

# INTERNATIONAL WINDOW TEST REPORT

**SCOPE OF WORK**

AAMA/WDMA/CSA 101/I.S.2/A440 -11 TESTING ON:

**5420 HORIZONTAL SLIDING WINDOW (XO)**

**REPORT NUMBER**

H2431.01-301-44 R0

**TEST DATES**

06/27/17 - 07/05/17

**ISSUE DATE**

09/26/17

**RECORD RETENTION END DATE**

07/05/22

**PAGES**

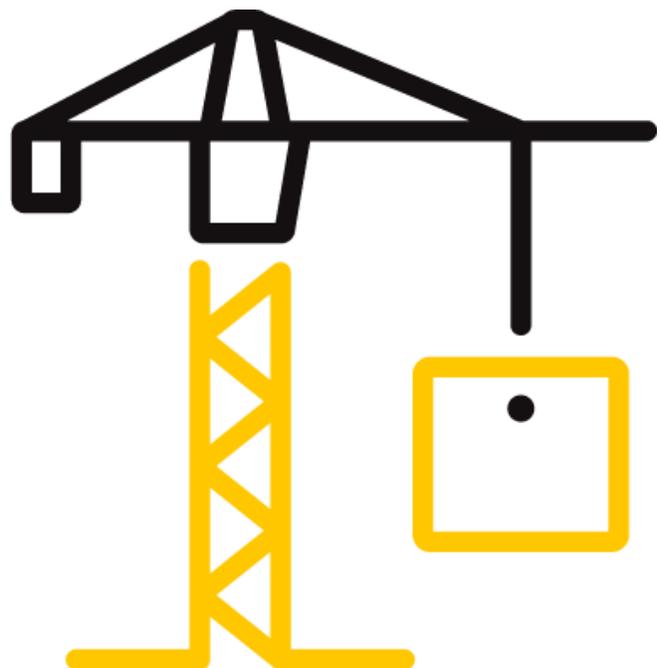
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## TEST REPORT FOR INTERNATIONAL WINDOW

Report No.: H2431.01-301-44 R0

Date: 09/26/17

### 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 to perform testing in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11, 2011 - *North American Fenestration Standard/Specification for Windows, Doors, and Skylights*, on their **5420 horizontal sliding window (XO)**. 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
AAMA/WDMA/CSA 101/I.S.2/A440 -11	Class CW – PG40 Size Tested: 1835 x 1535 (72 x 61) – Type HS
Design Pressure	±1920 Pa (±40.10 psf)
Air Infiltration	1.4 L/s/m <sup>2</sup> (0.28 cfm/ft <sup>2</sup> )
Canadian Air Infiltration	A2
Water Penetration Resistance Test Pressure	290 Pa (6.06 psf)

For INTERTEK B&C:

<b>COMPLETED BY:</b>	William Jay Ratliff	<b>REVIEWED BY:</b>	Tyler Westerling, P.E.
<b>TITLE:</b>	Technician – Structural	<b>TITLE:</b>	Senior Project Engineer
<b>SIGNATURE:</b>		<b>SIGNATURE:</b>	
<b>DATE:</b>	09/26/17	<b>DATE:</b>	09/26/17

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 2008 and 2011 - 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 specimen will be retained by Intertek B&C for a minimum of five years from the test completion date.

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

LOCATION	ANCHOR DESCRIPTION	ANCHOR LOCATION
Nail fin	#10 x 3" Philips flat-head screw	4" from corners and 16" on center through 2 x 2 wood strip over fin

### SECTION 5

#### EQUIPMENT

Type	Manufacturer	Asset Number
Control Panel	Intertek-ATI	005724
Micro MULE	Intertek-ATI	005722
Lab conditions monitor	Comet	63304
Deglazing fixture	Intertek-ATI	005264
Load Cell – 1 k	Interface	63196
Load Cell – 3k	Interface	65472
Digital Force Gauge	Wagner	65863
Spray Rack – Lab	Intertek-ATI	004047
Linear Transducer	Celesco	004487, 005281, 63349

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#### LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
David Douglass	Intertek B&C
William Jay Ratliff	Intertek B&C
Erick Caldera	Intertek B&C

### SECTION 7

#### TEST SPECIMEN DESCRIPTION

**Product Type:** Horizontal Sliding Window

**Series/Model:** 5420 (XO)

#### Product Sizes:

OVERALL AREA:	WIDTH		HEIGHT	
	millimeters	inches	millimeters	inches
2.8 m <sup>2</sup> (30.3 ft <sup>2</sup> )				
Overall Size	1835	72-1/4	1535	60-7/16
Sash	911	35-7/8	1460	57-1/2
Screen	885	34-7/8	1476	58-1/8

#### Frame Construction:

FRAME MEMBER	MATERIAL	DESCRIPTION
Head, sill, and jambs	PVC	Extruded; white.
Exterior meeting stile	PVC	Extruded; white.
Roller track	PVC	Extruded, white
Siteline adapter	PVC	Extruded, white
	JOINERY TYPE	DETAIL
Head, sill, and jambs	Mitered	Fully welded.
Roller Track	Snap-fit	Snap fit to sill and held back 1/4" from each end.
Siteline adapter	Snap-fit	Snap fit to head and sill at fixed lite. Secured to the frame with #6 x 1/2" Phillips pan head screws 4-5/8" from each end and mid-span.
Exterior meeting stile	Coped	Secured through the frame with #8 x 3" Phillips flat head screws.

