

PROJECT NUMBER: 180-6301

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DATE: 10/10/01

STORK® TWIN CITY TESTING
723 South 72nd Ave. STE B
Wausau, WI 54401

IN PLANT WITNESS TESTING OF
3-0 X 8-0 CLAD OUTSWING
OPERATING PATIO DOOR

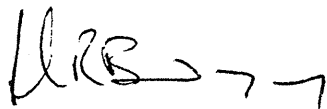
MANUFACTURED BY
HURD MILLWORK COMPANY

Prepared for:
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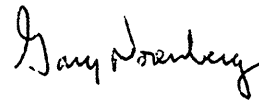
Test Date:	10/10/2001
Expiration Date:	10/10/2005
DP Rating: Air	.08 cfm/ft ²
Water	12.0 psf
Structural	90.0 psf

Prepared By:

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The test results contained in this report pertain only to the specimens tested and not necessarily to all similar products.

SAMPLE DESCRIPTION (Cont):

with five (5) #8 by 1-1/2" screws. The sill frame corners utilized foam gaskets, end plug and silicone sealant which was applied between the sill profile and the foam gasket. A metal head plate was secured to the top jamb for reinforcement. The head strike plate was secured with stainless steel screws, two (2) #10 by 2-1/2" backside and one (1) #10 by 1-1/2" frontside. The vinyl sill strike plate with a foam gasket was secured with one (1) #6 by 3/4" screw. The metal sill strike plate was secured with two (2) #10 by 2-1/2" stainless steel screws.

Panel Construction: The panel members were comprised of aluminum clad wood, with each corner square cut, butted, glued, and doweled (3 per bottom corner and 2 per top corner), with each end dowel stapled with one 2" T-nail per side. Four (4) panel plates were used to secure the panel joints at rails and stiles. Six (6) # 10 by 2-1/2" stainless steel screws were used per plate per corner.

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Foam-filled Santoprene angle-shape with rigid polypropylene base	1 row	Jamb, sill, and head
Dual durometer drip cap	1 row	Top of panel to exterior
Dual durometer sweep strip	1 row	Bottom of panel

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
5-point lock with keepers	1	Locks positioned 9", 56", and 83" from top rail, and one at top and bottom rail. Operating handle 36" from bottom rail
Hinges	4	Hinge locations are from the bottom of the panel to the center of the hinge located at 9", 34", 59" and 84"

Installation: The test specimen was installed within a nominal 2" by 6" wood frame surround, utilizing the nailing/mounting fin at the head and vertical jamb conditions with 2" roofing nails, spaced 4" on center. A continuous bead of silicone was employed between the nailing fin and the wood test chamber, as well as a continuous silicone bead between the aluminum sill and chamber sill plate. 2 (two) #8 by 3" screws were utilized through each hinge into the wood surround.

TEST RESULTS:

<u>Paragraph</u>		<u>ACTUAL</u>	<u>PERFORMANCE REQUIREMENTS</u>
<u>2.1.2</u>	<u>Air Infiltration</u>		
	Chamber Pressure, psf	1.57	1.57
	Unit Area, ft ²	24.16	
	Air Infiltration, cfm	2.0	
	cfm/ft ²	.08	0.30 maximum
	Chamber Pressure, psf	6.24	----
	Unit Area, ft ²	24.16	
	Air Infiltration, cfm	4.0	
cfm/ft ²	.17	----	

		<u>ACTUAL</u>	<u>PERFORMANCE REQUIREMENTS</u>
<u>2.1.3</u>	<u>Static Water Penetration</u>		
	Chamber Pressure, psf	12.00	12.00
	Water Flow Rate, gal/hr/ft ²	5.00	5.00 minimum
	Pressurized Duration, min.	5.0	5.0
	Unpressurized Duration, min.	1.0	1.0
	Cycles	4	4
	Water Penetration	None	No water shall flow over the interior face.
<u>2.1.4.2</u>	<u>Structural Load Test</u>		
	Chamber Pressure, psf	+90.0	+90.0
	Duration, sec.	10.00	10.00
	Permanent Set, in.	0.005	<0.4%L= 0.372 max.
	Chamber Pressure, psf	-90.0	-90.0
	Duration, sec.	10.00	10.00
	Permanent Set, in.	0.017	<0.4%L= 0.372 max.

TEST PROCEDURE:

The tests were conducted in accordance with ASTM and AAMA/WDMA 101/I.S.2-97 test procedures and the results were compared to the performance requirements.

Air Infiltration

ASTM:E283-91, Standard Test Methods for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors. Testing was conducted at 1.57 psf (25 mph) and at 6.24 psf (50 mph) test chamber static pressure.

Water Penetration

ASTM:E547-96, Standard Test Methods for Water Penetration of Exterior Windows, Curtain Wall and Doors by Cyclic Static Air Pressure Difference. Testing was conducted at 12.0 psf test chamber static pressure while water was applied continuously to the entire window at the rate of 5 gal/hr/sq ft for four cycles consisting of 5 minutes pressurized and one minute unpressurized.

Physical Load Testing

ASTM: E330-96, Standard Test Methods for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Differences. Permanent set measurements were recorded at 90.0 psf (189.9 mph) positive and negative test chamber pressure.

REMARKS:

Twin City Testing will retain a copy of this report. The above results were obtained by using the designated test methods and they indicate compliance with the performance requirements of the above referenced guidelines. This is not for certification