

TEST REPORT

Report No.: B5463.01-301-47

Rendered to:

MI WINDOWS AND DOORS, INC.
Prescott Valley, Arizona

PRODUCT TYPE: Polyvinyl Chloride (PVC) XO Horizontal Sliding Window
SERIES/MODEL: Pro 5000 5800

SPECIFICATION: AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

Title	Summary of Results
Primary Product Designator	HS-R35 1520 x 1221 (60 x 48)*
Design Pressure	±1680 Pa (±35.09 psf)
Air Infiltration	0.41 L/s/m ² (0.08 cfm/ft ²)
Water Penetration Resistance Test Pressure	260 Pa (5.43 psf)

Test Completion Date: 12/06/2011

Reference must be made to Report No. B5463.01-301-47 dated 12/30/11 for complete test specimen description and detailed test results. Reference Architectural Testing, Inc. Report No. 93448.01-301-47, dated 11/14/09 for complete *Gateway* test specimen description and test results.

1.0 Report Issued To: MI Windows and Doors, Inc.
7555 East State Route 69
Prescott Valley, Arizona 86314

2.0 Test Laboratory: Architectural Testing, Inc.
2524 East Jensen Avenue
Fresno, California 93706
(559) 233 - 8705

3.0 Project Summary:

3.1 Product Type: Polyvinyl Chloride (PVC) XO Horizontal Sliding Window

3.2 Series/Model: Pro 5000 5800

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method. The specimen tested successfully met the performance requirements for a **HS-R35 1520 x 1221 (60 x 48)*** rating. Reference Architectural Testing, Inc. Report No. 93448.01-301-47, dated 11/14/09 for complete *Gateway* test specimen description and test results.

***General Note:** An asterisk (*) next to the size designation indicates that the size tested for optional performance was smaller than the Gateway test size for the product type and class.*

3.4 Test Dates: 12/06/2011 – 12/06/2011

3.5 Test Location: MI Windows and Doors, Inc. test facility in Prescott Valley, Arizona. 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 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 reported herein. Test specimen construction was verified by Architectural Testing per the drawings located in Appendix B. Any deviations are documented herein or on the drawings.

3.8 List of Official Observers:

<u>Name</u>	<u>Company</u>
Russ Wilkerson	MI Windows and Doors, Inc.
Mike Maystadt	MI Windows and Doors, Inc.
Jeffrey T. Osugi	Architectural Testing, Inc.

4.0 Test Specifications:

AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 1.86 m ² (19.98 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1520	59-13/16	1221	48-1/16
Interior panel	766	30-3/16	1160	45-11/16

5.2 Frame Construction:

Frame Member	Material	Description
Exterior meeting stile	PVC	
Anti lift	PVC	Two above panel snap fit to head.
Roller track	PVC	Snap fit to sill and held back 1/2 - 3/4" from each end.
Head, sill and jambs	PVC	

	Joinery Type	Detail
Head, sill and jambs	Mitered	Fully welded.
Exterior meeting stile	Coped	Secured at each end through the frame with two #6 x 1-1/2" Phillips pan head screws with washers and rubber gaskets.

5.3 Panel Construction:

Panel Member	Material	Description
Top rail, bottom rail, each stile	PVC	The interlock was held back 1" from each end and notched 2-1/2" for the lock.

	Joinery Type	Detail
All corners	Mitered	Fully welded.

5.0 Test Specimen Description: (Continued)

5.4 Weatherstripping:

Description	Quantity	Location
0.250" high polypile with center fin	1 Row	All members of panel. Exterior meeting stile.

5.5 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
3/4" IG	U-shaped coated steel	3/32" Annealed	3/32" Annealed	Exterior glazed onto a 3/8" wide x 1/16" high glazing tape and secured with a snap in PVC glazing bead.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Fixed light	1	681 x 1140	26-13/16 x 44-7/8	1/2"
Panel	1	683 x 1078	26-7/8 x 42-7/16	1/2"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weephole with cover	1-1/2 x 1/4" (1-1/16" x 3/16" effective)	2	2-1/8" from each end through exterior sill face through first layer of internal webbing.
Weephole	5/16" x 3/16" oval	2	2-1/8" from each end through screen track / glazing track.
Weephole	1" x 3/16" oval	2	2" from each end through sill track.
Weephole	1" x 1/8"	2	Each end through second layer of internal webbing.
Weephole	1/2" x 3/16" oval	2	2-3/8" from each end on bottom rail of interior panel through both layers.

5.0 Test Specimen Description: (Continued)

5.7 Hardware:

Description	Quantity	Location
Cam lock	1	Midspan on exterior meeting stile secured with two #6 x 1" Phillips flat head self drilling screws into reinforcement.
Keeper	1	Opposite lock on exterior meeting stile secured with two #6 x 1/2" Phillips pan head self drilling screws into reinforcement.
Plastic rollers with housing	2	Each end on bottom rail secured with two #6 x 3/8" Phillips pan head screws.

5.8 Reinforcement:

Drawing Number	Location	Material
M-9140	Exterior meeting stile	Aluminum
SECT9142	Interior meeting stile	Aluminum

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Roll formed aluminum	Square cut with corner key	Fiberglass	Hollow spline

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/4 - 7/16" shim space. The exterior perimeter of the window was sealed with silicone.

Location	Anchor Description	Anchor Location
Head, sill and jambs	1-5/8" drywall screws.	3-4" from each corner and 5-9" on center through mounting fin.

7.0 Test Results: The temperature during testing was 12°C (54°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 92 N (20.7 lbf)	Report Only	7
	Maintain motion: 53 N (12.0 lbf)	90 N (20.2 lbf) max.	7
	Locks: 9 N (2.0 lbf)	100 N (22.5 lbf) max.	7
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.41 L/s/m ² (0.08 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1,7
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: A - Grade: 10	Pass	No entry	7
Thermoplastic Corner Weld	Pass	Meets as stated	7
Deglazing, per ASTM E 987 Operating direction, 320 N (71.9 lbf) Remaining direction, 230 N (51.7 lbf)	Pass	Meets as stated	7
	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 260 Pa (5.43 psf)	Pass	No leakage	2, 7
Uniform Load Deflection, per ASTM E 330 taken at exterior meeting stile +1680 Pa (+35.09 psf) -1680 Pa (-35.09 psf)	21.3 mm (0.84") 22.3 mm (0.88")	Report Only	4,5,6
Uniform Load Structural, per ASTM E 330 taken at exterior meeting stile +2520 Pa (+52.63 psf) -2520 Pa (-52.63 psf)	1.8 mm (0.07") 1.5 mm (0.06")	4.7 mm (0.19") 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: With and 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: Results obtained from Architectural Testing, Inc. gateway report # 93448.01-301-47, dated 11/14/09.

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.

Jeffrey T. Osugi
Technician

Leaton Kirk
Director – Regional Operations

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Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Alteration Addendum (1)

Appendix-B: Drawings (11) Complete drawings packet on file with Architectural Testing, Inc.



Test Report No.: B5463.01-301-47
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Test Record Retention End Date: 12/06/15

Appendix A
Alteration Addendum

Note: No alterations were required.



Test Report No.: B5463.01-301-47
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Appendix B

Drawings

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