



## PRODUCT EVALUATION REPORT #415-1

**DATE:** July 6, 2009

**PRODUCT CATEGORY:** Hurricane Shutters

**PRODUCT SUB-CATEGORY:** Roll Up Shutters

**PRODUCT NAME:** Aluminum Roll-up Shutter

**SUBMITTED BY:** USA Shutters (DBA Maestrosshield)  
1450 Rail Head Blvd.  
Naples, Florida 34110

### 1. COMPLIANCE

The above mentioned products have been evaluated for compliance with the requirements of the Florida Department of Community Affairs for Statewide Acceptance per Rule 9B-72.020 method 1(d). The products listed herein comply with the requirements of the 2007 Florida Building Code, including HVHZ within building sections 1609, 1613.

### 2. EVIDENCE SUBMITTED

1. Drawing number **MSS003**, signed and sealed by Kristina S. Daugherty, P.E.
2. Test Reports:
  - a. Report No.: HTL 0432-0804-06 signed and sealed by Vinu J. Abraham P.E.  
Hurricane Test Laboratory, LLC  
Aluminum Maestrosshield Roll-Up Shutter in a box 54" x 68"  
TAS 201 and ASTM E 1886-05/E 1996-05, Large Missile Impact test, Level D, Wind Zone 4  
TAS 202 and ASTM E 330-02, Uniform Static Load Test, ± 120 psf design pressure  
TAS 203 and ASTM E 1886-05/E 1996-05 Cyclic Load Test, ± 120 psf design pressure
  - b. Report No.: CTLA-1606W signed and sealed by Ramesh Patel P.E.  
Certified Test Laboratories  
88 3/8x84" Aluminum Meastrosshield Roll-up Shutter in a box without storm bars  
ASTM E 1886-02/E 1996-02 Large Missile Impact test, Level D, Wind Zone 4  
ASTM E 330-02 Uniform Static Load Test, ± 30 psf design pressure  
ASTM E 1886-02/E 1996-02 Cyclic Load Test ± 30 psf design pressure
  - c. Report No. CTLA-1609W signed and sealed by Ramesh Patel P.E.  
Certified Test Laboratories  
88 3/8" x 84" Aluminum Maestrosshield Roll-Up Shutter in a box with storm bars  
2" x 4" x 1/8" x 84" Aluminum Storm Bars  
TAS 201, Large Missile Impact test, Level D, Wind Zone 4  
TAS 202, Uniform Static Load Test, ± 77 psf Design pressure  
TAS 203, Cyclic Load Test, ± 77 psf design pressure
  - d. Report No.: FTL 5278 signed by Manny Sanchez, FTL CEO.  
Fenestration Testing Laboratories, Inc.  
123" x 95-1/2" (Samples A-1 and A-2) Aluminum Maestrosshield Roll-Up Shutter in a box without storm bars



- 262-3/4" x 120-3/8" (Samples A-3, A-4, A-6, A-7) Aluminum Maestrosshield Roll-Up Shutter in a box without storm bars
- 2" x 6" x 1/8" x 120" (Sample A-5) Aluminum Storm Bars
- TAS 201 and ASTM E 1886-05/E 1996-05, Large Missile Impact test, Level D, Wind Zone 4
- TAS 202 and ASTM E 330-02, Uniform Static Load Test,  $\pm 50$  psf design pressure
- TAS 203 and ASTM E 1886-05/E 1996-05 Cyclic Load Test,  $\pm 50$  psf design pressure
- e. Report No.: FTL 5906 signed by Michael R Wenzel, PE.  
Fenestration Testing Laboratories, Inc.  
2" x 6" x 1/4" x 229" (Sample B-1) Aluminum Tube Mullion  
TAS 201, Large Missile Impact test, Level D, Wind Zone 4
- 3. Structural Engineering Calculations  
On Maestrosshield Roll-Up Shutter for maximum shutter span vs. design wind load, as well as maximum anchor spacing vs. design wind load and shutter span based on rational and comparative analysis and in accordance with sections 1604 and 2002 of the Florida Building Code. Calculations signed and sealed by Kristina S. Daugherty, P.E.

### 3. MISSILE IMPACT RESISTANCE:

The shutters, stormbars, mullions, and header were impacted and qualified to resist large missile impact under section 1609.1.2 of the Florida Building Code, as per TAS 201 protocol.

### 4. LIMITATIONS AND CONDITIONS OF USE:

Maximum design pressure: Refer to design pressure charts in drawing **MSS003** sheet 2 of 11.

Slats may be installed with either profile facing the exterior.

For the end retention system requirements refer to approval document **MSS003** sheet 7 of 11.

For design pressures for units with storm bars refer to approval document **MSS003** sheet 9 of 11.

These products are rated to be used in the HVHZ.

This product does not require impact protection in areas where wind borne debris protection is required.

### 5. INSTALLATION

Product must be installed in accordance with installation drawing **MSS003**.

### 6. CONCLUSION

The products evaluated in this document and listed above, according to the performance tests and engineering analysis, meet the requirements of the 2007 Florida Building Code, including HVHZ.

### 7. CERTIFICATION OF INDEPENDENCE

Please note that I don't have nor will acquire a financial interest in any company manufacturing or distributing the product(s) for which this report is being issued. Also I don't have nor will acquire a financial interest in any other entity involved in the approval process of the listed product(s).

Respectfully submitted,

Kristina S. Daugherty, P.E.

Florida Registered Professional Engineer #68455

