

**AAMA/WDMA/CSA 101/LS.2/A440-05
TEST REPORT**

Rendered to:

MI WINDOWS AND DOORS, INC.

SERIES/MODEL: 910/3910

PRODUCT TYPE: PVC Sliding Glass Door (XO)

Title	Summary of Results
Primary Product Designator	SGD-R35 1816 x 2019 (72 x 80)
Negative Design Pressure*	2258 Pa (47.2 psf)
Operating Force (in motion)	62 N (14 lbf)
Air Infiltration	0.66 L/s/m ² (0.13 cfm/ft ²)
Water Penetration Resistance Test Pressure*	254 Pa (5.3 psf)
Uniform Load Structural Test Pressure	+3600 Pa (75.24 psf)** -3388 Pa (70.8 psf)
Forced Entry Resistance	Grade 10

*-Optional Secondary Designators

Test Completion Date: 02/16/06

Reference must be made to Report No. 62998.01-109-47, dated 07/16/08 for complete test specimen description and data.

AAMA/WDMA/CSA 101/I.S.2/A440-05 TEST REPORT

Rendered to:

MI WINDOWS AND DOORS, INC.
650 West Market Street
P.O. Box 370
Gratz, Pennsylvania 17030-0370

Report No.: 62998.01-109-47
Revision 2: 07/16/08
Test Date: 02/15/06
And: 02/16/06
Report Date: 02/27/06
Expiration Date: 02/16/10

Project Summary: Architectural Testing, Inc. (ATI) was contracted by MI Windows and Doors, Inc. to witness testing on a Series/Model 910/3910, PVC sliding glass door at MI Windows and Doors, Inc. test facility in Elizabethville, Pennsylvania. The sample tested successfully met the performance requirements for a SGD-R35 1816 x 2019 (72 x 80) rating. Test specimen description and results are reported herein.

Test Specification: The test specimen was evaluated in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights*.

Test Specimen Description:

Series/Model: 910/3910

Product Type: PVC Sliding Glass Door (XO)

Overall Size: 1816 mm (71-1/2") wide by 2019 mm (79-1/2") high

Interior Panel Size: 933 mm (36-3/4") wide by 1962 mm (77-1/4") high

Fixed Daylight Opening Size: 813 mm (32") wide by 1835 mm (72-1/4") high

Screen Size: 937 mm (36-7/8") wide by 1975 mm (77-3/4") high

Overall Area: 3.7 m² (39.5 ft²)

Test Specimen Description: (Continued)

Finish: All PVC was white.

Frame Construction: The frame was constructed of extruded PVC members. Corners were mitered and welded. The fixed meeting stile was fastened to the head and sill with two (2) #8 x 3" screws.

Panel Construction: The panel was constructed of extruded PVC members. Corners were mitered and welded.

Glazing Details: The unit was glazed with 3/4" thick insulating glass constructed of two sheets of 1/8" thick clear tempered glass and a metal reinforced butyl spacer system. The glass was set from the exterior onto double-sided adhesive foam glazing tape.

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
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

Drainage:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
1/8" by 1/2" weepslot	2	Sill, 1" from each end
3/16" by 1/2" weepslot	2	Each end of the sill
1/8" by 1" weepslot	2	Sill, 1" from each end

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Metal door handle and lock	1	Lock stile, 42" from sill
Metal rollers	2	Bottom rail, 4" from each end

Test Specimen Description: (Continued)

Reinforcement: The meeting stiles utilized a 1" by 1" tubular steel reinforcement and the lock stiles utilized a U-shaped steel reinforcement (Reference Drawing #910-995 RF STL Liner).

Screen Construction: The screen was constructed of roll-formed aluminum members. Corners were mitered and secured with plastic corner keys. The screen mesh was secured with a flexible vinyl spline.

Installation: The unit was installed into a wood test buck. The nail fin was set against a bed of silicone and fastened with #6 x 1-5/8" screws, 3" from each end and 8" on center.

Test Results: The results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
5.3.1	Operating Force per ASTM E 2068		
	Initiate motion	76 N (17 lbf)	135 N (30 lbf)
	Maintain motion	62 N (14 lbf)	90 N (20 lbf)
	Latches	22 N (5 lbf)	100 N (22.5 lbf)
5.3.2.1	Air Leakage Resistance per ASTM E 283		
	75 Pa (1.6 psf)	0.66 L/s/m ² (0.13 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ² max.)

Note #1: *The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440-05 for air leakage resistance.*

5.3.3	Water Penetration Resistance per ASTM E 547		See Note #2
5.3.4.2	Uniform Load Deflection per ASTM E 330		See Note #2
5.3.4.3	Uniform Load Structural per ASTM E 330		See Note #2

Note #2: *The client opted to start at a pressure higher than the minimum required. Those results are listed under "Optional Performance".*

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
5.3.5	Forced Entry Resistance per ASTM F 842		
	Type: A	Grade: 10	
	Disassembly Test	No entry	No entry
	Test A1 through A5	No entry	No entry
	Test A7	No entry	No entry
	Lock Hardware Manipulation Test	No entry	No entry
	Sash/Panel Manipulation Test	No entry	No entry
5.3.6.2	Thermoplastic Corner Weld Test	Meets as stated	Meets as stated
5.3.6.3	Deglazing Test		
	In operating direction - 320 N (70 lbs)		
	Left stile	2.8 mm (0.11")	11.4 mm (0.45")
	Right stile	3.0 mm (0.12")	11.4 mm (0.45")
	In remaining direction - 230 N (50 lbs)		
	Top rail	1.8 mm (0.07")	11.4 mm (0.45")
	Bottom rail	1.8 mm (0.07")	11.4 mm (0.45")

Optional Performance

4.4.2.6	Water Penetration Resistance per ASTM E 547 (with and without insect screen)		
	254 Pa (5.30 psf)	No leakage	No leakage
4.4.2.6	Uniform Load Deflection per ASTM E 330 (Deflections were taken on the meeting stile) (Loads were held for 52 seconds)		
	2400 Pa (50.16 psf) (positive)**	35.3 mm (1.39")	See Note #3
	2258 Pa (47.2 psf) (negative)	39.2 mm (1.54")	See Note #3

Note #3: *The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440-05 for this product designation. The deflection data is recorded in this report for special code compliance and information only.*

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
4.4.2.6	Uniform Load Structural per ASTM E 330 (Permanent sets were taken on the meeting stile) (Loads were held for 10 seconds)		
	3600 Pa (75.24 psf) (positive)**	1.0 mm (0.04")	7.6 mm (0.30") max.
	3388 Pa (70.8 psf) (negative)	2.0 mm (0.08")	7.6 mm (0.30") max.

***Reference Architectural Testing Letter of Results 75655.01-109-47, dated August 14, 2007 for test results.*

Drawing Reference: The test specimen drawings have been reviewed by ATI and are representative of the test specimen reported herein.

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 from the original test date. 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. This report may not be reproduced, except in full, without the approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.

Jeramie D. Grabosch
Technician

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

JDG:tla/cmd/vlm

Attachments (pages):

Appendix-A: Alteration Addendum (1)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	02/27/06	N/A	Original report issue
1	04/10/06	Summary Page	Corrected negative design pressure
2	07/16/08	Summary Page, Page 4 and 5	Changed positive load deflection from 1689 Pa (35.3 psf) to 2400 Pa (50.16 psf) and positive load structural from 2536 Pa (53.0 psf) to 3600 Pa (75.24 psf) per test results from Architectural Testing Report No. 75655.01-109-47

Appendix A
Alteration Addendum

Note: No alterations were required.