



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

Rendered to:
SUPERSEAL MANUFACTURING COMPANY, INC.
125 Helen Street
S. Plainfield, NJ 07080

Report No.: 78633.02-116-45
Simulation Date: 12/18/07
Report Date: 12/20/07
Expiration Date: 12/18/11

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 100-2004: Procedure for Determining Fenestration Product U-Factors
NFRC 200-2004: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence
NFRC 500-2004: Procedure for Determining Fenestration Product Condensation Resistance Values

Software:

Frame and Edge Modeling: THERM 5.2.14
Center-of-Glass Modeling: WINDOW 5.2.17
Total Product Calculations: WINDOW 5.2.17
Spectral Data Library: 15.3

Simulation Specimen Description:

Series/Model: Series 1100 Ultra-DH
Type: Vertical Slider , Double Hung
Frame Material: Vinyl
Sash Material: Vinyl
Standard Size: 1200mm x 1500mm

Technical Interpretations:

None

Modeling Assumptions:

None

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 5.2. The method gives overall product SHGC and VT indexed on center of glass properties.

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.00446	0.00719	0.00976
SHGC1	0.76129	0.68082	0.60504
VT0	0.00000	0.00000	0.00000
VT1	0.75683	0.67363	0.59528

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

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

Validation Matrix:

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

<i>Product Line</i>	<i>Report Number</i>
None	-

Spacer Option Description

<i>Spacer Type</i>	<i>Sealant</i>		
	<i>Primary</i>	<i>Secondary</i>	<i>Desiccant</i>
Intercept Spacer	Butyl Rubber	Butyl Rubber	Yes

Grid Option Description

<i>Grid Size</i>	<i>Grid Type</i>	<i>Grid Pattern</i>
0.188" x 0.625"	Rectangular Grid	NFRC

Reinforcement Option Description

<i>Location</i>	<i>Material</i>
None	-

Gas Filling Technique Description

<i>Fill Type</i>	<i>Method</i>
90% Argon	Single probe timed

Edge-of-Glass Construction

<i>Interior Condition</i>	Foam weatherstripping on vinyl sash against glass
<i>Exterior Condition</i>	PVC glazing bead on vinyl sash against glass

Weatherstripping

<i>Type</i>	<i>Quantity</i>	<i>Location</i>
Finpile	2 rows	Top Rail, Keeper Rail, All Jamb Stiles
Finpile	1 row	Head, Sill, Lock Rail
Hollow Vinyl Bulb Gasket	1 row	Bottom Rail

NFRC 100/200/500 Summary Sheet
SuperSeal Manufacturing Company, Inc.
Series 1100 Ultra-DH

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	Tint	Spacer	Grid Type
1	0.120	0.750	0.129					AIR	0.018(#3)	LE	CU-D	N,G
U-Factor		0.34	SHGC (N / <1 / >1)		0.29 / 0.26 / 0.23	VT (N / <1 / >1)		0.49 / 0.45 / 0.38	CR		50	
2	0.120	0.750	0.129					ARG90	0.018(#3)	LE	CU-D	N,G
U-Factor		0.31	SHGC (N / <1 / >1)		0.29 / 0.26 / 0.24	VT (N / <1 / >1)		0.49 / 0.43 / 0.38	CR		55	

This report is reissued in the name of SuperSeal Window 7 Door Co. through written authorization of Veka Inc., to whom the original report was rendered. The original Veka Inc. report number is 78633.01-116-45.

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 the NFRC unit conversion and rounding policy.

Architectural Testing 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.

Detailed drawings, simulation data files, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire. 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:



Digitally Signed by: Christian Santos

Christian G. Santos
Simulation Technician

REVIEWED BY:



Digitally Signed by: Michael J. Thoman

Michael J. Thoman
Director - Simulations and Thermal Testing
Simulator-In-Responsible-Charge

CGS:CGS

78633.02-116-45

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix A: Drawings and Bills of Material (3)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
.02R0	12/20/2007	All	Reissue Report to SuperSeal Window & Door Co.

