



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

**Rendered to:  
VEKA INC.**

**SERIES/MODEL:  
SS93WW Single Slider**

**Report Number: A3612.01-116-45  
Report Date: 09/20/10  
Expiration Date: 09/20/14**

130 Derry Court  
York, PA 17406-8405  
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[www.archtest.com](http://www.archtest.com)



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

Rendered to:  
VEKA INC.  
100 Veka Drive  
Fombell, PA 16123

Report Number: A3612.01-116-45  
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**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 100-2010: Procedure for Determining Fenestration Product U-Factors*  
*NFRC 200-2010: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence*  
*NFRC 500-2010: 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:** 17.4

**Simulations Specimen Description:**

**Series/Model:** SS93WW Single Slider  
**Type:** Horizontal Slider , Fixed/Operable  
**Frame Material:** VY Vinyl  
**Sash Material:** VY Vinyl  
**Standard Size:** 1500mm x 1200mm

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**Technical Interpretations:**

None

**Modeling Assumptions:**

- 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 5.2. 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	0.003168	0.005924	0.008522
SHGC1	0.785582	0.703725	0.626548
VT0	0.000000	0.000000	0.000000
VT1	0.782414	0.697801	0.618026

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

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

**Spacer Option Description**

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

**Grid Option Description**

<i>Grid Size</i>	<i>Grid Type</i>	<i>Grid Pattern</i>
None		

**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

**Edge-of-Glass Construction**

<i>Interior Condition</i>	Foam weatherstrip between sash leg and glass
<i>Exterior Condition</i>	PVC glazing bead against glass

**Weatherstripping**

<i>Type</i>	<i>Quantity</i>	<i>Location</i>
Finpile	3 rows	Bottom rail, operable stile
Finpile	2 rows	Keeper stile
Finpile	1 row	Frame perimeter, top rail, lock stile

**Frame/Sash Materials Finish**

<i>Interior</i>	Vinyl
<i>Exterior</i>	Vinyl

**NFRC 100/200/500 Summary Sheet**  
**SS93WW Single Slider**

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) <small>Grids (None / &lt;1 / &gt;=1)</small>					Visible Transmittance (VT) <small>Grids (None / &lt;1 / &gt;=1)</small>			Condensation Resistance	
1	E366 / arg / clr - (DS/DS) 3/4"											
	0.117	0.500	0.117					ARG90	0.022(#2)	CL	SU-D	N
	U-Factor 0.27		SHGC (N) 0.22					VT (N) 0.51			CR 59	
2	E366 / arg / clr / arg / E366 - (DS/DS/DS) 1-1/4"											
	0.117	0.438	0.117	0.438	0.117			ARG90	0.022(#2) / 0.022(#5)	CL	SU-D	N
	U-Factor 0.18		SHGC (N) 0.19					VT (N) 0.36			CR 71	

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.

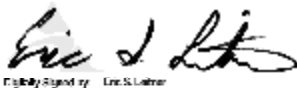
Ratings values included in this report are for submittals to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes.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

Architectural Testing 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.:

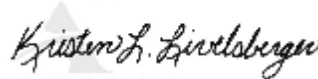
SIMULATED BY:



Digitally signed by Eric S. Leitner

Eric S. Leitner  
Simulation Technician

REVIEWED BY:



Digitally signed by Kristen L. Livelsberger

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

ESL:esl

A3612.01-116-45

Attachments (pages): This report is complete only when all attachments listed are included.  
Appendix A: Drawings and Bills of Material (11)

### Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
.01R0	9/21/2010	All	- Original report issue

This report produced from controlled document template ATI 00037, Revised 08/31/2009.

