

Architectural Testing

ANSI/AAMA/WDMA STRUCTURAL TEST REPORT

Rendered to:

HURD MILLWORK COMPANY, INC.
520 South Whelen Avenue
Medford, Wisconsin 54451

ATI Report No: 06-30247.01
Test Date: 08/06/01
and: 08/09/01
and: 09/04/01
Report Date: 09/04/01
Expiration Date: 08/06/05

Series/Model: DH1-AL-WD
Type: Aluminum Clad Double Hung Window

Test Procedure:

The test specimen was evaluated in accordance with ANSI/AAMA/WDMA 101/I.S. 2-97, "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors," for conformance to the **Class H-LC30* 30 x 81** performance requirements, as well as water test 4.50 psf and optional structural test of 45.00 psf positive and negative.

Test Specimen Description:

Overall Size: 29 -1/2" wide by 80 -5/8" high

Upper Sash Size: 26 -3/8" wide by 38 -5/8" high

Lower Sash Size: 26 -3/8" wide by 40" high

Overall Area: 16.52 ft²

Finish: Exterior was aluminum cladding, and the interior was natural wood.

Glazing: The sash were glazed using nominal 3/4" thick sealed insulating glass composed of two sheets of double strength clear annealed glass separated by a 1/2" desiccant metal spacer. The glass was set from the interior against a continuous silicone backbed, and wood glazing beads were employed at the interior which was secured with 3/4" brads spaced 8" to 10" on center.

5906 Saxon Avenue
Schofield, WI 54476
phone: 715.241.8624
fax: 715.241.8425
www.testati.com



Test Specimen Description:(con't)

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Sanoprene bulb	1 row	Upper sash, lower rail
Foam filled bulb	1 row	Frame head and lower sash at bottom rail
Foam pad	4	Jamb liners at ends
Wool pile	2	Center jamb liners

Frame Construction: The frame head and sill utilized molded pine sections, and the vertical jamb consisted of timber-strand lumber. The corners were dadoed, sealed with silicone and were secured with two (2) 1/2" crown by 2" staples per corner. Wood liners were employed and were secured to the frame with 1/8" by 1 -1/8" staples spaced 8" to 10" on center. The wood sill liner utilized a continuous seal of silicone sealant the full length of the sill. A vinyl frost barrier was applied at the sill, as well as a wood parting stop at the head which were secured to the frame with 1/8" by 1/2" staples spaced approximately 6" on center. The frame utilized extruded aluminum cladding which employed mitered, sealed, corner keyed and foam gasket construction. The mitered corners also utilized one (1) #6 by 5/8" screw per corner. Frame cladding is snap fit and secured with 1/8" by 1/2" staples spaced approximately 8" to 10" on center.

Sash Construction: The sash members consisted of molded pine sections with roll formed aluminum cladding at the exterior. The corners were of mortise and tenon construction and were secured with two (2) 1 -1/8" T-nails per corner. The roll formed aluminum cladding was mitered, lapped and snap-fit at the top check rail and bottom rail. At the top rail and bottom check rail the cladding was a butt joint and was also snap-fit around the wood profiles.

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Sash lock	1	Lower sash, top rail located at center of rail
Lock keeper	1	Upper sash, bottom rail adjacent to sash lock
Vinyl block and tackle jamb liner	2	Frame side jambs



Test Specimen Description:(con't)

Hardware:(con't)

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Tilt latch	4	Upper sash, top rail and lower sash, top rail at ends
Tilt pin	4	Sash stiles at bottom ends

Installation: The test specimen was installed into a nominal 2" x 6" wood buck. The interior side of the applied nailing flange was sealed to the wood buck and secured with 2" long roofing nails, spaced approximately 4" on center.

Test Results:

<u>Paragraph</u>	<u>Title of Test</u>	<u>Results</u>	<u>Allowed</u>
2.2.1.6.1	Operating Force Upper Sash Lower Sash	29 lbs. 25 lbs.	35 lbs. 35 lbs.
2.1.2	Air Infiltration ASTM E 283-91 @ 1.57 psf	0.23 cfm/ft ²	0.3 cfm/ft ²
<i>The test specimen meets the performance levels specified in ANSI/AAMA/WDMA 101/I.S.2-97 for a H-LC30* window, for air infiltration.</i>			
2.1.3	Water Resistance ASTM E 547-96 with and without screen @ 3.75 psf	No entry	No entry @ 3.75 psf
2.1.4.2	Uniform Load Structural ASTM E 330-97 Meeting rail @ 37.50 psf (positive) @ 37.50 psf (negative)	<0.001" <0.001"	0.4% of L = 0.170" 0.4% of L = 0.170"



Test Results:(con't)

<u>Paragraph</u>	<u>Title of Test</u>	<u>Results</u>	<u>Allowed</u>
2.2.1.6.2	Deglazing Test ASTM E 987-88		
	Top rail @ 70 lbs.(U)	Negligible (<0.01")	0.50"/100%
	Bottom rail @ 70 lbs.(U)	Negligible (<0.01")	0.50"/100%
	Left stile @ 50 lbs.(U)	Negligible (<0.01")	0.50"/100%
	Right stile @ 50 lbs.(U)	Negligible (<0.01")	0.50"/100%
	Top rail @ 70 lbs.(L)	Negligible (<0.01")	0.50"/100%
	Bottom rail @ 70 lbs.(L)	Negligible (<0.01")	0.50"/100%
	Left stile @ 50 lbs.(L)	Negligible (<0.01")	0.50"/100%
	Right stile @ 50 lbs.(L)	Negligible (<0.01")	0.50"/100%
2.1.8	Forced Entry Resistance ASTM F 588-97 Grade 10	No entry	No entry @ Grade 10

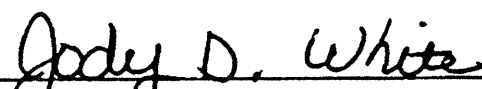
Optional Performance:

<u>Paragraph</u>	<u>Title of Test</u>	<u>Results</u>	<u>Allowed</u>
4.3	Water Resistance ASTM E 547-96 without screen @ 4.50 psf	No entry	No entry @ 4.50 psf
4.4.2	Uniform Load Structural ASTM E 330-97 Meeting rail		
	@ 45.00 psf (positive)	<0.001"	0.4% of L = 0.170"
	@ 45.00 psf (negative)	<0.001"	0.4% of L = 0.170"

Design Pressure Rating: For use in locations adhering to the S.B.C.C.I., S.F.B.C., S.F.B.C. Broward Edition, and where the pressure requirements as determined by ASCE 7 minimum design loads for buildings and other structures does not exceed design pressure ratings listed above.

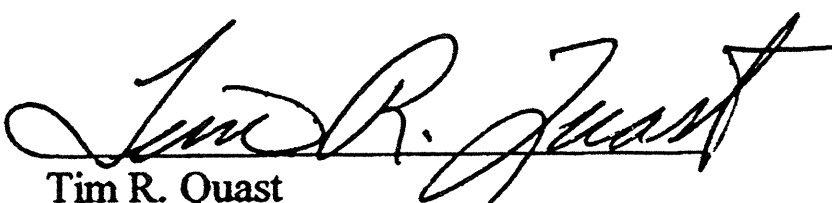
Detailed drawings and a copy of this report will be retained by ATI for a period of four years. The above results were secured by using the designated test methods and they indicate compliance with the performance requirements of the above referenced specification. This report does not constitute certification of this product which may only be granted by the certification program Administrator.

ARCHITECTURAL TESTING, INC.



Jody D. White
Project Manager

ARCHITECTURAL TESTING, INC



Tim R. Quast
Regional Manager

06-30247