

**METRO-DADE COUNTY
PERFORMANCE TEST REPORT**

Rendered to:

FLEETWOOD ALUMINUM PRODUCTS

03-31366.03

Test Date:	12/20/01
thru:	01/27/02
Report Date:	12/31/02
Expiration Date:	01/27/12

METRO-DADE COUNTY PERFORMANCE TEST REPORT

Rendered to:

Fleetwood Aluminum Products
P.O. Box 1086
Corona, California 92880

Report No.: 03-31366.03
Test Date: 12/20/01
thru: 01/27/02
Report Date: 12/31/02
Expiration Date: 01/27/12

Series/Model: "Yukon 5000T"

Type: Aluminum Awning Window

Project Summary: Architectural Testing, Inc. (ATI) was contracted by Fleetwood Aluminum Products to perform testing per Metro-Dade County Protocols PA 202-94, PA 201-94 and PA 203-94. The tests were performed on one (1) test sample. The sample tested met the performance requirements set forth in each of the protocols for a ± 65 psf *Design Load* rating.

Test Procedure: The test specimens were evaluated in accordance with the following Metro-Dade County Building Code Compliance Office Protocols:

PA 202-94, *Criteria for Testing Impact and Non Impact Resistance Building Envelope Components Using Uniform Static Air Pressure Loading.*

PA 201-94, *Impact Test Procedures.*

PA 203-94, *Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.*

Test Specimen Description:

Overall Size: 6' 0" wide by 3' 0-1/2" high

Vent Size: 5' 10" wide by 2' 11" high

Finish: All aluminum was painted white

Glazing Details: The awning was exterior glazed against a vinyl hollow bulb and silicone. The glass was laminated and consist of two (2) pieces of 3/16" heat strengthen glass and an inter layer of 0.124". The glazing bead was aluminum and snap in it employed an vinyl hollow bulb.

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.250" vinyl hollow bulb	2 Rows	Each vent member and each frame member
0.250" vinyl hollow bulb	2 Rows	The interior vertical bottom rail leg and the glazing bead.

Frame Construction: All frame corners were mitered and butted with silicone. They employed an aluminum corner key that was staked in place.

Panel Construction: The vent was aluminum, and the corners were mitered and butted with silicone. An aluminum corner key was employed and was staked in place. The vent was thermally broken.

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
4 bar hinge system	2	Each jamb fastened with # 10 by 1/2" PPHSMS four (4) to the frame and four (4) to the vent.
Sweep lock	2	10-3/4" from each end fastened with # 10 by 1/2" PPHSMS two (2)
Metal keepers	2	Metal keepers 10-3/4 from each end fastened with # 10 by 1/2" PPHSMS
Vinyl block	2	On each end fastened with one (1) # 10 by 1/2" PPHSMS.

Drainage:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
1" x 3/16" notch	2	4" from each end on the sill exterior vertical leg

Installation: The specimen was installed into a test buck with a rough opening 6' 0-1/8" wide by 3' 0-5/8" high. The unit was attached with shims and the following screws attachments:

- 14 - # 2 x 10" PFHMSMS
- (4) Head from left side @ 6-1/2", 27-1/2", 49-1/2", and 66-1/2"
- (3ea.) Each jamb from top down 6-1/2", 19-1/2", and 30-1/2"
- (4) Sill from left side @ 6-1/2", 27", 45-1/2", and 66-3/4"

