

TEST REPORT

Report No.: C2014.01-109-47

Rendered to:

MI WINDOWS AND DOORS, INC.
Gratz, Pennsylvania

PRODUCT TYPE: PVC Sliding Glass Door (O-OX)
SERIES/MODEL: 910

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-PG30 2727 x 2426 (107 x 96)-SD
Design Pressure	±1440 Pa (±30.08 psf)
Air Infiltration	1.0 L/s/m ² (0.19 cfm/ft ²)*
Water Penetration Resistance Test Pressure	220 Pa (4.59 psf)*

Test Completion Date: 08/29/2012

Reference must be made to Report No. C2014.01-109-47, dated 10/11/12 for complete test specimen description and detailed test results. *Reference Architectural Testing, Inc. Report No. C2011.01-109-47, dated 10/02/12 for 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: PVC Sliding Glass Door (O-OX)

3.2 Series/Model: 910

3.2.1 This product also labeled under the following name: 3910

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-PG30 2727 x 2426 (107 x 96)-SD** rating.

3.4 Test Dates: 08/27/2012 - 08/29/2012

3.5 Test Record Retention End Date: All test records for this report will be retained until October 11, 2016.

3.6 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".

3.7 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 report completion date.

3.8 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.

3.9 List of Official Observers:

<u>Name</u>	<u>Company</u>
Rick Sawdey	MI Windows and Doors, Inc.
Jeremy R. Bender	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: 6.6 m ² (71.2 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	2727	107-3/8	2426	95-1/2
Interior sash	930	36-5/8	2369	93-1/4
Screen	940	37	2381	93-3/4

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill, and jambs	PVC	Extruded, the interior sill track utilized a snap-in aluminum roller track. The sill screen track utilized a snap-in aluminum roller track. An extruded vinyl glazing adapter was snap-fit into the head and sill at fixed lite.
Fixed meeting stile	PVC	Extruded
Vertical mullion (V-426)	PVC	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally welded
Fixed meeting stile	Coped and butted	Secured to the head and sill using two #8 x 3" pan head screws at each end
Vertical mullion (V-426)	Snap-fit	Secured to each jamb and sealed with silicone utilizing a foam seal between the two jambs

5.3 Panel Construction:

Panel 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 0.190" high polypile with center fin	1 Row	Fixed meeting stile
0.187" backed by 0.250" high polypile with center fin	1 Row	Sill, head, active meeting stile, and jambs

5.5 Glazing: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.*

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
3/4" IG	Metal reinforced butyl	1/8" clear tempered	1/8" clear tempered	The glass was exterior glazed onto double-sided adhesive foam glazing tape and secured with PVC snap-in glazing beads

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Fixed daylight opening	2	806 x 2248	31-3/4 x 88-1/2	1/2"
Operable panel daylight opening	1	813 x 2248	32 x 88-1/2	1/2"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weepslot	1/8" wide by 1/2" high	2	Sill, 1" from each end
Weepslot	3/16" wide by 1/2" high	2	Each end of the sill
Weepslot	1/8" wide by 1" high	2	Sill, 1" from each end

5.7 Hardware:

Description	Quantity	Location
Metal door lock	1	Lock stile, 40" from sill
Metal rollers	2	Operable panel bottom rail, 4" from each end

**5.0 Test Specimen Description:** (Continued)**5.8 Reinforcement:**

Drawing Number	Location	Material
1 x 1 steel tube	Fixed and operable meeting stiles	Steel
99-20 910 steel handle liner	Lock stile	Steel

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Roll-formed aluminum	Mitered and keyed	Fiberglass mesh	Flexible vinyl spline

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/8" shim space. The mounting fin of the unit was set onto a bed of silicone.

Location	Anchor Description	Anchor Location
Head, sill, and jamb	#6 x 1-5/8" long drywall screws	2" from corners and spaced 8" on center through mounting fin into the wood buck

7.0 Test Results: The temperature during testing was 22°C (71°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 49 N (11 lbf) Maintain motion: 40 N (9 lbf) Locks: 18 N (4 lbf)	135 N (30 lbf) max. 90 N (20 lbf) max. 100 N (22.5 lbf) max.	7
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	1.0 L/s/m ² (0.19 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	



7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
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 842, Type: B - Grade: 10	Pass	No entry	
Thermoplastic Corner Weld	Pass	Meets as stated	
Deglazing, per ASTM E 987 Operating direction, 320 N (70 lbf) Remaining direction, 230 N (50 lbf)	Pass Pass	Meets as stated Meets as stated	
Optional Performance			
Water Penetration, per ASTM E 547 at 220 Pa (4.59 psf)	Pass	No leakage	2, 7
Uniform Load Deflection, per ASTM E 330 taken at the mullion +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf)	55.6 mm (2.19") 61.0 mm (2.40")	Report Only	4, 5, 6
Uniform Load Deflection, per ASTM E 330 taken at the meeting stile +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf)	67.1 mm (2.64") 67.1 mm (2.64")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at the mullion +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)	3.6 mm (0.14") 3.6 mm (0.14")	9.4 mm (0.37") max. 9.4 mm (0.37") max.	5, 6
Uniform Load Structural, per ASTM E 330 taken at the meeting stile +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)	5.3 mm (0.21") 3.0 mm (0.12")	9.4 mm (0.37") max. 9.4 mm (0.37") max.	5, 6



7.0 Test Results: (Continued)

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: Reference Architectural Testing, Inc. Report No. C2011.01-109-47, dated 10/02/12 for air, water and secondary testing.



Architectural Testing will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing, Inc. for the entire test record retention period.

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.

Jeremy R. Bender
Technician

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

JRB:cmd/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.



Architectural Testing

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Appendix A

Alteration Addendum

Note: No alterations were required.



Architectural Testing

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Appendix B

Drawings

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