

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

**Rendered to:  
AMERICAN WINDOW ALLIANCE**

**SERIES/MODEL:  
Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)  
Windgate New Construction & Belmont / Stormgate Replacement DH (Equal Lite)**

<i>Baseline Product for Validation Testing</i>	
<b>Simulated Thermal Transmittance (U-Factor)</b>	<b>0.22</b>
Unit Size:	47.25 inches wide by 59.00 inches high
Glazing Layer 1:	SS Clear
Gap 1:	0.234 inch Intercept Spacer (CU-S) - 90% Krypton Fill
Glazing Layer 2:	SS PPG Solarban 60 Lowe (e=0.035,#3)
Gap 2:	0.234 inch Intercept Spacer (CU-S) - 90% Krypton Fill
Glazing Layer 3:	SS PPG Solarban 60 Lowe (e=0.035,#5)
Notes:	143.095 DH was physically tested

**Report Number: 54088.29-116-45  
Report Date: 03/24/09  
Expiration Date: 12/14/10**

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

Rendered to:  
AMERICAN WINDOW ALLIANCE  
1239 Erie Street  
North Kansas City, MO 64116

Report Number: 54088.29-116-45  
Simulation Date: 12/14/06  
Report Date: 03/24/09  
Expiration Date: 12/14/10

**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:** 16.4

**Simulations Specimen Description:**

**Series/Model:** Windgate New Construction & Belmont /  
Stormgate Replacement DH (Unequal & Equal Lite)  
**Type:** Vertical Slider , Double Hung  
**Frame Material:** VY Vinyl  
**Sash Material:** VP Vinyl w/ Reinforcement - Partial  
**Standard Size:** 1200mm x 1500mm

**Technical Interpretations:**

None

**Modeling Assumptions:**

- 1) The 142.094 DH and the 142.194 DH are individual products within a product line and can be grouped according to NFRC 100-2004 Section 4.2.1.I.ii.
- 2) The 1/4" x 5/8" Rectangular Muntin, 3/16" x 5/8" Rectangular Muntin, 5.5mm x 18mm Contour Muntin, and the 5.5mm x 8mm Pencil Bar Muntin were grouped for simulation purposes according to NFRC 100-2004 Section 4.2.4.4.
- 3) The Cardinal XL Edge, Super Spacer, Duralite and the Duraseal spacers were grouped for simulation purposes according to NFRC 100-2004 Section 4.2.4.3.

**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.

***Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)***

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.003143	0.005894	0.008488
SHGC1	0.781163	0.699552	0.622621
VT0	0.000000	0.000000	0.000000
VT1	0.778021	0.693658	0.614133

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

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

***Windgate New Construction & Belmont / Stormgate Replacement DH (Equal Lite)***

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.003708	0.006416	0.008966
SHGC1	0.757635	0.677324	0.601694
VT0	0.000000	0.000000	0.000000
VT1	0.753928	0.670909	0.592728

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

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

### Spacer Option Description

<i>Spacer Type</i>	<i>Sealant</i>		
	<i>Primary</i>	<i>Secondary</i>	<i>Desiccant</i>
TruSeal DuraSeal Spacer	Butyl Rubber	Butyl Rubber	No
TruSeal DuraSeal Spacer	Butyl Rubber	None	No
Cardinal XL Edge Spacer	PIB	Silicone	Yes
Edgetech Super Spacer	Butyl Rubber	None	No

### Grid Option Description

<i>Grid Size</i>	<i>Grid Type</i>	<i>Grid Pattern</i>
5.5mm x 8mm	Pencil Bar - P-BV	NFRC
3/16" x 5/8"	Aluminum Rectangular Grid	NFRC
1/4" x 5/8"	Aluminum Rectangular Grid	NFRC
5.5mm x 18mm	Aluminum Contour Grid	NFRC
8mm x 18mm	Aluminum Contour Grid	NFRC
3/16" x 5/8"	Decralite SDL	NFRC

### Reinforcement Option Description

<i>Location</i>	<i>Material</i>
Interlock, bottom rail	Aluminum

### Gas Filling Technique Description

<i>Fill Type</i>	<i>Method</i>
90% Argon	Single Probe

### Edge-of-Glass Construction

<i>Interior Condition</i>	Foam tape between sash leg and glass
<i>Exterior Condition</i>	PVC glazing bead with flexible vinyl fin against glass

### Weatherstripping

<i>Type</i>	<i>Quantity</i>	<i>Location</i>
Finpile	1 row	Sill, lock rail, top rail

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	0.087	0.563	0.087					AIR		CL	SS-D <sup>1</sup>	N,G,S
	U-Factor 0.47			SHGC (N / <1) 0.62 / 0.56				VT (N / <1) 0.65 / 0.58			CR	43
2	0.116	0.531	0.087					AIR		CL	SS-D <sup>1</sup>	N,G,S
	U-Factor 0.47			SHGC (N / <1) 0.61 / 0.55				VT (N / <1) 0.64 / 0.57			CR	42
3	0.087	0.531	0.116					AIR		CL	SS-D <sup>1</sup>	N,G,S
	U-Factor 0.47			SHGC (N / <1) 0.62 / 0.55				VT (N / <1) 0.64 / 0.57			CR	42
	0.116	0.500	0.116					AIR		CL	SS-D <sup>1</sup>	N,G,S
	U-Factor 0.47			SHGC (N / <1) 0.61 / 0.54				VT (N / <1) 0.64 / 0.57			CR	42
3	0.116	0.531	0.087					AIR		CL	SS-D <sup>1</sup>	G
	U-Factor 0.48			SHGC (<1) 0.55				VT (<1) 0.57			CR	42
	0.087	0.531	0.116					AIR		CL	SS-D <sup>1</sup>	G
	U-Factor 0.48			SHGC (<1) 0.55				VT (<1) 0.57			CR	42
4	0.086	0.563	0.087					ARG90	0.037(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.29 / 0.26				VT (N / <1) 0.55 / 0.49			CR	61
	0.087	0.563	0.086					ARG90	0.037(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.36 / 0.33				VT (N / <1) 0.55 / 0.49			CR	61
5	0.086	0.531	0.116					ARG90	0.037(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.29 / 0.26				VT (N / <1) 0.55 / 0.49			CR	60
	0.118	0.531	0.087					ARG90	0.037(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.29 / 0.26				VT (N / <1) 0.55 / 0.49			CR	60
	0.118	0.500	0.116					ARG90	0.037(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.29 / 0.26				VT (N / <1) 0.55 / 0.49			CR	60
	0.087	0.531	0.118					ARG90	0.037(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.36 / 0.33				VT (N / <1) 0.55 / 0.49			CR	60
5	0.116	0.531	0.086					ARG90	0.037(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.36 / 0.32				VT (N / <1) 0.55 / 0.49			CR	60
	0.116	0.500	0.118					ARG90	0.037(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.36 / 0.32				VT (N / <1) 0.55 / 0.49			CR	60

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
6	0.086	0.531	0.116					ARG90	0.037(#2)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.26				VT (<1) 0.49			CR 60	
	0.118	0.531	0.087					ARG90	0.037(#2)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.26				VT (<1) 0.49			CR 60	
	0.118	0.500	0.116					ARG90	0.037(#2)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.26				VT (<1) 0.49			CR 60	
	0.087	0.531	0.118					ARG90	0.037(#3)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.33				VT (<1) 0.49			CR 60	
	0.116	0.531	0.086					ARG90	0.037(#3)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.32				VT (<1) 0.49			CR 60	
7	0.086	0.563	0.087					ARG90	0.022(#2)	LE	P1-S	N,G,S
	U-Factor 0.28			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.51 / 0.45			CR 61	
	0.087	0.563	0.086					ARG90	0.022(#3)	LE	P1-S	N,G,S
	U-Factor 0.28			SHGC (N / <1) 0.31 / 0.28				VT (N / <1) 0.51 / 0.45			CR 61	
8	0.086	0.531	0.116					ARG90	0.022(#2)	LE	P1-S	N,G,S
	U-Factor 0.28			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.51 / 0.45			CR 61	
	0.116	0.531	0.087					ARG90	0.022(#2)	LE	P1-S	N,G,S
	U-Factor 0.28			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.51 / 0.45			CR 61	
	0.116	0.500	0.116					ARG90	0.022(#2)	LE	P1-S	N,G,S
	U-Factor 0.28			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.50 / 0.45			CR 61	
	0.087	0.531	0.116					ARG90	0.022(#3)	LE	P1-S	N,G,S
	U-Factor 0.28			SHGC (N / <1) 0.31 / 0.28				VT (N / <1) 0.51 / 0.45			CR 61	
	0.116	0.531	0.086					ARG90	0.022(#3)	LE	P1-S	N,G,S
	U-Factor 0.28			SHGC (N / <1) 0.31 / 0.28				VT (N / <1) 0.51 / 0.45			CR 61	
9	0.086	0.531	0.116					ARG90	0.022(#2)	LE	P1-S	G
	U-Factor 0.29			SHGC (<1) 0.19				VT (<1) 0.45			CR 60	

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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		
	0.116	0.531	0.087					ARG90	0.022(#2)	LE	P1-S	G	
	U-Factor		0.29	SHGC (<1)				0.19	VT (<1)		0.45	CR	60
	0.116	0.500	0.116					ARG90	0.022(#2)	LE	P1-S	G	
	U-Factor		0.29	SHGC (<1)				0.19	VT (<1)		0.45	CR	60
	0.087	0.531	0.116					ARG90	0.022(#3)	LE	P1-S	G	
	U-Factor		0.29	SHGC (<1)				0.28	VT (<1)		0.45	CR	60
	0.116	0.531	0.086					ARG90	0.022(#3)	LE	P1-S	G	
	U-Factor		0.29	SHGC (<1)				0.28	VT (<1)		0.45	CR	60
	0.116	0.500	0.116					ARG90	0.022(#3)	LE	P1-S	G	
	U-Factor		0.29	SHGC (<1)				0.27	VT (<1)		0.45	CR	60
10	0.090	0.563	0.090					ARG90	0.027(#2)	LE	P1-S	N,G,S	
	U-Factor		0.28	SHGC (N / <1)				0.31 / 0.28	VT (N / <1)		0.56 / 0.50	CR	61
	0.090	0.563	0.090					ARG90	0.027(#3)	LE	P1-S	N,G,S	
	U-Factor		0.28	SHGC (N / <1)				0.38 / 0.34	VT (N / <1)		0.56 / 0.50	CR	61
11	0.090	0.531	0.117					ARG90	0.027(#2)	LE	P1-S	N,G,S	
	U-Factor		0.28	SHGC (N / <1)				0.31 / 0.28	VT (N / <1)		0.55 / 0.49	CR	60
	0.117	0.531	0.090					ARG90	0.027(#2)	LE	P1-S	N,G,S	
	U-Factor		0.28	SHGC (N / <1)				0.30 / 0.27	VT (N / <1)		0.55 / 0.49	CR	60
	0.117	0.500	0.117					ARG90	0.027(#2)	LE	P1-S	N,G,S	
	U-Factor		0.28	SHGC (N / <1)				0.30 / 0.27	VT (N / <1)		0.55 / 0.49	CR	60
	0.090	0.531	0.117					ARG90	0.027(#3)	LE	P1-S	N,G,S	
	U-Factor		0.28	SHGC (N / <1)				0.38 / 0.34	VT (N / <1)		0.55 / 0.49	CR	60
	0.117	0.531	0.090					ARG90	0.027(#3)	LE	P1-S	N,G,S	
	U-Factor		0.28	SHGC (N / <1)				0.38 / 0.34	VT (N / <1)		0.55 / 0.49	CR	60
	0.117	0.500	0.117					ARG90	0.027(#3)	LE	P1-S	N,G,S	
	U-Factor		0.28	SHGC (N / <1)				0.38 / 0.34	VT (N / <1)		0.55 / 0.49	CR	60
12	0.090	0.531	0.117					ARG90	0.027(#2)	LE	P1-S	G	
	U-Factor		0.29	SHGC (<1)				0.28	VT (<1)		0.49	CR	60
	0.117	0.531	0.090					ARG90	0.027(#2)	LE	P1-S	G	
	U-Factor		0.29	SHGC (<1)				0.27	VT (<1)		0.49	CR	60

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
	0.117	0.500	0.117					ARG90	0.027(#2)	LE	P1-S	G
	U-Factor 0.29			SHGC (<1) 0.27				VT (<1) 0.49			CR 60	
	0.090	0.531	0.117					ARG90	0.027(#3)	LE	P1-S	G
	U-Factor 0.29			SHGC (<1) 0.34				VT (<1) 0.49			CR 60	
	0.117	0.531	0.090					ARG90	0.027(#3)	LE	P1-S	G
	U-Factor 0.29			SHGC (<1) 0.34				VT (<1) 0.49			CR 60	
	0.117	0.500	0.117					ARG90	0.027(#3)	LE	P1-S	G
U-Factor 0.29			SHGC (<1) 0.34				VT (<1) 0.49			CR 60		
13	0.086	0.234	0.087	0.234	0.086			ARG90	0.037(#2) / 0.037(#5)	LE	P1-S	N
	U-Factor 0.26			SHGC (N) 0.25				VT (N) 0.43			CR 66	
14	0.086	0.234	0.087	0.234	0.086			ARG90	0.037(#2) / 0.037(#5)	LE	P1-S	G,S
	U-Factor 0.27			SHGC (<1) 0.22				VT (<1) 0.38			CR 66	
15	0.086	0.234	0.087	0.234	0.086			ARG90	0.022(#2) / 0.022(#5)	LE	P1-S	N
	U-Factor 0.25			SHGC (N) 0.19				VT (N) 0.37			CR 66	
16	0.086	0.234	0.087	0.234	0.086			ARG90	0.022(#2) / 0.022(#5)	LE	P1-S	G,S
	U-Factor 0.26			SHGC (<1) 0.17				VT (<1) 0.33			CR 66	
17	0.090	0.234	0.090	0.234	0.090			ARG90	0.027(#2) / 0.027(#5)	LE	P1-S	N
	U-Factor 0.25			SHGC (N) 0.27				VT (N) 0.44			CR 66	
18	0.090	0.234	0.090	0.234	0.090			ARG90	0.027(#2) / 0.027(#5)	LE	P1-S	G,S
	U-Factor 0.27			SHGC (<1) 0.24				VT (<1) 0.39			CR 66	
19	0.086	0.563	0.087					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.29 / 0.26				VT (N / <1) 0.55 / 0.49			CR 56	
	0.087	0.563	0.086					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	N,G,S
U-Factor 0.30			SHGC (N / <1) 0.36 / 0.33				VT (N / <1) 0.55 / 0.49			CR 56		
20	0.086	0.531	0.116					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.29 / 0.26				VT (N / <1) 0.55 / 0.49			CR 55	
	0.118	0.531	0.087					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.29 / 0.26				VT (N / <1) 0.55 / 0.49			CR 55	
	0.118	0.500	0.116					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	N,G,S
U-Factor 0.30			SHGC (N / <1) 0.29 / 0.26				VT (N / <1) 0.55 / 0.49			CR 55		



**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
21	0.087	0.531	0.118					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.36 / 0.33				VT (N / <1) 0.55 / 0.49			CR	55
	0.116	0.531	0.086					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.36 / 0.32				VT (N / <1) 0.55 / 0.49			CR	55
	0.116	0.500	0.118					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.36 / 0.32				VT (N / <1) 0.55 / 0.49			CR	55
21	0.086	0.531	0.116					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.26				VT (<1) 0.49			CR	55
	0.118	0.531	0.087					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.26				VT (<1) 0.49			CR	55
	0.118	0.500	0.116					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.26				VT (<1) 0.49			CR	55
21	0.087	0.531	0.118					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.33				VT (<1) 0.49			CR	55
	0.116	0.531	0.086					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.32				VT (<1) 0.49			CR	55
	0.116	0.500	0.118					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.32				VT (<1) 0.49			CR	55
22	0.086	0.563	0.087					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.51 / 0.45			CR	56
	0.087	0.563	0.086					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	N,G,S
23	U-Factor 0.30			SHGC (N / <1) 0.31 / 0.28				VT (N / <1) 0.51 / 0.45			CR	56
	0.086	0.531	0.116					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.51 / 0.45			CR	55
	0.116	0.531	0.087					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.51 / 0.45			CR	55
	0.116	0.500	0.116					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	N,G,S
23	U-Factor 0.30			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.50 / 0.45			CR	55
	0.087	0.531	0.116					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.31 / 0.28				VT (N / <1) 0.51 / 0.45			CR	55

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
	0.116	0.531	0.086					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.31 / 0.28				VT (N / <1) 0.51 / 0.45			CR	55
	0.116	0.500	0.116					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.50 / 0.45			CR	55
24	0.086	0.531	0.116					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.19				VT (<1) 0.45			CR	55
	0.116	0.531	0.087					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.19				VT (<1) 0.45			CR	55
	0.116	0.500	0.116					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.19				VT (<1) 0.45			CR	55
	0.087	0.531	0.116					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.28				VT (<1) 0.45			CR	55
	0.116	0.531	0.086					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.28				VT (<1) 0.45			CR	55
	0.116	0.500	0.116					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.27				VT (<1) 0.45			CR	55
25	0.090	0.563	0.090					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.31 / 0.28				VT (N / <1) 0.56 / 0.50			CR	56
	0.090	0.563	0.090					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.38 / 0.34				VT (N / <1) 0.56 / 0.50			CR	56
26	0.090	0.531	0.117					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.31 / 0.28				VT (N / <1) 0.55 / 0.49			CR	55
	0.117	0.531	0.090					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.55 / 0.49			CR	55
	0.117	0.500	0.117					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.55 / 0.49			CR	55
	0.090	0.531	0.117					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.38 / 0.34				VT (N / <1) 0.55 / 0.49			CR	55
	0.117	0.531	0.090					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.38 / 0.34				VT (N / <1) 0.55 / 0.49			CR	55

