

INTERNATIONAL WINDOW TEST REPORT

SCOPE OF WORK

AAMA/WDMA/CSA 101/I.S.2/A440-11 TESTING ON 5420HS XOX HORIZONTAL SLIDING WINDOW

REPORT NUMBER

H2428.01-301-44 R0

TEST DATE

07/20/17 - 10/03/17

ISSUE DATE

10/19/17

RECORD RETENTION END DATE

10/03/22

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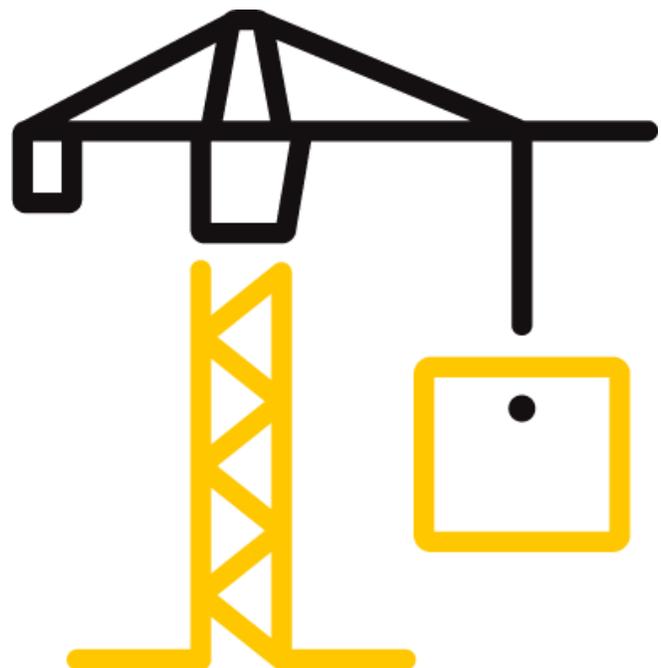
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TEST REPORT FOR INTERNATIONAL WINDOW

Report No.: H2428.01-301-44 R0

Date: 10/19/17

REPORT ISSUED TO
INTERNATIONAL WINDOW
1551 E. Orangethorpe Ave.
Fullerton, California 92831

SECTION 1 SCOPE

Intertek Building & Construction (B&C) was contracted by International Window, Fullerton, California to perform testing in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-08 and -11, *NAFS 2008 and 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*, on their 5420 HS XOX, horizontal sliding window. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted at Intertek-ATI test facility in Fresno, California. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2 SUMMARY OF TEST RESULTS

TITLE	RESULTS
Primary Designator	Class R – PG20: Size Tested 3650 x 1520 mm (144 x 60 in) – Type HS
Design Pressure	±960 Pa (±20.05 psf)
Air Infiltration	1.27 L/s/m ² (0.25 cfm/ft ²)
Canadian Air Leakage	Level A2
Water Penetration	Test Pressure: 150 Pa (3.13 psf)

For INTERTEK B&C:

COMPLETED BY:	William Jay Ratliff	REVIEWED BY:	Tyler Westerling, P.E.
TITLE:	Technician III – Structural	TITLE:	Senior Project Engineer
SIGNATURE:		SIGNATURE:	
DATE:	10/19/17	DATE:	10/19/17

WJR:ms

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SECTION 3

TEST METHODS

The specimens were evaluated in accordance with the following:

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

CSA A440S1-09, Canadian Supplement to **AAMA/WDMA/CSA 101/I.S.2/A440**, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

CAWM 301-90, *Forced entry resistance tests for windows*

SECTION 4

MATERIAL SOURCE/INSTALLATION

Test specimen was provided by the client. Representative samples of the test specimens will be retained by Intertek B&C for a minimum of four years from the test completion date.

The specimen was installed into a wood buck. The rough opening allowed for a 1/4" shim space. The exterior perimeter of the window was sealed with silicone.

ANCHOR LOCATION	ANCHOR DESCRIPTION	ANCHOR SPACING
Nail Fin	#10 x 3" self-drilling drywall screws	4" from corners and 16" on center through a 1x2 wood strip over fin.