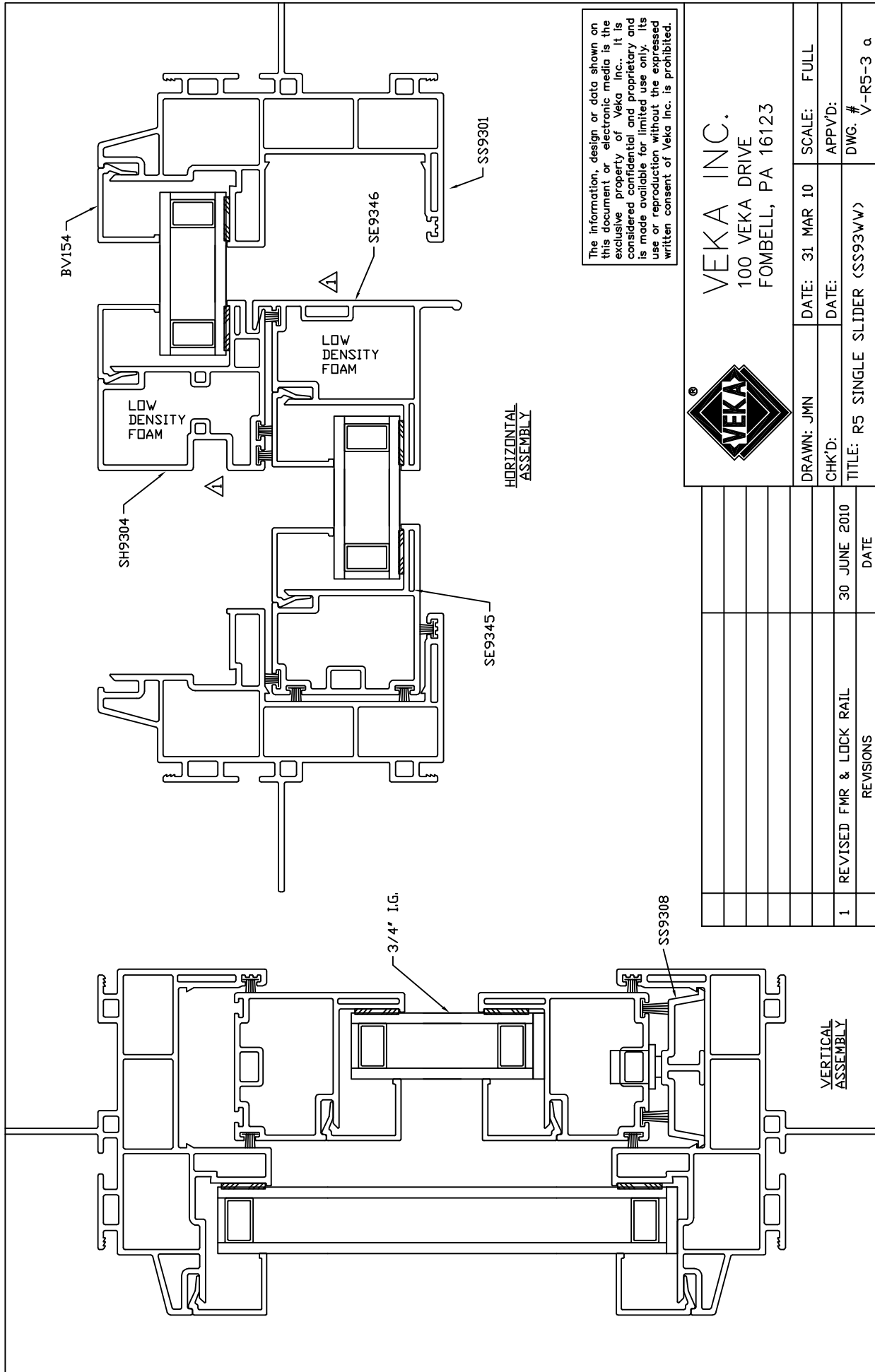


All drawings and Bills of Material used to simulate this product are enclosed in this Appendix

