible with aluminum and resistant to deterioration by all forms of weathering, suitably retained to maintain a watertight seal between the glass and the surrounding frame.
- G. Hardware
 - 1. Standard Hardware
 - a. Inboard and outboard casters.
 - b. Inboard and outboard head guides.
 - c. Adams Rite MS 1850A-505 Hookbolt Lock.
 - d. Interior and exterior cylinders.
 - e. Edge pull.
 - 2. Egress Doors

- a. Walking beam top pivot with modified center bottom pivot.
- b. Adams Rite M.S. 1850 A lock with two (2) cylinders.

2.3 FABRICATION

- A. Fabricate Components per the Manufacturer's most current Installation Instruction manuals with minimum suggested clearances and shim spacing around the perimeter of the assembly while enabling installation and dynamic movement of the perimeter seal.
- B. Accurately fit and secure all joints and corners. Make joints flush, hairline and waterproof.
- C. Prepare frames to receive anchor devices as required.
- D. When possible, arrange fasteners and attachments to conceal from view.
- E. Shop assemble frames to the greatest extent possible and shop seal all horizontal to vertical joints.

2.4 ALUMINUM FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.
- B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. High-Performance Organic Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
 1. Fluoropolymer Three-Coat System: Manufacturer's standard three-coat, thermocured system composed of specially formulated inhibitive primer, intermediate fluoropolymer color coat with suspended metallic flakes and clear top coat, both color coat and top coat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.
 2. Custom color and gloss as selected by the Architect.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where doors and frames are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected by the Contractor in a manner acceptable to the Architect.

3.2 INSTALLATION

- A. Use only skilled tradesmen for the installation of the aluminum sliding glass doors and components specified within this section.
- B. Bring all discrepancies between the project plans and field conditions to the attention of the General Contractor prior to commencement of any work in the area in question.
- C. Erect the aluminum sliding glass doors and components square and true, in strict accordance with the manufacturers published installation instructions. The installer is to furnish adequate anchoring to maintain position and integrity of the sliding glass doors when subjected to normal building movement and the specified wind load.
- D. Furnish and apply sealants in accordance with the manufacturer's published installation instructions and Section 079200, to provide a weather tight installation. Remove all excess sealants to leave all exposed surfaces and joints clean and smooth.

3.3 FIELD QUALITY CONTROL

- A. Conduct on-site air and water infiltration tests in accordance with AAMA 502, ASTM E 783, ASTM E 1105, with the Architect and the window manufacturer's representative present. The Architect will select units to be tested.
- B. Testing Agency: Engage a qualified testing agency to perform tests and inspections. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.
- C. Testing Services: Test and inspect installed sliding aluminum-framed glass doors as follows:
 - 1. Testing Methodology: Test sliding aluminum-framed glass doors for air infiltration and water resistance according to AAMA 502.
 - 2. Air-Infiltration Testing
 - a. Test Pressure: That required to determine compliance with AAMA/ WDMA/ CSA 101/I.S.2/A440 performance class indicated.
 - b. Allowable Air-Leakage Rate: 1.5 times the applicable AAMA/ WDMA/ CSA 101/ I.S.2/ A440 rate for product type and performance class rounded down to one decimal place.
 - 3. Water-Resistance Testing
 - a. Test Pressure: Two-thirds times test pressure required to determine compliance with AAMA/ WDMA/ CSA 101/ I.S.2/ A440 performance grade indicated.
 - b. Allowable Water Infiltration: No water penetration.
 - 4. Testing Extent: Three sliding aluminum-framed glass doors of each type as selected by Architect and a qualified independent testing and inspecting agency. Conduct tests after perimeter sealants have cured.
 - 5. Test Reports: Prepared according to AAMA 502.
- D. Sliding aluminum-framed glass door will be considered defective if it does not pass tests and inspections.

3.4 ADJUSTMENT AND CLEANING

- A. Upon completion of the entire scope of the work specified within this Section, the aluminum sliding glass doors and components are to be cleaned of dirt and manufacturers identification marks. Do not remove the permanent ANSI/AAMA or NFRC labels.
- B. Adjust the aluminum sliding glass doors for proper operation, after installation and cleaning has been completed.

END OF SECTION 083213