

**AAMA/NWDA 101/I.S.2-97
TEST REPORT SUMMARY**

Rendered to:


**SILVERLINE BUILDING PRODUCTS
CORPORATION**

**SERIES/MODEL: 2900
TYPE: PVC Single Hung Window
RATING: H-R45 44 x 62, H-R50 38 x 60*
H-R50 36 x 62***

Title of Test	H-R45 44 x 62	H-R50 38 x 60*	H-R50 36 x 62*
Overall Design Pressure	45.0 psf	50.0 psf	50.0 psf
Operating Force	17 lb max.	17 lb max.	17 lb max.
Air Infiltration	0.09 cfm/ft ²	0.09 cfm/ft ²	0.09 cfm/ft ²
Water Resistance	7.50 psf	7.50 psf	7.50 psf
Structural Test Pressure	+67.5 psf	+75.0 psf	+75.0
Deglazing	Passed	Passed	Passed
Forced Entry Resistance	Grade 10	Grade 10	Grade 10

Reference should be made to Report No. 01-34085.01 for complete test specimen description and data.

For ARCHITECTURAL TESTING, INC.



Adam A. Fodor, Technician

AAF:arr



130 Derry Court • York, PA 17402-9405
web www.testati.com • Facsimile 717-764-4129 • Telephone 717-764-7700

AAMA/NWWDA 101/I.S.2-97 TEST REPORT

Rendered to:

SILVERLINE BUILDING PRODUCTS CORPORATION
One Silver Line Drive
North Brunswick, New Jersey 08902

Report No: 01-34085.01
Test Date: 02/16/99
Thru: 02/18/99
and 03/03/99
Report Date: 03/08/99
Expiration Date: 03/08/03

Project Summary: Architectural Testing, Inc. (ATI) was contracted to witness tests on a Series/Model 2900, PVC single hung windows at Silverline Building Products Corporation's facility located in North Brunswick, New Jersey. The test specimens met all the performance requirements for an H-R45 44 x 62, H-R50 38 x 60*, and an H-R50 36 x 62* rating. The test specimen descriptions and test results are listed herein.

General Note: An asterisk (*) next to the performance grade indicates that the size tested for optional performance was smaller than the minimum test size for the product type and class.

Test Procedure: The test specimen was evaluated in accordance with the following:

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

ASTM F 588-97, Resistance of Window Assemblies to Forced Entry Excluding Glazing.

Test Specimen Description:

Series/Model: 2900

Type: PVC Single Hung Window

Test Specimen Description: (Continued)

Test Specimen #1: (H-R45 44 x 62) (rating)

Overall Size: 3' 8" wide by 5' 2" high

Sash Size: 3' 5-1/2" wide by 2' 6-3/4" high

Fixed Daylight Opening Size: 3' 3" wide by 2' 4" high

Screen Size: 3' 4" wide by 2' 5" high

Test Specimen #2: (H-R50 38x 60*) (rating)

Overall Size: 3' 2" wide by 5' 0" high

Sash Size: 2' 11-1/2" wide by 2' 5-1/2" high

Fixed Daylight Opening Size: 2' 8-3/4" wide by 2' 3" high

Test Specimen #3: (H-R50 36x 62*) (rating)

Overall Size: 3' 0" wide by 5' 2" high

Sash Size: 2' 9-1/2" wide by 2' 6-3/4" high

Fixed Daylight Opening Size: 2' 6-3/4" wide by 2' 4" high

Finish: All PVC was white.

Glazing Details: Both lites utilized 5/8" thick sealed insulating glass fabricated from two sheets of 1/8" clear annealed glass and a desiccant filled metal spacer system. The fixed lite was interior glazed onto silicone bedding and secured with PVC snap-in glazing beads. The sash was exterior glazed onto silicone bedding and secured with PVC snap-in glazing beads.

Test Specimen Description: (Continued)

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.240" high by 0.187" backed polypile with center fin	1 Row	Sill, fixed meeting rail and meeting rail
0.240" high by 0.187" backed polypile with center fin	2 Rows	Stiles of sash
0.375" high co-extruded single leaf gasket	1 Row	Bottom rail of sash

Frame Construction: The frame was constructed of extruded PVC members with mitered and welded corners. The fixed meeting rail was coped, butted and fastened with two screws per end.

Sash Construction: The sash was constructed of extruded PVC members with mitered and welded corners.

Screen Construction: The screen was constructed of aluminum members with plastic corner gussets. The fiberglass mesh was secured with a flexible vinyl spline.

