

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION WIN-202

Effective December 1, 2010

*The following product has been evaluated for compliance with the wind loads specified in the **International Residential Code (IRC)** and the **International Building Code (IBC)**. This product shall be subject to reevaluation **August 2013**.*

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code and the Texas Engineering Practice Act.

Series 200 Vinyl Single Hung Windows, Individual and Mulled, New and Replacement Construction, Impact Resistant, manufactured by:

Showcase Custom Vinyl Windows and Doors
A product of ENLIGHT Industries, LLC
4902 Gulf Freeway
Houston, Texas 77023
Telephone: (713) 926-8500

will be acceptable in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with the manufacturer's installation instructions and this product evaluation.

PRODUCT DESCRIPTION

The Series 200 window is a vinyl single hung window. The single hung windows evaluated in this report are individual and mulled, impact resistant windows. This product evaluation report is for vinyl single hung windows based on the following tested constructions:

General Description:

System	Description	Label Rating
1	Series 200; Single Hung Window; Individual; (O/X)	H-R50 38 x 84 AAMA 506-06
2	Series 200; Single Hung Window; Individual; (O/X)	H-R50 44 x 84 AAMA 506
3	Series 200; Single Hung Windows; Twin; (O/X O/X)	Each Window: H-R50 38 x 84; AAMA 506-06
4	Series 200; Single Hung Windows; Twin; (O/X O/X)	Each Window: H-R50 44 x 84; AAMA 506-06
5	Series 200; Single Hung Windows; Triple; (O/X O/X O/X)	Each Window: H-R50 44 x 84; AAMA 506-06

Product Dimensions:

System	Overall Size	Sash Size(s)	Fixed Daylight Opening Size(s)
1	37 ³ / ₄ " x 83 ¹ / ₂ "	35 ¹ / ₂ " x 41"	33" x 38 ¹ / ₄ "
2	44 ³ / ₈ " x 84"	42" x 35"	39 ¹ / ₂ " x 44 ³ / ₄ "
3	Two: 37 ³ / ₄ " x 83 ¹ / ₂ "	Two: 35 ¹ / ₂ " x 41"	Two: 33" x 38 ¹ / ₄ "
4	Two: 44 ³ / ₈ " x 84"	Two: 42" x 35"	Two: 39 ¹ / ₂ " x 44 ³ / ₄ "
5	Triple: 44 ³ / ₈ " x 84"	Triple: 42" x 35"	Triple: 39 ¹ / ₂ " x 44 ³ / ₄ "

Glazing Description:

System	Glass Construction ¹	Glazing Method ²
1	IG-1	GM-1
2	IG-1	GM-1
3	IG-1	GM-1
4	IG-1	GM-1
5	IG-1	GM-1

Note: ¹ See the "Glass Construction Key" for the glazing construction.

² See the "Glazing Method Key" for the glazing method description.

Glass Construction Key:

IG-1: The fixed lite and the operable sash contain sealed insulating glass units. The sealed insulating glass units are comprised of a laminated glass unit and a double strength (¹/₈") annealed glass lite separated by a Truseal Duraseal spacer system. The laminated glass lite is comprised of two double strength (¹/₈") annealed glass lites with a Solutia 0.090" PVB interlayer.

Glazing Method Key:

GM-1: The insulating glass unit in the operable sash is exterior glazed with Sika Flex 552 polyurethane backbedding compound at the interior of the insulating glass unit, full perimeter. A vinyl (PVC) snap-in glazing bead secures the insulating glass unit from the exterior. The insulating glass unit in the fixed lite is interior glazed with Sika Flex 552 polyurethane backbedding compound at the exterior of the insulating glass unit, full perimeter.

Frame Construction: The frame members are manufactured from extruded vinyl (PVC). The frame corners are mitered and welded construction. The fixed interlock is attached to the frame jambs with screws.

Sash Construction: The sash members are manufactured from extruded vinyl (PVC). The sash corners are mitered and welded construction.

