

TEST REPORT

Report No.: E5100.01-401-44

Rendered to:

INNOVATIONS MANUFACTURING, INC.
Denver, Colorado

PRODUCT TYPE: Transom Window
SERIES/MODEL: IM

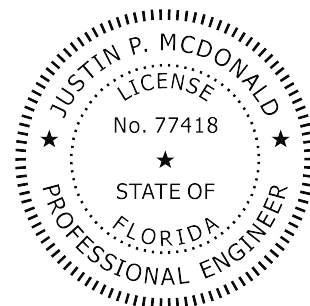
SPECIFICATION(S): AAMA/WDMA/CSA 101/I.S.2/A440-11, *NAFS 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

Title	Summary of Results
AAMA/WDMA/CSA 101/I.S.2/A440-11	Class R-PG50 1829 x 309 (72 x 12)-TR
Design Pressure	±2400 Pa (±50.13 psf)
Air Infiltration	<0.1 L/s/m ² (<0.01 cfm/ft ²)
Water Penetration Resistance Test Pressure	440 Pa (9.19 psf)

Test Completion Date: 02/11/15

This report contains in its entirety:

Cover Page: 1 page
Report Body: 5 pages
Alteration Addendum: 1 page
Location Air Seal: 1 page
Drawing: 1 page


Digitally Signed by: JP McDonald

2015.04.23 16:17:11 -04'00'

Reference must be made to Report No. E5100.01-401-44, dated 04/23/15 for complete test specimen description and detailed test results.

1.0 Report Issued To: Innovations Manufacturing, Inc.
4555 Grape Street
Denver, Colorado 80216

2.0 Test Laboratory: Architectural Testing, Inc.
an Intertek company ("Intertek-ATI")
2250 Massaro Boulevard
Tampa, Florida 33619
813-628-4300

3.0 Project Summary:

3.1 Product Type: Transom Window

3.2 Series/Model: IM

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). The specimen tested successfully met the performance requirements for a **Class R-PG50 1829 x 309 (72 x 12)-TR** rating.

3.4 Test Dates: 02/10/15 - 02/11/15

3.5 Test Record Retention End Date: All test records for this report will be retained until February 11, 2019.

3.6 Test Location: Intertek-ATI test facility in Tampa, Florida.

3.7 Test Specimen Source: The test specimen(s) was provided by the client. Representative samples of the test specimen(s) will be retained by Intertek-ATI for a minimum of four years from the test completion date.

3.8 Drawing Reference: The test specimen drawings have been reviewed by Intertek-ATI and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek-ATI per the drawings located in Appendix C. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

<u>Name</u>	<u>Company</u>
Owen Bunker	Innovations Manufacturing, Inc.
Wilferson Simbert	Intertek-ATI

4.0 Test Specification(s):

AAMA/WDMA/CSA 101/IS.2/A440-11, *NAFS 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 0.6 m ² (6 ft ²)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1829	72	305	12

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill and jambs	Aluminum	Extruded

	Joinery Type	Detail
All corners	Mitered and keyed	Each corner was sealed with sealant and secured with one inside aluminum corner key with epoxy.

5.3 Weatherstripping: No weatherstripping was utilized.

5.4 Glazing: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.*

Glass Type	Glazing	Glazing Method
Monolithic	3 mm thick annealed glass	Interior glazed against adhesive backed foam glazing tape and secured with snap-in PVC glazing beads.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Transom daylight opening	1	1784 x 260	70-1/4 x 10-1/4	1/2"

5.0 Test Specimen Description: (Continued)

5.5 Drainage: No drainage was utilized.

5.6 Hardware: No hardware was utilized.

5.7 Reinforcement: No reinforcement was utilized.

6.0 Installation:

The specimen was installed into a 2x6 Southern Yellow Pine wood buck. The rough opening allowed for a 1/8" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Head, sill and jambs	2" long roofing nails	3" from each corner and spaced 8" on center, through the nail fin and trim board into the wood buck

