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

Rendered to:

ALSIDE WINDOW SYSTEMS

SERIES/MODEL: 0201
TYPE: PVC Double Hung Window

	Results			
Title of Test	**Test Specimen #1**	**Test Specimen #2**	**Test Specimen #3**	**Test Specimen #4**
Rating	H-LC30 48 x 78	H-LC35 44 x 77	H-LC45* 44 x 60	H-LC55* 36 x 72
Overall Design Pressure	30 psf	35 psf	45 psf	55 psf
Operating Force	28 lb max.	N/A	N/A	N/A
Air Infiltration	0.16 cfm/ft^2	N/A	N/A	N/A
Water Resistance	9.0 psf	N/A	N/A	N/A
Structural Test Pressure	±45.0 psf	±52.5 psf	±67.5 psf	±82.5 psf
Deglazing	Passed	N/A	N/A	N/A
Forced Entry Resistance	Passed	N/A	N/A	N/A

Reference should be made to Report No. 05-30324.04 dated 04/15/02 for complete test specimen description and data.

For ARCHITECTURAL TESTING, INC.

Lynn George

Digitally signed by Lynn George

Lynn George, Project Manager

LG:nlb

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

Rendered to:

ALSIDE WINDOW SYSTEMS
3773 State Road
Akron, Ohio 44309-1365

Report No: 05-30324.04
Test Dates: 01/10/02
And: 01/23/02
Report Date: 04/16/02
Expiration Date: 01/23/06

Project Summary: Architectural Testing, Inc. (ATI) was contracted to perform tests on four Series/Model DH6WW/SLOPE, PVC double hung windows at the Veka, Inc. facility in Fombell, Pennsylvania. The samples tested, successfully met the performance requirements for the following ratings: Test Specimen #1: H-LC30 48 x 78; Test Specimen #2: H-LC35 44 x 77; Test Specimen #3: H-LC45* 44 x 60, and Test Specimen #4: H-LC55* 36 x 72. 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 minimum test size for the product type and class.*

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

Test Specimen Description:

Series/Model: 0201

Type: Poly Vinyl Chloride (PVC) Double Hung Window

Test Specimen #1: H-LC30 48 x 78

Overall Size: 4' 0" wide by 6' 6" high

Top Sash Size: 3' 8-5/8" wide by 3' 1-3/8" high

Bottom Sash Size: 3' 9-5/8" wide by 3' 2-3/8" high

Screen Size: 3' 8-5/16" wide by 3' 2-11/16" high

130 Derry Court
York, PA 17402-9405
phone: 717.764.7700
fax: 717.764.4129
www.archtest.com

Test Specimen Description: (Continued)

Test Specimen #2: H-LC35 44 x 77

Overall Size: 3' 8" wide by 6' 5" high

Top Sash Size: 3' 4-5/8" wide by 3' 0-7/8" high

Bottom Sash Size: 3' 5-5/8" wide by 3' 1-7/8" high

Test Specimen #3: H-LC45* 44 x 60

Overall Size: 3' 8" wide by 5' 0" high

Top Sash Size: 3' 4-5/8" wide by 2' 4-1/4" high

Bottom Sash Size: 3' 5-5/8" wide by 2' 5-5/16" high

Test Specimen #4: H-LC55* 36 x 72

Overall Size: 3' 0" wide by 6' 0" high

Top Sash Size: 2' 8-3/4" wide by 2' 10-3/8" high

Bottom Sash Size: 2' 9-3/4" wide by 2' 11-3/8" high

The following descriptions apply to all specimens.

Finish: All vinyl was white.

Glazing Details: The sash were exterior glazed with 13/16" thick sealed insulating glass fabricated from two sheets of 1/8" clear annealed glass and a metal spacer system. The insulating glass was set onto a double-sided adhesive tape and secured with rigid vinyl glazing beads.

Frame Construction: The PVC frame was constructed using mitered and welded corner construction. A rigid PVC adapter was applied to the head.

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

Screen Construction: The screen was constructed from extruded aluminum. The corners were miter cut and secured with corner keys. Fiberglass mesh screen cloth was held-in-place with a flexible spline.

Test Specimen Description: (Continued)

Weatherstripping:

Description	Quantity	Location
0.187" backed by 0.200" high pile with center fin	1 Row	Lock rail
0.187" backed by 0.260" high pile with center fin	1 Row	Head insert, sill, top rail
0.187" backed by 0.260" high pile with center fin	2 Rows	Sash stiles
0.187" backed by 0.350" high pile with center fin	1 Row	Exterior meeting rail (exterior)
0.187" backed by 0.550" high vinyl jacket/foam filled bulb	1 Row	Exterior meeting rail (interior)
0.187" backed by 0.300" diameter, offset vinyl jacket/foam filled bulb	1 Row	Bottom rail
1" by 1/2" x 0.250" high adhesive backed pile pad	4	Meeting rails, one at each end

Hardware:

Description	Quantity	Location
Metal cam lock and keeper	2	Lock rail, 8-1/2" from each end
Constant force balance system with locking tilt shoe	4	Two per jamb
Plastic spring-loaded tilt latch	4	Top corners of sash
Die cast sash tilt pin	4	Bottom corners of sash
PVC sash stop	4	Jambs, one at each end

Test Specimen Description: (Continued)

Drainage:

Description	Quantity	Location
7/8" wide by 3/16" high weepslot	2	One 2-1/4" from each end of the exterior sill face (with flaps), one at each end of the center sill wall
3/4" wide by 3/16" high weepslot	2	Sill screen track, one at each end
1-1/4" wide by 1/2" deep weepslot	2	Sill, one at each end of the interior jamb track
3/8" wide by 1/8" deep weepslot	4	Bottom sash rail and exterior meeting rail, one at each end

Reinforcement: The lock rail contained a rectangular shaped, formed steel reinforcement measuring 0.649" x 0.461" x 0.047" (reference drawing #2707). The exterior meeting rail and sash stiles contained a "U" shaped steel reinforcement measuring 0.781" x 0.400" x 0.047" (reference drawing # 2709).