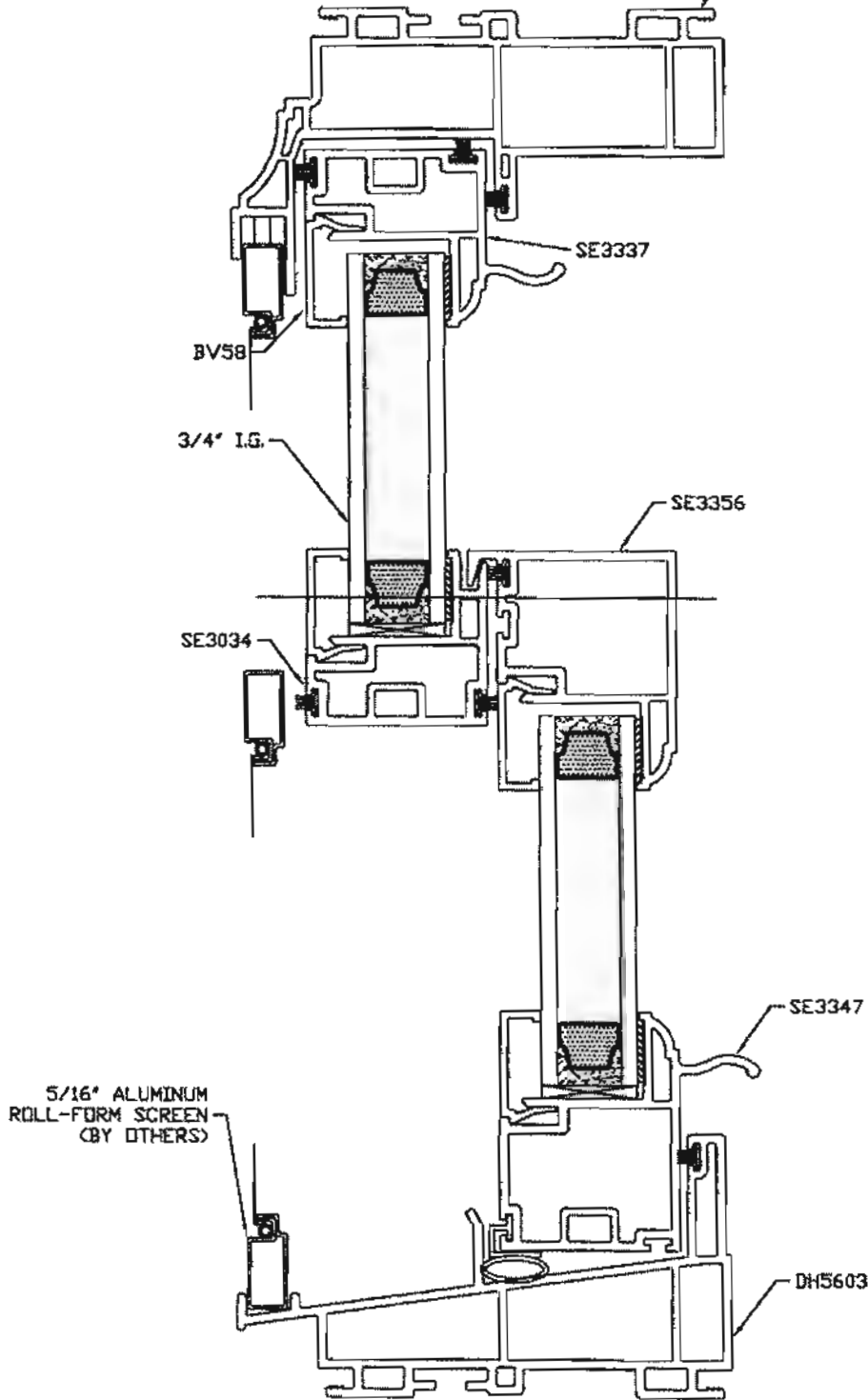
NOTE:
 FOR OTHER PROFILE, GLAZING BEAD,
 & GLASS OPTIONS, PLEASE SEE THE
 LINEAL PROFILE CHARTS FOR THIS
 SYSTEM.

Architectural Testing, Inc.