SECTION 5

EQUIPMENT

Type	Manufacturer	Asset Number
Control Panel	Intertek-ATI	005724, 005062
Micro MULE	Intertek-ATI	005722
Lab Conditions Monitor	Comet	63304
Deglazing Fixture	Intertek-ATI	005264
Load Cell – 1 k	Interface	63196,005135
Load Cell – 3k	Interface	65472
Digital Force Gauge	Wagner	65863
Spray Rack – Lab	Intertek-ATI	004047
Linear Transducer	Celesco	004485, 63346, 63349

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LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Jay Ratliff	Intertek B&C
Erick Caldera	Intertek B&C

SECTION 7

TEST SPECIMEN DESCRIPTION

Product Type: Horizontal Sliding Window

Series/Model: 5420 HS XOX

Product Sizes:

OVERALL AREA:	WIDTH		HEIGHT	
	millimeters	inches	millimeters	inches
5.55 m ² (59.7 ft ²)				
Overall Size	3650	143-11/16	1520	59-13/16
Sash (x2)	906	35-11/16	1451	57-1/8
Screen (x2)	880	34-5/8	1475	58

Frame Construction:

FRAME MEMBER	MATERIAL	DESCRIPTION
Head, Sill, and Jambs	PVC	Extruded; white.
Exterior Meeting Stile	PVC	Extruded; white
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 corners and each mid-span.

JOINT LOCATION	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.

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Sash Construction:

SASH MEMBER	MATERIAL	DESCRIPTION
Rails and Stiles	PVC	The interlock was held back 1" from each corner and 2-1/4" for the lock

JOINT LOCATION	JOINERY TYPE	DETAIL
All Corners	Mitered	Fully welded

Reinforcement:

DRAWING NUMBER	LOCATION	MATERIALS
C1499	Fixed meeting stile	Extruded aluminum
C1500	Sash meeting stile	Extruded aluminum
IW-155	Sill, at exterior meeting stile	Extruded aluminum, 8" long

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.

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	GLASS	GLAZING METHOD
1" IG	U shaped coated steel	1/8" Annealed Interior & exterior	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	1735 x 1385	68-1/4 x 54-1/2	1/2"
Sash	2	825 x 1369	32-1/2 x 53-7/8	1/2"

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Drainage:

METHOD	SIZE	QUANTITY	LOCATION
Weephole with cover	1-3/4" x 1/4" (1-1/4" x 1/8" effective)	4	4-1/2" and 43-1/2" 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	5" and 30" and 40-1/2" 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.

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	2	31-1/4" from lock jamb secured through roller track and sill with two #6 x 1/2" Phillips pan head screws.

Screen Construction:

FRAME MATERIAL	CORNERS	MESH	MESH ATTACHMENT
Roll Formed Aluminum	Square cut with corner key	Fiberglass	Hollow spline

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**SECTION 8
TEST RESULTS**

The temperature during testing was 25°C (77°F). The results are tabulated as follows:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Operating Force, per ASTM E2068 Initiate Motion Maintain Motion Latches Locks	50 N (11.25 lbf) 37 N (8.25 lbf) 18 N (4 lbf) 19 N (4.25 lbf)	<u>Maximum</u> Report only 180 N (40.47 lbf) 100 N (22.48 lbf) 100 N (22.48 lbf)	
Air Leakage, per ASTM E283 75 Pa (1.57 psf) Infiltration	1.3 L/s/m ² (0.25 cfm/ft ²)	<u>Maximum</u> 1.5 L/s/m ² (0.30 cfm/ft ²)	1, 2
Water Penetration, per ASTM E547	Pass 150 Pa (3.13 psf)	No leakage	3
Uniform Load Deflection, per ASTM E330 <u>Deflections</u> +960 Pa (+20.05 psf) -960 Pa (-20.05 psf)	<u>Meeting stile</u> 6.1 mm (0.24") 5.0 mm (0.20")	Report only	5, 6, 7
Uniform Load Structural, per ASTM E330 <u>Permanent sets</u> +1440 Pa (+30.08 psf) -1440 Pa (-30.08 psf)	<u>Meeting stile</u> 0.3 mm (0.01") <0.1 mm (<0.01")	<u>Maximum</u> 5.8 mm (0.23") 5.8 mm (0.23")	6, 7
Forced Entry Resistance, per ASTM F588, Type A per CAWM 301, Type I	Pass Grade 10 Pass	No entry	
Forced Entry Resistance,	Pass	No entry	
Thermoplastic Corner Weld	Pass	Meets as stated	
Deglazing, per ASTM E987 Stiles at 320 N (70 lbf) Rails at 230 N (50 lbf)	Pass Pass	Meets as stated Meets as stated	

