



## NATIONAL CERTIFIED TESTING LABORATORIES

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### U-Factor, Solar Heat Gain Coefficient, Visible Transmittance and Condensation Resistance Calculation Report

REPORT NO: NCTL-110-14975-01  
SIMULATION DATE: 03/25/13  
REPORT DATE: 03/25/13

**Client:** Northeast Windows USA, Inc  
1 Kees Place  
Merrick, NY 11572

**Product Line:** Northeast Windows USA, Inc's 4011 Vinyl Horizontal Slider

**Specification:** NFRC 100-2010: "Procedure for Determining Fenestration Product U-Factors",  
NFRC 200-2010: "Procedure for Determining Fenestration Product Solar Heat  
Gain Coefficients and Visible Transmittance at Normal Incidence",  
NFRC 500-2010: "Procedure for Determining Fenestration Product  
Condensation Resistance Values",  
Therm 6.x / Window 6.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 NFRC 601-2010: "NFRC Unit and Measurement Policy".

### PRODUCT LINE DESCRIPTION

**General:** The product line modeled is Northeast Windows USA, Inc's 4011 Vinyl Horizontal Slider.

**Model Size Simulations:** 1500mm x 1200mm (59.055" x 47.244")

**Weatherseals:**

Location	Weather Seal Description
Left Head	(2) single strips of weather-strip
Left Jamb	(1) single strips of weather-strip
Left Sill	(2) single strips of weather-strip
Meeting Stile	(3) single strips of weather-strip
Right Head	(2) single strips of weather-strip
Right Jamb	(1) single strips of weather-strip
Right Sill	(2) single strips of weather-strip

**Gas Fillings:**

Gas Type	Filling Technique	Percentage
Argon	Single probe	90%
Argon	Double probe	95%

**Reinforcement:** U shape Aluminum reinforcement located in vertical members.

**Edge - of - Glass - Construction:** Interior Vinyl Glazing Bead.

**Finish:** Vinyl.

**Frame Description:**

Code	Type	Definition
VF	Vinyl w/ foam-filled insulation	Extrusions are filled with a foam-type insulating material
VY	Vinyl	All members are vinyl with no reinforcements

**Sash Description:**

Code	Type	Definition
VF	Vinyl w/ foam-filled insulation	Extrusions are filled with a foam-type insulating material
VV	Vinyl w/ Vertical Members Reinforced	Reinforcement of vertical members

**Spacer and Sealant:**

Code	Type	Definition
A8-S	Aluminum-Butyl Composite	Exposed corrugated aluminum spacer with butyl
P1-S	Polycarbonate- Butyl Composite	Exposed corrugated polycarbonate spacer with butyl - single sealed.
ZE-S	Elastomeric Silicone Foam	Elastomeric Silicone foam spacer system

**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.

**Divider Description:** 3/16" x 5/8" Painted Aluminum Rectangular.

**Foam fillings:** Individual products contain foam filled channels (hollows) in the following extrusions:

Number of Channels	Extrusion Location	Dwg. No.
One	Sash Section	DW7
Five	Frame Section	DW7

The thermal conductivity (*k* factor) for the foam is 0.0139 BTU-in/ft<sup>2</sup>/Hr/F.

**Continuous Hardware Description:** Not applicable.

**Group Leaders:** The following group leaders are actual simulated individual products per NFRC 4.2.4 and the NFRC Technical Interpretations where applicable. All remaining individual products' U-factors in the corresponding groups are represented by the group leader's U-factor.

**COG Group Leader:** Determined by NFRC 100-2010 Section 4.2.4.1 (Only the Group Leader is shown).

Glazing ID	Glazing Description	U <sub>COG</sub>
001	2m_Clear_Air_2m_Clear	0.485*
003	2m_7178#2_Air_2m_Clear	0.304*
005	2m_SB70#2_Air_2m_Clear	0.301*
007	2m_366#2_Air_2m_Clear	0.303*
009	2m_7178#2_Arg_2m_Clear	0.256*
011	2m_SB70#2_Arg_2m_Clear	0.253*
013	2m_366#2_Arg_2m_Clear	0.254*
015	2m_SB70#2_Arg95_EPS#4	0.195*
017	2m_366#2_Arg95_EPS#4	0.196*
019	2m_Select36#2_Air2m_Clear	0.308*
021	2m_Select36#2_Arg_2m_Clear	0.260*

**Frame Group Leader:** Determined by NFRC 100-2010 Section 4.2.4.3.

Frame ID	Frame Description	U <sub>FRAME</sub>
F1	With Reinforcement	0.231*
F3	Without Reinforcement	0.229

\* Group Leader



**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.

**Miscellaneous assumptions:**

1. The screen extrusions were not modeled.
2. All radii are simulated at angles.
3. The modeling was performed in accordance with the manufacturer's assembly drawing.

**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: HD-CU-D-F1_003.THM	
HD	Frame Section (Head)
CU-D	Spacer (Intercept)
F1	Frame Description
_003	Glazing ID #3

