



Architectural Testing

ANSI/AAMA/WDMA STRUCTURAL TEST REPORT

Rendered to:

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

ATI Report No: 06-30252.01
Test Dates: 08/13/01
Report Date: 08/24/01
Expiration Date: 08/13/05

Series/Model: Vinyl Double Hung (VDH)

Type: Vinyl Double Hung Window (tempered glass)

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-R35 34 x 77** performance requirements, as well as water test 5.25 psf and optional structural test of 52.50 psf positive and negative

Test Specimen Description:

Overall Size: 33 -1/2" wide by 76 -1/2" high

Upper Sash Size: 29 -7/8" wide by 37 -7/8" high

Lower Sash Size: 30 -5/8" wide by 37 -7/8" high

Overall Area: 17.80 ft²

Finish: All vinyl was white.

Glazing: The sash was glazed using nominal 3/4" thick sealed insulating glass composed of two sheets of double strength clear tempered glass and a 1/2" thick aluminum spacer. The glass was set from the exterior against a closed cell foam glazing tape, with silicone backed at the tape corners, and vinyl glazing beads were employed at the exterior.

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**Test Specimen Description:(con't)****Weatherstripping:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
.500" vinyl wrapped foam hollow bulb	1 row	Lower sash bottom rail
.250" pile	2 rows	Upper and lower sash stiles
.250" pile	1 row	Lower sash, meeting rail and upper sash top rail
.250" pile	1 row	Frame head, center leg and sill, high performance liner

Frame and Sash Construction: The frame and sash members were mitered and employed welded corner construction. Frame center leg attachment was used at the head for a weatherstrip leg. Interior sash stops were employed at the lower corner of frame jambs. High performance sill liner was used at the frame sill attach with foam tape full length and sealed at the ends with silicone.

Screen Construction: The screen frame consisted of roll formed aluminum with miter cut and corner keyed construction. The screen utilized fiberglass mesh which was secured with a continuous rubber screen spline.

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Nylon tilt latch	2 per sash	Ends of sash top rail
Metal cam lock w/ strike	1	Sash top rail/meeting rail, at center of rail
Metal tilt/pivot pin	2 per sash	Lower corners of sash stiles
Block and tackle balances	2 per sash	Frame jambs



Test Specimen Description:(con't)

Drainage:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
.250" by .375" slot	2	Sill exterior surface and inside exterior tube section of sill
.250" by .625" slot	2	Sill interior track leg
.250" by .375" slot	2	Bottom rail lower sash and upper sash interlock

Installation: The window was installed into a nominal 2" by 6" wood buck, utilizing the integral mounting flange/fin on all four sides. The unit was set into the continuous bed of sealant. The flange/fin was secured to the wood buck with 2" galvanized roofing nails spaced approximately 4" on center. Silicone sealant was applied over the nail heads and the perimeter of nail flange.

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	14 lbs. 7 lbs.	30 lbs. 30 lbs.
2.1.2	Air Infiltration ASTM E 283-91 @ 1.57 psf	0.19 cfm/ft ²	0.30 cfm/ft ²
<i>The test specimen meets the performance levels specified in ANSI/AAMA/WDMA 101/I.S.2-97 for a H-R35 window.</i>			
2.1.3	Water Resistance ASTM E 547-93 with and without screen @ 2.86 psf	No entry	No entry @ 2.86 psf
2.1.4.2	Uniform Load Structural ASTM E 330-96 Meeting rail @ 22.50 psf (positive) @ 22.50 psf (negative)	<0.001" <0.001"	0.4% of L = 0.123" 0.4% of L = 0.123"



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)	0.06"/12%	0.50"/100%
	Bottom rail @ 70 lbs.(U)	0.06"/12%	0.50"/100%
	Left stile @ 50 lbs.(U)	0.03"/6%	0.50"/100%
	Right stile @ 50 lbs.(U)	0.03"/6%	0.50"/100%
	Top rail @ 70 lbs.(L)	0.06"/12%	0.50"/100%
	Bottom rail @ 70 lbs.(L)	0.06"/12%	0.50"/100%
	Left stile @ 50 lbs.(L)	0.03"/6%	0.50"/100%
	Right stile @ 50 lbs.(L)	0.03"/6%	0.50"/100%
2.1.7	Welded Corner Test	Meets as stated	Meets as stated
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 547-93 with and without screen @ 5.25 psf	No entry	No entry @ 5.25 psf
4.4.2	Uniform Load Structural ASTM E 330-96 Meeting rail		
	@ 52.50 psf (positive)	0.020"	0.4% of L = 0.123"
	@ 52.50 psf (negative)	0.010"	0.4% of L = 0.123"

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, representative samples of the test specimen, 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.

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