

AAMA/WDMA/CSA TEST REPORT

Rendered to:

MASTER WINDOW SYSTEMS, INC.

SERIES/MODEL: Master 2000 Picture Window PRODUCT TYPE: PVC Fixed Window

	Summary of Results	
Title	Test Specimen #1	Test Specimen #2
Primary Product Designator	FW-C40 1829 x 1524	FW-C50* 1829 x 1219
Primary Product Designator	(72 x 60)	(72 x 48)
Design Pressure*	1920 Pa (40.0 psf)	2400 Pa (50.0 psf)
Negative Design Pressure*	1920 Pa (40.0 psf)	2400 Pa (50.0 psf)
Operating Force (in motion)	N/A	N/A
Air Infiltration	<0.1 L/s/m ² (<0.01 cfm/ft ²)	N/A
Canadian Air Infiltration/Exfiltration Level*	N/A	N/A
Water Penetration Resistance Test Pressure*	360 Pa (7.5 psf)	N/A
Uniform Load Structural Test Pressure	±2880 Pa (±60.0 psf)	±3600 Pa (±75.0 psf)
Forced Entry Resistance	Grade 10	N/A

*-Optional Secondary Designators

Test Completion Date: 10/20/06

Reference must be made to Report No. 68522.02-501-47, dated 09/13/07 for complete test specimen description and data.

130 Derry Court York, PA 17406-8405 phone: 717-764-7700 fax: 717-764-4129 www.archtest.com



AAMA/WDMA/CSA TEST REPORT

Rendered to:

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

Report No.:	68522.02-501-47
Test Dates:	10/18/06
Through:	10/20/06
Report Date:	09/13/07
Expiration Date:	10/20/10

Project Summary: Architectural Testing, Inc. (ATI) was contracted by Veka, Inc. to witness testing on two Series/Model PW30W, PVC fixed windows at their facility located in Fombell, Pennsylvania. The samples tested successfully met the performance requirements for the following ratings: Test Specimen #1: FW-C40 1829 x 1524 (72 x 60); Test Specimen #2: FW-C50* 1829 x 1219 (72 x 48). This report is a reissue of the original Report No. 68522.01-501-47. 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.

General Note: An asterisk (*) next to the performance grade indicates that the size tested for optional performance was smaller than the Gateway test size for the product type and class.

Test Specifications: The test specimens were evaluated in accordance with the following:

ANSI/AAMA/NWWDA 101/I.S.2-97, Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors.

AAMA/WDMA/CSA 101/I.S.2/A440-05, Standard/Specification for Windows, Doors, and Unit Skylights.

Test Specimen Description:

Series/Model: Master 2000 Picture Window

Product Type: Poly Vinyl Chloride (PVC) Fixed Window

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Test Specimen Description: (Continued)

Test Specimen #1: FW-C40 1829 x 1524 (72 x 60)

Overall Size: 1829 mm (72") wide by 1524 mm (60") high

Daylight Opening Size: 1734 mm (68-1/4") wide by 1429 mm (56-1/4") high

Overall Area: $2.8 \text{ m}^2 (30.0 \text{ ft}^2)$

Installation: The unit was installed in a wood buck constructed of Spruce-Pine-Fir construction lumber and sealed at the exterior and interior perimeter with a silicone sealant, with the exception of an approximate 150 mm (6") long void at each interior sill corner. The unit was secured through the frame to the buck with 16 #8 x 51 mm (2") long screws, five each at the head and sill, and three at each jamb, evenly spaced and beginning 150 mm (6") in from each end. A nominal 3 mm (1/8") gap was maintained at the perimeter between the buck and window frame.

Test Specimen #2: FW-C50* 1829 x 1219 (72 x 48)

Overall Size: 1829 mm (72") wide by 1219 mm (48") high

Daylight Opening Size: 1734 mm (68-1/4") wide by 1124 mm (44-1/4") high

Overall Area: $2.2 \text{ m}^2 (24.0 \text{ ft}^2)$

Installation: The unit was installed in a wood buck constructed of Spruce-Pine-Fir construction lumber and sealed at the exterior and interior perimeter with a silicone sealant, with the exception of an approximate 150 mm (6") long void at each interior sill corner. The unit was secured through the frame to the buck with 10 #8 x 51 mm (2") long screws, three each at the head and sill, and two at each jamb, evenly spaced and beginning 150 mm (6") in from each end. A nominal 3 mm (1/8") gap was maintained at the perimeter between the buck and window frame.

The following descriptions apply to all specimens.

Finish: All PVC was white.

Glazing Details: The unit was interior glazed with nominal 19 mm (3/4") thick, sealed insulating glass fabricated from two sheets of 3.0 mm (1/8") clear annealed glass and a butyl spacer material with stainless steel substrate, single sealed. The insulating glass was set against a double-sided adhesive tape and secured with rigid vinyl glazing beads.



Test Specimen Description: (Continued)

Frame Construction: The PVC frame was constructed using mitered and welded corner construction.

Drainage: No drainage utilized.

