

VINYL CASEMENT SERIES WINDOWS

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**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Factory-assembled vinyl [casement] [awning] [wide fixed] [narrow fixed] windows
- B. Glass and glazing
- C. Weather strip, hardware, insect screens, muntin bars
- D. Anchorages, attachments, and shims

**1.2 RELATED SECTIONS**

- A. Section [072700 – Air Barriers]: Water resistive Barrier
- B. Section [079200 – Joint Sealants]: Sealants and Caulking

**1.3 REFERENCES**

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM C 1048 – Specification for Heat Treated Float Glass-Kind HS, Kind FT Coated & Uncoated.
  - 2. ASTM C 1036 - Specification for Flat Glass
  - 3. ASTM E 1300 - Standard Practice for Determining Load Resistance of Glass in Buildings
  - 4. ASTM 2188 – Test Method for Seal Durability of Insulating Glass Units
  - 5. ASTM E 2190 – Standard Specification For Insulating Glass unit Performance & Evaluation
  - 6. ASTM E 283 – Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Difference Across the Specimen
  - 7. ASTM E 330 – Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference
  - 8. ASTM 547 – Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic 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. AAMA/WDMA/CSA 101/I.S.2/A440 – North American Fenestration Standard/Specification for windows, doors and skylights.
  - 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 & 702 – Combined Voluntary Specification for Pile Weatherstripping and Voluntary Specification for Replacement fenestration Weatherseals.
  - 2. AAMA 2604 - Voluntary Specification Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
  - 3. AAMA 2605 - Voluntary Specification Performance Requirements and Test Procedures for Superior Organic Coatings on Aluminum Extrusions and Panels
- D. National Fenestration Rating Council (NFRC):
  - 1. NFRC 100 – Procedure for Determining Fenestration product U-Factors
  - 2. NFRC 200 – Procedure for Determining Fenestration Product Solar Heat Gain Coefficient at Normal Incidence

**1.4 PERFORMANCE REQUIREMENTS**

- A. Window units shall be Hallmark certified and meet specifications in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 to a rating of [CW] [LC] – PG[ \_\_\_\_ ] (Current performance ratings can be found in the Structural Design section at www.sunwindows.com)

- B. Window unit air leakage, when tested in accordance with ASTM E 283 Shall be 0.05 cfm/ft<sup>2</sup> of frame or less at 1.57 psf (25 mph).
- C. No water penetration beyond the interior face of the window when tested in accordance with ASTM E 547 under static pressure of 15.04 psf (77 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 shall comply with Forced Entry Resistance requirements for a Grade 20, when tested in accordance with ASTM F 588.
- E. Window units shall be rated, certified, and labeled in accordance with NFRC 100.  
U-Factors: [ \_\_\_ ] (Specific glazing options and values can be found in the Energy Performance Section at [www.sunwindows.com](http://www.sunwindows.com))
- F. Window units shall be rated, certified and labeled in accordance with NFRC 200.  
Solar Heat Gain Coefficient: [ \_\_\_ ] (Specific glazing options and values can be found in the Energy Performance Section at [www.sunwindows.com](http://www.sunwindows.com))

### 1.5 SUBMITTALS

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

### 1.6 QUALITY ASSURANCE

- A. Provide proof of compliance with AAMA/WDMA/CSA 101/I.S.2/A440-11, ASTM 2190 - rating for Seal Durability of Insulating Glass Units

### 1.7 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.

### 1.8 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, construction activities and direct sunlight and in an upright position.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Sun Windows, Inc., 1515 E. 18<sup>th</sup> St., Owensboro, Kentucky 42303. Toll Free (800)328-1151. Phone (270) 684-0691. Website: [www.sunwindows.com](http://www.sunwindows.com)

Notes: Edit accordingly. 2020 series is a vinyl frame/sash with no aluminum cladding. The Patriot series is a vinyl frame/sash with aluminum cladding. Remove this note when editing.

