

Specifications

Operable and Fixed Windows • Series 7400

SECTION 08 51 13 ALUMINUM WINDOWS

Drawings and specifications are based on the Series 7400 Thermal AW75 Windows as manufactured by U.S. Aluminum. Whenever substitute products are to be considered, supporting technical literature, samples, drawings, and performance data must be submitted 10 days prior to bid in order to make a valid comparison of the products involved. Test reports certified by an independent test laboratory must be made available upon request.

PART 1 GENERAL

1.01 Work Included

- A. Furnish and install aluminum architectural windows complete with hardware and related components as shown on drawings and specified in this section.

Specify glass and glazing in this section if window assemblies are to be glazed by the window manufacturer. If glazing is to be done by a different contractor, glass and glazing should be specified in Section 08 80 00.

B. Glass and Glazing

1. All units shall be factory glazed.
- OR

1. Reference Section 08 80 00 for Glass and Glazing.

List work and materials related to this section but specified in other sections.

1.02 Related Work

Section 08 40 00 - Entrances and Storefronts
 Section 08 44 00 - Glazed Curtain Walls
 Section 08 44 33 - Slope Glazing Systems
 Section 08 50 00 - Replacement Windows

1.03 Testing and Performance Requirements

A. Test Units

1. Air, water, and structural test unit shall conform to requirements set forth in ANSI/AAMA/NWWDA 101 I.S. 2-97 and AAMA 910-93.

2. Thermal test unit sizes shall be 36" (914) x 60" (1524). Unit shall consist of a casement, fixed or projected window.
- B. Test Procedures and Performances
1. Windows shall conform to all AAMA/ ANSI/NWWDA-101 I.S.2-97 and AAMA 910-93 requirements for the window type referenced in 1.01.B.
 2. Air Infiltration Test - With ventilators closed and locked, test unit in accordance with ASTM E 283-91 at a static air pressure difference of 6.24 psf. Air infiltration shall not exceed .10 cfm per foot of crack.
 3. Water Resistance Test - With ventilators closed and locked, test unit in accordance with ASTM E 331-96/ASTM E 547 at a static air pressure difference of 12 psf. There shall be no uncontrolled water leakage.
 4. Uniform Load Deflection Test - With ventilators closed and locked, test unit in accordance with ASTM E 330-97 at a static air pressure difference of 112.5 psf positive and negative pressure. No member shall deflect over L/175 of its span.
 5. Condensation Resistance Test (crf) - With ventilators closed and locked, test unit in accordance with AAMA 1503. Condensation Resistance Factor (crf) shall not be less than 49.
 6. Thermal Transmittance Test (Conductive U-Value) - With ventilators closed and locked, test unit in accordance with NFRC-100 and AAMA 1503. Conductive thermal transmittance (U-Value) shall not be more than 0.63
 7. AAMA Ratings
 - a. AW75 Series 7400 Operable and Fixed Windows Test Procedures: AAMA/WDMA/CSA 101/I.S.2/ A 440-08 - Laboratory performance testing.

AAMA 502-08 - Newly installed fenestration products.

AAMA 511-08 - Installed fenestration products after 6 months.

1.04 Quality Assurance

- A. Provide test reports from AAMA accredited laboratories certifying the performance as specified in 1.05.
- B. Test reports shall be accompanied by the window manufacturer's letter of certification, stating the tested window meets or exceeds the referenced criteria for the appropriate AAMA/NWWDA 101/I.S.2-97 and AAMA 910-93 window type.

1.05 Submittals

- A. Contractor shall submit shop drawings, finish samples, test reports, and warranties.

1.06 Warranties

- A. Total Window System
1. The responsible contractor shall assume full responsibility and warrant for one year the satisfactory performance of the total window installation which includes that of the windows, hardware, glass (including insulating units), glazing, anchorage and setting system, sealing, flashing, etc., as it relates to air, water, and structural adequacy as called for in the specifications and approved shop drawings.
 2. Any deficiencies due to such elements not meeting the specifications shall be corrected by the responsible contractor at his expense during the warranty period.

