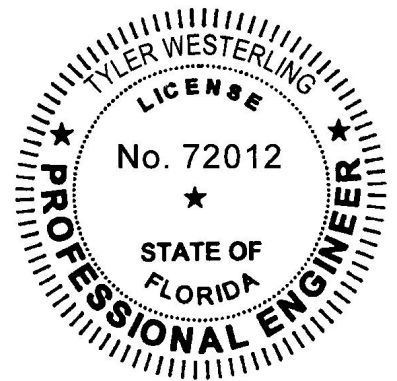


INNOVATIONS MANUFACTURING, INC. TEST REPORT



SCOPE OF WORK

TAS 202, AAMA A440-22 TESTING ON FIXED TRANSOM WINDOWS

Tyler Westerling
Digitally Signed by: Tyler Westerling

2024.11.07 08:16:59 -08'00'

REPORT NUMBER

R0182.01-801-44 R2

TEST DATE(S)

07/29/24 - 07/29/24

ISSUE DATE

10/04/24

REISSUE DATE

11/06/24

RECORD RETENTION END DATE

09/12/28

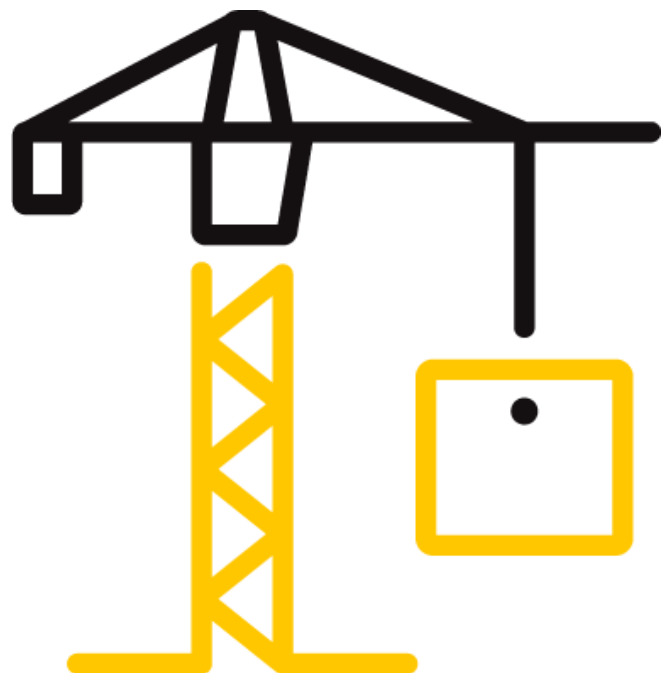
PAGES

13

DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-2805 (10/12/23)

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TEST REPORT FOR INNOVATIONS MANUFACTURING, INC.

Report No.: R0182.01-801-44 R2

Date: 10/04/24

REPORT ISSUED TO

INNOVATIONS MANUFACTURING, INC.

4555 Grape Street
Denver, CO 80216

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Innovations Manufacturing Inc, 4555 Grape Street, Denver, CO 80216 to perform testing in accordance with Air, Water, and Structural Testing (TAS 202/AAMA A440), on their vinyl transom windows. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek B&C test facility in Plano TX.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

The specimen(s) tested met the performance requirements set forth in the TAS 202 and AAMA A440-22 protocols.

TITLE	TEST SPECIMEN #1	TEST SPECIMEN #2
Design Pressure	±3840 Pa (±80.2 psf)	±3840 Pa (±80.2 psf)
Air Infiltration	0.05 L/s/m ² (0.01 cfm/ft ²)	0.06 L/s/m ² (0.012 cfm/ft ²)
Water Penetration Resistance Test Pressure	580 Pa (12.11 psf)	580 Pa (12.11 psf)
Uniform Load Structural Test Pressure	±5760 Pa (±120.3 psf)	±5760 Pa (±120.3 psf)

TEST REPORT FOR INNOVATIONS MANUFACTURING, INC.

