

# **NATIONAL CERTIFIED TESTING LABORATORIES**

1464 GEMINI BOULEVARD • ORLANDO, FLORIDA 32837  
PHONE (407) 240-1356 • FAX (407) 240-8882

## **STRUCTURAL PERFORMANCE TEST REPORT**

**Report No:** NCTL-210-2318-1  
**Test Date:** 03-25-00  
**Report Date:** 04-22-00

**Client:** Florida Extruders International Incorporated  
2540 Jewett Lane  
Sanford, FL 32771-1600

**Test Specimen:** Florida Extruders International Incorporated's Model "Milestone 2000" Single Hung Aluminum Prime Window (C-60) (53-1/8" x 72") (Downsized) (High Sill) (Design Pressure 62.5).

**Test Specifications:** AAMA/NWWDA 101/I.S. 2-97 Voluntary Specifications for Aluminum Vinyl (PVC) and Wood Windows and Prime Windows and Sliding Glass Doors." ASTM E 283-01, Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen. ASTM E 330-90, Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference. ASTM E 331-93, Test Method for Water Penetration of exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference. ASTM E 547-93, Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential.

### **TEST SPECIMEN DESCRIPTION**

**General:** The sample tested was a one-over-one tilt single hung aluminum prime window measuring 53-1/8" wide by 72" high overall. The fixed lite was glazed to the frame members providing a viewing area of 48-1/2" wide by 36-3/4" high. The bottom active sash measured 50-1/4" wide by 31-1/2" high. Frame and sash members were not thermally broken. The active sash was removable via a single block and tackle balance system with locking tilt shoe located in each interior jamb track. One metal cam-type sweep lock was located at 5" from each end of the interior meeting rail. The keeper was extruded onto the exterior meeting rail at the lock positions. One nylon tilt latch with thumb actuator was located at each end of the top rail. One metal pivot bar was fastened with one screw at each end of the bottom rail. The frame and sash were of double screw coped corner construction. The fixed meeting rail was fastened to the jambs at 32-3/16" from the sill with two screws.

**PROFESSIONALS IN THE SCIENCE OF TESTING**

*Gary P. ...*  
2/22/02

**Installation Fasteners:** The specimen was mounted to the wood test buck using ten (10) (# 8 x 1") flat head screws; two (2) in the head and two (2) used at the top of jamb at head; and two (2) (# 8 x 1"); 26-1/2" down from head in jambs; four (4) (# 8 x 2") used below the fixed rail; two (2) in each jamb.

**Glazing:** The fixed lite and active sash were interior glazed using 3/16" annealed clear glass with a silicone back-bedding and a snap-in rigid glazing bead. The active sash was interior glazed using DSB annealed clear glass with silicone back-bedding and a snap-in rigid vinyl glazing bead.

**Weatherstrip:** A double strip of polypile weatherstrip (0.150" high) were located at the active sash stile, and a single strip at the active sash meeting rail. A single strip of single leaf vinyl weatherstrip was located at the sash sill.

**Weeps:** One weep hole measuring 1-1/2" x leg height was located at each end of the sill screen retainer leg.

**Interior & Exterior Surface Finish:** White painted aluminum.

**Sealant:** A small-joint sealant was applied to the jamb/sill corners.

**Insect Screen:** An insect screen measuring 49-1/2" wide by 41-1/2" high with a square cut screen frame and square cut plastic corner keys. The screen employed fiberglass mesh cloth with a hollow vinyl spline and two jamb retainer springs.

