

TEXAS DEPARTMENT OF INSURANCE

Engineering Services / MC 103-3A 333 Guadalupe Street P.O. Box 149104 Austin, Texas 78714-9104
Phone No. (512) 322-2212 Fax No. (512) 463-6693

PRODUCT EVALUATION SHU-177

Effective July 1, 2009

*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 **July 2010**.*

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.

Storm-A-Rest (Supreme Protector 503 W/E/PEH) Fabric Shutter System, Impact Resistant,
manufactured by

JHRG, LLC
303 South Pine Street
Spring Hope, North Carolina 27882
Telephone: (800) 849-4997

will be accepted for use in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with the manufacturer's instructions, the design drawings referenced in this evaluation report, and the requirements specified in this evaluation report.

PRODUCT DESCRIPTION

The Storm-A-Rest (Supreme Protector 503 W/E/PEH) is a fabric windborne debris protective system. The system consists of a fabric storm panel system that is applied over an exterior opening and is secured to the exterior of the structure with fasteners. The system consists of the following components:

Fabric: The fabric is manufactured of 503 W/E/PEH woven fabric. The woven fabric has EVA and a polyethylene film coating on both sides. The woven fabric is UV resistant. Sewn into a pocket along two edges of the fabric is a $\frac{1}{8}$ " x 1" 6061 T6511 aluminum slat. The aluminum slat is required at two opposite edges of the fabric and extends the length of the fabric. The pocket is formed by folding the fabric over with a $1\frac{3}{4}$ " overlap and sewing together with thread SPT 138. Refer to Details C and D on page 4 of 4 of the approved drawings. Seams in the fabric are formed by sewing a 3 inch wide strip of Supreme Protector 503 W/E/PEH fabric into a 3 inch wide overlap of Supreme Protector 503 W/E/PEH fabric using thread SPT 138. Refer to Detail E on page 4 of 4 of the approved drawings.

Grommets: 305 stainless steel grommets with a 0.970" flange, a 0.545" hole, and a thickness of 0.345". The grommets are located along the perimeter of the fabric. The corner grommets are spaced a maximum of 2 inches from a non-reinforced edge of the fabric. The grommets are required only along the edges of the fabric reinforced with the aluminum slats (located at two opposite edges of the fabric). The spacing of these grommets is as specified in the approved drawings referenced in this evaluation report. Grommets located along the other two sides of the fabric are used only to prevent wind flap and are not required for the performance of the product.

Zipper (Optional): A No. 15 gauge x 84" maximum opening, teeth and pull handle. Manufactured of DuPont Delrin Acetal Resin. The tape is 1 ¼" wide and 100 percent polyester. Both the tape and the zipper are UV stabilized. The zipper tape is sewn into the Supreme Protector 503 W/E/PEH fabric with thread SPT 138. Refer to Detail B and Detail F of the approved drawings.

Sunbrella (Optional): A fabric used as an accent trim that is sewn onto the surface of the Supreme Protector 503 W/E/PEH fabric.

Product Identification: A manufacturer produced label shall be affixed to the fabric storm panel. The label includes the manufacturer's name (**JHRG LLC**); the product name (**Storm-A-Rest (Supreme Protector 503 W/E/PEH)**); and the design pressure rating (**+/- 78 psf**).

LIMITATIONS

Design Drawings: The fabric storm panels shall be installed in accordance with Drawing No. JHRG04, titled "Storm-A-Rest (Supreme Protector 503 W/E/PEH) Hurricane Shutter," sheets 1 through 4 of 4, drawn April 23, 2009 and revised June 24, 2009. Each sheet is signed, sealed, and dated by Kristina Daugherty, P. E., June 24, 2009. The stated drawings are referred to as "approved drawings" in this evaluation report. A copy of the approved drawings shall be available at the job site.

Wall Framing Construction: The fabric storm panel may be mounted to either pre-cast or cast-in-place concrete (minimum concrete compressive strength of 3,000 psi) or minimum Southern Yellow Pine dimension lumber.

Maximum Allowable Supported Span: The maximum allowable supported span is the distance between reinforced fabric edges with fastener (grommet) spacing as specified in the approved drawings for the performance of the product. The maximum supported span is 124 ½ inches. Refer to page 1 of 4 of the approved drawings.

Maximum Allowable Unsupported Span: The maximum allowable unsupported span is the distance between the non-reinforced fabric edges. There is no limit to this dimension. These two edges are not required to be anchored for the performance of the product. Refer to page 1 of 4 of the approved drawings.