Reinforcement: Extruded aluminum reinforcement is located in the fixed interlock rail, the sash top rail, bottom rail, and stiles. The reinforcement extends the full length of the member.

Mullion:

Systems 3, 4, and 5: An aluminum hollow extrusion, 1" x 5 ³/₈". Each window frame side jamb is secured to the mullion with one (1) row of No. 10 x ³/₄" screws spaced 12 inches on center.

Hardware (per window):

- Cam action lock; Two (2) required; Located at each end of the sash top rail. Attached with two (2) screws per lock.

Hardware (per window) - continued:

- Lock keepers; Two (2) required; Attached to the fixed meeting rail into the reinforcement with two (2) screws.
- Vinyl spring loaded tilt latch; Two (2) required; Located at each end of the sash top rail.
- Metallic pivot bar: Two (2) required; Located at each end of the sash bottom rail.
- Spiral type sash balance with locking tilt shoe; Two (2) required; Located in each frame side jamb.

Product Identification:

Systems 1 and 2: A certification program label (AAMA) will be affixed to the window. The certification program label includes the manufacturer's code name (**SHO-1**); product name: **200 SH**; performance characteristics; the approved inspection agency (AAMA); and the applicable standards: AAMA/WDMA/CSA 101/I.S.2/A440-05 and AAMA 506-06 Missile Level: D.

Systems 3, 4, and 5: A certification program label (AAMA) will be affixed to each window. The certification program label includes the manufacturer's code name (**SHO-1**); product name: **200 SH**; performance characteristics; the approved inspection agency (AAMA); and the applicable standards: AAMA/WDMA/CSA 101/I.S.2/A440-05 and AAMA 506-06 Missile Level: D.

LIMITATIONS

Design pressures:

System	Maximum Width (in.)	Maximum Height (in.)	Design Pressures (psf)
1	37 ³ / ₄	83 ¹ / ₂	± 50
2	44 ³ / ₈	84	± 50
3	Each Window: 37 ³ / ₄	Each Window: 83 ¹ / ₂	± 50
4	Each Window: 44 ³ / ₈	Each Window: 84	± 50
5	Each Window: 44 ³ / ₈	Each Window: 84	± 50

Impact Resistance: These window assemblies satisfy the Texas Department of Insurance's criteria for protection from windborne debris in the **Inland I zone** and the **Seaward zone**. The window assemblies passed Missile Level D specified in ASTM E 1996-04. The window assemblies may be installed at any height on the structure as long as the design pressure rating for the assembly is not exceeded. These window assemblies will not need to be protected with an impact protective system.

Acceptance of Smaller Assemblies: Window assemblies with dimensions equal to or smaller than those specified above are acceptable within the limitations specified in this report.

INSTALLATION INSTRUCTIONS

General: The window assembly shall be installed in accordance with the manufacturer's installation instructions and this evaluation report. Detailed installation instructions and drawings are available from the manufacturer.

Installation:

Systems 1 and 2 (One of the following):

Nailing Fin Installation: The wall framing members shall be minimum Spruce-Pine-Fir dimension lumber. The nailing fin of the window shall be secured to the wall framing with minimum $2\frac{3}{8}$ " x 0.120" diameter smooth shank nails. The fasteners shall be located approximately 2 inches from each corner and approximately 12 inches on center along the perimeter of the window. The fasteners shall be long enough to penetrate a minimum of $1\frac{1}{2}$ inches into the wall framing.

Frame Installation: The wall framing members shall be minimum Spruce-Pine-Fir dimension lumber. The window shall be secured to the wall framing using the window frame head and side jambs with minimum No. 10 x $2\frac{1}{2}$ " screws. Along the head, four (4) fasteners are required, evenly spaced. Along each side jamb, six (6) fasteners are required, evenly spaced. The fasteners shall be long enough to penetrate a minimum of $1\frac{1}{2}$ inches into the wall framing.

