GUIDE SPECIFICATIONS – SECTION 084113
ALUMINUM FRAMED ENTRANCES AND STOREFRONTS
Manko Window Systems, Inc. 2300i Series
Thermally Broken Terrace Door

SECTION 084113 ALUMINUM FRAMED TERRACE DOORS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
1. Furnish all necessary materials, labor and equipment for the complete installation of aluminum terrace door systems as shown on the drawings and herein specified. Structural support of the framing system is not included.
2. All hinged glass doors shall be Manko Window Systems, Inc. 2300i Series Terrace Door. Other manufacturers requesting approval to bid their product as an equal must submit the following information ten days prior to close of bidding.
   a. A sample hinged glass door (size and configuration) as per requirements of architect.
   b. Test reports documenting compliance with requirements of Section 1.02 Testing and Performance Requirements.
3. Glass and Glazing
   a. All units shall be factory glazed.
4. Single Source Requirement
   a. All products listed in Section 08400; 08500; 08800; and 08900 shall be by the same manufacturer.

1.02 SYSTEM PERFORMANCE REQUIREMENTS

A. Test Units
1. Air, water, and structural test unit shall conform to requirements set forth in AAMA/NWWDA 101/I.S.2-97.
2. Thermal test unit sizes shall be 3'-3" x 7'-0". Unit shall consist of a single typical vent.

B. Test Procedures and Performances
1. Hinged glass doors shall conform to all AAMA/NWWDA 101/I.S.2-97 requirements for the hinged glass door type referenced in 1.01.8. In addition, the following specific performance requirements shall be met.
2. Air Infiltration Test
   a. With door leaf closed and locked, test unit in accordance with ASTM E 283 at a static air pressure difference of 6.24 psf.
   b. Air infiltration shall not exceed .3 cfm per square foot of unit.
3. Water Resistance Test
   a. With door leaf closed and locked, test unit in accordance with ASTM E 331 and E 547.
   b. There shall be no uncontrolled water leakage at 8.0 psf.
4. Uniform Load Structural Test
   a. With door leaf closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of 60.0 psf, both positive and negative pressure.
   b. At conclusion of test there shall be no glass breakage, permanent damage to fasteners or hardware parts, nor any other damage that would cause the hinged glass door to be inoperable.
5. Condensation Resistance Test (CRF)
   a. With door leaf closed and locked, test unit in accordance with AAMA 1503.
   b. Condensation Resistance Factor (CRF) shall not be less than 47.
6. Thermal Transmittance Test (Conductive U-Value)
   a. With door leaf closed and locked, test unit in accordance with AAMA 1503.
   b. Conductive thermal transmittance (U-Value) shall not be more than .58 BTU/hr/sf/degrees F.

1.03 SUBMITTALS

A. General Requirements
1. Prepare, review, approve, and submit specified submittals in accordance with "Conditions of the Contract" and Submittals Sections. Product data, shop drawings, samples, and similar submittals are defined in "Conditions of the Contract."

1.04 QUALITY ASSURANCE

A. Submit certified independent laboratory test reports verifying compliance with all test requirements of 1.02 System Performance Requirements as requested by architect.
B. Test reports shall be accompanied by the entrance door manufacturer's letter of certification stating that the tested door meets or exceeds the referenced criteria for the appropriate AAMA door type.
C. Qualifications: Upon request, the manufacturer will provide written confirmation that the installer is authorized to install aluminum entrance products to be used on this project.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Packing, Shipping, Handling, and Unloading
   1. Materials will be packed, loaded, shipped, unloaded, stored and protected in accordance with AAMA CW-10.

1.06 WARRANTY

A. Aluminum Entrance Warranty
   1. Products: Submit a written warranty, executed by the aluminum entrance manufacturer, for a period of 2 years (10 years for insulated glass seal failure) from the date of manufacture, against defective materials or workmanship, including substantial non-compliance with applicable specification requirements and industry standards, which results in premature failure of the aluminum entrance, finish, factory-glazed glass, or parts, outside of normal wear.
      a. In the event that the aluminum entrances or components are found defective, manufacturer will repair or provide replacements without charge at manufacturer's option.
      b. Warranty for all components must be direct from the manufacturer (non-pass through) and non-prorated for the entire term. Warranty must be assignable to the non-residential owner, and transferable to subsequent owners through its length.
   2. Installation: Submit a written warranty, executed by the aluminum entrance installer, for a period of 2 years from the date of substantial completion, against defective materials or workmanship, including substantial non-compliance with applicable specification requirements, which result in premature failure.
      a. In the event that installation of aluminum entrances or components is found to be defective, installer will repair or provide replacements without charge at the installer's option.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer
   1. Drawings and specifications are based on Manko Window Systems, Inc. 2300i Series Terrace Door.
      a. Base bid will be Manko Window Systems, Inc.