Installation: The unit was installed in a wood buck constructed of Spruce-Pine-Fir construction lumber and sealed at the exterior perimeter with a silicone sealant. A 3/4" x 3/4" wood stop was applied to the interior and exterior perimeter and secured with 2" drywall screws spaced approximately 16" o.c.

Test Results:

The results are tabulated as follows:

Paragraph	Title of Test - Test Method	Results	Allowed
Test Specimen #1: H-LC30 48 x 78			
2.2.1.6.1	Operating Force	28 lbs	35 lbs max.
2.1.2	Air Infiltration per ASTM E 283 @ 1.57 psf (25 mph)	0.16 cfm/ft^2	0.3 cfm/ft^2 max.
2.1.3	Water Resistance per ASTM E 547 (with and without screen) WTP = 3.75 psf	No leakage	No leakage
2.1.4.2	Uniform Load Structural per ASTM E 330 (Measurements reported were taken on the exterior meeting rail)		
	@ 37.5 psf (positive)	0.03"	0.179" max.
	@ 37.5 psf (negative)	0.03"	0.179" max.
2.2.1.6.2	Deglazing Test per ASTM E 987		
	Top Sash		
	In operating direction at 70 lbs		
	Lift Rail	0.060"/12%	0.500"/100%
	Meeting Rail	0.060"/12%	0.500"/100%
	In remaining direction at 50 lbs		
	Left Stile	0.060"/12%	0.500"/100%
	Right Stile	0.030"/6%	0.500"/100%
	Bottom Sash		
	In operating direction at 70 lbs		
	Lift Rail	0.060"/12%	0.500"/100%
	Meeting Rail	0.060"/12%	0.500"/100%
	In remaining direction at 50 lbs		
	Left Stile	0.030"/6%	0.500"/100%
	Right Stile	0.030"/6%	0.500"/100%

Test Results:

Paragraph	Title of Test - Test Method	Results	Allowed
Test Specimen #1: H-LC30 48 x 78 (Continued)			
2.1.7	Welded Corner Test	Meets as stated	Meets as stated
2.1.8	Forced Entry Resistance per AAMA 1302.5-76		
	Tests A through G	No entry	No entry
Optional Performance			
4.3	Water Resistance per ASTM E 547 (with and without screen)		
	WTP = 9.0 psf	No leakage	No leakage
4.4.2	Uniform Load Structural per ASTM E 330 (Measurements reported were taken on the exterior meeting rail)		
	@ 45.0 psf (positive)	0.04"	0.179" max.
	@ 45.0 psf (negative)	0.06"	0.179" max.
Test Specimen #2: H-LC35 44 x 77			
Optional Performance:			
4.4.2	Uniform Load Structural per ASTM E 330 (Measurements reported were taken on the exterior meeting rail)		
	@ 52.5 psf (positive)	0.03"	0.163" max.
	@ 52.5 psf (negative)	0.03"	0.163" max.
Test Specimen #3: H-LC45* 44 x 60			
Optional Performance:			
4.4.2	Uniform Load Structural per ASTM E 330 (Measurements reported were taken on the exterior meeting rail)		
	@ 67.5 psf (positive)	0.02"	0.163" max.
	@ 67.5 psf (negative)	0.04"	0.163" max.

Test Results: (Continued)

Paragraph	Title of Test - Test Method	Results	Allowed
	Test Specimen #4: H-LC55* 36 x 72		
	Optional Performance:		
4.4.2	Uniform Load Structural per ASTM E 330		
	(Measurements reported were taken on the exterior meeting rail)		
	@ 82.5 psf (positive)	0.06"	0.131" max.
	@ 82.5 psf (negative)	0.02"	0.131" max.

This report is reissued in the name of Alside Window Systems through written authorization of Veka, Inc. to whom the original report was rendered. The original Veka, Inc. Report No. is 05-30324.01.

Detailed drawings, representative samples of the test specimen, and a copy of this report will be retained by ATI for a period of four years. 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.

For ARCHITECTURAL TESTING, INC:

Digitally signed by Lynn George

Lynn George
Project Manager

Michael L. Mackereth
Director - Operations

LG:nlb
05-30324.04

DOCUMENT CONTROL ADDENDUM #05-30324.00

Current Issue Date: 04/16/02

Report No.: 05-30324.01

Requested by: Doug Merry, Veka, Inc.
Purpose: AAMA/NWWDA 101/I.S.2-97 testing of four Series/Model DH6WW/Slope, PVC double hung windows.
Issued Date: 02/15/02
Comments:

Report No.: 05-30324.02

Requested by: Doug Merry, Veka, Inc.
Purpose: Reissue Report No. 05-30324.01 in the name of Alside Window Systems.
Issued Date: 02/28/02
Comments: Certification copy to John Smith at Associated Laboratories, Inc.

Report No.: 05-30324.03

Requested by: Doug Merry, Veka, Inc.
Purpose: Revise Report No. 05-30324.01.
Issued Date: 04/16/02
Comments: Page one of report, change Test Specimen Description Type from "Single Hung" to "Double Hung".

Report No.: 05-30324.04

Requested by: Doug Merry, Veka, Inc.
Purpose: Revise Report No. 05-30324.02.
Issued Date: 04/16/02
Comments: Page one of report, change Test Specimen Description Type from "Single Hung" to "Double Hung".
Certification copy to John Smith at Associated Laboratories. Inc.