Custom Window Company

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CSI Short Form Guide Specification
for Series 5000

SECTION 08520

ALUMINUM WINDOWS

PART 1 GENERAL

1.1 WORK INCLUDED

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

B. All windows shall be **Custom Window Series 5000** C-60 grade fixed, projected or casement (specify). Other manufactures requesting approval to bid their product as an equal must submit the following ten days prior to close of bidding:

1. A sample window (size and configuration) as per requirements of architect.
2. Test reports documenting compliance with requirements of Section 1.5.

C. Glass and glazing

1. All units are to be factory glazed

(OR)

1. All units to be glazed in field by qualified installer
2. Reference Section 08800 for Glass and Glazing

1.2 RELATED SECTIONS

1.3 REFERENCES

1.4 DELIVERY, STORAGE, AND HANDLING

1.5 TESTING AND PERFORMANCE REQUIREMENTS

A. Test Units

1. Air, water and structural test unit sizes and configuration shall conform to requirement set forth in AAMA/WDMA/CSA 101/I.S.2/A440-05

B. Test Procedures and Performance Standards:

1. Windows shall conform to all ANSI/AAMA 101-05, AP-C60 requirements.
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 of 6.24 psf.
   b. Air infiltration shall not exceed .01 cfm per foot of perimeter crack length.
3. Water Resistance Test

a. With window sash and ventilators closed and locked, test unit in accordance with ASTM E 331 at static pressure difference of 12.00 psf.

b. There shall be no uncontrolled water leakage.

4. Uniform Load Deflection Test

a. With window sash and ventilators closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference (positive and negative) of 60 psf

b. During the course of the test, no member shall deflect more than 1/175 of its span.

5. Uniform Load Structural Test

a. With window sash and ventilators closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of 90 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.

6. Condensation Resistance Test (CRF)

a. With window sash and ventilators closed and locked, test unit in accordance with AAMA 1502.7.

b. Condensation Resistance Factor (CRF) shall be not less than 60.

7. Thermal Transmittance Test (Conductive U-value)

a. With window sash and ventilators closed and locked, test unit in accordance with AAMA 1503.1.

b. Conductive thermal transmittance (u-value) shall be not more than .45 BTU/hr/sf/F^0.

8. Unless otherwise specified, windows tested for condensation resistance and thermal transmittance shall be glazed with no more than two lites of clear annealed glass. Sealed insulating glass shall be of standard construction.

1.6 QUALITY ASSURANCE

A. Provide test reports from AAMA accredited laboratories certifying the performance as specified in 1.5.

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 AAMA/WDMA/CSA 101/I.S.2/A440-05 window types.

1.7 SUBMITTALS

A. Submit in accordance with Section 01300

B. Product Data: Manufacturer's specifications, recommendations and standard details for window units.

C. Shop Drawings: Include typical unit elevations, full- or half-scaled detail sections and typical installation details. Include type of glazing, screening, and window finish.

D. Finish Samples: Two samples of each required finish, on an extruded shape of aluminum sheet.

E. Samples: If required by Architect, submit samples showing fabrication techniques, workmanship of component parts, design of hardware, and other exposed auxiliary items.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store and handle windows and other components in strict compliance with manufacturer's instructions.

B. Protect units against damage from the elements, construction activities and other hazards before, during, and after installation.

1.9 WARRANTY

A. 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 insulated 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. 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

2.1 MATERIALS

A. Aluminum

1. Extruded aluminum shall be 6063-T5 alloy and temper.

B. Hardware

1. Casement Ventilators:

a. Standard: Roto operators, casement locking handles and precision machined aluminum 5 knuckle butt hinges with nylon bushings and stainless steel pins.

b. Optional: Concealed 4-bar zinc plated or stainless steel balanced arms or 90^0 egress hinges as specified and cam locking handles.

(AND/OR)

1. Projected Ventilators:

a. Standard: Concealed 4-bar zinc plated or stainless steel balanced arms as specified and cam locking handles.

b. Optional: Pivotshoe roto operator with concealed 4-bar hinges. Precision Butt hinges in combination with Hold-Open arms.

C. Weatherstrip

1. All weatherstrip shall be Monsanto Santoprene or equal.

D. Glass and Glazing

1. As specified in Section 08800

E. Thermal Barrier

1. Thermal barrier material shall be poured-in-place two part polyurethane.

a. All extrusions shall have two (2) separate thermal breaks for maximum thermal efficiency.

2. Specified hardware shall not bridge the thermal barriers.

2.2 FABRICATION

A. General

1. Aluminum frame and sash extrusion shall have a nominal wall thickness of .080”.
2. Mechanical fasteners, welded components and hardware items shall not bridge thermal barriers. Thermal barriers shall align at all frame and sash corners.
3. Depth of frame and sash combined shall not be less than 3 11/16".

B. Frame

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

C. Sash

1. Each corner shall be mitered, reinforced with an extruded aluminum corner key, hydraulically crimped, and "cold welded" with epoxy adhesive.
2. Each sash shall have two rows of Monsanto Santoprene weatherstripping installed in specially designed dovetail grooves in all four sides of 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 glazing tape and extruded aluminum glazing beads. Exterior silicone cap bead shall be applied at all perimeter edges.

F. Finish

1. Anodic

a. Finish all exposed areas of aluminum windows and components with electrolytically deposited color in accordance with Aluminum Association Designation :

AA-_____

AA-M12-C22-A31/41 II/I Clear Anod. AAMA 607.1

AA-M12-C22-A34/44 II/I Color Anod. AAMA 608.1*

Color is to be _____

*Available colors are light bronze, champagne, medium bronze, dark bronze, and black.

2. Organic

a. Finish all exposed areas of aluminum windows and components with *Enter Description & AA Designation*

AA Description	Description	AAMA Guide Spec.
AA-M12-C42-R1X	Kynar 500(r)/Hylar5000(tm)	Fluropon 2605-98
AA-M12-C42-R1X	Kynar(r)/Hylar(tm)	Acroflur(r) 2604-98

AA-M12-C42-R1X Flurocryl(tm) 2603-98

Color is to be _____

PART 3 EXECUTION

3.1 INSPECTION

A. Job Conditions

1. Verify that openings are dimensionally within allowable tolerances, plumb, level, contain solid anchoring surfaces and are in accordance with approved shop drawings.

3.2 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. 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. Wipe off excess material and leave all exposed surfaces and joints clean and smooth.

3.3 ADJUSTING 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.

End of specification