PRODUCT	Product Number	Pane ID #1	Pane ID #2	Pane Thickness #1	Pane Thickness #2	Gap 1	Gap Fill 1	% of Gap Fill 1	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Tint	Spacer	Grid Type	Grid Size	U-factor	Condensation Resistance	SHGC NO GRID	SHGC GRID<1*	SHGC GRID>=1*	VT NO GRID	VT GRID<1*	VT GRID >=1*
	1	2 mm Clear	2 mm Clear	0.090	0.090	0.678	AIR						CL	A8-S	N,G	0.75	0.46	44	0.60	0.54	NA	0.62	0.56	NA
		3 mm Clear	3 mm Clear	0.117	0.117	0.639	AIR						CL	A8-S	N,G	0.75	0.46	44	0.59	0.53	NA	0.62	0.55	NA
	2	2 mm ClimaGuard RLE 71/38	2 mm Clear	0.090	0.090	0.678	AIR		0.027				CL	A8-S	N,G	0.75	0.33	55	0.30	0.27	NA	0.54	0.48	NA
		3 mm ClimaGuard RLE 71/38	3 mm Clear	0.117	0.117	0.639	AIR		0.027				CL	A8-S	N,G	0.75	0.33	55	0.30	0.27	NA	0.54	0.48	NA
	3	2 mm Solarban® 70XL	2 mm Clear	0.089	0.090	0.678	AIR		0.018				CL	A8-S	N,G	0.75	0.32	56	0.21	0.19	NA	0.49	0.44	NA
		3 mm Solarban® 70XL	3 mm Clear	0.129	0.117	0.639	AIR		0.018				CL	A8-S	N,G	0.75	0.32	56	0.21	0.19	NA	0.49	0.43	NA
	4	2 mm LoE <sup>2</sup> 366	2 mm Clear	0.087	0.090	0.678	AIR		0.022				CL	A8-S	N,G	0.75	0.33	55	0.21	0.19	NA	0.49	0.44	NA
		3 mm LoE <sup>2</sup> 366	3 mm Clear	0.117	0.117	0.639	AIR		0.022				CL	A8-S	N,G	0.75	0.33	55	0.21	0.19	NA	0.49	0.43	NA
	5	2 mm ClimaGuard RLE 71/38	2 mm Clear	0.090	0.090	0.678	ARG	90	0.027				CL	A8-S	N,G	0.75	0.29	59	0.30	0.27	NA	0.54	0.48	NA
		3 mm ClimaGuard RLE 71/38	3 mm Clear	0.117	0.117	0.639	ARG	90	0.027				CL	A8-S	N,G	0.75	0.29	59	0.29	0.26	NA	0.54	0.48	NA
	6	2 mm Solarban® 70XL	2 mm Clear	0.089	0.090	0.678	ARG	90	0.018				CL	A8-S	N,G	0.75	0.29	59	0.21	0.19	NA	0.49	0.44	NA
		3 mm Solarban® 70XL	3 mm Clear	0.129	0.117	0.639	ARG	90	0.018				CL	A8-S	N,G	0.75	0.29	59	0.21	0.19	NA	0.49	0.43	NA
	7	2 mm LoE <sup>2</sup> 366	2 mm Clear	0.087	0.090	0.678	ARG	90	0.022				CL	A8-S	N,G	0.75	0.29	59	0.21	0.19	NA	0.49	0.44	NA
		3 mm LoE <sup>2</sup> 366	3 mm Clear	0.117	0.117	0.639	ARG	90	0.022				CL	A8-S	N,G	0.75	0.29	59	0.21	0.19	NA	0.49	0.43	NA
	8	2 mm Comfort Select 36™	2 mm Clear	0.087	0.090	0.678	AIR		0.037				CL	A8-S	N,G	0.75	0.33	55	0.28	0.25	NA	0.50	0.45	NA
		3 mm Comfort Select 36™	3 mm Clear	0.129	0.117	0.639	AIR		0.036				CL	A8-S	N,G	0.75	0.33	55	0.28	0.25	NA	0.50	0.44	NA
	9	2 mm Comfort Select 36™	2 mm Clear	0.087	0.090	0.678	ARG	90	0.037				CL	A8-S	N,G	0.75	0.29	58	0.28	0.25	NA	0.50	0.45	NA
		3 mm Comfort Select 36™	3 mm Clear	0.129	0.117	0.639	ARG	90	0.036				CL	A8-S	N,G	0.75	0.29	58	0.28	0.25	NA	0.50	0.44	NA
	10	2 mm Clear	2 mm Clear	0.090	0.090	0.678	AIR						CL	P1-S	N,G	0.75	0.45	46	0.60	0.54	NA	0.62	0.56	NA
		3 mm Clear	3 mm Clear	0.117	0.117	0.639	AIR						CL	P1-S	N,G	0.75	0.45	46	0.59	0.53	NA	0.62	0.55	NA



PRODUCT	Product Number	Pane ID #1	Pane ID #2	Pane Thickness #1	Pane Thickness #2	Gap 1	Gap Fill 1	% of Gap Fill 1	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Tint	Spacer	Grid Type	Grid Size	U-factor	Condensation Resistance	SHGC NO GRID	SHGC GRID<1*	SHGC GRID>=1*	VT NO GRID	VT GRID<1*	VT GRID >=1*
	11	2 mm ClimaGuard RLE 71/38	2 mm Clear	0.090	0.090	0.678	AIR			0.027			CL	P1-S	N,G	0.75	0.31	59	0.30	0.27	NA	0.54	0.48	NA
		3 mm ClimaGuard RLE 71/38	3 mm Clear	0.117	0.117	0.639	AIR			0.027			CL	P1-S	N,G	0.75	0.31	59	0.30	0.27	NA	0.54	0.48	NA
	12	2 mm Solarban® 70XL	2 mm Clear	0.089	0.090	0.678	AIR			0.018			CL	P1-S	N,G	0.75	0.31	59	0.21	0.19	NA	0.49	0.44	NA
		3 mm Solarban® 70XL	3 mm Clear	0.129	0.117	0.639	AIR			0.018			CL	P1-S	N,G	0.75	0.31	59	0.21	0.19	NA	0.49	0.43	NA
	13	2 mm LoE² 366	2 mm Clear	0.087	0.090	0.678	AIR			0.022			CL	P1-S	N,G	0.75	0.31	59	0.21	0.19	NA	0.49	0.44	NA
		3 mm LoE² 366	3 mm Clear	0.117	0.117	0.639	AIR			0.022			CL	P1-S	N,G	0.75	0.31	59	0.21	0.19	NA	0.49	0.43	NA
	14	2 mm ClimaGuard RLE 71/38	2 mm Clear	0.090	0.090	0.678	ARG	90		0.027			CL	P1-S	N,G	0.75	0.28	63	0.30	0.27	NA	0.54	0.48	NA
		3 mm ClimaGuard RLE 71/38	3 mm Clear	0.117	0.117	0.639	ARG	90		0.027			CL	P1-S	N,G	0.75	0.28	63	0.29	0.26	NA	0.54	0.48	NA
	15	2 mm Solarban® 70XL	2 mm Clear	0.089	0.090	0.678	ARG	90		0.018			CL	P1-S	N,G	0.75	0.28	63	0.21	0.19	NA	0.49	0.44	NA
		3 mm Solarban® 70XL	3 mm Clear	0.129	0.117	0.639	ARG	90		0.018			CL	P1-S	N,G	0.75	0.28	63	0.21	0.19	NA	0.49	0.43	NA
	16	2 mm LoE² 366	2 mm Clear	0.087	0.090	0.678	ARG	90		0.022			CL	P1-S	N,G	0.75	0.28	63	0.21	0.19	NA	0.49	0.44	NA
		3 mm LoE² 366	3 mm Clear	0.117	0.117	0.639	ARG	90		0.022			CL	P1-S	N,G	0.75	0.28	63	0.21	0.19	NA	0.49	0.43	NA
	17	2 mm Comfort Select 36™	2 mm Clear	0.087	0.090	0.678	AIR			0.037			CL	P1-S	N,G	0.75	0.32	59	0.28	0.25	NA	0.50	0.45	NA
		3 mm Comfort Select 36™	3 mm Clear	0.129	0.117	0.639	AIR			0.036			CL	P1-S	N,G	0.75	0.32	59	0.28	0.25	NA	0.50	0.44	NA
	18	2 mm Comfort Select 36™	2 mm Clear	0.087	0.090	0.678	ARG	90		0.037			CL	P1-S	N,G	0.75	0.28	62	0.28	0.25	NA	0.50	0.45	NA
		3 mm Comfort Select 36™	3 mm Clear	0.129	0.117	0.639	ARG	90		0.036			CL	P1-S	N,G	0.75	0.28	62	0.28	0.25	NA	0.50	0.44	NA
	19	2 mm Clear	2 mm Clear	0.090	0.090	0.678	AIR						CL	ZE-S	N,G	0.75	0.45	45	0.60	0.54	NA	0.62	0.56	NA
		3 mm Clear	3 mm Clear	0.117	0.117	0.639	AIR						CL	ZE-S	N,G	0.75	0.45	45	0.59	0.53	NA	0.62	0.55	NA
	20	2 mm ClimaGuard RLE 71/38	2 mm Clear	0.090	0.090	0.678	AIR			0.027			CL	ZE-S	N,G	0.75	0.32	58	0.30	0.27	NA	0.54	0.48	NA
		3 mm ClimaGuard RLE 71/38	3 mm Clear	0.117	0.117	0.639	AIR			0.027			CL	ZE-S	N,G	0.75	0.32	58	0.30	0.27	NA	0.54	0.48	NA

