

PROJECT NUMBER: 180-6103

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DATE: 2/23/00**STORK® TWIN CITY TESTING**  
723 S. 72<sup>nd</sup> AVE STE B  
Wausau, WI 54401

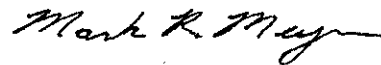
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**LABORATORY TESTING OF  
MONUMENT VINYL PATIO DOOR  
MANUFACTURED BY  
HURD MILLWORK COMPANY****Prepared for:**  
**HURD MILLWORK COMPANY**  
Attn: Mr. Art Kuss  
520 South Whelen Street  
Medford, WI 54451

Client Purchase Order Number: Verbal

Prepared By:

Reviewed By:

John R. Bordagaray  
Engineering Technician  
Product Testing Department  
Telephone: (715) 848-3935Mark R. Meyer  
Project Manager  
Product Testing Department  
Telephone: (715) 848-3935

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



**LABORATORY TESTING OF 8-0 X 8-0 VSLPD1**

**INTRODUCTION:**

This report presents the results of laboratory testing conducted on a vinyl sliding patio door window manufactured by Hurd Millwork Company. This work was requested and authorized by Mr. Bob Fales of Hurd Millwork with testing conducted on February 18, 2000.

The purpose of the testing was to determine the performance of the window for air infiltration, water resistance, and structural integrity when tested in accordance with ASTM procedures included in ANSI/AAMA/WDMA 101/I.S.2-97 "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors".

**TEST RESULTS SUMMARY:**

The window described herein meets performance specifications for ANSI/AAMA/WDMA 101/I.S.2-97 LC-25(X,O)\*.

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.

**SAMPLE DESCRIPTION:**

Overall Size:	95-1/2" wide by 95-1/2" high
Operating Sash Size	48-11/16" wide by 93-1/16" high
Stationary Sash Size	47-1/2" wide by 93-5/8" high
Unit Area:	63.2 sqft
Finish:	White vinyl

**Glazing:** The window utilized nominal 1" insulating glass fabricated from two nominal 5/32" annealed tempered sheets. The glass was set from the exterior against foam glazing tape, with the corners sealed with silicone and vinyl glazing beads were used on the exterior.

**SAMPLE DESCRIPTION (CON'T):****Weatherstripping:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.250" high pile with center fin by 0.187" backing	1 row	Sash perimeter and fixed meeting stile

**Frame Construction:** Frame corners were miter cut and welded. A fixed meeting stile was present at the midspan of the frame and was secured to the frame head and sill with two screws per end. The meeting stile also contained an aluminum reinforcement. An aluminum glide track cover was present on the PVC sill track.

**Panel Construction:** The panel corners were miter cut and welded, and both stiles contained an aluminum reinforcement.

**Drainage:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
3/8" by 1/4" weep hole	4	Sill exterior and inner cavity leg, 1-1/2" from each end
1/2" by 1/4" weep hole	2	Sill inner track to hollow below, 2-1/2" from each end
1-5/8" by 1/4" weep hole	2	Ends of sill track
1/2" by 1/4" pressure relief hole	2	Head inner track, 2-1/2" from each end

**Hardware:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Adjustable metal rollers	2	Panel bottom rail, 3" from each end
Metal lock with metal keepers	1	Panel locking jamb, 38" from bottom rail with keeper located on frame jamb
Pull handle	1	Panel locking jamb, 38" from bottom rail

**Screen Construction:** The screen Frame was extruded aluminum with mitered corners. Fiberglass screen cloth was attached to the frame with a rubber spline.

**Installation:** The test specimen was installed within a 1 1/2" by 6" wood buck. The window frame was secured to the wood buck by utilizing the vinyl nailing fin with 2" galvanized roofing nails spaced 4" on center and sealed with a quality silicone sealant.

**TEST RESULTS:**

	<b><u>ACTUAL</u></b>	<b><u>PERFORMANCE REQUIREMENTS</u></b>
<b><u>Air Infiltration</u></b>		
Chamber Pressure, psf	+1.57	+1.57
Unit Area, ft <sup>2</sup>	63.2	
Air Infiltration, cfm	3.5	
cfm/ft <sup>2</sup>	0.06	0.30 maximum
<b><u>Static Water Penetration</u></b>		
<b>With Screens</b>		
Chamber Pressure, psf	3.75	3.75
Water Flow Rate, gal/hr/ft <sup>2</sup>	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.
<b>Without Screens</b>		
Chamber Pressure, psf	3.75	3.75
Water Flow Rate, gal/hr/ft <sup>2</sup>	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.
<b><u>Structural Load Test</u></b>		
Chamber Pressure, psf	+37.5	+37.5
Duration, sec.	10.00	10.00
Permanent Set, in.	Negligible	<0.4%L = 0.382 maximum
Chamber Pressure, psf	-37.5	-37.5
Duration, sec.	10.00	10.00
Permanent Set, in.	Negligible	<0.4%L = 0.382 maximum
<b><u>Operating Force</u></b>		
Opening	15lbs	35lbs
Closing	17lbs	35lbs

**TEST RESULTS (CON'T):****Forced Entry Resistance (ASTM F842-97, performance grade 10)**

<u>Test</u>	<u>Load (lbs)</u>	<u>Duration (min)</u>	<u>Performance</u>
Lock Manipulation	---	5	Satisfactory (PASS)
A1	300	5	Satisfactory (PASS)
A2	300, 175	5	Satisfactory (PASS)
A3	300, 175	5	Satisfactory (PASS)
A4	300, 175, 50	5	Satisfactory (PASS)
A5	300, 175, 50	5	Satisfactory (PASS)
A6	300, 50, 30	5	Satisfactory (PASS)
Lock Manipulation	---	5	Satisfactory (PASS)

**Deglazing****ACTUAL****PERFORMANCE  
REQUIREMENTS**

Deglazing bite @ 70 lbs

0.12"

0.50"

Deglazing bite @ 50 lbs

0.06"

0.50"

**Corner Weld Test**

Break corners of test unit

Pass

Breakage not to extend along entire  
weld line

**TEST PROCEDURE:**

The tests were conducted in accordance with ASTM and ANSI/AMMA/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 1.57psf test chamber static pressure.

**Water Penetration**

ASTM:E547-96, Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Difference. Testing was conducted at 3.75 psf, test chamber static pressure while water was applied continuously to the entire window at a rate greater than or equal to 5 gal/hr/sq ft for four cycles consisting of 5 minutes pressurized and 1 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 positive/ negative 37.5 psf test chamber pressure.

**Forced Entry Resistance**

ASTM: F842-97, Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact. Performed in accordance with Type A Sliding Doors.

**Deglazing**

ASTM: E987-88, Standard Test Methods for Deglazing Force of Fenestration Products

**Corner Weld Test**

ANSI/AAMA/WDMA 101/I.S.2.97, Section 2.1,7 and APPENDIX A

**REMARKS:**

The tested window remained in the custody of the manufacturer after testing was completed. Twin City Testing will retain detailed drawings and 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. Certification of this product may only be granted by a certification administrator.