



TEST REPORT

Report No.: E8504.01-501-47

Rendered to:

VEKA INC.
Fombell, Pennsylvania

PRODUCT TYPE: PVC Horizontal Sliding Window, Type X0
SERIES/MODEL: SS46/57WW

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

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

Title	Summary of Results
AAMA/WDMA/CSA 101/I.S.2/A440-08 and -11	Class R-PG50 1829 x 1219 (72 x 48)-HS
Design Pressure	± 2400 Pa (± 50.13 psf)
Air Infiltration	0.5 L/s/m ² (0.10 cfm/ft ²)
Canadian Air Infiltration/Exfiltration Level	A2
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)

Test Completion Date: 08/05/15

Reference must be made to Report No. E8504.01-501-47, dated 08/18/15 for complete test specimen description and detailed test results.



- 1.0 Report Issued To:** Veka Inc.
100 Veka Drive
Fombell, Pennsylvania 16123-0250
- 2.0 Test Laboratory:** Architectural Testing, Inc., a subsidiary of Intertek (Intertek-ATI)
1140 Lincoln Avenue
Springdale, Pennsylvania 15144
724-275-7100
- 3.0 Project Summary:**
- 3.1 Product Type:** PVC Horizontal Sliding Window, Type XO
- 3.2 Series/Model:** SS46/57WW
- 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 **Class R-PG50 1829 x 1219 (72 x 48)-HS** rating.
- 3.4 Test Dates:** 06/01/15 - 08/05/15
- 3.5 Test Record Retention End Date:** All test records for this report will be retained until August 5, 2019.
- 3.6 Test Location:** Veka Inc. test facility in Fombell, Pennsylvania. Calibration of test equipment was performed by Intertek-ATI in accordance with AAMA 205-01 "In-Plant Testing Guidelines for Manufacturers and Independent Laboratories".
- 3.7 Test Specimen Source:** The test specimen was provided by the client. Representative samples of the test specimen(s) will be retained 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 C. Any deviations are documented herein or on the drawings.
- 3.9 List of Official Observers:**

<u>Name</u>	<u>Company</u>
Doug Merry	Veka Inc.
Cornell Charles	Veka Inc.
Joe Allison	Intertek-ATI

4.0 Test Specification(s):

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

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

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 1.8 m ² (19.3 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1829	72	1219	48
Sash size	911	35-7/8	1162	45-3/4
Screen size	870	34-1/4	1137	44-3/4

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill, sill extender, jambs, fixed stile, roller track	PVC	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally welded
Fixed stile	Coped/butt type	Fastened with four #8 x 3" truss head screws, two at each end and sealed with a silicone sealant
Sill extender	Square-cut	Sealed with a silicone sealant
Roller track	Square-cut	Snap-in

5.3 Sash Construction:

Sash Member	Material	Description
All rails and stiles	PVC	Extruded

5.0 Test Specimen Description: (Continued)

5.3 Sash Construction: (Continued)

	Joinery Type	Detail
All corners	Mitered	Thermally welded

5.4 Weatherstripping:

Description	Quantity	Location
0.187" backed x 0.270" high center fin pile	1 Row	Sash rails and stiles, fixed 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	Rectangular shaped steel, single sealed	1/8" annealed	1/8" annealed	The sash glass was exterior glazed and the fixed lite was interior glazed. The glass was set against a silicone sealant and secured with rigid vinyl glazing beads.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Sash	1	822 x 1073	32-3/8 x 42-1/4	1/2"
Frame	1	819 x 1105	32-1/4 x 43-1/2	1/2"

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weepslot with flap	1-1/4" wide by 5/32" high	2	Exterior sill face, one 3-1/2" in from each end
Weepslot	1-1/4" wide by 1/4" high	2	Interior sill track, one at each end
Weepslot	1" wide by 3/8" high	2	Intermediate sill wall, one at each end

5.0 Test Specimen Description: (Continued)

5.7 Hardware:

Description	Quantity	Location
Metal cam lock	2	Lock stile, one 9-1/2" in from each end mating with metal keeper on the fixed stile
Dual metal rollers with plastic housing	2	Bottom rail, one at each end

5.8 Reinforcement:

Drawing Number	Location	Material
S-065	Fixed meeting stile	Extruded aluminum
RFSE4646AOM	All stiles and rails	Extruded aluminum

5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Roll-formed aluminum	Square-cut and secured with snap-in plastic corner keys	Fiber	Flexible vinyl spline

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/8" shim space. The nail fin perimeter of the window was sealed with a silicone sealant.

