Intertek | Architectural Testing

TEST REPORT

Report No.: F2862.01-301-44

Rendered to:

INTERNATIONAL WINDOW
Fullerton, California

PRODUCT TYPE: Polyvinyl Chloride (PVC) Fixed Window
SERIES/MODEL: 5321

SPECIFICATION: AAMA/WDMA/CSA 101/I.S.2/A440-11, *NAFS 2011 – North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

Title	Summary of Results
AAMA/WDMA/CSA 101/I.S.2/A440-11	Class R – PG20 2446 x 1535 (96 x 60) – Fixed
Design Pressure	±960 Pa (±20.05 psf)
Air Infiltration	<0.1 L/s/m^2 (0.01 cfm/ft^2)
Air Exfiltration	<0.1 L/s/m^2 (0.01 cfm/ft^2)
Water Penetration Resistance	Test Pressure: 580 Pa (12.11 psf)

Test Completion Date: 3/30/2016

Reference must be made to Report No. F2862.01-301-44, dated 06/14/16 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: Intertek-ATI
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: 5321

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method. The specimen tested successfully met the performance requirements for the following rating:

Class R – PG20 2446 x 1535 (96 x 60) – Fixed

3.4 Test Date: 3/30/2016

3.5 Test Record Retention End Date: All test records for this report will be retained until March 30, 2020.

3.6 Test Location: Intertek-ATI test facility in Fresno, California.

3.7 Test Specimen Source: The test specimen was provided by the client. Representative samples of the test specimen will be retained by Intertek-ATI for a minimum of four years from the test completion date.

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

3.9 List of Official Observers:

Name	Company
Leonard Brum	Intertek-ATI
Dennis Janzen	Intertek-ATI
David Douglass	Intertek-ATI

4.0 Test Specification:

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

AAMA/WDMA/CSA 101/I.S.2/A440-11, *NAFS 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 3.75 m^2 (40.4 ft^2)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall Frame	2446	96-5/16	1535	60-7/16
Panel	2422	95-3/8	1511	59-1/2

5.2 Frame Construction:

Member	**Material**	**Description**
Head, Sill, Jambs, Mullion	PVC	Extruded; white.

Joint	**Joinery Type**	**Detail**
All Corners	Mitered	Fully welded.

5.3 Panel Construction:

Member	**Material**	**Description**
Head, Sill, Jambs, Mullion	PVC	Extruded; white.

Joint	**Joinery Type**	**Detail**
All Corners	Mitered	Fully welded.

5.4 Weatherstripping:

Description	**Quantity**	**Location**
Hollow Bulb Gasket	2 Rows	Coextruded with jambs, head, sill.
Single Leaf Gasket	1 Row	Coextruded with stiles, rails.

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	Glazing Method
3/4" IG	Stainless Steel	Set against double-sided foam tape; sealed at butted corner; secured with snap-fit exterior PVC bead.

Location	Interior/ Exterior Glass	Daylight Opening		Bite
		millimeters	inches	
Fixed Lite	3/16" annealed	2304 x 1393	90-11/16 x 54-13/16	1/2"

5.6 Drainage: No processed drainage was utilized.

5.7 Hardware:

Description	Quantity	Location
Fixed panel anchor spacer, 3" long	16	Head, sill, and jambs; 6" – 8" from corners; 18" –22" on center.
#6 x 1/2" Phillips flat head screw	2 per spacer	Attached to frame.
#9 x 2" Phillips truss head screw	1 per spacer	Attached to frame through glazing track and aluminum spacer.

5.8 Reinforcement: No reinforcement was utilized.

5.9 Screen Construction: No screen was utilized.

6.0 Installation:

The specimen was installed into a nominal 2x8 Douglas fir wood test buck. The rough opening allowed for a 3/8" shim space. A continuous nominal 2x2 wood furring strip was place over the mounting fin on all sides. The exterior perimeter of the window was sealed with silicone between the mounting fin and test buck.

Location	Anchor Description	Anchor Spacing
Head, sill, jambs	#8 x 3" Phillips flat head screws through furring strip and mounting fin into test buck.	4" from corners; 16" on center.

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

Title of Test	Results	Allowed	Note
Air Leakage per ASTM E 283 75 Pa (1.57 psf) Infiltration 75 Pa (1.57 psf) Exfiltration	 <0.1 L/s/m^2 (0.01 cfm/ft^2) <0.1 L/s/m^2 (0.01 cfm/ft^2)	Maximum 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 Frame Between Anchors +720 Pa (+15.04 psf) −720 Pa (−15.04 psf)	 Deflections 0.1 mm (0.01") 1.1 mm (0.05")	Report Only	3, 4, 5
Uniform Load Structural per ASTM E 330 Frame Between Anchors +1080 Pa (+22.56 psf) −1080 Pa (−22.56 psf)	 Permanent Sets <0.1 mm (<0.01") 0.3 mm (0.01")	Maximum 2.4 mm (0.09") 2.4 mm (0.09")	4, 5
Thermoplastic Corner Weld	Pass	Meets as stated	
Forced Entry Resistance per ASTM F 588, Type D	Grade 40	No entry	

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration per ASTM E 547 580 Pa (12.11 psf) – Cyclic	Pass	No Leakage	
Uniform Load Deflection per ASTM E 330 Frame Between Anchors +960 Pa (+20.05 psf) −960 Pa (−20.05 psf)	Deflections 0.3 mm (0.01") 1.9 mm (0.08")	Report Only	3, 4, 5
Uniform Load Structural per ASTM E 330 Frame Between Anchors +1440 Pa (+30.08 psf) −1440 Pa (−30.08 psf)	Permanent Sets 0.1 mm (0.01") <0.1 mm (<0.01")	Maximum 2.4 mm (0.09") 2.4 mm (0.09")	4, 5

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. Test results are reported under Optional Performance

Note 3: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation. The results are reported for special code compliance and information only.

Note 4 Loads were held for 10 seconds.

Note 5: Tape and film were not used to seal against air leakage during uniform load testing.

Intertek-ATI 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 Intertek-ATI 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 Intertek-ATI

For Intertek-ATI

Digitally Signed by: David Douglass

David Douglass
Project Manager

Digitally Signed by:Leaton Kirk

Leaton Kirk
Director – Laboratory Manager

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Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Alteration Addendum (1)
Appendix-B: Drawings (8)