PRODUCT	Product Number	Pane ID #1	Pane ID #2	Pane Thickness #1		Pane Thickness #2		Gap 1	Gap Fill 1	% of Gap Fill 1	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Tint	Spacer	Grid Type	Grid Size	U-factor	Condensation Resistance	SHGC NO GRID	SHGC GRID<1*	SHGC GRID>=1*	VT NO GRID	VT GRID<1*	VT GRID >=1*
				0.089	0.090	0.087	0.090																			
	21	2 mm Solarban® 70XL	2 mm Clear	0.089	0.090	0.678	AIR				0.018				CL	ZE-S	N,G	0.75	0.32	58	0.21	0.19	NA	0.49	0.44	NA
		3 mm Solarban® 70XL	3 mm Clear	0.129	0.117	0.639	AIR				0.018				CL	ZE-S	N,G	0.75	0.32	58	0.21	0.19	NA	0.49	0.43	NA
	22	2 mm LoE² 366	2 mm Clear	0.087	0.090	0.678	AIR				0.022				CL	ZE-S	N,G	0.75	0.32	58	0.21	0.19	NA	0.49	0.44	NA
		3 mm LoE² 366	3 mm Clear	0.117	0.117	0.639	AIR				0.022				CL	ZE-S	N,G	0.75	0.32	58	0.21	0.19	NA	0.49	0.43	NA
	23	2 mm ClimaGuard RLE 71/38	2 mm Clear	0.090	0.090	0.678	ARG	90			0.027				CL	ZE-S	N,G	0.75	0.28	61	0.30	0.27	NA	0.54	0.48	NA
		3 mm ClimaGuard RLE 71/38	3 mm Clear	0.117	0.117	0.639	ARG	90			0.027				CL	ZE-S	N,G	0.75	0.28	61	0.29	0.26	NA	0.54	0.48	NA
	24	2 mm Solarban® 70XL	2 mm Clear	0.089	0.090	0.678	ARG	90			0.018				CL	ZE-S	N,G	0.75	0.28	61	0.21	0.19	NA	0.49	0.44	NA
		3 mm Solarban® 70XL	3 mm Clear	0.129	0.117	0.639	ARG	90			0.018				CL	ZE-S	N,G	0.75	0.28	61	0.21	0.19	NA	0.49	0.43	NA
	25	2 mm LoE² 366	2 mm Clear	0.087	0.090	0.678	ARG	90			0.022				CL	ZE-S	N,G	0.75	0.28	61	0.21	0.19	NA	0.49	0.44	NA
		3 mm LoE² 366	3 mm Clear	0.117	0.117	0.639	ARG	90			0.022				CL	ZE-S	N,G	0.75	0.28	61	0.21	0.19	NA	0.49	0.43	NA
	26	2 mm Comfort Select 36™	2 mm Clear	0.087	0.090	0.678	AIR				0.037				CL	ZE-S	N,G	0.75	0.32	57	0.28	0.25	NA	0.50	0.45	NA
		3 mm Comfort Select 36™	3 mm Clear	0.129	0.117	0.639	AIR				0.036				CL	ZE-S	N,G	0.75	0.32	57	0.28	0.25	NA	0.50	0.44	NA
	27	2 mm Comfort Select 36™	2 mm Clear	0.087	0.090	0.678	ARG	90			0.037				CL	ZE-S	N,G	0.75	0.29	61	0.28	0.25	NA	0.50	0.45	NA
		3 mm Comfort Select 36™	3 mm Clear	0.129	0.117	0.639	ARG	90			0.036				CL	ZE-S	N,G	0.75	0.29	61	0.28	0.25	NA	0.50	0.44	NA
Foam Filled ,	28	2 mm Solarban® 70XL	2 mm Comfort E-PS	0.089	0.087	0.553	ARG	95			0.018	0.148			CL	A8-S	N,G	0.75	0.23	48	0.20	0.18	NA	0.46	0.41	NA
Foam Filled ,		3 mm Solarban® 70XL	3 mm Comfort E-PS	0.129	0.123	0.514	ARG	95			0.018	0.148			CL	A8-S	N,G	0.75	0.23	48	0.20	0.18	NA	0.44	0.39	NA
Foam Filled ,	29	2 mm LoE² 366	2 mm Comfort E-PS	0.087	0.087	0.553	ARG	95			0.022	0.148			CL	A8-S	N,G	0.75	0.23	48	0.20	0.18	NA	0.46	0.41	NA
Foam Filled ,		3 mm LoE² 366	3 mm Comfort E-PS	0.117	0.123	0.514	ARG	95			0.022	0.148			CL	A8-S	N,G	0.75	0.23	48	0.20	0.18	NA	0.44	0.39	NA
Foam Filled ,	30	3 mm Comfort Select 28	3 mm Comfort E-PS	0.125	0.123	0.514	ARG	95			0.029	0.148			CL	A8-S	N,G	0.75	0.23	47	0.20	0.18	NA	0.42	0.38	NA
Foam Filled ,	31	2 mm Solarban® 70XL	2 mm Comfort E-PS	0.089	0.087	0.553	ARG	95			0.018	0.148			CL	P1-S	N,G	0.75	0.22	52	0.20	0.18	NA	0.46	0.41	NA