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
	0.117	0.500	0.117					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.38 / 0.34				VT (N / <1) 0.55 / 0.49			CR	55
27	0.090	0.531	0.117					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.28				VT (<1) 0.49			CR	55
	0.117	0.531	0.090					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.27				VT (<1) 0.49			CR	55
	0.117	0.500	0.117					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.27				VT (<1) 0.49			CR	55
	0.090	0.531	0.117					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.34				VT (<1) 0.49			CR	55
	0.117	0.531	0.090					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.34				VT (<1) 0.49			CR	55
	0.117	0.500	0.117					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.34				VT (<1) 0.49			CR	55
28	0.086	0.234	0.087	0.234	0.086			ARG90	0.037(#2) / 0.037(#5)	LE	SS-D <sup>2</sup>	N
	U-Factor 0.27			SHGC (N) 0.25				VT (N) 0.43			CR	61
29	0.086	0.234	0.087	0.234	0.086			ARG90	0.037(#2) / 0.037(#5)	LE	SS-D <sup>2</sup>	G,S
	U-Factor 0.28			SHGC (<1) 0.22				VT (<1) 0.38			CR	61
30	0.086	0.234	0.087	0.234	0.086			ARG90	0.022(#2) / 0.022(#5)	LE	SS-D <sup>2</sup>	N
	U-Factor 0.27			SHGC (N) 0.19				VT (N) 0.37			CR	61
31	0.086	0.234	0.087	0.234	0.086			ARG90	0.022(#2) / 0.022(#5)	LE	SS-D <sup>2</sup>	G,S
	U-Factor 0.28			SHGC (<1) 0.17				VT (<1) 0.33			CR	61
32	0.090	0.234	0.090	0.234	0.090			ARG90	0.027(#2) / 0.027(#5)	LE	SS-D <sup>2</sup>	N
	U-Factor 0.27			SHGC (N) 0.27				VT (N) 0.44			CR	61
33	0.090	0.234	0.090	0.234	0.090			ARG90	0.027(#2) / 0.027(#5)	LE	SS-D <sup>2</sup>	G,S
	U-Factor 0.28			SHGC (<1) 0.24				VT (<1) 0.39			CR	61
34	0.325	0.285	0.116					AIR		CL	SS-D <sup>1</sup>	N
	U-Factor 0.49			SHGC (N) 0.52				VT (N) 0.62			CR	41
	0.116	0.285	0.325					AIR		CL	SS-D <sup>1</sup>	N
	U-Factor 0.49			SHGC (N) 0.56				VT (N) 0.62			CR	41

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
35	0.325	0.285	0.116					AIR		CL	SS-D <sup>1</sup>	G,S
	U-Factor 0.52			SHGC (<1) 0.46				VT (<1) 0.55			CR	41
35	0.116	0.285	0.325					AIR		CL	SS-D <sup>1</sup>	G,S
	U-Factor 0.52			SHGC (<1) 0.50				VT (<1) 0.55			CR	41
36	0.324	0.285	0.116					ARG90	0.037(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.29				VT (N) 0.54			CR	52
	0.325	0.285	0.118					ARG90	0.037(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.33				VT (N) 0.53			CR	52
	0.118	0.285	0.325					ARG90	0.037(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.29				VT (N) 0.53			CR	52
	0.116	0.285	0.324					ARG90	0.037(#3)	LE	SS-D <sup>1</sup>	N
U-Factor 0.34			SHGC (N) 0.35				VT (N) 0.54			CR	52	
37	0.324	0.285	0.116					ARG90	0.037(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.26				VT (<1) 0.48			CR	52
	0.325	0.285	0.118					ARG90	0.037(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.30				VT (<1) 0.47			CR	52
	0.118	0.285	0.325					ARG90	0.037(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.26				VT (<1) 0.47			CR	52
38	0.116	0.285	0.324					ARG90	0.037(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.32				VT (<1) 0.48			CR	52
	0.323	0.285	0.116					ARG90	0.022(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.33			SHGC (N) 0.23				VT (N) 0.50			CR	53
	0.325	0.285	0.116					ARG90	0.022(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.33			SHGC (N) 0.29				VT (N) 0.49			CR	53
38	0.116	0.285	0.325					ARG90	0.022(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.33			SHGC (N) 0.22				VT (N) 0.49			CR	53
	0.116	0.285	0.323					ARG90	0.022(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.33			SHGC (N) 0.30				VT (N) 0.50			CR	53
	U-Factor 0.37			SHGC (<1) 0.21				VT (<1) 0.44			CR	53
39	0.323	0.285	0.116					ARG90	0.022(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.37			SHGC (<1) 0.21				VT (<1) 0.44			CR	53

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
40	0.325	0.285	0.116					ARG90	0.022(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.37			SHGC (<1) 0.26				VT (<1) 0.44			CR	53
	0.116	0.285	0.325					ARG90	0.022(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.37			SHGC (<1) 0.20				VT (<1) 0.44			CR	53
	0.116	0.285	0.323					ARG90	0.022(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.37			SHGC (<1) 0.27				VT (<1) 0.44			CR	53
40	0.323	0.285	0.116					ARG90	0.027(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.30				VT (N) 0.54			CR	52
	0.325	0.285	0.117					ARG90	0.027(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.35				VT (N) 0.54			CR	52
	0.117	0.285	0.325					ARG90	0.027(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.30				VT (N) 0.54			CR	52
41	0.116	0.285	0.323					ARG90	0.027(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.37				VT (N) 0.54			CR	52
	0.323	0.285	0.116					ARG90	0.027(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.27				VT (<1) 0.48			CR	52
	0.325	0.285	0.117					ARG90	0.027(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.32				VT (<1) 0.48			CR	52
41	0.117	0.285	0.325					ARG90	0.027(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.27				VT (<1) 0.48			CR	52
	0.116	0.285	0.323					ARG90	0.027(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.33				VT (<1) 0.48			CR	52

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
42	0.087	0.563	0.087					AIR		CL	SS-D <sup>1</sup>	N,G,S
	U-Factor 0.47			SHGC (N / <1) 0.60 / 0.54				VT (N / <1) 0.63 / 0.56			CR	42
43	0.116	0.531	0.087					AIR		CL	SS-D <sup>1</sup>	N,G,S
	U-Factor 0.47			SHGC (N / <1) 0.59 / 0.53				VT (N / <1) 0.62 / 0.56			CR	42
43	0.087	0.531	0.116					AIR		CL	SS-D <sup>1</sup>	N,G,S
	U-Factor 0.47			SHGC (N / <1) 0.60 / 0.53				VT (N / <1) 0.62 / 0.56			CR	42
	0.116	0.500	0.116					AIR		CL	SS-D <sup>1</sup>	N,G,S
	U-Factor 0.47			SHGC (N / <1) 0.59 / 0.53				VT (N / <1) 0.62 / 0.55			CR	42
44	0.116	0.531	0.087					AIR		CL	SS-D <sup>1</sup>	G
	U-Factor 0.48			SHGC (<1) 0.53				VT (<1) 0.56			CR	42
	0.087	0.531	0.116					AIR		CL	SS-D <sup>1</sup>	G
	U-Factor 0.48			SHGC (<1) 0.53				VT (<1) 0.56			CR	42
44	0.116	0.500	0.116					AIR		CL	SS-D <sup>1</sup>	G
	U-Factor 0.48			SHGC (<1) 0.53				VT (<1) 0.55			CR	42
	0.086	0.563	0.087					ARG90	0.037(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.28 / 0.25				VT (N / <1) 0.53 / 0.48			CR	60
45	0.087	0.563	0.086					ARG90	0.037(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.35 / 0.32				VT (N / <1) 0.53 / 0.47			CR	60
46	0.086	0.531	0.116					ARG90	0.037(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.28 / 0.25				VT (N / <1) 0.53 / 0.47			CR	60
	0.118	0.531	0.087					ARG90	0.037(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.28 / 0.25				VT (N / <1) 0.53 / 0.47			CR	60
	0.118	0.500	0.116					ARG90	0.037(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.28 / 0.25				VT (N / <1) 0.53 / 0.47			CR	60
	0.087	0.531	0.118					ARG90	0.037(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.35 / 0.32				VT (N / <1) 0.53 / 0.47			CR	60
46	0.116	0.531	0.086					ARG90	0.037(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.35 / 0.31				VT (N / <1) 0.53 / 0.47			CR	60
	0.116	0.500	0.118					ARG90	0.037(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.35 / 0.31				VT (N / <1) 0.53 / 0.47			CR	60

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
47	0.086	0.531	0.116					ARG90	0.037(#2)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.25				VT (<1) 0.47			CR 60	
	0.118	0.531	0.087					ARG90	0.037(#2)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.25				VT (<1) 0.47			CR 60	
	0.118	0.500	0.116					ARG90	0.037(#2)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.25				VT (<1) 0.47			CR 60	
	0.087	0.531	0.118					ARG90	0.037(#3)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.32				VT (<1) 0.47			CR 60	
	0.116	0.531	0.086					ARG90	0.037(#3)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.31				VT (<1) 0.47			CR 60	
48	0.086	0.563	0.087					ARG90	0.022(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.49 / 0.44			CR 61	
	0.087	0.563	0.086					ARG90	0.022(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.49 / 0.44			CR 61	
49	0.086	0.531	0.116					ARG90	0.022(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.49 / 0.44			CR 60	
	0.116	0.531	0.087					ARG90	0.022(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.49 / 0.44			CR 60	
	0.116	0.500	0.116					ARG90	0.022(#2)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.49 / 0.43			CR 60	
	0.087	0.531	0.116					ARG90	0.022(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.49 / 0.44			CR 60	
	0.116	0.531	0.086					ARG90	0.022(#3)	LE	P1-S	N,G,S
	U-Factor 0.29			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.49 / 0.44			CR 60	
50	0.086	0.531	0.116					ARG90	0.022(#2)	LE	P1-S	G
	U-Factor 0.30			SHGC (<1) 0.19				VT (<1) 0.44			CR 60	

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
	0.116	0.531	0.087					ARG90	0.022(#2)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.19				VT (<1) 0.44			CR 60		
	0.116	0.500	0.116					ARG90	0.022(#2)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.19				VT (<1) 0.43			CR 60		
	0.087	0.531	0.116					ARG90	0.022(#3)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.27				VT (<1) 0.44			CR 60		
	0.116	0.531	0.086					ARG90	0.022(#3)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.27				VT (<1) 0.44			CR 60		
	0.116	0.500	0.116					ARG90	0.022(#3)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.27				VT (<1) 0.43			CR 60		
51	0.090	0.563	0.090					ARG90	0.027(#2)	LE	P1-S	N,G,S
	U-Factor 0.29		SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.54 / 0.48			CR 61		
	0.090	0.563	0.090					ARG90	0.027(#3)	LE	P1-S	N,G,S
	U-Factor 0.29		SHGC (N / <1) 0.37 / 0.33				VT (N / <1) 0.54 / 0.48			CR 61		
52	0.090	0.531	0.117					ARG90	0.027(#2)	LE	P1-S	N,G,S
	U-Factor 0.29		SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.54 / 0.48			CR 60		
	0.117	0.531	0.090					ARG90	0.027(#2)	LE	P1-S	N,G,S
	U-Factor 0.29		SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.54 / 0.48			CR 60		
	0.117	0.500	0.117					ARG90	0.027(#2)	LE	P1-S	N,G,S
	U-Factor 0.29		SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.53 / 0.48			CR 60		
	0.090	0.531	0.117					ARG90	0.027(#3)	LE	P1-S	N,G,S
	U-Factor 0.29		SHGC (N / <1) 0.37 / 0.33				VT (N / <1) 0.54 / 0.48			CR 60		
	0.117	0.531	0.090					ARG90	0.027(#3)	LE	P1-S	N,G,S
	U-Factor 0.29		SHGC (N / <1) 0.37 / 0.33				VT (N / <1) 0.54 / 0.48			CR 60		
	0.117	0.500	0.117					ARG90	0.027(#3)	LE	P1-S	N,G,S
	U-Factor 0.29		SHGC (N / <1) 0.37 / 0.33				VT (N / <1) 0.53 / 0.48			CR 60		
53	0.090	0.531	0.117					ARG90	0.027(#2)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.27				VT (<1) 0.48			CR 60		
	0.117	0.531	0.090					ARG90	0.027(#2)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.27				VT (<1) 0.48			CR 60		



**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
	0.117	0.500	0.117					ARG90	0.027(#2)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.27				VT (<1) 0.48			CR 60		
	0.090	0.531	0.117					ARG90	0.027(#3)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.33				VT (<1) 0.48			CR 60		
	0.117	0.531	0.090					ARG90	0.027(#3)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.33				VT (<1) 0.48			CR 60		
	0.117	0.500	0.117					ARG90	0.027(#3)	LE	P1-S	G
	U-Factor 0.30		SHGC (<1) 0.33				VT (<1) 0.48			CR 60		
54	0.086	0.234	0.087	0.234	0.086			ARG90	0.037(#2) / 0.037(#5)	LE	P1-S	N
	U-Factor 0.26		SHGC (N) 0.24				VT (N) 0.42			CR 64		
55	0.086	0.234	0.087	0.234	0.086			ARG90	0.037(#2) / 0.037(#5)	LE	P1-S	G,S
	U-Factor 0.27		SHGC (<1) 0.22				VT (<1) 0.37			CR 64		
56	0.086	0.234	0.087	0.234	0.086			ARG90	0.022(#2) / 0.022(#5)	LE	P1-S	N
	U-Factor 0.26		SHGC (N) 0.18				VT (N) 0.36			CR 64		
57	0.086	0.234	0.087	0.234	0.086			ARG90	0.022(#2) / 0.022(#5)	LE	P1-S	G,S
	U-Factor 0.27		SHGC (<1) 0.17				VT (<1) 0.32			CR 64		
58	0.090	0.234	0.090	0.234	0.090			ARG90	0.027(#2) / 0.027(#5)	LE	P1-S	N
	U-Factor 0.26		SHGC (N) 0.26				VT (N) 0.43			CR 64		
59	0.090	0.234	0.090	0.234	0.090			ARG90	0.027(#2) / 0.027(#5)	LE	P1-S	G,S
	U-Factor 0.27		SHGC (<1) 0.23				VT (<1) 0.38			CR 64		
60	0.086	0.563	0.087					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31		SHGC (N / <1) 0.28 / 0.25				VT (N / <1) 0.53 / 0.48			CR 55		
	0.087	0.563	0.086					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31		SHGC (N / <1) 0.35 / 0.32				VT (N / <1) 0.53 / 0.47			CR 55		
61	0.086	0.531	0.116					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31		SHGC (N / <1) 0.28 / 0.25				VT (N / <1) 0.53 / 0.47			CR 55		
	0.118	0.531	0.087					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31		SHGC (N / <1) 0.28 / 0.25				VT (N / <1) 0.53 / 0.47			CR 55		
	0.118	0.500	0.116					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31		SHGC (N / <1) 0.28 / 0.25				VT (N / <1) 0.53 / 0.47			CR 55		

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
	0.087	0.531	0.118					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.35 / 0.32				VT (N / <1) 0.53 / 0.47			CR	55
	0.116	0.531	0.086					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.35 / 0.31				VT (N / <1) 0.53 / 0.47			CR	55
	0.116	0.500	0.118					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.35 / 0.31				VT (N / <1) 0.53 / 0.47			CR	55
62	0.086	0.531	0.116					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.25				VT (<1) 0.47			CR	55
	0.118	0.531	0.087					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.25				VT (<1) 0.47			CR	55
	0.118	0.500	0.116					ARG90	0.037(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.25				VT (<1) 0.47			CR	55
	0.087	0.531	0.118					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.32				VT (<1) 0.47			CR	55
	0.116	0.531	0.086					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.31				VT (<1) 0.47			CR	55
	0.116	0.500	0.118					ARG90	0.037(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.31				VT (<1) 0.47			CR	55
63	0.086	0.563	0.087					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.49 / 0.44			CR	55
	0.087	0.563	0.086					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	N,G,S
64	U-Factor 0.31			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.49 / 0.44			CR	55
	0.086	0.531	0.116					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.49 / 0.44			CR	55
	0.116	0.531	0.087					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.49 / 0.44			CR	55
	0.116	0.500	0.116					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.21 / 0.19				VT (N / <1) 0.49 / 0.43			CR	55
	0.087	0.531	0.116					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.49 / 0.44			CR	55

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
	0.116	0.531	0.086					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.49 / 0.44			CR 55	
	0.116	0.500	0.116					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.30			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.49 / 0.43			CR 55	
65	0.086	0.531	0.116					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.19				VT (<1) 0.44			CR 55	
	0.116	0.531	0.087					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.19				VT (<1) 0.44			CR 55	
	0.116	0.500	0.116					ARG90	0.022(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.19				VT (<1) 0.43			CR 55	
	0.087	0.531	0.116					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.27				VT (<1) 0.44			CR 55	
	0.116	0.531	0.086					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.27				VT (<1) 0.44			CR 55	
	0.116	0.500	0.116					ARG90	0.022(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.31			SHGC (<1) 0.27				VT (<1) 0.43			CR 55	
66	0.090	0.563	0.090					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.54 / 0.48			CR 55	
	0.090	0.563	0.090					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.37 / 0.33				VT (N / <1) 0.54 / 0.48			CR 55	
67	0.090	0.531	0.117					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.54 / 0.48			CR 55	
	0.117	0.531	0.090					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.54 / 0.48			CR 55	
	0.117	0.500	0.117					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.30 / 0.27				VT (N / <1) 0.53 / 0.48			CR 55	
	0.090	0.531	0.117					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.37 / 0.33				VT (N / <1) 0.54 / 0.48			CR 55	
	0.117	0.531	0.090					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.37 / 0.33				VT (N / <1) 0.54 / 0.48			CR 55	