Report # 78633

Date 12/12/2007

Simulator ^{DH5602} *Chris Soto*



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VEKA INC.
 100 VEKA DRIVE
 FOMBELL, PA 16123

REVISIONS

DATE

DRAWN: TJF

DATE: 7 DEC 06

SCALE: FULL



Architectural Testing

**NFRC U-FACTOR, SHGC / VT,
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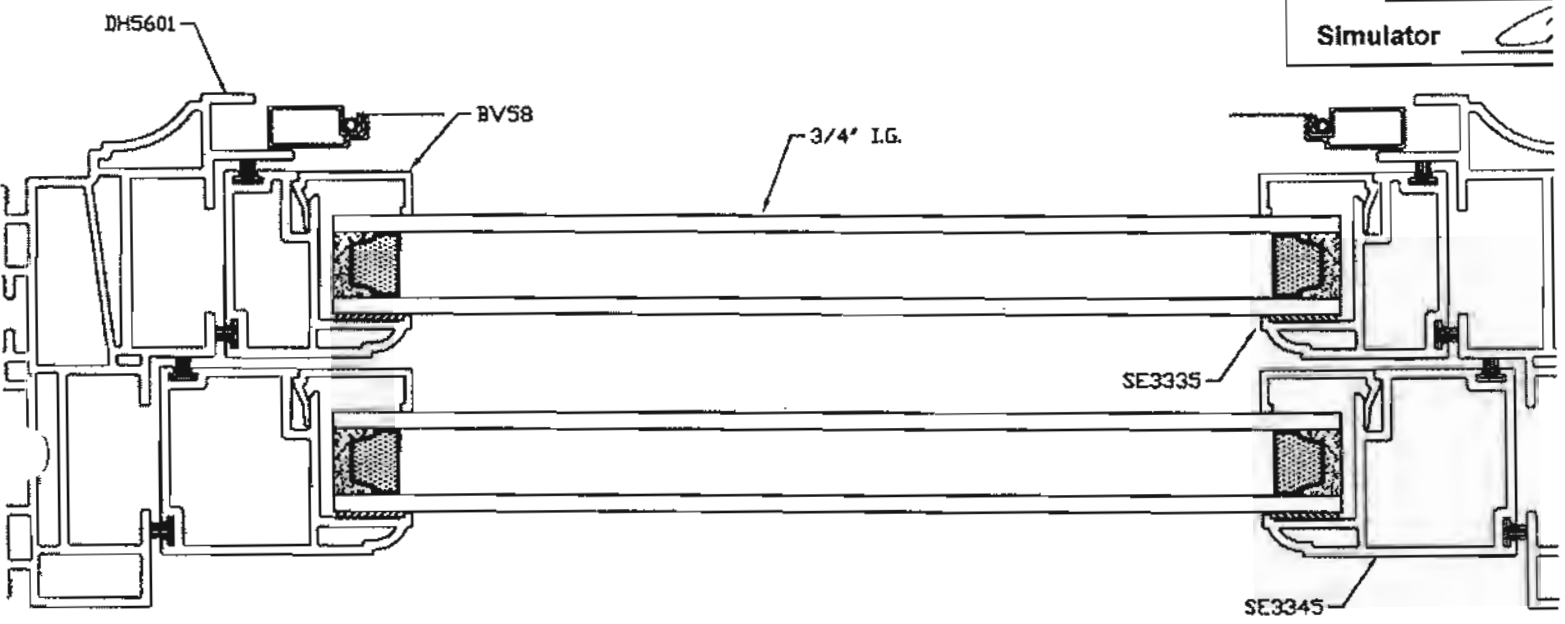
SERIES/MODEL: Series 1100 Ultra-DH

<i>Baseline Product for Validation Testing</i>	
Simulated Thermal Transmittance (U-Factor)	0.344
Unit Size:	47.244" wide by 59.055" high
Glazing Layer 1:	DS Clear
Gap 1:	0.750" Intercept Spacer (CU-D) - Air Fill
Glazing Layer 2:	DS PPG SB70 (e=0.035,#3)
Gap 2:	
Glazing Layer 3:	
Notes:	

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