

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

Rendered to:

EAGLE WINDOW & DOOR, INC.

**Series/Model: 4060 E-Tilt Aluminum Clad Double Hung
Type: Aluminum Clad Double Hung Tilt Wood Window**

Title of Test	Results
AAMA Rating	H-LC45 48 x 72*
Uniform Load Deflection Test Pressure	47.0 psf
Operating Force	17 lb max.
Air Infiltration	< 0.01 cfm/ft ²
Water Resistance Test Pressure	7.05 psf
Uniform Load Structural Test Pressure	± 70.5 psf
Deglazing	Passed
Forced Entry Resistance	Grade 10

Reference should be made to full report for test specimen description and data.

Report No: 02-34252.01
Report Date: 06/28/02
Expiration Date: 06/20/06

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

Rendered to:

EAGLE WINDOW & DOOR, INC.
2045 Kerper Boulevard
Dubuque, Iowa 52004-1072

Report No: 02-34252.01
Test Date: 06/20/02
Report Date: 06/28/02
Expiration Date: 06/20/06

Project Summary: Architectural Testing, Inc. (ATI) was contracted by Eagle Window & Door to perform testing on a 4060 E-Tilt Aluminum Clad Double Hung Window. The sample tested successfully met the performance requirements for a H-LC45 48 x 72* rating. Test specimen description and results are reported herein. The unit was additionally tested to the performance requirements for a DP 47 rating, with passing results.

*See ATI report 02-34254.01 for Gateway performance requirements conducted on a unit of identical construction size 44 x 78.

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

Test Specimen Description:

Series/Model: 4060 E-Tilt Aluminum Clad Double Hung

Type: Aluminum Clad Double Hung Tilt Wood Window

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

Top Sash Size: 3' 8-1/8" wide by 2' 11" high

Bottom Sash Size: 3' 8-1/8" wide by 2' 10-7/8" high

Screen Size: 3' 9" wide by 5' 9-5/8" high

Overall Size: 24 ft²

Finish: Exterior cladding was painted white, interior wood was natural.

Glazing Type: The sashes were glazed with nominal 5/8" insulating glass comprised of two nominal 2.3 mm annealed sheets separated by a desiccant-filled metal spacer system. The glass was set from the interior against butyl sealant and silicone with wood glazing beads set on the interior, secured with nails spaced 6" to 8" on center.

Test Specimen Description (Continued)

Frame Construction: Head frame corners were coped, butted, sealed with silicone, and secured with three 7/16" by 1-3/4" long staples per corner. Sill frame corners were coped, butted, sealed with silicone, and secured with two #8 by 2-1/2" screws. Aluminum cladding was slip-fit over wood members.

Sash Construction: Sash corners were mortise-and-tenon construction and secured with glue and one 3/16" by 1-1/2" staple per corner. Aluminum cladding was slip-fit over wood members.

Screen Construction: The screen was comprised of roll-formed aluminum with plastic corner keys. Fiberglass screen cloth was attached with a vinyl spline.

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Foam-filled bulb	1 Row	Bottom sash, bottom rail, head parting stop and interior of jamb liners bottom half
Soft vinyl flap	1 Row	Meeting rail
Open-cell foam pad	2	One per jamb liner bottom corner in the balance track
Wool pile pad	2	Jamb liners at meeting rail
Closed-cell foam pad	4	Top and bottom of each jamb liner

Hardware:

Vinyl jamb liner with block-and-tackle balance	2	One per jamb
Metal tilt pins	4	Each sash bottom corner
Metal tilt latch	4	Each sash top corner
Metal sweep lock	3	Meeting rail, 8" from each end and midspan

Installation: The window was installed within a 2" by 8" SPF #2 wood test frame and secured through the nail fin and wood stops with 2-1/2" screws located 6" from each corner and 6" on center. A silicone sealant was applied between the wood stops and the test frame.

Test Results

The results are tabulated as follows:

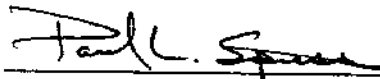
<u>Paragraph</u>	<u>Title of Test – Test Method</u>	<u>Results</u>	<u>Allowed</u>
2.2.1.6.1	Operating Force Top Sash		
	Open	17 lbs	35 lbs max.
	Close	14 lbs	35 lbs max.
	Bottom Sash		
	Open	13 lbs	35 lbs max.
	Close	14 lbs	35 lbs max.
2.1.2	Air Infiltration per ASTM E 283 (See Note #1)		
	@ 1.57 psf (25 mph)	< 0.01 cfm/ft ²	0.3 cfm/ft ² max.
	@ 6.24 psf (50 mph)	< 0.01 cfm/ft ²	
<i>Note #1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/NWWDA 101/I.S. 2-97 for air infiltration.</i>			
2.1.3	Water Resistance per ASTM E 547 (See Note #2)		
2.1.4.1	Uniform Load Deflection per ASTM E 330 (See Note #2)		
2.1.4.2	Uniform Load Structural per ASTM E 330 (See Note #2)		
<i>Note #2: The client opted to start at a pressure higher than the minimum required. Those results are listed under "Optional Performance."</i>			
2.1.8	Forced Entry Resistance per ASTM F 599-97		
	Grade 10	No entry	No entry @ Grade 10
2.2.1.6.2	Deglazing Test per ASTM E 987-94		
	In operating direction @ 70 lbs		
	Top Sash		
	Top Rail	0.11"/22%	0.500"/100%
	Bottom Rail	0.07"/14%	0.500"/100%
	Bottom Sash		
	Top Rail	0.10"/22%	0.500"/100%
	Bottom Rail	0.06"/22%	0.500"/100%
	In remaining direction at 50 lbs		
	Top Sash		
	Left Stile	0.06"/12%	0.500"/100%
	Right Stile	0.06"/12%	0.500"/100%
	Bottom Sash		
	Left Stile	0.07"/12%	0.500"/100%
	Right Stile	0.06"/12%	0.500"/100%

Test Results (Continued)


<u>Paragraph</u>	<u>Title of Test – Test Method</u>	<u>Results</u>	<u>Allowed</u>
<u>Optional Performance</u>			
4.3	Water Resistance per ASTM E 547-96 E 331-97 (With and without screen) WTP = 7.05 psf	No leakage	No leakage
4.4	Uniform Load Deflection per ASTM E 330-97 (Measurements reported were taken on the meeting rail) (Loads were held for 60 seconds)		
	@ 47.0 psf (positive)	0.20"	--
	@ 47.0 psf (negative)	0.44"	--
4.5	Uniform Load Deflection per ASTM E 330-97 (Measurements reported were taken on the meeting rail) (Loads were held for 10 seconds)		
	@ 70.5 psf (positive)	0.01"	0.170" max.
	@ 70.5 psf (negative)	0.10"	0.170" max.

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. This report may not be reproduced except in full without the approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.



Paul L. Spiess
Project Manager



Daniel A. Johnson
Regional Manager