Section 083213 - Sliding Aluminum Framed Glass Doors
(2500 Model Specifications)

I. GENERAL:

SECTION 083213 – SLIDING ALUMINUM-FRAMED GLASS DOORS

1.01 Scope of Work
   A. Furnish all necessary materials, labor, and equipment for the complete installation of aluminum doors for this project, including glass, hardware and related components, as shown on the drawings and herein specified.

1.02 Products Furnished but not Installed under this Section –
   List products, which are only supplied under this section, but may be installed “by others” or “by owner.” (Examples: extra sets of glazed panel, extra screens, position lock, etc.).

1.03 Products Installed but not Furnished under this Section –
   List products that are to be installed under this section, but may be supplied “by others” or “by owner.” (Examples: HVAC louvers, A/C units, etc.).

1.04 References
   (Where revision level dates are not indicated, it is implicit that the most current version is referenced).
   A. AAMA – American Architectural Manufacturers Association
      4. AAMA 505, “Dry Shrinkage and Composite Performance Thermal Cycling Test Procedure”
      5. AAMA 506, “Voluntary Specifications for Impact and Cycle Testing of Fenestration Products”
      7. AAMA 609/610, “Cleaning and Maintenance Guide for Architecturally Finished Aluminum”
     10. AAMA 800, “Voluntary Specifications and Test Methods for Sealants”
     11. AAMA 901, “Voluntary Specification for Rotary Operators in Window Applications”
     16. AAMA 1302.5, “Voluntary Specifications for Forced-Entry Resistant Aluminum Prime Windows & doors”
     19. AAMA 1505, “Voluntary Test Methods for Thermal Performance of Fenestration Products with Multiple Glazing Options”
     23. AAMA 2605, “Voluntary Specification, Performance Requirements and Test
Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels."
24. AAMA IPCB (08), "Standard Practice for the Installation of Windows & doors and Doors in Commercial Buildings."
25. AAMA CW-10, "Care and Handling of Architectural Aluminum from Shop to Site"

B. ASTM – American Society for Testing and Materials
1. ASTM C 1036, "Standard Specification for Flat Glass"
2. ASTM C 1048, "Standard Specification for Heat-Treated Flat Glass—Kind HS, Kind FT Coated and Uncoated Glass"
5. ASTM E 283, "Standard Test Method for Determining Rate of Air Leakage through Exterior Windows & doors, Curtain Walls, and Doors under Specified Pressure Differences Across the Specimen"
8. ASTM E 413, "Classification for Rating Sound Insulation"
11. ASTM E 1048, " Standard Classification for Determination of Outdoor-Indoor Transmission Class"
15. ASTM E 1886, "Standard Test Method for Performance of Exterior Windows & doors, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials"

C. CPSC – Consumer Product Safety Commission

D. NFRC – National Fenestration Rating Council
1. NFRC 100-2010, "Procedure for Determining Product U-factors" (U-values)"
2. NFRC 102-2010, "Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems"
5. NFRC 300-2010, "Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems"
7. NFRC 400-2010, “Procedure for Determining Fenestration Product Air Leakage”
8. NFRC 500-2010, “Procedure for Determining Fenestration Product Condensation Resistance Values”

1.05 System description
A. Doors:
   • 4.75” frame depth; extruded aluminum with integral structural polyurethane thermal break in frame and panel members; finish factory-applied; frames and panel factory-assembled.
B. Configuration:
   • Sliding Glass Door (AAMA designation “SD”)
C. Glazing:
   Factory-glazed per Section 2.02F herein with:
   • 2” applied muntins
   • 5/8” flat grid within insulating glass airspace
   • 1” flat grid within insulating glass airspace
D. Installation:
   Installation type of:
   with:
   • Strap Anchor - Field Applied
   • Snap-trim - Field Applied
   • Custom

1.06 Performance Requirements:
A. AAMA Performance Class:
   • Per (NAFS) AAMA/WDMA/CSA 101/I.S.2/A440-08, when tests are performed on the minimum test size indicated:
     ➢ Sliding Glass Door:
       - LC-PG25-SD-144X83
       - R-PG20-SD-144X98
B. Thermal Performance:
   1. Doors shall
      • meet Project requirements of
        ➢ U-value: SHGC:
   2. Thermal performance to be verified by simulation for conformance with
      • NFRC-100 (determining U-value by simulation or CMA)
      • NFRC-200 (determining SHGC by simulation or CMA)
      • NFRC-300 (determining solar optical proper-ties by test)
      • NFRC-500 (determining condensation resistance values by simulation)

1.07 Submittals
A. Drawings: Upon request the window manufacturer may submit cross section drawings. Anchorage details are to be determined by others.
B. Product data: manufacturer's specifications, test reports from an AAMA-accredited laboratory, and standard details verifying conformance with specifications.
C. Samples: one sample of specified finish for aluminum and other samples as requested by the architect.