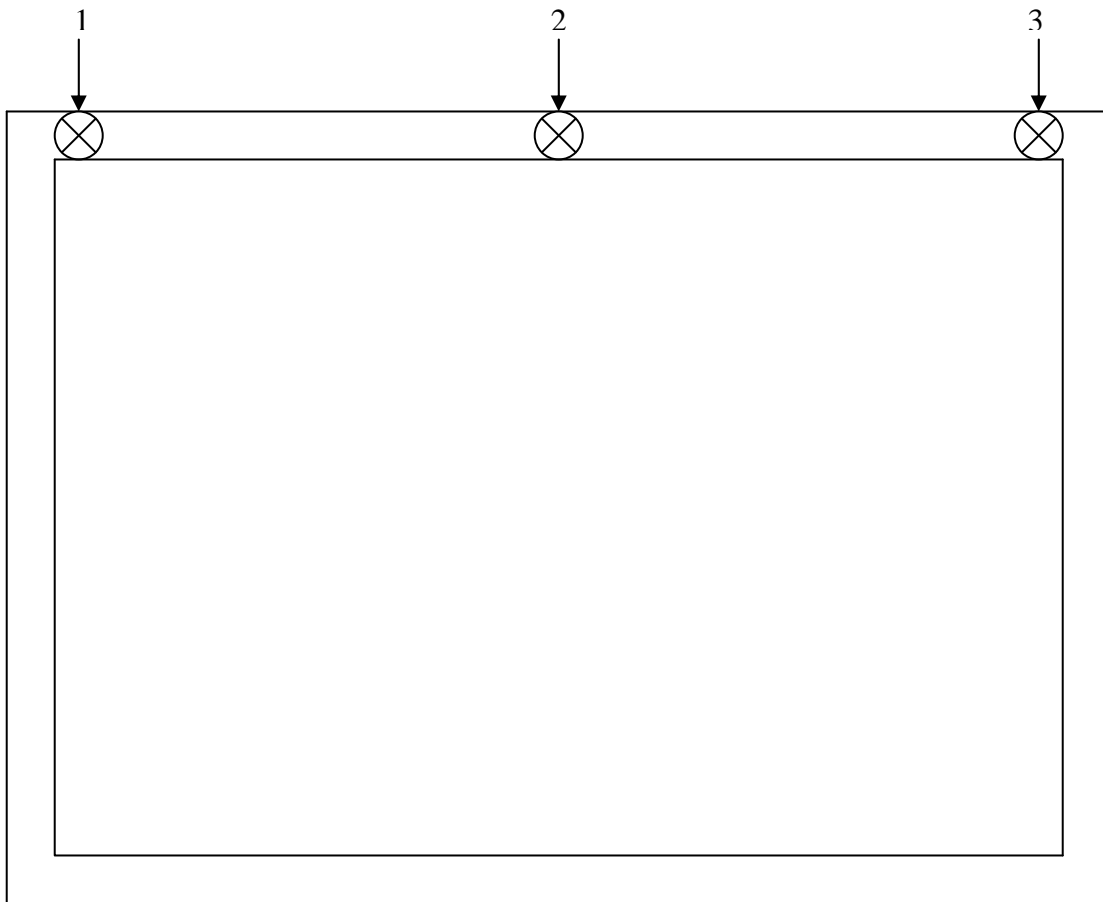
Protocol PA 202-94 "Static Air Pressure Tests"

Test Unit ¹	Title of Test	Results ¹		
	Air Infiltration @ 1.57 psf (mph)	0.01 cfm/ft		
		Indicators ²		
		#1	#2	#3
	Structural Loads (Positive) @ 50% of Test Pressure (48.75 psf)			
	Maximum Deflection	0.090"	0.100"	0.060"
	Permanent Set	0.010"	0.010"	0.010"
	Structural Loads (Positive) @ Design Pressure (65.0 psf)			
	Maximum Deflection	0.100"	0.120"	0.070"
	Permanent Set	0.000"	0.000"	0.000"
	Structural Loads (Negative) @ 50% of Test Pressure (48.75 psf)			
	Maximum Deflection	0.220"	0.420"	0.220"
	Permanent Set	0.030"	0.070"	0.010"
	Structural Loads (Negative) @ Design Pressure (65.0 psf)			
	Maximum Deflection	0.260"	0.530"	0.250"
	Permanent Set	0.030"	0.020"	0.000"
	Water Infiltration @ 15% Design Pressure (9.75 psf)	No Penetration		
		Indicators ²		
		#1	#2	#3
	Structural Loads (Positive) @ Test Pressure (97.5 psf)			
	Maximum Deflection	0.150"	0.190"	0.140"
	Permanent Set	0.050"	0.050"	0.050"
	Structural Loads (Negative) @ Test Pressure (97.5 psf)			
	Maximum Deflection	0.490"	0.890"	0.500"
	Permanent Set	0.040"	0.060"	0.010"

¹"Doors and windows shall be operable after this test." (Reference PA 202-94, Section 5.1.3). "Specimen and fasteners, when used, shall not become disengaged during test procedure." (Reference PA 202-94, Section 5.1.4).

