

# US WEATHERSEAL WINDOWS & DOORS CORP. COMPUTER SIMULATION REPORT

## SCOPE OF WORK

2128 Ocean Fixed Window- NFRC 100/200/500 simulations to determine U-Factor, Solar Heat Gain Coefficient, Visible Transmittance and Condensation Resistance ratings.

## REPORT NUMBER

I1437.01-116-45

## TEST DATE

03/15/19

## ISSUE DATE

03/15/19

## RECORD RETENTION END DATE

03/15/24

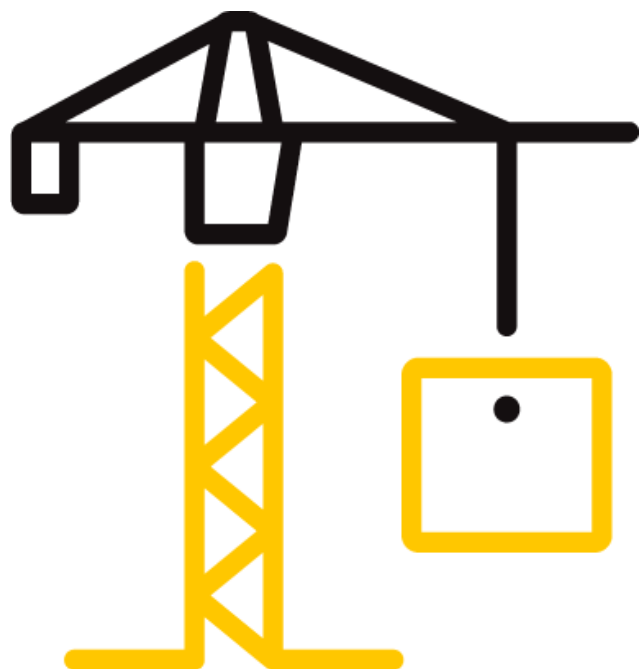
## PAGES

11

## DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-4044 (01/16/19)

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## TEST REPORT FOR US WEATHERSEAL WINDOWS & DOORS CORP.

Report No: I1437.01-116-45

Date: 03/15/19

### REPORT ISSUED TO

#### US WEATHERSEAL WINDOWS & DOORS CORP.

4916 3rd Avenue

Brooklyn, New York 11220

### SECTION 1

#### SUMMARY

#### SERIES/MODEL: 2128 Ocean Fixed Window

Intertek Building & Construction (Intertek B&C) was contracted to perform U-Factor, Solar Heat Gain Coefficient, Visible Transmittance and Condensation Resistance simulations in accordance with the National Fenestration Rating Council (NFRC).

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends five years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

FOR INTERTEK B&C:

<b>COMPLETED BY:</b>	Dale C. White
<b>TITLE:</b>	Simulation Technician
<b>SIGNATURE:</b>	
<b>DATE:</b>	03/15/19

<b>REVIEWED BY:</b>	Eric S. Leitner
<b>TITLE:</b>	Simulation Technician Team Leader
<b>SIGNATURE:</b>	
<b>DATE:</b>	03/15/19

DCW:dcw

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**TEST REPORT FOR US WEATHERSEAL WINDOWS & DOORS CORP.**

Report No: I1437.01-116-45

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**SECTION 2**

**TEST METHODS**

The products were evaluated in accordance with the following:

***ANSI/NFRC 100-2017, Procedure for Determining Fenestration Product U-Factors***

***ANSI/NFRC 200-2017, Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence***

***NFRC 500-2017, Procedure for Determining Fenestration Product Condensation Resistance Values***

*\*Condensation Resistance results obtained from this procedure are for controlled laboratory conditions and do not include the effects of air movement through the specimen, solar radiation, and the thermal bridging that may occur due to the specific design and construction of the fenestration system opening.*

Ratings values included in this report are for submittals to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes. The ratings values were rounded in accordance with NFRC 601, NFRC Unit and Measurement Policy.

Intertek B&C is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The values included in this report are not considered in compliance with ANSI/NFRC 100, ANSI/NFRC 200, and/or NFRC 500 unless the associated validation test requirements have been satisfied, as applicable.

## TEST REPORT FOR US WEATHERSEAL WINDOWS & DOORS CORP.

Report No: I1437.01-116-45

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### SECTION 3

#### TEST PROCEDURE

The total product, including specific frame, spacer, and glass details, was modeled using NFRC approved software.

