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NFRC U-FACTOR, SHGC, VT, & CONDENSATION RESISTANCE COMPUTER SIMULATION REPORT

(Revised)

Rendered to:
GLOBAL PRODUCTS INTERNATIONAL GROUP, LLC

SERIES/MODEL:
Vinyl Swinging Door (Single)

Report Number: **E1744.02-116-45**
Original Report Date: **10/10/14**
Revised Report Date: **12/01/14**

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Rendered to:
GLOBAL PRODUCTS INTERNATIONAL GROUP, LLC
2765 Bankers Industrial Drive
Atlanta, Georgia 30360

Report Number:	E1744.02-116-45
Simulation Date:	10/10/14
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Revised Report Date:	12/01/14

Project Summary:
Architectural Testing, Inc. was contracted to perform U-Factor, Solar Heat Gain Coefficient, Visible Transmittance, and Condensation Resistance* computer simulations in accordance with the National Fenestration Rating Council (NFRC). The products were evaluated in full compliance with NFRC requirements to the standards listed below.

**NFRC's Condensation Resistance rating is NOT equivalent to a Condensation Resistance Factor (CRF) determined in accordance with AAMA 1503.*

Standards:

NFRC 100-2014:	*Procedure for Determining Fenestration Product U-Factors*
NFRC 200-2014:	*Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence*
NFRC 500-2014:	*Procedure for Determining Fenestration Product Condensation Resistance Values*

Software:

Frame and Edge Modeling:	THERM 6.3.46
Center-of-Glass Modeling:	WINDOW 6.3.74
Total Product Calculations:	WINDOW 6.3.74
Spectral Data Library:	IGDB 38.0

Simulations Specimen Description:

Series/Model:	Vinyl Swinging Door (Single)
Type:	Swinging Door, Single Leaf Entrance Door
Frame Material:	WD Wood
Sash Material:	VA Vinyl w/ All Members Reinforced
Standard Size:	960mm x 2090mm

Modeling Assumptions/Technical Interpretations:

1) To prevent air infiltration, tape was applied to all interior sash crack locations.

Specialty Products Table:

The specialty products method allow 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 6.3.74. The method gives 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
SHGC0	0.007472	0.010214	0.012742
SHGC1	0.571186	0.490418	0.417017
VT0	0.000000	0.000000	0.000000
VT1	0.563714	0.480204	0.403206

SHGC = SHGC0 + SHGCc (SHGC1 - SHGC0)

VT = VT0 + VTc (VT1 - VT0)

Validation Matrix:

The following products are part of a validation matrix. Only one is required for validation testing.

Product Line	*Report Number*
None	-

Spacer Option Description

	Sealant		
Spacer Type	*Primary*	*Secondary*	*Code*
Cardinal XL-Edge	Silicone	Polyisobutylene	SS-D

Grid Option Description

Grid Size	*Grid Type*	*Grid Pattern*
None	-	-

Reinforcement Option Description

Location	*Material*
All horizontal and vertical sash members	Fiberglass Pultrusion

Gas Filling Technique Description

Fill Type	*Method*
None	-

Edge-of-Glass Construction

Interior Condition	PVC glazing bead against glass
Exterior Condition	Silicone between vinyl frame and glass

Weatherstripping

Type	*Quantity*	*Location*
Finpile	2 rows	Sash Perimeter

Frame/Sash Materials Finish

Interior	Vinyl
Exterior	Vinyl

NFRC 100/200/500 Summary Sheet
Vinyl Swinging Door (Single)

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			**Solar Heat Gain Coefficient (SHGC)** Grids (None / <1 / >=1)					**Visible Transmittance (VT)** Grids (None / <1 / >=1)		**Condensation Resistance**	
1	E180/AIR/CLR (DS/DS) 1"											
	0.118	0.778	0.118					AIR	0.068(#2)	CL	SS-D	N
	U-Factor		**0.32**	**SHGC (N)**				**0.37**	**VT (N)**	**0.45**	**CR**	**59**
2	E272/ARG90/CLR (DS/DS) 1"											
	0.117	0.778	0.118					ARG90	0.042(#2)	CL	SS-D	N
	U-Factor		**0.29**	**SHGC (N)**				**0.24**	**VT (N)**	**0.41**	**CR**	**63**
3	E366/ARG90/CLR (DS/DS) 1"											
	0.117	0.778	0.118					ARG90	0.022(#2)	CL	SS-D	N
	U-Factor		**0.29**	**SHGC (N)**				**0.16**	**VT (N)**	**0.37**	**CR**	**64**

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.

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 to NFRC 601, NFRC Unit and Measurement Policy.

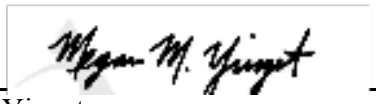
Architectural Testing, Inc. is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The NFRC procedure requires that the computational results be verified through actual test results.

Architectural Testing will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing, Inc. for the entire test record retention period. The test record retention end date for this report is October 10, 2018.

Results obtained are simulated values and were secured by using the designated test methods. 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 product simulated. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

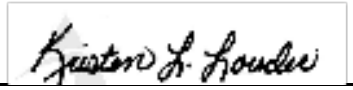
For ARCHITECTURAL TESTING, INC.:

SIMULATED BY:



Megan M. Yingst
Simulation Technician

REVIEWED BY:



Kristen L. Louder
Senior Simulation Technician
Simulator-In-Responsible-Charge

MMY:mmy
E1744.02-116-45

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix A: Drawings and Bills of Material (12)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
.01R0	10/10/14	All	Original Report Issued to Global Products International Group, LLC
.01R1	11/18/14	All	Revised reinforcement material to be fiberglass; updated report
.02R0	12/01/14	All	Added Options #2-3

All drawings and Bills of Material used to simulate this product are enclosed in this Appendix

Appendix A

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