

CERTIFIED TESTING LABORATORIES

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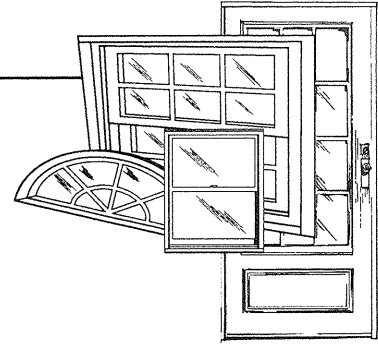
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Report Number: CTLA-386W-3 W-4 W-5

Report Date: April 19, 1999



STRUCTURAL PERFORMANCE TEST REPORT

Client: NU-AIR WINDOW and DOOR
PO BOX 15436
TAMPA, FL 33684

Product Type and Series: OH 2/OH 3 Aluminum Horizontal Slider HS-C 30 (72" x 72")

Downsize: OH2/OH3 Aluminum Horizontal Slider HS-C 40* (72" x 60")

Downsize: OH2/OH3 Aluminum Horizontal Slider HS-C 50* (60" x 48")

Test Specifications: AAMA/NWWDA 101/I.S.2-97 "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Window and Glass Doors"

TEST SPECIMEN

Frame: The extruded aluminum flange frame measured 72" x 72" overall, coped and butted corner construction. Each corner secured with two (2) #8 x .750" S.H., S.M.S. fasteners fixed meeting rail secured to main frame with one (1) # 8 x 750 S.H. S.M.S fastener top and bottom.

Downsize: Frame measured 72" x 60" overall.

Downsize: Frame measured 60" x 48" overall.

Configuration: XO

Ventilator: The operable vent measured 35.25" x 68.75" overall. Coped and butted corner construction. Each corner secured with one (1) # 8 x .750" PPH SMS fastener.

Downsize: Operable vent measured 35.25" x 57.75" overall.

Downsize: Operable vent measured 29.125" x 45.75" overall.

Panels: Fixed lite measured 36" x 69.75"

Downsize: Fixed lite measured 36" x 58.75"

Downsize: Fixed lite measured 30.5" x 46.75"

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Weather Stripping:	<u>Quantity</u>	<u>Description</u>	<u>Location</u>
	Frame One (1) Strip	Woolpile with integral Plastic fins .300" high.	Fixed Meeting Rail
	Frame One (1) Strip	Woolpile with integral Plastic fins .300" high.	Each Frame Jamb
	Vent One (1) Strip	Woolpile with integral Plastic fins .300" high.	Top Rail Exterior
	Vent One (1) Strip	Woolpile with integral Plastic fins .300" high.	Bottom Rail Exterior
	Vent One (1) Strip	Bulb Vinyl .300" o.d.	Lead or Butt Stile

Hardware & Location:	<u>Quantity</u>	<u>Description</u>	<u>Location</u>
	Two (2)	Metallic cam locks	10.25" from each end of vent interlock stile.
	Two (2)	Nylon roller housing with brass wheel	Each end of vent bottom rail

Glazing: 3/16" annealed glass exterior glazed with adhesive back bedding compound and roll formed aluminum glazing bead.

Sealant: A narrow joint sealant was used on all frame and vent corners.

Weep System: Four (4) 1" x .160" high weeps located in the sill track insert, 4" and 34" from each corner, weeping to sill can. Two (2) 1.5" x .120" high weeps located in the sill 4" from each corner weeping to the exterior.

Reinforcement: N/A

Additional Description: N/A

Screen: Roll formed aluminum screen with fiberglass mesh, vinyl spline, plastic corner keys, two (2) pull tabs and two (2) spring clips.

Installation: Fifteen (15) #10" x 1" csk PH were used to secure specimen to the wood test buck. Five (5) in the head measuring from left jamb 2", 16", 34", 52" and 68". Five in each jamb measuring from head to sill 2", 18", 35", 52" and 68".