WINDOWS

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PART 2 PRODUCTS

2.01 Materials

- A. Aluminum - Extruded aluminum shall be 6063-T5 alloy and tempered.
- B. Hardware - Locking handles shall be cam type as supplied by U.S. Aluminum. Operating hardware shall be 4-bar stainless steel arms or equal.
- C. Weatherstrip - All weatherstrip shall be E.P.D.M. or equal.
- D. Thermal Barrier - All exterior aluminum shall be separated from interior aluminum by a rigid, structural thermal barrier. For purposes of this specification, a structural thermal barrier is defined as a system that shall transfer shear during bending and, therefore, promote composite action between the exterior and interior extrusions. The thermal barrier shall be INSULBAR® by ENSINGER, INC. or equal, consisting of two glass reinforced polyamide nylon 6/6 struts, mechanically crimped in raceways in exterior and interior extrusions. Poured and debridged urethane thermal barriers shall not be permitted.
- E. Glass
1. Insulating glass shall be () as manufactured by () consisting of () exterior, () air spacer, and () interior.
OR
 1. Glass shall be 3/16" (5) or 1/4" (6) monolithic tempered.

2.02 Fabrication

A. General

1. All primary aluminum frame and vent extrusions shall have a minimum wall thickness of .125" (3.2).
2. Mechanical fasteners, welded components, and hardware items shall not bridge thermal barriers. Thermal barriers shall align at all frame and vent corners.

3. Depth of frame and vent shall not be less than 2-1/4" (57.2).
 4. All frame and vent members shall be able to accommodate separate interior and exterior finishes and colors.
- B. Frame - Frame components shall be mechanically fastened.
- C. Ventilator
1. All vent extrusions shall be tubular.
 2. Each corner shall be mitered, reinforced with an extruded corner key, and hydraulically crimped.
 3. Each vent shall be pressure equalized utilizing two rows of weatherstripping (or equal) installed in dovetail grooves in the extrusion.
 4. The vent shall present a flush appearance with the exterior and interior of the main frame when in the closed position.
- D. Muntins - Muntins shall be factory attached (non-removable), exterior grid designed to match vent sight line (if applicable).
- E. Screens
1. Screen frames shall be extruded.
 2. Screen mounting holes in the window frame shall be factory drilled.
 3. Screen mesh shall be aluminum or fiberglass.
- F. Glazing - All units shall be glazed with butyl tape, silicone cap seal, and extruded snap-in aluminum glazing bead, with E.P.D.M. gasket.
- G. Finish - Windows are capable of having separate interior and exterior finishes and/or colors.
1. Anodic
 - a. Finish all exposed areas of aluminum windows and components with electrolytically deposited color in accordance with Aluminum Association Designation AA-M10-C22-(). Color shall be (). Available colors are clear, bronze, and black.

2. Paint

- a. A Fluoropolymer paint coating conforming with the requirements of AAMA 2605. Color shall be (*Specify a U.S. Aluminum standard color*).

PART 3 EXECUTION

3.01 Inspection

- A. Job Conditions - Verify that openings are dimensionally within allowable tolerances, plumb, level, clean, provide a solid anchoring surface, and are in accordance with approved shop drawings.

3.02 Installation

- A. Use only skilled tradesmen with work done in accordance with approved shop drawings and specifications.
- B. Plumb and align window faces in a single plane for each wall plane, and erect windows and materials square and true. Adequately anchor to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified windloads.
- C. Adjust windows for proper operation after installation.
- D. Furnish and apply sealants to provide a weather tight installation at all joints and intersections and at opening perimeters.

3.03 Protection and Cleaning

- A. After completion of window installation, windows shall be inspected, adjusted, put into working order and left clean, free of labels, dirt, etc. Protection from this point shall be the responsibility of the general contractor.