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### Sash Construction:

SASH MEMBER	MATERIAL	DESCRIPTION
Rails, Stiles	PVC	Extruded; white
	JOINERY TYPE	DETAIL
All Corners	Mitered	Fully welded.

### Reinforcement:

PART NUMBER	LOCATION	MATERIALS
c-1499	Fixed meeting stile	Extruded aluminum
c-1500	Sash meeting stile	Extruded aluminum
Rw-155	8" long at sill of frame at exterior meeting stile	Extruded aluminum

### Weatherstripping:

DESCRIPTION	QUANTITY	LOCATION
0.310" high polypile with center fin	1 Row	All members of panel.
0.430" 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.*

GLASS TYPE	SPACER TYPE	INTERIOR LITE	EXTERIOR LITE	GLAZING METHOD
1" IG	Steel intercept	1/8" Annealed	1/8" Annealed	Exterior glazed onto a 1/2" 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	832 x 1376	32-3/4 x 54-1/8	1/2"
Panel	1	829 x 1380	32-5/8 x 54-5/16	1/2"

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**Drainage:**

DRAINAGE METHOD	SIZE	QUANTITY	LOCATION
Slot with cover	1-3/8"x3/16" (effective)	2	3-5/8" from each end through exterior sill face.
Slot	1-3/4" x 1/4"	2	3-5/8" from each end punched through the first internal wall.
Weephole	1/4" round	8	2-1/8" and 32-3/8" from each end through sill screen track. 1" from each end through sill siteline adapter. 1-1/4" from each end through bottom rail.
Weephole	1/2" round	4	5" and 30-5/8" from each end through sill track and internal webbing.

**Hardware:**

DESCRIPTION	QUANTITY	LOCATION
Auto lock	1	Sash meeting stile, mid-span. The faceplate was secured to the lock with two #6 x 1/2" Phillips flat head screws.
Keeper	1	Fixed meeting stile, opposite lock, secured with two #8 x 3/4" Phillips flat head self-drilling screws into reinforcement.
Plastic roller with housing	2	3-1/4" from each end on bottom rail, snap-fit
Secondary lock	1	Bottom of sash meeting stile secured with two 8-32 x 5/8" Phillips pan head screws into reinforcement.
Secondary lock keeper	1	33-1/2" from lock jamb secured through roller track and sill with two #6 x 1/2" Phillips pan head screws.

**Screen Construction:**

FRAME MATERIAL	CORNER CONSTRUCTION	MESH TYPE	MESH ATTACHMENT METHOD
Rolled aluminum	Keyed	Fiberglass	Hollow spine

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**SECTION 8  
TEST RESULTS**

The temperature during testing was 24°C (75°F). The results are tabulated as follows:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
<b>Operating Force,</b> per ASTM E2068	Initiate Motion: 58 N (13.0 lbf) Maintain Motion: 31 N (7.0 lbf) Latches: 22 N (5.0 lbf) Locks: 18 N (4 lbf)	Report only  115 N (25.85 lbf) max  100 N (22.5 lbf) max  100 N (22.5 lbf) max	
<b>Air Leakage,</b> Infiltration per ASTM E283 at 75 Pa (1.57 psf)	1.4 L/s/m <sup>2</sup> (0.28 cfm/ft <sup>2</sup> )	1.5 L/s/m <sup>2</sup> (0.3 cfm/ft <sup>2</sup> ) max.	1, 2
<b>Canadian Air Infiltration</b>	A2	N/A	2
<b>Water Penetration,</b> per ASTM E547 at 180 Pa (3.76 psf)	N/A	N/A	4
<b>Uniform Load Deflection,</b> per ASTM E330 Deflections taken at the meeting stile +1200 Pa (+25.06 psf ) -1200 Pa (-25.06 psf)	N/A	N/A	4
<b>Uniform Load Structural,</b> per ASTM E330 Permanent set taken at meeting stile +1800 Pa (+37.05 psf) -1800 Pa (-37.05 psf)	N/A	N/A	4
<b>Forced Entry Resistance,</b> per ASTM F588, Type: A - Grade: 10	Pass	No entry	
<b>Forced Entry Resistance,</b> per CAWM 301, Type: I	Pass	No entry	
<b>Thermoplastic Corner Weld</b>	Pass	Meets as stated	

