

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

Rendered to:

EARTHWISE GROUP, L.L.C.

**SERIES/MODEL: 143.095 SH
145.095 SH
143.095 SH Common Head**

Baseline Product for Validation Testing

Series Model: **143.093 SH (Common Head)**

Unit Size: Width: 47.25" Height: 59"

Simulated U-Factor: 0.306

Glazing Information

Layer 1:	SS Guardian RLE 71/38 (e=0.027,#2)
Gap 1:	0.234" Super Spacer (ZF-S) - Air Fill
Layer 2:	SS Guardian RLE 71/38 (e=0.027,#4)
Gap 2:	0.234" Super Spacer (ZF-S) - Air Fill
Layer 3:	SS Clear

Reinforcement Option Description

Location	Material
Lock Rail, Keeper Rail	Aluminum

**Report No.: 54089.06-116-45
Report Date: 05/04/05
Expiration Date: 03/30/09**

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

Rendered to:

EARTHWISE GROUP, L.L.C.
107 Pierce Road
Clifton Park, New York 12065

Report No.: 54089.06-116-45
Simulation Date: 03/30/05
Report Date: 05/04/05
Expiration Date: 03/30/09

Project Summary: Architectural Testing, Inc. (ATI) 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

**NFRC's Condensation Resistance rating is NOT equivalent to a Condensation Resistance Factor (CRF) determined in accordance with AAMA 1503.*

Standards:

NFRC 100-2001: Procedure for Determining Fenestration Product U-Factors
NFRC 200-2001: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence
NFRC 500-2001: 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: 14.1

Simulation Specimen Description:

Series/Model:	143.095 SH	145.095 SH	143.095 SH Common Head
Type:	Vertical Slider (Single Hung)		
Frame Material:	Vinyl w/reinforcing - interlock only (VI)		
Sash Material:	Vinyl w/reinforcing - horizontal members only (VH)		
Width:	1200 mm		
Height:	1500 mm		

Technical Interpretations:

U-factor: None
SHGC: None

Modeling Assumptions:

- U-factor:**
1. The 143.095 SH, 145.095 SH and the 143.095 SH Common Head are individual product lines and can be grouped within the same validation matrix according to NFRC 100-2001 Section 1.4.1.
 2. The 3/16" X 9/16", 3/16" X 5/8", 3/16" X 3/4", 1/4" X 5/8" Rectangular Muntins, 5.5mm X 18mm, 8mm X 18mm, 8mm X 25mm, 0.313" X 0.725" Contour Muntins, 7/16" X 3/8" Square Muntin, 5.9mm X 7.95mm Brass Caming Muntins were grouped for simulation purposes. The 7/16" X 3/8" Square Muntin was the group leader.
 3. Tempered glass is simulated as clear annealed per NFRC 100-2001.

- SHGC:**
1. Tempered glass is simulated as clear annealed per NFRC 200-2001.

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.

143.095 SH	No Dividers	Dividers < 1"	Dividers >= 1"
SHGC ₀	0.004	0.007	0.009
SHGC ₁	0.788	0.706	0.629
VT ₀	0.000	0.000	0.000
VT ₁	0.784	0.700	0.620

145.095 SH	No Dividers	Dividers < 1"	Dividers >= 1"
SHGC ₀	0.004	0.007	0.010
SHGC ₁	0.784	0.702	0.625
VT ₀	0.000	0.000	0.000
VT ₁	0.779	0.695	0.615

143.095 SH Common Head

	No Dividers	Dividers < 1"	Dividers >= 1"
SHGC ₀	0.004	0.007	0.010
SHGC ₁	0.789	0.707	0.629
VT ₀	0.000	0.000	0.000
VT ₁	0.784	0.700	0.620

$$SHGC_c = SHGC_0 + SHGC_c (SHGC_1 - SHGC_0)$$

$$VT_c = VT_0 + VT_c (VT_1 - VT_0)$$

Appendices: The following appendices contain material required by NFRC 100-2001, NFRC 200-2001, and NFRC 500-2001.