1.08 Quality Assurance
A. Submit for pre-bid qualification approval ten days prior to the bid opening:
   1. One sample window representing the window being bid with color being the only exception.
   2. Valid test reports not more than four years from test date (at time of submittal) from an AAMA-accredited laboratory confirming conformance to Paragraph 1.07 test results.
B. Submit bids based only on pre-qualified "equal" as confirmed in a pre-bid written addendum.
C. Furnish written documentation that the doors for the project conform to AAMA/WDMA/CSA 101/I.S.2/A440-05 or AAMA/WDMA/CSA 101/ I.S.2/A440-08 as applicable.
D. Furnish written documentation that the doors for the project conform to energy efficiency requirements as described in Section 1.07B above.
E. Manufacturer’s warranties
   1. Doors: If installed per manufacturer’s instructions, doors shall be warranted for five years (one year on moving parts) from date of sale against defects in material or workmanship under normal use.
   2. Sealed insulated glass (IGU): IGU shall be warranted for ten years against obstruction of vision resulting from failure of the hermetic seal, excluding that caused by breakage or abuse. Units containing muntin bars and/or
capillary tubes shall be warranted for three years, and laminated glass for five years.
3. 10-year pass-through warranty against failure of the polymer on aluminum extrusions having a mechanically locked pour and debridged thermal break.
4. Aluminum organic coatings shall be covered by a limited warranty
   • for 15 years against chipping, peeling cracking, blistering, fading or chalking, as required per AAMA specification AAMA 2605
   • for 10 years chipping, peeling cracking, blistering, fading or chalking, as required per AAMA specification AAMA 2604
   • for 5 years against chipping, peeling, cracking or blistering, as required per AAMA specification AAMA 2603.

1.09 Delivery, Storage and Handling
A. Handle doors and accessories in accordance with AAMA CW-10.
B. Protect the doors from the elements, construction activities and other hazards until project completion.
C. Install per AAMA IPCB (08).

II. PRODUCTS:

2.01 Acceptable Window Manufacturers
A. Doors shall be the “2500 Model” as manufactured by Wojan Window and Door Corporation, Charlevoix, Michigan. The “2500 Model” is a…
   • sliding glass door consisting of
     - SV (XO,OX) - an operable (left or right) panel and a fixed opposing panel
     - SEV (XOZ,ZOX) - one operable (left or right end) panel and a fixed center and opposing panel.
     - CV (Z XO,OXZ) - an operable center panel (left or right sliding) and two fixed end panel
   …type with thermally improved frame and/or panel. The specifications and materials for the “2500 Model” are as follows:

2.02 Materials
A. Panel and frame members
B. Finish
   1. Application: on clean extrusions free from significant surface blemishes or scratches on exposed surfaces visible when the installed window’s operating panel is closed.
   2. Coatings shall be organic and shall meet the requirements of:
      • AAMA 2603
      • AAMA 2604
      • AAMA 2605
      Color shall be:
      • Standard color electrostatically-applied baked-on polyester to meet or exceed AAMA 2603.
      • Standard color high-performance fluoropolymer (Kynar®) to meet or exceed AAMA 2605.
      • High-performance fluoropolymer (Kynar®) to meet or exceed AAMA 2604.
      • Custom color/finish to match color sample chip furnished by customer to conform to AAMA 2603, 2604 or 2605 as applicable.
   C. Thermal break: Main frames and panel members are to be extruded aluminum having a structural thermal barrier. Azo-Brader technology shall be used as part of the aluminum quality process and production of fenestration members to create a mechanical lock in the polymer.
   D. Hardware
      1. Locks shall consist of
         • a silver zinc mortise type lock at the operating panel stile, with keyed lock cylinder on the exterior and yellow zinc tandem rollers.
• a silver zinc mortise type lock at the operating panel stile and yellow zinc tandem rollers.
• a stainless steel mortise type lock at the operating panel stile, with keyed lock cylinder on the exterior and stainless steel tandem rollers.
• a stainless steel mortise type lock at the operating panel stile and stainless steel tandem rollers.

