

# TEXAS DEPARTMENT OF INSURANCE

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## PRODUCT EVALUATION SHU-52

Effective May 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 **May 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.*

**ES44 and ES55 Extruded Aluminum Roll Up Shutters, Impact Resistant**, manufactured by

**Croci North America**  
**11600 Adelmo Lane**  
**Fort Myers, Florida 33966**  
**Telephone: (239) 278-3066**

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

## PRODUCT DESCRIPTION

The ES44 and the ES55 roll up shutters are manufactured from extruded aluminum. The roll up shutters are assembled using interlocking extruded aluminum slats. The components of the roll up shutter system are as follows:

**ES44 Slats:** Manufactured from 6063-T6 aluminum alloy with a thickness of 0.040" and a cross section of 1.74" wide by 0.374" deep.

**ES55 Slats:** Manufactured from 6063-T6 aluminum alloy with a thickness of 0.040" and a cross section of 2.17" wide by 0.52" deep.

**Side Rail (Used with ES55 slats):** Manufactured from 6063-T6 aluminum. The side rail is 3.150" in length and 1.10" in depth.

**Alternative Side Rail (Used with ES55 slats):** Manufactured from 6063-T6 aluminum. The side rail is 3.150" in length and 1.10" in depth.

**Side Rail (Used with ES44 slats):** Manufactured from 6063-T6 aluminum. The side rail is 2.44" in length and 0.83" in depth.

**Storm Bars (Aluminum Tube):** Manufactured of 6063-T6 aluminum. The storm bars are 2" deep. The storm bars are available in 2", 3", 4", 5", and 6" depths. The wall thickness is 0.125".

**Header Bars (Aluminum Tube):** Manufactured of 6063-T6 aluminum. The header bars are 2" deep. The header bars are available in 2", 3", 4", 5", and 5" depths. The wall thickness is 0.125".

**Mullion Bars (Aluminum Tube):** Manufactured of 6063-T6 aluminum. The mullions are 2" deep. The mullions are available in 2", 3", 4", 5", and 6" depths. The wall thickness is 0.125".

## LIMITATIONS

**Design Drawings:** "ES 55 – ES 44 Extruded Aluminum Rolling Shutter," Drawing No. 13-070, sheets 1 through 18 of 18, dated March 18, 2013, and signed and sealed by Pedro Figueiredo, P.E. on March 17, 2014. The stated 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.

**Design Pressure Rating:** The design pressure rating for the roll up shutters is dependant on several factors, including the slat span, the storm bar span, the header bar span, and the mullion bar span. Refer to the approved drawings to determine the allowable design pressure rating for the shutter assembly. The maximum allowable design pressure is +/-150 psf.

**Separation Distance from Glazed Openings:** This product has no required minimum separation distance from glazed openings except as noted in the approved drawings.

**Allowable Span Configurations:** The roll up shutters can be installed as single span systems, two span systems, or three span systems. Each span configuration can be extended by using a mullion. Refer to the approved drawings for illustrations of allowable span configurations.

**Mounting Configurations:** The shutters may be mounted directly to the wall system, built out from the wall system using a 2x extruded aluminum tube, or inset from the wall system. Refer to the approved drawings for illustrations of allowable mounting configurations.

**Wall Framing Construction:** The shutters may be mounted to concrete (minimum compressive strength specified on approved design drawings); hollow concrete block, minimum Douglas Fir-Larch dimension lumber, minimum 0.125" thick 6063-T6 aluminum, or minimum 0.125" thick A36 steel.

**Maximum Slat Spans:** The allowable slat span varies as a function of design pressure. The maximum allowable ES55 slat span is 80". The maximum allowable ES44 slat span is 51". Refer to the approved drawings for the allowable slat span.

**Maximum Storm Bar Span:** The maximum allowable vertical storm bar height varies as a function of the cross section dimensions of the storm bar, the slat span, and the design pressure. The maximum storm bar span is 80". Refer to the approved drawings for the allowable storm bar span.

**Maximum Header Bar Span:** The maximum allowable horizontal header span is a function of the cross section dimensions of the header bar, the storm bar height, and the track to track spacing.

**Maximum Mullion Bar Span:** The maximum allowable vertical mullion bar height is specified on the approved drawings. One of the following cases shall be utilized:

- **Single Span Shutters:** The mullion bar spans are a function of the cross section dimensions of the mullion bar, the slat span, and the design pressure.
- **Multiple Span Shutters with Header Bar Anchored to the Mullion Bar.** The mullion bar spans are a function of the cross section dimensions of the mullion bar, the track to track spacing, and the design pressure.

**Product Identification:** The shutters shall be labeled with the manufacturer's name, the name of the product, the design pressure rating for the shutter installed, and the test standards: ASTM E 330-02, ASTM E 1886-04, and ASTM E 1996-04.

**Impact Resistance:** These 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 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 ES44 and the ES55 roll up shutters shall be installed in accordance with the manufacturer's installation instructions, the approved drawings, and this product evaluation report.

**Note:** The manufacturer's installation instructions and the approved drawings shall be available on the jobsite 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.