PRODUCT	Product Number	Pane ID #1	Pane ID #2	Pane Thickness #1	Pane Thickness #2	Gap 1	Gap Fill 1	% of Gap Fill 1	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Tint	Spacer	Grid Type	Grid Size	U-factor	Condensation Resistance	SHGC NO GRID	SHGC GRID<1°	SHGC GRID>=1°	VT NO GRID	VT GRID<1°	VT GRID>=1°
Foam Filled ,		3 mm Solarban® 70XL	3 mm Comfort E-PS	0.129	0.123	0.514	ARG	95		0.018		0.148	CL	P1-S	N,G	0.75	0.22	52	0.20	0.18	NA	0.44	0.39	NA
Foam Filled ,	32	2 mm LoE <sup>2</sup> 366	2 mm Comfort E-PS	0.087	0.087	0.553	ARG	95		0.022		0.148	CL	P1-S	N,G	0.75	0.22	52	0.20	0.18	NA	0.46	0.41	NA
Foam Filled ,		3 mm LoE <sup>2</sup> 366	3 mm Comfort E-PS	0.117	0.123	0.514	ARG	95		0.022		0.148	CL	P1-S	N,G	0.75	0.22	52	0.20	0.18	NA	0.44	0.39	NA
Foam Filled ,	33	3 mm Comfort Select 28	3 mm Comfort E-PS	0.125	0.123	0.514	ARG	95		0.029		0.148	CL	P1-S	N,G	0.75	0.22	51	0.20	0.18	NA	0.42	0.38	NA
Foam Filled ,	34	2 mm Solarban® 70XL	2 mm Comfort E-PS	0.089	0.087	0.553	ARG	95		0.018		0.148	CL	ZE-S	N,G	0.75	0.22	50	0.20	0.18	NA	0.46	0.41	NA
Foam Filled ,		3 mm Solarban® 70XL	3 mm Comfort E-PS	0.129	0.123	0.514	ARG	95		0.018		0.148	CL	ZE-S	N,G	0.75	0.22	50	0.20	0.18	NA	0.44	0.39	NA
Foam Filled ,	35	2 mm LoE <sup>2</sup> 366	2 mm Comfort E-PS	0.087	0.087	0.553	ARG	95		0.022		0.148	CL	ZE-S	N,G	0.75	0.22	50	0.20	0.18	NA	0.46	0.41	NA
Foam Filled ,		3 mm LoE <sup>2</sup> 366	3 mm Comfort E-PS	0.117	0.123	0.514	ARG	95		0.022		0.148	CL	ZE-S	N,G	0.75	0.22	50	0.20	0.18	NA	0.44	0.39	NA
Foam Filled ,	36	3 mm Comfort Select 28	3 mm Comfort E-PS	0.125	0.123	0.514	ARG	95		0.029		0.148	CL	ZE-S	N,G	0.75	0.22	52	0.20	0.18	NA	0.42	0.38	NA
	0	2 mm Solarban® 70XL	2 mm Comfort E-PS	0.089	0.087	0.678	ARG	95		0.018		0.148	CL	P1-S	N		0.24	54	0.20	NA	NA	0.46	NA	NA



A baseline 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 1.4.3 of NFRC 100-2010, "the baseline product is the individual product selected for validation testing". The individual product selected as the baseline product shall be the lowest simulated individual product or an individual product having a simulated U-factor within 0.60 W/ (m<sup>2</sup>\*K) (0.10 BTU/HR/ft<sup>2</sup>/°F) or 20% of the listed lowest simulated U-factor.

**Note:**

1. For lowest U-factor listings where multiple individual products are shown, validation testing can be conducted on any within 20% of the lowest simulated u-factor.
2. Actual simulated individual products are required for product line validation testing.

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

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

**NATIONAL CERTIFIED TESTING LABORATORIES**

Performed by:

A handwritten signature in black ink that reads "Zachary Mundorff". The signature is written over a circular logo for NCTL (National Certified Testing Laboratories) which contains the text "NCTL" and "DIGITAL SIGNATURE".

Zachary Mundorff  
Simulator

Reviewed by:

A handwritten signature in black ink that reads "Steve H. Coble". The signature is written over a circular logo for NCTL (National Certified Testing Laboratories) which contains the text "NCTL" and "DIGITAL SIGNATURE".

