

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION SHU-111

Effective October 1, 2004

*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.

Embossed Aluminum Hurricane Shutter Panels, Galvanized Steel Storm Panels, and Polycarbonate Storm Panels manufactured by

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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, the manufacturer's installation instructions and Drawing No. 04-115-0001, sheets 1 and 2, as revised on June 11, 2004, and signed by Frank L. Bennardo, P.E. on June 15, 2004 and MM-04-2004, sheets 1 and 2, as drawn on September 14, 2004, and signed by Joseph Potts, P.E. on September 14, 2004. Installation instructions and Drawing No. 04-115-0001 and MM-04-2004 shall be provided and available on the job site during installation.

PRODUCT DESCRIPTION

System 1:

Embossed Aluminum Shutter Panels are 0.022 inch embossed aluminum panels. These panels are rolled formed into a two (2) ribbed 2" x 12" section with a nominal coverage of 12" per panel. As an option, these panels were also perforated to allow a small amount of light to filter through the installed panel assembly. Each perforation was a half-moon indentation over an area approximately $\frac{3}{8}$ " wide at widest point by $\frac{1}{2}$ " long with an actual opening approximately $\frac{3}{32}$ " at widest point.

System 2:

Galvanized Steel Storm Panels are 0.018 inch galvanized steel storm panels. These panels are rolled formed into a two (2) ribbed 2" x 12" section with a nominal coverage of 12" per panel. As an option, these panels were also perforated to allow a small amount of light to filter through the installed panel assembly. Each perforation was a half-moon indentation over an area approximately $\frac{3}{8}$ " wide at widest point by $\frac{1}{2}$ " long with an actual opening approximately $\frac{3}{32}$ " at widest point.

System 3:

Polycarbonate Storm Panels: Polycarbonate storm panels shall be alternated with 0.018 inch galvanized steel storm panels, (System #2). Polycarbonate panels were extruded into (2) 2 x 12 $\frac{1}{2}$ " sections with nominal coverage of 12 $\frac{1}{2}$ " per panel. The $\frac{1}{10}$ polycarbonate panels were tested with 0.018 inch steel storm panels (System #2).

LIMITATIONS

Maximum Allowable Design Load:

System 1: Embossed Aluminum Shutter Panels

Panel Type	Span	Maximum Allowable Load ±38 psf
Embossed Aluminum (0.022")	Max. span 9' 2" (All mounting conditions)	
	Min. span 26" (Direct mount top & bottom)	
	Min. span 16" (All other conditions)	

System 2: Galvanized Steel Storm Panels

Panel Type	Span	Maximum Allowable Load ±54 psf
Galvanized Steel [28 ga. (0.018")]	Max. span 9' 2" (all mounting conditions)	
	Min. span 26" Direct mount top & bottom	
	Min. span 16" (All other conditions)	

System 3: Polycarbonate Storm Panels/Combination Metal Panels

Panel Type	Span	Maximum Allowable Load ±54 psf
Clear Polycarbonate Full/Half (0.100")	Max. span 9' 2" (All mounting conditions)	
	Min. span 24" (Direct mount top & bottom)	
	Min. span 15" (All other conditions)	

Impact Resistance: This 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 C specified in ASTM E 1996-99. 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:

All shutters shall be installed in accordance with Drawing No. 04-115-0001, sheets 1 & 2, prepared by Frank Bennardo, P.E., June 11, 2004, signed by Frank J. Bennardo, P.E. on June 15, 2004 and MM-04-2004, sheets 1 and 2, as drawn on September 14, 2004, and signed by Joseph Potts, P.E. on September 14, 2004 and this product evaluation report.

Mounting Conditions:

The shutter system shall be mounted and anchored in accordance with the mounting conditions shown on the drawings. For attachment to any wood framing members, the wood framing members shall be a minimum 2" x 4" Southern Pine with a specific gravity of 0.55 or greater.

Note: Manufacturer's installation instructions and Drawing No. 04-115-0001, sheets 1 & 2, prepared by Frank Bennardo, P.E., June 11, 2004, signed by Frank J. Bennardo, P.E. on June 15, 2004 and MM-04-2004, sheets 1 and 2, as drawn on September 14, 2004, and signed by Joseph Potts, P.E. on September 14, 2004 shall be available on the job site. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC) and the International Building Code (IBC).