



Superseal Manufacturing Company, Inc.

*SIMULATION PERFORMANCE &
SOLAR HEAT GAIN REPORT*

*"850"
Sliding Glass Door*

NCTL-110-12499-01



NATIONAL CERTIFIED TESTING LABORATORIES

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Simulation Performance, Solar Heat Gain Coefficient, Visible Transmittance and Condensation Resistance Calculation Report

REPORT NO: NCTL-110-12499-01
SIMULATION DATE: 12/28/09
REPORT DATE: 12/28/09

Client: Superseal Manufacturing Company, Inc.
125 Helen Street, P.O. Box 795
South Plainfield, NJ 07080

Product Line: Superseal Manufacturing Company, Inc. 's "850" Sliding Glass Door

Specification: NFRC 100-2004: "Procedure for Determining Fenestration Product U-Factors".
NFRC 200-2004: "Procedure for Determining Fenestration Product Solar Heat
Gain Coefficients and Visible Transmittance at Normal Incidence".
NFRC 500-2004: "Procedure for Determining Fenestration Product
Condensation Resistance Values".
Therm 5.x / Window 5.x NFRC Simulation Manual (Approved at test date)

**Procedures
and
Compliance:** All U-factor, Solar Heat Gain Coefficients, Visible Transmittance and
Condensation Resistance values were calculated using the following
characteristics: a default value of 0.30 solar absorptance for all products other
than window glazed wall and sloped glazing which have a solar absorptance of
0.50. The best glazing option was used as the configuration for SHGC and VT
specialty products table. NCTL is a NFRC accredited simulation laboratory and
this simulation was conducted in full compliance with NFRC requirements. This
report does not constitute an opinion or endorsement by the laboratory. Ratings
values included in this report are for submittal 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. Rounding per
IEEE/ASTM SI 10-1997 except section 5.4.1.3.

PRODUCT LINE DESCRIPTION

General: The product line modeled is Superseal Manufacturing Company, Inc.'s "850"
Sliding Glass Door.

Model Size Simulations: 2000mm x 2000mm (78.740" x 78.740")

Weatherseals:

Location	Weather Seal Description
Left Head	(1) single strips of weather-strip
Left Jamb	(1) single strips of weather-strip
Left Sill	(1) single strips of weather-strip
Meeting Stile	(1) single strips of weather-strip
Right Head	(1) single strips of weather-strip
Right Jamb	(1) single strips of weather-strip
Right Sill	(1) single strips of weather-strip / (1) Bulb Seal

Gas Fillings:

Gas Type	Filling Technique	Percentage
Argon	Single probe	90%

Reinforcement: A piece of aluminum reinforcement in the lock and keeper rail and in the Left Jamb sash.

Edge - of - Glass - Construction: Exterior Vinyl Glazing Bead and Interior silicone back bedding.

Spacer and Sealant:

Intercept – Coated Steel U-Shaped with Butyl Primary and Secondary Seal.
Superspacer – Elastomeric Silicone foam spacer system

Finish: Vinyl

Dividers: Where applicable, dividers were not modeled because the gap between dividers and lites were greater than 3mm. For Solar Heat Gain and Visual Light Transmittance default dividers less than 1” and greater or equal to 1” and default patterns were used for simulations.

Modeling Assumptions and Comments Deemed Important:

Sealing Rules:

All cavities that are opened to the exterior within a frame section shall be modeled according to ISO 15099, Section 6.7.1, which states that cavities greater than 2mm but equal to or less than 10 mm shall be modeled as “slightly ventilated air cavities”. For physical testing purposes the product is sealed at the inside surface with tape or equivalent to prevent air infiltration. Air cavities created by this sealing technique must be simulated with the standard NFRC “Frame Cavity” material. If cavities on the frame are sealed (covered) to the surround panel with tape or equivalent, those cavities are also filled with NFRC “Frame Cavity” material within the simulation model. If the frame is not covered or sealed, those areas are left hollow or opened within the simulation model.

Continuous elements:

All elements continuous within the product line are identified from the Bill-of-Materials and detailed drawings via the referenced dimensions and cut lengths as compared to the overall size of the product.

General Notes:

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.

Modeling assumptions:

The product was modeled with a nominal 1" x 4" wood stud attached to the exterior flange.

Miscellaneous assumptions:

1. The screen extrusions were not modeled.
2. All radii are simulated at angles.
3. Any spacer simulated using a spacer system from the Frame Spacer Library match the required configurations for this manufacturer's spacer system.
4. The modeling was performed in accordance with the manufacturer's assembly drawing from a DXF file.

Component Area and Frame Heights:

Frame heights, calculated areas, area weighted values for U-factor, SHGC, and VT, and center-of-glazing are located in approved NFRC simulation programs for all individual products.

