

**ANSI/AAMA/NWDA 101/I.S.2-97
TEST REPORT**

Rendered to:

MASTER WINDOW SYSTEMS, INC.

**SERIES/MODEL: Master 1000 Sliding Window
PRODUCT: PVC Horizontal Sliding Window**

Title	Summary of Results		
	Test Specimen #1	Test Specimen #2	Test Specimen #3
Specimen Configuration	XO	XOX 1/3, 1/3, 1/3	XOX 1/4, 1/2, 1/4
Rating	HS-R30 69 x 48	HS-R20 104 x 48	HS-R25 104 x 48
Operating Force	N/A	N/A	N/A
Air Infiltration	N/A	N/A	N/A
Water Resistance Test Pressure	N/A	N/A	N/A
Uniform Load Deflection Test Pressure	±35.0 psf	±20.0 psf	±25.0 psf
Uniform Load Structural Test Pressure	±52.5 psf	±30.0 psf	±37.5 psf
Forced Entry Resistance	N/A	N/A	N/A

Reference should be made to ATI Report No. 68612.02-501-47 for complete test specimen description and data.

ANSI/AAMA/NWWDA 101/I.S.2-97 TEST REPORT

Rendered to:

MASTER WINDOW SYSTEMS, INC.
2060 DeFoor Hills Road, N.W.
Atlanta, Georgia 30318

Report No.: 68612.02-501-47
Test Dates: 10/19/06
And: 11/01/06
Report Date: 09/13/07
Expiration Date: 09/26/09

Project Summary: Architectural Testing, Inc. (ATI) was contracted by Veka, Inc. to witness testing on three Series/Model SS27WW, PVC horizontal sliding windows at their test facility located in Fombell, Pennsylvania. The samples tested successfully met the performance requirements for the following ratings: Test Specimen #1: HS-R30 69 x 48; Test Specimen #2: HS-R20 104 x 48; Test Specimen #3: HS-R25 104 x 48. This report is a reissue of the original Report No. 68612.01-501-47. This report is reissued in the name of Master Window Systems, Inc. through written authorization of Veka, Inc. Test specimen description and results are reported herein. Reference ATI Report Number 59931.01-501-47 for gateway performance test results.

Test Specification: The test specimens were evaluated in accordance with ANSI/AAMA/NWWDA 101/I.S.2-97, *Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors*.

Test Specimen Description:

Series/Model: Master 1000 Sliding Window

Product Type: Poly Vinyl Chloride (PVC) Horizontal Sliding Window

Test Specimen #1: HS-R30 69 x 48

Overall Size: 5' 9" wide by 4' 0" high

Operable Sash Size: 2' 10-1/4" wide by 3' 9-1/4" high

Fixed Daylight Opening Size: 2' 6-5/8" wide by 3' 6-3/4" high

Overall Area: 23.0 ft²

Test Specimen Description: (Continued)

Test Specimen #1: HS-R30 69 x 48 (Continued)

Installation: The unit was installed in a wood buck constructed of Spruce-Pine-Fir construction lumber and sealed at the exterior nail fin perimeter with a silicone sealant. The unit was secured to the buck through the nail fin with #8 x 1-1/4" long dry wall screws, spaced approximately 9" on center. A nominal 1/8" space was maintained at the perimeter between the buck and window frame.

Test Specimen #2: HS-R20 104 x 48

Overall Size: 8' 8" wide by 4' 0" high

Operable Sash Size (2): 2' 10-1/4" wide by 3' 9-1/4" high

Fixed Daylight Opening Size: 2' 7-3/4" wide by 3' 6-3/4" high

Overall Area: 34.7 ft²

Installation: The unit was installed in a wood buck constructed of Spruce-Pine-Fir construction lumber and sealed at the exterior nail fin perimeter with a silicone sealant. The unit was secured to the buck through the nail fin with #8 x 1-1/4" long dry wall screws, spaced approximately 4-1/2" on center. A nominal 1/8" space was maintained at the perimeter between the buck and window frame.

Test Specimen #3: HS-R25 104 x 48

Overall Size: 8' 8" wide by 4' 0" high

Operable Sash Size (2): 2' 2" wide by 3' 9-1/4" high

Fixed Daylight Opening Size: 4' 0-3/4" wide by 3' 6-3/4" high

Overall Area: 34.7 ft²

Installation: The unit was installed in a wood buck constructed of Spruce-Pine-Fir construction lumber and sealed at the exterior nail fin perimeter with a silicone sealant. The unit was secured to the buck through the nail fin with #8 x 1-1/4" long dry wall screws, spaced approximately 4-1/2" on center. A nominal 1/8" space was maintained at the perimeter between the buck and window frame.

Test Specimen Description: (Continued)

The following descriptions apply to all specimens.

Finish: All vinyl was white.

