

SunClad USA Easy-Tilt Double Hung Windows
SECTION 08550**ALUMINUM-CLAD DOUBLE-HUNG WINDOWS****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Factory-assembled extruded aluminum-clad double-hung 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 [06100 - 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 1036-01 - Specification for Flat Glass.
 - 3. ASTM E 1300-03 - Standard Practice for Determining Load Resistance of Glass in buildings.
 - 4. ASTM E 773 - Test Method for Seal Durability of Insulating Glass Units .
 - 5. ASTM E 774-97 -Specification for Seal Durability of Insulating Glass Units.
 - 6. ASTM E 283-04 - Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified pressure Difference Across the Specimen.
 - 7. ASTM E 330-02 -Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
 - 8. ASTM E 547-00- Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential.
 - 9. ASTM F 588-04 - Measuring the Forced Entry Resistance of Window Assemblies, excluding glazing.
- B. Window and Door Manufacturer's Association (WDMA):
 - 1. WDMA I.S.-2 -Industry Standard for Wood Windows.
 - 2. WDMA I.S.-4-00 -Industry Standard for Water-Repellent Preservative Non-Pressure Treatment for Millwork.
- C. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 701-00 & 702-00 -Combined Voluntary Specification for Pile Weatherstripping and Voluntary Specification for Replacement fenestration Weatherseals.
 - 2. AAMA 2603-02 - Voluntary Specification for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
- D. National Fenestration Rating Council (NFRC):
 - 1. NFRC 100-2001 - Procedure for Determining Fenestration Product U-Factors.
 - 2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient at Normal Incidence.

1.04 PERFORMANCE REQUIREMENTS

- A. Window units shall meet Rating H-R30 specifications in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-05, except where more stringent requirements are specified. (Optional Rating: H-R45)
- B. Window unit air leakage, when tested in accordance with ASTM E 283-04 at 1.57 psf (25 mph), shall be 0.30 cfm/ft² of frame or less.
- C. No water penetration beyond the interior face of the window when tested in accordance with ASTM E 547-00 under static pressure of 4.5 psf (42 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. (Optional Pressure of 7.5 psf (54 mph) for more stringent requirements)
- D. Window units shall withstand positive and negative pressures of 45 psf (133 mph) acting normal to the plane of the window. Units shall have no permanent deformation in excess of .4% of its span when tested in accordance with ASTM E 330-02.
- E. Window units shall comply with Forced Entry Resistance requirements for a Level 10, when tested in accordance with ASTM F 588-04.



- F. Window units shall be rated, certified and labeled in accordance with NFRC 100-2001. U-Factors: (47 1/4 x 59); PPII glass, 0.34
- G. Window units shall be rated, certified and labeled in accordance with NFRC 200. Solar Heat Gain Coefficient: (47 1/4 x 59); PPII glass, 0.32

1.05 SUBMITTALS

- A. Submit in accordance with conditions of Division 1 requirements and the Contract.
- B. Product Data: Submit manufacturer's 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. Submit elevations indicating location and type of glazing material.
- D. Samples: Provide (1) complete window assembly for approval of color, glazing system and quality of construction.

1.06 QUALITY ASSURANCE

- A. Provide proof of compliance with AAMA/WDMA/CSA 101/I.S.2/A440-05 and ASTM E 774-97, Class "A" 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 manufacturer's 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 Easy-Tilt Double-Hung 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. 4-00. Interior exposed surfaces clear Western Pine; all exterior surfaces clad with extruded aluminum at head, jambs, and sill and incorporate an integral nail fin. Overall frame depth: 6" (153mm) for a wall depth of 4-9/16" (116mm). Optional factory-applied jamb extensions available up to 7-9/16" wall depths. Jambliner shall be high-impact, exterior weathering grade polyvinyl chloride with locking clutch balance shoes.
- B. Sash: Select kiln dried Western Pine, water-repellent, preservative-treated in accordance with WDMA I.S. 4-00. Interior exposed surfaces clear Western Pine; exterior surfaces clad with extruded aluminum, miter-jointed. Wood corners lap-jointed, glued and secured with metal fasteners. Sash thickness: 1-3/8" (35 mm). Glass shall be set to the sash frame using a 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-1036-01. [clear/clear] [Clear, argon filled, Low-E II coated] [Climaguard SPF™, argon filled, Low-E II coated providing 99.9% UV protection]. Various tints, obscure, tempered and laminated options are also available. Sealed insulating glass will have a Ω " air space with the revolutionary Duralite™ Warm Edge I.G. Spacer. Insulated Glass meets or exceeds standards required by ASTM E 774-97, Class A rating.
- D. Weatherstripping: Rigid dual wall parting stop with flexible hinge at head and custom dual durometer bulb at sill; Polyvinyl chloride leaf-style with flexible urethane hinge set into upper sash for tight contact at checkrail. Secondary dual durometer, foam weatherstrip at bottom sash at sill. Secondary fin-seal weatherstrip at head. PVC jambliner at sides of sash with fin-seal pad at checkrail. Weatherstrip meets or exceeds standards required by AAMA 701-00 or 702-00.