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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: Air Leakage testing was conducted 08/22/17 at 11:43 AM

Note 3: *With and without insect screen.*

Note 4: *For Optional Performance, the client opted to test at a pressure higher than the minimum required for this product designation.*

Note 5: *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 6: *Loads were held for 10 seconds.*

Note 7: *The use of tape and film to seal against extraneous air leakage during uniform load testing did not, in the opinion of the Intertek B&C technician, affect test results.*

SECTION 9 ALTERATIONS

Alteration #1: Date – 8/22/2017
Cause for alteration – Failure during testing for Air Leakage
Remedial action taken – Replaced unit frame.

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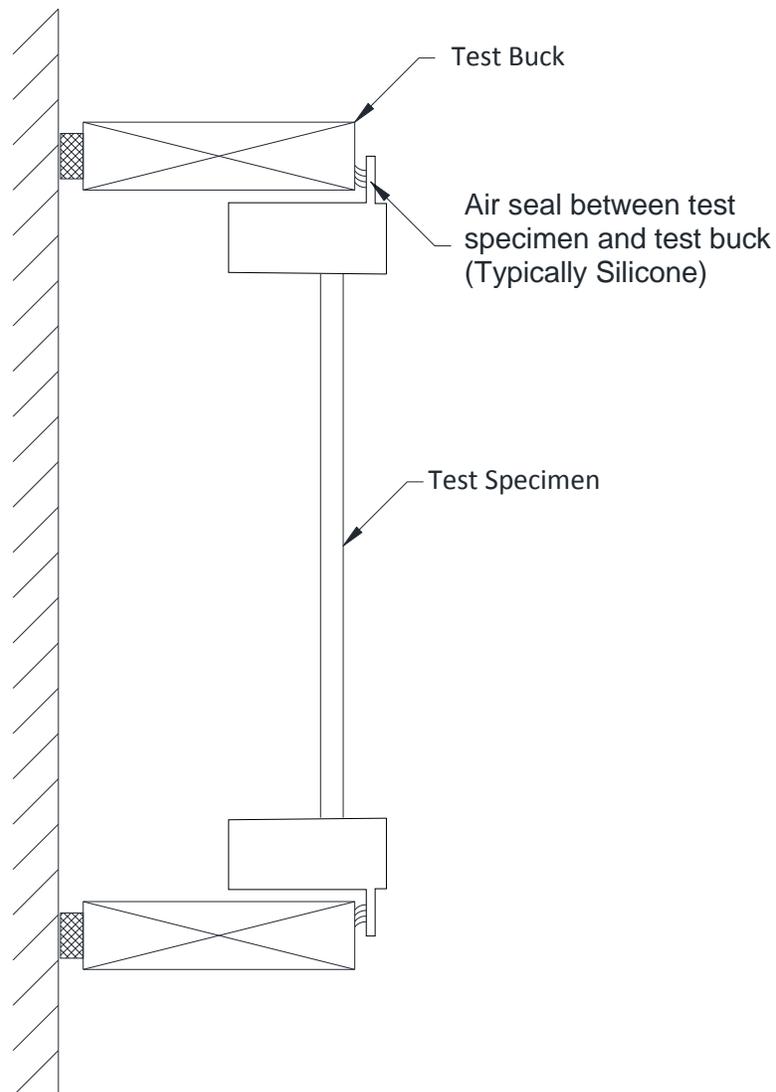
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SECTION 10

LOCATION OF AIR SEAL

The air seal between the test specimen and the test buck is detailed below. The seal is made of sealant, typically silicone, between the mounting fin and the exterior face of the rough opening.



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SECTION 11

CONCLUSION

The specimen tested successfully met the performance requirements for the following rating:

Class R – PG25: Size Tested 3650 x 1520 mm (144 x 60 in)– Type HS

SECTION 12

DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimens reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

Note: *Complete drawings packet on file with Intertek B&C.*



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SECTION 13

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	10/19/17	N/A	Original Report Issue