

**SECTION 08 51 13**  
**ALUMINUM WINDOWS**

**PART 1 GENERAL**

**1.1 STIPULATIONS**

- A. The specifications sections "General Conditions to the Construction Contract", "Special Conditions" and "Division 01 - General Requirements" form a part of this Section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

**1.2 SECTION INCLUDES**

- A. Extruded aluminum windows with operating sash.
- B. Factory glazing.
- C. Operating hardware.
- D. Insect screens.

**1.3 RELATED REQUIREMENTS**

- A. Section 06 10 00 - Rough Carpentry: Wood perimeter shims.
- B. Section 07 92 00 - Joint Sealants: Sealing joints between window frames and adjacent construction.
- C. Section 08 80 00 - Glazing.

**1.4 REFERENCE STANDARDS**

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights 2017.
- B. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site 2015.
- C. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document) 2015.
- D. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- F. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.

**1.5 SUBMITTALS**

- A. Product Data: Include component dimensions, information on glass and glazing, internal drainage details, and descriptions of hardware and accessories.
- B. Shop Drawings: Indicate opening dimensions, elevations of different types, framed opening tolerances, anchorage locations, and installation requirements.

C. Samples:

1. Framing: Two samples, 12 by 12 inch in size illustrating typical corner construction, accessories, and finishes.
2. Sashes: Two samples, 12 by 12 inch in size illustrating typical corner construction, accessories, and finishes.
3. Operating Hardware: Two samples of each type and finish.

D. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:

1. Evidence of AAMA Certification.
2. Evidence of WDMA Certification.
3. Evidence of CSA Certification.
4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.

E. Manufacturer's Installation Instructions: Include complete preparation, installation, and cleaning requirements.

**1.6 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

**1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Comply with requirements of AAMA CW-10.
- B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or weather.

**1.8 FIELD CONDITIONS**

- A. Do not install sealants when ambient temperature is less than 40 degrees F.
- B. Maintain this minimum temperature during and 24 hours after installation of sealants.

**1.9 WARRANTY**

- A. Correct defective work within a five year period after Date of Substantial Completion.
- B. Manufacturer Warranty: Provide 5-year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units. Complete forms in Client Agency's name and register with manufacturer.
- C. Manufacturer Warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Client Agency's name and register with manufacturer.

## 1.10 PRE-INSTALLATION MEETING

- A. Contractor shall utilize the Pre-Installation Meeting Agenda and Pre-Installation Meeting Checklist documents located in e-Builder, Z - Standard Documentation & Training project: Documents \ 03 - Construction - Training and Guidance Documents \ 03 - Role Based Training and Guidance Documents \ Contractors.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Aluminum Windows Manufacturers:
  - 1. Arcadia, Inc: [www.arcadiainc.com/#sle](http://www.arcadiainc.com/#sle).
  - 2. TRACO: [www.traco.com/#sle](http://www.traco.com/#sle).
  - 3. **Basis of Design:** Winco Window Company, Inc; Series 4410S: [www.wincowindow.com/#sle](http://www.wincowindow.com/#sle).
  - 4. Substitutions: Or equal as approved by the Professional.

### 2.2 ALUMINUM WINDOWS

- A. Aluminum Windows: Extruded aluminum frame and sash, factory fabricated, factory finished, with operating hardware, related flashings, and anchorage and attachment devices.
  - 1. Frame Depth: 4 inch.
  - 2. Provide factory-glazed units.
  - 3. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for operating hardware and imposed loads.
  - 4. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
  - 5. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
  - 6. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
  - 7. Thermal Movement: Design to accommodate thermal movement caused by 180 degrees F surface temperature without buckling stress on glass, joint seal failure, damaging loads on structural elements, damaging loads on fasteners, reduction in performance or other detrimental effects.
- B. Single-Hung Type:
  - 1. Construction: Thermally broken.
  - 2. Provide screens.

3. Glazing: Double; clear; low-e. Insulated glass units shall have tempered laminated safety glazing.
4. Exterior Finish: Class II color anodized.
5. Interior Finish: Class II color anodized.

## **2.3 PERFORMANCE REQUIREMENTS**

- A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
  1. Performance Class (PC): LC.
  2. Performance Grade (PG): 25, with minimum design pressure (DP) of 25.06 psf.

## **2.4 COMPONENTS**

- A. Frames: 1 3/4 inch wide by 4 inch deep profile, flush glass stops of snap-on type.
- B. Insect Screens: Extruded aluminum frame with mitered and reinforced corners; screen mesh taut and secure to frame; secured to window with adjustable hardware allowing screen removal without use of tools.
  1. Hardware: Spring loaded steel pins; four per screen unit.
  2. Screen Mesh: Vinyl-coated fiberglass, window manufacturer's standard mesh.
  3. Frame Finish: Same as frame and sash.
- C. Operable Sash Weatherstripping: Wool pile; permanently resilient, profiled to achieve effective weather seal.
- D. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.

## **2.5 MATERIALS**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

## **2.6 HARDWARE**

- A. Window Opening Control Devices (WOCD): Provide operable window sash hardware that limits openings to only allow passage of 4 inch diameter rigid sphere or less, and are easily releasable to fully open without use of keys, tools, or special knowledge.
- B. Sill locks: Provide aluminum sill locks, two per window, for all operable windows.

## **2.7 FINISHES**

- A. Class II Color Anodized Finish: AAMA 611 AA-M12C22A32, integrally colored anodic coating not less than 0.4 mil thick.
- B. Finish Color: As selected by Architect from manufacturer's full range.
- C. Apply one coat of bituminous coating to concealed aluminum surfaces in contact with dissimilar materials.

## **PART 3 EXECUTION**

### **3.1 PRIME WINDOW INSTALLATION**

- A. Install windows in accordance with manufacturer's instructions.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- D. Install sill.
- E. Set sill members and sill flashing in continuous bead of sealant.
- F. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- G. Install operating hardware not pre-installed by manufacturer.
- H. Install glass in accordance with requirements; see Section 08 80 00.

### **3.2 TOLERANCES**

- A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft non-cumulative or 1/8 inches per 10 ft, whichever is less.

### **3.3 ADJUSTING**

- A. Adjust hardware for smooth operation and secure weathertight closure.

### **3.4 CLEANING**

- A. Remove protective material from factory finished aluminum surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

**END OF SECTION**