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

- E. Insect Screen: [Full] size with charcoal vinyl-coated 18/16 mesh fiberglass screen cloth, set in 0.020" roll form aluminum frame fitted to outside of window, supplied complete with all necessary hardware. Screen frame finish shall be of color to match window cladding.
- F. Interior Removable Wood Grilles: [half profile] [1" profile] removable solid wood bars dado & notched at joints and fitted to sash with clear plastic slide latch with steel pin. Surfaces unfinished, ready for site finishing. [Optional: interior white finish]
- G. Internal Grilles (ICM): [1/4" Brass profile] [1/4" black profile] [3/4" contour profile] Roll form aluminum bars fitted between the panes of glass in the specified insulated glass unit. 3/4" contour Internal Grille (ICM) finish shall be baked enamel, 1-color options [White], [Sand], [bronze], [vanilla] / 2-color options [White/Sand], [Sand/White], [bronze/white], [white/bronze]
- H. Simulated True Divided Lite Grilles: Exterior Muntin Bars shall be 1/8" thick by 1" wide profiled, solid extruded aluminum bars. Bars shall be adhered to exterior glass surface with black VHB adhesive tape and will align with Interior black Muntin. Interior Muntin Bars shall be of 1" Wood Grilles with black adhesive tape application. Exterior surfaces finished to match window cladding. Interior surfaces unfinished, ready for sight finishing. [optional: interior white finish]
- I. Extruded Aluminum Brickmold: .060" Extruded aluminum brickmold profile with 1 3/8" offset from frame edge at head and jamb. Sill has a 5/8" offset from edge of frame. Extruded aluminum brickmold to incorporate an integral nail fin.

2.03 HARDWARE

- A. Balance System: Spring balances connected to sash and concealed within the jamb liner. Incorporates locking pivot shoe when tilted to 90°.
- B. Locks/Keepers/Finger Latches: High-pressure, corrosion resistant, die cast zinc recessed sash lock/keeper factory installed. Two sash locks on units with 2'-8" frame width or greater. Recessed finger latches for restraining lower sash. Finish shall be [baked enamel, white.] [baked enamel], [tan.], [oil rubbed bronze], [brushed chrome], [brushed nickel] [bronze(brown)] [polished brass] Locks meet or exceed requirements by AAMA 1302.5.

2.04 CERTIFICATIONS

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

- A. WDMA Hallmark Certification Program
- B. NFRC (National Fenestration Ratings Council)
- C. ENERGY STAR®
- D. IGMA (Insulated Glass Manufacturers Association)

2.05 FINISH

- A. Exterior Finish: Exterior aluminum surfaces shall be finished with a baked on Polyester based, electro-statically applied paint. Meets or exceeds standards required by AAMA 2603-02. Color shall be [white.] [sand.] [bronze] [vanilla] [special** -.]
- B. Interior Finish: [Unfinished ready for site finishing.] [white]

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 0" 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.



3.03 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 manufacturers Installation & Finishing Instructions.
- D. Remove and replace glass that has been broken, chipped, cracked, abraded or damaged during the construction period.

Specifications subject to change without notice.

END OF SECTION

REV 09/07

SunClad USA Double Hung Products: Test Data											
Product Name	Size	DP (psf)	Air (psf)	Water (psf)	Structural (psf)	Structural Load (mph)	U-Value	R-Value	Solar Heat Gain Coef.	Visible Light Trans.	Condensation Resistance
SunClad USA Easy-Tilt Double Hung	44" x 74 1/4"	30	0.11	4.5	45	133	0.34	2.94	0.32	0.53	53
SunClad USA Easy-Tilt Double Hung	36" x 62 3/16"	45	0.11	4.5	67.5	163	0.34	2.94	0.32	0.53	53
SunClad USA Comfort-Tilt Double Hung	44" x 74 1/4"	30	0.11	4.5	45	133	0.34	2.94	0.32	0.53	53
SunClad USA Replacement Easy-Tilt Double Hung	44 1/4" x 73 3/4"	30	0.11	4.5	45	133	0.35	2.86	0.32	0.52	52
SunClad USA Fixed Lite	72" x 72"	15	<0.01	6.0	22.5	94	0.29	3.45	0.37	0.62	57
SunClad USA Replacement Fixed Lite	72" x 72"	15	<0.01	6.0	22.5	94	0.29	3.45	0.37	0.62	57
SunClad Heritage Fixed Lite	72" x 72"	15	<0.01	9.0	22.5	94	0.38	2.63	0.28	0.46	58

Note: Prices, Sizes, Descriptions, Features, Options and Availability are subject to change without notice.