Reinforcement: No reinforcement utilized.

Test Results: The results are tabulated as follows:

<u>Paragraph</u>	Title of Test - Test Method	<u>Results</u>	Allowed	
<u>Test Specimen #1</u> : FW-C40 1829 x 1524 (72 x 60)				
2.1.2	Air Leakage Resistance per A	STM E 283 (See Note	#1)	
5.3.2	75 Pa (1.57 psf, 25 mph)	<0.1 L/s/m ² (<0.01 cfm/ft ²)	1.5 L/s/m^2 (0.30 cfm/ft ²) max.	

Note #1: The tested specimen meets (or exceeds) the performance levels specified in ANSI/AAMA/NWWDA 101/I.S.2-97, 101/I.S.2/NAFS-02, AAMA/WDMA/CSA 101/I.S. 2/A440-05 for air infiltration.

Water Resistance per ASTM E 547			
220 Pa (4.5 psf)	No leakage	No leakage	
Uniform Load Deflection per A	ASTM E 330		
(Deflections reported were taken on the head)			
(Loads were held for 10 seconds)			
1440 Pa (30.0 psf) (positive)	<0.3 mm (<0.01")	See Note #2	
1440 Pa (30.0 psf) (negative)	1.3 mm (0.05")	See Note #2	
	 Water Resistance per ASTM E 220 Pa (4.5 psf) Uniform Load Deflection per A (Deflections reported were take (Loads were held for 10 second 1440 Pa (30.0 psf) (positive) 1440 Pa (30.0 psf) (negative) 	Water Resistance per ASTM E 547220 Pa (4.5 psf)No leakageUniform Load Deflection per ASTM E 330(Deflections reported were taken on the head)(Loads were held for 10 seconds)1440 Pa (30.0 psf) (positive)<0.3 mm (<0.01")	

Note #2: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440-05 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		
5.3.4.3	(Permanent sets reported were taken on the head)		
	(Loads were held for 10 seconds)		
	2160 Pa (45.0 psf) (positive)	<0.3 mm (<0.01")	7.3 mm (0.29") max.
	2160 Pa (45.0 psf) (negative)	2.0 mm (0.08")	7.3 mm (0.29") max.



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Test Results: (Continued)

<u>Paragraph</u>	Title of Test - Test Method	Results	Allowed
<u>Test Specin</u>	nen #1: FW-C40 1829 x 1524 (72 x	60) (Continued)	
2.1.8 5.3.5	Forced Entry Resistance per AS Type: D	TM F 588 Grade: 10	
	Hand Tool Manipulation	No entry	No entry
5.3.6.2	Thermoplastic Corner Weld Test	Meets as stated	Meets as stated
Optional Per	rformance		
4.3 4.4.2.6	Water Resistance per ASTM E 5 360 Pa (7.5 psf)	547 No leakage	No leakage
4.4.1 4.4.2.6	Uniform Load Deflection per Al (Deflections reported were taken (Loads were held for 10 seconds	STM E 330 n on the head)	
	1920 Pa (40.0 psf) (positive) 1920 Pa (40.0 psf) (negative)	0.5 mm (0.02") 1.0 mm (0.04")	See Note #2 See Note #2
4.4.2 4.4.2.6	Uniform Load Structural per ASTM E 330 (Permanent sets reported were taken on the head) (Loads were held for 10 seconds) 2880 Ba (60.0 psf) (positive) = 0.5 mm (0.02") = 7.2 mm (0.20") m		
	2880 Pa (60.0 psf) (positive) 2880 Pa (60.0 psf) (negative)	0.8 mm (0.02")	7.3 mm (0.29") max.
Test Specin	<u>nen #2</u> : FW-C50* 1829 x 1219 (72 :	x 48)	
Optional Per	rformance		
4.4.1 4.4.2.6	Uniform Load Deflection per ASTM E 330 (Deflections reported were taken on the head) (Loads were held for 10 seconds)		
	2400 Pa (50.0 psf) (positive) 2400 Pa (50.0 psf) (negative)	0.5 mm (0.02") 3.0 mm (0.12")	See Note #2 See Note #2
4.4.2 4.4.2.6	Uniform Load Structural per ASTM E 330 (Permanent sets reported were taken on the head) (Loads were held for 10 seconds)		
	3600 Pa (75.0 psf) (positive) 3600 Pa (75.0 psf) (negative)	0.3 mm (0.01") 3.0 mm (0.10")	7.3 mm (0.29") max. 7.3 mm (0.29") max.



Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing, Inc. and match the test specimen reported herein.

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 68522.01-501-47.

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 above results were secured by using the designated test methods and they indicate compliance with the performance requirements of the above 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 Michael L. Mackereth Director - Operations

LG:jld

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



Revision Log

<u>Rev. #</u>	Date	Page(s)	Revision(s)
0 09/13/07 N/A	09/13/07	N/A	Original report issue - Reissue of Report
	No. 68522.01-501-47 in the name of		
			Master Window Systems, Inc.



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Appendix A

Alteration Addendum

Note: No alterations were required.