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Cam sweep lock with keeper	2	10" from each end of meeting rail with keepers aligned on fixed meeting rail
Plastic tilt latch	2	Each end of meeting rail
Metal tilt bar	2	Each end of bottom rail
Block and tackle balance with shoe	2	Each jamb
Plastic pull	1	Bottom rail of screen
Spring clip	2	Top rail of screen

Test Specimen Description: (Continued)

Drainage:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
1/4" diameter weephole	4	Two, 3" from each end of bottom rail draining glazing channel
2 1/2" wide weep notch	2	Each end of interior sill leg
1 1/8" wide weep notch	2	Each end of exterior sill leg
Slope sill	1	Sill

Reinforcement: Both the meeting rail and fixed meeting rail utilized a 0.030" thick galvanized steel "U" channel reinforcement.

Installation: The test unit was installed into a 2" x 8" wood test buck utilizing the supplied nailing fin with screws every 10" around the perimeter. The exterior utilized wood blind stops and a sealed perimeter.

Test Results:

The results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test</u>	<u>Results</u>	<u>Allowed</u>
2.2.1.6.1	Operating Force	17 lbs	30 lbs max.
2.1.2	Air Infiltration per ASTM E 283 (See Note #1) @ 1.56 psf (25 mph)	0.09 cfm/ft ²	0.3 cfm/ft ² max.

Note #1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/NWDA 101/I.S. 2-97 for air infiltration.

Test Results: (Continued)

The results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test</u>	<u>Results</u>	<u>Allowed</u>
2.1.3	Water Resistance per ASTM E 547 (with and without screen) WTP = 2.86 psf	No leakage	No leakage
2.1.4.2	Uniform Load Structural (Indicator(s) located on the fixed meeting rail) @ 22.5 psf (exterior) @ 22.5 psf (interior)	<0.01" <0.01"	0.16" max. 0.16" max.
2.2.1.6.2	Deglazing Test per ASTM E 987 In operating direction at 70 lbs Meeting rail Bottom rail	0.09"/16% 0.09"/16%	0.56"/100% 0.56"/100%
	In remaining direction at 50 lbs Left stile Right stile	0.06"/11% 0.06"/11%	0.56"/100% 0.56"/100%
2.1.7	Welded Corner Test	Meets as stated	Meets as stated
2.1.8	Forced Entry Resistance per ASTM F 588-97 Type: A Grade: 10		
	Lock Manipulation Test	No entry	No entry
	Test A1 thru A5 Test A7	No entry No entry	No entry No entry
	Lock Manipulation Test	No entry	No entry

Test Results: (Continued)

The results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test</u>	<u>Results</u>	<u>Allowed</u>
<u>Optional Performance</u>			
4.3	Water Resistance per ASTM E 547 (with and without screen) WTP = 7.50 psf	No leakage	No leakage
4.4.2	Uniform Load Structural (Indicator(s) located on the fixed meeting rail)		
	@ 67.50 psf (exterior)	0.02"	0.16" max.
	@ 67.50 psf (interior)	0.02"	0.16" max.

Test Specimen #2: (H-R50 38 x 60*) (Rating)Optional Performance

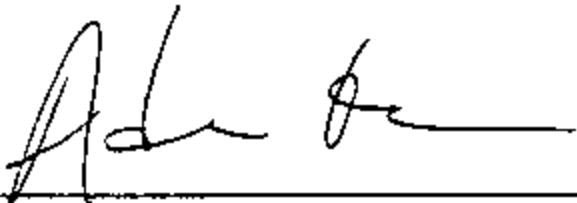
4.4.2	Uniform Load Structural (Indicator(s) located on the fixed meeting rail)		
	@ 75.0 psf (exterior)	0.01"	0.13" max.
	@ 75.0 psf (interior)	0.01"	0.13" max.

Test Specimen #3: (H-R50 36 x 62*) (Rating)Optional Performance

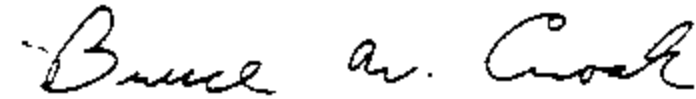
4.4.2	Uniform Load Structural (Indicator(s) located on the fixed meeting rail)		
	@ 75.0 psf (exterior)	0.01"	0.12" max.
	@ 75.0 psf (interior)	<0.01"	0.12" max.

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.

For ARCHITECTURAL TESTING, INC:



Adam A. Fodor
Technician



Bruce W. Croak
Project Manager

AAF:arr
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