Report No.: R0182.01-801-44 R2

Date: 10/04/24

For INTERTEK B&C:

COMPLETED BY:	Alexei Buruiian
TITLE:	Technician – Building & Construction
SIGNATURE:	 Digitally Signed by: Alexei Buruiian
DATE:	11/06/24

REVIEWED BY:	Jeffrey Crump, FMPC
TITLE:	Laboratory Manager Building & Construction
SIGNATURE:	 Digitally Signed by: Jeffrey Crump
DATE:	11/06/24

AB:jc/cm

REVIEWED BY:	Tyler Westerling, PE
TITLE:	Operations Manager
SIGNATURE:	 Digitally Signed by: Tyler Westerling
DATE:	11/06/24

SECTION 3

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

ASTM E283/E283-19, *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen*

ASTM E330/E330M-14, *Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*

ASTM E547-00(2016), *Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference*

TAS 202-94, *Criteria for Testing Impact & Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure*

TEST REPORT FOR INNOVATIONS MANUFACTURING, INC.

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SECTION 4

MATERIAL SOURCE/INSTALLATION

Test specimens were provided by the client. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

The specimen was installed into a Wall specimen surrounded by Southern Yellow Pine test buck. The rough opening allowed for a 1/4" shim space. The exterior perimeter of the window was sealed with silicone. Installation of the tested product was performed by the client.

LOCATION	ANCHOR DESCRIPTION	ANCHOR LOCATION
Exterior perimeter	.092 x 1-3/4 ring shank galvanized nails. Silicone located at interior of window perimeter.	6 inches O.C., ½ minimum edge

SECTION 5

EQUIPMENT

Control Panel: 004829	Calibration due: 8-2-24
Weather Station: INT01928	Calibration due: 9-12-24
Spray Rack: 3233	Calibration due: 11-11-24
Water Gauge: INT03864	Calibration due: 11-23-24

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Owen Bunker	Innovations Manufacturing, Inc.
Alexei Buruian	Intertek B&C
Jovica Cijuk	Intertek B&C

SECTION 7

TEST SPECIMEN DESCRIPTION

Product Type: Fixed Shed Transom window

Product Size(s):48x12

TEST REPORT FOR INNOVATIONS MANUFACTURING, INC.

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Test Specimen #1 RTV Silicone only

OVERALL AREA:	WIDTH		HEIGHT	
0.37 m ² (4.0 ft ²)	millimeters	inches	millimeters	inches
Overall Size	1219.2	48	304.8	12
Fixed DLO	1166.81	45.94	252.41	9.94

Test Specimen #2 RTV Silicone and Tape

OVERALL AREA:	WIDTH		HEIGHT	
0.37 m ² (4.0 ft ²)	millimeters	inches	millimeters	inches
Overall Size	1219.2	48	304.8	12
Fixed DLO	1166.81	45.94	252.41	9.94

Frame Construction:

FRAME MEMBER	MATERIAL	DESCRIPTION
Head, sill and jambs	Vinyl	Extruded pvc

	JOINERY TYPE	DETAIL
All Corners	Corner weld	Mitre 45 degree

Weatherstripping: *No weatherstripping was utilized.*
Glazing: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.*
Test Specimen #1

GLASS TYPE	GLAZING	GLAZING METHOD
Monolithic	1/8" tempered glass	Interior glazed against RTV Silicone and secured with snap-in PVC glazing beads.

TEST REPORT FOR INNOVATIONS MANUFACTURING, INC.

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Date: 10/04/24

Test Specimen #2

GLASS TYPE	GLAZING	GLAZING METHOD
Monolithic	1/8" tempered glass	Interior glazed against adhesive backed foam glazing tape and RTV silitone at corners, secured with snap-in PVC glazing beads.

LOCATION	QUANTITY	DAYLIGHT OPENING		GLASS BITE
		millimeters	inches	
Center	1	1166.81 x 252.41	45.94 x 9.94	1/2

Drainage: No drainage was utilized.

Hardware: No hardware was utilized.

Screen Construction: No Screen was utilized

SECTION 8
TEST RESULTS

The temperature during testing was 24.2°C (75.5°F). The results are tabulated as follows:

Test Specimen #1 RTV Silicone Only:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Air Leakage, Infiltration per ASTM E283 at 75 Pa (1.57 psf) (25 mph per TAS 202)	0.05 L/s/m ² (0.01 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Air Leakage, Infiltration per ASTM E283 at 300 Pa (6.27 psf) (50 mph per TAS 202)	<0.01 L/s/m ² (<0.01 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration, ASTM E331 at 580 Pa (12.11 psf) per TAS 202 15% of Positive Design Pressure at 12.03 psf	Pass	No leakage	2

TEST REPORT FOR INNOVATIONS MANUFACTURING, INC.

