TEST REPORT

Report No.: D3397.01-301-44

Rendered to:

INTERNATIONAL WINDOW
Fullerton, CA

PRODUCT TYPE: Polyvinyl Chloride (PVC) Side Hinged Door (Outswing)
SERIES/MODEL: 5021

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 Designators	Class R – PG20 Size Tested 968 x 2440 mm (38 x 96 in) – Type SHD Class R – PG30 Size Tested 968 x 2440 mm (38 x 96 in) – Type LW SHD
Design Pressure	±1440 Pa (±30.08 psf)
Air Infiltration	0.7 L/s/m^2 (0.13 cfm/ft^2)
Water Penetration Resistance	Test Pressure: 150 Pa (3.13 psf)

Test Completion Date: 02/05/15

Reference must be made to Report No. D3397.01-301-44, dated 10/07/16 for complete test specimen description and detailed test results.

1.0 Report Issued To: International Window
1551 East Orangethorpe Avenue
Fullerton, California 92831

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) Side Hinged Door (Outswing)

3.2 Series/Model: 5021

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 the following ratings:

Class R – PG20 Size Tested 968 x 2440 mm (38 x 96 in) – Type SHD

Class R – PG30 Size Tested 968 x 2440 mm (38 x 96 in) – Type LW SHD

3.4 Test Dates: 12/03/13 - 02/05/15

3.5 Test Record Retention End Date: All test records for this report will be retained until February 5, 2019.

3.6 Test Location: Architectural Testing test facility in Fresno, California.

3.7 Test Specimen 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 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 located in Appendix C. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

Name	Company
David Douglass	Architectural Testing, Inc.
Jay Ratliff	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: 2.36 m^2 (25.4 ft^2)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	968	38-1/8	2440	96-1/16
Leaf	900	35-7/16	2365	93-1/8

5.2 Frame Construction:

Frame Member	**Material**	**Description**
Head, sill and jambs	PVC	Extruded.

Joint Location	**Joinery Type**	**Detail**
All corners	Mitered	Fully welded.

5.3 Leaf Construction:

Leaf Member	**Material**	**Description**
Rails and stiles	PVC	

Joint Location	**Joinery Type**	**Detail**
Top rail corners	Butted	Sealed; fastened through stile reinforcement using aluminum corner blocks and one 3/8-16 x 2-1/2" bolt and nut with washers.
Bottom rail corners	Butted	Sealed; fastened through stile reinforcement using aluminum corner blocks and two 3/8-16 x 2-1/2" bolts and nuts with washers.

5.4 Weatherstripping:

Description	**Quantity**	**Location**
Wrapped foam gasket	1 Row	Head; sill; 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.*

Type	Spacer	Interior& Exterior Glass	Glazing Method
3/4" IG	U Shaped steel	1/8" Tempered	Tape glazed and sealed with silicone to interior stop; secured with a snap-fit PVC bead.

Location	Quantity	Daylight Opening		Bite
		millimeters	inches	
Leaf	1	656 x 2072	25-13/16 x 81-9/16	1/2"

5.6 Drainage:

Method	Size	Quantity	Location
Rectangular slot	1-1/4" x 1/4"	4	Sill face and two inner legs; spaced 5-1/2" and 8-3/8" from each end.
Rectangular slot	1" x 1/4"	4	Sill track; spaced 5-1/2" and 8-1/2" from each corner.

5.7 Hardware:

Description	Quantity	Location
Butt hinges	4	Jamb and stile; spaced 8-7/8" and 33-5/8" from each end; fastened to panel with four #8 x 1-1/4" screws into panel and five #8x 1/2" screws into frame.
Latch/lock & handle assembly	1	Lock stile; secured with four #8 x 1/2" screws.
Latch strike	1	Jamb; spaced 35-1/2" from sill; fastened with two #8 x 1/2" screws.
Deadbolt strike	1	Jamb; spaced 41" from sill fastened with two #8 x 1/2" screws.

5.0 Test Specimen Description: (Continued)

5.8 Reinforcement:

Drawing Number	Location	Material
H50443	Top Rail	Extruded Aluminum.
H50444	Bottom Rail	Extruded Aluminum.
H50445	Hinge Stile	Extruded Aluminum.
H50446	Lock Stile	Extruded Aluminum.
H50442	Frame	Extruded Aluminum.