A. Drawings and Bills of Material used in simulation

Spacer Option Description

<i>Spacer Type</i>	<i>Sealant</i>		
	<i>Primary</i>	<i>Secondary</i>	<i>Dessicant</i>
PPG Intercept Spacer	Butyl Rubber	Butyl Rubber	Yes
Edgetech Super Spacer	Butyl Rubber	None	No
TruSeal DuraSeal Spacer	Butyl Rubber	Butyl Rubber	No
Aluminum Swiggle Spacer	Butyl Rubber	Butyl Rubber	No
Cardinal XL Edge Spacer	Silicone	PIB	Yes

Grid Option Description

<i>Grid Size</i>	<i>Grid Type</i>	<i>Grid Pattern</i>
3/16" X 9/16"	Allmetal Rectangular Muntin	2H x 3V
3/16" X 5/8"	Allmetal Rectangular Muntin	2H x 3V
3/16" X 3/4"	Allmetal Rectangular Muntin	2H x 3V
1/4" X 5/8"	Allmetal Rectangular Muntin	2H x 3V
5.5mm X 18mm	Allmetal Contour Muntin	2H x 3V
8mm X 18mm	Allmetal Contour Muntin	2H x 3V
8mm X 25mm	Allmetal Contour Muntin	2H x 3V
0.313" X 0.725"	Allmetal Contour Muntin	2H x 3V
7/16" X 3/8"	Square Muntin	2H x 3V
5.9mm X 7.95mm	Brass Caming Muntin	2H x 3V

Reinforcement Option Description

<i>Location</i>	<i>Material</i>
Lock Rail, Keeper Rail, Bottom Rail	Aluminum

Gas Filling Technique Description

<i>Fill Type</i>	<i>Method</i>
90% Argon	Single Probe
95% Argon	Dual Probe
90% Krypton	Dual Probe

Edge-of-Glass Construction - Fixed Sash

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

Edge-of-Glass Construction - Operable Sash

<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

Type	Qty.	Location
Finpile	2 rows	Jamb Stiles
Finpile	1 row	Sill, Lock Rail
Foam Rubber Bulb Gasket	1 row	Bottom Rail

Finish

Interior Condition	White PVC
Exterior Condition	White PVC

Hardware *(If modeling is required, continuous items are listed below)*

Type	Qty.	Location
None		

Sealing Rules *(To prevent air infiltration)*

Tape was applied to all interior sash crack locations.
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U-Factor / CR
143.095 SH

		PPG Intercept Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
1	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.49	43
2	SS Clear / DS Clear - 3/4" IG	0.48	43	0.49	43
3	035 / Clear - SS,DS - 3/4" IG	0.34	53	0.36	53
4	035 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	56	0.32	56
5	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.31	55	0.33	55
6	027 / Clear - SS,DS - 3/4" IG	0.34	53	0.36	53
7	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	57	0.32	57

		Super Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
8	Clear / Clear - SS,DS - 3/4" IG	0.47	44	0.48	44
9	DS Clear / SS Clear - 3/4" IG	0.47	44	0.49	44
10	DS Clear / SS Clear w/ 90% Argon - 3/4" IG	0.45	46	0.47	46
11	154 / Clear - DS - 3/4" IG	0.36	52	0.39	52
12	154 / Clear w/ 95% Argon- DS - 3/4" IG	0.33	55	0.35	55
13	035 / Clear - SS,DS - 3/4" IG	0.33	55	0.35	55
14	035 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.30	58	0.31	58
15	041 / Clear - SS,DS - 3/4" IG	0.34	55	0.35	55
16	041 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.30	58	0.32	58
17	027 / Clear - SS,DS - 3/4" IG	0.33	55	0.35	55
18	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	59	0.31	59
19	027 / 027 w/ 90% Argon - SS,DS - 3/4" IG	0.29	60	0.31	59

U-Factor / CR

143.095 SH

		<i>Duraseal Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
20	Clear / Clear - SS,DS - 3/4" IG	0.47	44	0.49	44
21	044 / Clear - SS,DS - 3/4" IG	0.34	55	0.36	55
22	044 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	58	0.32	58
23	041 / Clear - SS,DS - 3/4" IG	0.34	55	0.36	55
24	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	58	0.32	58
25	027 / Clear w/ 90% Argon - DS - 3/4" IG	0.30	58	0.32	58

		<i>Aluminum Swiggle Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
26	Clear / Clear - SS,DS - 3/4" IG	0.48	44	0.49	44
27	041 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
28	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.32	57
29	027 / Clear - SS,DS - 3/4" IG	0.34	54	0.34	54
30	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	57	0.31	57

U-Factor / CR
143.095 SH

		Cardinal XL Edge Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
31	Clear / Clear - DS - 3/4" IG	0.47	43	0.50	43
32	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.30	56	0.33	56