<b>FRAME AND EDGE MODELING</b>	THERM 7.4.4
<b>CENTER-OF-GLASS MODELING</b>	WINDOW 7.4.14
<b>TOTAL PRODUCT CALCULATIONS</b>	WINDOW 7.4.14
<b>SPECTRAL DATA LIBRARY</b>	IGDB 65.0

#### Modeling Assumptions / Technical Interpretations

Any modeling assumptions and technical interpretations required to model this product are listed below.

- 1) To prevent air infiltration, tape was applied to all interior sash crack locations.
- 2) The glass used is not in the spectral data library, and cannot be certified.

### SECTION 4

#### SIMULATION SPECIMEN DESCRIPTION

<b>SERIES/MODEL</b>	2128 Ocean Fixed Window
<b>PRODUCT TYPE</b>	Fixed, 4-Sided
<b>FRAME MATERIAL</b>	AT - Aluminum w/ Thermal Breaks - All Members
<b>SASH MATERIAL</b>	NA - Not Applicable
<b>STANDARD SIZE</b>	1200mm x 1500mm
<b>NFRC CPD NUMBER</b>	

**TEST REPORT FOR US WEATHERSEAL WINDOWS & DOORS CORP.**

Report No: I1437.01-116-45

Date: 03/15/19

**SECTION 4 (Continued)**

**SIMULATION SPECIMEN DESCRIPTION**

SPACER OPTIONS			
TYPE	PRIMARY SEAL	SECONDARY SEAL	CODE
Aluminum Spacer	Butyl Rubber	Silicone	A1-D

GRID OPTIONS		
GRID SIZE	GRID TYPE	GRID PATTERN
None	-	-

REINFORCEMENT OPTIONS	
LOCATION	MATERIAL
None	-

GAS FILLING TECHNIQUE	
FILL TYPE	METHOD
90% Argon	Single-Probe, Timed

EDGE-OF-GLASS CONSTRUCTION	
<b>INTERIOR CONDITION</b>	Aluminum bead with EPDM gasket
<b>EXTERIOR CONDITION</b>	Aluminum leg with EPDM gasket

WEATHERSTRIPPING		
TYPE	QUANTITY	LOCATION
None	-	-

FRAME/SASH MATERIALS FINISH	
<b>INTERIOR</b>	Aluminum (Painted/Anodized)
<b>EXTERIOR</b>	Aluminum (Painted/Anodized)

VALIDATION MATRIX*	
PRODUCT LINE	REPORT NUMBER
None	-

*\*These products are part of a validation matrix. Only one is required for validation testing.*

**TEST REPORT FOR US WEATHERSEAL WINDOWS & DOORS CORP.**

Report No: I1437.01-116-45

Date: 03/15/19

**SECTION 5**

**SPECIALTY PRODUCTS TABLE**

The specialty products method allows the manufacturer to determine the overall product SHGC and VT for any glazing option. The center of glass SHGC and/or VT must be determined using WINDOW 7.4.14. The method calculates overall product SHGC and VT indexed on center of glass properties. All values used in the calculations are truncated to six decimal place precision.

	No Dividers	Dividers < 1	Dividers > 1
<b>SHGC0</b>	0.007959	0.010786	0.013456
<b>SHGC1</b>	0.823799	0.740173	0.661226
<b>VT0</b>	0.000000	0.000000	0.000000
<b>VT1</b>	0.815840	0.729386	0.647771

$$SHGC = SHGC0 + SHGCc (SHGC1 - SHGC0)$$

$$VT = VT0 + VTc (VT1 - VT0)$$

## TEST REPORT FOR US WEATHERSEAL WINDOWS & DOORS CORP.

Report No: I1437.01-116-45

Date: 03/15/19

### SECTION 6

### SIMULATION RESULTS

TOTAL PRODUCT CALCULATIONS (2128 Ocean Fixed Window)														
Option Number	Pane Thickness 1 (in)	Gap Width 1 (in)	Pane Thickness 2 (in)	Gap Width 2 (in)	Pane Thickness 3 (in)	Gap Width 3 (in)	Pane Thickness 4 (in)	Gap Fill	Low-e (Surface #)	Tint	Spacer	Grid Type		
	U-Factor (Btu/Hr-Ft <sup>2</sup> -F)		Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)				Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance (CR)					
1	XETG0160/Argon/Clear/Argon/Clear (6mm-6mm-6mm) 42mm IG													
	0.234	0.472	0.232	0.472	0.232			ARG90	0.114(#2)	CL	A1-D	N		
	U-Factor		0.29		SHGC (N)			0.30		VT (N)		0.39	CR	52



Total Quality. Assured.

