

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION SHU-187

Effective April 1, 2010
Revised September 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 **May 2013**.*

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 985HV Aluminum Hurricane Screen manufactured by:

Tapco Incorporated
1815 McCullough Blvd.
Tupelo, MS 38801
Telephone: (800) 737-8272

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

PRODUCT DESCRIPTION

The Series 985HV aluminum hurricane impact screen is a permanently mounted impact protective screen that is secured to an aluminum frame and mounted over exterior openings. The aluminum hurricane screen is a triple mullied unit with fixed transom on top and active sash on the bottom. The units may be installed as single units or multiple units. The units shall not exceed the overall sash size shown on the approved drawings. The vertical mullion shall not exceed 96" in length and the horizontal mullion shall not exceed 51 $\frac{1}{4}$ " in length. The aluminum frame impact screen consists of the following components:

Frame: The main frame, sub frame and mullions are constructed from 6005-T5 extruded aluminum. The corners of the main frame are mitered and secured with two (2) No. 8 x 1" square drive sheet metal screws. The fixed sash frame utilizes mitered corner construction and uses an aluminum corner key 2.325" wide x 3.25" high x .360" at each corner.

Screen: The screen is constructed with minimum 0.035" stainless steel powdered coated wire with 12 strands by 12 strands per square inch. The screen is secured to the frame using an extruded aluminum using #8 x $\frac{1}{2}$ " long square drive Tek screws.

Horizontal Mullion: Aluminum tubes are constructed of 6063-T5 extruded aluminum. The aluminum tubes are located between the main frames. The horizontal aluminum tubes shall be minimum 2 $\frac{1}{2}$ " x 1 $\frac{1}{4}$ " x 0.09" wall thickness. The tubes are reinforced with I-beam reinforcement. The horizontal mullions shall not exceed 51 $\frac{1}{4}$ " in length.

Vertical Mullion: Aluminum tubes are constructed of 6063-T5 extruded aluminum. The aluminum tubes are located between the main frames. The vertical aluminum tubes shall be minimum $1\frac{1}{4}$ " x $1\frac{5}{8}$ " x 0.156" wall thickness. The vertical mullions are reinforced with a U-shaped channel. The vertical mullions shall not exceed 96" in length.

Hardware: The units employed a 2-point SPR-200, (Single Point Release), latch.

LIMITATIONS

Design Drawings: The Series 985HV aluminum hurricane impact screen shall be installed in accordance with "985HV Aluminum Hurricane Screen – Impact 153" x 96", drawing no. 08-00871, sheets 1 of 5 thru 5, Rev. C, dated October 8, 2009, revision C, dated July 22, 2011, signed and sealed by Luis R. Lomas, P.E. on July 26, 2011. The referenced drawings will be referred to as the "approved drawings" in this product evaluation report.

Product Identification: A certification program label (NAMI) will be affixed to the impact screen. The certification program label includes the manufacturer's name; product name; performance characteristics; the maximum size tested; the approved inspection agency (NAMI); and the applicable standards: ASTM E 330-02, ASTM E 1886-05, and ASTM E 1996-05.

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 an impact-resisting standard equivalent to Missile Level D specified in ASTM E 1996-05. 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.

Maximum Sash Size: The active and inactive sashes shall not exceed 49" x 46".

Screen Opening Size: The screen opening dimensions shall not exceed $46\frac{1}{2}$ " x 43".

Horizontal Mullion: The horizontal mullions shall not exceed $51\frac{1}{4}$ " in length.

Vertical Mullion: The vertical mullions shall not exceed 96" in length.

Allowable Design Pressure: ± 50 psf

Separation Distance from Glazed Openings: The screen shall be separated a minimum of $2\frac{3}{8}$ inches from the glazed opening at its closest point.

Wall Construction: The impact screen may be mounted to the following types of wall framing:

- Pre-cast concrete, cast-in-place concrete (minimum compressive strength 3,200 psi)
- Grout-filled concrete masonry units (CMU), C-90, Grade N, Type 1 (or greater)
- Wood (minimum Spruce-Pine-Fir dimension lumber)
- Steel, minimum 16 gauge or 0.060"
- Aluminum, minimum 6063-T5, $\frac{1}{8}$ " thick

INSTALLATION INSTRUCTIONS

General Installation Requirements:

The shutter assembly shall be installed in accordance with this evaluation report and the approved drawings referenced in this product evaluation report.

Anchorage:

The shutter assembly shall be mounted to the wall framing in accordance with the mounting details on the approved drawings.

The aluminum frame shall be secured to either concrete, hollow concrete block, steel, aluminum, or wood substrate.

Attachment to Concrete or Hollow Concrete Block Structures: Concrete shall have a minimum compressive strength of 3,200 psi. Concrete block shall have a minimum compressive strength of 1,500 psi. The aluminum frame shall be secured to the concrete or to the concrete block substrate with minimum $\frac{3}{16}$ " diameter ITW Ultracon Tapcon fasteners. The fasteners shall have a minimum embedment depth of $1\frac{1}{4}$ inches and a minimum edge distance of $1\frac{3}{4}$ inches. Refer to Sheet 3 of 5 of the approved drawings.

Attachment to Wood Frame Structures: The wall framing shall be minimum Spruce-Pine-Fir dimension lumber. The aluminum frame shall be secured to wood framing with a minimum No. 8 wood screws. The fasteners shall have a minimum embedment depth of $2\frac{3}{8}$ inches. Refer to Sheet 2 of 5 of the approved drawings.

Attachment to Steel or Aluminum Frame Structures: For steel framing, minimum 16 gauge 33 ksi steel is required. For aluminum framing, minimum $\frac{1}{8}$ " thick 6063-T5 aluminum is required. The aluminum framing shall be secured to the wall framing with minimum No. 8 Tek screws. The fasteners shall penetrate a minimum of 3-thread pitch beyond substrate. Refer to Sheet 4 of 5 of the approved drawings.

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.