

TEST REPORT

Report No. A7802.01-501-47

Rendered to:

VEKA INC. Fombell, Pennsylvania

PRODUCT TYPE: PVC Horizontally Sliding Window, Type XO **SERIES/MODEL**: SS93WW

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

	Summary of Results			
Title	Test Specimen #1 Vertical Reinforcement	Test Specimen #2 Full Reinforcement		
Primary Product Designator	Class R-PG45 1930 x 1371 (76 x 54) - HS	Class R-PG45 1930 x 1371 (76 x 54) - HS		
Design Pressure	+2160 Pa (+45.11 psf)	+2160 Pa (+45.11 psf)		
Negative Design Pressure	-2400 Pa (-50.13 psf)	-3120 Pa (-65.16.13 psf)		
Air Infiltration	0.5 L/s/m ² (0.09 cfm/ft ²)	N/A		
Water Penetration Resistance Test Pressure	330 Pa (6.90 psf)	N/A		

Test Completion Date: 02/16/2011

Reference must be made to Report No. A7797.01-501-47, dated 02/22/11 for complete test specimen description and detailed test results.

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1.0 Report Issued To: Veka Inc.

100 Veka Drive

Fombell, Pennsylvania 16123-025

2.0 Test Laboratory: Architectural Testing, Inc.

1140 Lincoln Avenue

Springdale, Pennsylvania 15144

724-275-7100

3.0 Project Summary:

Architectural Testing

3.1 Product Type: PVC Horizontal Sliding Window, Type XO

3.2 Series/Model: SS93WW

Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). The specimens tested successfully met the performance requirements for the following ratings: Test Specimen #1: Class R-PG45 1930 x 1371 (76 x 54) - HS; Test Specimen #2: Class R-PG45 1930 x 1371 (76 x 54) - HS.

- **3.3 Test Dates**: 02/15/2011 02/16/2011
- **3.4 Test Location**: Veka Inc. test facility in Fombell, Pennsylvania. Calibration of test equipment was performed by Architectural Testing in accordance with AAMA 205-01 "In-Plant Testing Guidelines for Manufacturers and Independent Laboratories".
- **3.5 Test Sample Source**: The test specimens were provided by the client. Representative samples of the test specimen(s) will be retained by Architectural Testing for a minimum of four years from the test completion date.
- **3.6 Drawing Reference**: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen(s) 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.

3.7 List of Official Observers:

Name Company

Value Inc.

Doug Merry Veka Inc. Cornell Charles Veka Inc.

Joseph Allison Architectural Testing, Inc.



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4.0 Test Specification(s):

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:

Test Specimen #1:

rest specimen # 2.					
Overall Area:	Width		Height		
2.6 m ² (28.5 ft ²)	millimeters	inches	millimeters	inches	
Overall size	1930	76	1371	54	
Sash size	975	38-3/8	1295	51	
Screen size	930	36-5/8	1311	51-5/8	

Test Specimen #2:

rest specimen #2.					
Overall Area:	Width		Width Height		
2.6 m ² (28.5 ft ²)	millimeters	inches	millimeters	inches	
Overall size	1930	76	1371	54	
Sash size	975	38-3/8	1295	51	
Screen size	930	36-5/8	1311	51-5/8	

The following descriptions apply to all specimens.

5.2 Frame Construction:

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

r #8 x 2" truss head screws,



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5.0 Test Specimen Description: (Continued)

5.3 Sash Construction:

Sash Member	Material	Description
All rails and	PVC	Extruded
stiles	1 7 C	Extruded

	Joinery Type	Detail
All corners	Mitered	Thermally welded

5.4 Weatherstripping:

Description	Quantity	Location
0.187" x 0.270" center fin pile	3 Rows	Bottom rail, jamb stile
0.187" x 0.270" center fin pile	2 Rows	Fixed meeting stile
0.187" x 0.270" center fin pile	1 Row	Frame perimeter, lock stile, top rail

5.5 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Rectangular shaped steel, single sealed	1/8" annealed	1/8" annealed	The sash and fixed lite were exterior glazed. The glass was set against a double-sided adhesive tape and secured with rigid vinyl glazing beads.

