



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

**Rendered to:**

**MI HOME PRODUCTS, INC.**

**SERIES/MODEL: 168**

**TYPE: Aluminum Horizontal Sliding Window**

Title of Test	Results	
	Test Specimen #1	Test Specimen #2
Rating	HS-LC25 84 x 72	HS-LC30 72 x 63
Overall Design Pressure	25 psf	<u>+30</u> psf
Operating Force	20 lb max.	N/A
Air Infiltration	0.18 cfm/ft <sup>2</sup>	N/A
Water Resistance	6.00 psf	N/A
Structural Test Pressure	<u>+37.5</u> psf	<u>+45</u> psf
Deglazing	Passed	N/A
Forced Entry Resistance	Grade 10	N/A

Reference should be made to Report No. 01-35673.05 for complete test specimen description and data.

For ARCHITECTURAL TESTING, INC.

Mark A. Hess, Technician



Architectural Testing

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

Rendered to:

MI HOME PRODUCTS, INC.  
650 West Market Street  
P.O. Box 370  
Gratz, Pennsylvania 17030-0370

Report No: 01-35673.05  
Test Dates: 09/10/99  
And: 10/24/01  
Report Date: 01/03/02  
Expiration Date: 09/10/03

**Project Summary:** Architectural Testing, Inc. (ATI) was contracted to witness tests on a Series/Model 168, aluminum horizontal sliding window at MI Home Products' facility in Elizabethville, Pennsylvania. Test Specimen #1 successfully met the performance requirements for an HS-LC25 84 x 72 rating as referenced in Report No. 01-35673.01 for the gateway unit. Test Specimen #2 successfully met the performance requirements for an HS-LC30 72 x 63.

**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:** 168

**Type:** Aluminum Horizontal Sliding Window

**Test Specimen #1:** HS-LC25 84 x 72

**Overall Size:** 6' 11-1/2" wide by 5' 11-5/8" high

**Operable Sash Size:** 3' 6-1/8" wide by 5' 9-1/4" high

**Screen Size:** 3' 5-5/16" wide by 5' 8-3/16" high

**Glazing Type:** The sash and fixed lite both utilized a single sheet of 0.184" thick, clear annealed glass.

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**Test Specimen Description:** (Continued)

**Test Specimen #2:** HS-LC30 72 x 63

**Overall Size:** 5' 11-5/8" wide by 5' 3-3/8" high

**Operable Sash Size:** 3' 0-1/8" wide by 5' 1" high

**Glass Type:** The sash and fixed lite utilized 1/2" thick sealed insulating glass comprised of two 0.125" sheets and a 1/4" Intercept™ spacer system.

*The following description applies to both specimen*

**Finish:** All aluminum was painted white.

**Glazing Details:** The glass was interior glazed against double sided foam tape and secured using vinyl glazing bead.

**Weatherstripping:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.190" high by 0.187" backed polypile with center fin	1 Row	Fixed meeting stile and interior leg of head and sill
0.250" high by 0.187" backed polypile with center fin	1 Row	Exterior leg of top and bottom rails
0.375" high by 0.200" diameter vinyl wrapped foam bulb	1 Row	Jamb stile
0.250" high adhesive backed polypile pads	2	Ends of interior meeting stile



**Test Specimen Description:** (Continued)

**Frame Construction:** The frame was constructed of extruded aluminum members. The corners were coped, butted, and fastened with two screws per corner. The jamb/sill corners were sealed with silicone. The fixed meeting stile was fastened to the head and sill with plastic shear blocks. The shear blocks were fastened to frame and the meeting stile with two screws per block.

**Sash Construction:** The sash was constructed of extruded aluminum members. The corners were coped, butted, sealed, and fastened with one screw per corner.

**Screen Construction:** The screen frame was constructed of formed aluminum members with pressure fit plastic corner keys. The fiberglass screen was fastened to the frame with a roll-in flexible spline.

**Hardware:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Metal roller in plastic housing	2	2" from ends of bottom rail
Metal sweep lock	1	Midspan of interior meeting stile
Plastic anti-lift block	1	Sash track of head, 18" from jamb stile

**Drainage:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
1.500" wide by 0.275" high weepslots	2	Center leg of sill, 1-3/4" from ends, draining into sill hollow
1.500" wide by 0.275" high weepslots with hinged weep cover	2	Exterior leg of sill, 1-3/4" from ends, draining sill hollow

**Installation:** The test unit was secured to a Spruce-Pine-Fir #2 wood test buck using the integral nail fin that was bedded in silicone and fastened to the buck with screws spaced 6" on center.