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Test Specimen #1 RTV Silicone Only:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Uniform Load Deflection, per ASTM E330 Deflections taken at the header +3840 Pa (+80.2 psf) -3840 Pa (-80.2 psf)	4 mm (0.16") 4.5 mm (0.18")	6.35 mm (0.25") max. 6.35 mm (0.25") max.	3, 4
Water Penetration, ASTM E331 at 580 Pa (12.11 psf) per TAS 202 15% of Positive Design Pressure at 12.03 psf	Pass	No leakage	2
Uniform Load Structural, per ASTM E330 Permanent set taken at the header +5760 Pa (+120.3 psf) -5760 Pa (-120.3psf)	0.25 mm (0.01") 0.25 mm (0.01")	1.02 mm (0.04") max. 1.02 mm (0.04") max.	3, 4
Forced Entry Resistance, per ASTM F588, Type: D - Grade: 10	Pass	No entry	

Test Specimen #2 RTV Silicone and Tape:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Air Leakage, Infiltration per ASTM E283 at 75 Pa (1.57 psf)	0.006 L/s/m ² (0.012 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Air Leakage, Infiltration per ASTM E283 at 300 Pa (6.27 psf)	0.008 L/s/m ² (0.017 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration, ASTM E331 at 580 Pa (12.11 psf) per TAS 202 15% of Positive Design Pressure at 12.03 psf	Pass	No leakage	2
Uniform Load Deflection, per ASTM E330 Deflections taken at the header +3840 Pa (+80.2 psf) -3840 Pa (-80.2 psf)	4.3 mm (0.17") 4.5 mm (0.18")	6.35 mm (0.25") max. 6.35 mm (0.25") max.	3, 4

TEST REPORT FOR INNOVATIONS MANUFACTURING, INC.

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Test Specimen #2 RTV Silicone and Tape:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Water Penetration, ASTM E331 at 580 Pa (12.11 psf) per TAS 202 15% of Positive Design Pressure at 12.03 psf	Pass	No leakage	2
Uniform Load Structural, per ASTM E330 Permanent set taken at the header +5760 Pa (+120.3 psf) -5760 Pa (-120.3psf)	0.5 mm (0.02") 0.25 mm (0.01")	1.02 mm (0.04") max. 1.02 mm (0.04") max.	3, 4
Forced Entry Resistance, per ASTM F588, Type: D - Grade: 10	Pass	No entry	

General Note: All testing was performed in accordance with the referenced standard(s).

Note 1: Test Date 07/29/24 / Time: 10:15 AM (Air Note Only)

Note 2: Without insect screen.

Note 3: Loads were held for 30 seconds.

Note 4: Tape and film were not used to seal against air leakage during structural testing.

TEST REPORT FOR INNOVATIONS MANUFACTURING, INC.