Location	Quantity	Dayligh	Glass Bite	
Location	Quantity	millimeters	inches	Glass Bite
Sash	1	876 x 1197	34-1/2 x 47-1/8	5/8"
Fixed lite	1	876 x 1273	34-1/2 x 50-1/8	5/8"



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5.0 Test Specimen Description: (Continued)

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weepslot with cover	1-5/16" by 5/16"	2	Exterior sill face, one 3-1/2" in from each end.
Weepslot with open cell foam baffle	1" by 1/4"	2	Interior sill track, one at each end.
Weepslot	1" by 1/4"	2	Sill intermediate wall, one at each end

5.7 Hardware:

Description	Quantity	Location
Metal cam lock and keeper	2	Lock stile, one 8" in from each end with corresponding metal keeper on the fixed meeting stile.
Dual metal rollers with plastic housing	2	Bottom rail, one at each end

5.8 Reinforcement:

Drawing Number	Location	Material
RF SE9346 AOM	Lock stile (Specimen #1 and #2)	Extruded aluminum
RF SH9304 AOM	Fixed meeting stile (Specimen #1 and #2)	Extruded aluminum
RF SE9345 AOM	Jamb stile (Specimen #1 and #2)	Extruded aluminum
RF SE9345 AOM	Top rail, bottom rail (Specimen #2 only)	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



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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 exterior perimeter of the window was sealed with sealant. The sill was set onto a bed of silicone sealant.

Test Specimen #1:

Location	Anchor Description	Anchor Location
Head, sill #8 x 2" truss head screws		5 each, evenly spaced and beginning 5" in
ricau, siii	WOXZ cruss fiedu serews	from each end.
Iambs	#8 x 2" truss head screws	3 per jamb, located 5" in from each end
Jailius	#0 x Z ti uss ileau screws	and at midspan.

Test Specimen #2:

i cot opecime			
Location	Anchor Description	Anchor Location	
Head, sill	#8 x 2" truss head screws	5 per head / sill, located 5" from each end and then evenly spaced. Two additional screws per head / sill located 6" from each side of midspan. (7 total)	
Jambs	#8 x 2" truss head screws	3 per jamb, located 5" in from each end and at midspan.	



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

Test Specimen #1:

1 est Specimen #1:			
Title of Test	Results	Allowed	Note
	Initiate motion:		
	89 N (20 lbf)	Report Only	
	Maintain motion:		
Operating Force,	58 N (13 lbf)	90 N (20 lbf) max.	
per ASTM E 2068	Latches:		
	N/A	100 N (22.5 lbf) max.	
	Locks:		
	22 N (5 lbf)	100 N (22.5 lbf) max.	
Air Leakage,	, ,	-	
Infiltration per ASTM E 283	0.5 L/s/m ²	1.5 L/s/m ²	
at 75 Pa (1.6 psf)	(0.09 cfm/ft^2)	$(0.3 \text{ cfm/ft}^2) \text{ max.}$	1
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	Daga	Moote on state	
Operating direction,	Pass	Meets as stated	
320 N (72 lbf)			
Remaining direction,	Pass	Meets as stated	
230 N (52 lbf)	F d S S	meets as stated	



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7.0 Test Results: (Continued)

Test Specimen #1: (Continued)

rest specimen #1. (Continued)				
Title of Test	Results	Allowed	Note	
Optional Performance				
Water Penetration,				
per ASTM E 547 at 330 Pa				
(6.90 psf)	Pass	No leakage	2	
Uniform Load Deflection,				
per ASTM E 330				
taken at the fixed meeting stile				
+2400 Pa (+50.13 psf)	6.8 mm (0.27")			
-2400 Pa (-50.13 psf)	6.3 mm (0.25")	Report Only	4, 5, 6	
Uniform Load Structural,				
per ASTM E 330				
taken at the fixed meeting stile				
+3600 Pa (+75.19 psf)	0.3 mm (0.01")	4.6 mm (0.18") max.		
-3600 Pa (-75.19 psf)	0.3 mm (0.01")	4.6 mm (0.18") max.	5, 6	

