

# TEXAS DEPARTMENT OF INSURANCE

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## PRODUCT EVALUATION SHU-152

Effective October 1, 2013

*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.*

**Force 12 Diamond Screen Fabric Storm Panels, Impact Resistant**, manufactured by

**Hendee Enterprises, Inc.**  
**9350 South Point Drive**  
**Houston, Texas 77054**  
**Telephone: (800) 231-7275**  
**Website: [www.hendee.com](http://www.hendee.com)**

will be accepted for use in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with this product evaluation and with design drawings that are referenced in this evaluation report.

## PRODUCT DESCRIPTION

The Force 12 Diamond Screen fabric storm panels are a flexible wind abatement and impact protection system. The system may be installed on new or existing construction. The fabric storm panel system consists of the following components:

**Fabric:** 100 percent polypropylene constructed of nineteen (19) 0.052" wide filaments, both horizontally and vertically, per square inch of fabric. Each filament is made up of three (3) 0.013" wide sub filaments in a  $\frac{3}{4}$ " basket weave network and calendared such that the filaments retain dimensional stability relative to each other. Each corner of the fabric panel is reinforced with two (2) layers of screen material. Along the fabric panel edges with grommets, there is a 2 inch wide double fold with webbing.

**Grommets:** #2 spur grommet;  $\frac{1}{2}$ " hole diameter,  $\frac{7}{8}$ " flange diameter. The grommets are installed along the perimeter of the fabric, a minimum of 1 inch from the fabric edges. The spacing of the grommets shall be as specified in this evaluation report.

**"F" Track:** Dimensions: 1.690" x 0.375" x 0.060." The "F" track is manufactured of 6063-T6 aluminum. The "F" track is used with track mount installation.

**Product Identification:** Each fabric panel is labeled with the manufacturer's name, address, phone number, and product logo.

## LIMITATIONS

**Design Drawings:** The fabric storm panels shall be installed in accordance with Force 12 Diamond Screen Drawing. The drawing is dated 10/31/2012; and consists of seven (7) sheets with no revision. Each sheet is signed and sealed by James R. Bailey, P.E. dated November 1, 2012. The referenced drawings will be 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 several types of wall framing construction (refer to Sheet 3.0 and Sheet 7.0 of the approved design drawings). The types of wall framing construction are summarized below:

- Concrete (minimum 3,200 psi compressive strength);
- Hollow concrete block;
- Wood dimension lumber (minimum Southern Yellow Pine)
- Through brick veneer into concrete (minimum 3,200 psi compressive strength);
- Through brick veneer into hollow concrete block;
- Through brick veneer into wood dimension lumber (minimum Southern Yellow Pine).

**Anchors:** Refer to Sheet 3.0 through Sheet 7.0 of the approved drawings for the type of anchors that may be used. Sheets 3.0 through Sheet 3.0 of the approved drawings indicate the minimum embedment depths for the fasteners and the minimum edge distances (minimum distance fastener must be from the edge of the substrate material) for the fasteners.

**Design Pressure Rating:** The design pressure rating for the fabric storm panels is dependant on panel span, type of anchor used (which depends on the wall construction), and the spacing of the anchors. To determine the design pressure rating for the fabric storm panels, the following must be considered:

- Refer to Sheet 3.0 of the approved drawings for the maximum allowable design pressures for direct mount installation.
- Refer to Sheet 3.0 of the approved drawings for the allowable design pressures associated with the type of anchor used, panel span, and the spacing of the anchors for direct mount installation.
- Refer to Sheet 4.0 of the approved drawings for the maximum allowable design pressures for track mount installation.
- Refer to Sheet 4.0 of the approved drawings for the allowable design pressures associated with the type of anchor used, panel span, and the spacing of the anchors for track mount installation.

**Panel Width:** The fabric dimension parallel to the rows of fasteners. This dimension is not limited. Refer to Sheet 1.0 of the approved drawings.

**Panel Span:** The maximum distance between rows of fasteners. Note: The fabric storm panel may be installed horizontally or vertically. Therefore, the panel span may be either a vertical dimension or a horizontal dimension. Refer to Sheet 1.0, Sheet 2.0, and Sheet 3.0 of the approved drawings for the maximum panel span and the allowable panel spans.

**Grommets (Fabric end and edge distance):** The grommets are spaced a minimum of 1 inch from the ends of the fabric. The grommets shall be spaced a minimum of 1 inch from the edge of the fabric. Refer to Sheet 1.0 of the approved drawings.

**Separation Distance from Glazed Openings:** This product does not have a required minimum separation distance from the glazed openings.

**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 fabric storm panels passed Missile Level D specified in ASTM E 1996-05. The fabric storm panel 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 fabric storm panels shall be installed in accordance with manufacturer's installation instructions, the approved drawings, and this product evaluation report.

**Wall Framing Construction:** The fabric storm panel may be mounted to several types of wall framing construction (refer to Sheet 3.0 through Sheet 7.0 of the approved design drawings). The types of wall framing construction are summarized below:

- Concrete (minimum 3,200 psi compressive strength);
- Hollow concrete block;
- Wood dimension lumber (minimum Southern Yellow Pine)
- Through brick veneer into concrete (minimum 3,200 psi compressive strength);
- Through brick veneer into hollow concrete block;
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**Anchors:** Refer to Sheets 3.0 through Sheet 7.0 of the approved drawings for the type of anchors that may be used. Sheet 3.0 through sheet 7.0 of the approved drawings indicate the minimum embedment depths for the fasteners and the minimum edge distances (minimum distance fastener must be from the edge of the substrate material) for the fasteners.

**Design Pressure Rating:** The design pressure rating for the fabric storm panels is dependant on panel span, type of anchor used (which depends on the wall construction), and the spacing of the anchors. To determine the design pressure rating for the fabric storm panels, the following must be considered:

- Refer to Sheet 1.0 of the approved drawings for the maximum allowable design pressures for direct mount installation.
- Refer to Sheet 2.0 of the approved drawings for the allowable design pressures associated with the type of anchor used, panel span, and the spacing of the anchors for direct mount installation.
- Refer to Sheet 3.0 of the approved drawings for the maximum allowable design pressures for track mount installation.
- Refer to Sheet 3.0 of the approved drawings for the allowable design pressures associated with the type of anchor used, panel span, and the spacing of the anchors for track mount installation.

**Storage:** The fabric storm panels are 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 storm panels be marked or labeled in some manner to identify the proper window or door they will cover on the structure.

**Note:** The manufacturer's installation instructions and the approved drawings 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.