B. Substitutions
   1. Other manufacturers' products that meet or exceed specified design requirements may be considered. Submit the following information with request for substitutions at least ten (10) working days prior to bid date.
      a. Test reports specified in 1.02 SYSTEM PERFORMANCE REQUIREMENTS
      b. Full proposal details and samples specified in 1.03 SUBMITTALS
      c. Copy of manufacturer's warranty specified in 1.06 WARRANTY
      d. Other information as requested for evaluation
   2. Substitute products not pre-approved by the Architect via addendum will not be considered.

2.02 MATERIALS

A. Aluminum
   1. Extruded aluminum shall be 6063-T5 or 6063-T6 alloy and temper.

B. Hardware
   1. Locking mechanism shall be multipoint type as installed by the door manufacturer.
      a. Locking handles.
      b. Locking mechanism shall be stainless steel.
   2. Operating Hinges
      a. Precision machined aluminum butt hinges with FRP bushings and stainless steel pins.

C. Weatherstripping
   1. All doors shall be double weatherstripped with an extruded vinyl. The weatherstrip shall be uninterrupted and secured within extruded races at the interior and exterior points of contact with the frame.

D. Glass
   1. Insulated tempered glass shall be 1" as manufactured by Manko Window Systems, Inc. consisting of 1/4" exterior, 1/2" air spacer, and 1/4" interior. Refer to Section 08800 for glass types.

E. Thermal Barrier
   1. All exterior aluminum shall be separated from interior aluminum by a polyamide thermal strut.
   2. No thermal short circuits shall occur between the exterior and interior.

2.03 FABRICATION

A. General
   1. All aluminum frame and door leaf extrusions shall have a nominal wall thickness of .125". All glazing bead extrusions shall have a nominal wall thickness of .050".
   2. Mechanical fasteners, welded components, and hardware items shall not bridge thermal barriers. Thermal barriers shall align at all frame and door leaf corners.
   3. Depth of frame shall not be less than 3 1/2".
   4. Depth of door leaf shall not be less than 2".

B. Frame
   1. Frame components shall be neatly coped and mechanically fasten at each corner leaving only hairline joinery. Hairline joinery shall be weather sealed.

C. Door Leaf
   1. Door leaf components shall be neatly mitered and reinforced with extruded corner keys. These keys shall be located on each side of the thermal cavity, so as not to bridge the thermal properties in any way. Then hydraulically crimped and mechanically fastened.

D. Glazing

1. All units shall be glazed with the manufacturer's standard sealant process provided the glass is held in place by a removable, extruded aluminum, glazing bead. The glazing bead must be isolated from the glazing material by a gasket.

2.04 FINISHES

A. Finish of Aluminum Components

1. Finish of all exposed areas of aluminum windows and components shall be done in accordance with the appropriate AAMA Voluntary Guide Specification shown (select from below).

Designation	Description	Standard	Color
AAM12C21A31	Clear - Class II	AAMA 611	Clear
AAM12C21A41	Clear - Class I	AAMA 611	Clear
AAM12C21A44	Electrolytically Deposited – Class I	AAMA 611	Champagne, Light Bronze, Medium Bronze, Dark Bronze, Black
	Organic Paint	AAMA 2603	As selected by Architect from manufacturer's standard colors - Suitable for INTERIOR Finishes
	Organic Paint	AAMA 2605	As selected by Architect from manufacturer's (Specify) standard or custom colors - suitable for INTERIOR or EXTERIOR finishes

PART 3 EXECUTION

3.01 EXAMINATION

A. Site Verification of Conditions

1. Verify that building substrates permit installation of entrances according to the manufacturer's instructions, approved shop drawings, calculations and contract documents.
2. Do not install entrances until unsatisfactory conditions are corrected.

3.02 INSTALLATION

A. Erection of Aluminum Framed Entrances

1. Install entrances with skilled tradesman in exact accordance with approved shop drawings, installation instructions, specifications, and AAMA 101 and 101/I.S.-2.
2. Entrances must be installed **plumb, square, and level** for proper weathering and operation.
3. All joints between framing and the building structure shall be sealed in order to secure a water tight installation.
4. Aluminum that is not organically coated shall be insulated from direct contact with steel, masonry, concrete, or dissimilar metals by bituminous paint, zinc chromate primer, non-conductive shims or other suitable insulating material.

3.03 PROTECTION AND CLEANING

A. After completion of entrance installation, the General Contractor shall adequately protect exposed portions of aluminum surfaces from damage by grinding and polishing compounds, plaster, lime, acid, cement, or other contaminants. The General Contractor shall be responsible for the final cleaning. Manko Windows Systems, Inc. recommends mild soap and water to clean the aluminum surface of the doors.