**TEST RESULTS**

<u>AAMA/NWWDA 101-97</u>	<u>Title of Test</u>	<u>Measured</u>	<u>Allowed</u>
2.2.1.6.1	Operating Force Active Sash	24 lbs. max.	35 lbs. max.
2.1.2	Air Infiltration (ASTM E283) 0.57 psf (15 mph) 1.57 psf (25 mph)	0.02 cfm/ft 0.06 cfm/ft	----- 0.30 cfm/ft
2.13	* Water Resistance - (5.0 gph/ft <sup>2</sup> ) WTP = 3.00 psf	No Entry	No Entry
2.1.4.2	Uniform Load Structural 60.0 psf Exterior 60.0 psf Interior	0.115" 0.124"	0.208" 0.208"

*Banyo Portno*  
*2/22/02*

**TEST RESULTS CONTINUATION**

<u>AAMA/NWWDA 101-97</u>	<u>Title of Test</u>	<u>Measured</u>	<u>Allowed</u>
2.2.1.6.2	Deglazing Test Active Sash		
	Meeting Rail (70#)	4.2% (0.015")	< 100%
	Bottom Rail (70#)	1.8% (0.021")	< 100%
	Left Stile (50#)	3.4% (0.019")	< 100%
	Right Stile (50#)	3.6% (0.026")	< 100%

**OPTIONAL PERFORMANCE**

4.3	* Water Resistance - (5.0 gph/ft <sup>2</sup> ) WTP = 15.00 psf	No Entry	No Entry
4.4.2	Uniform Load Structural		
	94.0 psf Exterior	0.201"	0.208"
	94.0 psf Interior	0.205"	0.208"

**Test Completed: 03-25-00**

\*Test performed with and without insect screens.

This test specimen meets the performance criteria level of C-60 (Downsized) of the AAMA/NWWDA 101/I.S. 2-97 specification. (Design Pressure Rating 62.5 psf Interior & Exterior).

Detailed drawings were available for laboratory records and compared to the test specimen at the time of this report. A copy of this report along with representative sections of the test specimen will be retained by NCTL for a period of four (4) years. The results obtained apply only to the specimen tested.

NATIONAL CERTIFIED TESTING LABORATORIES, INC.

