

TEXAS DEPARTMENT OF INSURANCE

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PRODUCT EVALUATION SHU-216

Effective April 1, 2014

*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 **April 2018**.*

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.

Bertha HV™ Accordion Shutter System manufactured by

Aramco Shutters
5105 Broadway
Galveston, TX 77551
(409) 762-9652

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 HV 1 and the HV 1A blade of the HV accordion shutter measures 4.371" wide x 0.050" thick, constructed as indicated in the approved drawings using extruded aluminum alloy 6063-T6. The HV 1A blade has HV window details per sheet 4 of 20 of the design drawings, and limitations per sheet 19 of drawing 14-017. The accordion blades may be mounted to the opening using the extrusions illustrated in the approved drawings. All aluminum extrusions shall be constructed using extruded aluminum alloy as noted on the drawings. The accordion shutter is a permanently mounted impact protection system.

LIMITATIONS

Design Drawings: The accordion shutters shall be installed in accordance with Aramco Bertha HV Accordion System HV Blade #1 with or without HV Window Blade, Drawing No. 14-017, Sheets 1–20 of 20, dated February 28, 2014, with each sheet signed, sealed, and dated by Walter A. Tillit Jr., P.E. on March 3, 2014. 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.

Shutter Configurations: The accordion shutters may be installed with or without the window blade as shown on the approved drawings.

Mounting Conditions: The shutters may be mounted to concrete, concrete block, metal studs or wood framing. Refer to the approved drawings for the mounting conditions.

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

- Cast-in-place concrete (minimum 3,000 psi);
- Grout-filled concrete masonry units (CMU), C-90; or
- Wood (minimum Spruce-Pine-Fir).

Allowable Design Pressure: The allowable design pressure is a function of the slat span, anchor spacing, mounting condition, substrate and the minimum separation from the glass. Refer to the approved drawings for the allowable design pressure. The maximum allowable design pressure is ± 205 psf.

Maximum Slat Span: The maximum allowable slat span is 16'-0".

Minimum Separation from Glass: The minimum separation distance to the glass is 1 inch.

Product Identification: Each unit must bear a permanent label containing the product evaluation holder, the evaluation number and contact information for the authorized dealer-fabricator of the installed product. Each shutter shall bear a permanent label in a visible place with the warning note: During periods of hurricane warnings, the owner, tenant or others must properly close all HV and HD centermates and engage or lock all HV and HD locks.

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 test standard equivalent 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: All shutters shall be installed in accordance with the approved drawings.

Anchorage: The accordion shutters shall be anchored to the structure in accordance with the approved drawings. Anchorage of the accordion shutters shall follow the mounting details on the drawings and the fasteners specified in the mounting details and fastener schedules.

Note: The manufacturer's installation instructions and 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.