

# Hurricane Test Laboratory, Inc.

Windows / Doors / Storefronts / Curtain Walls / Skylights / Shutters / EIFS / Metal Building Systems

## STRUCTURAL TEST REPORT – FIXED WINDOW

Test Date: 12/2/99

Job #: 0217-1202-99

Specimen #: 4

Page #: 1

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### MANUFACTURER'S IDENTIFICATION

- 1.0 NAME OF APPLICANT: Specialty Windows of Florida  
690 Heinburg Street  
Pensacola, FL 32501
- 2.0 CONTACT PERSON: Richard Bradley
- 3.0 HTL NOTIFICATION #: HTL99075
- 4.0 HTL LAB CERTIFICATION: Miami-Dade County (99-0301.04)

### PRODUCT IDENTIFICATION

- 5.0 Product Type: Aluminum Fixed Window
- 6.0 Model Number: Specialty Windows Series 100 Window System
- 7.0 Performance Class: +60/-70 PSF Design Load
- 8.0 Overall Size: 50 5/16-in. (w) x 98 5/16-in. (h)
- 9.0 Sash Size: N/A
- 10.0 Configuration: Fixed.

### PRODUCT DESCRIPTION

**GENERAL DESCRIPTION:** Please note that Specialty Windows Drawing #1 and all accompanying sheets are incorporated into this test report by reference.

#### 11.0 MATERIAL CHARACTERISTICS:

11.1 Overall Window Frame Construction: The window frame in this test specimen was fabricated using the following aluminum extrusions:

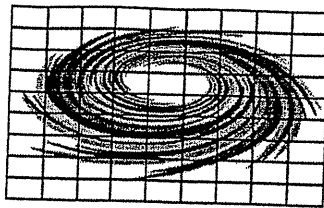
Description	Part #	Overall Cross Section	Alloy
Frame Head	SW-001	1.577" x 1.875" x 0.065"	6063-T5
Frame Sill	SW-001	1.577" x 1.875" x 0.065"	6063-T5
Frame Jambs	SW-001	1.577" x 1.875" x 0.065"	6063-T5

At each frame corner, the vertical frame member end was notched, butted and mechanically attached to the horizontal frame member using two (2), #8 x 1-in. zinc, self tapping sheet metal screws at each corner. Each frame corner was sealed using a bead of PTI-200 small joint sealant. This test specimen was interior glazed using a series of removable glazing stops that were each fabricated from a common aluminum alloy 6063-T5 extrusion, Specialty Windows' Part # SW-016, having overall cross sectional dimensions of 0.562-in. (face) x 0.500-in. (deep) x 0.062-in. (wall thickness). This glazing stop was attached to the frame using #8 X

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1-in zinc, self tapping sheet metal screws located 3-in. from the corners and 6-in. o.c. thereafter.

### 11.2 Glazing:

**11.2.1 Glazing Material:** The glazing material used in this sample was 3/8-in. thick (overall) Laminated Glass, consisting of the following components:

- 1/8-in. clear annealed glass
- 0.090-in. SAFLEX PVB interlayer (Miami-Dade County N.O.A. #98-0728.05)
- 3/16-in. clear heat strengthened

### 11.2.2 Glazing Method:

Interior Side: using a continuous 1/8" x 1/2" bead of PECORA 895 Silicone Sealant.

Exterior Side: using a continuous 1/8" x 1/2" bead of PECORA 895 Silicone Sealant.

### 11.2.3 Daylight Opening:

Quantity	Location	Daylight Opening	Glass Bite
1	Fixed Lite.	47-in. (w) x 95-in. (h)	1/2-in.

**11.3 Weather-stripping:** None used.

**11.4 Hardware:** None used.

**11.5 Weep Holes:** None used.

**11.6 Muntins:** None used.

**11.7 Additional Reinforcement:** None used.

### 11.8 Sealant's Used:

*Frame Perimeter Sealant* – PECORA 895 Silicone Sealant

*Frame Joint Sealant* – PECORA Silicone Sealant

## INSTALLATION

**12.0** This window sample was installed into the wood opening as follows:

**12.1 Frame Jambs:** Each jamb member of the window frame was attached to the wood buck using a single row of #10 x 2-1/2-in. stainless steel, PH SMS (Type AB) located 3-in. away from each corner and then 6-in. on center thereafter.

**12.2 Frame Head & Sill:** The head and sill of the window frame were each attached to the wood buck using a single row of #10 x 2-1/2-in. stainless steel, PH SMS (Type AB) located 3-in. away from each corner and then 6-in. on center thereafter.