Downsize: Thirteen (13) #10" x 1" csk PH were used to secure specimen to the wood test buck. Five (5) in the head measuring from left jamb 2", 18", 34", 50" and 66" four (4) in each jamb measuring from head to sill 2", 20", 39" and 57".

Downsize: Twelve (12) #10" x 1" csk PH were used to secure specimen to the wood test buck. Four (4) in the head measuring from left jamb 2", 27", 32" and 56" four (4) in each jamb measuring from head to sill 2", 13", 30" and 45".

Surface Finish: White

Comment: Nominal 2 mil polyethylene film was used to seal against air leakage during structural loads. The film was used in a manner that did not influence the test results.

D-E Perb. P.E.
 5/6/98

Performance Test Results

<u>Paragraph No</u>	<u>Title of Test</u>	<u>Method</u>	<u>Measured</u>	<u>Allowed</u>
*2.1.2	Air Infiltration	ASTM E283-91	.19 cfm/ft ²	.3 cfm/ft ²
	The specimen as tested exceeds the performance levels specified in AAMA/NWWDA 101/I.S.2-97.			
2.1.3	Water Resistance	ASTM E547-93		
	5.0 gph/ft ²	Four (4) five minute cycles	No Entry	No Entry
	WTP=7.5 psf	ASTM E331-93		
		Fifteen (15) minute duration	No Entry	No Entry
	Unit tested with and without insect screen.			
2.1.4.2	Uniform Load Structural	ASTM E330-90		
	Permanent Deformation ten (10) second loading			
Gateway unit 72" x 72"	@ 45 psf Positive		.019"	.282"
	@ 45 psf Negative		.053"	.282"
Downsize 72" x 60"	@ 60 psf Positive		.170"	.237"
	@ 60 psf Negative		.220"	.237"
Downsize 60" x 48"	@ 75 psf Positive		.018"	.190"
	@ 75 psf Negative		.052"	.190"
*2.1.8	Forced Entry Resistance	AAMA 1302.5-76		
	Test A		0"	1/2"
	Test B		0"	1/2"
	Test C		0"	1/2"
	Test D, E, F		0"	1/2"
	Test G		0"	1/2"
*2.2.2.5.1	Operating Force	AAMA/NWWDA 101/I.S.2-97	18 lbs.	25 lbs.
*2.2.2.5.2	Deglazing	ASTM E987-88		
	Top Rail 50 lbs.		.005"=	1.0% <100%
	Bottom Rail 50 lbs.		.004"=	0.8% <100%
	Left Stile 70 lbs.		.008"=	1.6% <100%
	Right Stile 70 lbs.		.008"=	1.6% <100%

* Reference CTLA 386W-6

Testing done at NUAIR facility in Tampa, FL.

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 5/6/93

Test Date: February 17, 1999

Test Completion Date: March 24, 1999

Remarks: Detailed drawings were available for laboratory records and comparison 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 CTL for a period of four (4) years. The results obtained apply only to the specimen tested.

This test report does not constitute certification of this product, but only that the above test results were obtained using the designated test methods and they indicate compliance with the performance requirements (paragraphs as listed) of the above referenced specifications.

Certified Testing Laboratories assumes that all information provided by the client is accurate and that the physical and chemical properties of the components are as stated by the manufacturer.

Witness:

Christopher Bennett, CTL

Jens Rosowski, NUAIR

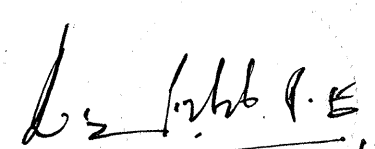
Ken Moran, NUAIR

Certified Testing Laboratories, Inc.



Christopher Bennett
Lab Manager
Architectural Division

cc: NU-AIR (2)
NAMI (2)
Ramesh Patel P.
File


Ramesh Patel, P.E.
Florida Reg. #20224

5/6/99