



Testing Evaluation Laboratories, Inc.

2002 Wood Court Suite 1 – Plant City, FL 33563

Phone: 813-754-9887 Fax: 813-754-9989

AAMA/WDMA/101/1.S.2/A440-05

TEST REPORT SUMMARY

Test Report Issued To:

**Permaglass Windows, LLC
5201 Robert McLane Boulevard
Kissimmee, FL 34758**

**Double Hung Window without Fin
44.0" x 77.0"**

Product Designator = LC45 1118 x 1956 (44 x 77)

Title of Test	Results
Overall Design Pressure	+ 45.0 psf – 50.0 psf
Air Infiltration	0.023 scfm/ft²
Water Resistance	7.50 psf
Structural Test Pressure	+ 67.5 psf – 75.0 psf
Forced Entry Resistance	No Entry

Reference should be made to Report No. TEL 07-0420-5 for complete test specimen description and data.

For Testing Evaluation Laboratories, Inc.

**Vivian K. Wright,
President**



Testing Evaluation Laboratories, Inc.

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AAMA/WDMA/101/I.S.2/A440-05

Issued to:
Permaglass Windows, LLC
5201 Robert McLane Boulevard
Kissimmee, FL 34758

Report No: TEL 07-0420-5
Test Date: April 17, 2007
Report Date: April 25, 2007

Project Summary:

Testing Evaluation Laboratories, Inc. (TEL) was contracted to perform tests on a “Series F-745 Pultruded Fiberglass Double Hung Window” at TEL’s Plant City, FL test facility. The sample tested successfully met the performance requirements for AAMA/WDMA/101/I.S.2/A440-05. Test specimen description and results are reported herein.

Test Specimen Description:

Series / Model: F - 745

Type: Pultruded Fiberglass Double Hung Window

Overall Size: 44.00” x 77.00”

Fixed Daylight Opening Size: (See attached drawing # L-3590)

Glazing Details: Insulated glass – .125” Annealed Glass / .125” Annealed Glass

Frame Construction: The frame is constructed of Pultruded Fiberglass, mitered and mechanically fastened at corners (See attached drawing # L-3590).

Sash Construction: The sash is constructed of Pultruded Fiberglass, mitered and mechanically fastened at corners (See attached drawing # L-3590).

Reinforcement: None

Installation: All specimens were installed into a double wood test buck (Southern Yellow Pine) (See attached drawing # L-3590)

Test Results:

The test results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test – Test Method</u>	<u>Results</u>	<u>Allowed</u>
5.3.1	Operating Force per ASTM E2068-00		
	Initiate Motion	22 lbf	Report Only
	Maintain Motion	26 lbf	30 lbf
	Latches	3 lbf	22.5 lbf
5.3.2.1	Air Infiltration per ASTM E283-04 @ 1.57 psf	0.023 SCFM/FT ²	0.3 SCFM/FT ²
Note #1:	<i>The tested specimen meets (or exceeds) the performance levels specified in AAMA/NWWDA 101/I.S.2-97 for air infiltration.</i>		
5.3.3	Water Resistance per ASTM E 547-00	See Note 2	
5.3.4.2	Uniform Load Deflection per ASTM E 330-02	See Note 2	
5.3.4.3	Uniform Load Structural per ASTM E 330-02	See Note 2	
Note #2:	<i>The client opted to start test at a pressure higher than the minimum required. Those results are listed under "Optional Performance".</i>		
5.3.5	Forced Entry ASTM F588-04 Type A Grade 10		
	Test A1 through A7	No Entry	No Entry
	Lock Hardware Manipulation Test	No Entry	No Entry
	Sash Manipulation Test	No Entry	No Entry
5.3.6.3	Deglazing Test ASTM E987-88		
	In Operating Direction – 70 lbs		
	Top Rail	0.055"	0.450"
	Bottom Rail	0.049"	0.450"
	In Opposite Direction – 50 lbs		
	Right Stile	0.046"	0.450"
	Left Stile	0.051"	0.450"

Test Results: (Continued)

<u>Paragraph</u>	<u>Title of Test – Test Method</u>	<u>Results</u>	<u>Allowed</u>
4.4.2.6	Optional Performance		
	Water Resistance per ASTM E 547-00		
	With insect screen @ 7.50 PSF	No Leakage	No Leakage
	Without insect screen @ 7.50 PSF	No Leakage	No Leakage

Uniform Loads per ASTM E330-02

Range	Time (seconds)	Load (psf)	Location	Deflection	Set	Allowable
Half Test Positive	10	32.50				
Test Positive	10	65.00				
Half Test Negative	10	35.00				
Test Negative	10	70.00				
Half Proof Positive	10	48.75				
Proof Positive	10	97.50	1	0.547"	0.014"	0.159"
			2	0.302"	0.012"	0.176"
			3	0.012"	0.010"	0.078"
Half Proof Negative	10	52.50				
Proof Negative	10	105.00	1	0.549"	0.014"	0.159"
			2	0.042"	0.001"	0.176"
			3	0.012"	0.011"	0.078"

(For def/set locations, see TEL Drawing no. DEF-3590)

Additional Documents

This report is not complete unless accompanied by the following documents bearing the Testing Evaluation Laboratories, Inc. stamp and signed by appropriate personnel:

1. Drawing # L-3590, titled Double Hung Windows, sheets 1 through 8 of 8.
2. Drawing # Def-3590, titled Deflection/Set Locations, sheet 1 of 1

Conditions, Terms, and General Notes Regarding These Tests

The product tested Has Been compared to the detailed drawing, bill of materials and fabrication information supplied by the client so named herein. Our analysis, which includes dimensional and component description comparisons, indicate the tested product and engineering information supplied by the client "Are Equivalent".

The report and representative samples will be retained for four years from the date of initial test.

These test results were obtained by employing all requirements of the designated test methods with no Deviations unless explicitly noted in test report. The test results and specimen supplied for testing are in compliance with the reference.

The test results are specific to the product tested by this laboratory and of the sample supplied by the client named herein, and they relate to no other product either manufactured by the client, a fabricator of the client or of installed field performance.

This test report does not constitute certification of this product, but only that the above test results were obtained using the designated test methods and they indicate compliance with the performance requirements (paragraphs as listed) of the above referenced specifications.

Testing Evaluation Laboratories, Inc. makes no opinions or endorsements regarding this product and its performance. This report may not be reproduced or quoted in partial form without the expressed written approval of Testing Evaluation Laboratories, Inc.

Testing Evaluation Laboratories, Inc.'s letter, reports, its name or insignia or mark are for the exclusive use of the client so named herein and any other use is strictly prohibited. The report, letters and the name of Testing Evaluation Laboratories, Inc., its seal or mark shall not be used in any circumstance to the general public or in any advertising.

Limitation of liability: Due diligence was used in performing the tests and reporting the results. By acceptance of this report, this client agrees to hold harmless and indemnify Testing Evaluation Laboratories, Inc., its employees and officers and owners against all claims and demands of any kind whatsoever, which arise out of or in any manner connected with the performance of work referred to herein.

Testing Evaluation Laboratories, Inc.



Vivian K. Wright
President