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
	0.117	0.500	0.117					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	N,G,S
	U-Factor 0.31			SHGC (N / <1) 0.37 / 0.33				VT (N / <1) 0.53 / 0.48			CR	55
68	0.090	0.531	0.117					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.27				VT (<1) 0.48			CR	55
	0.117	0.531	0.090					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.27				VT (<1) 0.48			CR	55
	0.117	0.500	0.117					ARG90	0.027(#2)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.27				VT (<1) 0.48			CR	55
	0.090	0.531	0.117					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.33				VT (<1) 0.48			CR	55
	0.117	0.531	0.090					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.33				VT (<1) 0.48			CR	55
	0.117	0.500	0.117					ARG90	0.027(#3)	LE	SS-D <sup>2</sup>	G
	U-Factor 0.32			SHGC (<1) 0.33				VT (<1) 0.48			CR	55
69	0.086	0.234	0.087	0.234	0.086			ARG90	0.037(#2) / 0.037(#5)	LE	SS-D <sup>2</sup>	N
	U-Factor 0.28			SHGC (N) 0.24				VT (N) 0.42			CR	60
70	0.086	0.234	0.087	0.234	0.086			ARG90	0.037(#2) / 0.037(#5)	LE	SS-D <sup>2</sup>	G,S
	U-Factor 0.29			SHGC (<1) 0.22				VT (<1) 0.37			CR	60
71	0.086	0.234	0.087	0.234	0.086			ARG90	0.022(#2) / 0.022(#5)	LE	SS-D <sup>2</sup>	N
	U-Factor 0.27			SHGC (N) 0.18				VT (N) 0.36			CR	60
72	0.086	0.234	0.087	0.234	0.086			ARG90	0.022(#2) / 0.022(#5)	LE	SS-D <sup>2</sup>	G,S
	U-Factor 0.29			SHGC (<1) 0.17				VT (<1) 0.32			CR	60
73	0.090	0.234	0.090	0.234	0.090			ARG90	0.027(#2) / 0.027(#5)	LE	SS-D <sup>2</sup>	N
	U-Factor 0.28			SHGC (N) 0.26				VT (N) 0.43			CR	60
74	0.090	0.234	0.090	0.234	0.090			ARG90	0.027(#2) / 0.027(#5)	LE	SS-D <sup>2</sup>	G,S
	U-Factor 0.29			SHGC (<1) 0.23				VT (<1) 0.38			CR	60
75	0.325	0.285	0.116					AIR		CL	SS-D <sup>1</sup>	N
	U-Factor 0.49			SHGC (N) 0.50				VT (N) 0.60			CR	41
	0.116	0.285	0.325					AIR		CL	SS-D <sup>1</sup>	N
	U-Factor 0.49			SHGC (N) 0.55				VT (N) 0.60			CR	41

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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	
76	0.325	0.285	0.116					AIR		CL	SS-D <sup>1</sup>	G,S
	U-Factor 0.52			SHGC (<1) 0.45				VT (<1) 0.53			CR	41
76	0.116	0.285	0.325					AIR		CL	SS-D <sup>1</sup>	G,S
	U-Factor 0.52			SHGC (<1) 0.49				VT (<1) 0.53			CR	41
77	0.324	0.285	0.116					ARG90	0.037(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.28				VT (N) 0.52			CR	52
77	0.325	0.285	0.118					ARG90	0.037(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.32				VT (N) 0.51			CR	52
77	0.118	0.285	0.325					ARG90	0.037(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.28				VT (N) 0.51			CR	52
77	0.116	0.285	0.324					ARG90	0.037(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.34				VT (N) 0.52			CR	52
78	0.324	0.285	0.116					ARG90	0.037(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.25				VT (<1) 0.46			CR	52
78	0.325	0.285	0.118					ARG90	0.037(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.29				VT (<1) 0.46			CR	52
78	0.118	0.285	0.325					ARG90	0.037(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.25				VT (<1) 0.46			CR	52
78	0.116	0.285	0.324					ARG90	0.037(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.31				VT (<1) 0.46			CR	52
79	0.323	0.285	0.116					ARG90	0.022(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.22				VT (N) 0.48			CR	52
79	0.325	0.285	0.116					ARG90	0.022(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.28				VT (N) 0.47			CR	52
79	0.116	0.285	0.325					ARG90	0.022(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.21				VT (N) 0.47			CR	52
79	0.116	0.285	0.323					ARG90	0.022(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34			SHGC (N) 0.29				VT (N) 0.48			CR	52
80	0.323	0.285	0.116					ARG90	0.022(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38			SHGC (<1) 0.20				VT (<1) 0.43			CR	52

**NFRC 100/200/500 Summary Sheet**  
**Windgate New Construction & Belmont / Stormgate Replacement DH (Unequal Lite)**

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)				Visible Transmittance (VT)			Condensation Resistance	
									Grids (None / <1 / >=1)	Grids (None / <1 / >=1)		
	0.325	0.285	0.116					ARG90	0.022(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38		SHGC (<1) 0.25				VT (<1) 0.42			CR	52	
	0.116	0.285	0.325					ARG90	0.022(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38		SHGC (<1) 0.19				VT (<1) 0.42			CR	52	
	0.116	0.285	0.323					ARG90	0.022(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38		SHGC (<1) 0.26				VT (<1) 0.43			CR	52	
81	0.323	0.285	0.116					ARG90	0.027(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34		SHGC (N) 0.29				VT (N) 0.53			CR	52	
	0.325	0.285	0.117					ARG90	0.027(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34		SHGC (N) 0.34				VT (N) 0.52			CR	52	
	0.117	0.285	0.325					ARG90	0.027(#2)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34		SHGC (N) 0.29				VT (N) 0.52			CR	52	
	0.116	0.285	0.323					ARG90	0.027(#3)	LE	SS-D <sup>1</sup>	N
	U-Factor 0.34		SHGC (N) 0.36				VT (N) 0.53			CR	52	
82	0.323	0.285	0.116					ARG90	0.027(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38		SHGC (<1) 0.26				VT (<1) 0.47			CR	52	
	0.325	0.285	0.117					ARG90	0.027(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38		SHGC (<1) 0.31				VT (<1) 0.46			CR	52	
	0.117	0.285	0.325					ARG90	0.027(#2)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38		SHGC (<1) 0.26				VT (<1) 0.46			CR	52	
	0.116	0.285	0.323					ARG90	0.027(#3)	LE	SS-D <sup>1</sup>	G,S
	U-Factor 0.38		SHGC (<1) 0.32				VT (<1) 0.47			CR	52	

*Notes:*

- 1) SS-D<sup>1</sup> means the DuraLite, DuraSeal, XL Edge and Super Spacers were grouped
- 2) SS-D<sup>2</sup> means the DuraSeal, XL Edge and Super Spacers were grouped
- 3) 0.323-0.325" Laminate makeup - DS / 090PVB / 090

This report is reissued in the name of American Window Alliance through written authorization of Deceuninck North America, L.L.C., to whom the original report was rendered. The original Deceuninck North America, L.L.C. report number is 54088.01-116-45.

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:

REVIEWED BY:

---

Eric S. Leitner  
Simulation Technician

---

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

ESL:ESL  
54088.29-116-45

Attachments (pages): This report is complete only when all attachments listed are included.  
Appendix A: Drawings and Bills of Material (30)

### Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
.01R0	12/14/2006	All	- Original Deceuninck report issue
.29R0	3/24/2009	All	- Reissue report to AWA





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

**Appendix A**

54088.29-116-45

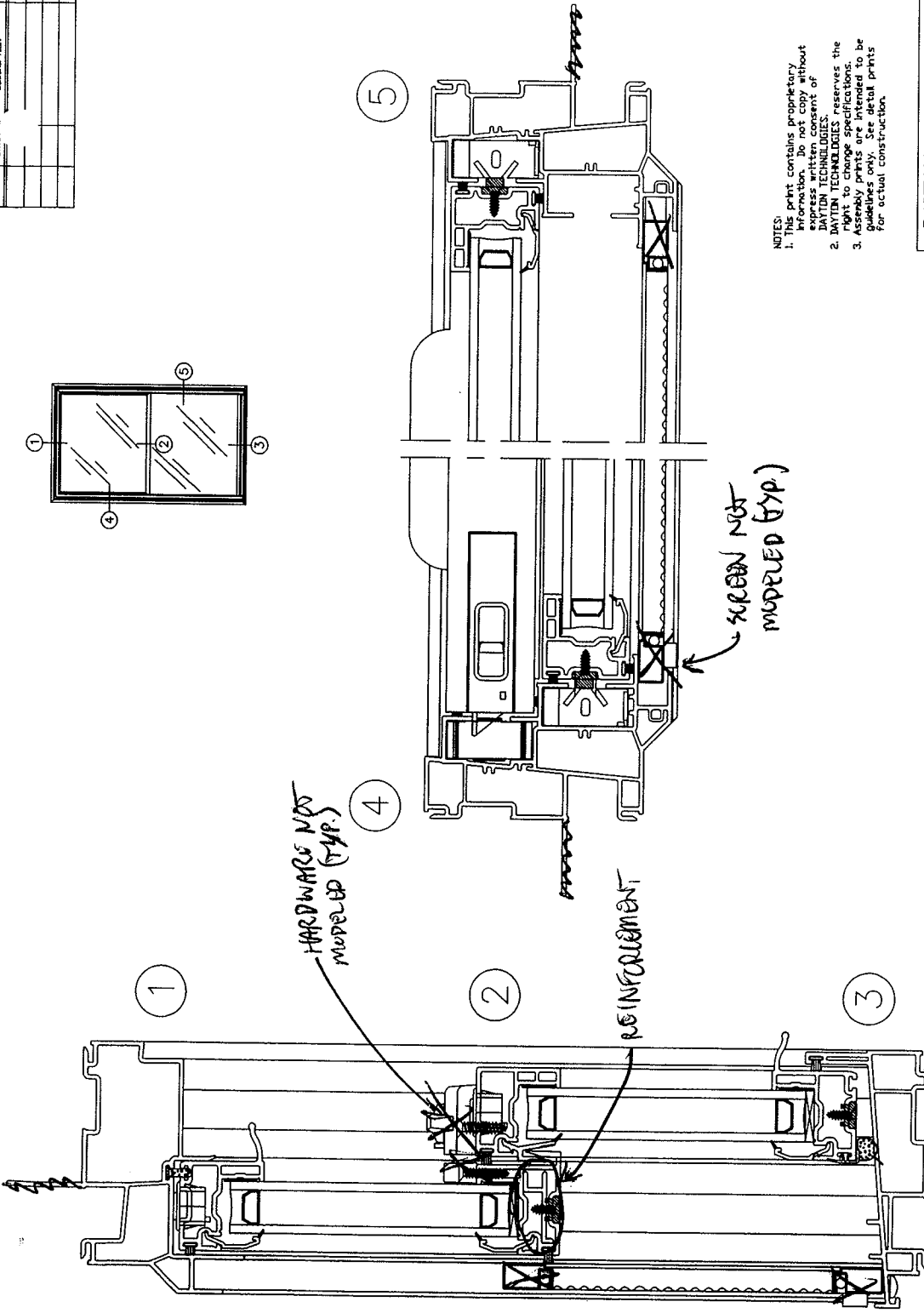
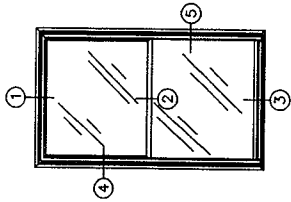
Architectural Testing, Inc.

Report # 54088

Date 4/30/2008

Simulator Eric Sattler

REV.	DATE	DESCRIPTION	BY



HARDWARE NOT  
MODELED (TYP.)

REINFORCEMENT

SCREEN NOT  
MODELED (TYP.)

NAILING FIN NOT  
MODELED (TYP.)

- NOTES:
1. This print contains proprietary information. Do not copy without express written consent of DAYTON TECHNOLOGIES.
  2. DAYTON TECHNOLOGIES reserves the right to change specifications.
  3. Assembly prints are intended to be guidelines only. See detail prints for actual construction.

DAYTON TECHNOLOGIES	
MODEL: 142094	Copyright 1999
NAME: Double Hung	DATE: 3/8/00
PROJECT: RH	BY: JTB
SCALE: 1/4" = 1'-0"	
PAGE NO: 142094DH	

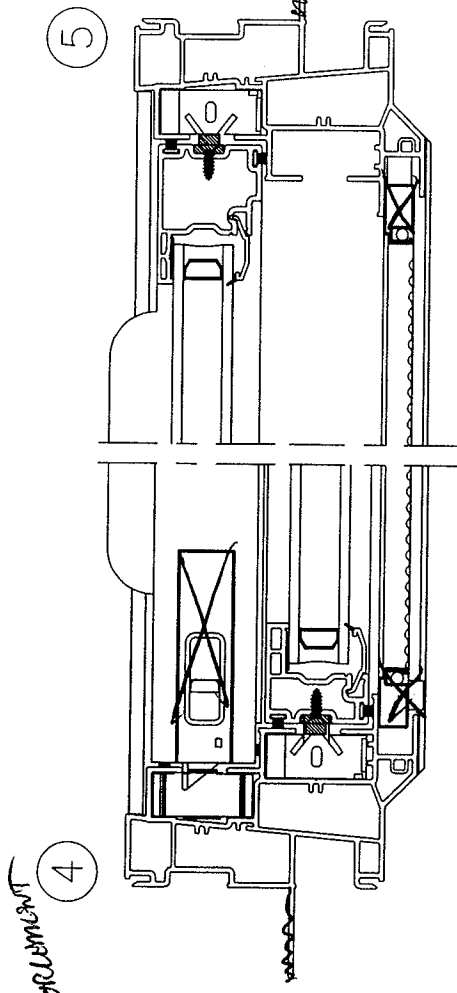
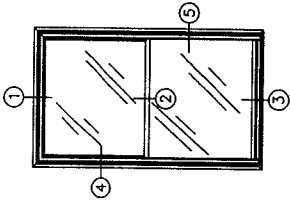
Architectural Testing, Inc.

Report # 54088

Date 4/30/2008

Simulator *Eric Futuro*

REV.	DATE	DESCRIPTION	BY



- NOTES:
1. This print contains proprietary information. Do not copy without permission of Architectural Testing, Inc. DAYTON TECHNOLOGIES reserves the right to change specifications.
  2. DAYTON TECHNOLOGIES reserves the right to change specifications.
  3. Assembly prints are intended to be guidelines only. See detail prints for actual construction.

DAYTON TECHNOLOGIES	
MODEL, DHD	Copyright 1999
NAME	142194 Double Hung
DESIGN BY	RH
DATE	6/07/99
SCALE	1:1
UNIT	°C
PROJECT NO.	142194DH

**Architectural Testing, Inc.**

**Report #** 54088

**Date** 4/30/2008

**Simulator** *Gric Saturno*

142.000 DH FRAME - BILL OF MATERIALS - NC			
TIE	DESCRIPTION	QUANTITY	FAB DWG.
M			
2	HEAD	1	P8677F001
3	SILL	1	P8673F01
4	JAMB	2	P8670F01
5			
6	CENTER FIN WEATHERSTRIPPING	AS REQ'D	
7	SCREEN ASSEMBLY	1	
8	WEATHER SEAL	AS REQ'D	
9			
10	BALANCE SYSTEM - CROSSBOW		
11	BALANCE	4	36" and Less / Over 36" Wide
12		4	1000 / 10001
13		4	1200 / 1201
14		4	1400 / 1401
15		4	1600 / 1601
16		4	1800 / 1801
17		4	2000 / 2001
18		4	2200 / 2201
19		4	2400 / 2401
20		4	2600 / 2601
21		4	2800 / 2801
22		4	3000 / 3001
23		4	3200 / 3201
24		4	3400 / 3401
25		4	3600 / 3601
26		4	3800 / 3801
27		4	4000 / 4001
28	1/2" REAR BRAKE SHOE	4	81020
29			
30			
31			
32			
33			
34			
35	BALANCE SCREW ANCHOR	2	9637
36	BALANCE SCREW	2	#8 x 1/2 PPH
37			
38	FRAME SCREWS AT SCREEN TRACK	2	#8 x 3/4" PPH
39			
40			

Rev	Date	Description	By
A	#####	Added Shoe Callout	RH
B	#####	Updated Revision For Distribution	RH
C	#####	Added Egress Sill	RH

**DAYTON TECHNOLOGIES**  
 MONROE, OH  
 NAME: 142.000 DH  
 DWN BY: RH 8/17/1999  
 CHKD BY:  
 DWG NO.: 42000DH-NC.xls

# 000.094 DH SASH - BILL OF MATERIALS

**Architectural Testing, Inc.**

Report # 54088

Date 4/30/2008

Simulator *Eric Futner*

ITEM NO.	DESCRIPTION	QUANTITY	PART NO.	FAB DWG. NO	SOURCE
26	TOP LIFT RAIL	1	P8894 ✓	P8894F01	A
27	KEEPER RAIL	1	P8890 ✓	P8890-F-01	A
28	LOCK RAIL	1	P8885 ✓	P8885-F-01	A
29	BOTTOM LIFT RAIL	1	P8894 ✓	P8894F-03	A
30	BOTTOM STILE	2	P8875 ✓	P8875-F-09	A
31	TOP STILE	2	P8875 ✓	P8875-F-09	A
32	BULB SEAL	1	P8206 ✓	P8206F01	A
33	GLAZING BEAD	8	P5473 ✓	P5473F01	A
34	INTERLOCK GLAZING BEAD	1	P5551 ✓	STRAIGHT CUT	A
35					
36	SASH REINFORCEMENT (ALUM.)	AS REQ'D	A6202 ✓	A6202-F-01	EEE, 000
37	CENTER FIN WEATHERSTRIPPING	AS REQ'D	.187 BK. X .290 HT.		F, I
38	LOCK ASSEMBLY	1 OR 2	L29990010002R - NO NIBS		D
	LOCK ASSEMBLY	1 OR 2	L29990110002R - NESTING NIBS		D
	LOCK ASSEMBLY	1 OR 2	L2999001AM1R - NO NIBS / ALLIANCE LOGO		D
	LOCK ASSEMBLY	1 OR 2	L2999011AM1R - NESTING NIBS / ALLIANCE LOGO		D
39	KEEPER	1 OR 2	12911		D
40	TILT LATCH ASSEMBLY	4	78050 / 78150		D
41	PIVOT BAR				
42	For Crossbow Balance	4	13037		D
43	For Coil Balance	4	13036		D
44	3/4" INSULATED GLASS	2			
45	SETTING BLOCKS (REFER TO IG SUPPLIER GUIDELINES)	AS REQ'D	1/8" x 3/4"		W
46	GLAZING COMPOUND	AS REQ'D	SBC2150		T
47	LOCK SCREW	2 OR 4	#8 x 3/4" PFH		B, Z
48	KEEPER SCREW	2 OR 4	#5 x 3/4" PFH		B
49	PIVOT BAR SCREW S - RAILS	4 OR 8	#6 x 3/8" PPH		B, Z
50	PIVOT BAR SCREWS - STILES	4	#6 x 1/2" PPH		B, Z
51	NIGHT LATCH / VENT STOP	2	86070		D

**DAYTON TECHNOLOGIES**  
 MONROE, OH COPYRIGHT 1999

NAME: \_\_\_\_\_  
 DWN BY: 000.094 DH  
 CRB  
 12/15/1999

CHKD BY: \_\_\_\_\_  
 DWG NO: 000094DH.XLS

Rev	Date	Description	By
A	12/21/1999	UPDATED LOCK INFO	CRB
B	1/19/2000	UPDATED LOCK INFO.	RH

# 000.194 DH SASH - BILL OF MATERIALS

Architectural Testing, Inc.

