



## PART 1 GENERAL

### 1.01 SECTION INCLUDES

- A. Factory-assembled extruded aluminum-clad wood awning windows
- B. Glass and glazing
- C. Weatherstripping, hardware, [insect screens],[muntin bars]
- D. Anchorages, attachments, and shims

### 1.02 RELATED SECTIONS

- A. Section [04200 – Unit Masonry]: Units in Masonry
- B. Section [0610 – Rough Carpentry]: Framed openings
- C. Section [07210 – Building Insulation]: Batt insulation at window perimeter
- D. Section [07900 – Joint Sealers]: Perimeter Joint Sealant and Backer Rod
- E. Section [09900 – Painting]: Finishing interior wood, including removable grilles

### 1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM)\
  - 1. ASTM C 1048-04 – Specification for Heat Treated Float Glass-Kind HS, Kind FT Coated & Uncoated.
  - 2. ASTM C 1036-06 - Specification for Flat Glass
  - 3. ASTM E 1300-09 -Standard Practice for Determining Load Resistance of Glass in Buildings
  - 4. ASTM 2188-02 – Test Method for Seal Durability of Insulating Glass Units
  - 5. ASTM E 2190-08 – Standard Specification For Insulating Glass unit Performance & Evaluation
  - 6. ASTM E 283– Rate of Air Leakage Through Exterior Windows, Curtain Walls andDoors Under Specified Pressure Difference Across the Specimen
  - 7. ASTM E 330– Structural Performance of Exterior Windows, Curtain Walls and Doorsby Uniform Static Air Pressure Difference
  - 8. ASTM 547– Water Penetration of Exterior Windows, Curtain Walls and Doors byCyclic Static Air Pressure Differential
  - 9. ASTM F 588– Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing
- B. Window and Door Manufacturers Association (WDMA)
  - 1. WDMA I.S.-2 – Industry Standard for Wood Windows
  - 2. WDMA I.S.-4– Industry Standard for Water Repellent Preservative Non-Pressure Treatment for Millwork
- C. American Architectural Manufacturers Association (AAMA)
  - 1. AAMA 701-04 & 702-04 – Combined Voluntary Specification for Pile Weatherstrippingand Voluntary Specification for Replacement fenestration Weatherseals
  - 2. AAMA 2603-02 – Voluntary Specification for Pigmented Organic Coatings onAluminum Extrusions and Panels.
  - 3. AAMA 2604-Voluntary Specification Performance Requirements and Test Proceduresfor High Performance Organic Coatings on Aluminum Extrusions and Panels
  - 4. AAMA 2605-Voluntary Specification Performance Requirements and Test Proceduresfor Superior Organic Coatings on Aluminum Extrusions and Panels
- D. National Fenestration Rating Council (NFRC):
  - 1. NFRC 100-2004 – Procedure for Determining Fenestration product U-Factors
  - 2. NFRC 200-2004 – Procedure for Determining Fenestration Product Solar Heat GainCoefficient at Normal Incidence

### 1.04 PERFORMANCE REQUIREMENTS

- A. Window units shall meet Rating PG50 (48x32) specification in accordance with AAMA/WMDA/CSA 101/I.S.2/A440-08 (Ratings for larger units available on web)
- B. Window unit air leakage, when tested in accordance with ASTM E 283 at 1.57 psf (25 mph), Shall be 0.30 cfm/ft• of frame or less.
- C. No water penetration beyond the interior face of the window when tested in accordance with ASTM E 547 under static pressure of 12.0 psf (69 mph) after 4 cycles of 5 minutes each separated by 1 minute with pressure released, with water being applied continuously, at a rate of 5 gallons per hour per square foot.
- D. Window units shall withstand positive and negative pressures of 75.0 psf (172 mph) actingnormal to the plane of the window. Units shall have no permanent deformation in excess of1/175 of its span when tested in accordance with ASTM E 330. (Ratings for larger units available on web)
- E. Window shall comply with Forced Entry Resistance requirements for a Level 10, when tested inaccordance with ASTM F 588.
- F. Window units shall be rated, certified, and labeled in accordance with NFRC 100-2004 U-Factors: 0.34 Cardinal E270 LowE glass (Specific glazing options and values may be obtained from the Product Data Sheet on the web)
- G. Window units shall be rated, certified and labeled in accordance with NFRC 200-2004.Solar Heat Gain Coefficient: 0.27 Cardinal E270 LowE glass (Specific glazing options and valuesmay be obtained from the Product Data Sheet on the web)