7.0 Test Results: The temperature during testing was 19°C (67°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.1 L/s/m ² (<0.01 cfm/ft ²)	1.5 L/s/m ² (0.3 cfm/ft ²) max.	1
Water Penetration, per ASTM E 547	N/A	N/A	2
Uniform Load Deflection, per ASTM E 330	N/A	N/A	2
Uniform Load Structural, per ASTM E 330	N/A	N/A	2
Forced Entry Resistance, per ASTM F 588, Type: D - Grade: 10	Pass	No entry	

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 at 440 Pa (9.19 psf)	Pass	No leakage	3
Uniform Load Deflection, per ASTM E 330 Deflections taken at the head +2400 Pa (+50.13 psf) -2400 Pa (-50.13 psf)	<0.3 mm (<0.01") 0.3 mm (0.01")	Report Only	4, 5, 6
Uniform Load Structural, per ASTM E 330 Permanent sets taken at the head +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	0.5 mm (0.02") 0.5 mm (0.02")	0.8 mm (0.03") max. 0.8 mm (0.03") max.	4, 5, 6

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.

Note 2: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 3: Without insect screen.

Note 4: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation. The deflection data is recorded in this report for special code compliance and information only.

Note 5: Loads were held for 10 seconds.

Note 6: Tape and film were not used to seal against air leakage during structural testing.

Intertek-ATI will service this report for the entire test record retention period. Test records such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Intertek-ATI for the entire test record retention period.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

For ARCHITECTURAL TESTING, Inc.



Digitally Signed by: Daniel P. Braun

Daniel P. Braun
Senior Vice President



Digitally Signed by: JP McDonald

J.P. McDonald, P.E.
Director – Regional Operations

VLM:vlm

Attachments (pages): This report is complete only when all attachments listed are included.

- Appendix-A: Alteration Addendum (1)
- Appendix-B: Location of Air Seal (1)
- Appendix-C: Drawing(s) (1)