Glazing Details: The sash was exterior and the fixed lite was interior glazed with 3/4" thick, sealed insulating glass, fabricated from two sheets of 3/32" (1/8" in fixed lite of 1/4, 1/2, 1/4 unit) clear annealed glass and a butyl spacer material with stainless steel substrate, single sealed. Each insulating glass unit was set against a double-sided adhesive tape and secured with rigid vinyl glazing beads.

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
0.187" backed by 0.260" high pile with center fin	2 Rows	Top and bottom rails
0.187" backed by 0.260" high pile with center fin	1 Row	Jamb stile, lock stile
0.187" backed by 0.280" high pile with center fin	1 Row	Head, sill, jambs

Frame Construction: The PVC frame was constructed using mitered and welded corner construction. The fixed meeting stile was coped and fastened through the head and sill with two #8 x 3" long screws per end. A rigid PVC roller track was applied to the sill.

Sash Construction: The PVC sash was assembled using mitered and welded corner construction.

Screen Construction: The screen was constructed from formed aluminum. The corners were square-cut and secured with plastic corner keys. Fiber mesh screen cloth was held-in-place with a flexible spline.

Test Specimen Description: (Continued)

Drainage:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
1" wide by 1/4" high weepslot (with flap)	2	Exterior base of the sill, one at each end
1" wide by 1/4" high weepslot	2	Intermediate sill wall, one at each
1/2" long by track width weep notch	2	Sill roller track cut short at each end

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Metal cam lock and keeper	2 (4)	Lock stile, one 8" in from ends, with mating keeper on the fixed stile
Single metal roller with plastic housing	2 (4)	Bottom rail, one at each end

Reinforcement: The fixed meeting stile contained an extruded aluminum reinforcement measuring 1.000" by 0.924" by 0.125", reference Drawing No. RFSH204AOM. The lock stile, and handle stile contained an extruded aluminum reinforcement measuring 0.870" by 0.846" by 0.135", reference Drawing No. RFSE1347AOM.

Test Results:

The results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
<u>Test Specimen #1:</u> HS-R30 69 x 48			
<u>Optional Performance</u>			
2.1.4.1	Uniform Load Deflection per ASTM E 330 (Deflections reported were taken on the exterior meeting stile) (Loads were held for 10 seconds)		
	35.0 psf (positive)	0.41"	See Note #1
	35.0 psf (negative)	0.64"	See Note #1

Note #1: *The Uniform Load Deflection test is not a requirement of ANSI/AAMA/NWWDA 101/I.S.2-97 for this product designation. The deflection data is recorded in this report for special code compliance and information only.*

2.1.4.2	Uniform Load Structural per ASTM E 330 (Permanent sets reported were taken on the exterior meeting stile) (Loads were held for 10 seconds)		
	52.5 psf (positive)	0.17"	0.18" max.
	52.5 psf (negative)	0.18"	0.18" max.

Test Specimen #2: HS-R20 104 x 48

Optional Performance

2.1.4.1	Uniform Load Deflection per ASTM E 330 (Deflections reported were taken on the exterior meeting stile) (Loads were held for 10 seconds)		
	20.0 psf (positive)	0.22"	See Note #1
	20.0 psf (negative)	0.12"	See Note #1
2.1.4.2	Uniform Load Structural per ASTM E 330 (Permanent sets reported were taken on the exterior meeting stile) (Loads were held for 10 seconds)		
	30.0 psf (positive)	0.01"	0.178" max.
	30.0 psf (negative)	0.04"	0.178" max.

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
<u>Test Specimen #3:</u> HS-R25 104 x 48			
<u>Optional Performance</u>			
2.1.4.1	Uniform Load Deflection per ASTM E 330		
	(Deflections reported were taken on the exterior meeting stile)		
	(Loads were held for 10 seconds)		
	25.0 psf (positive)	0.35"	See Note #1
2.1.4.2	25.0 psf (negative)	0.39"	See Note #1
	Uniform Load Structural per ASTM E 330		
	(Permanent sets reported were taken on the exterior meeting stile)		
	(Loads were held for 10 seconds)		
	37.5 psf (positive)	0.01"	0.178" max.
	37.5 psf (negative)	0.02"	0.178" max.

This report is reissued in the name of Master Window Systems, Inc. through written authorization of Veka, Inc. to whom the original report was rendered. The original Veka, Inc. Report No. is 68612.01-501-47.

Detailed drawings, representative samples of the test specimen, and a copy of this report will be retained by Architectural Testing, Inc. for a period of four years from the original test date. The results herein were secured by using the designated test methods and they indicate compliance with the performance requirements of the referenced specification. This report does not constitute certification of this product, which may only be granted by the certification program administrator. This report may not be reproduced, except in full, without the approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.:

Lynn George
Project Manager

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Attachments (pages):
Appendix-A: Alteration Addendum (1)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	09/13/07	N/A	Original report issue - Reissue of Report No. 68612.01-501-47 in the name of Master Window Systems, Inc.

Appendix A

Alteration Addendum

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