**Test Results:**

The results are tabulated as follows:

**Test Specimen #1:**

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
2.2.2.5.1	Operating Force	20 lbs	25 lbs max.
2.1.2	Air Infiltration per ASTM E 283 (See Note #1) @ 1.57 psf (25 mph)	0.18 cfm/ft <sup>2</sup>	0.3 cfm/ft <sup>2</sup> max.
<i>Note #1: The tested specimen meets (or exceeds) 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 = 6.00 psf	No leakage	No leakage
2.1.4.2	Uniform Load Structural per ASTM E 330 (Measurements reported were taken on the fixed meeting stile) @ 37.5 psf (positive) @ 37.5 psf (negative)	0.068" 0.033"	0.274" max. 0.274" max.
2.2.2.5.2	Deglazing Test per ASTM E 987 In operating direction at 70 lbs		
	Meeting stile	0.09"/18.0%	0.50"/100%
	Jamb stile	0.09"/18.0%	0.50"/100%
	In remaining direction at 50 lbs		
	Top rail	0.06"/12.0%	0.50"/100%
	Bottom rail	0.06"/12.0%	0.50"/100%
2.1.8	Forced Entry Resistance per ASTM F 588-97  Type: A Grade: 10		
	Lock Manipulation Test	No entry	No entry
	Tests A1 through A5	No entry	No entry
	Test A7	No entry	No entry
	Lock Manipulation Test	No entry	No entry



**Test Results:** (Continued)

Optional Performance

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
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**Test Specimen #1:**

Additional Uniform Structural Loads per ASTM E 330			
	@ 30.0 psf (positive) 40 second duration		No damage
	@ 32.0 psf (negative) 45 second duration		No damage
	@ 34.5 psf (positive) 10 second duration		No damage
	@ 43.5 psf (negative) 10 second duration		No damage

**Test Specimen #2:**

4.4.1	Uniform Load Deflection – ASTM E 330 (Indicators located on the meeting stile) (Loads held for 52 seconds)		
	@ 30.0 psf (positive)	1.78"*	0.36" max.
	@ 30.0 psf (negative)	1.78"*	0.36 max.
	@ 31.3 psf (positive)	2.07"*	0.36" max.
	@ 31.3 psf (negative)	1.66"*	0.36" max.

\* Exceeds L/175 for deflection, but meets all other test requirements.

4.4.2	Uniform Load Structural – ASTM E 330 (Indicators located on the meeting stile) (Loads held for 10 seconds)		
	@ 45.0 psf (positive)	0.18"	0.25" max.
	@ 45.0 psf (negative)	0.22"	0.25" max.
	@ 46.95 psf (positive)	0.20"	0.25" max.
	@ 46.95 psf (negative)	0.24"	0.25" 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.

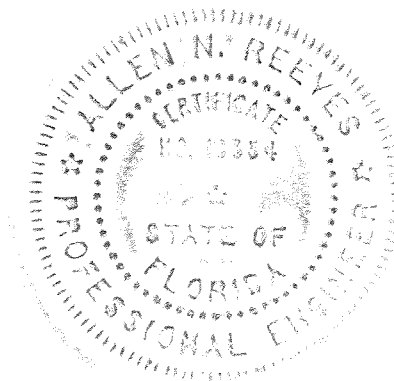
For ARCHITECTURAL TESTING, INC:

Mark A. Hess  
Technician

MAH:nlb  
01-35673.05

Allen N. Reeves, P.E.  
Director - Engineering Services

7 JANUARY 2002





**DOCUMENT CONTROL ADDENDUM #01-35673.00**

**Current Issue Date: 01/03/02**

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**Report No.: 01-35673.01**

**Requested by:** Scott Gill, MI Home Products, Inc.

**Purpose:** AAMA/NWWDA 101/I.S.2-97 testing of Series/Model 138 aluminum horizontal sliding window.

**Issued Date:** 11/03/99

**Comments:** Certification copies to John Smith at Associated Laboratories, Inc.

**Report No.: 01-35673.02**

**Requested by:** Scott Gill, MI Home Products, Inc.

**Purpose:** Reissue Report No. 01-35673.01 in the name of BetterBilt.

**Issued Date:** 12/23/99

**Comments:** Certification copies to John Smith at Associated Laboratories, Inc.

**Report No.: 01-35673.03**

**Requested by:** Scott Gill, MI Home Products, Inc.

**Purpose:** Revise Report No. 01-35673.01.

**Issued Date:** 01/27/00

**Comments:** Attach Test Specimens #2 and #3, tested 01/11/00.  
Certification copies to John Smith at Associated Laboratories, Inc.

**Report No.: 01-35673.04**

**Requested by:** Scott Gill, MI Home Products, Inc.

**Purpose:** Revise Report No. 01-35673.02.

**Issued Date:** 01/27/00

**Comments:** Attach Test Specimens #2 and #3, tested 01/11/00.  
Certification copies to John Smith at Associated Laboratories, Inc.

**Report No.: 01-35673.05**

**Requested by:** Bill Emley, MI Home Products, Inc.

**Purpose:** AAMA/NWWDA 101/I.S.2-97 testing of Series/Model 168, aluminum horizontal sliding window.

**Issued Date:** 01/03/02

**Comments:** Florida P.E. seal required on report.  
Certification copy to John Smith at Associated Laboratories, Inc.