Report # 54088

Date 4/30/2008

Simulator *Eric Sutor*

ITEM NO.	DESCRIPTION	QUANTITY	PART NO.	FAB DWG. NO	SOURCE
26	TOP LIFT RAIL	1	P8894 ✓	P8894F01	A
27	KEEPER RAIL	1	P8890 ✓	P8890-F-01	A
28	LOCK RAIL	1	P8896 ✓	P8896F01	A
29	BOTTOM LIFT RAIL	1	P8893 ✓	P8893F01	A
30	BOTTOM STILE	2	P8876 ✓	P8876F01	A
31	TOP STILE	2	P8875 ✓	P8875-F-09	A
32	BULB SEAL	1	P8206 ✓	P8206F01	A
33	GLAZING BEAD	8	P5473 ✓	P5473F01	A
34					
35	BOTTOM SASH REINFORCEMENT (ALUM.)	AS REQ'D	10300021 ✓	10300021F01	O, OOO
36	TOP SASH REINFORCEMENT (ALUM.)	AS REQ'D	A6202 ✓	A6202-F-01	EEE, OOO
37	CENTER FIN WEATHERSTRIPPING	AS REQ'D	.187 BK. X .290 HT.		F, I
38	LOCK ASSEMBLY	1 OR 2	L29990010002R - NO NIBS		D
	LOCK ASSEMBLY	1 OR 2	L29990110002R - NESTING NIBS		D
	LOCK ASSEMBLY	1 OR 2	L2999001AM1R - NO NIBS / ALLIANCE LOGO		D
	LOCK ASSEMBLY	1 OR 2	L2999011AM1R - NESTING NIBS / ALLIANCE LOGO		D
39	KEEPER	1 OR 2	12911		D
40	TILT LATCH ASSEMBLY	4	78050 / 78150		D
41	PIVOT BAR				
42	For Crossbow Balance	4	13037		D
43	For Coil Balance	4	13036		D
44	3/4" INSULATED GLASS	2			W
45	SETTING BLOCKS (REFER TO IG SUPPLIER GUIDELINES)	AS REQ'D	1/8" x 3/4"		T
46	GLAZING COMPOUND	2 OR 4	SBC2150		B, Z
47	LOCK SCREW	2 OR 4	#8 x 1 1/4" PFH		B
48	KEEPER SCREW	2 OR 4	#5 x 3/4" PFH		B, Z
49	PIVOT BAR SCREW S - RAILS	4 or 8	#6 x 3/8" PPH		B, Z
50	PIVOT BAR SCREWS - STILES	4	#6 x 1/2" PFH		B, Z
51	NIGHT LATCH / VENT STOP	2	86070		D

<b>DAYTON TECHNOLOGIES</b>	
MONROE, OH	COPYRIGHT 1999
NAME	000.194 DH
DWN BY:	RH
CHKD BY:	6/29/1999
DWG NO:	000194DH.XIS

Rev	Date	Description	By
A	10/28/1999	Updated Pivot Bar Callout	RH
B	11/16/1999	Updated To Next Revision For Distribution	RH
C	12/21/1999	UPDATED LOCK INFO.	CRB
D	1/18/1999	Updated Screw Length	JCH
E	1/19/2000	UPDATED LOCK INFO.	RH

Architectural Testing, Inc.

Report # 54088

Date 4/30/2008

Simulator *Eric Sutor*

PROFILE: F 3670

REVISIONS

REV	DESCRIPTION	DATE	ENG.
A	DIM. "I" & "J" FROM .020 TO .025 DIM. "R" FROM +/- .020 TO +/- .025	11/8/99	CRB
B	Dimensioned Sloped Wall	3/6/00	RH
C	Shortened Balance Track Nibs By .035	7/25/00	RH

FITS WITH: P8673, P8674, P8671

A IMPACT AREA NOTED

CONTROL DIMENSIONS

DIM	METH	MIN	ENG	MAX	DIM	METH	MIN	ENG	MAX
A	V	0	.020	B	U	V	0	.030	B
B	V	.430	.440	.450	V				
C	V	3.622	3.652	3.682	W				
D	V	0	.020	B	X				
E	V	.949	.969	.989	Y				
F	V	.545	.560	.575	Z				
G	G	GAUGE IV - 2			AA				
H	V	0	.020	B	BB				
I	V	0	.025	B	CC				
J	V	0	.025	B	DD				
K	V	1.975	2.000	2.025	EE				
L	V	1.480	1.500	1.520	FF				
M	V	0	.020	B	GG				
N	V	.025	.035	.045	HH				
O	V	.050	.087	.090	II				
P	V	3.220	3.250	3.280	JJ				
Q	V	0	.020	B	KK				
R	V	1.163	1.188	1.213	LL				
S	V	2.168	2.188	2.208	MM				
T	V	2.408	2.438	2.468	NN				

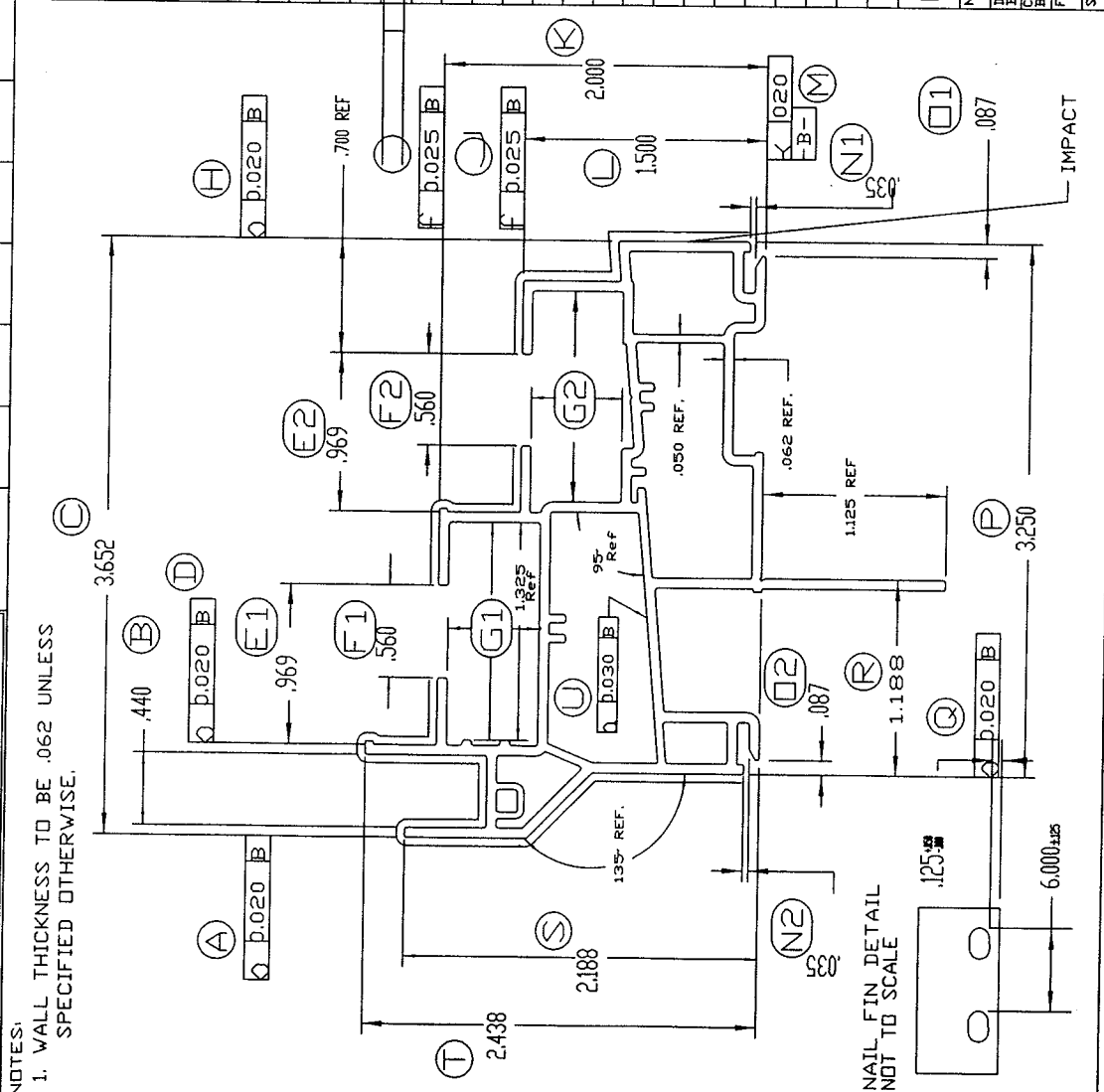
**Dayton**  
A MEMBER OF THE TECHNOLOGIES GROUP

DAYTON TECHNOLOGIES  
351 N. GARVER RD.  
MIDDLETOWN, OHIO 45050

NAME: MAIN FRAME - DH  
DRAWN BY: CRB DATE: 6/8/99  
CHECKED BY: DATE:  
FILENAME: /pd/ug/profiles/p8670.prt  
SCALE: 1 : 1 DWG NO: p8670.prt A

COLOR	WH	DS	o	EB	/ & OTH	CUSTOM	COLOR	(PEARL WHITE)

PART WT.	RIGID	CAP	FLEX	ALUM	STEEL	TOTAL
(LBS/FT)	.775					.775



NOTES:  
1. WALL THICKNESS TO BE .062 UNLESS SPECIFIED OTHERWISE.

UNLESS OTHERWISE NOTED THE FOLLOWING TOLERANCES APPLY  
.001 - .005  
.001 - .005  
.500 - .010  
.501 - 1.000 .015  
UNSPECIFIED ANGLES .1° - .5°  
EXPOSED SURFACE - VOODGRAIN SURFACE







CAD MATRIARE  
INCORPORATED

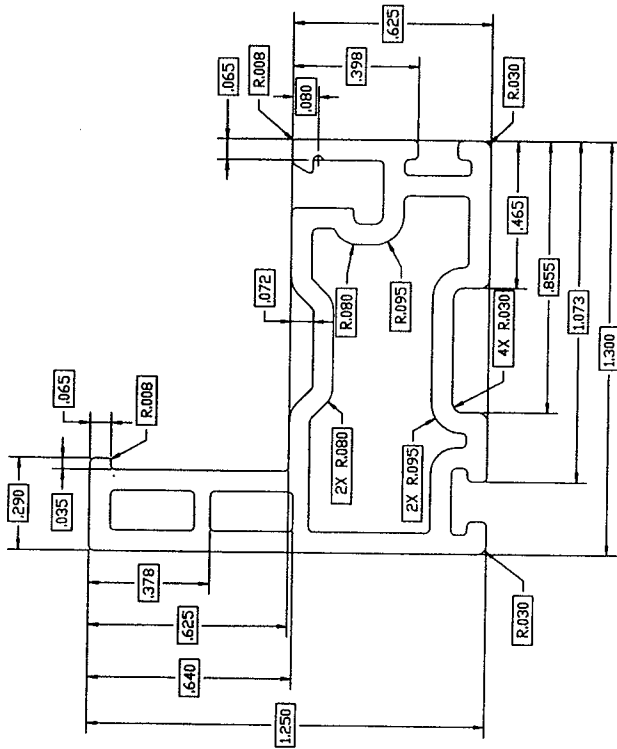
UNLESS SHOWN  
OTHERWISE  
DESIGN ACTIVITY.

# Architectural Testing, Inc.

Report # 54088

Date 4/30/2008

Simulator Eric Saturo



UNLESS OTHERWISE SPECIFIED DIM ARE IN INCHES TOLERANCES UNLESS NOTED 2 PL ± .01 3 PL ± .005 INTERPRET DIM AND TOL PER ASME Y14.5M - 1994 THIRD ANGLE PROJECTION	DESIGN BY: RH DATE: 9/7/01/D DRAWN BY: CDB DATE: 03/02/07 AUTH: FILENAME: hpd/cad/parts/ BPS/1000875/SIF-001	<b>Dowdyn</b> INCORPORATED 2000 W. LEXINGTON AVENUE, SUITE 100 COLUMBUS, OHIO 43260	REV. 10008875 A
	C Dwg. No. 10008875	SCALE: 4:1 (UNLESS NOTED)	SHEET 3

THIS DOCUMENT CONTAINS PROPRIETARY  
INFORMATION. DO NOT COPY OR DISCLOSE THIS  
INFORMATION WITHOUT THE EXPRESS WRITTEN  
CONSENT OF DAYTON TECHNOLOGIES.  
DAYTON TECHNOLOGIES RESERVES THE RIGHT  
TO MAKE CHANGES WITHOUT NOTICE TO ANY  
ASSOCIATED DOCUMENTS.

UNLESS OTHERWISE SPECIFIED THE FOLLOWING TOLERANCES APPLY

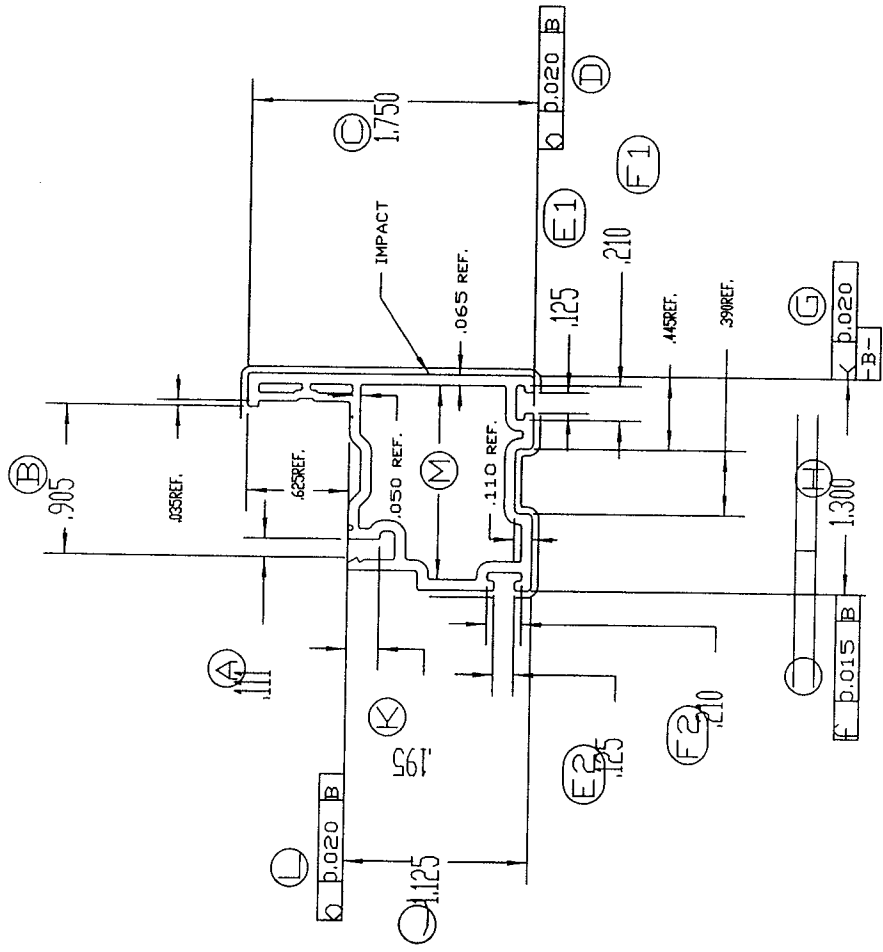
.001 - .005	1.500 - 1.500	.020
.01 - .500	.010 - 2.000	.025
.501 - 1.000	.015 - 2.001	.030
UNSPECIFIED ANGLES 1° - VDDGRAIN SURFACES ADD .007"		
EXPOSED SURFACE - VDDGRAIN SURFACE		

COLOR	o	VH	x	DS	o	EB	o	X	DTH	CUSTOM	COLOR	(089D)
RIGID	CAP	FLEX	ALUM	STEEL	TOTAL							
.271	.271				.271							

PROFILE: F376

REV	DESCRIPTION	DATE	ENG.
A	CORRECTED GAUGE ON "M" DIM.	8/17/00	CRB

NOTES:  
 1. WALL THICKNESS TO BE .065 UNLESS SPECIFIED OTHERWISE.



