

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION WIN-658

Effective June 1, 2011

*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 **February 2014**.*

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 2000 Aluminum Fixed Windows, Impact Resistant, manufactured by

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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 2000 window is an aluminum fixed window. The aluminum fixed windows evaluated in this report are individual, impact resistant windows. This product evaluation report is for aluminum fixed windows based on the following tested constructions:

General Description:

System	Description	Label Rating
1	Series 2000 Aluminum Fixed Windows; (O); Large Missile Impact Rating	FW-AW90 60 x 120; Missile Level D
2	Series 2000 Aluminum Fixed Windows; (O); Large Missile Impact Rating	FW-AW90 60 x 120; Missile Level D
3	Series 2000 Aluminum Fixed Windows; (O); Large Missile Impact Rating	FW-AW105 60 x 120; Missile Level D
4	Series 2000 Aluminum Fixed Windows; (O); Small Missile Impact Rating	FW-AW90 60 x 120; Missile Level A
5	Series 2000 Aluminum Fixed Windows; (O); Small Missile Impact Rating	FW-AW105 60 x 120; Missile Level A

Product Dimensions:

System	Overall Size	Fixed Daylight Opening
1	60" x 120"	54 1/2" x 114 1/2"
2	60" x 120"	54 1/2" x 114 1/2"
3	60" x 120"	54 1/2" x 114 1/2"
4	60" x 120"	54 1/2" x 114 1/2"

Product Dimensions (continued):

System	Overall Size	Fixed Daylight Opening
5	60" x 120"	54 ½" x 114 ½"

Glazing Description:

System	Glass Construction ¹	Glazing Method ²
1	IG-1	GM-1
2	IG-3	GM-1
3	SG-1	GM-1
4	IG-2	GM-1
5	SG-2	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 window contains an insulating glass unit. The insulating glass unit is comprised of a ⅜" fully tempered glass lite and a laminated glass unit separated by a desiccant filled spacer system. The laminated glass unit is comprised of two ⅜" heat strengthened glass lites with a 0.060" thick SGP interlayer by Solutia.

IG-2: The window contains an insulating glass unit. The insulating glass unit is comprised of a ⅜" fully tempered glass lite and a laminated glass unit separated by a desiccant filled spacer system. The laminated glass unit is comprised of two ⅜" heat strengthened glass lites with a 0.035" thick SGP interlayer by Solutia.

IG-3: The window contains an insulating glass unit. The insulating glass unit is comprised of a ⅜" fully tempered glass lite and a laminated glass unit separated by a desiccant filled spacer system. The laminated glass unit is comprised of two ⅜" heat strengthened glass lites with a 0.090" thick SGP interlayer by Solutia.

SG-1: The window contains a laminated glass unit. The laminated glass unit is comprised of two ¼" heat strengthened glass lites with a 0.090" thick SGP interlayer by Solutia.

SG-2: The window contains a laminated glass unit. The laminated glass unit is comprised of two ¼" heat strengthened glass lites with a 0.035" thick SGP interlayer by Solutia.

Glazing Method Key:

GM-1: The insulating glass units and laminated glass units are set with Sika 552 sealant backbedding compound. An aluminum glazing stop with a vinyl impact glass stop secures the glass units in place.

Frame Construction: The frame members are manufactured from extruded aluminum. The frame corners are coped, butted, and attached with screws.

Reinforcement: None.

Product Identification: Two certification program labels (Keystone) will be affixed to the window. One certification program label includes the manufacturer's name, performance characteristics and approved inspection agency to indicate compliance with the requirements of AAMA/WDMA/CSA 101/I.S.2/A440-05. The second certification program label includes the manufacturer's name, performance characteristics

and approved inspection agency to indicate compliance with the requirements of ASTM E1886 and ASTM E 1996.

Each label contains a Certification Authorization Report (CAR) number located on the top right side of the label and a model name for the window. The following CAR numbers and model names are located on each label:

Label Identification:

System	Model	Certification Authorization Report (CAR) number	
		Label with AAMA/WDMA/CSA 101/I.S.2/A440-05	Label with ASTM E 1886 and ASTM E 1996
1	2000 Impact Fixed	167-404	167-228
2		167-452	167-257
3	2000 Impact Fixed	167-406	167-230
4	2000 Impact Fixed	167-407	167-231
5	2000 Impact Fixed	167-405	167-229

LIMITATIONS

Design pressures:

System	Maximum Width (in.)	Maximum Height (in.)	Design Pressures (psf)
1	60	120	± 90
2	60	120	± 90
3	60	120	± 105
4	60	120	± 90
5	60	120	± 105

Impact Resistance:

Systems 1, 2, and 3: These window assemblies satisfy the Texas Department of Insurance's criteria for protection from windborne debris in both 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 assemblies is not exceeded. These window assemblies will not need to be protected with an impact protective system.

Systems 4 and 5: These window assemblies satisfy the Texas Department of Insurance's criteria for protection from windborne debris in both the **Inland I zone** and the **Seaward zone**. The window assemblies passed Missile Level A specified in ASTM E 1996-04. The window assemblies may be installed at heights **30 feet or higher** on the structure as long as the design pressure rating for the assemblies is not exceeded. **Note: These window assemblies may not be installed at heights less than 30 feet.** 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. Detailed installation instructions and drawings are available from the manufacturer.

Installation:

Wall Framing Construction: The windows may be mounted to several types of wall framing construction. The types of wall framing construction allowed include:

- Concrete (minimum compressive strength: 3,200 psi)
- Hollow concrete block (ASTM C-90, Grade N, Type 1 or greater)
- Wood dimension lumber (minimum Spruce-Pine-Fir)
- Wood backed (minimum Spruce-Pine-Fir) minimum 20 gauge steel

Fasteners:

- Concrete and hollow concrete block wall framing; Minimum $\frac{1}{4}$ " diameter ITW Tapcons; Minimum $1\frac{1}{4}$ " embedment; Minimum $2\frac{1}{2}$ " edge distance.
- Wood and wood backed steel wall framing; Minimum No. 14 screw; Minimum $1\frac{3}{4}$ " embedment

Fastener Spacing: The fasteners shall be installed through the window frame and into the wall framing. The fasteners shall be spaced approximately 6 inches from each corner and approximately 8 inches on center on center along the perimeter of the window assembly.

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.