#### 1.05 SUBMITTALS

- A. Submit in accordance with conditions of Division 1 requirements and the contract.
- B. Product Data: Submit Manufacturers product data.
- C. Shop Drawings: Typical jamb, head and sill details showing layout and installation of typical and composite members, necessary dimensioning, hardware and muller unit details. Submittals indicating location and type of glazing material.
- D. Samples: Provide (1) complete window assembly for approval of color, glazing systems and Quality of construction.

#### 1.06 QUALITY ASSURANCE

- A. Provide proof of compliance with AAMA/WMDA/CSA 101/I.S.2/A440-08, ASTM 2190-08 rating for Seal Durability of Insulating Glass Units

#### 1.07 PROJECT CONDITIONS

- A. For renovation projects, all actual window openings will be checked by accurate field measurement before fabrication.
- B. Coordinate window fabrication schedule with construction progress to avoid delays.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to job site in manufacturers packaging undamaged, complete with installation instructions.
- B. Store windows and accessories off ground, under cover, protected from weather and construction activities.

## PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. SunClad USA Awning units as manufactured by Sun Windows, Inc., Owensboro, Kentucky: Factory-assembled extruded aluminum-clad wood window with sash installed in the frame.

#### 2.02 COMPONENTS

- A. Frame: Select kiln dried Western Pine, water-repellent, preservative –treated in accordance with WDMA I.S. 4. Interior exposed surfaces clear Western Pine; all exterior surfaces clad with 0.050" extruded aluminum at head, jamb, and sill and incorporate an integral aluminum nail fin as part of the extrusion. Overall frame depth: 6" (153 mm) for a wall depth of 4-9/16" (116 mm). Optional factory applied jamb extensions available up to 7-9/16" wall depths.
- B. Sash: Select kiln dried Western Pine, water-repellent, preservative –treated in accordance with WDMA I.S. 4. Interior exposed surfaces clear Western Pine; all exterior surfaces clad with 0.060" extruded aluminum, mitred. Wood corners exposed mortise and tenon and secured with metal fasteners. Sash thickness: 1-7/8" (48mm). Glass shall be set to the sash frame using an AAMA approved silicone glazing material and secured with interior profiled wood stops.
- C. Glazing System: Sealed insulating glass shall be produced using quality float glass complying with ASTM C-1036-06. [clear/clear], [clear/argon filled, Low-E II coated]. Various tints, obscure, tempered, laminated and triple glazing options are also available. Dual sealed insulating glass will have a 1/2" air space with the revolutionary Duralite™ Warm Edge I.G. Spacer. Insulated glass meets or exceeds standards required by ASTM E 2190-08. Primary seal to be a continuous.
- D. Thermoplastic alloy, (TPA) filled polypropylene with Arloc™ slip coat compression seal for enhanced resistance against compression set and air leakage. Secondary seal to be a Polypropylene Leaf weatherstrip. Weatherstrip meets or exceeds standards required by AAMA 702-04.

The following six paragraphs specify optional products sold separately. Consult manufacturer and edit accordingly.

