



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

Rendered to:

SIMONTON WINDOWS

SERIES/MODEL: 07-70

TYPE: PVC Double Hung Window with A4 Reinforcement

Title of Test	Results
Rating	H-R50 47 x 71
Overall Design Pressure	50 psf
Operating Force	29 lb max.
Air Infiltration	0.09 cfm/ft ²
Water Resistance	7.5 psf
Structural Test Pressure	±75.0 psf
Deglazing	Passed
Forced Entry Resistance	Passed

Reference should be made to Report No. 05-30359.01 dated 04/03/02 for complete test specimen description and data.

For ARCHITECTURAL TESTING, INC.

Digitally signed by Lynn George

Lynn George, Project Manager

LG:nlb



Architectural Testing

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

Rendered to:

SIMONTON WINDOWS
One Cochrane Avenue
Pennsboro, West Virginia 26415

Report No: 05-30359.01
Test Date: 03/07/02
Report Date: 04/03/02
Expiration Date: 03/07/06

Project Summary: Architectural Testing, Inc. (ATI) was contracted by Simonton Windows to witness performance tests on a Series/Model 07-70, poly vinyl chloride (PVC) double hung window at their facility located in Pennsboro, West Virginia. The sample tested, successfully met the performance requirements for an H-R50 47 x 71 rating. Test specimen description and results are reported herein.

Test Specification: The test specimen was evaluated in accordance with AAMA/NWWDA 101/I.S.2-97, *Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors*.

Test Specimen Description:

Series/Model: 07-70 (Reinforcement Code A4)

Type: PVC Double Hung Window

Overall Size: 3' 11" wide by 5' 11" high

Top Sash Size: 3' 6-13/16 wide by 2' 9-11/16" high

Bottom Sash Size: 3' 7-13/16" wide by 2' 10-3/4" high

Screen Size: 3' 6-3/4" wide by 2' 10-7/8" high

Finish: All vinyl was white.

Test Specimen Description: (Continued)

Glazing Details: The sash were exterior glazed with 3/4" thick, sealed insulating glass fabricated from two sheets of 1/8" thick, annealed glass and a metal spacer system. The insulating glass was set against a double-sided adhesive tape and secured with dual durometer snap-in vinyl glazing beads.

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.187" backed by 0.210" high pile with center fin	1 Row	Sill
0.187" backed by 0.250" high pile with center fin	1 Row	Top rail, interior and exterior meeting rails, bottom stiles (sides)
0.187" backed by 0.250" high pile with center fin	2 Rows	Top sash stiles
0.187" backed by 0.340" high pile with center fin	1 Row	Exterior meeting rail, bottom sash stiles (exterior face)
7/16" diameter, offset vinyl jacket/hollow foam-filled bulb	1 Row	Bottom rail
0.187" backed by 0.500" high vinyl jacket/foam-filled C-fold leaf	1 Row	Bottom rail
0.187" backed by 0.250" high vinyl jacket/foam filled bulb	1 Row	Head insert
0.187" backed by 0.300" high vinyl jacket/foam filled bulb	1 Row	Top rail

Frame Construction: The PVC frame was constructed using mitered and welded corner construction. A rigid PVC snap-in adapter was located at the head.

Sash Construction: The PVC sash were assembled utilizing mitered and welded corner construction.

Screen Construction: The screen was constructed with extruded aluminum. The corners were square cut and secured using plastic corner keys. The fiberglass mesh screen cloth was held-in-place with a flexible vinyl spline.