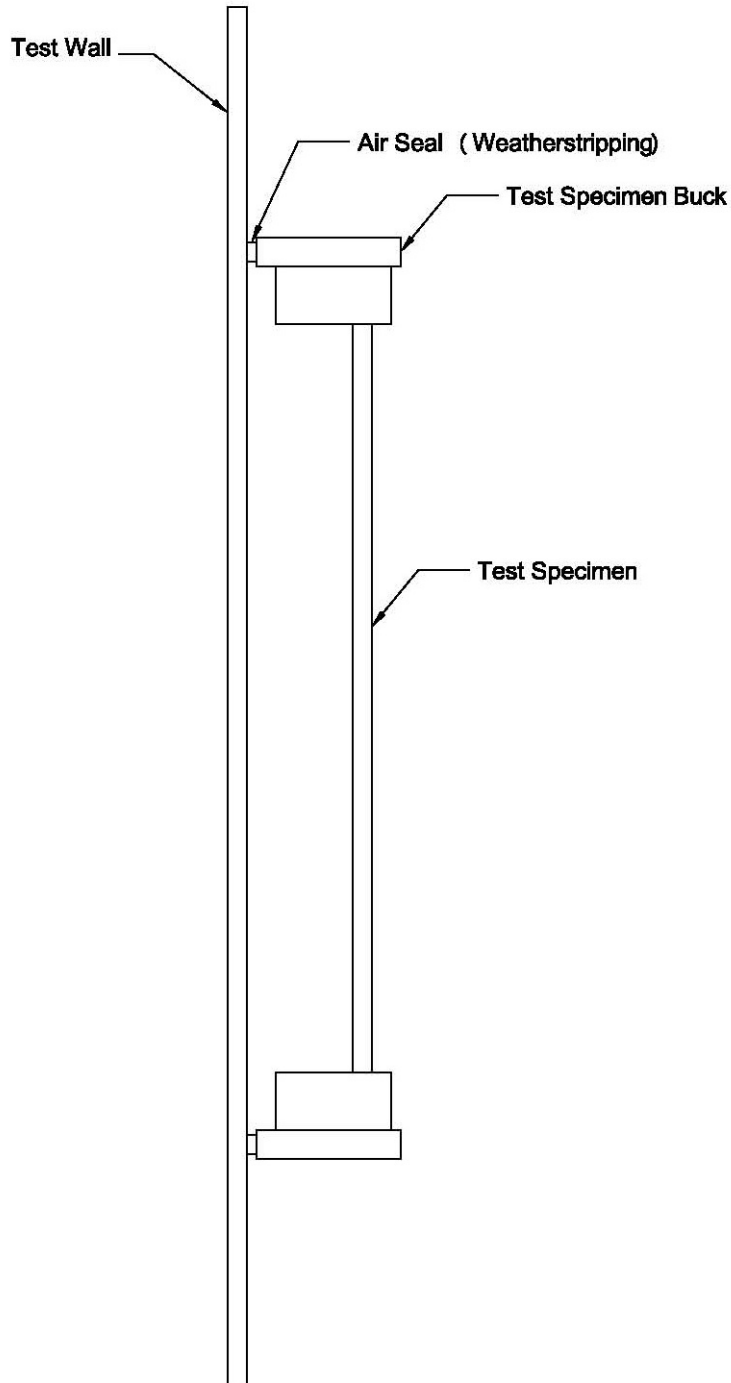
Appendix A

Alteration Addendum

Note: *No alterations were required.*

Appendix B

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.



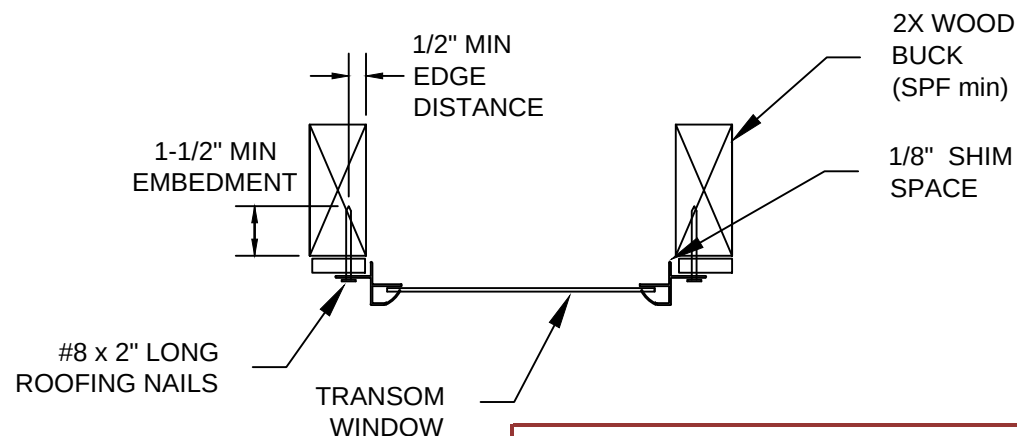
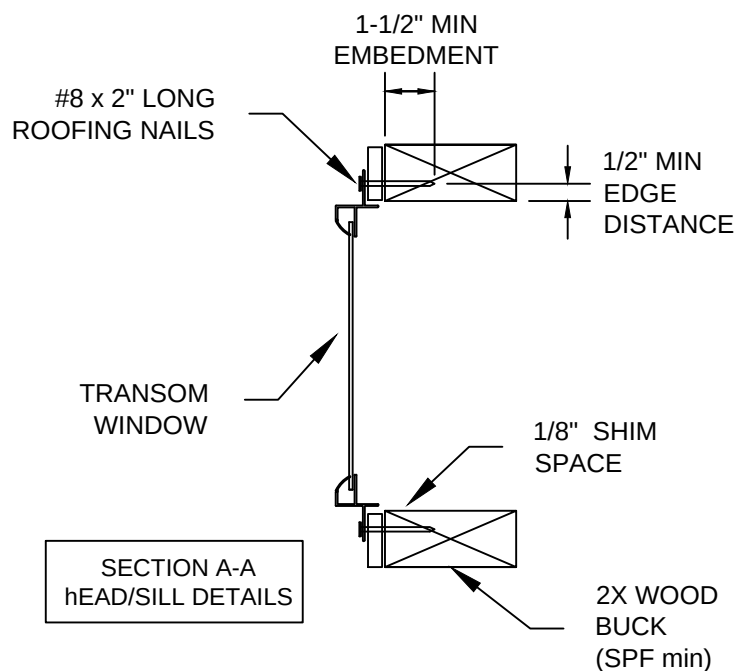
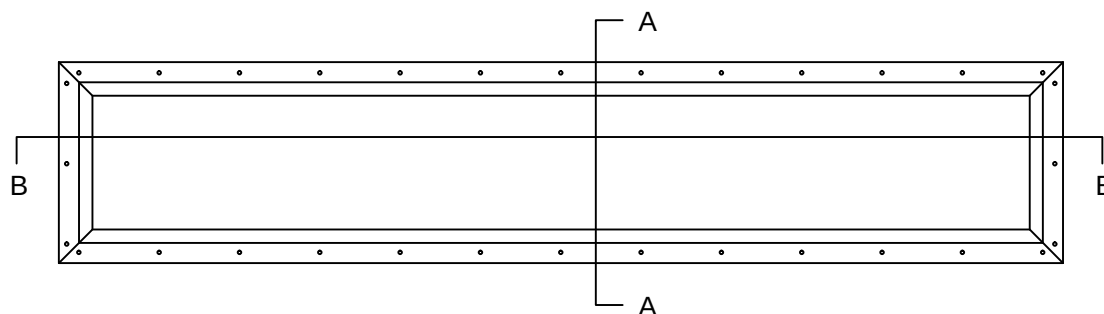
Appendix C