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TITLE OF TEST	RESULTS	ALLOWED	NOTE
<b>Deglazing,</b> per ASTM E987 Operating direction, 320 N (70 lbf) Remaining direction, 230 N (50 lbf)	Pass  Pass	Meets as stated  Meets as stated	
<b>OPTIONAL PERFORMANCE</b>			
<b>Water Penetration,</b> per ASTM E547 at 290 Pa (6.06 psf)	Pass	No leakage	3
<b>Uniform Load Deflection,</b> per ASTM E330 Deflections taken at meeting stile +1920 Pa (+40.10 psf) -1920 Pa (-40.10 psf)	7.3 mm (0.28") 8.3 mm (0.33")	8.3 mm (0.33") max. 8.3 mm (0.33") max.	5, 6, 7
<b>Uniform Load Structural,</b> per ASTM E330 Permanent set taken at meeting stile +2880 Pa (+60.15 psf) -2880 Pa (-60.15 psf)	0.1 mm (<0.01") 0.3 mm (0.01")	4.3 mm (0.17") max. 4.3 mm (0.17") max.	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: Test Date 06/27/17 / Time: 03:00 PM*

*Note 3: With and without insect screen.*

*Note 4: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.*

*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: 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.*



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### SECTION 9 ALTERATIONS

**Alteration #1:**      Date - 07/05/17  
Cause for alteration – Unit deglazed  
Remedial action taken – Re-glazed the unit

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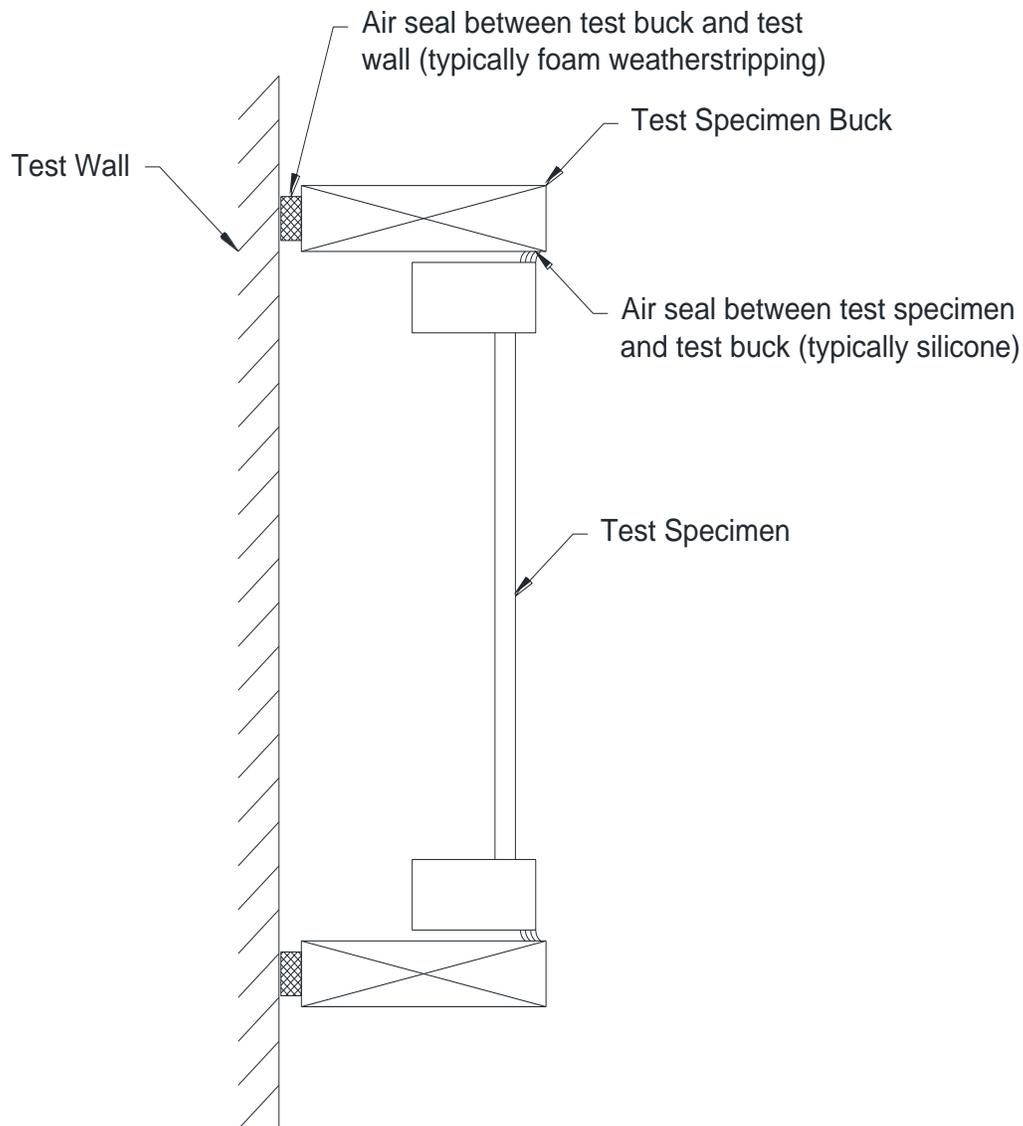
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### SECTION 10

#### LOCATION OF AIR SEAL

The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.





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### SECTION 11

#### CONCLUSION

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

**Class CW – PG40: Size Tested: 1835 x 1535 (72 x 61) – Type HS**



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### SECTION 12

#### DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen 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	09/26/17	N/A	Original Report Issue