²Reference ATI Drawing No. 2 for specific locations.

Drawing No. 1
Dial Indicator Locations



Test Results: The following results have been recorded:

Protocol PA 201-94 "Impact Test Procedures"

Missile Weight: 9.2 lbs

Muzzle Distance from Test Specimen: 17 ft.

Test Unit # 1

Impact #1: Missile Velocity: 49 fps

Impact Area¹: Lower corner

Observations²: Miss hit rehit other side

Results: Pass

Impact #2: Missile Velocity: 50 fps

Impact Area¹: Midspan of right panel

Observations²: No tear

Results: Pass

Impact #3: Missile Velocity: 49 fps

Impact Area¹: Lower corner

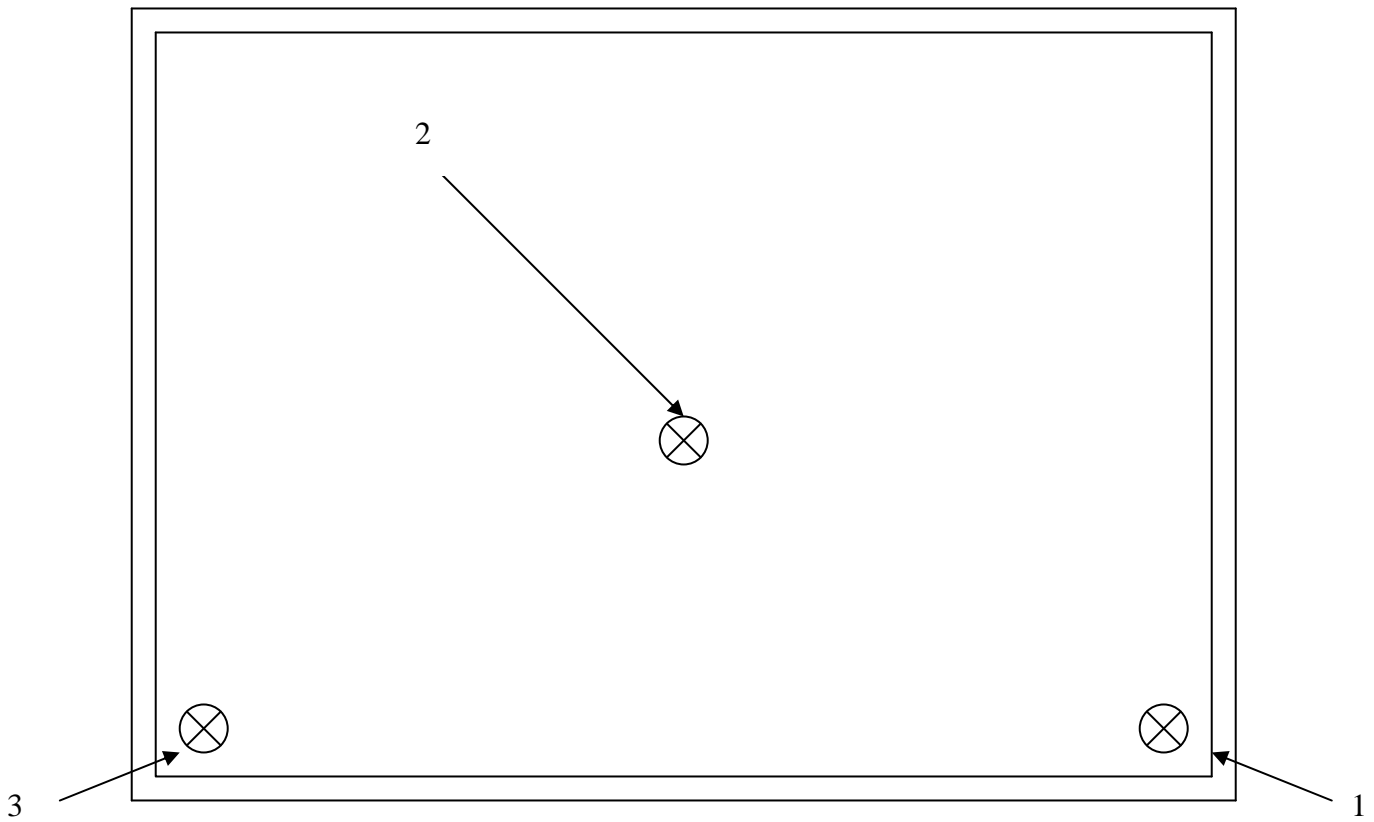
Observations²: No tear

Results: Pass

¹Refer to ATI Drawing No. 1 for specific location areas.

²A particular system of construction shall be deemed to comply with this recommended practice if three test specimens reject the two missile impacts without penetration and resist the cyclic pressure loading with no crack forming longer than 5" and 1/16" wide through which air can pass. (Reference SFBC; Section 2315.2, Paragraph h).

Drawing No. 2
Impact Locations



Test Results: (Continued)

Protocol PA 203-94 "Cyclic Wind Pressure Loading"

Design Load: 65psf

Test Unit: 1

Table 23F "Fatigue Loading Sequence" Section 2314.5, South Florida Building Code.

Table 1 "Cyclic Wind Pressure Loading" Section 2315, South Florida Building Code.

POSITIVE LOADING

Pressure Range	No. of Cycles	Average Cycle Time (sec.)	Maximum Deflection (in.)		
			1	2	3
			13.0 to 32.5	3500	1.95
0.0 to 39.0	300	2.15	0.170"	0.290"	0.110"
32.5 to 52.0	600	1.86	0.200"	0.310"	0.120"
19.5 to 65.0	100	2.00	0.230"	0.400"	0.160"
Permanent Set¹:			0.150"	0.250"	0.100"

NEGATIVE LOADING