### 2.2 COMPONENTS

- A. Frame:
  - 1. Impact resistant, exterior grade polyvinyl chloride extrusions complying with AAMA 303 and ASTM D 4726. Mitered and fusion welded corners, with molded-in receptor pockets for interior and exterior trim; 1 inch pre-punched nailing fin four sides (optional for 2020

- series). Overall 2020 frame depth: 3 1/4" (83 mm). [optional 2020 frame depth: 5 13/16" (148mm) for a wall depth of 4 9/16" (116 mm)]. [Overall Patriot frame depth: 4" (102mm) for a wall depth of 2 9/16" (65 mm)] [optional Patriot frame depth: 6" (153 mm) for a wall depth of 4 9/16" (116 mm)] [optional Patriot frame depth: 8" (203mm) for a wall depth of 6 9/16" (167 mm)] [Optional factory applied jamb extensions available up to 7-9/16" wall depths]
2. Glass shall be set to the [Wide Fixed] [Narrow Fixed] frame using an AAMA approved silicone glazing material and secured with vinyl glass stops.
  3. [For optional frame depths] Select kiln dried Western Pine, water-repellent, preservative treated in accordance with WDMA I.S. 4. Interior exposed surfaces clear Western Pine [unfinished] [painted] [primed].
  4. [For Patriot series] 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.
- B. Sash:
1. Impact resistant, exterior grade polyvinyl chloride extrusions complying with AAMA 303 and ASTM D 4726. Mitered and fusion welded corners
  2. Glass shall be set to the sash using an AAMA approved silicone glazing material and secured with vinyl glass stops.
  3. [For 2020 series] Sash thickness: 2-5/16" (59mm). [For Patriot series] Sash thickness: 2-7/16" (62mm).
  4. [For Patriot series] All exterior surfaces clad with 0.050" extruded aluminum, coped joinery. Sash has a built in water management system.
- C. Glazing System: Sealed insulating glass shall be produced using quality float glass complying with ASTM C-1036. [clear/clear] [Low-E 270/argon/clear] [Low-E 366/argon/clear] [Low-E 270/argon/i89] [Low-E 366/argon/i89] [clear/argon/Low-E 180], solar passive option. 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.
- D. Weatherstripping: One Co-extruded leaf seal on frame, One Co-extruded bulb seal on the sash, one secondary fin seal weatherstrip on the sash. All weatherstrip applied at head, sill and jambs. Weatherstrip meets or exceeds standards required by AAMA 702.

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

- E. Insect Screen: [Full] size with charcoal vinyl-coated BetterView® mesh fiberglass screen cloth, set in 0.020" roll form aluminum frame fitted to inside of window, supplied complete with all necessary hardware. [optional: Ultraview® mesh]
- F. FlexScreen®: [Full] size with charcoal vinyl-coated mesh fiberglass screen cloth, set in phosphate enhanced spring steel coated with an exterior grade, high performance PVC for outstanding scratch and weather resistance.
- G. 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 [see grille types options at [www.sunwindows.com](http://www.sunwindows.com)]. 2 color options [see grille type options at [www.sunwindows.com](http://www.sunwindows.com)].
- H. Simulated Divided Lite Grilles (SDL): Exterior muntin bars shall be .280" thick by [ 1" ] [1 1/4" ] [5/8" ] [2 1/4" ] profile hollow extruded aluminum bars. Bars shall be adhered to exterior glass surface with black VHB acrylic adhesive tape and will align with interior aluminum muntin of same size. Interior grilles applied with acrylic adhesive tape. Exterior bars finished to match window cladding. Interior bars finished to match interior vinyl. (Color options may be found by going to Interior Finish Options at [www.sunwindows.com](http://www.sunwindows.com)).

### 2.3 **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 lock the window from bottom to top with up to 0.625" (15.9 mm) of pull-in. The lock must utilize a tie bar driven by a single locking handle. The lock shall be constructed of high pressure zinc alloy die castings and painted or E-Gard components.

### 2.4 **CERTIFICATIONS**

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

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

### 2.5 **FINISH**

- A. Exterior Finish: (For Patriot Series) Finish shall meet specifications in accordance with AAMA 2604. As selected by customer from manufacturer's full range of standard and custom colors.
- B. Interior Finish: White, Black, Sand or Unfinished and ready for site finishing (wood jambs).

## **PART 3 EXECUTION**

### 3.1 **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 ¼" 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.

### 3.2 **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

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