- E. Insect Screen: [Full] size with charcoal vinyl-coated BetterVue® mesh fiberglass screen cloth, set in 0.020" roll form aluminum frame fitted to inside of window, supplied complete with all necessary hardware. [optional: UltraVue® mesh]
- F. Extruded Insect Screen: [Full] size with charcoal vinyl-coated BetterVue® mesh fiberglass screen cloth, set in 0.050" extruded aluminum frame fitted to inside of window, supplied complete with all necessary hardware. [optional: UltraVue® mesh]
- G. Interior Removable Wood Grilles: [1" profile], [1-1/4" profile] removable solid wood bars dado and notched at joints and fitted to sash with clear plastic slide latch with steel pin. Surfaces unfinished [optional: white], ready for site finishing.
- H. Grilles- Between- Glass (GBG): [3/4" contour profile], [1/4" profile] Roll form aluminum bars fitted between the panes of glass in the specified insulated glass unit. 3/4" internal contour grille (GBG) finish shall be baked enamel, 1-color options [white], [sand], [bronze], [vanilla], and [special]. 2 color options [white/sand], [sand/white], [bronze/white], [white/bronze].
- I. Simulated Divided Lite Grilles (SDL): Exterior muntin bars shall be 1/8" thick by 1" wide [optional 1-1/4" wide] [optional: 2-1/4" wide] profile, solid extruded aluminum bars. Bars shall be adhered to exterior glass surface with black acrylic adhesive tape and will align with interior muntin, Interior muntin bars shall be of 1" [optional 1-1/4" wide] [optional: 2-1/4" wide] Wood grilles with adhesive tape application. Exterior surfaces finished to match window cladding. Interior surfaces unfinished, ready for site finishing, [optional: white].
- J. Between-the-Glass Blinds: Mini-Blind system is concealed between the insulated glass unit and a removable interior glass panel (triple Glazed). Finish for slats to be of epoxy paint with polyester UV high resistant finish. Slat finish to be [white], [sand]. Uses magnetic slide and helix assembly for easy tilt operation.



### 2.03 HARDWARE

- A. Operator: Window operators will have removable cover with folding handle that nests in the operator cover when retracted. The operator must be constructed of E-Gard® coated components. High-pressure die-cast zinc operator base, crank, handle and knob.
- B. Hinges: The hinge must provide a washable space between sash and side jamb when open 90° or the hinge must provide egress access when opened 90° (optional). Hinges will be of slide and pivot design, which uses a low friction slide shoe and stainless steel track. Sash arms are to be constructed of E-Gard® components to provide enhanced corrosion protection. The hinges shall provide a means of adjustment for sash drag.
- C. Locks: The lock must incorporate a multi-point locking feature that sequentially locks the window from bottom to top. The lock must provide for a removable handle and escutcheon for ease in color changes and/or for ease of site finishing. The locking drive and tiebar system shall be constructed of stamped steel protected with E-Gard® and high quality engineered plastics.

### 2.04 CERTIFICATIONS

Sun Windows are certified to the following programs, using Independent Testing Laboratories.

- A. WDMA Hallmark Certification Program
- B. NFRC (National Fenestration Rating Council)

### 2.05 FINISH

- A. Exterior Finish: Finish shall meet specifications in accordance with AAMA 2604. As selected by customer from manufacturer's full range.
- B. Interior Finish: Unfinished and ready for site finishing.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Inspect window openings prior to beginning installation. Verify that the openings are level and plumb and that the minimum opening dimension (width or height) is 1/4" larger than the window unit. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Install window units in accordance with manufacturer's recommendations, installation & finishing instructions and approved shop drawings.
- C. Secure assembly to framed openings, plumb, level and square, without distortion. Provide proper support and anchor securely in place.
- D. Place batt insulation in shim spaces around window perimeter to maintain continuity of building insulation. Do not use expanding foam insulation.
- E. Apply sealant and related backing materials at the exterior perimeter of the window units.
- F. Leave window units closed and locked.

### 3.02 PROTECTION AND CLEANING

- A. Clean window frames, sash and glass promptly following installation. Avoid damaging protective coatings and finishes. Remove excess sealants, dirt and other substances.
- B. Protect window surfaces and hardware from contact with contaminating substances, such as masonry cleaning solutions. Contact with certain substances can cause damage to the glass surface and/or could cause seal failure of the insulating glass unit. These substances could also cause discoloration or damage to painted surfaces. Clean contaminated surfaces immediately after contact.
- C. Remove nonpermanent labels from glass surfaces per manufacturer's installation finishing . . . instructions.
- D. Remove and replace glass that has been broken, chipped, cracked, abraded or damaged during the construction period.

### END OF SECTION

Specifications subject to change without notice