		Triple Glazed Super Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
33	Clear / Clear / Clear - SS - 3/4" IG	0.40	51	-	-
34	027 / Clear / Clear - SS - 3/4" IG	0.35	57	-	-
35	027 / Clear / Clear w/ 90% Argon - SS - 3/4" IG	0.31	60	-	-
36	027 / 027 / Clear - SS - 3/4" IG	0.31	60	-	-
37	027 / 027 / Clear w/ 90% Argon - SS - 3/4" IG	0.27	63	-	-

Notes :

1. All options available with bronze and grey tints on exterior surface.
2. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.035 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

U-Factor / CR
145.095 SH

		PPG Intercept Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
1	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.50	43
2	SS Clear / DS Clear - 3/4" IG	0.48	42	0.50	42
3	035 / Clear - SS,DS - 3/4" IG	0.35	53	0.36	53
4	035 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	56	0.33	56
5	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.31	55	0.34	55
6	027 / Clear - SS,DS - 3/4" IG	0.34	53	0.36	53
7	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	56	0.33	56

		Super Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
8	Clear / Clear - SS,DS - 3/4" IG	0.47	44	0.49	44
9	DS Clear / SS Clear - 3/4" IG	0.47	44	0.49	44
10	DS Clear / SS Clear w/ 90% Argon - 3/4" IG	0.45	46	0.47	46
11	154 / Clear - DS - 3/4" IG	0.36	52	0.39	52
12	154 / Clear w/ 95% Argon- DS - 3/4" IG	0.33	55	0.36	55
13	035 / Clear - SS,DS - 3/4" IG	0.34	55	0.36	55
14	035 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.30	58	0.32	58
15	041 / Clear - SS,DS - 3/4" IG	0.34	55	0.36	55
16	041 / Clear w/ 90% Argon- SS,DS - 3/4" IG	0.30	58	0.32	58
17	027 / Clear - SS,DS - 3/4" IG	0.33	55	0.35	55
18	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	58	0.32	58
19	027 / 027 w/ 90% Argon - SS,DS - 3/4" IG	0.30	59	0.31	59

U-Factor / CR
145.095 SH

		<i>Duraseal Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
20	Clear / Clear - SS,DS - 3/4" IG	0.48	44	0.49	44
21	044 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
22	044 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.33	57
23	041 / Clear - SS,DS - 3/4" IG	0.34	54	0.36	54
24	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	58	0.33	58
25	027 / Clear w/ 90% Argon - DS - 3/4" IG	0.30	57	0.33	57

		<i>Aluminum Swiggle Spacer</i>			
		<i>No Grids</i>		<i>Grids</i>	
	Option Description	U-Factor	CR	U-Factor	CR
26	Clear / Clear - SS,DS - 3/4" IG	0.48	43	0.49	43
27	041 / Clear - SS,DS - 3/4" IG	0.35	53	0.36	53
28	041 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.33	57
29	027 / Clear - SS,DS - 3/4" IG	0.34	54	0.34	54
30	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.31	57	0.32	57

U-Factor / CR
145.095 SH

		Cardinal XL Edge Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
31	Clear / Clear - DS - 3/4" IG	0.48	43	0.50	43
32	041 / Clear w/ 90% Argon - DS - 3/4" IG	0.31	56	0.33	56

		Triple Glazed Super Spacer			
		No Grids		Grids	
Option Description		U-Factor	CR	U-Factor	CR
33	Clear / Clear / Clear - SS - 3/4" IG	0.40	51	-	-
34	027 / Clear / Clear - SS - 3/4" IG	0.35	56	-	-
35	027 / Clear / Clear w/ 90% Argon - SS - 3/4" IG	0.31	60	-	-
36	027 / 027 / Clear - SS - 3/4" IG	0.31	59	-	-
37	027 / 027 / Clear w/ 90% Argon - SS - 3/4" IG	0.27	62	-	-

Notes :

1. All options available with bronze and grey tints on exterior surface.
2. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.035 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

U-Factor / CR

143.095 SH Common Head

Option Description		Super Spacer			
		No Grids		Grids	
		U-Factor	CR	U-Factor	CR
1	DS Clear / SS Clear - 3/4" IG	0.47	44	0.49	44
2	DS Clear / SS Clear w/ 90% Argon - 3/4" IG	0.45	46	0.47	46
3	027 / Clear - SS,DS - 3/4" IG	0.33	55	0.35	55
4	027 / Clear w/ 90% Argon - SS,DS - 3/4" IG	0.30	59	0.31	59

Option Description		Duraseal Spacer			
		No Grids		Grids	
		U-Factor	CR	U-Factor	CR
5	Clear / Clear - SS,DS - 3/4" IG	0.47	44	0.49	44
6	041 / Clear - SS,DS - 3/4" IG	0.34	55	0.36	55

