WINDOWS

Specifications

Operable and Fixed Windows
- Series 7200
- Series 7300

SECTION 08 51 13 ALUMINUM WINDOWS

Drawings and specifications are based on the Series (*specify*) 7200 or 7300 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 AAMA independent test laboratory must be made available upon request.

PART 1 GENERAL

1.01 Work Included

A. Furnish all necessary materials, labor, and equipment for the complete installation of aluminum windows as shown on the drawings and specified herein.

B. Work Not Included: Structural support of the window system, interior closures, trim. (*Specifier list other exclusions*).

1.02 Related Work

Section 08 40 00 - Entrances and Storefronts
Section 08 44 00 - Glazed Curtain Walls
Section 08 50 00 - Windows

1.03 Testing and Performance Requirements

A. Test Units
1. Air, water, and structural test unit sizes and configuration shall conform to requirement set forth in ANSI/AAMA 101-93 or CSA-A440-98.

B. Test Procedures and Performance
1. Standards:
   a. Windows shall conform to all requirements for the window type(s) referenced in ANSI/AAMA 101/I.S.2-97, or CSA-A440-98. In addition, the following specific performance requirements shall be met.
2. Air Infiltration Test
   a. With window sash and ventilators closed and locked, test unit in accordance with ASTM E 283 at static air pressure difference of 6.24 or 75 Pa (1.5 psf).
   b. Air infiltration shall not exceed .10 CFM per foot or .25 m^3/h-m of perimeter crack length.
3. Water Infiltration Test
   a. With window sash and ventilators closed and locked, test unit in accordance with ASTM E 331 at static pressure difference of 12 psf.
   b. There shall be no uncontrolled water leakage.
4. Uniform Load Structural Test
   a. With window sash and ventilators closed and locked, test unit in accordance with ASTM E 330 at a static pressure difference of (*specify per window system*) psf positive pressure and *(specify per window system)* or ASTM E330-97e1 at a static air pressure difference both positive and negative of 2000 Pa (41.6 psf) and a blow-out test of 5000 Pa (104 psf)
   b. At conclusion of test there shall be no glass breakage, permanent damage to fasteners, hardware parts, support arms or actuating mechanisms, nor any other damage which would cause the window to be inoperable.
5. Condensation Resistance Test (crf)
   a. With window sash and ventilators closed and locked, test unit in accordance with AAMA 1503.
   b. Condensation Resistance Factor (crf) shall be not less than 56.
6. Thermal Transmittance Test (Conductive U-value) in accordance with NFRC-100 and AAMA 1503.
7. AAMA Ratings
   a. C-75 Series 7200 Operable Windows
   b. C-90 Series 7200 Fixed Windows
   c. HC-75 Series 7300 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/CSA accredited laboratories certifying the performance as specified in section 1.05 (AAMA) or 11.15 of CSA-A440-98.

B. Test reports shall be accompanied by the window manufacturer's letter of certification stating that the tested window meets or exceeds the referenced criteria for the appropriate ANSI/AAMA 101-93 or CSA-A440-98 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 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.

CRL U.S. ALUMINUM

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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.

PART 2 PRODUCTS

2.01 Materials

A. Aluminum
Extruded aluminum shall be 6063-T5 alloy and tempered.

B. Hardware
1. Casement Ventilators:
Five knuckle butt hinges with roto operators or 4-bar stainless steel hinges with lever handles.
2. Project-Out Ventilators:
4-bar stainless steel hinges, high pressure die-cast zinc cam handle lock and strike.
3. Project-In Ventilators:
4-bar stainless steel hinges, high pressure die-cast zinc cam handle with concealed zinc plated steel pawl and stainless steel keepers.

C. Weatherstrip
1. Weatherstrip shall be Monsanto Santoprene or equal.

D. Thermal Barrier
1. Barrier material shall be poured-in-place two-part Polyurethane. To ensure that composite strength remains unaltered during thermal cycling, a mechanical bond between the aluminum and the thermal filling shall be created by mechanically abrading the extrusion thermal cavity prior to filling with the Polyurethane polymer. A non-structural thermal barrier is unacceptable.
2. Specified hardware shall not bridge the thermal barrier.

2.02 Fabrication

A. Aluminum vent extrusions shall have a nominal wall thickness of:
7200 Series = .062" (1.57)
7300 Series = .125" (3.2)
1. Mechanical fasteners and hardware items shall not bridge thermal barriers. Thermal barriers shall align at all frame and sash corners.

B. Frame
Frame components shall be mitered or butt jointed, as appropriate to the type of construction required. All joints shall incorporate mechanical fasteners.

C. Sash
1. All sash extrusions shall be tubular.
2. Each corner shall be mitered, reinforced with an extruded aluminum corner key, and hydraulically crimped.
3. Each sash shall have weatherstripping installed in specially designed dovetail grooves in the sash extrusion.

D. Screens (Optional)
1. Screen frames shall be extruded or roll formed aluminum.
2. Screen mounting holes in the window frames shall be factory drilled.
3. Screen mesh shall be aluminum or fiberglass.

E. Glazing
1. Shop and field glazed units are to be glazed with pre-shimmed glazing tape, extruded aluminum glazing beads, and an E.P.D.M. drive-in wedge gasket.

F. Finish
All exposed framing surfaces shall be free of scratches and other serious blemishes. Aluminum extrusions shall be given a caustic etch followed by an anodic oxide treatment to obtain… *(Specify one of the following)*:
_____#11 Clear Anodic coating
_____#22 Dark Bronze Anodic coating
_____#33 Black Anodic coating
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
1. 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 tradesman 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 anchored to maintain positions permanently when subjected to normal thermal and building movement and specified wind loads.

C. Adjust windows for proper operation after installation.

D. Furnish and apply sealants to provide a weathertight 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, put into working order, and left clean, free of labels, dirt, etc. Protection from this point shall be responsibility of general contractor.