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**TEST REPORT FOR US WEATHERSEAL WINDOWS & DOORS CORP.**

Report No: I1437.01-116-45

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**SECTION 7**

**DRAWINGS / BILL OF MATERIALS**

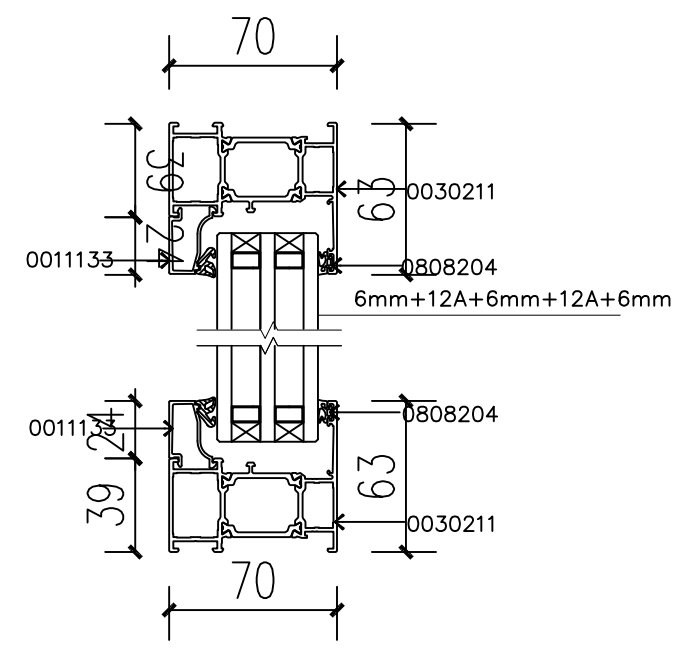
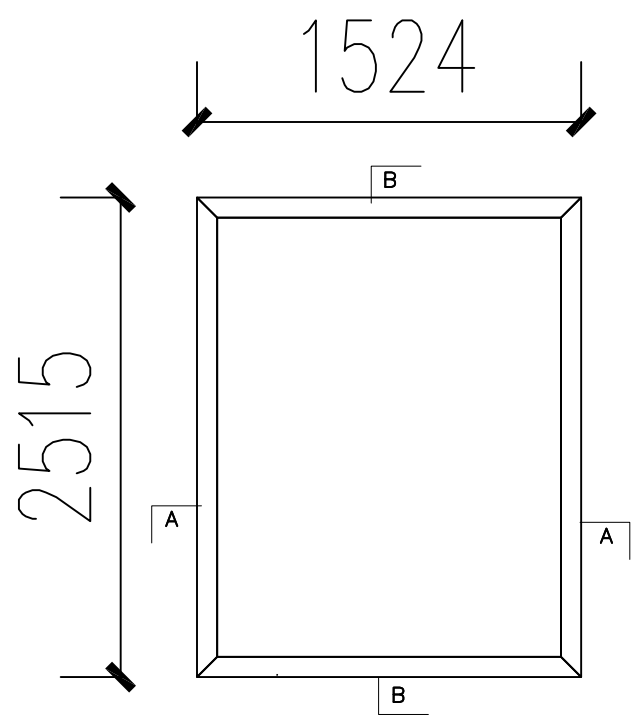
The drawings which follow have been reviewed by Intertek B&C and are representative of the simulation results reported herein. Any deviations are documented herein or on the drawings.



