



AAMA/NWWDA 101/LS.2-97
TEST REPORT SUMMARY

Rendered to:

SIMONTON WINDOWS

SERIES/MODEL: 07-70
TYPE: PVC Double Hung Window
with E9 Reinforcement

Title of Test	Results
Rating	H-R50 52 x 71
Overall Design Pressure	50 psf
Operating Force	27 lb max.
Air Infiltration	0.08 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. 05-30349.01 dated 04/02/02 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: 05-30349.01

Test Date: 02/08/02

And: 03/06/02

Report Date: 04/02/02

Expiration Date: 02/08/06

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 52 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 E9)

Type: PVC Double Hung Window

Overall Size: 4' 4" wide by 5' 11" high

Top Sash Size: 3' 11-3/4 wide by 2' 9-11/16" high

Bottom Sash Size: 4' 0-3/4" wide by 2' 10-3/4" high

Screen Size: 3' 11-13/16" 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 steel spacer system. The insulating glass was set onto 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 screens were 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 at the exterior 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, 3 coils per assembly
PVC sash stop	4	One per end of each jamb
Molded plastic "U" channel jamb reinforcement	2	One at midspan 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 keeper rail glazing pocket, one 7/8" in from each end
3/8" wide by 1-1/4" long weepslot	2	Slotted cavity plugs at sill/interior jamb track intersection

Test Specimen Description: (Continued)

Reinforcement: (Simonton code E9) The exterior meeting rail contained a rectangular shaped bar, steel reinforcement measuring 0.750" x 0.188" (reference drawing #1208). The interior meeting rail contained a rectangular shaped, steel reinforcement measuring 0.748" x 0.472" x 0.062" (reference drawing #DH75 reinforcement), and 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, formed steel reinforcement measuring 0.748" x 0.394" x 0.062" (reference drawing #DH76 reinforcement). The top sash stiles contained a rectangular shaped, formed steel reinforcement measuring 0.748" x 0.472" x 0.062" (reference drawing #DH75 reinforcement). The bottom sash stiles and bottom rail contained a rectangular shaped, formed steel reinforcement measuring 0.748" x 0.866" x 0.062" (reference drawing #DH78, DH79 reinforcement).

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 4" 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	22 lbs	30 lbs max.
	Closing	23 lbs	30 lbs max.
	<u>Bottom Sash</u>		
	Opening	27 lbs	30 lbs max.
	Closing	27 lbs	30 lbs max.
2.1.2	Air Infiltration per ASTM E 283 @ 1.56 psf (25 mph)	0.08 cfm/ft ²	0.3 cfm/ft ² max.

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

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test - Test Method</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 per ASTM E 330 (Measurements reported were taken on the exterior meeting rail) @ 22.5 psf (positive) @ 22.5 psf (negative)	0.078" 0.075"	0.191" max. 0.191" max.
2.2.1.6.2	Deglazing Test per ASTM E 987 <u>Top Sash</u> In operating direction at 70 lbs Top rail Meeting rail In remaining direction at 50 lbs Left stile Right stile <u>Bottom Sash</u> In operating direction at 70 lbs Lift rail Meeting rail In remaining direction at 50 lbs Left stile Right stile	 0.060"/12% 0.060"/12% 0.030"/6% 0.030"/6% 0.060"/12% 0.090"/18% 0.060"/12% 0.030"/6%	 0.500"/100% 0.500"/100% 0.500"/100% 0.500"/100% 0.500"/100% 0.500"/100% 0.500"/100% 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

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test - Test Method</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 per ASTM E 330 (Measurements reported were taken on the exterior meeting rail) @ 22.5 psf (positive) @ 22.5 psf (negative)	0.078" 0.075"	0.191" max. 0.191" max.
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