STEVEN H. COBLE  
NFRC Accredited Simulator  
Simulator-In-Responsible-Charge

Attachments

**Report Log**

**Product Line:** *Northeast Windows USA, Inc's 4011 Vinyl Horizontal Slider*

**Date:**

*03/25/13*

*- Original Report issued to Northeast Windows USA, Inc and Inspection Agency*

*ATTACHMENT A*

*Product Drawings*



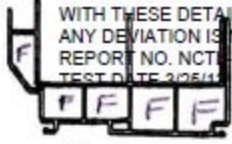
WITH THESE DETAILS.  
ANY DEVIATION IS NOTED.  
REPORT NO. NCTL-110-14975-01  
TEST DATE 3/25/13

BOM 4011 Horizontal Slider

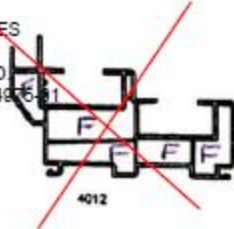
Part Name	Part Number	Material
SL4000 2 Lite Slider	SL4000 Cross Section	
Slider MF No Fin No J	4411	Vinyl
Welded Double Hung Male	B-WDIM-3004	Vinyl
Welded Double Hung Female	B-WDIF-3003	Vinyl
Welded Double Hung Handle Sash	B-WDHS-3002	Vinyl
Welded Double Hung Regular Sash	B-WDSH-3000	Vinyl
Glazing Bead	B-WDGB-3008	Vinyl
Grid		Painted Aluminum
Spacer		



TEST SPECIMEN COMPLIES WITH THESE DETAILS. ANY DEVIATION IS NOTED. REPORT NO. NCT-110-149-6-1 TEST DATE 2/25/44



4411



4012



4013



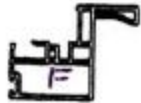
4014



4015



3000  
PLAIN SASH  
WELDED



3002  
HANDLE SASH  
WELDED



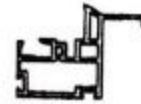
3003  
INTERLOCK FEMALE  
WELDED



3004  
INTERLOCK MALE  
WELDED



3000B  
PLAIN SASH-BEVELED  
WELDED



3007  
HANDLE SASH-BEVELED  
WELDED



3003B  
INTERLOCK FEMALE-BEVELED  
WELDED



XXXX  
SNAP IN SILL- MAIN FRAME



3008  
GLAZING BEAD  
WELDED

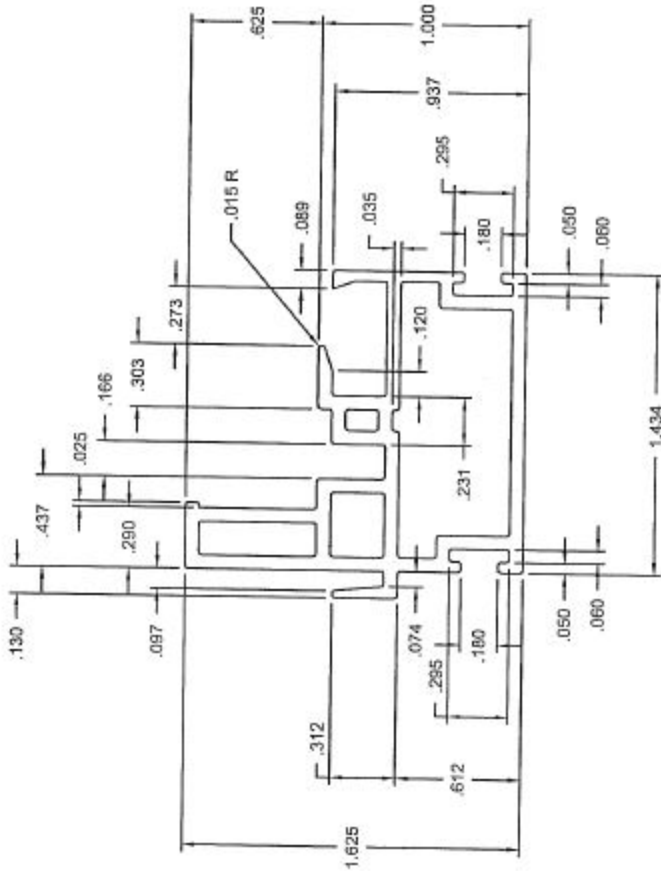
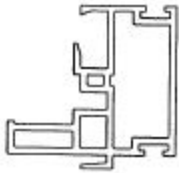
NO.	REVISION	BY	DATE

	<b>LOCATION FOR IMPACT TEST</b> SPECIFICATION-LENGTHS TO 36"	ALLOWABLE BOW MAX. 1" PER 14' ANGULARITY TO BE $\approx 1/2^\circ$	DO NOT SCALE DRAWING TOLERANCES- .XX $\approx .010$ .XXX $\approx .005$	
	DRAWN FOR	1) MATERIAL <u>ALUMINUM</u> 2) CAPSTOCK <u> </u> 3) UNSPECIFIED WALLS <u> </u> 4) BREAK ALL CORNERS <u>.015 R</u> 5) AREA <u>SO IN</u> 6) WT/FT <u>1.85 FT</u>	TITLE <u>SERIES XXX PROFILE CHART</u> DESIGNED BY <u>OCB</u> SCALE <u> </u> DATE <u>11-09-11</u> CHECKED BY <u> </u> APPR BY <u> </u> DRAWING NO. <u> </u>	





TEST SPECIMEN COMPLIES  
 WITH THESE DETAILS.  
 ANY DEVIATION IS NOTED.  
 REPORT NO. NCTL-110-14975-01  
 TEST DATE 3/25/13



DO NOT SCALE DRAWING

LOCATION FOR IMPACT TEST  
 SPECIFICATION LENGTHS TO 3/8"

