



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

Rendered to:

MI HOME PRODUCTS, INC.

SERIES/MODEL: 740/744

TYPE: Aluminum Single Hung Window with Flange

Title of Test	Results
Rating	H-R45 53 x 73
Overall Design Pressure	45 psf
Operating Force	23 lbs max.
Air Infiltration	0.10 cfm/ft ²
Water Resistance	6.75 psf
Structural Test Pressure	+67.5 psf -70.8 psf
Deglazing	Passed
Forced Entry Resistance	Grade 10

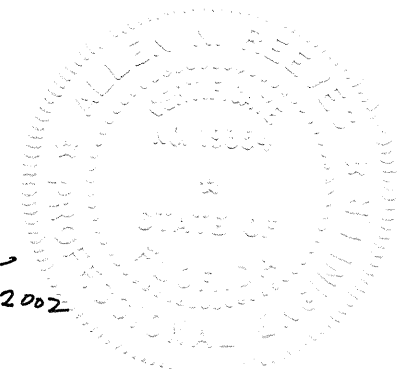
Reference should be made to Report No. 01-40351.04 for complete test specimen description and data.

For ARCHITECTURAL TESTING, INC.

Mark A. Hess, Technician

MAH:baw

Allen W. Renna
15 FEBRUARY 2002





Architectural Testing

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

Rendered to:

MI HOME PRODUCTS, INC.
P.O. Box 370
Gratz, Pennsylvania 17030-0370

Report No: 01-40351.04
Test Date: 10/22/01
And: 10/23/01
Report Date: 02/14/02
Expiration Date: 10/23/05

Project Summary: Architectural Testing, Inc. (ATI) was contracted by MI Home Products, Inc. to witness performance testing on a Series/Model 740/744, aluminum single hung window at MI Home Products, Inc.'s test facility in Elizabethville, Pennsylvania. The sample tested successfully met the performance requirements for an H-R45 53 x 73 rating.

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: 740/744

Type: Aluminum Single Hung Window With Flange

Overall Size: 4' 4-7/8" wide by 6' 0-1/8" high

Active Sash Size: 4' 2-3/4" wide by 2' 11-3/4" high

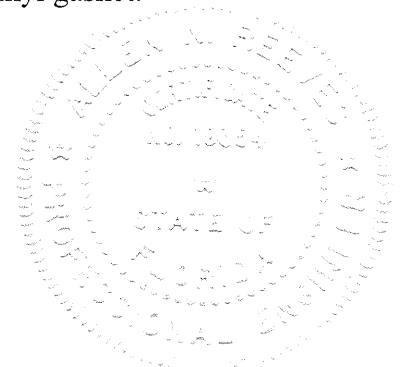
Fixed Daylight Opening Size: 4' 1-1/8" wide by 2' 9" high

Screen Size: 4' 1-7/8" wide by 2' 11-5/16" high

Finish: All aluminum was polished.

Glazing Details: The active sash and fixed lite were glazed with one sheet of 1/8" thick clear, tempered glass. Each sash was channel glazed using a flexible vinyl gasket.

130 Derry Court
York, PA 17402-9405
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Test Specimen Description: (Continued)

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.330" high by 0.187" backed polypile with center fin	1 Row	Fixed meeting rail interlock
0.170" high by 0.187" backed polypile with center fin	1 Row	Fixed lite, stiles and top rail
3/8" diameter hollow bulb gasket	1 Row	Bottom rail
0.310" high by 0.187" backed polypile with center fin	1 Row	Active sash stiles
0.150" high by 0.187" wide polypile	1 Row	Active sash stiles

Frame Construction: All frame members were constructed of extruded aluminum with coped, butted and sealed corners fastened with two screws each. Fixed meeting rail was secured utilizing one screw in each end directly through exterior face into jamb. Silicone was utilized around exterior meeting rail/jamb joinery.

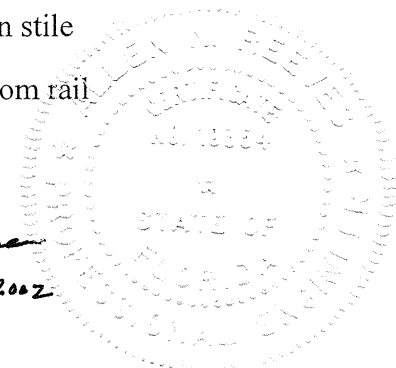
Sash Construction: All sash members were constructed of extruded aluminum with coped and butted corners fastened with one screw each.

Screen Construction: The screen frame was constructed from roll formed aluminum members with plastic keyed corners. The screening consisted of a fiberglass mesh and was secured with a flexible vinyl spline.

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Plastic tilt latch	2	One each end of the interior meeting rail
Metal sweep lock	2	13" from meeting rail ends
Balance assembly	2	One per jamb
Screen tension spring	2	One per end of screen stile
Tilt pin	2	One each end of bottom rail

Allen W. Rivera
15 FEBRUARY 2002





Test Specimen Description:

Drainage: Sloped sill

Reinforcement: No reinforcement was utilized.

Installation: The test buck was fabricated from 2 x 8 #2 Spruce-Pine-Fir. The unit was secured utilizing three 1-5/8" drywall screws through the jamb track, 5" from sill, 1-3/4" below meeting rail and 1" from head. The head utilized drywall screws 3-1/2" from jambs and midspan. Exterior perimeter was sealed with silicone.

