



**Series M 2000-HC45
Sliding Glass Door
5” Frame Depth
AAMA Certified
Heavy Commercial Rating
Thermal Design**

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

- A. The Conditions of the Contract, and all Sections of Division 1, are hereby made a part of this Section.
- B. Coordinate work with that of all construction contractors affecting or affected by work of this contract. Cooperate with such contractors to assure the steady progress of the work.
- C. Pre-Bid Qualifications: All bids must be based on pre-qualified products; to qualify, the bidder must furnish one complete door unit and additional information as shown below ten (10) days prior to bid date.
 - 1. The sample must be identical to the model of the door the bid is based on, with the finish being the only exception.
 - 2. The prospective bidder shall also include in his pre-bid qualification package copies of the independent laboratory tests which certify that the proposed product meets or exceeds the SGD-HC45 classification as specified herein and shall show continuing compliance by furnishing a Notice of Product Certification from the Administrator/ Validator of the AAMA Certification Program. A test report from an independent laboratory showing that the glass to be supplied has been tested to the CBA Level is also required.

1.02 DEFINITION:

- A. Sliding glass doors shall consist of two or more panels of glass contained in aluminum frames, which in turn are contained within an overall aluminum frame designed so one or more panels are moveable in a horizontal direction. Panels may be all sliding or some sliding

and some fixed. Panels shall lock or interlock with each other or shall contact a jamb member where the panel may be securely locked. Doors shall be designed and assembled so that aluminum-to-aluminum contact between horizontal members moving relative to one another does not occur.

1.03 QUALITY ASSURANCE:

- A. Standards: Except as otherwise indicated, requirements for aluminum sliding glass doors, terminology, tolerances, standards of performance, and fabrication workmanship are those specified and recommended in AAMA/NWWDA 101/I.S.2-97 and applicable general recommendations published by AAMA and AA.
- B. Performance and Testing: Except as otherwise indicated, comply with air infiltration tests, water resistance tests and applicable load tests specified in AAMA/NWWDA 101/I.S.2-97 for type and classification of the sliding glass door units required in each case.
- C. Testing: Where manufacturer's standard sliding glass door units comply with requirements and have been tested in accordance with specified tests, provide certification by manufacturer showing compliance with such tests.
 - 1. Test reports shall be no more than four years old.
 - 2. Sample submitted for tests shall be of manufacturer's standard construction and with panel width a minimum of 4 feet 10 inches wide for doors rated SGD-HC45 and minimum frame height of 7 feet 10 inches. The sequence of tests shall be optional between manufacturer and the testing laboratory except that in all cases, the air infiltration shall be performed before the water resistance test.
- D. Specific Performance Requirements: Sliding glass doors shall conform to specified AAMA standards and the following, whichever are the more stringent:
 - 1. Air Infiltration Test: With the panel in a closed and locked position, the sliding glass door shall be subjected to an air infiltration test in accordance with ASTM E 283-84. Air infiltration shall not exceed 0.37 cubic feet per minute, per square foot of door area.
 - 2. Water Resistance Test: The glazed unit shall be mounted in its vertical position continuously supported around perimeter and the panel placed in the fully closed and locked position. The sliding glass door unit shall be subjected to a water resistance test in accordance with ASTM E 547.

Testing shall be performed on sliding glass doors both with and without an available insect screen.

- a. Using a static pressure of 6.75 pounds per square foot for M-2000 doors, a water flow rate equal to five gallons of water per hour per square foot of sliding glass door area should be cycled for five (5) minutes of pressure on and one (1) minute off for a total of four (4) cycles. No water shall pass the interior face of the sliding glass doorframe and there shall be no leakage as defined in the ASTM E 547 test method.
3. Uniform Load Structural Test: Per ASTM E 330-84. At the conclusion of tests, there shall be no glass breakage, permanent damage of fasteners, hardware parts, or any other damage causing the sliding glass door to be inoperable.
4. Condensation Resistance Factor: The door shall be tested in accordance with AAMA 1502 standards and tests of thermal performance. The CRF shall be a minimum of 50.
5. "U" Value Tests: (Co-efficient of Heat Transfer):
 - a. Thermal Transmittance of Conduction with a 15 mph perpendicular dynamic wind: 0.65 BTU/hr/ft²/F.
6. Operating Force: The moving panel shall have been adjusted to operate in either direction with a force not exceeding 45 pounds starting force and 25 pounds operating force.

1.04 SUBMITTALS:

A. General: Provide submittals in compliance with the following:

1. Product Data: Submit manufacturer's specifications, recommendations and standard details for aluminum sliding glass door units, including independent laboratory certified test reports as necessary to show compliance with requirements.
2. Shop Drawings: Submit shop drawings, including typical unit elevations and showing full-scale or half-scale detail sections of products being supplied.
3. Samples: Submit samples as follows:
 - a. One sample of each required aluminum finish, on a three-inch long section of an extruded shape or flat aluminum sheet.

PART 2 - PRODUCTS

2.01 GENERAL:

- A. Manufacturer: Subject to compliance with Contract Documents and specifications, provide one of the following:
1. Series M-2000-HC45 Sliding Glass Doors, glazed and supplied by Hydro Aluminum Wells.
 2. Architect approved equal.
- B. Thermal Break Construction: The fabricated aluminum sliding glass door panels and the door's master frame shall have an integral concealed low-conductance polyurethane thermal barrier, located between the exterior and the interior of the doors, in a manner which eliminates direct metal-to-metal contact. The thermal break shall be of a poured-in-place polyurethane material.

