

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION SHU-52

Effective January 1, 2004
Revised June 1, 2006

*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 3 years after the effective date.*

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.

ES44, ES55, SAR115, SAR155A Aluminum Roll Up Shutters, Impact Resistant, manufactured by

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Fort Myers, Florida 33912
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will be accepted for use in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with this product evaluation and the design drawings referenced in this evaluation report.

PRODUCT DESCRIPTION

The roll up shutters are manufactured from extruded aluminum. The roll up shutters are assembled using interlocking extruded aluminum slats. The components of the roll up shutter system are as follows:

SAR155A slats: Manufactured from aluminum sheet metal, 3005-H8 aluminum alloy, filled with a high density, polyisocyanurate foam core with a thickness of 0.018" and a cross section of 2.583" wide by 0.48" deep.

SAR115 slats: Manufactured from 6063-T6 aluminum alloy with a thickness of 0.039" and a cross section of 2.628" wide by 0.472" deep.

ES44 slats: Manufactured from 6063-T6 aluminum alloy with a thickness of 0.039" and a cross section of 2.016" wide by 0.374" deep.

ES55 slats: Manufactured from 6063-T6 aluminum alloy with a thickness of 0.039" and a cross section of 2.016" wide by 0.374" deep.

Guide rails: Manufactured from 6063-T6 aluminum. The guide rail used with the ES55, SAR115, and SAR155A slats are 3.149" in length and 1.1.02" in depth. The guide rail used with the ES44 slats are 2.441" in length and 0.827" in depth.

Storm bars: Manufactured of 6063-T6 aluminum. The storm bars are 2" deep. The storm bars are available in 2", 3", 4", and 5" depths. The wall thickness is 0.125".

Headers: Manufactured of 6063-T6 aluminum. The headers are 2" deep. The headers are available in 3", 4", and 5" depths. The wall thickness is 0.125".

PRODUCT DESCRIPTION (Continued)

Mullions: Manufactured of 6063-T6 aluminum. The mullions are 2" deep. The mullions are available in 2", 3", 4", 5", and 6" depths. The wall thickness is 0.125".

LIMITATIONS

Design Drawings: The roll up shutters shall be installed in accordance with Drawing No. 04-264, sheets 1 through 11 of 11, dated May 27, 2005, and signed and sealed by Pedro De Figueiredo, P.E. on September 29, 2005. The stated drawings will be referred to as "approved drawings" in this report. A copy of the approved drawings shall be available at the job site.

Design Pressure Rating: The design pressure rating for the roll up shutters is dependant on several factors, including the slat span, the storm bar span, the header span, and the mullion span. Refer to the approved drawings to determine the allowable design pressure rating for the shutter assembly based on components of the shutter assembly.

Separation Distance from Glazed Openings: This product has no required minimum separation distance from glazed openings.

Allowable Span Configurations: The shutters can be installed as single span systems, two span systems, or three span systems. Each span configuration can be extended by using a mullion.

Mounting Configurations: The shutters may be mounted directly to the wall system, built out from the wall system using a 2x extruded aluminum tube, or inset from the wall system.

Wall Framing Construction: The shutters may be mounted to concrete (minimum compressive strength specified on approved design drawings); hollow concrete block, Southern Yellow Pine dimension lumber, or minimum 0.125" aluminum.

Maximum Slat Spans: The maximum allowable slat spans for a given design pressure and type of slat used are specified in a table on page 2 of 11 of the approved drawings.

Maximum Storm Bar Span: The maximum allowable vertical storm bar height is specified on page 4 of 11 of the approved drawings. The maximum allowable storm bar height is a function of the cross section dimensions of the storm bar, the allowable design load, and the slat span.

Maximum Header Span: The maximum allowable horizontal header span is specified on page 6 of 11 of the approved drawings. The maximum allowable header span is function of the heard cross section used and the allowable design load.

Maximum Mullion Span: The maximum allowable vertical mullion height is specified on page 7 of 11 and 9 of 11. One of the following cases shall be utilized:

- **Case 1:** The mullion spans on page 7 of 11 are for single span shutters and multiple span shutters with the heard anchored to the wall.
- **Case 2:** The mullion spans on page 9 of 11 are for multiple span shutters with the outside header anchored to the mullion.

Product Identification: The shutters shall be labeled with the manufacturer's name, large missile impact resistant shutter, and ES44, ES55, SAR115, and SAR155A series roll shutters.

LIMITATIONS (Continued)

Impact Resistance: These shutter assembly satisfies the Texas Department of Insurance's criteria for protection from windborne debris in both the **Inland I zone** and the **Seaward zone**. The shutter assemblies passed Missile Level D specified in ASTM E 1996-01. The shutter assemblies may be installed at any height on the structure as long as the design pressure rating for the assemblies is not exceeded.

INSTALLATION INSTRUCTIONS

General Installation Requirements: The shutters shall be installed in accordance with the manufacturer's installation instructions, the approved drawings, and this product evaluation report.

Wall Framing Construction: The shutters may be mounted to concrete (minimum compressive strength specified on approved design drawings); hollow concrete block, Southern Yellow Pine dimension lumber, or minimum 0.125" thick aluminum. The mounting options specified in the approved drawings shall be followed.

Guide Rail Mounting Options: Guide rail mounting options are specified on page 3 of 11 of the approved design drawings. The shutters may be mounted directly to the wall system, built out from the wall system using an extruded aluminum tube, or inset from the wall system. If the built out option is used, then the guide rails shall be mounted to a 2x 6063-T6 extruded aluminum tube.

Storm Bar Mounting Options: Storm bar mounting options are specified on page 5 of 11 of the approved design drawings.

Header Mounting Options: Header mounting mounting options are specified on page 6 of 11 of the approved design drawings.

Mullion Mounting Options: Mullion mounting options for Case 1 conditions are specified on page 8 of 11 of the approved design drawings. Mullion mounting options for Case 2 conditions are specified on page 10 of 11 of the approved design drawings.

Note: All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), the International Building Code (IBC), and the Texas Revisions. A copy of the approved drawings shall be available at the job site.