Architectural Testing

TEST REPORT

Report No.: B0968.01-109-47

Rendered to:

MI WINDOWS AND DOORS, INC.
Gratz, Pennsylvania

PRODUCT TYPE: Basement Window (Finless)
SERIES/MODEL: 9990

SPECIFICATION: AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

Title	Summary of Results
Primary Product Designator	Class R-PG15 1016 x 813 (40 x 32)-BW
Design Pressure	+720 Pa (+15.04 psf)
Negative Design Pressure	-960 Pa (-20.05 psf)
Air Infiltration	0.9 L/s/m^2 (0.17 cfm/ft^2)
Water Penetration Resistance Test Resistance	150 Pa (3.13 psf)

Test Completion Date: 06/16/2011

Reference must be made to Report No. B0968.01-109-47, dated 07/01/11 for complete test specimen description and detailed test results. Reference Architectural Testing, Inc. Report No. A9023.01-109-47, dated 06/07/11 for Forced Entry Resistance and Thermoplastic Corner Weld test results.

1.0 Report Issued To: MI Windows and Doors, Inc.
P.O. Box 370
650 West Market Street
Gratz, Pennsylvania 17030-0370

2.0 Test Laboratory: Architectural Testing, Inc.
130 Derry Court
York, Pennsylvania 17406-8405
717-764-7700

3.0 Project Summary:

3.1 Product Type: Basement Window (Finless)

3.2 Series/Model: 9990

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). The specimen tested successfully met the performance requirements for a **Class R-PG15 1016 x 813 (40 x 32)-BW** rating.

3.4 Test Dates: 06/15/2011 – 06/16/2011

3.5 Test Location: MI Windows and Doors, Inc. test facility in Gratz, Pennsylvania. Calibration of test equipment was performed by Architectural Testing in accordance with AAMA 205-01 "In-Plant Testing Guidelines for Manufacturers and Independent Laboratories".

3.6 Test Sample Source: The test specimen was provided by the client. Representative samples of the test specimen(s) will be retained by Architectural Testing for a minimum of four years from the test completion date.

3.7 Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Architectural Testing per the drawings on file with Architectural Testing. Any deviations are documented herein or on the drawings.

3.8 List of Official Observers:

Name	Company
Rick Sawdey	MI Windows and Doors, Inc.
Ken R. Stough	Architectural Testing, Inc.

4.0 Test Specification(s):

AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 0.8 m^2 (8.9 ft^2)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	1016	40	813	32
Vent Size	975	38-3/8	772	30-3/8

5.2 Frame Construction:

Frame Member	**Material**	**Description**
Head, sill, and jambs	PVC	Extruded
Sill water dam	PVC	Extruded

	Joinery Type	**Detail**
All corners	Mitered	Thermally welded
Sill water dam	N/A	The angle was set onto silicone at the sill and secured with #6 x 1/2" long pan head screws at each end and spaced 12" on center

5.3 Vent Construction:

Vent Member	**Material**	**Description**
Rails and stiles	PVC	Extruded

	Joinery Type	**Detail**
All corners	Mitered	Thermally welded

5.0 Test Specimen Description: (Continued)

5.4 Weatherstripping:

Description	Quantity	Location
0.187" backed by 0.250" diameter foam-filled vinyl bulb seal	2 Rows	Vent rails and stiles
0.187" backed by 0.360" high polypile with fin	1 Row	Vent rails and stiles

5.5 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
3/4" IG	Aluminum-butyl composite	1/8" clear annealed	1/8" clear annealed	The glass was set from the interior onto a bed of silicone and secured with snap-on vinyl glazing beads.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Vent daylight opening	1	838 x 635	33 x 25	1/2"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weepslot with cover	1" wide by 1/4" high	2	Face of sill, 4-1/2" from each end, draining the unit through the exterior sill leg

5.7 Hardware:

Description	Quantity	Location
Quarter-turn lever lock	1	Top rail at midspan
Single bar hinges	2	Bottom of each vent stile

5.8 Reinforcement: No reinforcement was utilized.

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/16" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Head and jambs	#8 x 2" long pan head screws	3" from the ends and spaced 12" on center, through the frame into the wood buck.

7.0 Test Results: The temperature during testing was 23°C (73°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.9 L/s/m² (0.17 cfm/ft²)	1.5 L/s/m² (0.3 cfm/ft²) max.	1
Water Penetration, per ASTM E 547	N/A	N/A	3
Uniform Load Deflection, per ASTM E 330	N/A	N/A	3
Uniform Load Structural, per ASTM E 330	N/A	N/A	3
Forced Entry Resistance, per ASTM F 588 Type: B - Grade: 10	Pass	No entry	7
Thermoplastic Corner Weld	Pass	Meets as stated	7

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 at 150 Pa (3.13 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 taken at bottom rail +720 Pa (+15.04 psf) -960 Pa (-20.05 psf)	 1.5 mm (0.06") 1.3 mm (0.05")	 Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at bottom rail +1080 Pa (+22.56 psf) -1440 Pa (-30.08 psf)	 <0.3 mm (<0.01") 0.3 mm (0.01")	 3.6 mm (0.14") max. 3.6 mm (0.14") max.	 5, 6

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.

Note 2: Without insect screen.

Note 3: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 4: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation. The deflection data is recorded in this report for special code compliance and information only.

Note 5: Loads were held for 10 seconds.

Note 6: Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

Note 7: Reference Architectural Testing Report No. A9023.01-109-47, dated 06/07/11 for complete test results.

The service life of this report will expire on the stated Test Record Retention End Date, at which time such materials as drawings, data sheets, samples of test specimens, copies of this report, and any other pertinent project documentation, shall be discarded without notice.

If test specimen contains glazing, no conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, Inc.

Digitally Signed by: Ken R. Stough

Ken R. Stough
Technician

Digitally Signed by: Michael D. Stremmel

Michael D. Stremmel, P.E.
Senior Project Engineer

KRS:dem

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Alteration Addendum (1)
Appendix-B: Complete drawings packet on file with Architectural Testing, Inc.

Appendix A

Alteration Addendum

***Note**: No alterations were required.*

Appendix B

Drawings

***Note**: Complete drawings packet on file with Architectural Testing, Inc.*