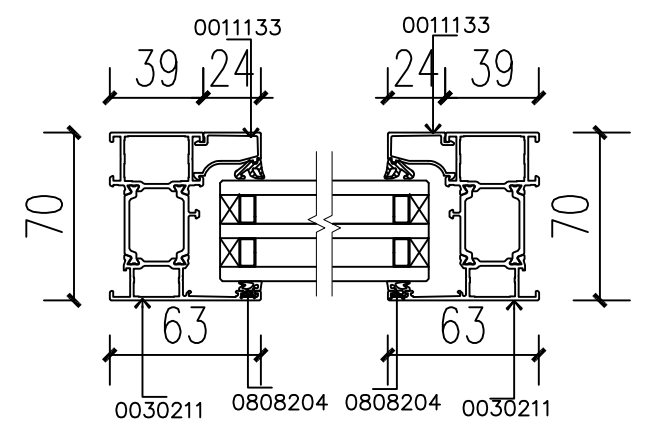


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B-B



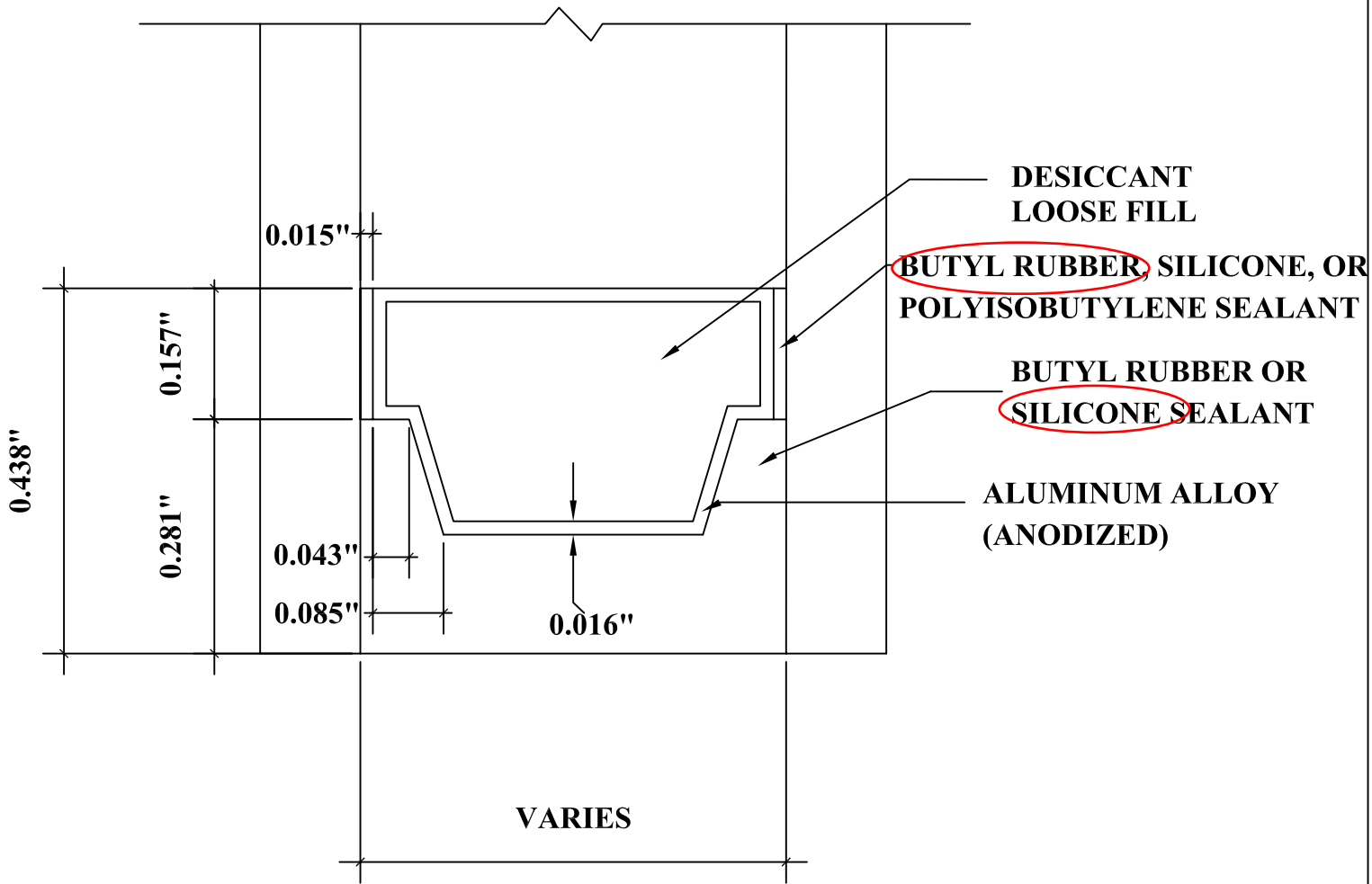
A-A

ITEM	2128	
PROJECT	ALUMINUM DOOR & WINDOW	
DESIGN	STARLIGHT	
CONTENT	DETAIL DWG	
ITEM MARK		
DATE	2018-1-16	
CHANGED		
No.	DATE	CONTENT

CONFIRM SIGNING:

**intertek**  
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Report #: 11437-116-45  
Date: 7/13/2018  
Verified by: *[Signature]*



DETAIL FOR THERMAL MODELING OF  
ALUMINUM SPACER (A1-D)



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Report No: I1437.01-116-45

Date: 03/15/19

**SECTION 8**

**REVISION LOG**

<b>REVISION #</b>	<b>DATE</b>	<b>PAGES</b>	<b>REVISION</b>
.01R0	03/15/19	N/A	Original report issued.