2.02 MATERIALS:

- A. Aluminum Extrusions: All extruded sections shall be of 6063 T5 aluminum. Alloy and temper recommended by sliding glass door manufacturer for strength, corrosion resistance, and application of required finish, but not less than 22,000 psi ultimate tensile strength, a yield of 16,000 psi. Comply with ASTM B 221.
- B. Fasteners: Aluminum, stainless steel, or other materials warranted by manufacturer to be non-corrosive and compatible with aluminum sliding glass door members, hardware, anchors and other components of the sliding glass doors.
1. Do not use exposed fasteners on exterior except where unavoidable for application of hardware.
 2. Provide zinc-plated steel hex head machine screws for exposed fasteners, where required, or special tamperproof fasteners.
 3. Locate all fasteners so as not to bridge the thermal break construction of sliding glass doors.
- C. Rollers and Roller assembly: Moveable panels shall be fitted with rollers and roller assemblies conforming to AAMA 506.3-87. Rollers and roller assemblies shall be designed to provide easy movement and to adequately support the panel during extended usage without deforming or developing flat spots.

D. Sliding Weather-stripping: Provide double weather-stripping using silicone-coated woven pile with polypropylene fin center complying with AAMA 701.

2.03 SLIDING GLASS DOOR CLASSIFICATION (GRADE):

A. Except as otherwise indicated, provide sliding glass door units complying with requirements of AAMA classification SGD-HC45.

2.04 FABRICATION AND ACCESSORIES:

A. General: Provide manufacturer's standard fabrication and accessories which comply with specifications indicated.

B. Sliding Glass Door Members: All sliding glass door members shall be of aluminum.

1. Main frame and insert members shall not have required minimum wall thickness as long as they meet all specifications of AAMA/NWWDA 101/. I.S.2-97. The standard wall thickness tolerance as defined by the Aluminum Association shall apply.

C. Thermal Break: The thermal barrier shall provide a continuous uninterrupted thermal break around the entire perimeter of the frame and all panels and shall not be bridged by any metal conductors.

D. Hardware: hardware having component parts that are exposed shall be of aluminum, stainless steel, or any non-corrosive materials compatible with aluminum. Cadmium or zinc-plated steel where used must be in accordance with ASTM Specification A 165 or A 164.

E. Construction:

1. Assembly: The sliding glass door shall be assembled in a secure and workmanlike manner to perform as hereinafter specified. All joints of the main frame and the panels shall be butt type, coped and joined neatly and secured by means of screws anchored in integral ports. The main frame at the sill shall be sealed on the underside with a narrow joint sealant meeting AAMA 803 specification for Narrow Joint Sealants.
2. All panels shall be of telescope construction mechanically joined so that they may be easily repaired. The meeting rails shall interlock in the closed position. The meeting rail interlock shall consist of two separate and distinct metal interlocks containing fin seal weather-stripping as an integral part of both metal interlocks.

F. Panels:



1. Panels shall be joined at the corners with screws in integral screw ports.
2. The panel must be easily removed from the frame for repair. Re-glazing shall be easily accomplished without the aid of special tools.

G. Glazing:

1. All glazing shall be glazed at the factory as follows:
 - a. All units shall be constructed to an overall minimum thickness of 1” with two (2) lites of DSB 3/16”. (As size and loading requires).
 - b. All glass must be tempered.
 - c. All insulated glass units shall be tested, certified and carry the respective CBA level certification on the glass spacer.
 - d. Test reports supporting CBA certification shall be submitted with bid.
2. All panels shall be marine-glazed.

H. Receptor Systems: When indicated on drawings, a two-piece snap-together receptor system shall serve to hold the sliding glass door(s) in place. The receptor shall be of aluminum with finish to match window with a two-part poured and de-bridged polyurethane thermal break and a santoprene bulb weather-stripping. The receptor system is generally used at head and jamb or head only as is indicated on the drawings.

2.05 ALUMINUM SLIDING GLASS DOOR FINISHES:

- A. Organic Coating: Provide organic coating of type and color indicated or selected by Architect, tested and certified by door manufacturer to comply with AAMA 2603.8.
1. Provide manufacturer’s standard electrostatically applied baked enamel coating of 1.0 +/- .2 mils dry film thickness (minimum), of manufacturer’s standard color(s) as selected by the Architect, applied over manufacturer’s standard substrate preparation including cleaning, degreasing, and other appropriate pre-treatments.

PART 3 - EXECUTION

3.01 INSTALLATION:



- A. Provide manufacturer's specifications and recommendations for installation of sliding glass door unit, hardware, operators and other components of work. In no case shall attachment to existing structure or to components of the door system be through or bridge any existing thermal barriers of the door.
- B. Units to be set plumb, level and true to line, without warp or rack of frames or inserts. Anchor securely in place. Separate aluminum and surfaces from sources of corrosion or electrolytic action.
- C. Insulation to be placed between frames of new doors and construction to remain, or between frames and new blocking as applicable.

3.02 ADJUST AND CLEAN:

- A. Adjust moving door panel and hardware to provide tight fit at contact points and at weather-stripping, for smooth operation and weather-tight closure. Lubricate any hardware or moving parts requiring it.
- B. Clean aluminum surfaces promptly after installation of sliding glass door(s), exercising care to avoid damage to the finish
- C. Clean glass after installation of sliding glass door(s). Remove any glazing or sealant compounds, dirt and other substances.
- D. Initiate all protection and other precautions required to ensure that door units will be without damage or deterioration (other than normal weathering) at time of acceptance.
- E. Send to architect, with copy to owner, written recommendations for maintenance and protection of sliding glass door(s) following substantial completion.