



# NATIONAL CERTIFIED TESTING LABORATORIES

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## STRUCTURAL PERFORMANCE TEST REPORT

Report No: NCTL-210-3214-2  
Test Date: 11/03/05  
Report Date: 12/03/05

**Client:** A.F.G. Glass  
P O Box 929  
Kingsport, Tennessee 37662

**Test Specimen:** Series "IFG451" Aluminum Store Front (147.5"x 96"x 2.0")  
Design Pressure Positive 50 Negative 50

**Test Method:** ASTM E283-91, "Test Method for Determining the Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences across the Specimen." ASTM E330-02, "Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference." ASTM E331-00, "Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference."

### TEST SPECIMEN DESCRIPTION

**General:** The extruded aluminum frame 147.5" x 96.0" was coped and butted corner construction. Each corner was secured with two (2) # 12 x 1" Phillips pan head screws. A 4" long shear plate was snap fitted to the exterior of frame at each anchor location. Each frame was attached together with an extruded aluminum shallow mullion adapter. The frame was setting on a sub-sill with an end dam.

**Glazing:** 1" Clear Insulated Tempered Glass.

**Glazing Method:** All lites were glazed using interior and exterior glazing stop and flush glaze gasket.

**Daylight Opening:** One (1) lite 46.5" wide x 92.5" high  
Four (4) lites 46.5" wide x 45.375" high

**Weatherseals:** N/A

**Weeps:** N/A

**Sealant:** A small joint sealant was used at each frame joint.  
Dow Corning 795 silicone sealant was used to seal the exterior perimeter of the specimen to the wooden test buck.

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**Interior & Exterior Surface Finish:** Anodized Aluminum.

**Insect Screen:** N/A

**Installation:** The specimens were secured with twenty-eight (28) # 10 x 3" long Phillips flat head wood screws located.

**Sill:** Nine (9) located at 4" from each end 19.25" on center thereafter

**Header:** Nine (9) located at 4" from each end 19.25" on center thereafter

**Jambs:** Five (5) located at 6" from each end 21" on center thereafter

The sub-sill was attached to the wooden test with six (6) # 10 x 3" Phillips flat head wood screws located 12" from each jamb and 12" each side of mullions.

### TEST RESULTS

<u>Par. No.</u>	<u>Title of Test &amp; Method</u>	<u>Measured</u>	<u>Allowed</u>
2.1.2	Air Infiltration - ASTM E283 1.57 psf (25 mph) 6.24 psf (50 mph)	0.003 cfm/ft <sup>2</sup> 0.005 cfm/ft <sup>2</sup>	0.3 cfm/ft <sup>2</sup> 0.3 cfm/ft <sup>2</sup>
2.1.3	Water Resistance - ASTM E 331 5.0 gph/ft <sup>2</sup> WTP = 15.0 psf	No Leakage	No Leakage
2.1.4.2 **	Uniform Load Structural - ASTM E330	Def	Set
D/ P	+ 50 psf - 50 psf 50.0 psf Exterior 50.0 psf Interior	0.245" 0.199"	0.021" 0.044"
Test Load	75.0 psf Exterior 75.0 psf Interior	0.450" 0.220"	0.040" 0.029"

*Deflection and Set measurement taken at mid-span of vertical mullion.*

Loc # 1 Maximum Allowable Permanent Set (0.4% of 96" span) = 0.384"

Loc # 1 Maximum allowable Deflection (L/175 of 96" span) = 0.548"

\*\* No glass breakage or permanent damage causing the unit to be inoperable

\* Specimen passed all specification

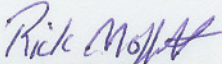



Observers – Mr. Daniel Ocasio (NCTL)  
Mr. Ricky Moffett (NCTL)  
Mr. Jim Stropoli (PTC Engineering, Inc.)  
Mr. Joe Lewis (PTC Engineering, Inc.)  
Mr. David McComas (AFG Glass)  
Mr. Ivan Zuniga (AFG Glass)

**TEST COMPLETED 11/03/05**

Detailed drawings were available for laboratory records and comparison 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. 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.

**NATIONAL CERTIFIED TESTING LABORATORIES**

  
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