



PROJECT: Siteline Clad Inswing Door Transom

BY: JAR DATE: 10/24/23

PROJECT NO.: Q6707.02-925-38

CKD: TAD SHEET: 1 OF 6

## Product Approval Supporting Calculations

### Siteline Clad Inswing Door Transom

Report Q6707.02-925-38

Rendered to:

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October 24, 2023


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This item has been digitally signed and sealed by Joseph A. Reed, PE on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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### Scope

Architectural Testing, Inc. was contracted by Jeld-Wen Windows & Doors to evaluate alternate installation methods for their Siteline Clad Inswing Door Transom windows. The evaluation is based on physical testing and product certifications. Reference standards utilized in this project include:

*Florida Building Code, Building, 8<sup>th</sup> Edition (2023)*. International Code Council, 2023.

*ANSI/AWC NDS—2018 National Design Specification (NDS) for Wood Construction with 2015 NDS Supplement*. American Wood Council, 2018.


*ADM1-2020 Aluminum Design Manual: Part 1 – Specification for Aluminum Structures*. The Aluminum Association, Inc., 2020.

The anchorage analyses presented herein do not address the water resistance, water penetration or air infiltration performance of the installation method or the installed product. In addition, the analyses rely on the assumption that the building substrate is capable of withstanding incurred loads.

### Certification of Independence

In accordance with Rule 61G20-3 Florida Administrative Code, Architectural Testing, Inc. hereby certifies the following:

- Architectural Testing, Inc. does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the agency.
- Architectural Testing, Inc. is not owned, operated or controlled by any company manufacturing or distributing products it tests or labels.
- Joseph A. Reed, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the reports are being issued.
- Joseph A. Reed, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

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**Analyses**

**Summary of Test Results**

The following table summarizes the various Siteline Clad Inswing Door Transom window products and their corresponding performance levels which have been established by testing or product certification.

**Table 1** Summary of Test Results

Series/Model	Test Report Number	Size (W x H)	Performance
Siteline Clad Inswing Door Transom (Fin Install)	SJW2014-040 E0A3 (Rev. 2, 05/21/14)	87" x 24"	+/- 50 psf

Testing documented in Table 1 was conducted by the National Certified Testing Laboratories laboratory in York, Pennsylvania (Florida Department of Business & Professional Regulation Test Lab No. TST4744, A2LA Certificate 3054.01).

**As-Tested Installation Analysis**

For air/water/structural testing the test specimen was secured to a 2x Spruce-Pine-Fir buck. The as-tested installation methods are evaluated on page 4. These capacities will be used to prove acceptable anchors and substrates for the windows.

**Anchorage Requirements**

As-tested spacing must be maintained. It must be determined the anchorages are not overloaded for the approved window size and design pressures. Calculations presented on page 5 show the anchor spacing requirements for the established limiting anchor capacities.

Anchorage requirements established by this report are accurately presented in Drawing D010963.

**Nail Fin to Wood**

#8 x 1-5/8" Wood Screw

0.050" thick 6063-T6 Aluminum Nailing Fin

Spruce-Pine-Fir 2x Wood Substrate Minimum (G=0.42)

**Allowable Tension of #8 x 1-5/8" Wood Screw**

$$W = 1.6(1.625'' - 0.062'')(2/3)(82 \text{ lb/in})$$

$$W = 137 \text{ lb}$$

(NDS, Table 12.2B, 2/3 for screw with smooth shank)

**Pull-Over of #8 x 1-5/8" Wood Screw**

$$P_{nov} = C_{pov} t_1 F_{tu1} (D_{ws} - D_h) / \Omega$$

$$P_{nov} = 1.0(0.050'')(30,000 \text{ psi})(0.322'' - 0.164'') / 3.0$$

$$P_{nov} = 79 \text{ lb}$$

**Capacity of Connection is 79 lb**



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87 x 24 +/- 50 psf

### Anchorage Requirements – Nail Fin

Window Overall Size: 87" x 24"

Window Overall Area:  $(87")(24")/144 = 14.5 \text{ ft}^2$

Window Overall Wind Load:  $(50 \text{ psf})(14.5 \text{ ft}^2) = 725 \text{ lb}$

Installed Anchor Spacing: 11" head; 11" sill; 11" each jamb

Installed Anchors: 7 head + 7 sill + 2(3) jambs = 20 installed anchors

Minimum Anchor Capacity: 79 lb/anchor

Total Anchor Capacity:  $(20 \text{ anchors})(79 \text{ lb/anchor}) = 1,580 \text{ lb} > 725 \text{ lb}$  **OK**



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### Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	10/24/23	N/A	Original report issue