FITS WITH: P8893, P8896, P5470, P8127

A IMPACT AREA NOTED

CONTROL DIMENSIONS

DIM	METH	MIN	ENG	MAX	DIM	METH	MIN	ENG	MAX
A	V	.101	.111	.121	U				
B	V	.890	.905	.920	V				
C	V	1.725	1.750	1.775	W				
D	V	6	1020	B	X				
E1	G	GAUGE	1-1 & 1-2A	Y					
E2	G	GAUGE	1-1 & 1-2A	Z					
F1	V	6	1020	AA					
F2	V	6	1015	BB					
G	V	1.280	1.300	1.320	BB				
H	V	1.105	1.125	1.145	CC				
I	V	.185	.195	.205	DD				
J	V	6	1020	B	EE				
K	V	GAUGE	A103000021	GG					
L	V			HH					
M	V			II					
N	V			JJ					
O	V			KK					
P	V			LL					
Q	V			MM					
R	V			NN					
S	V								
T	V								

**Dayton** TECHNICAL SERVICES  
 351 N. GARVEY RD.  
 MDRDE, OHIO 45050

NAME: MAIN SASH  
 DRAWN BY: CRB DATE: 5/27/99  
 CHECKED BY: DATE:  
 FILENAME: /pd/ug/profiles/p8876.prt  
 SCALE: 1 : 1 DWG NO: p8876.prt A

**Architectural Testing, Inc.**

Report # 54088

Date 4/30/2008

Simulator Eric Saturo

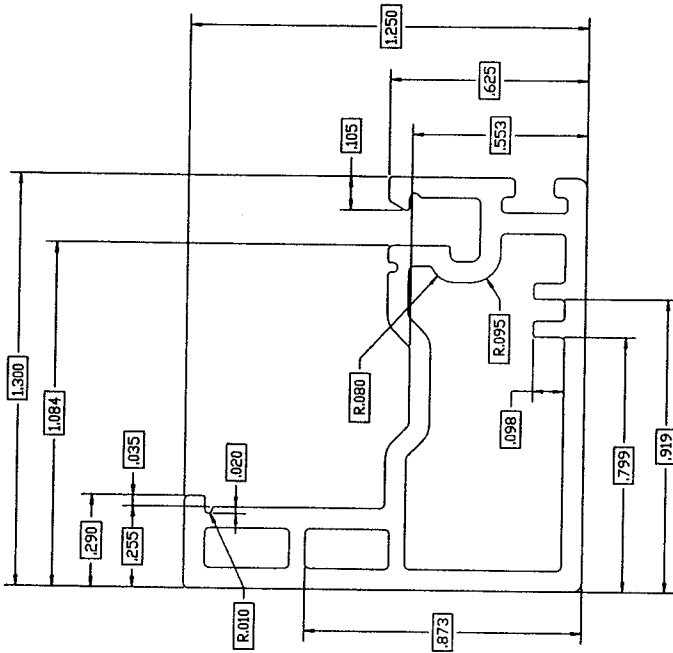
**Architectural Testing, Inc.**

Report # 54088

Date 4/30/2008

Simulator *Eric Saturo*

CAD DRAWINGS SHALL BE INCORPORATED INTO DESIGN ACTIVITY.



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DIMENSIONS ARE TO BE 2 PL ± 0.1 INTERPRET DIM AND TOL PER ASME Y14.5M - 1994 THIRD ANGLE PROJECTION	DESIGN BY: RH	DATE: 04/02/08	DESIGN BY: T.L.H.	DATE: 02/20/08	FILE NAME: 10008885_S38
	DATE: 04/02/08	DATE: 02/20/08	DATE: 02/20/08	DATE: 02/20/08	DATE: 02/20/08
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION. DO NOT COPY OR DISCLOSE THIS INFORMATION WITHOUT THE EXPRESS WRITTEN CONSENT OF DAYTON TECHNOLOGIES. DAYTON TECHNOLOGIES RESERVES THE RIGHT TO CHANGE THIS DRAWING AND ANY ASSOCIATED DOCUMENTS.	DAYTON TECHNOLOGIES 10008885_S38	DAYTON TECHNOLOGIES 10008885_S38	DAYTON TECHNOLOGIES 10008885_S38	DAYTON TECHNOLOGIES 10008885_S38	DAYTON TECHNOLOGIES 10008885_S38
	DAYTON TECHNOLOGIES 10008885_S38	DAYTON TECHNOLOGIES 10008885_S38	DAYTON TECHNOLOGIES 10008885_S38	DAYTON TECHNOLOGIES 10008885_S38	DAYTON TECHNOLOGIES 10008885_S38
	SCALE: 2:1 (US/71)	SCALE: 2:1 (US/71)	SCALE: 2:1 (US/71)	SCALE: 2:1 (US/71)	SCALE: 2:1 (US/71)
	REV: -	REV: -	REV: -	REV: -	REV: -
	SHEET: 3	SHEET: 3	SHEET: 3	SHEET: 3	SHEET: 3

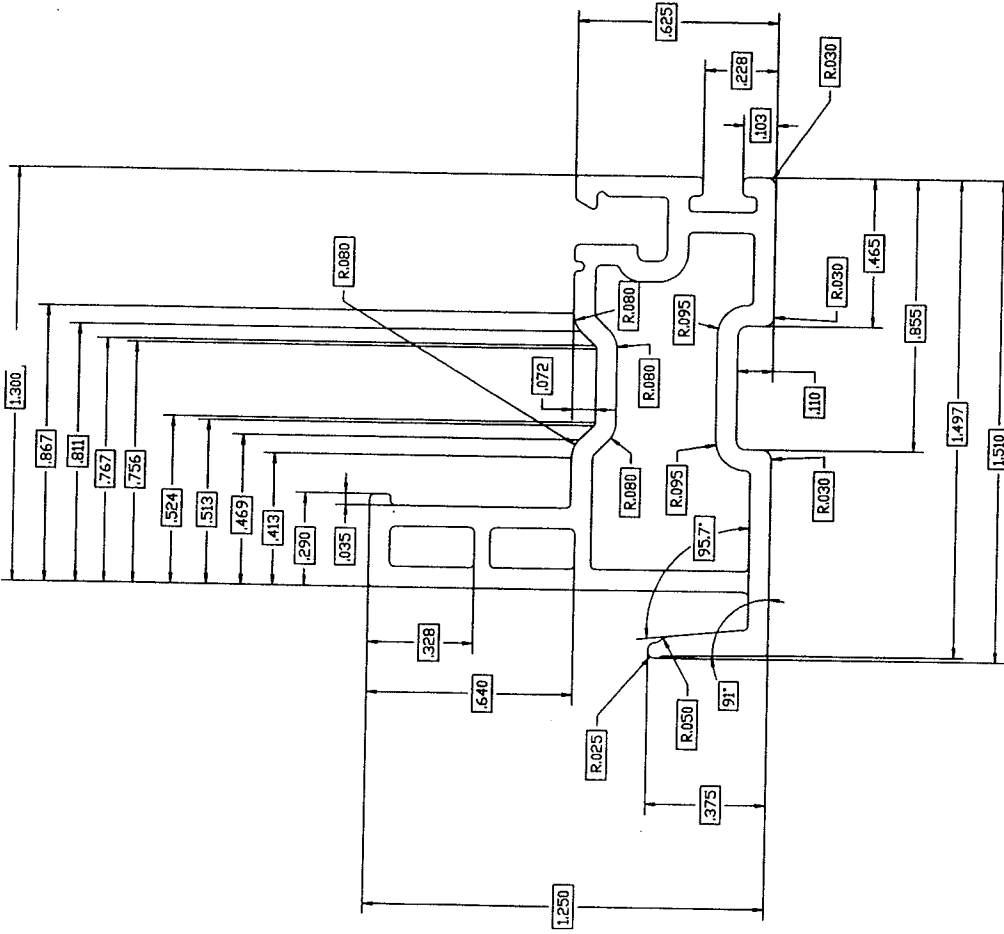
Architectural Testing, Inc.

Report # 54088

Date 4/30/2008

Simulator Eric Satno

CAD MANIPULATED  
DIMENSIONS SHALL BE  
INCORPORATED  
DESIGN ACTIVITY.



<p>UNLESS OTHERWISE SPECIFIED DIM ARE IN INCHES 2 PL. 1-1 INTERPRET DIM AND TOL PER ASME Y14.5M - 1994 THIRD ANGLE PROJECTION</p>		<p>DESIGN BY: RH DATE: 9/10/21/11 DRAWN BY: CDB DATE: 03/02/05</p>	<p><b>Dayton</b> CORPORATION 1000 DAYTON AVENUE DAYTON, OH 45424</p>
<p>THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION. DO NOT COPY OR REPRODUCE THIS INFORMATION WITHOUT THE EXPRESS WRITTEN CONSENT OF DAYTON TECHNOLOGIES. DAYTON TECHNOLOGIES RESERVES THE RIGHT TO MODIFY THIS DRAWING AND ANY ASSOCIATED DOCUMENTS.</p>		<p>DATE: 03/02/05 AUTH: KEEPER SASH FILENAME: hpad/cad/part-1/1000BB90</p>	<p>COMPONENT NO: 1000BB90 PART NO: 1000BB90 REV: 3</p>

SCALE: 1:1

UNLESS OTHERWISE SPECIFIED:  
 .001 - .005 1.001 - 1.500 .020  
 .01 - .500 .010 1.501 - 2.000 .025  
 501 - 1.000 .015 2.001 - & UP .030  
 UNSPECIFIED ANGLES 1° - VOODGRAIN SURFACES ADD .007"  
 EXPOSED SURFACE VOODGRAIN SURFACE

COLOR o WH & DS o EB o x DTH PEARL WHITE  
 RIGID CAP FLEX ALUM STEEL TOTAL  
 .304 .304 .304

PROFILE: P8876  
 REVISIONS

REV DESCRIPTION DATE ENG.

A	added Gauge A10300021	10/23/99	RH
B	ADDED 'N' DIM	5/2/00	PA
C	INCREASED 'N' MAX. FROM .079 TO .085	3/19/01	CRB

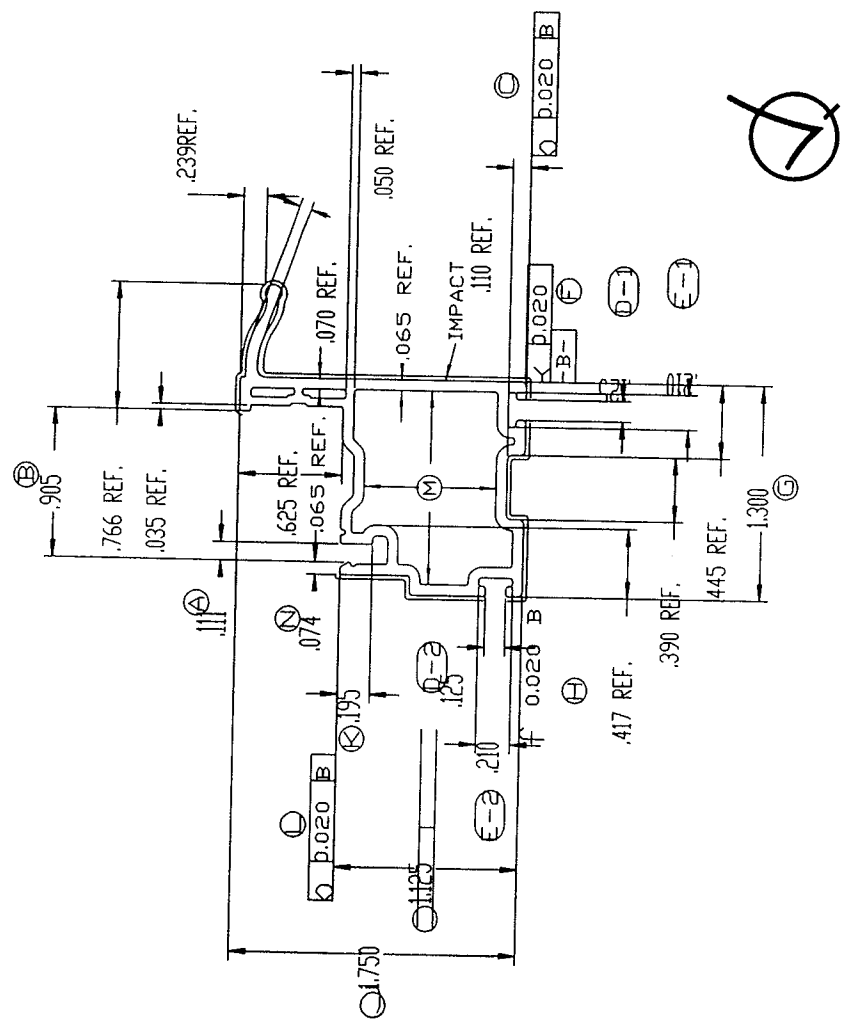
FITS WITH: P8876  
 A IMPACT AREA, NOTED

CONTROL DIMENSIONS

DIM	METH	MIN	ENG	MAX	DIM	METH	MIN	ENG	MAX
A	V	.101	.111	.121	U				
B	V	.890	.905	.920	V				
C	V	Ø .0020	B		W				
D	G	I-1&I-2A			X				
E	G	I-1&I-2A			Y				
F	V	Ø .0020	B		Z				
G	V	1.280	1.300	1.320	AA				
H	V	Ø .0020	B		BB				
I	V	1.105	1.125	1.145	CC				
J	V	1.725	1.750	1.775	DD				
K	V	.185	.195	.205	EE				
L	V	Ø .0020	B		FF				
M	G	A10300021			GG				
N	V	.069	.074	.085	HH				
O					II				
P					JJ				
Q					KK				
R					LL				
S					MM				
T					NN				

**Dayton**  
 A MEMBER OF THE DAYTON GROUP  
 DAYTON TECHNOLOGIES  
 351 N. GARVER RD.  
 MONROE, OHIO 45050

NAME: PULL/LIFT SASH  
 DRAWN BY: RH/PJA DATE: 6/2/99  
 CHECKED BY: DATE:  
 FILENAME: /pd/ug/profiles/p8893.prt  
 SCALE: 1:1 DWG NO. p8893\_B.prt A



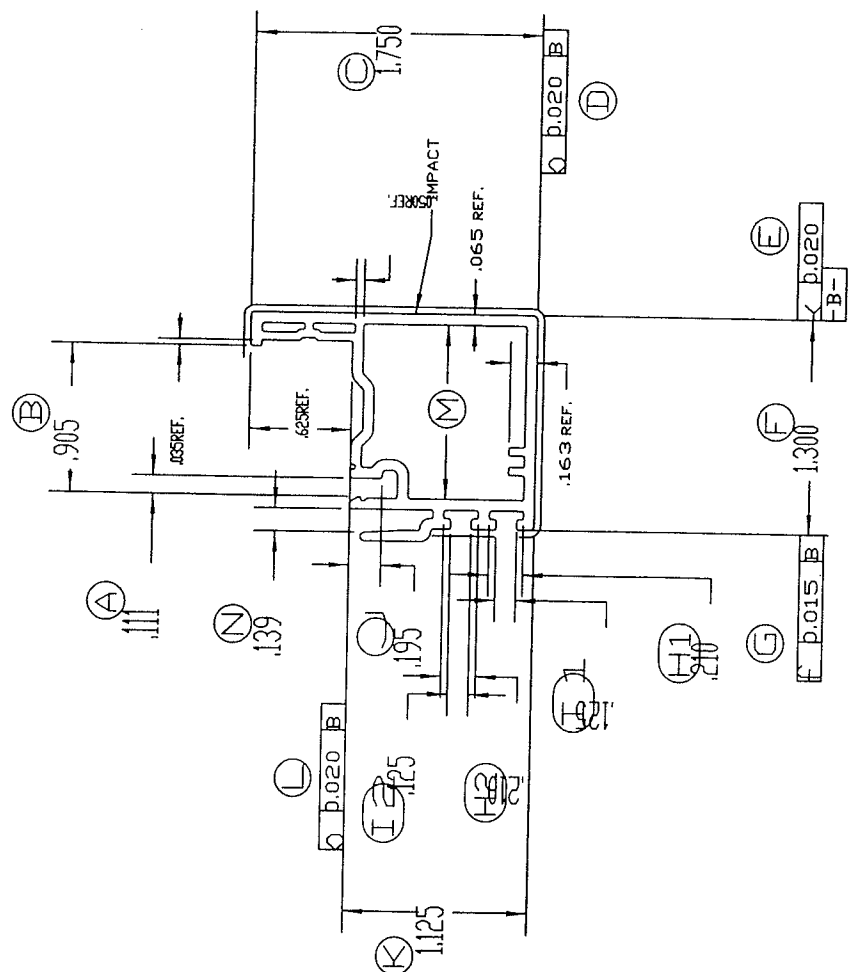


UNLESS OTHERWISE SPECIFIED:  
 .001 - .005 1.001 - 1.500 .020  
 .01 - .500 .010 1.501 - 2.000 .025  
 .501 - 1.000 .015 2.001 - & UP .030  
 UNSPECIFIED ANGLES 1" - VDDGRAIN SURFACES ADD .007"  
 EXPOSED SURFACE VDDGRAIN SURFACE

COLOR 0 WH 0 DS 0 EB 0 X DTH CUSTOM COLOR (0290)  
 RIGID CAP .-EX ALUM STEEL TOTAL  
 .289 .289

PROFILE: F 896  
 REVISIONS

NOTES:  
 1. WALL THICKNESS TO BE .065 UNLESS SPECIFIED OTHERWISE.