Pressure Range	No. of Cycles	Average Cycle Time (sec.)	Maximum Deflection (in.)		
			1	2	3
			19.5 to 65.0	50	2.41
32.5 to 52.0	1050	2.13	0.270"	0.520"	0.280"
0.0 to 39.0	50	2.55	0.230"	0.420"	0.240"
13.0 to 32.5	3350	2.05	0.210"	0.390"	0.210"
Permanent Set¹:			0.140"	0.170"	0.150"

Result: Pass

¹"Doors and windows shall be operable after this test." (Reference PA 203-94, Section 5 4).

Test Equipment:

Cannon: Constructed from steel piping utilizing compressed air to propel the missile(s)

Missile(s): 2 by 4 Southern Pine, #6 Aggregate

Timing Device: Electronic Beam Type

Cycling Mechanism: Computer controlled centrifugal blower with electronic pressure measuring device.

Deflection Measuring Device:

Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

Representative samples of the test specimen and a copy of this report will be retained by ATI for a period of six years. This report is the exclusive property of the client so named herein and is applicable to the sample tested. Results obtained are tested values and do not constitute an opinion or endorsement by this laboratory.

For ARCHITECTURAL TESTING, INC.

Hector Lara
Technician

Leaton Kirk
Regional Manager

HL:lg
00-31366.02

DOCUMENT CONTROL ADDENDUM #03-31366.03

Current Issue Date: 12/31/02

Report No.: 03-31366.01

Requested by: Mr. Eric Perez
Purpose: Dade County Performance Test Report
Issued Date: 11/11/11
Comments: First Issue

Report No.: 03-31366.02

Requested by: Mr. Eric Perez
Purpose: Dade County Performance Test Report
Issued Date: 12/31/02
Comments: Fixed Unit

Report No.: 03-31366.03

Requested by: Mr. Eric Perez
Purpose: Dade County Performance Test Report
Issued Date: 12/31/02
Comments: Aluminum Awning Unit