6.0 Installation:

The specimen was installed into a test buck fabricated from Douglas fir nominal 2x8 lumber. The rough opening allowed for a shim space of 1/4" each side. The exterior perimeter of the specimen was sealed to the rough opening with silicone.

Location	Anchor Description	Spacing
Through jambs	#8 x 2-1/2" Phillips flat head screw	2" from sill; 21" on center.
Through head	#8 x 2-1/2" Phillips flat head screw	2" from corners; midspan.

7.0 Test Results: The temperature during testing was 22-23°C (71-73°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force per ASTM E 2068 Force to Latch Force to enable deadbolt Latch Operation	 37 N (8.3 lbf) 102 N (23.0 lbf) 41 N (9.25 lbf)	 Report Only Report Only 100 N (22.5 lbf) max.	
Air Leakage per ASTM E 283 Infiltration at 75 Pa (1.57 psf)	 0.7 L/s/m^2 (0.13 cfm/ft^2)	 <u>Maximum</u> 1.5 L/s/m^2 (0.3 cfm/ft^2)	 1
Water Penetration per ASTM E 547	 N/A	 N/A	 2
Uniform Load Deflection per ASTM E 330	 N/A	 N/A	 2
Uniform Load Structural per ASTM E 330	 N/A	 N/A	 2

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Forced Entry Resistance per AAMA 1304,	Pass	No entry	
Thermoplastic Corner Weld	Pass	Meets as stated	
Vertical Loading Resistance Per Aama 925 Pre-Load – 200 N (45 Lbf) Vertical Deflection Vertical Permanent Set Test Load – 675 N (152 lbf) Vertical Deflection Vertical Permanent Set Diagonal Deformation Force to Latch Force To Enable Deadbolt	 0.3 mm (0.01") <0.1 mm (<0.01") 0.5 mm (0.02") <0.1 mm (<0.01") <0.1 mm (<0.01") 36 N (8.0 lbf) 100 N (22.5 lbf)	 Report only	
Operation Cycle Performance per AAMA 920 25,000 cycles	Pass	Meets as stated	3
Optional Performance			
Water Penetration per ASTM E 547 at 150 Pa (3.13 psf)	Pass	No leakage	
Uniform Load Deflection per ASTM E 330 Lock Stile +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf) +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf) Head +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf) +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)	 Deflection 0.5 mm (0.02") 0.5 mm (0.02") 1.0 mm (0.04") 0.5 mm (0.02") 1.8 mm (0.07") 2.8 mm (0.11") 2.5 mm (0.10") 4.1 mm (0.16")	 Report Only	 4, 5, 6, 7

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Uniform Load Structural per ASTM E 330			
Lock Stile	Permanent Set	Maximum	
+2160 Pa (+45.11 psf)	<0.1 mm (<0.01")	5.3 mm (0.21")	
-2160 Pa (-45.11 psf)	0.3 mm (0.01")	5.3 mm (0.21")	
Head			
+2160 Pa (+45.11 psf)	0.8 mm (0.03")	3.6 mm (0.14")	
-2160 Pa (-45.11 psf)	0.5 mm (0.02")	3.6 mm (0.14")	6, 7

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: The client opted to start at a pressure higher than the minimum required for this product designation. Test results are reported under Optional Performance.

Note 3: At the conclusion of the test, there were no signs of damage to the door panel, frame, construction, fasteners, glazing, weatherstripping, or system assembly.

Note 4: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation. The deflections are included in this report for special code compliance and information only.

Note 5: Additional deflections are reported at pressures higher than required for this product designation. Test results are included at the request of the client.

Note 6: Loads were held for 10 seconds.

Note 7: 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 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: David Douglass

David Douglass
Project Manager

Digitally Signed by: Tyler Westerling

Tyler Westerling, P.E.
Senior Project Engineer

DD/TW:ms

Attachments (pages): This report is complete only when all attachments listed are included.
- Appendix-A: Alteration Addendum (1)
- Appendix-B: Location of Air Seal (1)
- Appendix-C: Drawings (17)