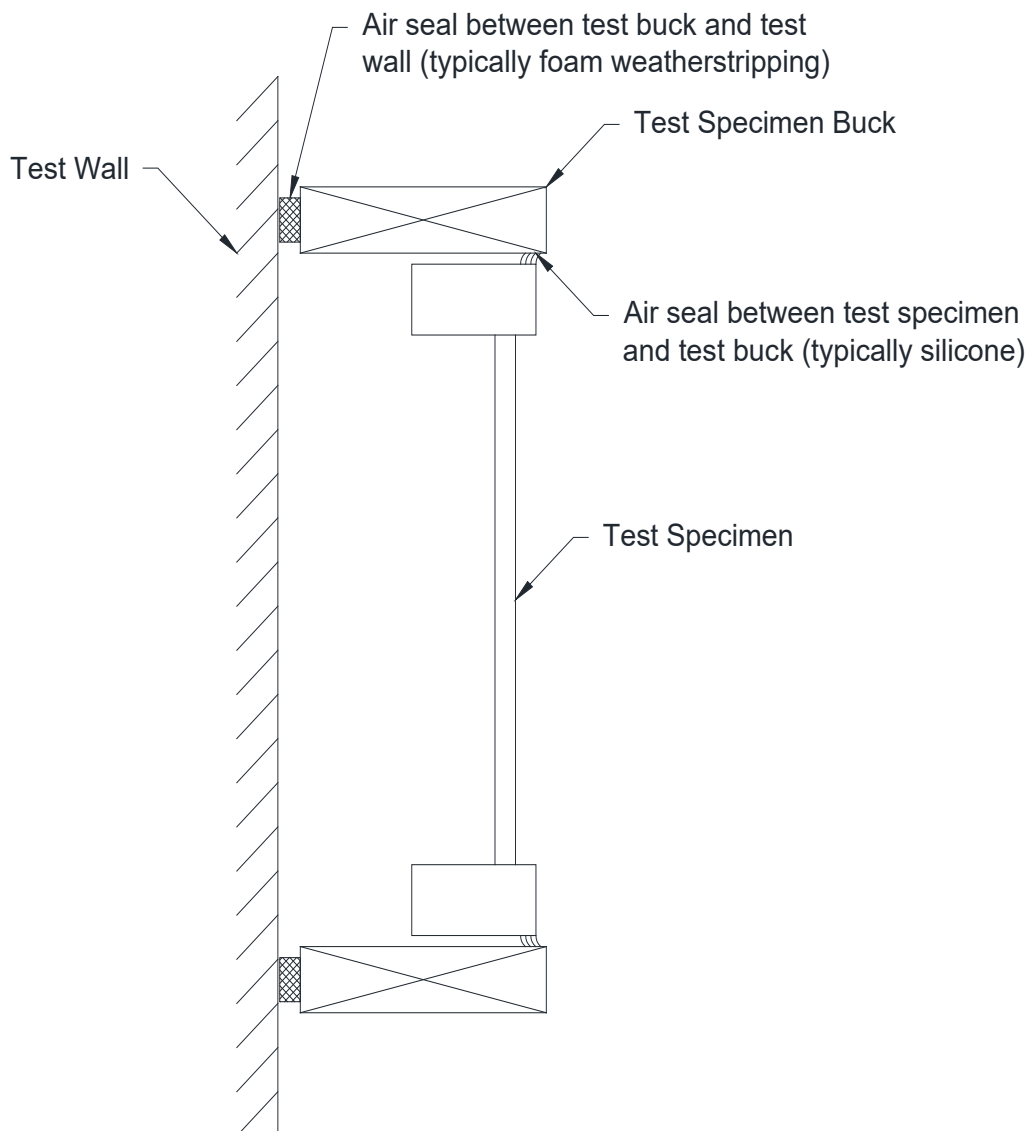
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SECTION 9

LOCATION OF AIR SEAL

The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.



TEST REPORT FOR INNOVATIONS MANUFACTURING, INC.

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SECTION 10

PHOTOGRAPHS



Photo No. 1
Water test setup

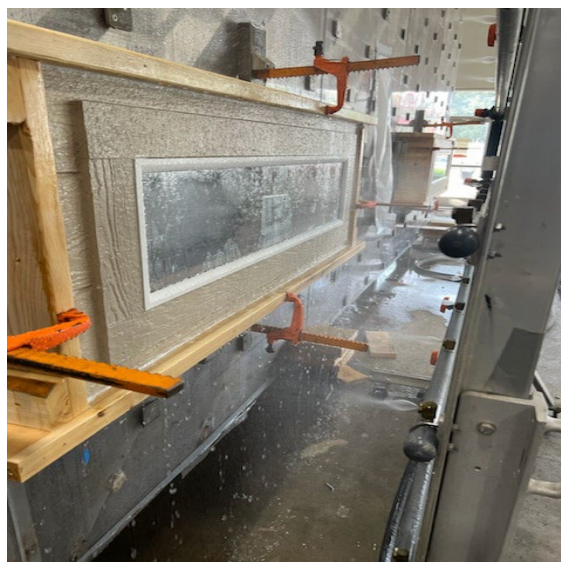


Photo No. 2
Water Test



Total Quality. Assured.

1909 10th Street, Suite 100
Plano, Texas 75074

Telephone: 469-814-0687
www.intertek.com/building

TEST REPORT FOR INNOVATIONS MANUFACTURING, INC.