## **Appendix A**

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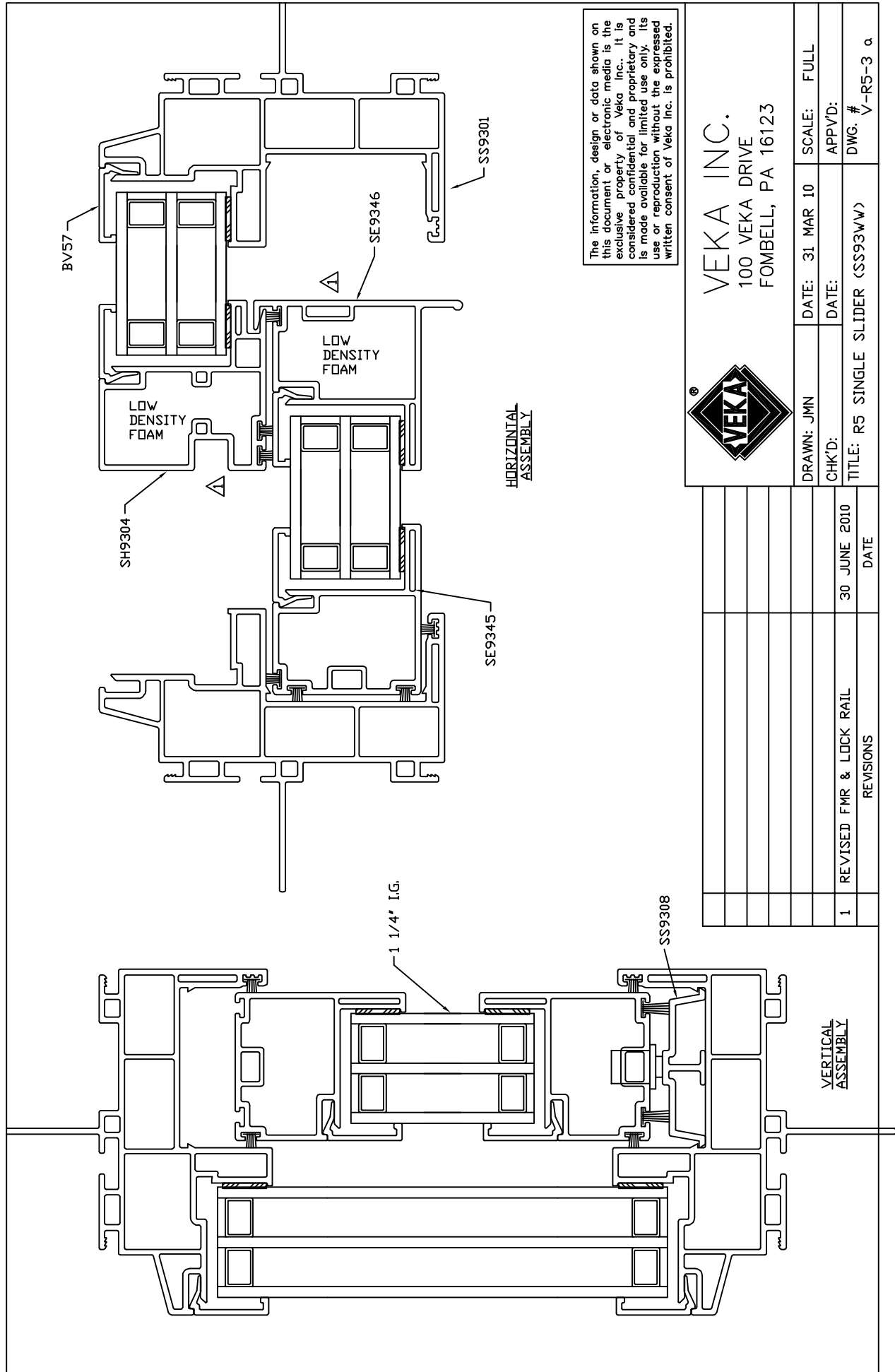


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**VEKA INC.**  
 100 VEKA DRIVE  
 FOMBELL, PA 16123

DRAWN: JMN	DATE: 31 MAR 10	SCALE: FULL
CHK'D:	DATE:	APP'VD:
TITLE: R5 SINGLE SLIDER (SS93WV)		DWG. # V-R5-3 a

NO.	REVISIONS	DATE
1	REVISED FMR & LOCK RAIL	30 JUNE 2010



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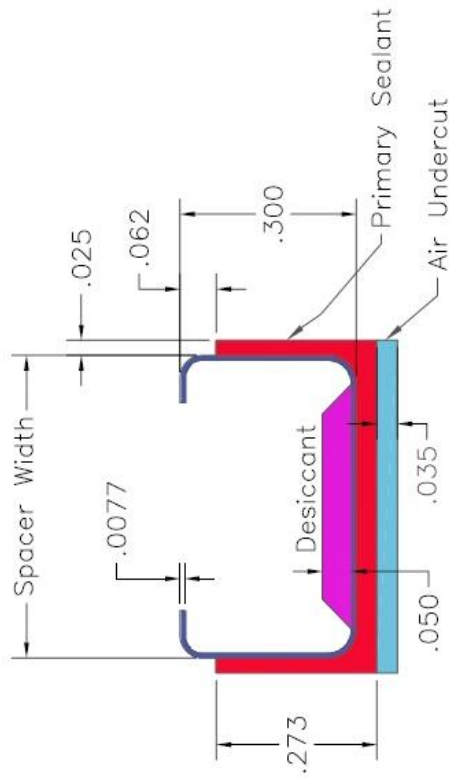


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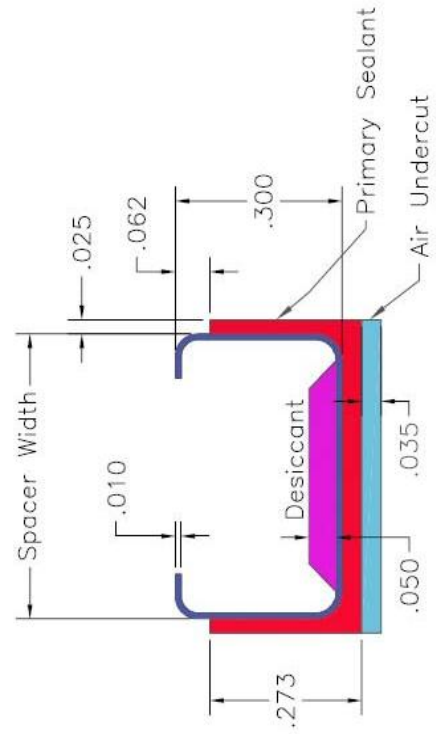
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1	REVISED FMR & LOCK RAIL	30 JUNE 2010