MICHAEL LANE  
Division Manager

MEL/lk

*Gary D. Perkins*  
*12/2/00*

*Forced Entry Resistance Test Results*

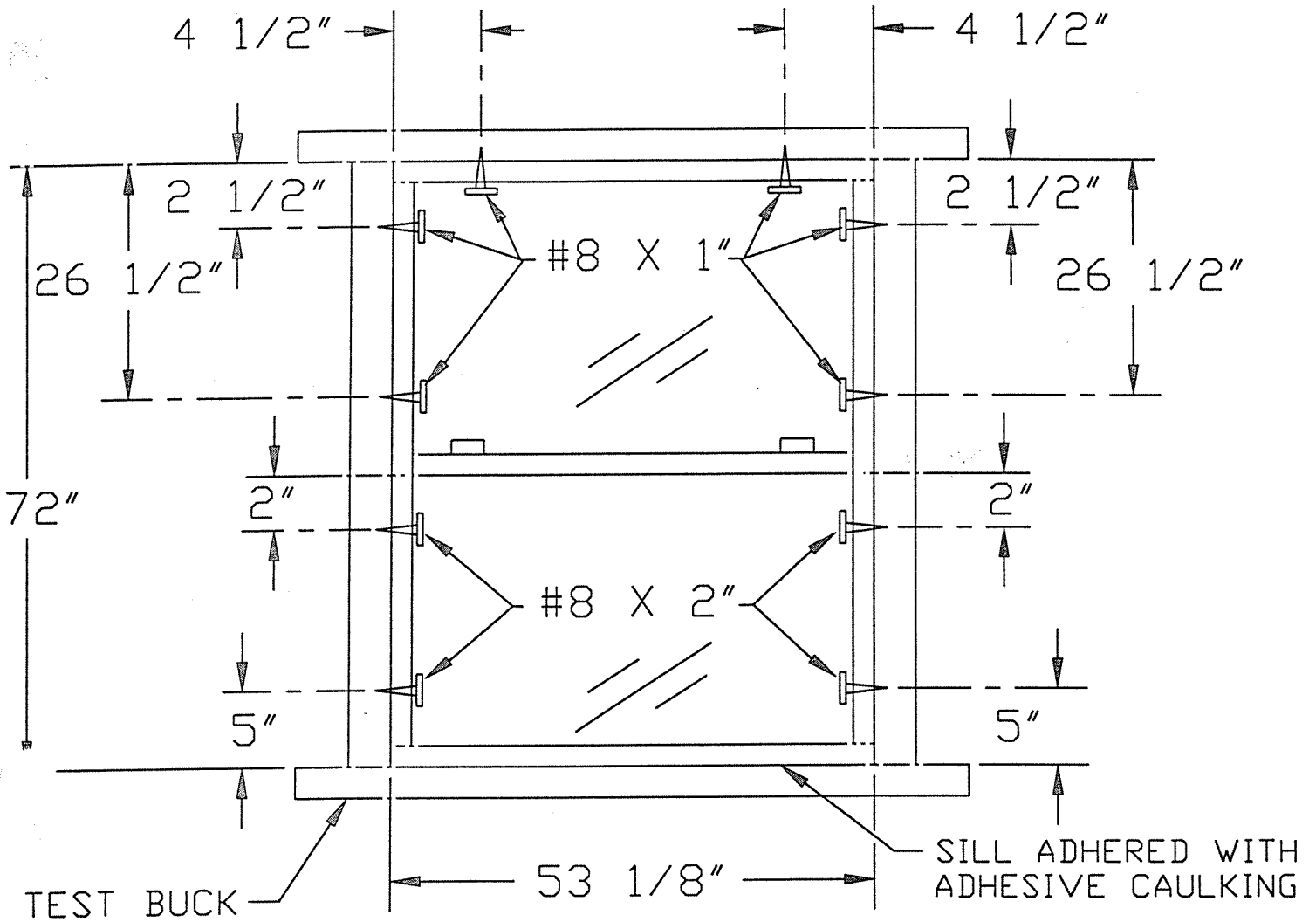
*Test Method: ASTM F588-97, "Standard Test Method for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact".*

**TEST RESULTS**

<u>Paragraph No.</u>	<u>Loads</u>	<u>Duration</u>	<u>Measured</u>	<u>Allowed</u>
10.1-Lock Manipulation		5 Minutes	No Entry	No Entry
10.2.1.1-Test A1	L1=200 lbf	1 Minute	No Entry	No Entry
10.2.1.2-Test A2	L1=200 lbf L2=100 lbf interior	1 Minute	No Entry	No Entry
10.2.1.3-Test A3	L1=200 lbf L2=100 lbf exterior	1 Minute	No Entry	No Entry
10.2.1.4-Test A4	L1=200 lbf L2=100 lbf interior	1 Minute	No Entry	No Entry
10.2.1.5-Test A5	L1=200 lbf L2=100 lbf exterior	1 Minute	No Entry	No Entry
10.2.1.7-Test A7	L1=200 lbf L2=100 lbf interior L3= 35 lbf interior	1 Minute	No Entry	No Entry
10.2.1.8 Lock Manipulation		5 Minutes	No Entry	No Entry
10.2.4.2 Fixed Lite Glazing/Panel Manipulation		5 Minutes	No Entry	No Entry

*Bryan P. Patton  
2/2/02*

# FASTENER LOCATIONS



Dimensions shown from buck.

The test specimen was mounted to the test buck using ten (10) #8 screws. Fastener locations shown cover all windows over 62" buck height, up to 71" buck height.

NOTE: Jamb screws below meeting rail (4) #8 x 2"  
 Jamb & head screws above meeting rail (6) #8 x 1"

▴ - DENOTES SCREW

*Danya Portney  
 2/2/02*

NATIONAL CERTIFIED  
 TESTING LABORATORIES

JOB NO. : NCTL-210-2318-1

COMPANY : FLORIDA EXTRUDERS

TEST DATE : 3-25-00