Drawing(s)

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	VENDOR
1	----	WALL ASSEMBLY	TUFF SHED
2	----	TRANSOM WINDOW	INNOVATIONS MFG
3	----	WINDOW TRIM	LOUISIANA PACIFIC
4	----	.113 #8 x 2 3/8" RING SHANK NAIL	FASTENAL

AS TESTED INSTALLATION NOTES:

1. WINDOW MUST BE INSTALLED INTO A SPF OR BETTER 2X WOOD MEMBER
2. WINDOW MUST BE INSTALLED USING 2" LONG, #8 ROOFING NAILS. ALL NAILS MUST BE SPACED A MAXIMUM OF 6" ON CENTER, THROUGH THE NAIL FIN INTO THE 2X WOOD MEMBER.
3. ALL INSALLATION FASTENERS MUST BE LOCATED A MINIMUM OF 1/2" FROM THE EDGE OF THE NAIL FIN AND HAVE A MINIMUM EMBEDMENT OF 1-1/2"..



Building **BetterTogether.**

Test sample complies with these details.

Deviations are noted.

Report #: **E5100.01-401-44** Date: **04/13/2015**

Verified by:



Order #:
Customer:
Site Address:
Building Size: WIDTH - LENGTH - HEIGHT - SQ. FT. AREA

PO #
Drawn By: PK
Date: 11/18/14
Checked By:
Date:
Scale: N.T.S.

THESE DRAWINGS AND THE DESIGN ARE THE PROPERTY OF TUFF SHED, INC. THESE DRAWINGS ARE FOR A BUILDING TO BE SUPPLIED AND BUILT BY TUFF SHED. ANY OTHER USE IS FORBIDDEN BY TUFF SHED INC & THE ENGINEER OF RECORD.

DRAWINGS BY:
TUFF SHED, INC.

IN HOUSE DRAFTING DEPARTMENT
1777 S. HARRISON STREET
DENVER, COLORADO 80210
(303) 753-TUFF

TUFF SHED INC. ASSUMES ALL RESPONSIBILITY FOR THE CONTENT OF THESE DRAWINGS AND THE CONSTRUCTION OF THE BUILDINGS SHOWN HEREIN.

TITLE
INSTALLATION INSTRUCTIONS
FOR TRANSOM WINDOWS
MANUFACTURED BY
INNOVATIONS MFG, INC

DRAWING NO.
AP-FL-TRANSOM
REV. LEVEL 01
SHEET **1**
SHEET 1 OF 3