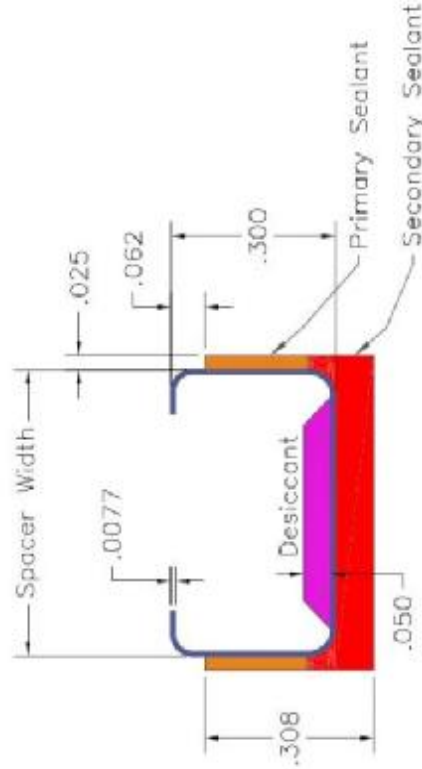
**Intercept® ULTRA Stainless Steel—Standard Profile  
SINGLE SEAL**



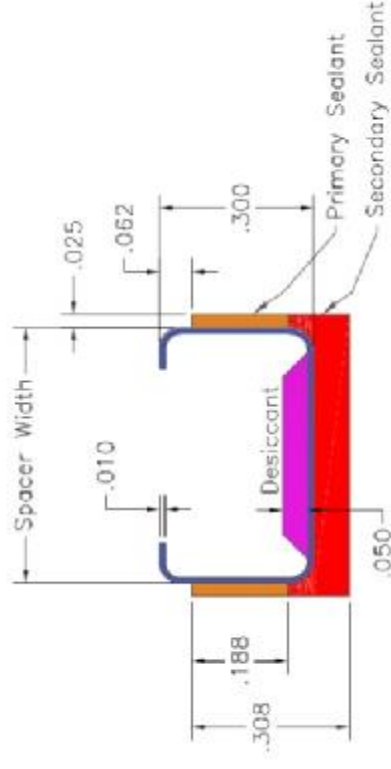
**Intercept® Blackline or Electrolytic Tin Plated Steel—Standard Profile  
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**Intercept® ULTRA Stainless Steel—Standard Profile  
DUAL SEAL**



**Intercept® Blackline or Electrolytic Tin Plated Steel—Standard Profile  
DUAL SEAL**





# Intercept® ULTRA Simulation Model

**For More Information,  
Contact Your  
GED Sales Manager**

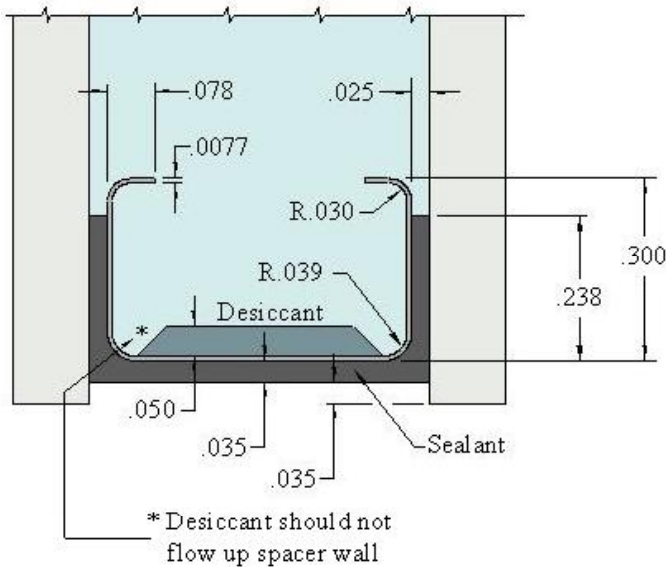
**GED Integrated Solutions  
9280 Dutton Drive  
Twinsburg, OH  
44087-1967**

**Telephone: 330.963.5401  
Fax: 330.963.0584  
www.gedusa.com**

**For THERM**

- ✓ Spacer wall thickness: ULTRA material = 0.0077"  
Blackline material = 0.0077"
- ✓ Thermal conductivity: ULTRA material = 13.63 W/m°K  
Blackline material = 13.63 W/m°K  
Desiccant = 0.29 W/m°K  
Sealant = 0.24 W/m°K
- ✓ Spacer should be below sight line
- ✓ All dimensions in inches

**Accurate Geometry**



**Inaccurate Geometry**