Option Description		Triple Glazed Super Spacer			
		No Grids		Grids	
		U-Factor	CR	U-Factor	CR
7	Clear / Clear / Clear - SS - 3/4" IG	0.40	51	-	-
8	027 / Clear / Clear - SS - 3/4" IG	0.35	57	-	-
9	027 / Clear / Clear w/ 90% Argon - SS - 3/4" IG	0.31	60	-	-
10	027 / 027 / Clear - SS - 3/4" IG	0.31	60	-	-
11	027 / 027 / Clear w/ 90% Argon - SS - 3/4" IG	0.27	64	-	-

Notes :

1. All options available with bronze and grey tints on exterior surface.
2. Low-E's used:
0.041 = Cardinal E172
0.027 = Guardian RLE 71/38

SHGC/VT
143.095 SH

		SHGC			VT		
Option Description		No Grids	√1	∧1	No Grids	√1	∧1
1	Clear / Clear - SS,DS	0.62	0.56	0.50	0.64	0.57	0.51
2	Solar Bronze / Clear - SS,DS	0.50	0.44	0.40	0.48	0.42	0.38
3	Solar Gray / Clear - SS,DS	0.46	0.41	0.37	0.43	0.38	0.34
4	035 / Clear - SS,DS	0.31	0.28	0.25	0.57	0.51	0.45
5	Clear / 035 - SS,DS	0.37	0.33	0.30	0.57	0.51	0.45
6	Solar Bronze / 035 - SS,DS	0.30	0.27	0.24	0.42	0.38	0.33
7	Solar Gray / 035 - SS,DS	0.28	0.25	0.23	0.38	0.34	0.30
8	041 / Clear - SS,DS	0.33	0.30	0.27	0.57	0.50	0.45
9	Clear / 041 - SS,DS	0.39	0.35	0.32	0.57	0.50	0.45
10	Solar Bronze / 041 - SS,DS	0.31	0.28	0.25	0.42	0.37	0.33
11	Solar Gray / 041 - SS,DS	0.29	0.26	0.24	0.38	0.34	0.30
12	027 / Clear - SS,DS	0.31	0.28	0.25	0.56	0.50	0.44
13	Clear / 027 - SS,DS	0.38	0.34	0.31	0.56	0.50	0.44
14	Solar Bronze - 027 - SS,DS	0.30	0.27	0.25	0.41	0.37	0.33
15	Solar Gray / 027 - SS,DS	0.28	0.26	0.23	0.37	0.33	0.29
16	154 / Clear - SS,DS	0.51	0.46	0.41	0.59	0.52	0.46
17	Clear / 154 - SS,DS	0.56	0.50	0.45	0.59	0.52	0.46
18	Solar Bronze / 154 - SS,DS	0.45	0.40	0.36	0.44	0.39	0.34
19	Solar Gray / 154 - SS,DS	0.41	0.37	0.33	0.39	0.35	0.31
20	044 / Clear - SS,DS	0.33	0.29	0.26	0.54	0.48	0.43
21	Clear / 044 - SS,DS	0.38	0.34	0.30	0.54	0.48	0.43
22	Solar Bronze - 044 - SS,DS	0.30	0.27	0.25	0.40	0.36	0.32
23	Solar Gray / 044 - SS,DS	0.28	0.26	0.23	0.36	0.32	0.29
24	Clear / Clear / Clear - SS	0.56	0.51	0.45	0.60	0.53	0.47
25	027 / Clear / Clear - SS	0.29	0.26	0.24	0.51	0.46	0.41
26	027 / 027 / Clear - SS	0.25	0.23	0.21	0.44	0.39	0.35

Notes :

1. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.035 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