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	23 lbs	30 lbs max.
2.1.2	Air Infiltration per ASTM E 283 (See Note #1) @ 1.57 psf (25 mph)	0.10 cfm/ft ²	0.30 cfm/ft ² max.

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

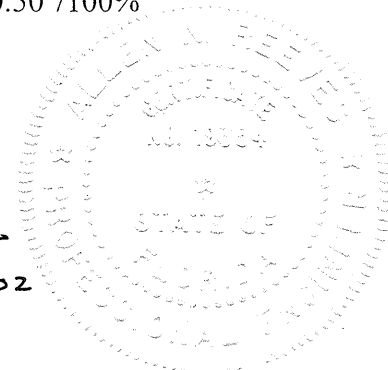
2.1.3	Water Resistance per ASTM E 547-96 (with and without screen) WTP = 2.86 psf	See Note #2	No leakage
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Note #2: The client opted to start at a pressure higher than the minimum required. Those results are listed under "Optional Performance".

2.1.4.2	Uniform Load Structural per ASTM E 330-97 (Measurements were taken on the meeting rail) @ 22.5 psf (positive) @ 22.5 psf (negative)	See Note #2	0.20" max. 0.20" max.
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2.2.1.6.2	Deglazing Test per ASTM E 987 In operating direction at 70 lbs		
	Top rail	0.06"/12%	0.50"/100%
	Bottom rail	0.06"/12%	0.50"/100%
	In remaining direction at 50 lbs		
	Left stile	0.03"/6%	0.50"/100%
	Right stile	0.03"/6%	0.50"/100%

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15 FEBRUARY 2002





Test Results: (Continued)


<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
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	No entry	No entry
	Test A7	No entry	No entry
	Lock Manipulation Test	No entry	No entry

Optional Performance

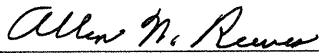
4.3	Water Resistance per ASTM E 547-96 (with and without screen) WTP = 6.75 psf	No leakage	No leakage
4.4.1	Uniform Load Deflection per ASTM E 330-97 (Measurements were taken on the meeting rail) (Loads held for 52 seconds) @ 45.0 psf (positive) @ 45.0 psf (negative)	0.95* 0.79*	0.29" max. 0.29" max.
	* Exceeds L/175 for deflection, but meets all other test requirements		
4.4.2	Uniform Load Structural per ASTM E 330-97 (Measurements were taken on the meeting rail) (Loads held for 10 seconds) @ 67.5 psf (positive) @ 67.5 psf (negative)	0.14" 0.16"	0.20" max. 0.20" max.
4.4.2	@ 70.8 psf (negative)	0.19"	0.20" 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:



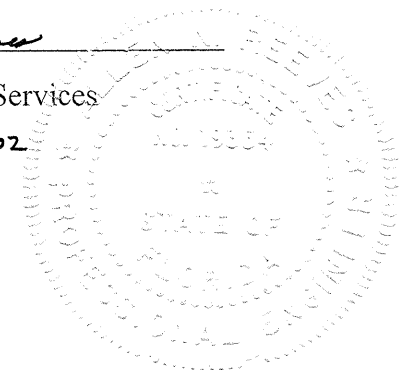
Mark A. Hess
Technician

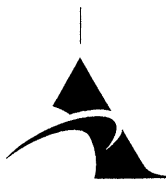


Allen N. Reeves, P.E.
Director – Engineering Services

15 FEBRUARY 2002

MAH:baw
01-40351.04





DOCUMENT CONTROL ADDENDUM #01-40351.00

Current Issue Date: 02/14/02

Report No.: 01-40351.01

Requested by: William Emley, MI Home Products, Inc.
Purpose: AAMA/NWWDA 101/I.S.2-97 testing of Series/Model 744 aluminum single hung window with flange.
Issued Date: 12/28/01
Comments: Florida P.E. seal required on report.
Certification copy to John Smith at Associated Laboratories, Inc.

Report No.: 01-40351.02

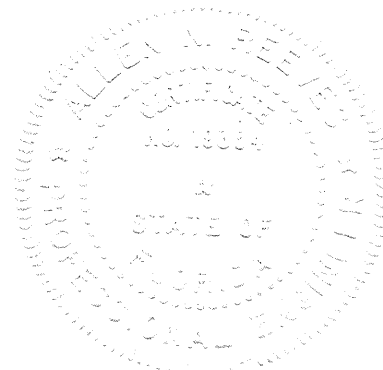
Requested by: William Emley, MI Home Products, Inc.
Purpose: Change of glass type.
Issued Date: 12/28/01
Comments: Florida P.E. seal required on report.
Certification copy to John Smith at Associated Laboratories.

Report No.: 01-40351.03

Requested by: William Emley, MI Home Products, Inc.
Purpose: AAMA/NWWDA 101/I.S.2-97 testing of Series/Model 740/744 aluminum single hung window with nail fin.
Issued Date: 02/14/02
Comments: Florida P.E. seal required on report.
Certification copy to John Smith at Associated Laboratories, Inc.

Report No.: 01-40351.04

Requested by: William Emley, MI Home Products, Inc.
Purpose: Revised Report No. 01-40351.01
Issued Date: 02/14/02
Comments: Changed Series/Model from 744 to 740/744 and unit size from 52 x 71 to 53 x 73. Florida P.E. seal required on report. Certification copy to John Smith at Associated Laboratories, Inc.



Allen M. Reeves
15 FEBRUARY 2002