

NATIONAL CERTIFIED TESTING LABORATORIES

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IN-PLANT WITNESS STRUCTURAL PERFORMANCE TEST REPORT

Report No: NCTL-310-0005-5.1
Test Date: 07/15/98
Report Date: 08/03/98
Expiration Date: 07/30/02
Revision Date: 09/29/98

Client: Metal Industries Home Products
650 West Market Street
Gratz, PA 17030

Test Specimen: Betterbilt, Inc.'s Series "BB165/740/744" Fixed Lite Aluminum Prime Window (F-C50 72 x 72). This unit was flange mounted and is "valid for tempered glass only."

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

Test Site: Betterbilt, Smyrna, TN, all calibrations were performed before testing.

TEST SPECIMEN DESCRIPTION

General: The test specimen was an aluminum prime window measuring 72-1/4" wide by 72-1/4" high overall. The fixed lite was glazed to the frame members, providing a viewing area of 69-1/8" wide by 69-1/8" high. The frame was of double screw (#8x5/8) butt-type corner construction. From the interior view the left corners were sealed with small joint sealant and the right corners employed gasket tape.

Glazing: The lite was interior glazed using 3/16" clear tempered glass with a butyl tape back-bedding, a vinyl bulb gasket, and an extruded aluminum glazing bead. The glazing bead was fastened with #8x7/8 screws every 8".

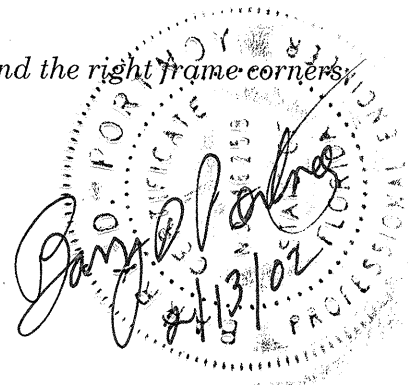
Weatherseals: No weatherseals employed.

Weeps: No apparent weeps employed.

Interior & Exterior Surface Finish: Mill finished aluminum.

Sealant: The left frame corners were sealed with a small-joint sealant and the right frame corners employed gasket tape.

PROFESSIONALS IN THE SCIENCE OF TESTING



TEST RESULTS

<u>Par. No.</u>	<u>Title of Test & Method</u>	<u>Measured</u>	<u>Allowed</u>
2.1.2	Air Infiltration - ASTM E283 1.57 psf (25 mph)	Pass	Pass / Fail
2.1.3	Water Resistance - ASTM E547 5.0 GPH/FT ² WTP= 3.00 psf	No Leakage	No Leakage
2.1.4.2 *	Uniform Load Structural - ASTM E330 30.0 psf Exterior 30.0 psf Interior	0.000" 0.000"	0.285" 0.285"
2.1.8	Forced Entry Resistance (see Appendix A for results)	Meets as Stated	

OPTIONAL PERFORMANCE

4.3	Water Resistance - ASTM E547 5.0 GPH/FT ² WTP= 7.50 psf	No leakage	No Leakage
4.4.2 *	Uniform Load Structural - ASTM E330 75.0 psf Exterior 75.0 psf Interior	0.000" 0.000"	0.285" 0.285"
*	No glass breakage or permanent damage causing the unit to be inoperable		

TEST COMPLETED 07/15/98

The tested specimen meets (or exceeds) the performance levels specified in Table 2.1 of AAMA/NWWDA 101/I.S.2-97 for air infiltration. The listed results were secured by using the designated test methods and indicate compliance with the performance requirements of the referenced specification paragraphs for the F-C50 72x72 product designation.

A circular professional engineer seal for Gary D. Adams, State of Florida, License No. 12555. The seal is stamped over a handwritten signature and the date 2/13/02.

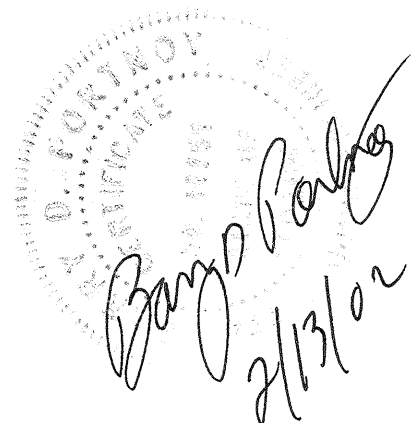
Detailed drawings were available for laboratory records and compared to the test specimen at the time of this report. A copy of this report along with representative sections of the test specimen will be retained by NCTL for a period of four (4) years. The results obtained apply only to the specimen tested. No conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen may be drawn from this test. This report does not constitute certification of the product which may only be granted by a certification program validator.

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*WB/amb
Ref: NCTL-310-0005-5.1*



A circular seal for Barry Portnoy, P.E. is visible in the bottom right corner. The seal contains the text "PORTNOY, BARRY" and "P.E." around the perimeter. Overlaid on the seal is a handwritten signature and the date "2/13/02".

APPENDIX A
Forced Entry Resistance Test Results

Test Method: ASTM F588-97, "Standard Test Methods For Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact."

<u>Paragraph No.</u>	<u>Loads</u>	Test Results		<u>Measured</u>	<u>Allowed</u>
		<u>Duration</u>			
10.2.4.2	N/A	5 Minutes		No Entry	No Entry



Sam Park
2/13/02

**Metal Industries Home Products
In-Plant Witness
Structural Performance Test Report
NCTL 310-0005-2.1
Series "740/744" Fixed Lite
Aluminum Prime Window
Test Date: 07/14/98**



A circular seal from the National Institute of Standards and Technology (NIST) is located in the bottom right corner. The seal contains the text "NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY" around the perimeter and "DEPARTMENT OF COMMERCE" at the bottom. The word "CERTIFICATE" is visible in the center. Overlaid on the seal is a handwritten signature and the date "7/13/98".