SHGC/VT
145.095 SH

		SHGC			VT		
Option Description		No Grids	√1	∧1	No Grids	√1	∧1
1	Clear / Clear - SS,DS	0.62	0.55	0.49	0.64	0.57	0.51
2	Solar Bronze / Clear - SS,DS	0.49	0.44	0.39	0.47	0.42	0.37
3	Solar Gray / Clear - SS,DS	0.46	0.41	0.37	0.43	0.38	0.34
4	035 / Clear - SS,DS	0.31	0.28	0.25	0.56	0.50	0.44
5	Clear / 035 - SS,DS	0.36	0.33	0.29	0.56	0.50	0.44
6	Solar Bronze / 035 - SS,DS	0.29	0.27	0.24	0.42	0.37	0.33
7	Solar Gray / 035 - SS,DS	0.28	0.25	0.22	0.38	0.34	0.30
8	041 / Clear - SS,DS	0.33	0.30	0.26	0.56	0.50	0.44
9	Clear / 041 - SS,DS	0.39	0.35	0.31	0.56	0.50	0.44
10	Solar Bronze / 041 - SS,DS	0.31	0.28	0.25	0.42	0.37	0.33
11	Solar Gray / 041 - SS,DS	0.29	0.26	0.24	0.37	0.33	0.30
12	027 / Clear - SS,DS	0.31	0.28	0.25	0.55	0.49	0.44
13	Clear / 027 - SS,DS	0.38	0.34	0.30	0.55	0.49	0.44
14	Solar Bronze - 027 - SS,DS	0.30	0.27	0.24	0.41	0.36	0.32
15	Solar Gray / 027 - SS,DS	0.28	0.26	0.23	0.37	0.33	0.29
16	154 / Clear - SS,DS	0.51	0.46	0.41	0.58	0.52	0.46
17	Clear / 154 - SS,DS	0.56	0.50	0.45	0.58	0.52	0.46
18	Solar Bronze / 154 - SS,DS	0.45	0.40	0.36	0.43	0.39	0.34
19	Solar Gray / 154 - SS,DS	0.41	0.37	0.33	0.39	0.35	0.31
20	044 / Clear - SS,DS	0.32	0.29	0.26	0.54	0.48	0.42
21	Clear / 044 - SS,DS	0.37	0.34	0.30	0.54	0.48	0.42
22	Solar Bronze - 044 - SS,DS	0.30	0.27	0.24	0.40	0.35	0.31
23	Solar Gray / 044 - SS,DS	0.28	0.25	0.23	0.36	0.32	0.28
24	Clear / Clear / Clear - SS	0.56	0.50	0.45	0.59	0.53	0.47
25	027 / Clear / Clear - SS	0.29	0.26	0.24	0.51	0.45	0.40
26	027 / 027 / Clear - SS	0.25	0.23	0.20	0.44	0.39	0.35

Notes :

1. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.035 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

SHGC/VT

143.095 SH Common Head

		SHGC			VT		
Option Description		No Grids	√1	∧1	No Grids	√1	∧1
1	Clear / Clear - SS,DS	0.62	0.56	0.50	0.64	0.57	0.51
2	Solar Bronze / Clear - SS,DS	0.50	0.44	0.40	0.48	0.42	0.38
3	Solar Gray / Clear - SS,DS	0.46	0.41	0.37	0.43	0.38	0.34
4	041 / Clear - SS,DS	0.33	0.30	0.27	0.57	0.50	0.45
5	Clear / 041 - SS,DS	0.39	0.35	0.32	0.57	0.50	0.45
6	Solar Bronze / 041 - SS,DS	0.31	0.28	0.25	0.42	0.37	0.33
7	Solar Gray / 041 - SS,DS	0.29	0.26	0.24	0.38	0.34	0.30
8	027 / Clear - SS,DS	0.31	0.28	0.25	0.56	0.50	0.44
9	Clear / 027 - SS,DS	0.38	0.34	0.31	0.56	0.50	0.44
10	Solar Bronze - 027 - SS,DS	0.30	0.27	0.25	0.41	0.37	0.33
11	Solar Gray / 027 - SS,DS	0.28	0.26	0.23	0.37	0.33	0.29
12	Clear / Clear / Clear - SS	0.57	0.51	0.45	0.60	0.53	0.47
13	027 / Clear / Clear - SS	0.29	0.26	0.24	0.51	0.46	0.41
14	027 / 027 / Clear - SS	0.25	0.23	0.21	0.44	0.39	0.35

Notes :

1. "5m" stands for 3/16" glass thickness
3. Low-E's used:
 - 0.035 = PPG Solarban 60
 - 0.041 = Cardinal E172
 - 0.027 = Guardian RLE 71/38
 - 0.154 = LOF Advantage
 - 0.044 = Guardian PPII

This report is reissued in the name of Earthwise Group, L.L.C. through written authorization of Dayton Technologies to whom the original report was rendered. The original Dayton Report No. is 54089.01-116-45.

This simulation method does not include procedures to determine the Condensation Resistance due to either air movement through the specimen or solar radiation effects. As a consequence, the Condensation Resistance results obtained do not reflect performance which may be expected from field installations because they do not account for solar radiation, air leakage effects, and the thermal bridge effects that may occur due to the specific design and construction of the fenestration system opening. Therefore, it should be recognized that the Condensation Resistance results obtained from this simulation method are for controlled laboratory conditions and should only be used for fenestration product comparisons and as input to condensation resistance performance analyses, which also include solar, air leakage and thermal bridge effects.