FITS WITH: P8876, P5470, P8127, P5551  
 A IMPACT AREA: NOTED

CONTROL DIMENSIONS			
DIM METH	MIN	ENG MAX	DIM METH MIN ENG MAX
A	V	.101	.111 .121 U
B	V	.890	.905 .920 V
C	V	1.725	1.750 1.775 W
D	V	0.1020	B X
E	V	0.1020	Y
F	V	1.280	1.300 1.320 Z
G	V	0.1015	B AA
H2	G	GAUGE I-1 & I-2A BB	
I2	G	GAUGE I-1 & I-2A CC	
J	V	1.185	1.195 1.205 DD
K	V	1.105	1.125 1.145 EE
L	V	0.1020	B FF
M	G	GAUGE A10300021 GG	
N	V	1.29	1.39 1.49 HH
O	V	I I	
P	V	J J	
Q	V	K K	
R	V	L L	
S	V	M M	
T	V	N N	

DAYTON  
 DAYTON TECHNOLOGIES  
 351 N. GARVER RD  
 MONROE, OHIO 45050  
 NAME: LOCK SASH  
 DRAWN: CRB DATE: 5/27/99  
 CHECKED: DATE:  
 FILENAME: /pd/ug/profiles/p8896.prt  
 SCALE: 1 : 1 DWG NO: p8896.prt A

Architectural Testing, Inc.  
 Report # 54088  
 Date 4/30/2008  
 Simulator *Eric Saturo*





**Architectural Testing, Inc.**

Report # 54088

Date 4/30/2008

Simulator Eric Sator

REV.	DATE	DESCRIPTION	BY
D	10/28/97	INCREASE OF DIA W/OUT P5551-DP-05	Joe L
P	03/03/99	MAKE W/OUT P5551-DP-06	Joe L
Q	10/1/99	INCREASE I.D.G. MAX DIMENSION	PJA
R	11/12/99	MADE 'L' DIA A REFERENCE	Joe L
		CHANGE W/OUT TO ALLOW CORNER 'R'	
		P5551-DP-07	

REV CLASS		C		IMPACT AREA		NOTED	
DIA	REV	MIN	MAX	DIA	REV	MIN	MAX
A	DG	P5551-DP-07	X				
B	DC	0.010	5				
C	DC	0.087	0.092	1.05	Z		
D	DG	P5551-DP-07	A4				
E	DC	h	JAMES	5	2B		
F	DG	P5551-DP-07	CC				
G	DC	1.34	1.44	1.64	DD		
H	DG	P5551-DP-07	EE				
I	DG	P5551-DP-07	FF				
J	DG	P5551-DP-07	GG				
K	C-D	0.055	0.060	0.065	HH		
L	H				II		
M	DG	P5551-DP-07	JJ				
N	DG	P5551-DP-07	KK				
O	DC	2.04	2.15	2.26	LL		
P					MM		
Q					NN		
R					OO		
S					PP		
T					QQ		
U					RR		
V					SS		
W					TT		

Part Vt (Lbs/Ft)		Rigid	Capl	Flexi	Alum	Total
		.048	.002	.003	-----	.053

**DAYTON TECHNOLOGIES**

MEMPHIS, OHIO Copyright 1995

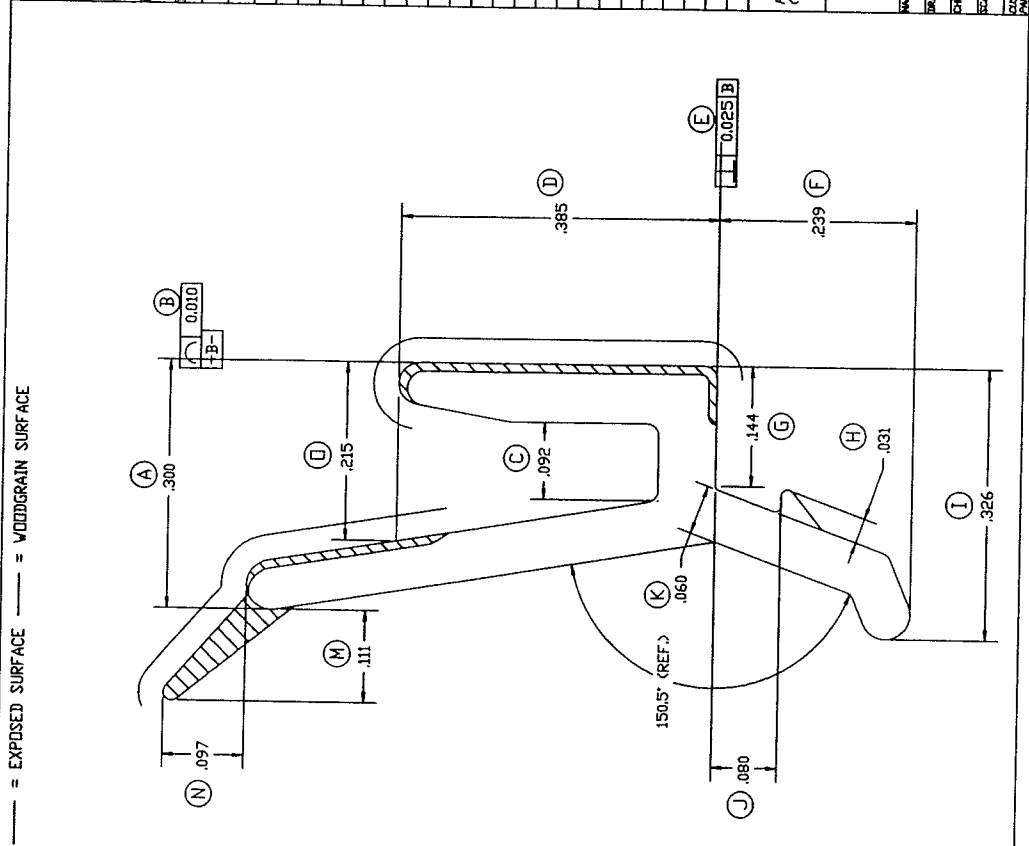
NAME: SERIES 4000 INTERLOCK BEAD

DRAWN BY: MAB DATE: 10/11/88

CHECKED BY: DATE:

SCALE: 4 : 1 'B' COLOR: GRAY ORS ORS CLAY CLAY

CUST PART NO: 5551 DWG NO: P5551-R

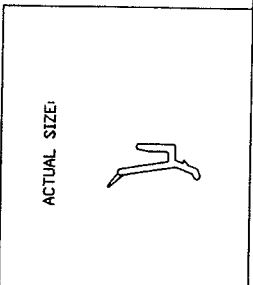


UNLESS OTHERWISE NOTED THE FOLLOWING TOLERANCES APPLY

100 ± .005  
 100 - 500 ± .003  
 500 - 1000 ± .002  
 1000 - 2000 ± .0015  
 2000 - & UP ± .001

UNSPECIFIED ANGLES ± 1° - VODDGRAIN SURFACES AND .007

- NOTES:
1. FLEXIBLE TO BE .65 DIURUMETER
  2. CAPSTOCK TO BE .005 THICK

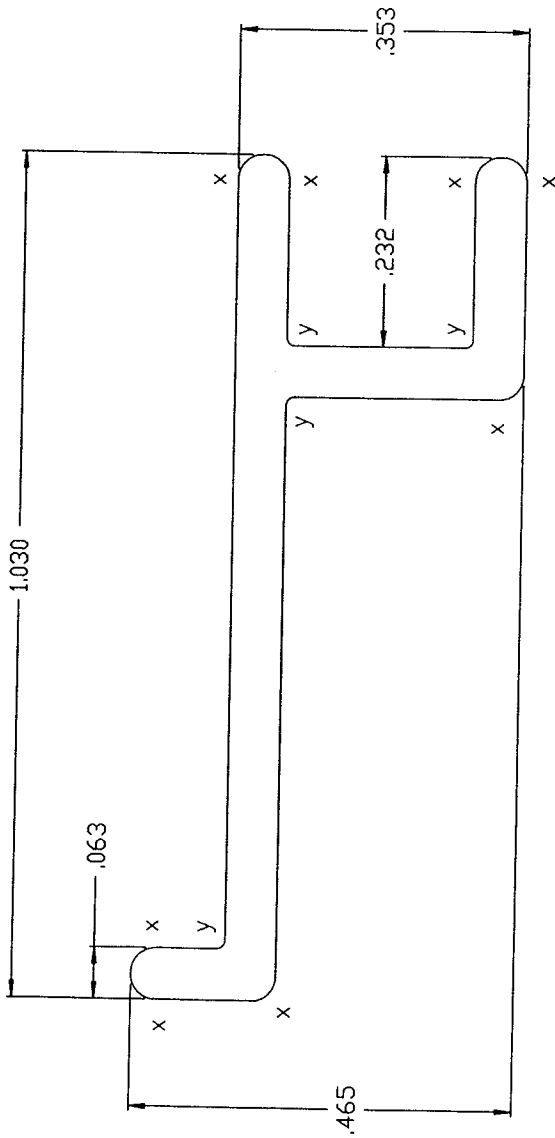


Architectural Testing, Inc.

Report # 54088

Date 4/30/2008

Simulator Eric Futuro



DAYTON EXTRUDED PLASTICS  
 SPRINGBORO, OHIO Copyright 1994

NAME: 0093 SASH REINFORCEMENT  
 MATERIALS: ALUMINIUM

DRAWN BY: DAS DATE: 3/22/94  
 CHECKED BY: DATE:

SCALE: 5 : 1 'A'  
 PART DWG. NO: A6202  
 CUST. PART. NO: 6202  
 DIE NO: 6202

Area : .103 Sq. In.  
 Weight : .123 Lb./Ft.

Standard Commercial Tolerances  
 Apply Unless Otherwise Noted

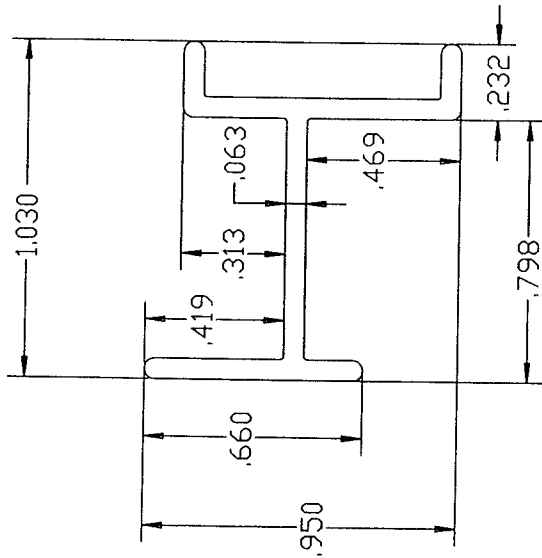
- Notes:
- 1) "x" = .030" radius
  - 2) "y" = .010" radius

**Architectural Testing, Inc.**

Report # 54088

Date 4/30/2008

Simulator *Eric Sattler*



DAYTON TECHNOLOGIES MONROE, OHIO		Copyright 2001	
NAME:	193 SASH REINFORCEMENT	MATERIAL(S):	ALUMINIUM
DRAWN BY:	CRB	DATE:	4/3/01
CHECKED BY:		DATE:	
SCALE:	2 : 1 'A'	PART DWG. NO.	A10300021

Area :	.103 Sq. In.
Weight :	.123 Lb./Ft.
Standard Commercial Tolerances Apply Unless Otherwise Noted	

Notes:  
1) Part To Be Aluminum.

**Architectural Testing, Inc.**

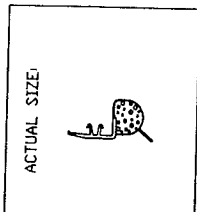
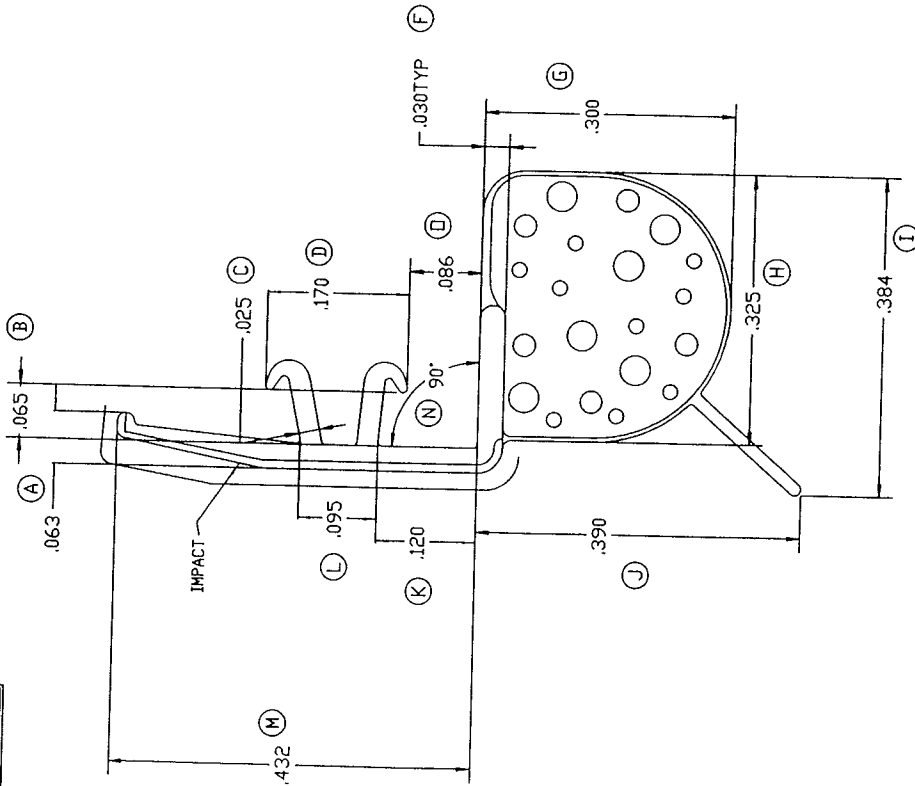
Report # 54088

Date 4/30/2008

Simulator Eric Sutor

--- = EXPOSED SURFACE --- = WOODGRAIN SURFACE

UNLESS OTHERWISE NOTED THE FOLLOWING TOLERANCES APPLY  
 .001 - .300 ± .005  
 .300 - 1.000 ± .010  
 1.000 - 2.500 ± .015  
 2.500 - 5.000 ± .020  
 5.000 - 25.000 ± .030  
 25.000 - 100.000 ± .040  
 100.000 - 500.000 ± .050  
 500.000 - 1000.000 ± .060  
 UNPICKED DIMENSIONS ± .1 - WOODGRAIN SURFACES AND JOINTS



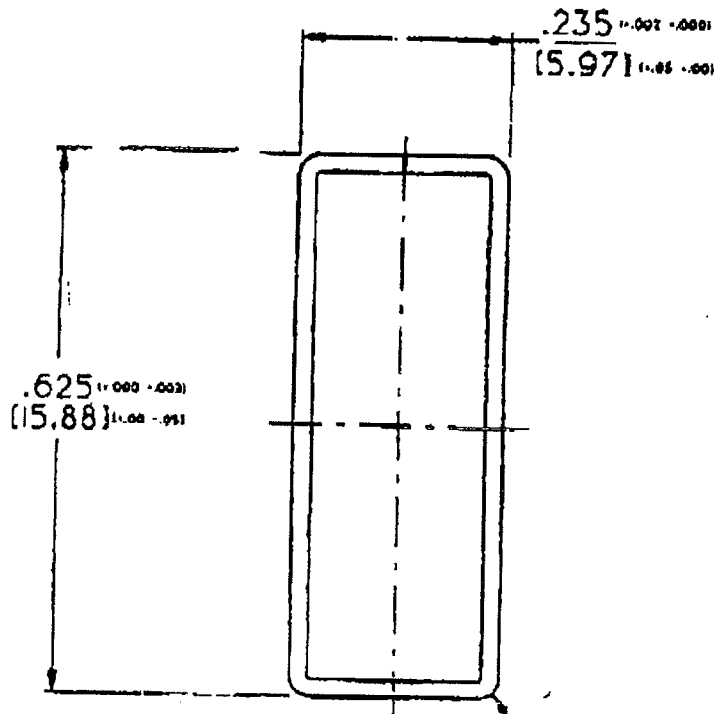
REV.	DATE	DESCRIPTION	BY
A	07-23-97	REVISED SWAP AREA & LEAF LENGTH	Joe L
B	08-25-97	REVISED SWAP DIM 'Y' & 'L'	Joe L
C	10-06-97	ADD TWO DIMENSIONS 'W' & 'T'	Joe L
D	10/13/97	REMOVE 'E' & CHANGE 'P'	Joe L

NOTED  
 DIM ZONES B IMPACT AREA

CONTROL DIMENSIONS									
DIM	METH	MIN	ENG	MAX	DIM	METH	MIN	ENG	MAX
A	V	.048	.063	.078	X	---	---	---	---
B	V	.060	.065	.075	Y	---	---	---	---
C	V	.020	.025	.030	Z	---	---	---	---
D	V	.160	.170	.180	AA	---	---	---	---
E	V	---	---	---	BB	---	---	---	---
F	V	.025	.030	.035	CC	---	---	---	---
G	V	.285	.300	.315	DD	---	---	---	---
H	V	.305	.325	.345	EE	---	---	---	---
I	V	.364	.384	.404	FF	---	---	---	---
J	V	.365	.390	.415	GG	---	---	---	---
K	V	.110	.120	.130	HH	---	---	---	---
L	V	.080	.095	.110	II	---	---	---	---
M	V	.407	.432	.457	JJ	---	---	---	---
N	V	90°	90°	95°	KK	---	---	---	---
O	V	.076	.086	.096	LL	---	---	---	---
P	---	---	---	---	MM	---	---	---	---
Q	---	---	---	---	NN	---	---	---	---
R	---	---	---	---	OO	---	---	---	---
S	---	---	---	---	PP	---	---	---	---
T	---	---	---	---	QQ	---	---	---	---
U	---	---	---	---	RR	---	---	---	---
V	---	---	---	---	SS	---	---	---	---
W	---	---	---	---	TT	---	---	---	---
Part Vt (Lbs/Ft)	Rigid	Capl	Flexi	Alumi	Total				
	.014	.003	.039	---	.056				

**DAYTON TECHNOLOGIES**  
 Copyright 1995  
 HONOLULU, HI  
 NAME  
 DRAWN BY Joe L DATE 12 June 1997  
 CHECKED BY DATE  
 SCALE 8:1 1/2" PART DIMS DIMS DIMS DIMS  
 PART NO. 8206 DRAWING NO. PB206-D