ALLOWABLE BOW MAX. 1" PER 14"  
 ANGULARITY TO BE ± 1/2 °

TOLERANCES:  
 .XX ± .010  
 .XXX ± .005

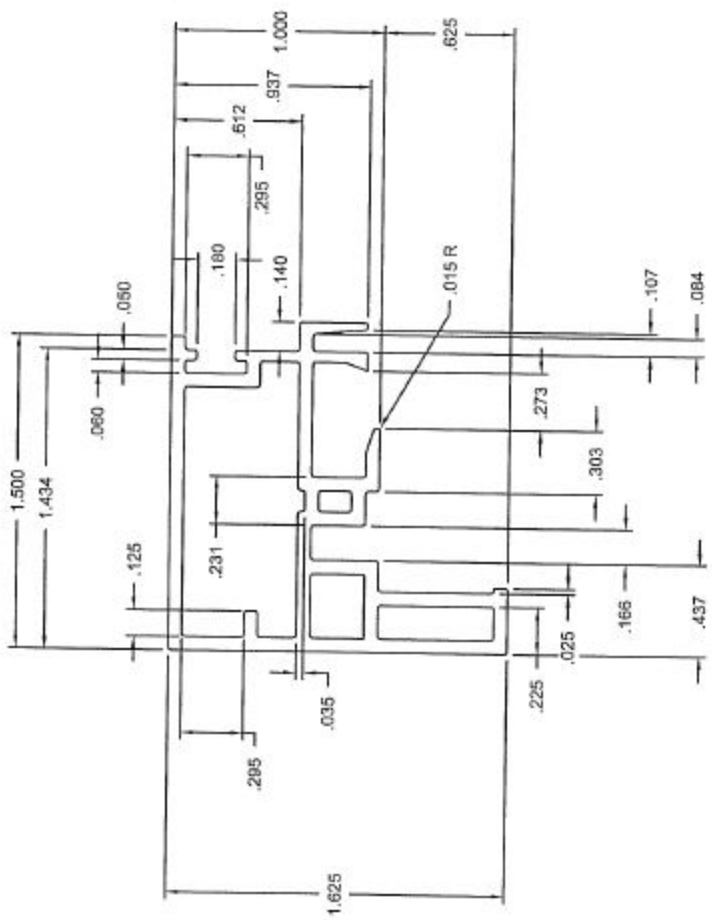
  
 BY DCS DESIGNS  
 "OUR NAME SAYS IT ALL"

- 1) MATERIAL RIGID PVC
- 2) CAPSTOCK
- 3) UNSPECIFIED WALLS .065
- 4) BREAK ALL CORNERS .015
- 5) AREA .528 SQ.IN.
- 6) WT/FT

TITLE WELDED DOUBLE HUNG

DESIGNED BY	SCALE	DATE	CHNG BY	APPR BY
DDS	2:1	11/14/02		
COMPUTER NO				
DWG NO B-WDIM-3004				

NO.	REVISION	BY	DATE



DO NOT SCALE DRAWING

ALLOWABLE BOW MAX. 1" PER 14"	TOLERANCES- .XX ± .010
ANGULARITY TO BE ± 1/2 °	.XXX ± .005
TITLE WELDED DOUBLE HUNG	
DRAWN BY DDS	SCALE 2:1
DATE 11/15/02	CHGD BY
COMPUTER NO	APPD BY

1) MATERIAL RIGID PVC	
2) CAPSTOCK	
3) UNSPECIFIED WALLS .065	
4) BREAK ALL CORNERS .015	
5) AREA .529	SQ. IN.
6) WT/FT	LBS/FT
	DWG NO B-WDIF-3003

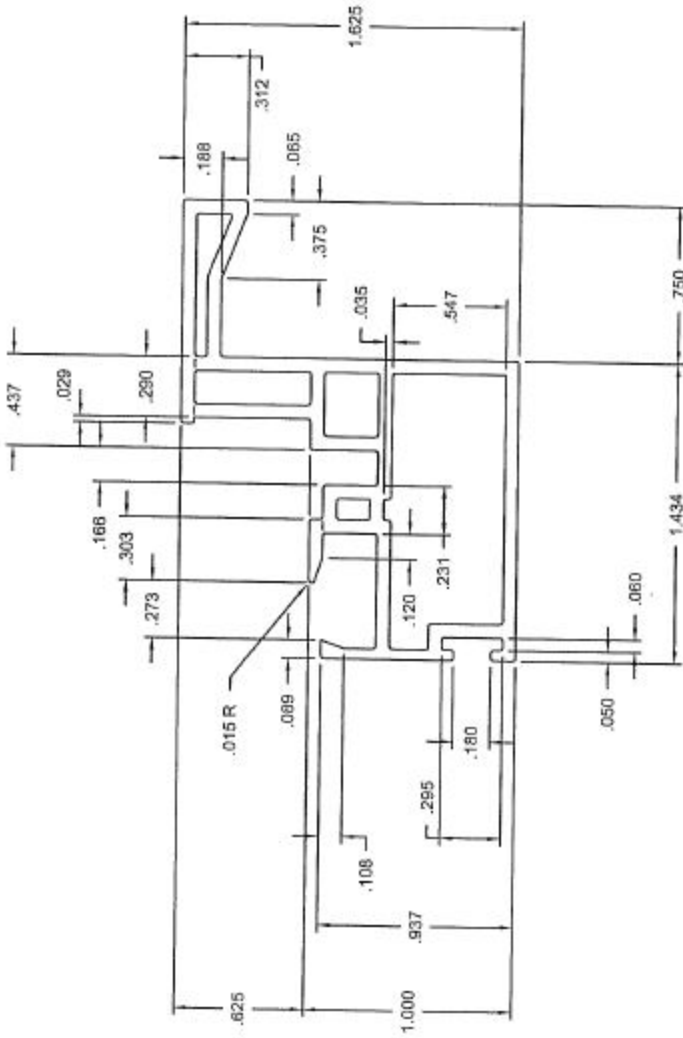
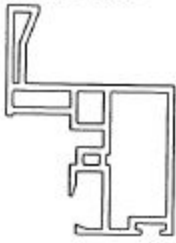
LOCATION FOR IMPACT TEST SPECIFICATION-LENGTHS TO 3/8"

BY DDS  
 QUALITY LINEALS  
 DESIGNS

"OUR NAME SAYS IT ALL"

REVISION	BY	DATE
A	DDS	11/28/11
JO.		





