



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

**Rendered to:**

**ALSIDE WINDOW SYSTEMS**

**SERIES/MODEL: 0301/S301/E301  
TYPE: PVC Double Hung Window**

<b>Results</b>				
<b>Title of Test</b>	<b>Test Specimen #1</b>	<b>Test Specimen #2</b>	<b>Test Specimen #3</b>	<b>Test Specimen #4</b>
Rating	H-LC25 48 x 77	H-LC30 44 x 77	H-LC35* 44 x 60	H-LC50* 36 x 72
Overall Design Pressure	25 psf	30 psf	35 psf	50 psf
Operating Force	27 lb max.	N/A	N/A	N/A
Air Infiltration	0.15 cfm/ft <sup>2</sup>	N/A	N/A	N/A
Water Resistance	8.25 psf	N/A	N/A	N/A
Structural Test Pressure	37.5 psf	45.0 psf	52.5 psf	75.0 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. 05-30323.04 dated 04/15/02 for complete test specimen description and data.

For ARCHITECTURAL TESTING, INC.

Digitally signed by Lynn George

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Lynn George, Project Manager

LG:nlb



Architectural Testing

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

Rendered to:

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

Report No: 05-30323.04  
Test Dates: 01/09/02  
And: 01/23/02  
Report Date: 04/15/02  
Expiration Date: 01/23/06

**Project Summary:** Architectural Testing, Inc. (ATI) was contracted to perform tests on four Series/Model DH22WW/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-LC25 48 x 77; Test Specimen #2: H-LC30 44 x 77; Test Specimen #3: H-LC35\* 44 x 60; and Test Specimen #4: H-LC50\* 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:** 0301/S301/E301

**Type:** Poly Vinyl Chloride (PVC) Double Hung Window

**Test Specimen #1:** H-LC25 48 x 77

**Overall Size:** 4' 0" wide by 6' 5" high

**Top Sash Size:** 3' 8-5/8" wide by 3' 0-13/16" high

**Bottom Sash Size:** 3' 9-5/8" wide by 3' 1-13/16" high

**Screen Size:** 3' 8-1/2" wide by 3' 2-1/4" 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-LC30 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-LC35\* 44 x 60

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

**Top Sash Size:** 3' 4-5/8" wide by 2' 4-5/16" high

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

**Test Specimen #4:** H-LC50\* 36 x 72

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

**Top Sash Size:** 2' 8-5/8" wide by 2' 10-3/8" high

**Bottom Sash Size:** 2' 9-5/8" wide by 2' 11-3/8" high

*The following descriptions apply to all specimens.*

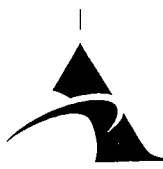
**Finish:** All vinyl was white.

**Glazing Details:** The sash were exterior glazed with 3/4" thick sealed insulating glass fabricated from two sheets of 3/32" 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:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
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:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
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:**

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
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 1/8" high weepslot	2	Sill screen track, one at each end
1-1/4" wide by 5/8" 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 secured through the nail fin with 1" long drywall screws spaced approximately 18" o.c. and sealed with a silicone sealant. A 3/4" x 3/4" wood stop was applied to the interior perimeter and secured with 2" drywall screws spaced approximately 18" o.c. A 1-1/2" x 3/4" wood stop was applied to the exterior perimeter and secured with 2" drywall screws spaced approximately 18" o.c.



**Test Results:**

The results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
<b><u>Test Specimen #1:</u> H-LC25 48 x 77</b>			
2.2.1.6.1	Operating Force	27 lbs	35 lbs max.
2.1.2	Air Infiltration per ASTM E 283 @ 1.57 psf (25 mph)	0.15 cfm/ft <sup>2</sup>	0.3 cfm/ft <sup>2</sup> 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) @ 37.5 psf (negative)	0.14" 0.07"	0.179" max. 0.179" max.
2.2.1.6.2	Deglazing Test per ASTM E 987		
	<u>Top Sash</u>		
	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%
	<u>Bottom Sash</u>		
	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:**

<u>Paragraph</u>	<u>Title of Test - Test Method</u>	<u>Results</u>	<u>Allowed</u>
<b><u>Test Specimen #1:</u></b> H-LC25 48 x 77 (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 = 8.25 psf	No leakage	No leakage
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**Test Specimen #2:** H-LC30 44 x 77

Optional Performance:

4.4.2	Uniform Load Structural per ASTM E 330 (Measurements reported were taken on the exterior meeting rail)		
	@ 45.0 psf (positive)	0.02"	0.163" max.
	@ 45.0 psf (negative)	0.04"	0.163" max.

**Test Specimen #3:** H-LC35\* 44 x 60

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)	0.02"	0.163" max.
	@ 52.5 psf (negative)	0.04"	0.163" max.

**Test Specimen #4:** H-LC50\* 36 x 72

Optional Performance:

4.4.2	Uniform Load Structural per ASTM E 330 (Measurements reported were taken on the exterior meeting rail)		
	@ 75.0 psf (positive)	0.02"	0.131" max.
	@ 75.0 psf (negative)	0.04"	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 05-30323.01.

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

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Lynn George  
Project Manager

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Michael L. Mackereth  
Director - Operations

LG:nlb  
05-30323.04