**NOTE: ALL DIMENSIONS IN [ ] BRACKETS ARE MM UNLESS NOTED**



**ACTUAL PART SIZE**

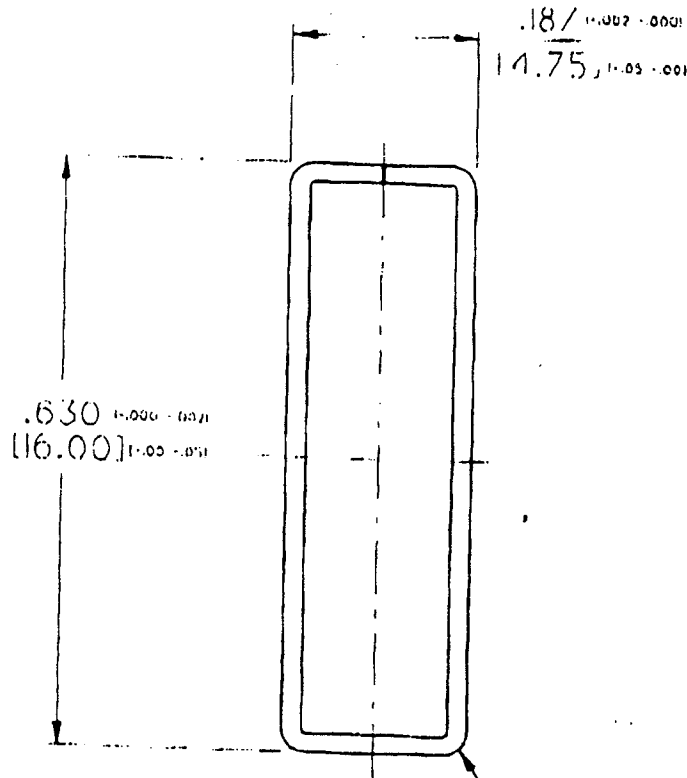
**Architectural Testing, Inc.**  
 Report # 54088  
 Date 3/20/2009  
 Simulator *Eric Luttrell*

10/28/98		Tolerance notes added to height and width		GRM
2/9/97		Initial Release		GRM
DATE	SYM.	REVISION	AUTH.	DES.
		INFORMATION SHOWN ON THIS PRINT IS PROPRIETARY. THIS DRAWING IS NOT TO BE REPRODUCED EITHER WHOLLY OR IN PART WITHOUT THE EXPRESS PERMISSION OF ALLMETAL INC.		
<b>TOLERANCES EXCEPT AS NOTED</b>		<b>TITLE</b> 1/4 x 5/8 MB (Muntin Bar)		DES. BY G. Matthews
DECIMAL INCHES .XX .XXX .XXXX ± .01 .003 .0002		<b>MATL.</b> .020 [.51mm] 3105-H24 Aluminum		CK. BY
DECIMAL MM .XX .XXX ± .13 .08		<b>FINISH</b> ALL BUT ANODIZED		APPR. BY
<b>ANGULAR</b> ± 1°		<b>SCALE</b> 5:1	<b>DATE</b> 10/28/98	<b>DWG. NO.</b> 1020102010XX140

FILENAME:14X5BM

RECEIVED  
 JUL 10 2002  
 P. 82

NOTE: ALL DIMENSIONS IN [ ] BRACKETS ARE MM UNLESS NOTED



**Architectural Testing, Inc.**  
 Report # 54088  
 Date 3/20/2009  
 Simulator Gic Lathos

.025R  
 [.64] typ.



ACTUAL PART  
 SIZE

FILENAME: \\MB\0200\316X58M

10/28/98		Tolerance notes added to height and width			
3/6/98		Initial Release			GRM
DATE	SYM.	REVISION			GRM
			AUTH.	DRN.	CK.

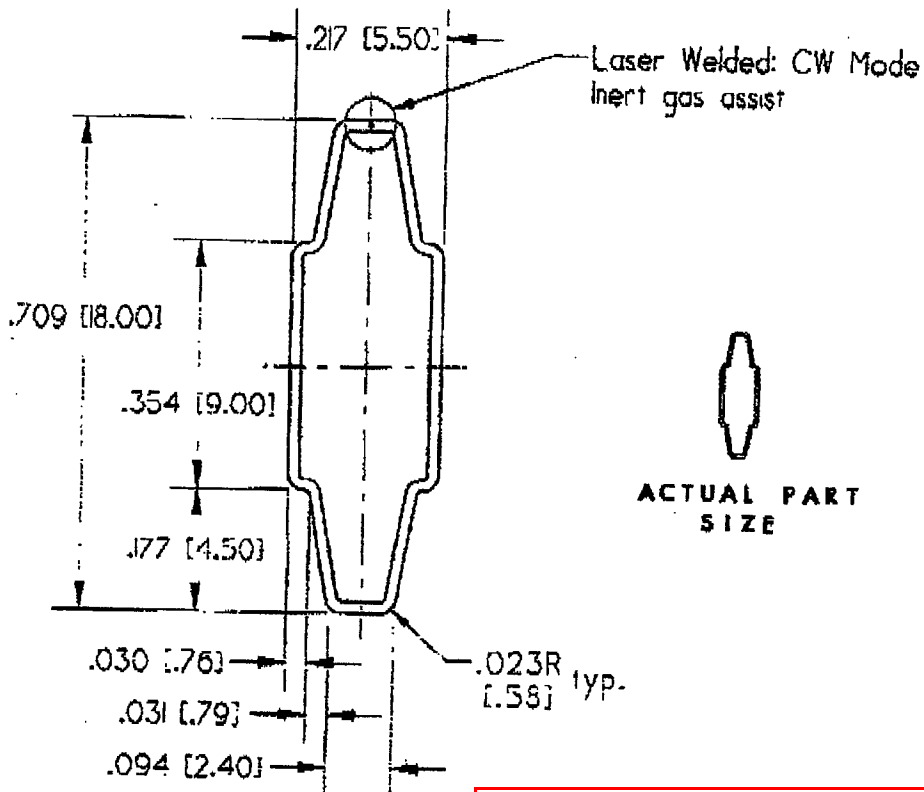


**ALLMETAL**

INFORMATION SHOWN ON THIS PRINT IS PROPRIETARY. THIS DRAWING IS NOT TO BE REPRODUCED EITHER WHOLLY OR IN PART WITHOUT THE EXPRESS PERMISSION OF ALLMETAL INC.

<b>TOLERANCES EXCEPT AS NOTED</b>		<b>TITLE</b>		<b>DRN. BY</b>	
DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002		3/16 x 5/8 MB (Muntin Bar)		G. Matthews	
DECIMAL MM .XX .XXX ± .13 .06		MATL. .020 [.51mm] 3105-H24 Aluminum		CK. BY	
ANGULAR ± 1°		FINISH ALL BUT ANODIZED		APPR. BY	
SCALE 5:1		DATE 10/28/98		S.O. NO.	
		DWG. NO. 1020101010XX140			

NOTE: ALL DIMENSIONS IN [ ] BRACKETS ARE MM UNLESS NOTED



**Architectural Testing, Inc.**

Report # 54088

Date 3/20/2009

Simulator *Eric Sathes*

DATE	SYN.	REVISION	AUTH.	DRN.	CK.
4/17/97		Weld note changed. Title block changed			GRM
12/9/92		Initial Release			GRM



**ALLMETAL**

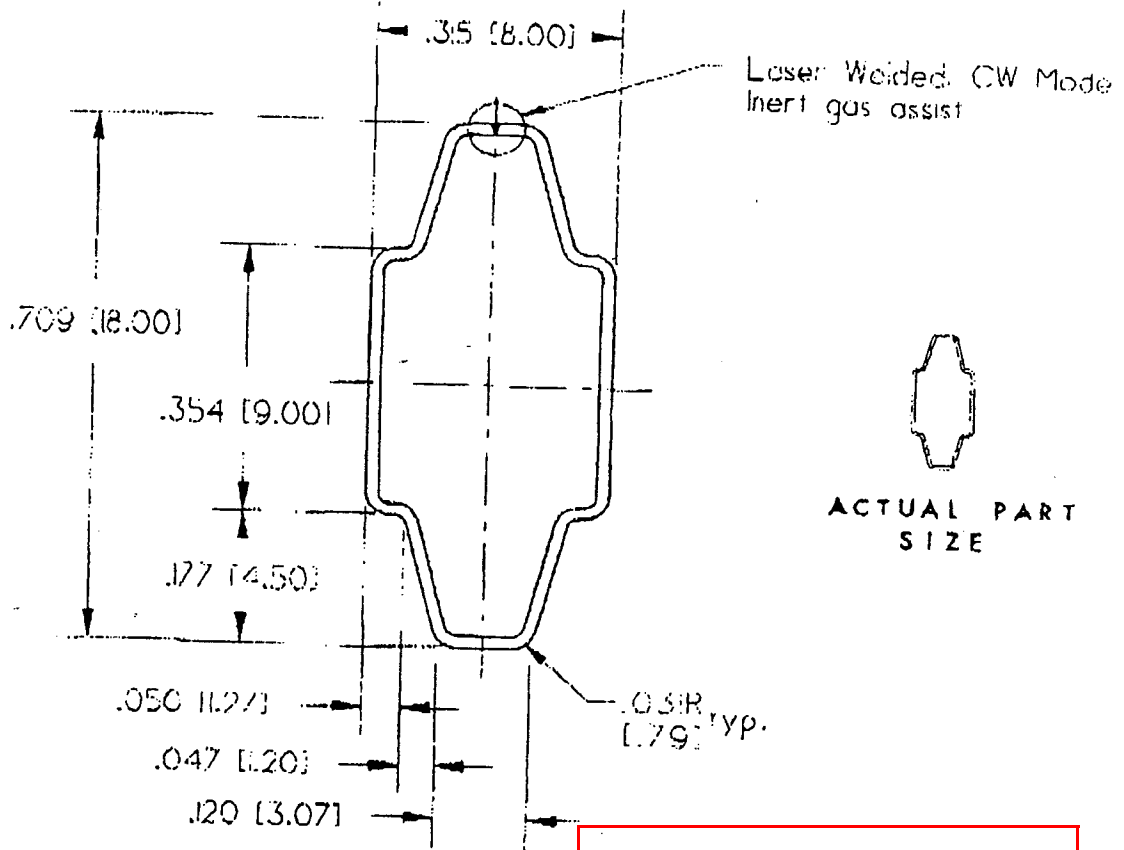
INFORMATION SHOWN ON THIS PRINT IS PROPRIETARY. THIS DRAWING IS NOT TO BE REPRODUCED EITHER WHOLLY OR IN PART WITHOUT THE EXPRESS PERMISSION OF ALLMETAL INC.

FILENAME: CMB5518J

TOLERANCES EXCEPT AS NOTED		TITLE		DRN. BY G. Matthews	
DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002		5.5 x 18mm Contour Muntin Bar (CMB)		CK. BY	
DECIMAL MM .XX .XXX ± .13 .06		MATL.	FINISH	APPR. BY	
ANGULAR ± °		3105 Aluminum	FULL RANGE (MILL. ANOD., PAINTED)	S.O. NO.	
SCALE	DATE	DWS. NO.			
4:1	4/17/97	1020301010XX255			



NOTE: ALL DIMENSIONS IN [ ] BRACKETS ARE MM UNLESS NOTED



**Architectural Testing, Inc.**

Report # 54088

Date 3/20/2009

Simulator vic Future

DATE	SYM.	REVISION	AUTH.	DRN.	CK.
4/17/97		Weld note changed. Title block changed		GRM	
12/9/97		Initial Release		GRM	

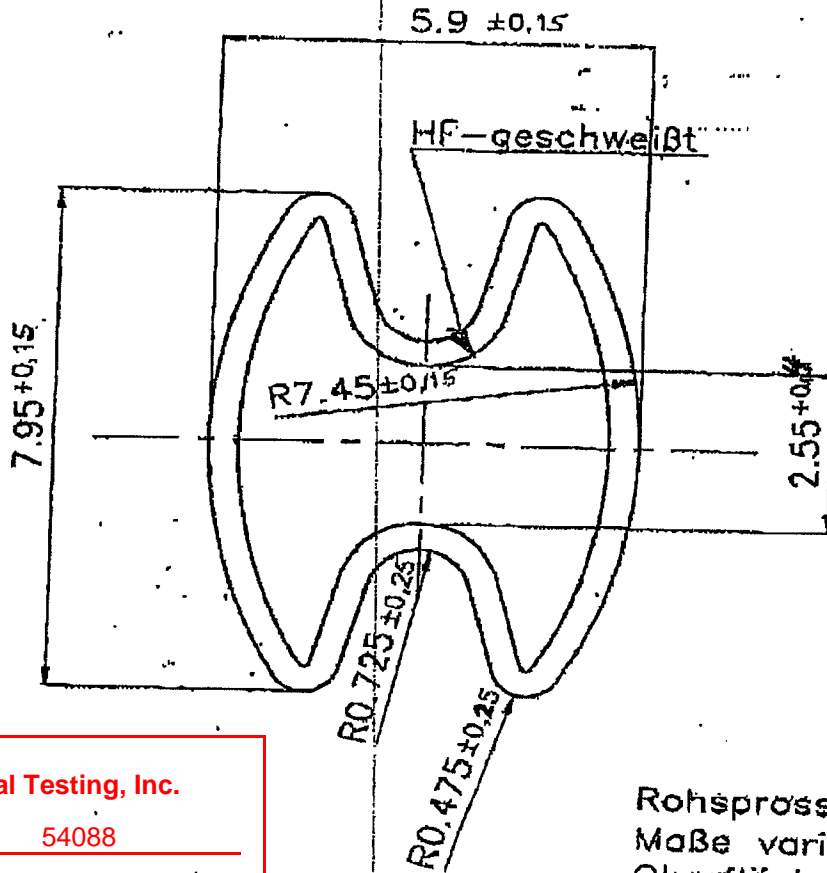


# ALLMETAL

INFORMATION SHOWN ON THIS PRINT IS PROPRIETARY. THIS DRAWING IS NOT TO BE REPRODUCED EITHER WHOLLY OR IN PART WITHOUT THE EXPRESS PERMISSION OF ALLMETAL INC.

<b>TOLERANCES EXCEPT AS NOTED</b> DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002 DECIMAL MM .XX .XXX ± .13 .06 ANGULAR ± 1°		<b>TITLE</b> 8 x 18mm Contour Muntin Bar (CMB)		DRN. BY G. Matthews CK. BY APPR. BY S.O. NO.	
<b>MATL.</b> .016" [.41mm] 3105 Aluminum		<b>FINISH</b> FULL RANGE (MILL. ANOD., PAINTED)			
<b>SCALE</b> 4:1	<b>DATE</b> 4/17/97	<b>DWG. NO.</b> 1020301010XX280			

FILENAME: CMB81B1



**Architectural Testing, Inc.**  
 Report # 54088  
 Date 3/20/2009  
 Simulator bie Lutho

Verteiler: BTL  
 DM3  
 Produktion  
 AV

Rohsprösse!  
 Maße variieren je nach  
 Oberflächenbehandlung

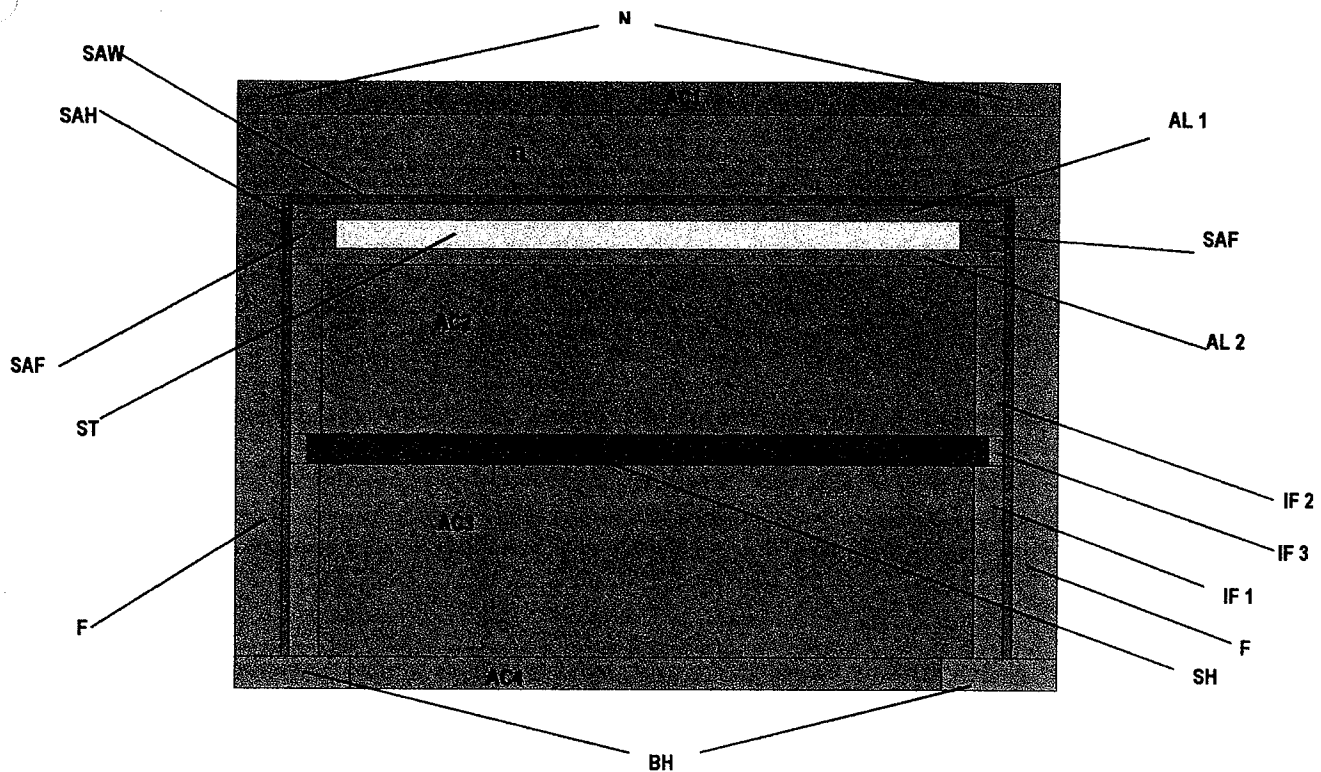
M1

1	Höhe u. Breite geändert	04.07.96	Hbf.	
	Ä-Nr./Art der Änderung	Datum	Name	Gepr.

Werkstoff: Bd 0,4 <sup>+0,04</sup> / <sub>-0,03</sub>		Al 99,85-ähnlich EN 1085/WN wahlweise EN AW-3003	
1996	Tag	Name	Für diese Zeichnung bzw. techn. Unterlage behalten wir uns alle Rechte vor.
Bearb.	24.07.	Höfinghoff	
Gepr.			
Maßstab: 10:1		Benennung: Einbausprosse, geschweißt	
Meße ohne Tol.-Angabe		Zeichnungsnummer: KP 8x1,5G	
DIN 7168-m		Erstellt durch:	