DO NOT SCALE DRAWING

ALLOWABLE BOW MAX. 1" PER 14" ANGULARITY TO BE ± 1/2°		TOLERANCES- .XX ± .010 .XXX ± .005	
MATERIAL RIGID PVC		TITLE WELDED DOUBLE HUNG HANDLE SASH	
CAPSTOCK		DRAWN BY DDS	SCALE 2:1
UNSPECIFIED WALLS .065		DATE 11/13/02	CHECKED BY [ ]
BREAK ALL CORNERS .015 R		COMPUTER NO	
AREA .607		DWG NO B-WDHS-3002	
WT/FT [ ]		[ ]	

LOCATION FOR IMPACT TEST SPECIFICATION-LENGTHS TO 3/8"	1) MATERIAL 2) CAPSTOCK 3) UNSPECIFIED WALLS .065 4) BREAK ALL CORNERS .015 R 5) AREA .607 6) WT/FT [ ]
---	--

DRAWN FOR QUALITY LINEALS BY DDS DESIGNS	"OUR NAME SAYS IT ALL"
--	------------------------

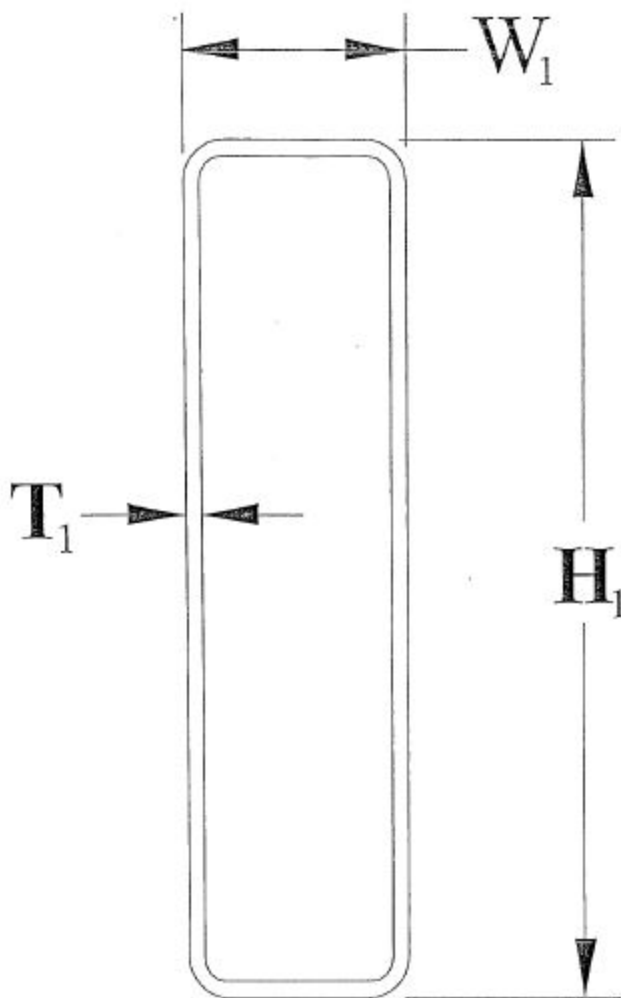
NO.	REVISION	BY	DATE







TEST SPECIMEN COMPLIES  
 WITH THESE DETAILS.  
 ANY DEVIATION IS NOTED.  
 REPORT NO. NCTL-110-14975-01  
 TEST DATE 3/25/13



## Rectangular

Divider Dimensions - Fill dimensions where applicable - Please fill out a divider sheet for each divider size used.

Dimensions			Material		
<input type="checkbox"/> $W_1$ <u>3/16</u> "	<input type="checkbox"/> $W_2$ _____ "	<input type="checkbox"/> $W_3$ _____ "	<input checked="" type="checkbox"/> Aluminum	<input type="checkbox"/> Steel - Galvanized	<input type="checkbox"/> Other _____
<input type="checkbox"/> $H_1$ <u>5/8</u> "	<input type="checkbox"/> $H_2$ _____ "	<input type="checkbox"/> $T_1$ <u>0.020</u> "	<input type="checkbox"/> Steel - Mild	<input type="checkbox"/> Steel - Stainless	

