8148 NW 74 Avenue
Medley, FL, 33166
305.885.3328 ph. | 305.885.3329 fx

Report Date:	04/21/2020
Simulation Date:	04/17/2020
Expiration Date:	04/17/2025
Report Number:	12077
Project Number:	20-1074
Revision Number:	0

Thermal Simulation Report

Manufacture: Shanghai Superhouse Bldg, Co. Ltd

Address: No. 10 Hangfan RD, Pudong
New Area, Shanghai, China

Specifications: ANSI/*NFRC 100-2017:* Procedure for Determining Fenestration Product U-Factor
ANSI/*NFRC 200-2017:* Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence.
NFRC 500-2017: Procedure for Determining Fenestration Product Condensation Resistance Values

Software: Therm 7.4.4.0, Window v7.4.14, Simulation Manual, Optics 6
Spectral Data Library: IGDB v68.0

Baseline Product Validation

The baseline product must be tested in accordance with NFRC 102 "Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems" to validate the U Values indicated. NFRC 100-2017 states "The baseline product is the individual product selected for validation testing". The individual product selected as the baseline product shall have a simulated U-factor within 0.10 Btu/h·ft²·F or 20% of the lowest simulated U-factor, whichever is greater.

Product Description	Product Number	Pane Thickness #1	Pane Thickness #2	Gap	Gap Fill	Emissivity Surface #	Spacer	U Factor

Window Test Size: 1200 mm (47 1/4") by 1500 mm (59") high

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Model Designation:	Aluminum Double Hung Window
Operator Code:	VSDH
Simulated Model Size:	1200 mm (47 1/4") by 1500 mm (59") high

Frame and Vent Construction	
Frame Material and Finish:	(AT) painted aluminum alloy with thermally broken members
Vent Material and Finish:	(AT) painted aluminum alloy with thermally broken members

Spacer Type	**Sealant Primary**	**Sealant Secondary**	**Desiccant**
Duralite Spacer	Butyl	Butyl	None

Edge of Glass Construction	
Interior Condition:	Silicone
Exterior Condition:	Silicone

Gas Type	**Filling Technique**	**Gas Fill Percentage**
Argon	Single Probe	90%

Weather Stripping		
Quantity	Description	Location
Single row	Mohair	Frame head on the interior
Double row	Mohair	Bottom vent top rail on the exterior
Single row	Mohair	Bottom vent bottom rail on the interior
Single row	Mohair	Vent jamb rails on the interior and exterior

Hardware		
Quantity	Description	Location
None	None	None

Only continuous elements which require modeling are listed

Reinforcement	
Material	**Location**
None	None

Dividers/Grids		
Grid Size	Material	Grid Pattern
None	None	None
Note: any deviations in grid pattern are noted here		

Modeling Assumptions: None

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Simulated Data

Product Description	Product ID Number	Pane Thickness #1	Pane Thickness #2	Pane Thickness #3	Gap #1	Gap Fill #1	Emissivity Surface #2	Emissivity Surface #3	Tint	Grid Type	Total Product U-Factor	Condensation Resistance	Total Product SHGC NG	Total Product VT NG
6mm SB70XL-ARG-6mm SB70XL	1	0.236	0.236		0.375	ARG	0.018	0.018	CL	N	0.45	33	0.20	0.39
6mm SB70XL-ARG- 6mm SG460	2	0.236	0.236		0.375	ARG	0.018	0.055	CL	N	0.45	33	0.21	0.44
6mm Clear-090PVB-6mm Clear	3	0.539							CL	N	0.95	17	0.54	0.64
6mm Solarblue-090PVB-6mm Clear	4	0.535							BL	N	0.95	17	0.42	0.40

Low E Coatings Used:
Vitro formerly PPG Solarban 70XL e=0.018
Vitro formerly PPG Sungate 460 e=0.055

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Remarks

"Ratings values included in this report are for submittal to an NFRC-licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those values identified on a valid Certification Authorization Report (CA) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes."

"The values included in this report are not considered in compliance with NFRC 100, NFRC 200, and/or NFRC 500 unless the associated validation test requirements have been satisfied, as applicable."

"The 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."

Simulations were conducted in full compliance with NFRC requirements. Simulation relates only to the simulated Fenestration product.

Rounding is per requirements of NFRC 601, NFRC Unit and Measurement Policy.

U factors, Solar Heat Gain Coefficients, Visible Transmittance and Condensation Resistance values are calculated with a default frame absorption of 0.30 for all products other than glazed walls and slope glazing which have a frame absorption of 0.50.

Drawings referenced in this document are an integral part of this report, therefore, are required when distributing this test report. Simulation results obtained represent the actual value of the simulated specimen and does not constitute opinion, endorsement or certification by this laboratory.

This test report is considered the exclusive property of the client named herein and is applicable to the specimen simulated. This report may not be reproduced without the approval of Fenestration Testing Laboratory, Inc and if so must be in full.

Revision History Table

Revision	Description	Author	Effective Date
0	Initial Release	Monika Sanchez	04/13/2020

Simulation Conducted by

Monika Sanchez

NFRC Certified Simulator

Jose Sanchez

Simulator- in- Responsible- Charge

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Appendix

Fenestration Simulated Product Drawings and Bill of Material