Ratings included in this report are for submittal to an NFRC-licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) are to be used for labeling purposes.

Detailed drawings, simulation data disks, and a copy of this report will be retained by ATI for a period of four years. The above results are the exclusive property of the client so named herein and are applicable to the sample simulated. ATI 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. This report does not constitute an opinion or endorsement by this laboratory. This report may not be reproduced except in full without the approval of ATI.

For ARCHITECTURAL TESTING, INC.:

SIMULATED BY:

REVIEWED BY:

Eric Leitner
Simulation Technician

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

EL:ssr
54089.06-116-45

Attachments (pages):
Appendix A: Drawings and Bills of Material (32)

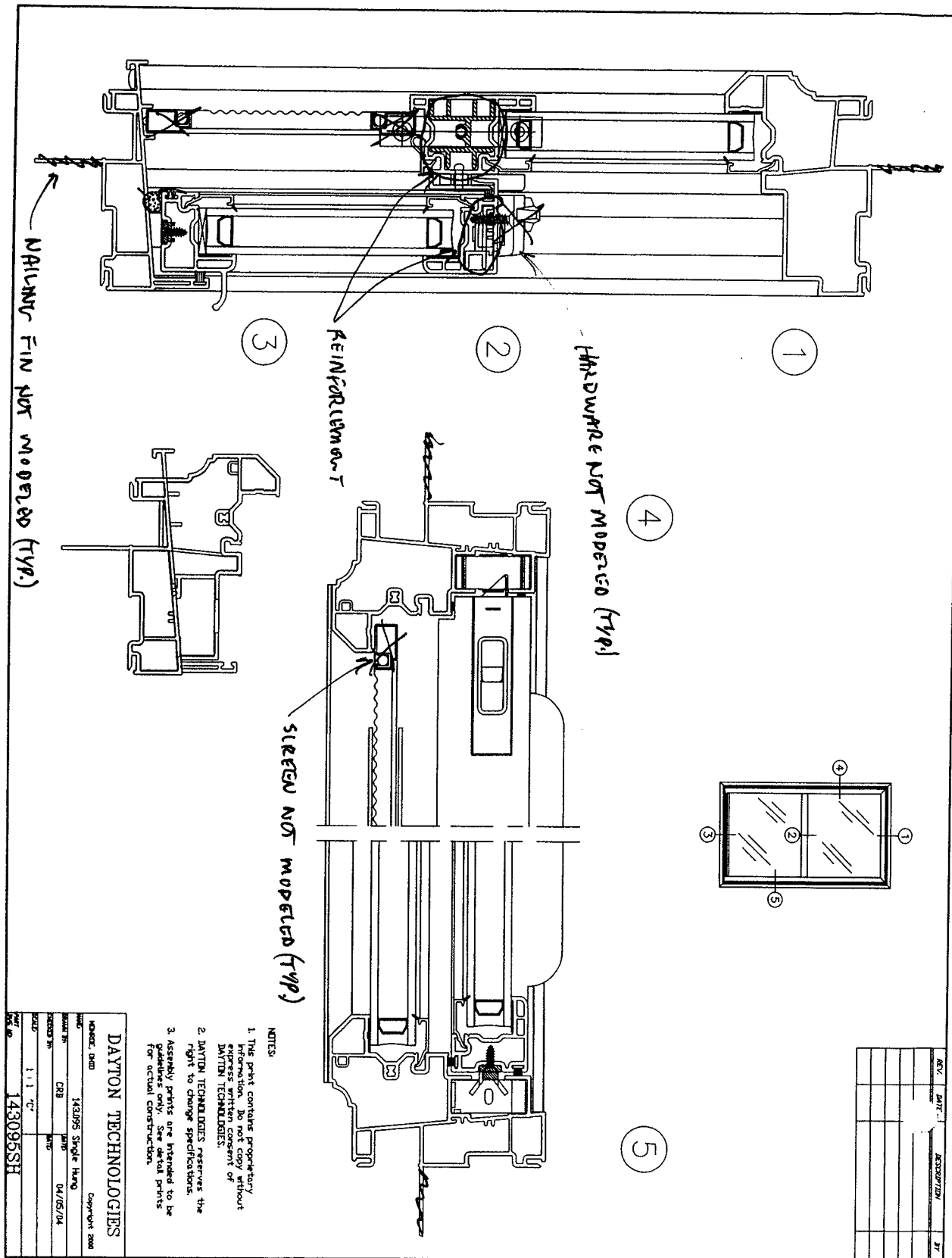
Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	5/4/2005	All	Add 143.095 SH Common Head to report; Correct Test Option



All drawings and Bills of Material used in simulating this product are enclosed in this Appendix.

