

# TEXAS DEPARTMENT OF INSURANCE

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## PRODUCT EVALUATION

Effective November 1, 2011

SHU-197

*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 **September 2015**.*

*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.*

**Wood Structural Panel Shutter Systems Using ShutterUp Latches, manufactured by**

**Norse, Inc.**  
**100 South Road**  
**Torrington, Connecticut 06790**  
**Telephone: (860) 482-1532**  
**www.norse-inc.com**

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

## PRODUCT DESCRIPTION

The shutter system consists of wood structural panels that are secured to the structure using proprietary hardware manufacture by Norse, Inc.

Along the top horizontal edge of the panel, the panel is secured to the structure with a hook and with a hanger. The hanger is secured to the panel and the hook is secured to the structure. Along the vertical edges of the panel, the panel is secured to the structure with a latch and with a receiver. The latch is secured to the panel and the receiver is secured to the structure. Along the bottom, horizontal edge of the panel, the panel is secured to the structure with a bottom support clip. The bottom support clip is secured to the structure and to the panel. As an option, along the bottom, horizontal edge of the panel, the panel is secured to structure with a latch and with a receiver. The latch is secured to the panel and the receiver is secured to the structure. The hardware is manufactured of steel.

The wood structural panel shutter system specified in this report is considered temporary. In other words, they are intended to be mounted only prior to a windstorm event and should be removed from the building following the windstorm event. To permit a quick and efficient installation, the shutters shall be labeled to indicate the locations of the openings on the building they are protecting. The pre-cut wood structural panels and the installation instructions should be stored in a permanent dry location.

## LIMITATIONS

**Product Identification:** The package for the latches is labeled as “ShutterUp Latches.” The manufacturer’s installation instructions and the package for the latches shall be available at the jobsite for inspection.

**Shutter Panels:**

Wood structural panels shall be minimum  $\frac{5}{8}$ ” plywood complying with the provisions of either U.S. Department of Commerce Voluntary Product Standard 1 (PS 1) *Construction and Industrial Plywood*, U.S. Department of Commerce Voluntary Product Standard 2 (PS 2) *Performance Standard for Wood-Based Structural-Use Panels*, or APA PRP-108, *Performance Standards and Policies for Structural-Use Panels*.

Oriented strand board (OSB) may not be used for shutter panels.

It is not acceptable to use a plywood panel thinner than  $\frac{5}{8}$ ”.

**Building Height:**

The shutters shall only be installed on one- or two-story buildings. For building on piles, the shutters shall only be installed if the building has a perimeter deck which permits safe installation.

**Shutter Configurations:** The shutters may be installed as a single panel or as multiple panels.

**Mounting Conditions:** The shutters may be installed as flush mount or as surface mount. Refer to the approved drawings for the mounting conditions.

**Wall Construction:** The shutters may be mounted to the following types of wall framing:

- Pre-cast concrete, cast-in-place concrete (minimum 2,000 psi).
- Grout-filled concrete masonry units (CMU), minimum 1,500 psi.
- Wood dimension lumber (minimum specific gravity of 0.42).

**Allowable Design Pressure:** The allowable design pressure is  $\pm 45$  psf.

**Maximum Panel Width:** The maximum panel width for a single panel installation is 36 inches. For multiple panel installations, an unlimited number of panels may be used as long as the individual panel width does not exceed 36 inches. For multiple panel installations, the panels shall be secured together as specified on the approved drawings.

**Maximum Panel Height:** The maximum panel height for single panel and for multiple panel installations is 80 inches.

**Minimum Separation from Glass:** The minimum separation distance to the glass is specified in Note 5 on Sheet 1 of the approved drawings.

**Impact Resistance:** These shutter assemblies satisfy the Texas Department of Insurance’s criteria for protection from windborne debris in the **Inland I zone** and the **Seaward zone**. The shutter assemblies passed Missile Level D specified in ASTM E 1996-04. 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 shutter assemblies shall be installed in accordance with the manufacturer's installation instructions, the approved drawings, and this product evaluation report.

**Design Drawings:** The shutters shall be installed in accordance with the following design drawings:

- **Single Panel – Flush Mount:** The shutters shall be installed in accordance with “Hurricane Shutter System Single Flush Mount Hardware - Impact” manufactured by Norse, Inc., Drawing No. 08-01224, Rev B, Sheets 1–4 of 4, dated March 21, 2011, revised July 26, 2011, with each sheet signed and sealed by Luis R. Lomas, P.E. on July 27, 2011. 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.
- **Single Panel – Surface Mount:** The shutters shall be installed in accordance with “Hurricane Shutter System Single Surface Mount Hardware - Impact” manufactured by Norse, Inc., Drawing No. 08-01225, Rev A, Sheets 1–4 of 4, dated March 22, 2011, revised July 26, 2011, with each sheet signed and sealed by Luis R. Lomas, P.E. on July 27, 2011. 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.
- **Multiple Panel – Flush Mount:** The shutters shall be installed in accordance with “Hurricane Shutter System Multiple Panel Flush Mount Hardware - Impact” manufactured by Norse, Inc., Drawing No. 08-01226, Rev A, Sheets 1–5 of 5, dated March 21, 2011, revised August 29, 2011, with each sheet signed and sealed by Luis R. Lomas, P.E. on August 31, 2011. 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.
- **Multiple Panel – Surface Mount:** The shutters shall be installed in accordance with “Hurricane Shutter System Multiple Panel Surface Mount Hardware - Impact” manufactured by Norse, Inc., Drawing No. 08-01227, Rev A, Sheets 1–5 of 5, dated March 22, 2011, revised August 29, 2011, with each sheet signed and sealed by Luis R. Lomas, P.E. on August 31, 2011. 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.

### Installation:

- For single panel installations, refer to Sheet 1 of 4 of the approved drawings for the anchor layout and refer to Sheets 3 of 4 thru 4 of 4 of the approved drawings for installation details.
- For multiple panel installations, refer to Sheet 1 of 5 of the approved drawings for the anchor layout and refer to Sheets 3 of 5 thru 5 of 5 of the approved drawings for installation details.
- 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.

**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.