Architectural Testing

TEST REPORT

Report No.: C1943.01-301-44

Rendered to:

INTERNATIONAL WINDOW
Hayward, California

PRODUCT TYPE: Polyvinyl Chloride (PVC) Fixed Window
SERIES/MODEL: 9320

SPECIFICATION: AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

CAWM 301-90, *Forced Entry Resistance Test for Windows.*

Title	Summary of Results
Primary Product Designator	FW- C40 1810 x 1503 (71 x 59)
Design Pressure	±1920 Pa (±40.10 psf)
Air Infiltration	<0.05 L/s/m^2 (<0.01 cfm/ft^2)
Water Penetration Resistance Test Pressure	290 Pa (6.06 psf)

Test Completion Date: 09/20/2012

Reference must be made to Report No. C1943.01-301-44 dated 09/21/12 for complete test specimen description and detailed test results.

1.0 Report Issued To: International Window
30526 San Antonio Street
Hayward, California 94544

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) Fixed Window

3.2 Series/Model: 9320

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test methods. The specimen tested successfully met the performance requirements for a **FW- C40 1810 x 1503 (71 x 59)** rating.

3.4 Test Dates: 08/21/12 **–** 09/20/2012

3.5 Test Record Retention End Date: All test records for this report will be retained until September 20, 2016.

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

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 test completion date.

3.8 Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen reported herein. Test specimen construction was verified by Architectural Testing per the drawings located in Appendix B. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

Name	Company
Jarod Hardman	Architectural Testing, Inc.
Jeffrey Osugi	Architectural Testing, Inc.

4.0 Test Specifications:

AAMA/WDMA/CSA 101/I.S.2/A440-05, *Standard/Specification for Windows, Doors, and Unit Skylights.*

CAWM 301-90, *Forced Entry Resistance Test for Windows.*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 2.72 m^2 (29.28 ft^2)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	1810	71-1/4	1503	59-3/16
Interior sash	1763	69-7/16	1457	57-3/8

5.2 Frame Construction:

Frame Member	**Material**	**Description**
Head, sill and jambs	PVC	
Mounting fin	PVC	Snap fit to all members of frame and sealed.

	Joinery Type	**Detail**
Head, sill and jambs	Mitered	Fully welded
Mounting fin	Mitered	Fully welded

5.3 Panel Construction:

Panel Member	**Material**	**Description**
Top rail, bottom rail and each stile	PVC	The panel was secured to the frame with #8 x 1-1/4" Phillips pan head screws located 1-1/2 - 1-3/4" from each end and 15-1/2 – 23" on center into reinforcement. The screws were sealed.

	Joinery Type	**Detail**
All corners	Mitered	Fully welded

5.0 Test Specimen Description: (Continued)

5.4 Weatherstripping:

Description	Quantity	Location
0.240" high polypile with center fin.	1 Row	All members of panel.

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	Aluminum	1/8" Annealed	3/16" Annealed	Exterior glazed onto a 1/2" x 1/16" high glazing tape and secured with a snap in PVC glazing bead. The glazing was cap sealed at the interior with silicone.

Glass Type	Glazing	Glazing Method
Monolithic	3/16" Annealed	The panel was exterior glazed onto a 1/2" x 1/16" high glazing tape and secured with a snap in PVC glazing bead.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Panel	1	1660 x 1354	65-3/8 x 53-5/16	3/8 – 1/2"
Fixed lite	1	1715 x 1410	67-1/2 x 55-1/2	1/2"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weephole with cover	1-1/2" x 1/4" (1-1/16 x 3/16" effective)	2	2-3/8" from each end through exterior sill face and first and second layer of internal webbing.
Weephole	3/16" round	2	1-7/8" from each end through sill glazing track.

5.0 Test Specimen Description: (Continued)

5.7 Hardware: No hardware was utilized.

5.8 Reinforcement: No reinforcement was utilized.

Drawing Number	Location	Material
50298	Sill	Extruded aluminum
50297	Head sill and jambs	Extruded aluminum
50300	All members of panel	Extruded aluminum

5.9 Screen Construction: No screen was utilized.

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 3/8 – 7/16" shim space. The exterior perimeter of the window was sealed with silicone.

Location	Anchor Description	Anchor Location
Head, sill and jamb	3” drywalls crews	5-1/2 – 6” from each end and 16” on center through 2 x 2 and mounting fin.

7.0 Test Results: The temperature during testing was 22 - 24°C (71 - 75°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.5 L/s/m² (<0.01 cfm/ft²)	1.5 L/s/m² (0.3 cfm/ft²) max.	1
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 left jamb of frame between mounting screws +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf)	 0.3 mm (0.01") 0.0 mm (0.00")	 Report Only	2,3,4
Uniform Load Structural, per ASTM E 330 taken at left jamb of frame between mounting screws +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)	 0.0 mm (0.00") 0.0 mm (0.00")	 1.3 mm (0.05") max.	3,4
Forced Entry Resistance, per ASTM F 588, Type: D	Pass	No entry	
Forced Entry Resistance, per CAWM 301, Type: V	Pass	No entry	
Thermoplastic Corner Weld	Pass	Meets as stated	

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 at 290 Pa (6.06 psf)	Pass	No leakage	
Uniform Load Deflection, per ASTM E 330 taken at left jamb of frame between mounting screws +1920 Pa (+40.10 psf) -1920 Pa (-40.10 psf)	 0.3 mm (0.01") 0.0 mm (0.00")	 Report Only	 2,3,4
Uniform Load Structural, per ASTM E 330 taken at left jamb of frame between mounting screws +2880 Pa (+60.15 psf) -2880 Pa (-60.15 psf)	 0.0 mm (0.00") 0.3 mm (0.01")	 1.3 mm (0.05") max.	 3,4

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 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 3: Loads were held for 10 seconds.

Note 4: 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.

Jarod Hardman/ms.
Digitally Signed for: Jarod Hardman by Marisela Saavedra

Jarod Hardman
Technician

Digitally Signed by:Leaton Kirk

Leaton Kirk
Director – Regional Operations

JO: ms

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Alteration Addendum (1)
Appendix-B: Drawings (10) Complete drawings packet on file with Architectural Testing, Inc.