2. Provide coastal hardware package consisting of stainless steel hardware and fasteners.

E. Weatherstripping shall conform to AAMA 701/702 specification for weatherstrip.

F. Glass and glazing
1. Construction
   a. Insulating glass units (IGU) shall be 1” overall thickness with two lites of DS, 3/16” or 1/4” glass, the exterior lite of which shall be...
   • low-E coated with a non/pyrolytic coating (surface #2) (conforming to ASTM C 1048)
   • tinted
   • obscure pattern glass
   • tempered (conforming to ASTM C 1048 or CPSC16CFR1201 Safety Standard for Architectural Glazing Materials as applicable)
   • laminated glass (conforming to ASTM C 1172) and the interior lite of which shall be...
   • low-E coated with a non/pyrolytic coating (surface #3) conforming to ASTM C 1048
   • obscure pattern glass
   • tempered (conforming to ASTM C 1048 or CPSC16CFR1201 Safety Standard for Architectural Glazing Materials as applicable)
   • laminated glass (conforming to ASTM C 1172)

Interior and exterior lites of the IGU shall be...
• separated by aluminum spacers and desiccated. Perimeter sealant shall be polyurethane.
• separated by warm-edge spacers and desiccated. Perimeter sealant shall be polyurethane.
The interior space between interior and exterior lites shall be filled with
• argon (90%) / air (10%) mixture
• air (100%)

2. Operable panel glazing
   a. Glass in the operable panel shall be marine glazed at the factory. All lites are to be glazed from the interior to enable replacement from the interior.
   b. The sliding glass door operable panel be top loaded and removable from the inside for ease of maintenance.

3. Fixed glazing on operable doors:
The fixed lite shall be marine glazed at the factory.

G. Screens
1. Screen frame shall be of
   • aluminum extrusion.
   Finish shall match the main frames and panel.

2. Insect screening shall be
   • fiberglass cloth
   • aluminum wire
   • pet screen cloth
   • sun screen cloth secured with a vinyl spline.

3. Screens for sliding glass doors shall be half length (operable panel only).

2.03 Fabrication
A. General
1. Fabricate and shop assemble frame and panel members into complete doors under responsibility of one manufacturer.

2. No bolts, screws or fastenings to bridge thermal barriers or impair independent frame movement.

3. Fabricate to allow for thermal movement of materials when subjected to a temperature differential from −30°F to +180°F.

B. Frame: Mainframe shall be a mechanically joined construction. Corner joints should be sealed with a quality grade of sealant meeting the requirements of AAMA 800. All screws at joints of panel and mainframe shall be secured into integral screw ports. Sill shall be sloped to the exterior to facilitate water drainage.

C. Mechanical fasteners, welded components and hardware items shall not bridge thermal barriers.

D. Panel: horizontal panel rails secured with two stainless steel screws per panel corner.
III. EXECUTION

3.01 Examination
   A. Verify that openings are within tolerance, plumb, level, clean, and provide a solid anchoring surface, and are in accordance with approved shop drawings.
   B. Correct defective openings as required before installation.

3.02 Installation
   A. Install doors using only skilled mechanics with experience in this trade, in accordance with manufacturer's recommendations and approved shop drawings. Installation shall conform to the requirements of AAMA IPCB-08, “Standard Practice for the Installation of Windows & doors and Doors in Commercial Buildings.”
   B. Provide required support and securely fasten frames. Units shall be installed plumb, level and square without twist or bow.
   C. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at assembly perimeter to maintain continuity of the thermal barrier.
   D. A non-hardening sealant compatible with aluminum shall be provided by the installer and applied in sufficient quantity at joints and intersections to provide a weathertight seal between the door and surrounding construction. Wipe off excess and leave exposed sealant surfaces clean and smooth.
   E. Remove and legally dispose of existing doors and other materials generated by the installation of the new doors.

3.03 Field Testing
   A. Conduct on-site tests of installed units in conformance with AAMA 502 for air and water infiltration with representatives from the window manufacturer, contractor and owner or architect present.
   B. Select test units as directed by the owner's or architect's representative.
   C. Conduct tests with an AAMA-accredited laboratory provided by the owner, architect or contractor.

3.04 Adjusting and Cleaning
   A. Adjust frames, panel and hardware after installation, as necessary, to ensure smooth and watertight operation.
   B. Leave doors clean and free of labels and dirt.