APPENDIX A



Architectural Testing

Test sample complies with these details.
Deviations are noted.

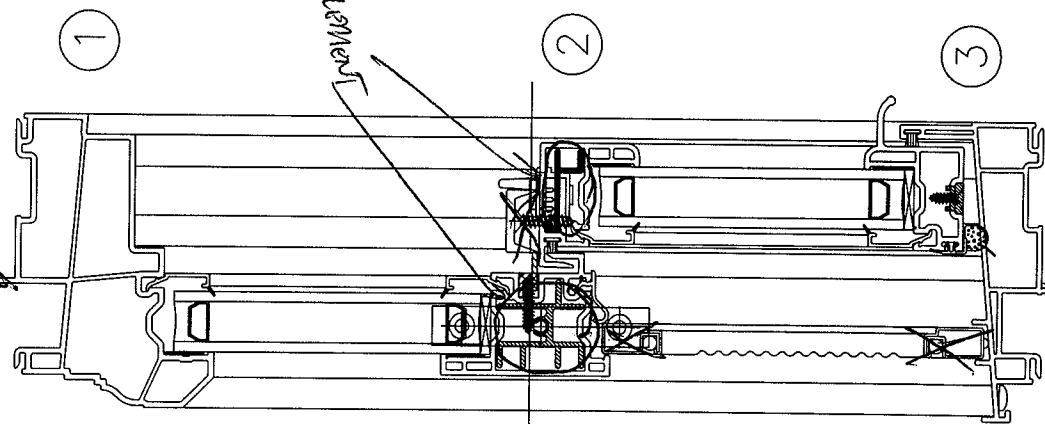
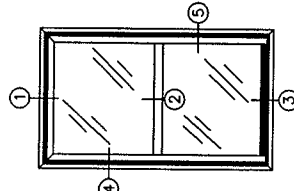
Report# 54089

Date 3/05 Tech ESL

REV	STATUS	REV.	DESCRIPTION	DATE	APPROVED
1	SH	1			
2					
3					
4					
5					

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.

NAILING FIN NOT
MODELED (TYP)



REINFORCEMENT

GLASS NOT MODELED
(TYP)

LAYOUT DRAWING

DESIGN BY: CDB	DATE: 02/02/12	DESIGN BY: CDB	DATE: 02/02/12
UNLESS OTHERWISE SPECIFIED DIM ARE IN INCHES TOL ON ANGLE ± 1° 2 PLACES ± .005 INTERPRET DIM AND TOL PER ASME Y14.5M - 1994		THIRD ANGLE PROJECTION	
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION. IT IS NOT TO BE DISCLOSED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF DAYTON TECHNOLOGIES. DAYTON TECHNOLOGIES RESERVES THE RIGHT TO CHANGE THIS DRAWING AND ANY ASSOCIATED DOCUMENTS.			
PROJECT NO: 145095		SHEET: 1 OF 1	
DRAWING NO: 145095SSH		REV: -	
FILE NAME: pd/assembly/145095SSH.dwg		SCALE: 1/16" = 1'-0"	