Maximum Distance Between Seams: The maximum distance between seams is the distance between a reinforced fabric edge and a seam in the fabric panel. The maximum distance between seams is 62 ¼ inches. Refer to page 1 of 4 of the approved drawings.

Maximum Design Pressure Rating: The maximum design pressure rating for the fabric panel is 78 psf. Lower design pressure ratings may be achieved with the appropriate fastener spacing. Refer to page 2 of 4 of the approved drawings.

Impact Resistance: This 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 assembly passed Missile Level D specified in ASTM E 1996-04. The assembly may be installed at any height on the structure as long as the design pressure rating for the assembly is not exceeded.

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

Minimum Separation Distance: There is no minimum separation distance between the fabric and the glazing for this shutter system. Refer to General Note No. 10 on page 1 of 4 of the approved drawings.

INSTALLATION INSTRUCTIONS

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

Design Drawings: The fabric panel shall be installed as specified on design drawings. Drawing No. JHRG04, titled "Storm-A-Rest (Supreme Protector 503 W/E/PEH) Hurricane Shutter," sheets 1 through 4 of 4, drawn April 23, 2009 and revised June 24, 2009. Each sheet is signed, sealed, and dated by Kristina Daugherty, P. E., June 24, 2009. The stated drawings are referred to as "approved drawings" in this evaluation report. A copy of the approved drawings shall be available at the job site.

Installation:

Wall Construction: The assembly shall be mounted to either Southern Yellow Pine dimension lumber or pre-cast or cast-in-place concrete (minimum compressive strength of 3,000 psi).

Fabric: The fabric panels shall be sized to be installed taught and without excessive slack. The fabric panels may be mounted either horizontally or vertically. The allowable span of the fabric panel (the distance between the reinforced fabric edges) shall not exceed the allowable span specified in the design drawings referenced in this evaluation report. Follow the installation instructions that are provided on the design drawings. The spacing of the grommets shall be as specified on the design drawings.

Attachment: The fabric shall be secured to the wall framing using one of the following fastener options:

Southern Yellow Pine Wood Wall Framing:

- ITW Buildex Tapcons, $\frac{1}{4}$ " x $2\frac{1}{4}$ " SG with Ultrashield; $\frac{1}{4}$ x 20 heavy duty washered wingnut, nickel plated.
- ITW Buildex Sammy Super Screw with $1\frac{3}{4}$ " Tapcon with $\frac{1}{4}$ -20 stainless steel cap; $\frac{1}{4}$ " x 20 x $\frac{3}{4}$ " combo sidewalk bolt 18-8 stainless steel.

Concrete Wall Systems:

- ITW Buildex Tapcons, $\frac{1}{4}$ " x $2\frac{1}{4}$ " SG with Ultrashield; $\frac{1}{4}$ x 20 heavy duty washered wingnut, nickel plated.
- ITW Buildex Sammy Super Screw with $1\frac{3}{4}$ " Tapcon with $\frac{1}{4}$ -20 stainless steel cap; $\frac{1}{4}$ " x 20 x $\frac{3}{4}$ " combo sidewalk bolt 18-8 stainless steel.

Fastener Locations: The fasteners shall be placed through the grommets located along the reinforced edge of the fabric panel and into the structure. For the design performance of the fabric panel, the fasteners are required along two opposite, reinforced edges of the fabric panel. Fasteners located along the other two, non-reinforced, edges may be used to reduce wind flap, but are not required for the performance of the product.

Fastener embedment: For wood wall framing, the fasteners shall be long enough to penetrate a minimum of $1\frac{1}{2}$ inches into the wood wall framing. For concrete wall systems, the fasteners shall be long enough to penetrate a minimum of $1\frac{3}{4}$ inches into the concrete. The embedment distance excludes the exterior wall finish material.

Edge distance: For wood wall framing, the fasteners shall be located a minimum of $2\frac{1}{4}$ inches from any edge of the wood wall framing. For concrete wall systems, the fasteners shall be located a minimum of $2\frac{1}{2}$ inches from any edge of the concrete. The edge distance excludes the exterior wall finish material.

Storage: The Supreme Protector 503 W/E/PEH shutter system is designed to be removed when not in use. Following the initial installation of the system, the assembly should be removed and stowed away. It is recommended that the fabric panels be marked or labeled in some manner to identify the proper exterior opening they will cover on the structure.

Note: The manufacturer's installation instructions and the design drawings referenced in this evaluation report 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.