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March 6, 2002

To whom it may concern:

The following test reports for General Aluminum Company of Texas issued by Dallas Laboratories, Inc. have been reviewed for completeness and authenticity. Dallas Laboratories, Inc. is accredited by the American Architectural Manufacturers Association (AAMA) to perform window and door structural load testing. Calibration reports for the test equipment used in performing the test have been reviewed and determined to be within the tolerances allowed. Detailed window assembly drawings representative of the test specimens indicating wall thicknesses of all members, corner constructions, and hardware applications are on file and have been compared to the actual test specimen. Corner sections of each window tested are being retained at Dallas Laboratories, Inc.. The results reported were secured by using the designated test methods as specified in AAMA/ NWWDA 101/I.S.2-97 "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors".

Dallas Laboratories Report Numbers: 31596

Date of Report: January 22,2002

Product Type: Aluminum Fixed Window with Flange Frame

Series Model: 1450

Frame Size: 6'-1" x 5'-1"

Configuration: O

Manufactures Model Variations: Series 1900 (Dual Glazed Fin Frame);
Series 1100 (Single Glazed Fin Frame);
Series 1550 (Dual Glazed Flange Frame)

Please do not hesitate to contact me should you have any questions.

Sincerely,

Yoosef Lavi, P.E.
YL/jb

Attachments: Test Report (2 Pages)

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Yoosef Lavi
3-6-02

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CABLE ADDRESS "DALAB"

DALLAS LABORATORIES, INC.

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Submitted by: General Aluminum Company

P.O. Box 819022
Dallas, TX 75381-9022
Attn: Ivan Paredes

Date: January 22, 2002
(Reissue Date: 03-06-02)

Report # 31596

REPORT

Product Type: Aluminum Fixed Window with Flange Frame

Specification: AAMA/NWWDA 101/I.S. 2-97; F-R40-73x61

Series Model: 1450

Frame Size: 6'1" x 5'1"

Configuration: O

Manufactures

Model Variations: Series 1900 (Dual Glazed Fin Frame); 1100 (Single Glazed Fin Frame); 1550 (Dual Glazed Flange Frame)

PRODUCT DESCRIPTION

Weatherstripping: None

Hardware: None

Glass: Double strength annealed.

Glazing: Exterior glazed with backbedding compound and aluminum glazing bead with vinyl weatherstrip. Aluminum glazing bead secured by #6 x 1" screws an approximately 12" to 14" on center.

Weep Arrangement: 3/32 x 1/2" half oval weep approximately 3" from each end of glazing bead of frame sill.

Sealant: Frame sill to jamb corners sealed with narrow joint sealant.

Installation: Frame full perimeter attached to 2" x 4" SPF lumber test buck by twelve #8x1" screws 6" from each end and on 12" centers through the frame. The 2" x4" buck was attached to 2" x 12" wood frame using bolts at each end and on 20" centers. Silicone was applied full perimeter of frame to buck, exterior only.

Other Features: Frame corner construction by two (2) #6x3/4" "hex head" screws.

Date Testing Started: December 5, 2001

Date Testing Completed: December 6, 2001

Test Performed at: General Aluminum Corp. testing facility in Carrollton, Texas.

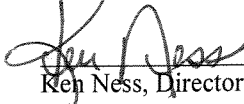
PERFORMANCE TEST RESULTS

<u>SPECIFICATION PARAGRAPH NO.</u>	<u>TITLE OF TEST</u>	<u>TEST METHOD</u>	<u>MEASURED</u>	<u>ALLOWED</u>
2.1.2	Air Infiltration @ 1.57 psf (The tested specimen exceeds the performance levels specified in AAMA/NWWDA 101/I.S.2-97 for Air Infiltration.)	ASTM E 283-91	.01CFM/Ft ²	0.30 CFM/Ft ²
2.1.3	Water Resistance @ 2.86 psf	ASTM E 547-96	No Leakage	No Leakage
4.3	Water Resistance @ 6.00 psf	ASTM E 547-96	No Leakage	No Leakage
2.1.4.2	Uniform Load Structural - Exterior - Interior - Permanent Set	ASTM E 330-96	22.5 psf* 22.5 psf Negligible	22.5 psf* 22.5 psf* 0.292"
4.4.2	Uniform Load Structural - Exterior - Interior - Permanent Set	ASTM E 330-96	60.0 psf* 60.0 psf* Negligible	60.0 psf* 60.0 psf* 0.292"
2.1.8	Forced Entry Test	ASTM E 588-97		
9.4	Preparation		No Entry	No Entry
10.2.4.2	Hand & Tool Manipulation		No Entry	No Entry

Detailed extrusion and assembly drawings indicating measured wall thickness, corner construction, and hardware application are on file and have been compared to the test sample submitted. Test sample will be retained at the testing laboratory. A copy of this report has been forwarded to ALI.

The above results were secured by using the designated test methods and they indicate compliance with the performance requirements of the above referenced specifications. This report does not constitute certification of this product which may only be granted by ALI.

DALLAS LABORATORIES, INC.
TESTING LABORATORY


Ken Ness, Director of Testing