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PRODUCT EVALUATION REPORT

- 1. **Report No:** FL 5790 (12-0402)
- 2. **Date:** April 24, 2012
- 3. **Product Category:** Shutters
- 4. **Product Sub-Category:** Roll-up
- 5. **Other Sub-Category:** None
- 6. **Product Name:** 58 mm Bertha End-Retention / Non-Retention Roll-up Shutter System
- 7. **Evaluation by:** Trevor Johnson, P.E.
11835 Autumn Creek Dr.
Riverview, FL 33569
813-404-7649
- 8. **Manufacturer:** American Shutter System Association, Inc
4268 Westroads Drive
West Palm, FL 33407
1-800-432-2204

9. Product Description:

The aluminum 58 mm slat end-retention and non-retention roll-up shutter for impact protection of openings. These roll-up shutter systems can be used for new installations or for replacement of existing shutters.

10. Statement of Compliance:

This product evaluation report is to American Shutter System Association, Inc in accordance with the Department of Community Affairs (Florida Building Commission) Rule Chapter 9N-3.005 Method 1D. The product covered by this report has been verified to be in compliance with the 2010 Florida Building Code and meets the impact and wind resistance requirements of



11. Evidence Submitted:

11.1. Testing Reports:

Fenestration Testing Laboratory, Inc.

Laboratory No. 4760

Date: December 1, 2005

Report No. 05

File No. 05-418

End-Retention tested for large missile impact, cycle loading and uniform static load in accordance with ASTM Standards E330-02, E1886-02, and E1996-02.

Maximum Width Tested 120"

Design Pressure Tested 140 PSF

Configurations Tested Direct Mount

Laboratory No. 4744

Date: November 14, 2005

Report No. 04

File No. 05-418

Non-Retention tested for large missile impact, cycle loading and uniform static load in accordance with ASTM Standards E330-02, E1886-02, and E1996-02.

Maximum Width Tested 97"

Design Pressure Tested 45 PSF

Configurations Tested Direct Mount

Laboratory No. 4740

Date: November 14, 2005

Report No. 03

File No. 05-418

Non-Retention tested for large missile impact, cycle loading and uniform static load in accordance with ASTM Standards E330-02, E1886-02, and E1996-02.

Maximum Width Tested 120"

Design Pressure Tested 23 PSF

Configurations Tested Direct Mount



Product Evaluation Report
58mm Bertha End-Retention / Non-Retention Roll-up Shutter System
Report No.: 12-0402

Laboratory No. 4644
Date: June 17, 2005
Report No. 02
File No. 05-418
End-Retention tested for large missile impact, cycle loading and uniform static load in accordance with ASTM Standards E330-02, E1886-02, and E1996-02.
Maximum Width Tested 280.75"
Design Pressure Tested 60 PSF
Configurations Tested Direct Mount

Laboratory No. 4596
Date: April 29, 2005
Report No. 01
File No. 05-418
End-Retention tested for large missile impact, cycle loading and uniform static load in accordance with ASTM Standards E330-02, E1886-02, and E1996-02.
Maximum Width Tested 242.5"
Design Pressure Tested 80 PSF
Configurations Tested Direct Mount, Build-Outs, & Build-Ins

Laboratory No. 2760
Date: August 31, 2000
Report No. 03
File No. 00-256
Storm bars tested for large missile impact in accordance with TAS 201-94.
Storm Bars Tested 2x2x1/4x96, 2x3x1/8x96, 2x4x1/8x120, 2x4x1/4x144, 2x4x1/4x170

American Test Lab of South Florida, Inc.

Date: February 2, 2010
Report No. 0928.01-09
Certification No. 09-0203.02
Viewport slats tested for large missile impact, cycle loading and uniform static load in accordance with ASTM Standards E330-02, E1886-05, and E1996-05.
Maximum Width Tested 204" & 120"
Design Pressure Tested 62 PSF & 100 PSF
Configurations Tested Direct Mount



11.2. Product Evaluation Document:

Approval Document titled “58mm Bertha End-Retention / Non-Retention Roll-up Shutter System”, dated 4/24/12, Sheet 1 of 22 through Sheet 22 of 22, Signed and Sealed by Trevor Johnson, P.E. These Drawings are an integral part of this Evaluation Report.

11.3. Structural Engineering Calculations:

The 58mm Bertha End-Retention / Non-Retention shutter for maximum slat span vs. design wind loads for multiple mounting conditions and anchor spacing. The design wind load and slat span are based on rational and comparative analysis, and in accordance with sections 1612 and 2003 of the Florida Building Code. Calculations prepared by TKJ Engineering, LLC, dated 4/24/12, Signed and Sealed by Trevor Johnson, P.E.

12. Missile Impact Resistance:

The 58mm Bertha End-Retention / Non-Retention shutter has been verified to withstand large missile impact under Section 1609.1.2, as per ASTM E1886-02 & E1996-02.

13. Wind Load Resistance:

The 58mm Bertha End-Retention / Non-Retention shutter has been verified to withstand sustained and cyclic wind pressures under Section 1609.1.2, as per ASTM E330-02, E1886-02, and E1996-02. The maximum slat span, wind pressure, and anchor spacing shall be as indicated on sheet 7 through 22 of Approval Document titled “58mm Bertha End-Retention / Non-Retention Roll-up Shutter System”.

14. Instillation and Specifications:

Installation shall be in strict accordance with the General Notes, components, and details of the Approval Document titled “58mm Bertha End-Retention / Non-Retention Roll-up Shutter System”, dated 4/24/12, Sheet 1 of 22 through Sheet 22 of 2, Signed and Sealed by Trevor Johnson, P.E.



15. Limitation and Condition of Use:

- 15.1. This product shall not be installed in the “High Velocity Hurricane Zone” as defined in the Section 1620 of the Florida Building Code.
- 15.2. Product shall be manufactured and installed strictly in accordance with Approval Document titled “58mm Bertha End-Retention / Non-Retention Roll-up Shutter System”, dated 4/24/12, Sheet 1 of 22 through Sheet 22 of 22, Signed and Sealed by Trevor Johnson, P.E.
- 15.3. This product and shutters shall be installed in accordance with Means of Egress requirements of Section 1008.1.4.6 of the Florida Building Code.
- 15.4. Multiple Roll-up Shutter unit installations require an approved mullion for this type of shutter system.