Systems 3 and 4 (One of the following):

Nailing Fin Installation: The wall framing members shall be minimum Spruce-Pine-Fir dimension lumber. The window shall be secured to the wall framing using the nailing fin of the window with minimum $2\frac{3}{8}$ " x 0.120" diameter smooth shank nails. The fasteners shall be located approximately 2 inches from each corner and approximately 8 inches on center along the perimeter of the window. An aluminum strap ($1" \times 5\frac{3}{8}" \times \frac{3}{32}"$ (0.093")) shall be used to attach the center mull reinforcement to the wall framing. A single strap is required at the head and sill. The strap is secured to the mullion with two (2) No. 10 x $\frac{3}{4}"$ screws into the screw boss located at the end of the mullion. Each strap is fastened to the wood wall framing with minimum four (4) No. 16 x $2\frac{1}{2}"$ long screws. All fasteners shall be long enough to penetrate a minimum of $1\frac{1}{2}$ inches into the wall framing.

Frame Installation: The wall framing members shall be minimum Spruce-Pine-Fir dimension lumber. The window shall be secured to the wall framing using the window frame head and side jambs with minimum No. 10 x $2\frac{1}{2}"$ screws. Along the head, four (4) fasteners are required along each window, evenly spaced (total of eight (8) fasteners). Along each side jamb, twelve (12) fasteners are required, evenly spaced. An aluminum strap ($1" \times 5\frac{3}{8}" \times \frac{3}{32}"$ (0.093")) shall be used to attach the center mull reinforcement to the wall framing. A single strap is required at the head and sill. The strap is secured to the mullion with two (2) No. 10 x $\frac{3}{4}"$ screws into the screw boss located at the end of the mullion. Each strap is fastened to the wood wall framing with minimum four (4) No. 16 x $2\frac{1}{2}"$ long screws. The fasteners shall be long enough to penetrate a minimum of $1\frac{1}{2}$ inches into the wall framing.

System 5 (One of the following):

Nailing Fin Installation: The wall framing members shall be minimum Spruce-Pine-Fir dimension lumber. The window shall be secured to the wall framing using the nailing fin of the window with minimum $2\frac{3}{8}"$ x 0.120" diameter smooth shank nails. The fasteners shall be located approximately 2 inches from each corner and approximately 8 inches on center along the perimeter of the window. An aluminum strap ($1" \times 5\frac{3}{8}" \times \frac{3}{32}"$ (0.093")) shall be used to attach the mull reinforcement to the wall framing. A single strap is required at each end of each mull reinforcement. The strap is secured to the mullion with two (2) No. 10 x $\frac{3}{4}"$ screws into the screw boss located at the end of the mullion. Each strap is fastened to the wood wall framing with minimum four (4) No. 16 x $2\frac{1}{2}"$ long screws. All fasteners shall be long enough to penetrate a minimum of $1\frac{1}{2}$ inches into the wall framing.

Frame Installation: The wall framing members shall be minimum Spruce-Pine-Fir dimension lumber. The window shall be secured to the wall framing using the window frame head and side jambs with minimum No. 10 x 2 ½" screws. Along the head, six (6) fasteners are required along each window, evenly spaced (total of eighteen (18) fasteners). Along each side jamb, sixteen (16) fasteners are required, evenly spaced. An aluminum strap (1" x 5 ⅜" x ⅜" (0.093")) shall be used to attach the mull reinforcement to the wall framing. A single strap is required at each end of each mull reinforcement. The strap is secured to the mullion with two (2) No. 10 x ¾" screws into the screw boss located at the end of the mullion. Each strap is fastened to the wood wall framing with minimum four (4) No. 16 x 2 ½" long screws. The fasteners shall be long enough to penetrate a minimum of 1 ½ inches into the wall framing.

Note: The manufacturer's installation instructions shall be available on the job site during installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), the International Building Code (IBC), and the Texas Revisions.