



FLORIDA | GEORGIA | TEXAS
GEORGIA OFFICE
 1701 Westfork Drive, Suite 106
 Lithia Springs, Georgia 30122
 770.941.6916
 HTLTEST.COM

Test Report #: G049-0202-11
 Specimen #: 1
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1.0 MANUFACTURER'S IDENTIFICATION

- 1.1 Name of Applicant: KAWNEER
 555 Guthridge Court
 Norcross, Georgia 30092
 (770) 840-6492
- 1.2 Contact Person: Kyle McDaniel

2.0 LABORATORY IDENTIFICATION

- 2.1 HTL Lab Certifications: Miami-Dade County (09-0720.02)
 Florida Building Code (TST3892)
 IAS (TL-338)

3.0 SCOPE OF WORK

- 3.1 Introduction
 KAWNEER retained HTL Georgia to witness testing of their TRIFAB VG 451T system per the requirements of AAMA 501 (ASTM E283, E330, E331, and E547) at their In-House Test Facility in Norcross, Georgia.
- 3.2 Report Information
 Table 3.1 provides the test dates and ratings for the units tested.

Table 3.1: Report Summary

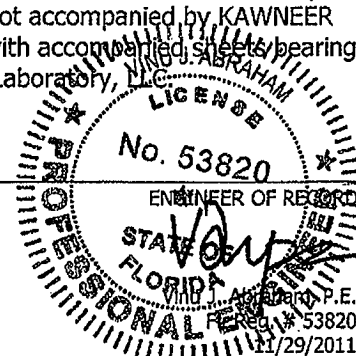
Specimen #	Test Dates	Test Standard	Performance Class
1	2/14-15/11	Air Infiltration Test (ASTM E283)	75 Pa and 300 Pa (1.57 and 6.24 psf)
		Air Exfiltration Test (ASTM E283)	
		Water Infiltration Test (ASTM E331)	400 Pa (8.35 psf)
		Water Infiltration Test (ASTM E547)	400 Pa (8.35 psf)
		Uniform Static Load Test (ASTM E330)	+/-1.44 kPa (+/-30 psf) Design Pressure
		CAN/CSA A440-00	Air Tightness Fixed Water Tightness B4 Load Resistance C2

4.0 PRODUCT IDENTIFICATION

- 4.1 Product Type: Store-Front
- 4.2 Model Designation: TRIFAB VG 451T
- 4.3 Configuration: Fixed
- 4.4 Overall Size: 154-3/8" (w) x 120" (h)
- 4.5 Drawing: This test report is incomplete if not accompanied by KAWNEER drawings labeled "451TVG825" with accompanying sheets bearing the ink stamp of Hurricane Test Laboratory, LLC.

REPORT WRITER

José E. Colon, E.E.
 HTL Georgia





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4.6 Sample Source: Sample provided by KAWNEER.

4.7 Additional Information:

4.7.1 Glazing Details:

4.7.1.1 Glazing:

Table 4.2 describes the type of glass used for testing.

Table 4.2: Glazing Schedule

Overall Thickness	Makeup
1"	1/4" tempered glass (outboard) 1/2" air space 1/4" tempered glass (inboard)

4.7.1.2 Glazing Method:

Table 4.3 describes the glazing methods used for this test unit.

Table 4.3 Glazing Details

Qty.	DLO	Glass Bite	Glazing Method	
			Interior	Exterior
4	29-3/16" (w) x 31-15/16" (h)	3/8"	EPDM Glazing Gasket (Part # 027-074)	
2	29-3/16" (w) x 49-15/16" (h)			
6	29-1/4" (h) x 31-15/16" (h)			
3	29-1/4" (w) x 49-15/16" (h)			

4.7.2 Installation:

Table 4.7 describes the anchors used to install the test units into the wood bucks.

Table 4.7: Installation

Description	Location		Spacing
#12 x 3-1/2" FH wood screws	Frame to Wood Opening	Head	Please refer to attached drawings
		Sill	

5.0 TEST RESULTS

5.0 Table 5.1 provides the test results for Specimen #1.

Table 5.1: Test Results for Specimen # 1

Test Method	Test Conditions	Measured	Allowed
Air Infiltration Test (ASTM E283) PER UNIT AREA	75 Pa (1.6 psf)	0.005 L/s-m ² (0.001 cfm/ft ²)	0.30 L/s-m ² (0.06 cfm/ft ²)
	300 Pa (6.24 psf)	0.155 L/s-m ² (0.031 cfm/ft ²)	0.30 L/s-m ² (0.06 cfm/ft ²)
Air Infiltration Test (ASTM E283) PER LENGTH OF CRACK	75 Pa (1.6 psf)	0.004 m ³ /h/m (0.001 cfm/ft)	0.25 m ³ /h/m (0.045 cfm/ft)
	300 Pa (6.24 psf)	0.135 m ³ /h/m (0.024 cfm/ft)	0.25 m ³ /h/m (0.045 cfm/ft)