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Date: 10/04/24

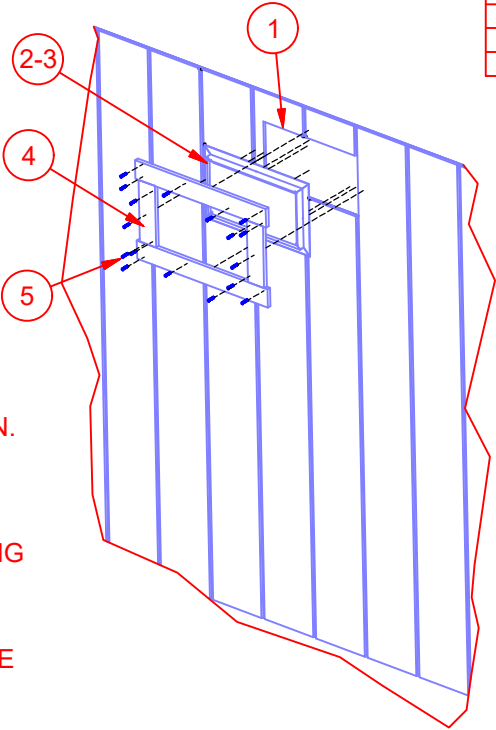
SECTION 11

DRAWINGS

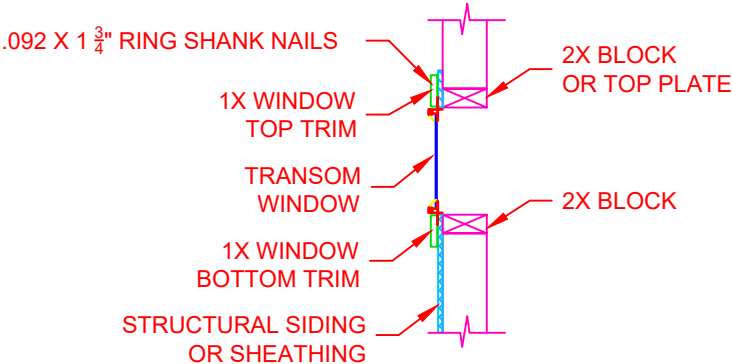
The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

INSTALLATION INSTRUCTIONS
FOR TRANSOM WINDOWS
MANUFACTURED BY
INNOVATIONS MANUFACTURING, INC. :

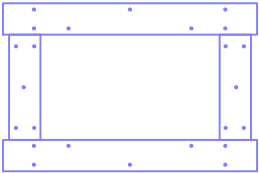
1. APPLY $\frac{1}{4}$ " BEAD OF CONTINUOUS CALKING AROUND WINDOW OPENING $\frac{1}{2}$ " FROM EDGE.
2. INSERT WINDOW INTO OPENING.
3. APPLY $\frac{1}{4}$ " BEAD OF CONTINUOUS CALKING AROUND NAIL FIN $\frac{3}{8}$ " FROM EDGE AND AT EDGE OF NAIL FIN.
4. PLACE TRIM AROUND WINDOW
5. SECURE WINDOW AND TRIM WITH .092" X 1 3/4"" RING SHANK GALVANIZED NAILS WITH A MAXIMUM OF 6" O.C. SPACING, $\frac{1}{2}$ " MINIMUM EDGE DISTANCE AND MINIMUM EMBEDMENT OF $\frac{7}{8}$ ". ALL NAIL HEADS TO BE VISIBLE FROM SURFACE OF TRIM - NO HIDDEN FASTENERS IN THIS INSTALLATION.



PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	VENDOR
1	----	WALL ASSEMBLY	TUFF SHED
2-3	----	TRANSOM WINDOW	INNOVATIONS MFG
4	----	WINDOW TRIM	LOUISIANA PACIFIC
5	----	.092" X 1 3/4" RING SHANK NAIL	SOUTHERN CARLSON SYSTEMS

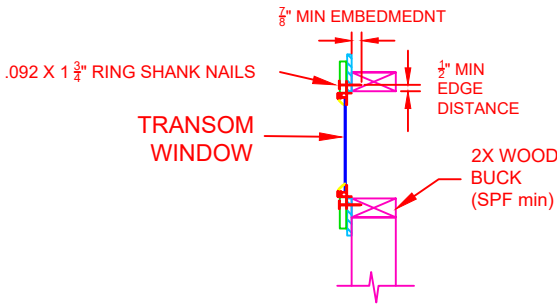


1 EXPLODED WINDOW ASSEMBLY
SCALE: 1/2" = 1'-0"



TRIM NAIL PATTERN

2 TRANSOM WINDOW SECTION VIEW
SCALE: 1:16



intertek Takl Quality Assured.	Report #:	R0182.01-801-44
	Date:	10/04/24
	Verified by:	J. Crump



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Date: 10/04/24

SECTION 12

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	10/04/24	N/A	Original Report Issue
1	10/28/24	4	No corner key
2	11/6/24	Cover, 3	Added PE stamp, Added additional signer