Test Specimen #2:

rest openimen was				
Title of Test	Results	Allowed	Note	
Optional Performance				
Uniform Load Deflection,				
per ASTM E 330				
taken at the fixed meeting stile				
+3120 Pa (+65.16 psf)	9.05 mm (0.36")			
-3120 Pa (-65.16psf)	8.5 mm (0.34")	Report Only	4, 5, 6	
Uniform Load Structural,				
per ASTM E 330				
taken at the fixed meeting stile				
+4680 Pa (+97.74 psf)	0.5 mm (0.02")	5.3 mm (0.21") max.		
-4680 Pa (-97.74 psf)	0.5 mm (0.02")	5.3 mm (0.21") max.	5, 6	



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7.0 Test Results: (Continued)

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.



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The service life of this report will expire on the stated Test Record Retention End Date, at which time such materials as drawings, data sheets, samples of test specimens, copies of this report, and any other pertinent project documentation, shall be discarded without notice.

If test specimen contains glazing, no conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made. 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.

I D AN

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: Drawings (11)

This report produced from controlled document template ATI 00438, issued 12/28/10.



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Appendix A

Alteration Addendum

Note: No alterations were required.

Architectural Testing



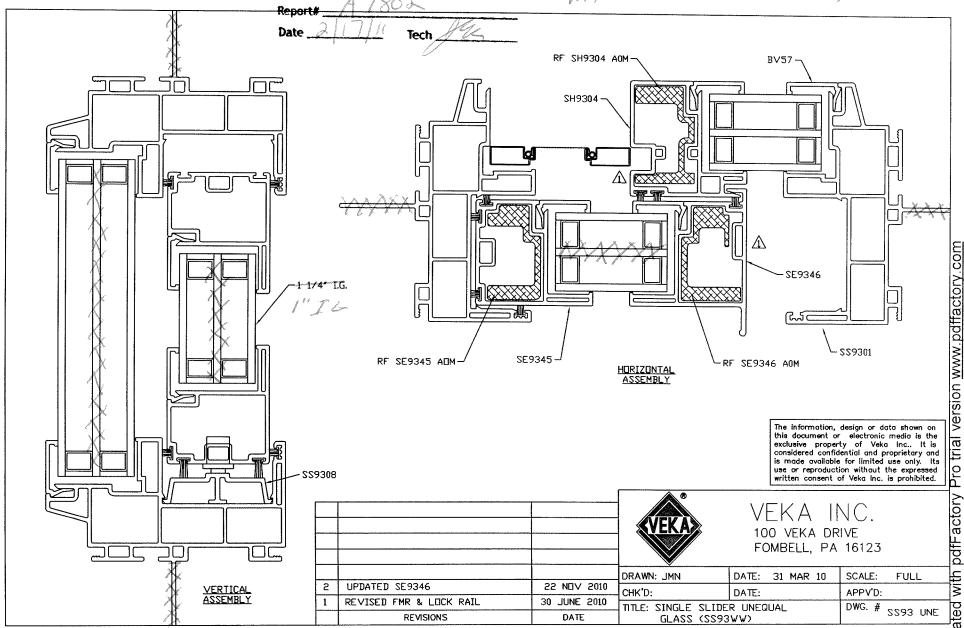
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Appendix B

Drawings



With votical reinforcement only



PDF created



Test sample complies with these details. Deviations are noted. With Foll Reintviement RF SH9304 A0M BV57 SH9304 SE9346 sion www.pdffactory -1 1/4" I.G. \$\$9301 SE9345 └RF SE9346 AOM RF SE9345 ADM HORIZONTAL **ASSEMBLY** The infarmation, design or data shown on this document or electronic media is the exclusive property of Veka Inc.. It is cansidered confidential and proprietary and is made available for limited use only. Its Pro. use or reproduction without the expressed written consent of Veka Inc. is prohibited. 808625 pdfFactory VEKA INC. 100 VEKA DRIVE FOMBELL, PA 16123 with DRAWN: JMN DATE: 31 MAR 10 SCALE: FULL UPDATED SE9346 22 NOV 2010 VERTICAL ASSEMBLY

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REVISIONS

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TITLE: SINGLE SLIDER UNEQUAL

GLASS (SS93WW)

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