

#### **TEST REPORT**

**Report No.**: C8629.01-109-47

### Rendered to:

MI WINDOWS AND DOORS, LLC Gratz, Pennsylvania

**PRODUCT TYPE**: Polyvinyl Chloride (PVC) Horizontal Sliding Window (XO) **SERIES/MODEL**: 3580

**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 1816 x 1816 (72 x 72)-HS
Design Pressure	±720 Pa (±15.04 psf)
Air Infiltration	0.6 L/s/m <sup>2</sup> (0.11 cfm/ft <sup>2</sup> )
Water Penetration Resistance Test Pressure	150 Pa (3.13 psf)

**Test Completion Date**: 05/21/2013

Reference must be made to Report No. C8629.01-109-47, dated 06/17/13 for complete test specimen description and detailed test results.

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**1.0 Report Issued To**: MI Windows and Doors, LLC

P.O. Box 370

650 West Market Street

Gratz, Pennsylvania 17030-0870

**2.0 Test Laboratory**: Architectural Testing, Inc.

130 Derry Court

York, Pennsylvania 17406-8405

717-764-7700

### 3.0 Project Summary:

**Architectural Testing** 

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

**3.2 Series/Model**: 3580

**3.2.1** This product also labeled under the following names: 358031, 1280, and 128031.

- **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 1816 x 1816 (72 x 72)-HS** rating.
- **3.4 Test Date**: 05/21/2013
- **3.5 Test Record Retention End Date**: All test records for this report will be retained until June 17, 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 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 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, LLC Aaron M. Shultz Architectural Testing, Inc.

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# **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:	Width		Height	
3.3 m <sup>2</sup> (35.4 ft <sup>2</sup> )	millimeters	inches	millimeters	inches
Overall size	1816	71-1/2	1816	71-1/2
Panel size	906	35-11/16	1769	69-5/8
Screen	860	33-7/8	1734	68-1/4

### **5.2 Frame Construction:**

Frame Member	Material	Description
Head, sill, and	Vinyl	Extruded, a snap-in extruded PVC sill track was
jambs	Vinyl	utilized

	Joinery Type	Detail
All corners	Mitered	Thermally welded

### **5.3 Panel Construction:**

<b>Panel Member</b>	Material	Description
Rails and stiles	Vinyl	Extruded
Fixed meeting stile	Vinyl	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally welded
Fixed meeting stile	Coped and butted	Each end and secured to the frame using a custom shaped extruded PVC clip. Each clip was secured to the meeting stile with three #6 x 1-1/4" long Phillips flat head screws, and secured to the frame with three #6 x 5/8" long Phillips flat head screws



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

# **5.4 Weatherstripping:**

Description	Quantity	Location
0.187" backed by 0.230" high	1 Row	Operable panel lock stile and top and
polypile with center fin	1 KOW	bottom rails
0.187" backed by 1/4" diameter		Fixed meeting stile
offset vinyl foam-filled bulb	1 Row	Fixed meeting stile

**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	Spacer	Interior	Exterior	Glazing Method
Type	Type	Lite	Lite	
3/4" IG	Aluminum reinforced butyl	1/8" thick clear annealed glass	1/8" thick clear annealed glass	The glass was set from the interior against double-sided adhesive foam tape and secured using extruded vinyl snap-in glazing beads

Logation	Oventity	Dayligl	Glass	
Location	Quantity	millimeters	inches	Bite
Fixed daylight opening	1	860 x 1745	33-7/8 x 68-11/16	1/2"
Operable daylight opening	1	838 x 1696	33 x 66-3/4	1/2"

### 5.6 Drainage:

<b>Drainage Method</b>	Size	Quantity	Location
Weepslot	1/8" wide by	2	Fixed glazing channel, 2" from each
Weepstot	1/2" long	2	end, draining to exterior sill hollow
Weepslot	1/8" wide by	2	Screen track, 1" from each end,
vveepsiot	1/2" long	2	draining to exterior sill hollow
Weepslot	1/4" wide by 5/8" long	4	Each end of interior sill track, draining the interior sill track through the intermediate hollow to the exterior sill hollow
Weepslot	1/8" wide by 1-1/4" long	2	Sill face, 2-1/2" from each end
Weepslot	1/16" wide by 1/2" long	4	Panel bottom rail, two located 2" from each end

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# **5.0 Test Specimen Description**: (Continued)

### 5.7 Hardware:

Description	Quantity	Location
Lock with adjacent keeper	2	Lock stile, 15" from each end
Wheel assembly	2	End of bottom rail
Aluminum retained springs	2	Screen jamb stile

### **5.8 Reinforcement:**

Drawing Number	Location	Material
RF-1045-020	Fixed meeting stile	Steel
GVL-451-020	Panel stiles	Steel

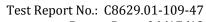
### **5.9 Screen Construction**:

Frame Material	<b>Corner Construction</b>	Mesh Type	Mesh Attachment Method
Aluminum	Square-cut with a plastic corner key	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.

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



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

Title of Test	Results	Allowed	Note
	Initiate motion:		
	102 N (23 lbf)	Report Only	
Operating Force,	Maintain motion:		
per ASTM E 2068	44 N (10 lbf)	90 N (20 lbf) max.	
	Locks:		
	13 N (3 lbf)	100 N (22.5 lbf) max.	
Air Leakage,			
Infiltration per ASTM E 283	0.6 L/s/m <sup>2</sup>	1.5 L/s/m <sup>2</sup>	
at 75 Pa (1.57 psf)	(0.11 cfm/ft <sup>2</sup> )	$(0.3 \text{ cfm/ft}^2) \text{ max.}$	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: A - Grade: 10	Pass	No entry	
Thermoplastic Corner Weld	Pass	Meets as stated	
Deglazing,			
per ASTM E 987			
Operating direction,			
320 N (70 lbf)	Pass	Meets as stated	
Remaining direction,	_		
230 N (50 lbf)	Pass	Meets as stated	
	Optional Performance	<u> </u>	
Water Penetration,			
per ASTM E 547	D	Ma last see	2
at 150 Pa (3.13 psf)	Pass	No leakage	2
Uniform Load Deflection,			
per ASTM E 330			
taken at meeting stile +720 Pa (+15.04 psf)	36.8 mm (1.45")		
-720 Pa (+15.04 psf)	35.1 mm (1.38")	Report Only	4, 5, 6
Uniform Load Structural,	33.1 11111 (1.30 )	Report Only	τ, υ, υ
per ASTM E 330			
taken at meeting stile			
+1152 Pa (+24.06 psf)	3.8 mm (0.15")	6.9 mm (0.27") max.	
-1152 Pa (-24.06 psf)	5.8 mm (0.23")	6.9 mm (0.27") max.	5, 6, 7

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### **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 not used to seal against air leakage during structural testing.* 

*Note 7: Client opted to test Uniform Loads Permanent set at 1.6% of the design pressure.* 



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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.

- M.C. I. D.C. I. D.C.

Aaron M. Shultz Technician Michael D. Stremmel, P.E. Senior Project Engineer

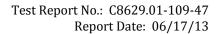
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Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Alteration Addendum (1)

Appendix-B: Complete drawings packet on file with Architectural Testing, Inc.

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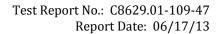


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# Appendix A

### **Alteration Addendum**

**Note**: No alterations were required.





Appendix B

# **Drawings**

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