Test Specimen Description: (Continued)

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Metal cam lock and keeper	2	Lock rail, 8" in from each end with mating keepers on the exterior meeting rail
Plastic tilt latch	4	Top corner of each sash
Metal pivot bar	4	Bottom corner of each sash
Constant force balance system with locking tilt shoe	4	Two per jamb, three coils per assembly
PVC sash stop	4	One per end of each jamb
Molded plastic "U" channel jamb reinforcement	2	One at mid-span of each interior jamb track, at the bottom sash tilt latches

Drainage:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
1-1/16" wide by 3/16" high weepslot (with flap)	2	Exterior face of sill, one 3-1/4" in from each end
1" wide by 3/16" high weepslot	2	Sill intermediate leg, one at each end
3/16" diameter hole	4	Bottom rail and exterior meeting rail glazing pocket, one 7/8" in from each end
5/16" wide by 1-1/4" long weepslot	2	Slotted cavity plugs at sill/interior jamb track intersection

Reinforcement: (Simonton code A4) The exterior meeting rail contained a rectangular shaped extruded aluminum reinforcement measuring 0.750" x 0.492" x 0.062" (reference drawing #56110). The interior meeting rail contained a custom shaped, hollow aluminum reinforcement measuring 0.796" x 0.989" x 0.062" (reference drawing #60911). The top sash rail contained a custom shaped, extruded aluminum reinforcement measuring 0.748" x 0.394" x 0.062" (reference drawing #16107). The bottom sash rail contained a rectangular shaped, hollow, extruded aluminum reinforcement measuring 0.748" x 0.866" x 0.062" (reference drawing #56109).

Test Specimen Description: (Continued)

Installation: The unit was installed in a 2 x 10 wood buck constructed of Spruce-Pine-Fir construction lumber and secured to the buck through the jambs using six #8 x 2-1/2" long screws, three at each jamb, evenly spaced (embedded 1-1/2" into the buck). The interior and exterior perimeter was sealed with a silicone caulking with the exception of an approximate 6" long void at each interior sill corner.

Test Results:

The results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
2.2.1.6.1	Operating Force		
	<u>Top Sash</u>		
	Opening	20 lbs	30 lbs max.
	Closing	25 lbs	30 lbs max.
	<u>Bottom Sash</u>		
	Opening	29 lbs	30 lbs max.
	Closing	28 lbs	30 lbs max.
2.1.2	Air Infiltration per ASTM E 283 @ 1.56 psf (25 mph)	0.09 cfm/ft ²	0.3 cfm/ft ² max.
<i>Note #1: The tested specimen meets the performance levels specified in AAMA/NWWDA 101/I.S. 2-97 for air infiltration.</i>			
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 per ASTM E 330 (Measurements reported were taken on the exterior meeting rail)		
	@ 22.5 psf (positive)	0.039"	0.171" max.
	@ 22.5 psf (negative)	0.090"	0.171" max.

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
2.2.1.6.2	Deglazing Test per ASTM E 987		
	<u>Top Sash</u>		
	In operating direction at 70 lbs		
	Top rail	0.060"/12%	0.500"/100%
	Meeting rail	0.060"/12%	0.500"/100%
	In remaining direction at 50 lbs		
	Left stile	0.030"/6%	0.500"/100%
	Right stile	0.030"/6%	0.500"/100%
	<u>Bottom Sash</u>		
	In operating direction at 70 lbs		
	Lift rail	0.060"/12%	0.500"/100%
	Meeting rail	0.090"/18%	0.500"/100%
	In remaining direction at 50 lbs		
	Left stile	0.060"/12%	0.500"/100%
	Right stile	0.030"/6%	0.500"/100%
2.1.7	Welded Corner Test	Meets as stated	Meets as stated
2.1.8	Forced Entry Resistance per AAMA 1302.5-76 Tests A through G	No entry	No entry
<u>Optional Performance</u>			
4.3	Water Resistance per ASTM E 547 (with and without screen) WTP = 7.5 psf	No leakage	No leakage
4.4.2	Uniform Load Structural (Measurements reported were taken on the exterior meeting rail)		
	@ 75.0 psf (positive)	0.047"	0.171" max.
	@ 75.0 psf (negative)	0.153"	0.171" 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.:

A handwritten signature in cursive script that reads "Lynn George".

Digitally signed by Lynn George

Lynn George
Project Manager

LG:mb
05-30359.01

A handwritten signature in cursive script that reads "Michael E. Mackereth".

Michael E. Mackereth
Director - Operations