Maßstab: 10:1	Benennung: Einbausprosse, geschweißt
Meße ohne Tol.-Angabe	Zeichnungsnummer: KP 8x1,5G
DIN 7168-m	Erstellt durch:

## Legend



### Description

### Material and Conductivity

		Imp	SI
N	71X	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
BH	71X	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
TL	71X	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
SAW	Moisture vapour barrier	Default polyethylene	Default polyethylene
SAH	Moisture vapour barrier	Default polyethylene	Default polyethylene
ST	Stiffener	Polypropylene 1.53 Btu in/hr ft <sup>2</sup> °F	0.221 W/m/°C
SH	Shim	Default aluminum	Default aluminum
AL 1 2	Adhesive	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
AC 1 3 4	Default cavity	Default cavity	
AC 2	still air	still air – default conductivity	default still air*
SAF	Adhesive	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
IF 1 2 3	Adhesive	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
F	Adhesive	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C

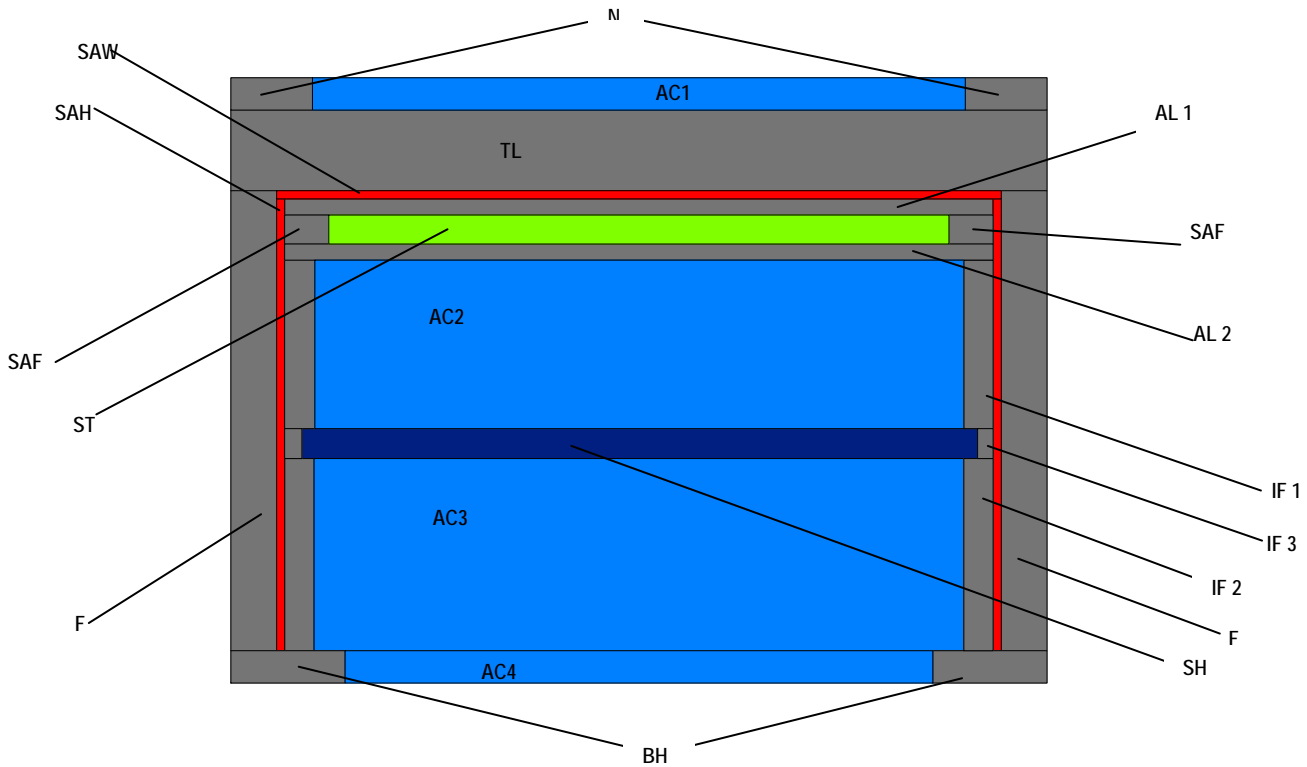
\* Corrected from previous version

If there are questions regarding this document please call

**Rich Warren**  
 Technical Service  
 TruSeal Technologies  
 416 438 1858  
 888 257 7610

<b>Architectural Testing, Inc.</b>	
<b>Report #</b>	54088
<b>Date</b>	3/20/2009
<b>Simulator</b>	<i>Gric Luthers</i>

## Legend



### Description

### Material and Conductivity Imp Si

N	71X	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
BH	71X	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
TL	71X	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
SAW	Moisture vapour barrier	Default polyethylene	Default polyethylene
SAH	Moisture vapour barrier	Default polyethylene	Default polyethylene
ST	Stiffener	Default polypropylene	Default polypropylene
SH	Shim	Default polycarbonate	Default polycarbonate
AL 1 2	Adhesive	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
AC 2	still air	still air – default conductivity	default still air
AC 1 3 4	link to respective adjacent air cavities		
SAF	Adhesive	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
IF 1 2 3	Adhesive	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C
F	Adhesive	Butyl 1.603 Btu in/hr ft <sup>2</sup> °F	0.231 W/m/°C

If there are questions regarding this document please call

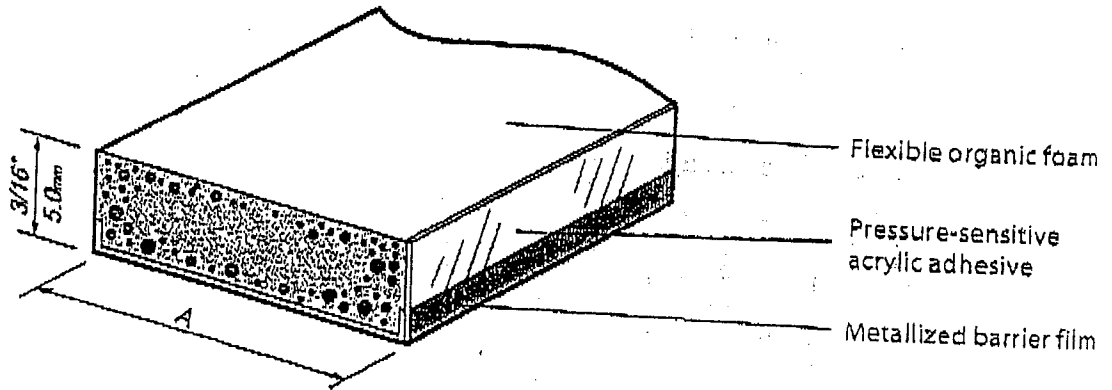
**Werner Lichtenberger**  
 Technical Service  
 TruSeal Technologies  
 905 522 9058  
 888 257 7605 voicemail

<b>Architectural Testing, Inc.</b>	
<b>Report #</b>	54088
<b>Date</b>	3/20/2009
<b>Simulator</b>	<i>Eric Lichtenberger</i>

# Super Spacer®

Stand

## Technical Data



Width A	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"
Ft/Reel	2000	1500	1100	1000	900	800	700	675	600	500
*Width (mm)	5.0	6.5	8.0	9.5	11.0	12.5	14.5	16.0	17.5	19.0
*m/Reel	610	460	335	305	275	245	215	205	185	150

\*Metric spacer widths are conversions to the nearest half millimeter from imperial sizes.

### Spacer Sizes

Super Spacer Standard is available in a standard 3/16" (5mm) thickness and a full range of spacer widths from 3/16" (5mm) to 3/4" (19mm).

### Continuous Packaged Length

For regular insulating-glass production, Super Spacer Standard is supplied on reels with the continuous packaged length varying depending on the spacer width.

### Protective Packaging

To provide desiccant protection, the reels are sealed in moisture-proof foil bags and packaged in

high-density polyethylene bags. These double-packaged reels are then shipped in recyclable cardboard boxes.

### Desiccant Systems

Over 40 percent by spacer weight is desiccant material and the low-deflection blend primarily consists of 3A molecular-sieve material.

### Standard Colors

The standard color is a charcoal grey.

### Architectural Testing, Inc.

Report # 54088

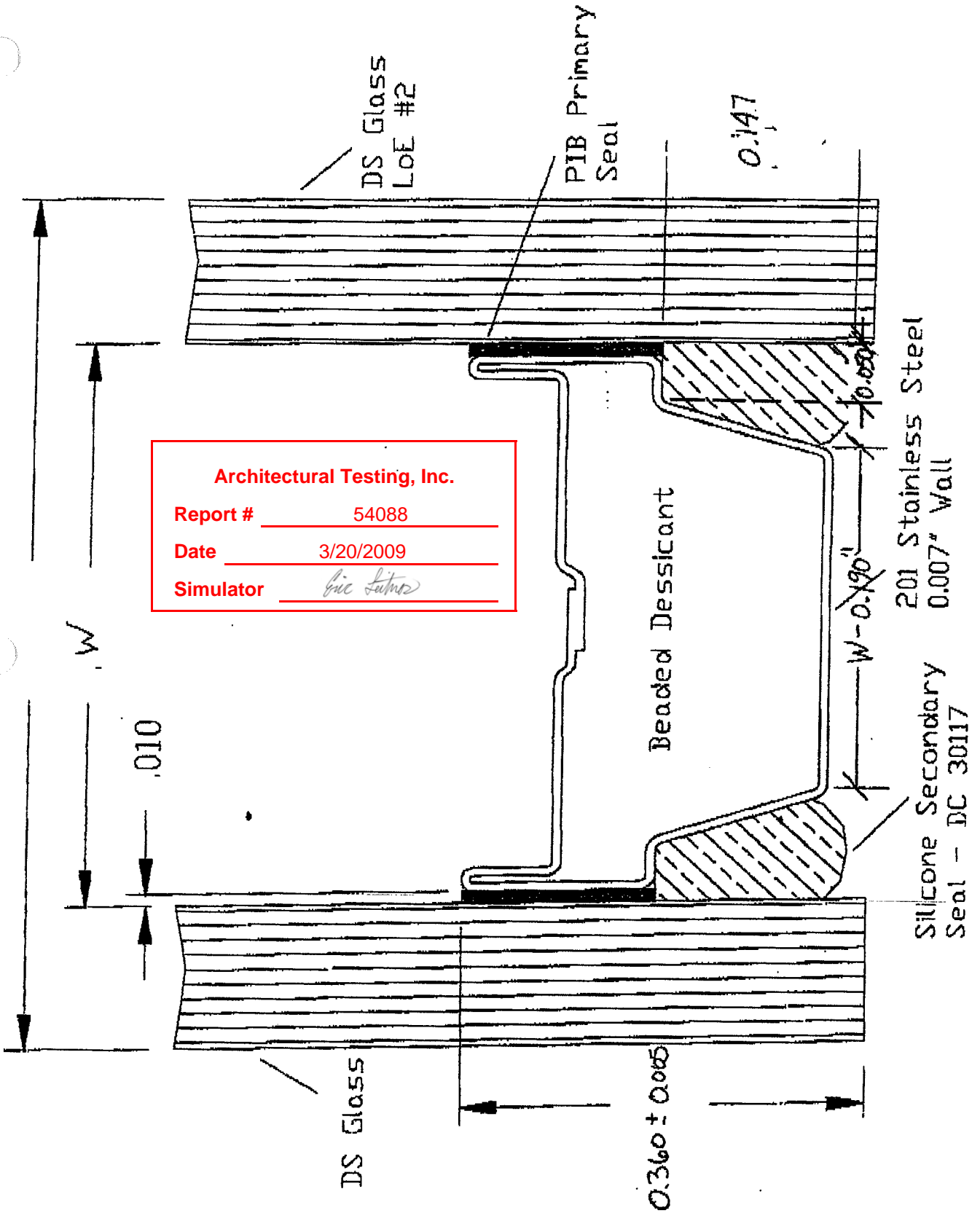
Date 3/20/2009

Simulator Eric Sutor

Super Spacer® is a registered trademark of Edgetech I.G. Inc.

BETWEEN YOU AND THE ELEMENTS • 1.866.TRUEWARM





**Architectural Testing, Inc.**  
 Report # 54088  
 Date 3/20/2009  
 Simulator pic Satmo

**Architectural Testing, Inc.**

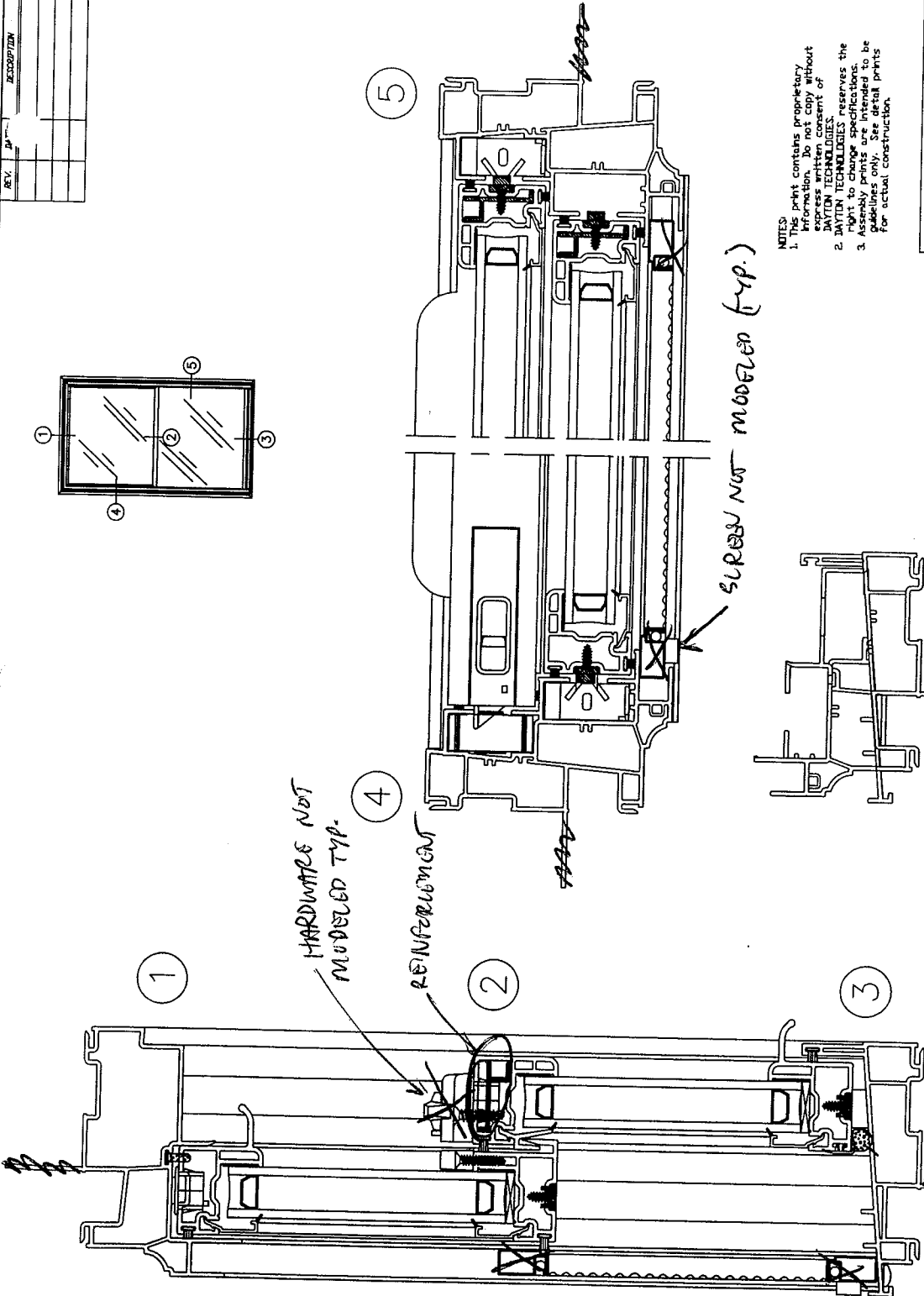
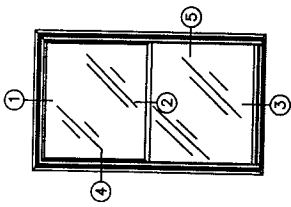
Report # 54088

Date 3/20/2009

Simulator Eric Saturo

TEST OPTION ONLY

REV.	DATE	DESCRIPTION



- NOTES
1. This print contains proprietary information. Do not copy without express written consent of DAYTON TECHNOLOGIES.
  2. DAYTON TECHNOLOGIES reserves the right to change specifications.
  3. Assembly prints are intended to be used for informational purposes only. For actual construction, refer to the final prints.

**DAYTON TECHNOLOGIES**

DATE: 03/20/09  
 DRAWN BY: JCB  
 CHECKED BY: JCB  
 SCALE: 1:1  
 PROJECT: 143095DH