Location	Anchor Description	Anchor Location
Integral nail fin	#8 x 2" truss head screws	Nominally spaced at 7-1/2" on center, beginning at each corner

7.0 Test Results: The temperature during testing was 20°C (68°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 67 N (15 lbf) Maintain motion: 62 N (14 lbf) Locks: 22 N (5 lbf)	Report Only 90 N (20 lbf) max. 100 N (22.5 lbf) max.	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.5 L/s/m ² (0.10 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Air Leakage, Exfiltration per ASTM E 283 at 75 Pa (1.57 psf)	0.8 L/s/m ² (0.15 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Canadian Air Infiltration/Exfiltration Level	A2	N/A	
Water Penetration, per ASTM E 547	N/A	N/A	3
Uniform Load Deflection, per ASTM E 330	N/A	N/A	3
Uniform Load Structural, per ASTM E 330	N/A	N/A	3
Forced Entry Resistance, per ASTM F 588, Type: A - Grade: 10	Pass	No entry	
Thermoplastic Corner Weld	Pass	Meets as stated	
Deglazing, per ASTM E 987 Operating direction, 320 N (72 lbf) Remaining direction, 230 N (52 lbf)	Pass Pass	Meets as stated Meets as stated	

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 at 360 Pa (7.52 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 Deflections taken at the fixed meeting stile +2400 Pa (+50.13 psf) -2400 Pa (-50.13 psf)	25.0 mm (0.99") 19.8 mm (0.78")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 Permanent sets taken at the fixed meeting stile +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	4.0 mm (0.16") 0.8 mm (0.03")	4.3 mm (0.17") max. 4.3 mm (0.17") max.	5, 6

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.



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 ARCHITECTURAL TESTING, INC.

Joseph E. Allison
Senior Technician

Lynn George
Director – Regional Operations

JEA:sld

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Alteration Addendum (1)

Appendix-B: Location of Air Seal (1)

Appendix-C: Drawing(s) (2) Complete drawings packet on file with Intertek-ATI.



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Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
1	08/31/15	Page 4	Corected reinforcement drawing numbers



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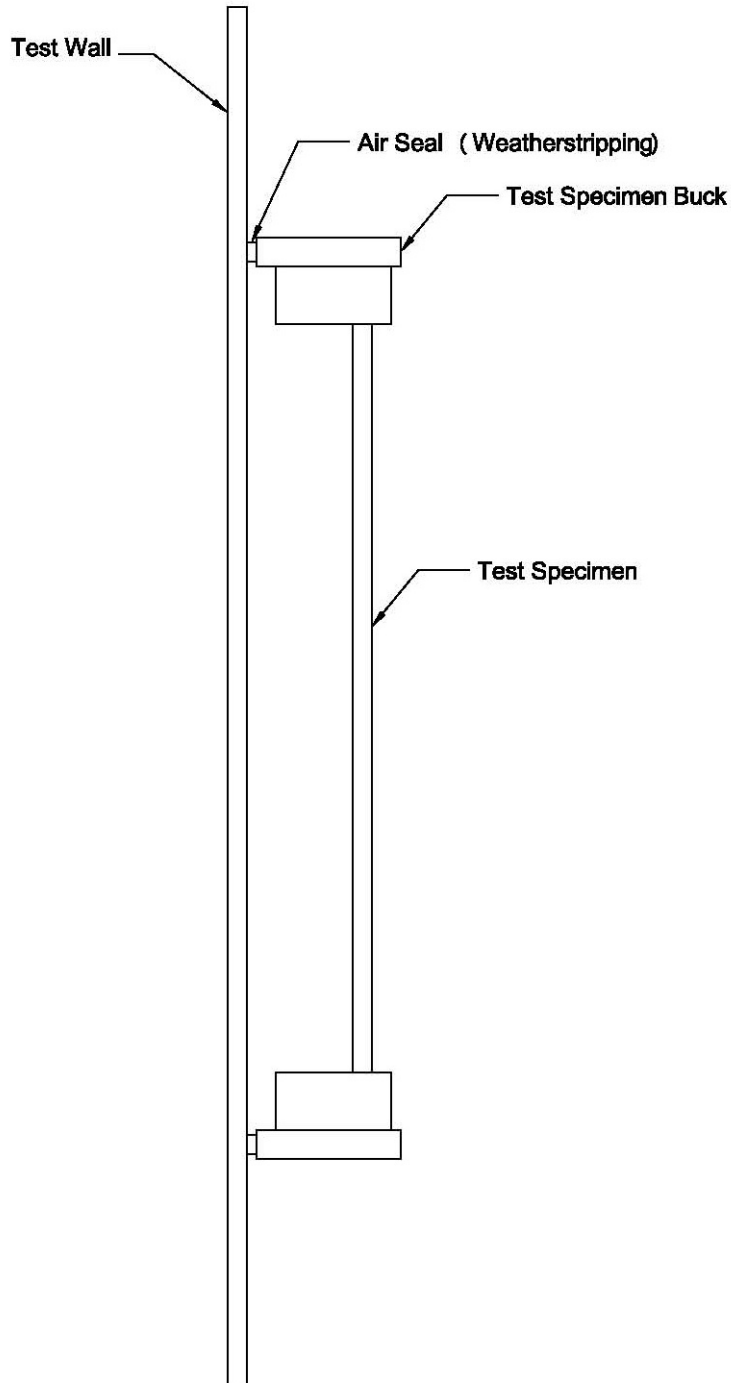
Appendix A

Alteration Addendum

Note: *No alterations were required.*

Appendix B

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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Appendix C

Drawing(s)

Note: Complete drawings packet on file with Intertek-ATI