**Duralite™ Thermal Model Information Rev 1.1 January 9, 2007 for Duralite™ design model Rev 1.02**

ANY DEVIATIONS NOTED:  
 REPORT NO. NCTL-110-14975-01  
 TEST DATE 3/25/13

**Table B: Dimensions for airspaces 23/48" (0.479") and larger. Dimensions are in inches. Use with DS.dxf.**

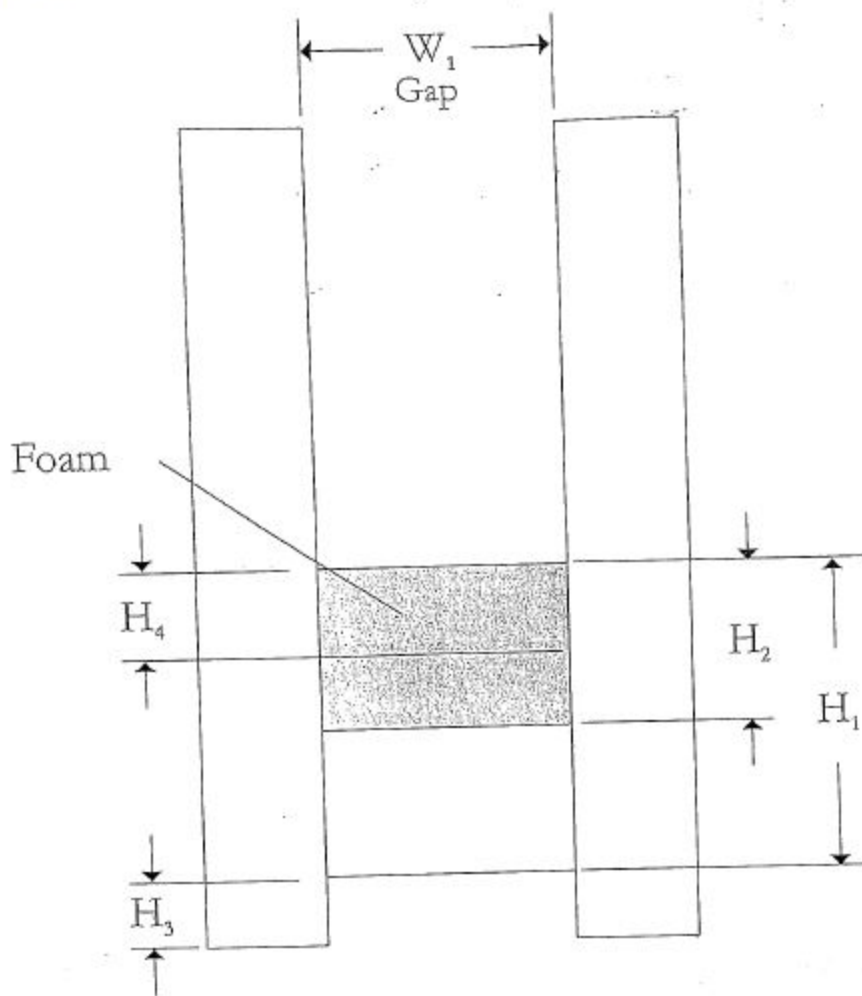
Gap	Code	N	BH	TL	SAW	SAH	ST	SH	AC1	AC2	AC3	AC4	AL1 AL 2	SAF	IF 1	IF 2	IF 3	F
	No. of rectangles	2	2	1	1	2	1	1	1	1	1	1	2	2	2	2	2	2
23/48	48H	←	←	0.479	0.435	←	0.400	0.423	0.363	0.397	0.397	0.339	0.427	←	←	←	←	←
1/2	50H	←	←	0.500	0.456	←	0.421	0.444	0.384	0.418	0.418	0.360	0.448	←	←	←	←	←
25/48	52H	←	←	0.521	0.477	←	0.442	0.465	0.405	0.439	0.439	0.381	0.469	←	←	←	←	←
26/48	54H	←	←	0.542	0.498	←	0.463	0.486	0.426	0.460	0.460	0.402	0.490	←	←	←	←	←
9/16	56H	←	←	0.563	0.519	←	0.484	0.507	0.447	0.481	0.481	0.423	0.511	←	←	←	←	←
28/48	58H	←	←	0.583	0.539	←	0.504	0.527	0.467	0.501	0.501	0.443	0.531	←	←	←	←	←
29/48	60H	←	←	0.604	0.560	←	0.525	0.548	0.488	0.522	0.522	0.464	0.552	←	←	←	←	←
5/8	62H	←	←	0.625	0.581	←	0.546	0.569	0.509	0.543	0.543	0.485	0.573	←	←	←	←	←
31/48	64H	←	←	0.646	0.602	←	0.567	0.590	0.530	0.564	0.564	0.506	0.594	←	←	←	←	←
32/48	66H	←	←	0.667	0.623	←	0.588	0.611	0.551	0.585	0.585	0.527	0.615	←	←	←	←	←
11/16	68H	←	←	0.688	0.644	←	0.609	0.632	0.572	0.606	0.606	0.548	0.636	←	←	←	←	←
34/48	70H	←	←	0.709	0.665	←	0.63	0.653	0.593	0.627	0.627	0.569	0.657	←	←	←	←	←
35/48	73H	←	←	0.729	0.685	←	0.65	0.673	0.613	0.647	0.647	0.589	0.677	←	←	←	←	←
3/4	75H	←	←	0.75	0.706	←	0.671	0.694	0.634	0.668	0.668	0.610	0.698	←	←	←	←	←
37/48	77H	←	←	0.77	0.726	←	0.691	0.714	0.654	0.688	0.688	0.630	0.718	←	←	←	←	←
38/48	79H	←	←	0.792	0.748	←	0.713	0.736	0.676	0.710	0.710	0.652	0.740	←	←	←	←	←
13/16	81H	←	←	0.813	0.769	<b>0.004</b>	0.734	0.757	0.697	0.731	0.731	0.673	0.761	<b>0.014</b>	<b>0.015</b>	<b>0.015</b>	<b>0.002</b>	<b>0.022</b>
Fixed for all		<b>0.058</b>	<b>0.070</b>	<b>0.048</b>	<b>0.004</b>	<b>0.209</b>	<b>0.018</b>	<b>0.023</b>	<b>0.022</b>	<b>0.064</b>	<b>0.074</b>	<b>0.007</b>	<b>0.015</b>	<b>0.018</b>	<b>0.064</b>	<b>0.074</b>	<b>0.023</b>	<b>0.213</b>

Notes to Tables A, B, C & D:

1. The arrows indicate that the dimension remains the same in that direction. For example SAF is the same dimension in all sizes.
2. Dimensions in **bold** are constant for a group of sizes as indicated.
3. Use this dimension to complete the rectangle in boxes that show only one dimension.
4. Boxes with two numbers shown, the upper number is in the airspace dimension. The lower number is parallel to the glass.
5. If you have any questions about this chart please call:

Werner Lichtenberger, Truseal Technologies, Inc. 905 522 9058 or 888 257 7605 voice mail. Or E-mail [lichtenberger@Truseal.com](mailto:lichtenberger@Truseal.com)





### Super Spacer

Spacer Dimensions - Fill dimensions where applicable - Please fill out a spacer sheet for each spacer used whether spacer type or size.

Gap	Primary Seal	Secondary Seal	Material	Fill
$W_1$ <u>VARIES</u>	<input type="checkbox"/> Butyl	<input checked="" type="checkbox"/> Butyl	<input type="checkbox"/> Aluminum	<input type="checkbox"/> Dessicant
$W_2$ _____"	<input type="checkbox"/> PIB	<input type="checkbox"/> PIB	<input type="checkbox"/> Steel - Mild	<input type="checkbox"/> Air
$W_3$ _____"	<input type="checkbox"/> Polysulphide	<input type="checkbox"/> Polysulphide	<input type="checkbox"/> Steel - Stainless	<input type="checkbox"/> Other _____
$W_4$ _____"	<input type="checkbox"/> Silicone	<input type="checkbox"/> Silicone	<input type="checkbox"/> Steel - Galvanized	
$H_1$ <u>375</u> "	<input type="checkbox"/> Urethane	<input type="checkbox"/> Urethane	<input type="checkbox"/> Vinyl	
$H_2$ <u>1875</u> "	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> Foam _____	
$H_3$ _____"	<input checked="" type="checkbox"/> Other <u>EPDM</u>	<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____	
$H_4$ _____"				
$H_5$ _____"				
$T_1$ _____"				