

TEST REPORT

Report No.: C6391.01-301-44

Rendered to:

International Window
Fullerton, California

PRODUCT TYPE: Polyvinyl Chloride (PVC) XOX Horizontal Sliding Window
SERIES/MODEL: 5420

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.*

Title	Summary of Results
Primary Product Designator	HS-LC25 3030 x 1811* (119 x 71*)
Design Pressure	±1200 Pa (±25.06 psf)
Air Infiltration	1.12 L/s/m ² (0.22 cfm/ft ²)
Water Penetration Resistance Test Pressure	220 Pa (5.43 psf)

Test Completion Date: 03/20/2013

Reference must be made to Report No. C6391.01-301-44 dated 04/04/13 for complete test specimen description and detailed test results. Reference Architectural Testing, Inc. Report No. C2278.01-301-44, dated 03/24/13 for complete *Gateway* test specimen description and test results.

1.0 Report Issued To: International Window
1551 E. Orangethrope Ave.
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) XOX Horizontal Sliding Window

3.2 Series/Model: 5420

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 **HS-LC25 3030 x 1811* (119 x 71*)** rating. Reference Architectural Testing, Inc. Report No. C2278.01-301-44, dated 03/24/13 for complete *Gateway* test specimen description and test results.

***General Note:** An asterisk (*) next to the size designation indicates that the size tested for optional performance was smaller than the Gateway test size for the product type and class.*

3.4 Test Dates: 02/21/2013 – 03/20/2013

3.5 Test Record Retention End Date: All test records for this report will be retained until March 24, 2017.

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:

<u>Name</u>	<u>Company</u>
Jay Ratliff	Architectural Testing, Inc.
David Douglass	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: 5.49 m ² (59.06 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	3030	119-1/4	1811	71-5/16
Interior panel x 2	754	29-11/16	1754	69-1/16
Screen x 2	719	28-5/16	1765	69-1/2

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill and jambs	PVC	
Exterior meeting stile	PVC	
Roller track	PVC	Snap fit to sill and held back 1/4" from each end.
Siteline adapter	PVC	Snap fit to head and sill at fixed lite. Secured to the frame with #6 x 1/2" Phillips pan head screws 2" from each end and mid-span.

	Joinery Type	Detail
Head, sill and jambs	Mitered	Fully welded.
Exterior meeting stile	Coped	Secured through the frame with two #8 x 2-1/2" Phillips flat head screws. The screws were sealed.

5.0 Test Specimen Description: (Continued)

5.3 Panel Construction:

Panel Member	Material	Description
Top rail, bottom rail and each stile	PVC	The interlock was held back 1" from each end and 2-1/4" for the lock.

	Joinery Type	Detail
All corners	Mitered	Fully welded.

5.4 Weatherstripping:

Description	Quantity	Location
0.310" high polypile with center fin	1 Row	All members of panel.
0.450" high polypile with center fin	1 Row	Exterior 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 Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
3/4" IG	U shaped coated steel	1/8" Annealed	1/8" Annealed	Exterior glazed onto a 3/8" wide x 1/16" high glazing tape and secured with a snap in PVC glazing bead.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Fixed lite	1	1430 x 1663	56-5/16 x 65-1/2	3/8"
Left interior panel	1	673 x 1673	26-1/2 x 65-7/8	5/16"
Right interior panel	1	672 x 1674	26-7/16 x 65-7/8	5/16"

5.0 Test Specimen Description: (Continued)

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weephole with cover	1-3/4" x 1/4" (1-1/4" x 1/8" effective)	6	3-5/8", 23-3/8" and 33-3/4" from each end through exterior sill face.
Weephole	1/4" round	8	2-1/8" from each end through screen track. 1" from each end through sill siteline adapter. 1-1/4" from each end through bottom rail of interior panels.
Weephole	1/2" round	6	4-3/4", 24-3/4" and 34-1/4" from each end through sill track through internal webbing.
Weephole	1/8" round	4	1/4" from each side of exterior meeting stiles through screen track.

5.7 Hardware:

Description	Quantity	Location
Auto lock	2	Midspan on interior meeting stile. The faceplate was secured to the lock with two #6 x 1/2" Phillips flat head screws.
Keeper	2	Opposite lock on exterior meeting stile secured with two #8 x 1" Phillips flat head self-drilling screws into reinforcement.
Plastic roller with housing	4	3-1/4" from each end on bottom rail.
Secondary lock	2	Bottom of interior meeting stile secured with two 8-32 x 5/8" Phillips pan head screws into reinforcement.
Secondary lock keeper		31-1/4" from lock jamb secured through roller track and sill with two #6 x 1/2" Phillips pan head screws.

5.0 Test Specimen Description: (Continued)

5.8 Reinforcement:

Drawing Number	Location	Material
50600	Exterior meeting stile	Extruded aluminum
50601	Interior meeting stile	Extruded aluminum
50596	8" long at sill of frame at exterior meeting stile	Extruded aluminum

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Roll formed aluminum	Square cut with corner key	Fiberglass	Hollow spline

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/8 – 3/16" shim space. The exterior perimeter of the window was sealed with silicone. The frame perimeter was blocked with 2 x 2 wood.

Location	Anchor Description	Anchor Location
Head, sill and jambs	3" drywall screws	4" from each and 16" on center through the 2 x 2 wood and mounting fin.

7.0 Test Results: The temperature during testing was 22 - 24°C (72 - 76°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 66 N (14.8 lbf) Maintain motion: 53 N (12.0 lbf) Locks: 19 N (4.3 lbf)	Report Only. 115 N (25.9 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	1.12 L/s/m ² (0.22 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration, per ASTM E 547	N/A	N/A	3
Uniform Load Deflection, per ASTM E 330 taken at exterior meeting stile +1200 Pa (+25.06 psf) -1200 Pa (-25.06 psf)	14.5 mm (0.57") 12.8 mm (0.50")	Report Only.	4, 5, 6
Uniform Load Structural, per ASTM E 330 taken at exterior meeting stile +1800 Pa (+37.59 psf) -1800 Pa (-37.59 psf)	0.0 mm (0.00") 0.5 mm (0.02")	7.1 mm (0.28") max.	5, 6
Forced Entry Resistance, per ASTM F 588, Type: A - Grade: 10	Pass	No entry	
Forced Entry Resistance, per CAWM 301, Type: I	Pass	No entry	

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Thermoplastic Corner Weld	Pass	Meets as stated	
Deglazing, per ASTM E 987 Operating direction, 320 N (71.9 lbf) Remaining direction, 230 N (51.7 lbf)	Pass Pass	Meets as stated Meets as stated	
Optional Performance			
Water Penetration, per ASTM E 547 at 220 Pa (5.43 psf)	Pass	No leakage	2

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 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.

David Douglass
Project Manager

Leaton Kirk
Director – Regional Operations

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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 (14) Complete drawings packet on file with Architectural Testing, Inc.



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Record Retention End Date: 03/24/17

Appendix A

Alteration Addendum

***Note:** No alterations were required.*



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Appendix B

Drawings

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