Intertek | Architectural Testing

TEST REPORT

Report No.: D2260.01-109-47

Rendered to:

MI WINDOWS AND DOORS, LLC
Gratz, Pennsylvania

PRODUCT TYPE: Poly Vinyl Chloride (PVC) Sliding Glass Door (XO)
SERIES/MODEL: 910

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

	Summary of Results	
Title	**Test Specimen #1**	**Test Specimen #2**
Primary Product Designator	Class LC-PG25 2438 x 2438 (96 x 96)-SGD	Class LC-PG30 1819 x 2019 (72 x 80)-SGD
Design Pressure	±1200 Pa (±25.06 psf)	±1920 Pa (±40.10 psf)
Air Infiltration	0.8 L/s/m^2 (0.15 cfm/ft^2)	N/A
Water Penetration Resistance Test Pressure	220 Pa (4.59 psf)	N/A

Test Completion Date: 10/18/2013

Reference must be made to Report No. D2260.01-109-47, dated 11/15/13 for complete test specimen description and detailed test results.

1.0 Report Issued To: MI Windows and Doors, LLC
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: Poly Vinyl Chloride (PVC) Sliding Glass Door (XO)

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 specimens tested successfully met the performance requirements for the following ratings: Test Specimen #1: **Class LC-PG25 2438 x 2438 (96 x 96)-SGD**; Test Specimen #2: **Class LC-PG30 1819 x 2019 (72 x 80)-SGD**.

3.4 Test Dates: 10/15/2013 - 10/18/2013

3.5 Test Record Retention End Date: All test records for this report will be retained until October 18, 2017.

3.6 Test Location: MI Windows and Doors, LLC 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 specimens were 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.

3.8 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.

3.0 Project Summary: (Continued)

3.9 List of Official Observers:

Name	Company
Rick Sawdey	MI Windows and Doors, LLC
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:

Test Specimen #1:

Overall Area: 5.9 m^2 (64.0 ft^2)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	2438	96	2438	96
Interior panel	1238	48-3/4	2372	93-3/8
Screen	1240	48-13/16	2381	93-3/4

Test Specimen #2:

Overall Area: 3.7 m^2 (39.5 ft^2)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	1819	71-5/8	2019	79-1/2
Interior panel	933	36-3/4	1962	77-1/4
Screen	937	36-7/8	1975	77-3/4

5.0 Test Specimen Description: (Continued)

The following descriptions apply to all specimens.

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill, and jambs	PVC	Extruded, the sill utilized a snap-fit threshold at the exterior track at the operable panel
Fixed meeting stile	PVC	Extruded
Fixed glass adaptor	PVC	Extruded

	Joinery Type	Detail
All corners	Mitered and welded	Thermoplastic weld
Fixed meeting stile	Coped and butted	Coped, butted, and secured with two #8 x 3" long screws at the head and sill
Fixed glass adaptor	N/A	Snap-fit to the head and sill at the fixed panel area

5.3 Panel Construction:

Panel Member	Material	Description
Rails and stiles	PVC	Extruded

	Joinery Type	Detail
All corners	Mitered	Mitered and thermoplastic weld

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

5.0 Test Specimen Description: (Continued)

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.*

Test Specimen #1:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
3/4" IG	Metal reinforced butyl	5/32" clear tempered	5/32" clear tempered	The glass was exterior glazed onto double-sided adhesive foam tape and secured with snap-in PVC glazing beads

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Panel daylight opening	1	1118 x 2242	44 x 88-1/4	1/2"
Fixed daylight opening	1	1118 x 2242	44 x 88-1/4	1/2"

Test Specimen #2:

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 tape and secured with snap-in PVC glazing beads

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Panel daylight opening	1	813 x 1835	32 x 72-1/4	1/2"
Fixed daylight opening	1	813 x 1835	32 x 72-1/4	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

5.0 Test Specimen Description: (Continued)

5.7 Hardware:

Description	Quantity	Location
Metal door handle with lock	1	Lock stile, 42" from sill
Metal rollers	2	Operable panel, 4" from each end of bottom rail

5.8 Reinforcement:

Drawing Number	Location	Material
1" by 1" steel tube	Fixed and active 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	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 exterior perimeter of the window was sealed with sealant.

Test Specimen #1:

Location	Anchor Description	Anchor Location
Head, sill, and jambs	#6 x 1-5/8" long screws	3" from corners and spaced 8" on center through the mounting fin into the wood buck

Test Specimen #2:

Location	Anchor Description	Anchor Location
Head and jambs	#6 x 1-5/8" long screws	3" from corners and spaced 8" on center through the mounting fin into the wood buck, the sill was bedded in silicone sealant

7.0 Test Results: The temperature during testing was 21°C (70°F). The results are tabulated as follows:

Test Specimen #1:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 62 N (14 lbf) Maintain motion: 53 N (12 lbf) Locks: 9 N (2 lbf)	135 N (30 lbf) max. 90 N (20 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.8 L/s/m^2 (0.15 cfm/ft^2)	1.5 L/s/m^2 (0.3 cfm/ft^2) 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 842, Type: A - 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	

7.0 Test Results: (Continued)

Test Specimen #1: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 at 220 Pa (4.59 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 taken at meeting stile +1200 Pa (+25.06 psf) -1200 Pa (-25.06 psf)	 66.5 mm (2.62") 77.7 mm (3.06")	 Report Only	 4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at meeting stile +1800 Pa (+37.59 psf) -1800 Pa (-37.59 psf)	 3.8 mm (0.15") 7.6 mm (0.30")	 9.7 mm (0.38") max. 9.7 mm (0.38") max.	 5, 6

Test Specimen #2:

Title of Test	Results	Allowed	Note
Optional Performance			
Uniform Load Deflection, per ASTM E 330 taken at meeting stile +1920 Pa (+40.10 psf) -1920 Pa (-40.10 psf)	 38.9 mm (1.53") 42.2 mm (1.66")	 Report Only	 4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at meeting stile +2880 Pa (+60.15 psf) -2880 Pa (-60.15 psf)	 3.0 mm (0.12") 3.3 mm (0.13")	 7.9 mm (0.31") max. 7.9 mm (0.31") 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.

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.

Digitally Signed by: Jeremy R. Bender

Jeremy R. Bender
Technician

Digitally Signed by: Timothy J. McGill

Timothy J. McGill
Manager – Product Testing

JRB:dem/asm

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.

Revision Log

Rev. #	Date	Page(s)	Revision(s)
1	01/08/14	Page 5	Changed reinforcement number from 910-995 RF STL Liner to 99-20 910 Steel Handle Liner
2	09/30/15	Cover page, Page 1	Corrected rating from "R" to "LC"

Appendix A

Alteration Addendum

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

Appendix B

Drawings

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