## TEST RESULTS

### 13.0 TEST SEQUENCE:

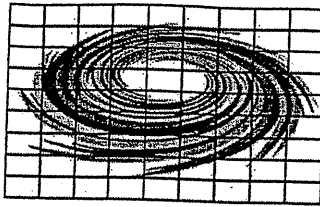
- a. Air infiltration test at 1.57 psf.
- b. Air infiltration test at 6.24 psf.
- c. Uniform static load test at 50% of positive test pressure.
- d. Uniform static load test at positive design pressure.
- e. Uniform static load test at 50% of negative design pressure.
- f. Uniform static load test at negative design pressure.
- g. Water infiltration test at 15% of positive design pressure.
- h. Uniform static load test at 100% of positive test pressure.
- i. Uniform static load test at 100% of negative test pressure.

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### 14.0 AIR INFILTRATION TEST RESULTS:

#### 14.1 TEST DATA:

Test Pressure (psf)	q (ft <sup>3</sup> /min)	q <sub>A</sub> (ft <sup>3</sup> /min*ft <sup>2</sup> )
1.57	1.56	0.05
6.24	1.03	0.03

q = Measured Air Leakage

q<sub>A</sub> = Air Leakage Per Area of Specimen

#### 14.2 REMARKS:

The air infiltration measured through this specimen fell within the allowable limits for this type of product. As such, this sample was found to satisfy the requirements of Miami-Dade County Protocol PA 202 and AAMA 101-97.

### 15.0 WATER LEAKAGE TEST RESULTS:

#### 15.1 TEST CONDITIONS:

Test Pressure (0.15P<sub>d</sub>) = 10.5 psf

Test Duration = 15.00 min.

Spray Rate = 5.0 gal/(ft<sup>2</sup>\*hr)

#### 15.2 REMARKS:

At the conclusion of the test duration, there was no moisture detected inside the specimen. This specimen was found to satisfy the requirements of Miami-Dade County Protocol PA 202 and AAMA 101-97.

### 16.0 UNIFORM STATIC LOAD TEST RESULTS:

#### 16.1 TEST LOAD (P<sub>t</sub>) COMPUTATION:

##### Manufacturer Specified Design Pressures:

Inward Acting Design Pressure (P<sub>d</sub>)<sub>in</sub> = 60 psf

Outward Acting Design Pressure (P<sub>d</sub>)<sub>out</sub> = 70 psf

##### Conversion to Equivalent Test Load:

Maximum Inward Acting Test Load (P<sub>t</sub>)<sub>in</sub> = 1.5(P<sub>d</sub>)<sub>in</sub> = 90 psf

Maximum Outward Acting Test Load (P<sub>t</sub>)<sub>out</sub> = 1.5(P<sub>d</sub>)<sub>out</sub> = 105 psf

#### 16.2 REMARKS:

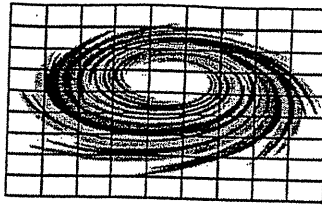
No deflection measurements were taken because there was no room to place a deflection gage. No signs of failure were observed during or after the static load test. As such, this specimen was found to satisfy the requirements set forth by Miami-Dade County Protocol PA 202 and AAMA 101-97.

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### 17.0 SUMMARY OF RESULTS:

Test Method	Test Conditions	Test Conclusion
Air Infiltration Test (ASTM E283 and PA 202)	1.57 psf & 6.24 psf	PASS
Water Infiltration Test (ASTM E331 and PA 202)	10.5 psf	PASS
Static Load Test (ASTM E330 and PA 202)	+ 60 psf and – 70 psf Design Pressure	PASS

### MISCELLANEOUS INFORMATION

#### 18.0 CERTIFICATION & DISCLAIMER STATEMENT:

The test and the results summarized in this test report were conducted in accordance with the specifications of the applicable codes, standards & test methods listed below by the Hurricane Test Laboratory, Inc. located at 6655 Garden Road, Riviera Beach, FL 33404. This report is only intended for the use of the entity named in section 1.0 of this report. The above results were secured by using the designated test methods and they indicate compliance with the performance requirements of the referenced specification.

#### 19.0 APPLICABLE CODES, STANDARDS & TEST METHODS:

**Miami-Dade County Protocol PA 202** – Criteria For Testing Impact and Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure.

**ASTM E283** - Standard Test Method For Determining The Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences.

**ASTM E330** - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

**ASTM E331** – Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

**AAMA 101/I.S.2-97** – Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors.

#### 20.0 LIST OF OFFICIAL OBSERVERS:

Vinu J. Abraham – HTL, Professional Engineer

José E. Colón – HTL, Test Engineer

Joe Gibson – HTL, Technician

Terry Roberts – HTL, Technician

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