NCTL Therm Section Filename Methodology

Filename Codes Example: CU_HD2_003.THM	
CU	Spacer (Intercept)
HD	Frame Section (Head)
2	Glass Size (2.5mm)
_003	Glazing ID #3

Individual Product Descriptions and Model Size Matrix of U-Factors, SHGC, VT & CR
All U-factors are given in BTU/HR/ft²/°F

Product Description	Product Number	Pane ID 1	Pane ID 2	Pane Thickness 1	Pane Thickness 2	Gap	Gap Fill	% of Gap Fill	Emissivity Surface 2	Tin:	Spacer	Grid Type	U-factor	Condensation Resistance	Solar Heat Gain Coefficient (ND)	Visual Transmittance (ND)	Solar Heat Gain Coefficient (<1")
Clr_2mm_Air	001	885	885	0.098	0.098	0.553	AIR			CL	CU-D	N,G	0.48	42	0.67	0.69	0.59
72#2_2mm_Air	002	2010	885	0.098	0.098	0.553	AIR		0.042	LE	CU-D	N,G	0.34	52	0.35	0.60	0.31
72#2_2mm_Arg	003	2010	885	0.098	0.098	0.553	ARG	90	0.042	LE	CU-D	N,G	0.30	55	0.35	0.60	0.31
70XL#2_3mm_Air	004	5432	887	0.118	0.118	0.514	AIR		0.018	LE	CU-D	N,G	0.33	52	0.23	0.53	0.21
70XL#2_3mm_Arg	005	5432	887	0.118	0.118	0.514	ARG	90	0.018	LE	CU-D	N,G	0.30	55	0.23	0.53	0.20
70XL#2_3mm_Air	006	5432	887	0.118	0.118	0.514	AIR		0.018	LE	ZE-D	N,G	0.32	58	0.23	0.53	0.21
70XL#2_3mm_Arg	007	5432	887	0.118	0.118	0.514	ARG	90	0.018	LE	ZE-D	N,G	0.28	61	0.23	0.53	0.20

Manufacturing Company, Inc.

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Product test in accordance with the "NFRC 102: Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems" is required in order to validate the "Model Size Matrix of U-Values" as previously indicated. Per Section 5.1, "The baseline product is the individual product selected for validation testing". **The individual product selected as the baseline shall be the lowest simulated individual product or an individual product having a simulated U-factor within 5% (or 0.003 BTU/HR/ft²/°F) or 20% of the listed lowest simulated U-factor.**

For the lowest U-factor listings where multiple individual products are shown, validation testing can be conducted for the configurations listed.

For all simulated individual products are required for product line validation testing.

All individual products in the product line were simulated using the approved NFRC THERM program.

For the purposes of validation testing, production line units and sizes shall be used to represent the baseline product. Per NFRC 102, "The product shall be manufactured as part of their product line; therefore the previously listed model size can be used for baseline product line validation testing."

The copy of this report and the detailed product drawings will be retained by NCTL for a period of four (4) years. This report shall not be reproduced in full, without the approval of NCTL. The results only to the fenestration product simulated. The attached files include the required NFRC data and software files.

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Richard A. McVicker III

Simulator



STEVEN H. COBLE

NFRC Accredited Simulator

Simulator-In-Responsible-Charge

Report Log

Product Line: *Superseal Manufacturing Company, Inc. 's "850" Sliding Glass Door*

Date:
12/28/09 *- Original Report issued to Superseal Manufacturing Company, Inc. and
Inspection Agency*

NFRC CODES

Door	
Code	Description
EM	Embossed
FL	Flush
LF	Full Lite
LH	1/2 - Lite
LQ	1/4 - Lite
LT	3/4 - Lite
N	Not Applicable
RP	Raised Panel

Gap Fill	
Code	Description
AIR	Air
AR3	Argon/Krypton/Air Mixture
ARG	Argon
KRY	Krypton
N	Not Applicable

Grid	
Code	Description
G	Grids between the glass
N	No Muntins
S	Simulated Divided Lites
T	True Muntins

Glass Tint	
Code	Description
AZ	Azurlite
BG	Blinds between the Glazing
BL	Blue
BZ	Bronze
CL	Clear
DV	Dynamic Glazing (Variable)
DY	Dynamic Glazing (Non-Variable)
EV	Evergreen
GC	Gold (reflective coating)
GD	Gold
GR	Green
GY	Gray
LE	Low 'e' Coating
OT	Other (use comment field)
RC	Solar or Reflective Coating
RG	Roller shades between Glazing
RS	Silver (reflective coating)
SF	Suspended Polyester Film
SR	Silver

Sealant	
Code	Description
D	Dual Seal Spacer System
N	Not Applicable
S	Single Seal Spacer System

Spacer		
Code	Type	Definition
A1-D	Aluminum	Aluminum spacer system - dual sealed.
A1-S	Aluminum	Aluminum spacer system - single sealed.
A2-D	Aluminum (thermally-broken)	Thermally improved aluminum spacer system - dual sealed.
A2-S	Aluminum (thermally-broken)	Thermally improved aluminum spacer system - single sealed.
A3-D	Aluminum-reinforced polymer	Polymer spacer material with aluminum substance - dual sealed.
A3-S	Aluminum-reinforced polymer	Polymer spacer material with aluminum substance - single sealed.
A4-D	Aluminum/Wood	Composite spacer system of two materials - dual sealed.
A4-S	Aluminum/Wood	Composite spacer system of two materials - single sealed.
A5-D	Aluminum-reinforced butyl	Butyl spacer material with aluminum substrate - dual sealed.
A5-S	Aluminum-reinforced butyl	Butyl spacer material with aluminum substrate - single sealed.
A6-D	Aluminum/Foam/Aluminum	Two aluminum spacers separated by foam-type material - dual sealed
A6-S	Aluminum/Foam/Aluminum	Two aluminum spacers separated by foam-type material - single sealed
A7-D	Aluminum U-shaped	U-shaped spacer system embedded in sealant - dual sealed.
A7-S	Aluminum U-shaped	U-shaped spacer system embedded in sealant - single sealed.
A8-D	Aluminum-Butyl Composite	Exposed corrugated aluminum spacer with butyl - dual sealed.