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Table 5.1: Test Results for Specimen # 1

Test Method	Test Conditions	Measured	Allowed
Air Exfiltration Test (ASTM E283) PER UNIT AREA	75 Pa (1.6 psf)	0.070 L/s-m ² (0.014 cfm/ft ²)	0.30 L/s-m ² (0.06 cfm/ft ²)
	300 Pa (6.24 psf)	0.125 L/s-m ² (0.025 cfm/ft ²)	0.30 L/s-m ² (0.06 cfm/ft ²)
Air Exfiltration Test (ASTM E283) PER LENGTH OF CRACK	75 Pa (1.6 psf)	0.062 m ³ /h/m (0.011 cfm/ft)	0.25 m ³ /h/m (0.045 cfm/ft)
	300 Pa (6.24 psf)	0.109 m ³ /h/m (0.020 cfm/ft)	0.25 m ³ /h/m (0.045 cfm/ft)
Water Infiltration Test (ASTM E331)	400 Pa (8.35 psf)	PASSED per ASTM E331 (no water found inside of the unit)	
Water Infiltration Test (ASTM E547)	400 Pa (8.35 psf)	PASSED per ASTM E547 (no water found inside of the unit)	
Uniform Load Deflection Test (ASTM E330)	+ 1.44 KPa (+30 psf)	Deflection	
		Vertical Mullion	
		7.49 mm (0.295 in.)	17.40 mm (0.685 in.)
		Mid-Horizontal	
		0	4.43 mm (0.174 in.)
	- 1.44 KPa (-30 psf)	Deflection	
		Vertical Mullion	
		8.33 mm (0.328 in.)	17.40 mm (0.685 in.)
		Mid-Horizontal	
		0	4.43 mm (0.174 in.)
Water Infiltration Test (ASTM E331)	400 Pa (8.35 psf)	PASSED per ASTM E331 (no water found inside of the unit)	
Water Infiltration Test (ASTM E547)	400 Pa (8.35 psf)	PASSED per ASTM E547 (no water found inside of the unit)	
Uniform Load Structural Test (ASTM E330)	+ 2.16 KPa (+45 psf)	Permanent Set	
		Vertical Mullion	
		0	6.10 mm (0.240 in.)
		Mid-Horizontal	
		0	1.55 mm (0.061 in.)
	- 2.16 KPa (-45 psf)	Permanent Set	
		Vertical Mullion	
		0	6.10 mm (0.240 in.)
		Mid-Horizontal	
		0	1.55 mm (0.061 in.)

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6.0 CERTIFICATION AND DISCLAIMER STATEMENT

All tests performed on this test specimen were witnessed in accordance with the specifications of the applicable codes, standards and test methods listed below by HTL, LLC. HTL, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products tested at HTL. HTL is not owned, operated or controlled by any company manufacturing or distributing products it tests. This report is only intended for the use of the entity named in Section 1.0 of this report. Detailed assembly drawings showing wall thickness of all members, corner construction and hardware applications are on file and have been compared to the test specimen submitted. A copy of this test report along with representative sections of the test specimen will be retained at HTL for a period of ten (10) years. All results obtained apply only to the specimen tested and they do indicate compliance with the performance requirements of the test methods and specifications listed in the following section.

7.0 APPLICABLE CODES, STANDARDS, AND TEST METHODS

- ASTM E283-04** – Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
- ASTM E330-02** – Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
- ASTM E331-00** – Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- ASTM E547-00** – Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference
- ANSI/AAMA/NWDA 101/I.S.2-97** – Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows, and Glass Doors.
- AAMA/WDMA/CSA 101/I.S.2/A440-05** – Standard/Specification for Windows, Doors, and Unit Skylights
- AAMA/WDMA/CSA 101/I.S.2/A440-08** – Standard/Specification for Windows, Doors, and Skylights
- AAMA 910** – Voluntary "Life Cycle" Specifications and Test Methods for ARCHITECTURAL GRADE WINDOWS and SLIDING GLASS DOORS
- CSA Standard A440-00** - Windows

8.0 WITNESSES (ALL OR PARTIAL)

Vinu J. Abraham, P.E.	CEO	HTL, LLC
José E. Colón, E.I.	Operations Manager	HTL, LLC
Michael Mitchell	KAWNEER	
Kyle McDaniel	KAWNEER	

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