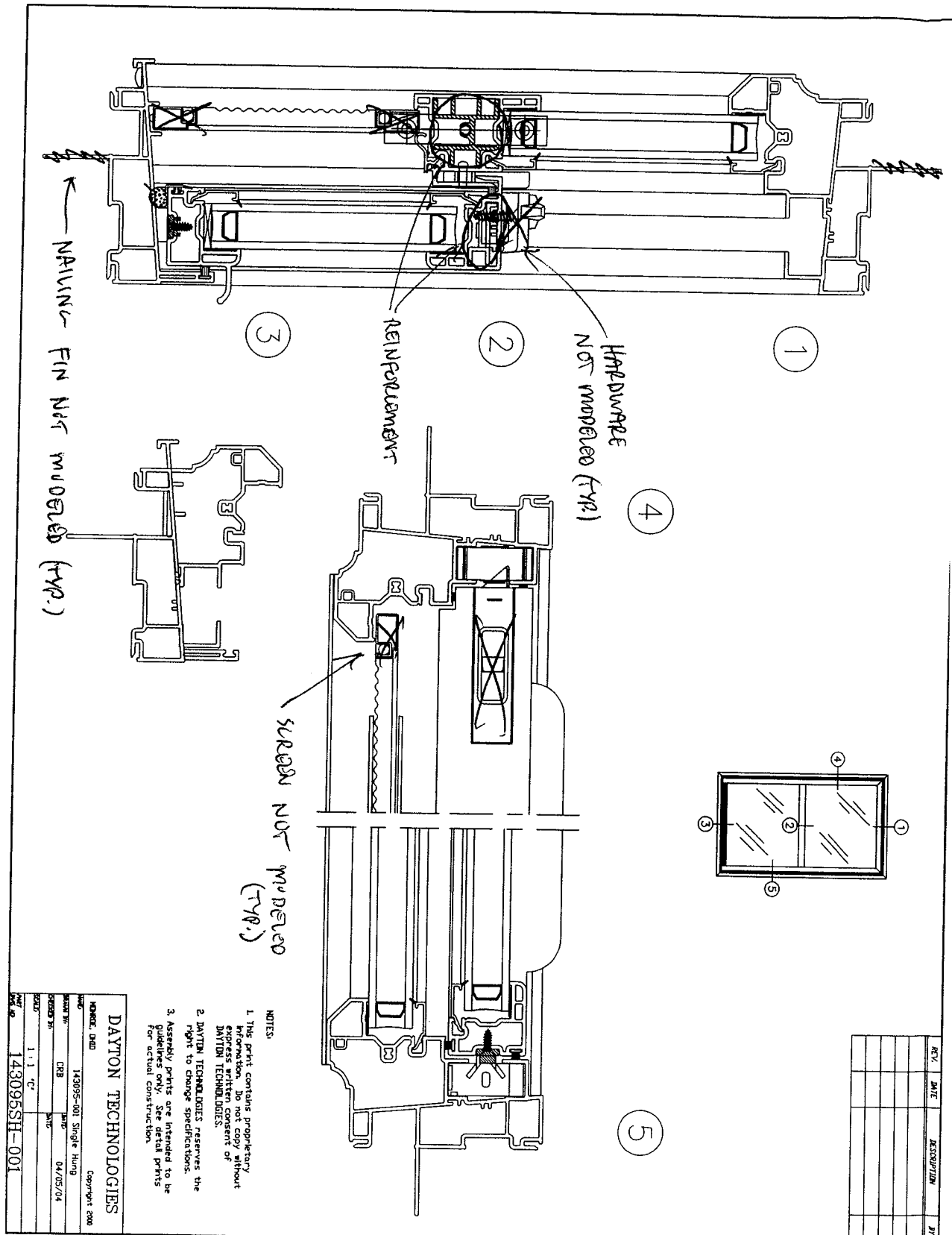
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089

Date 3/05

Tech 31



REV.	DATE	DESCRIPTION	BY

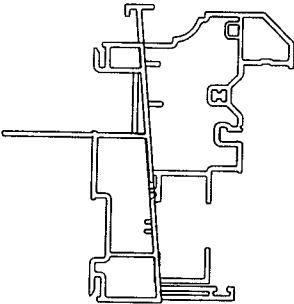
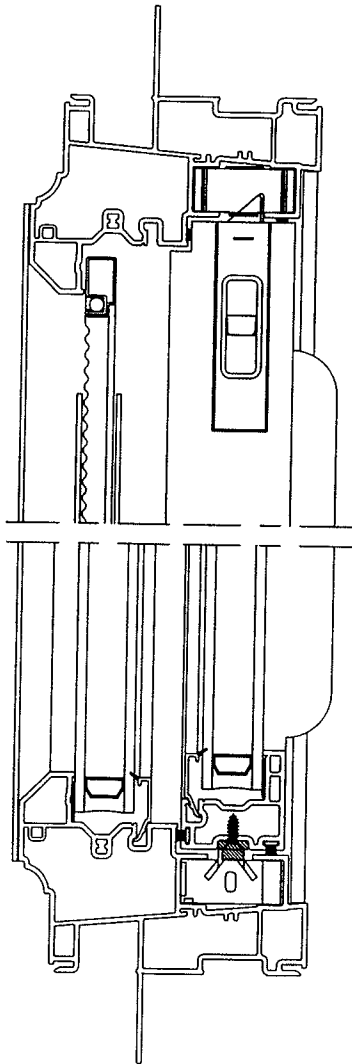
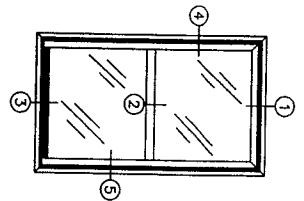
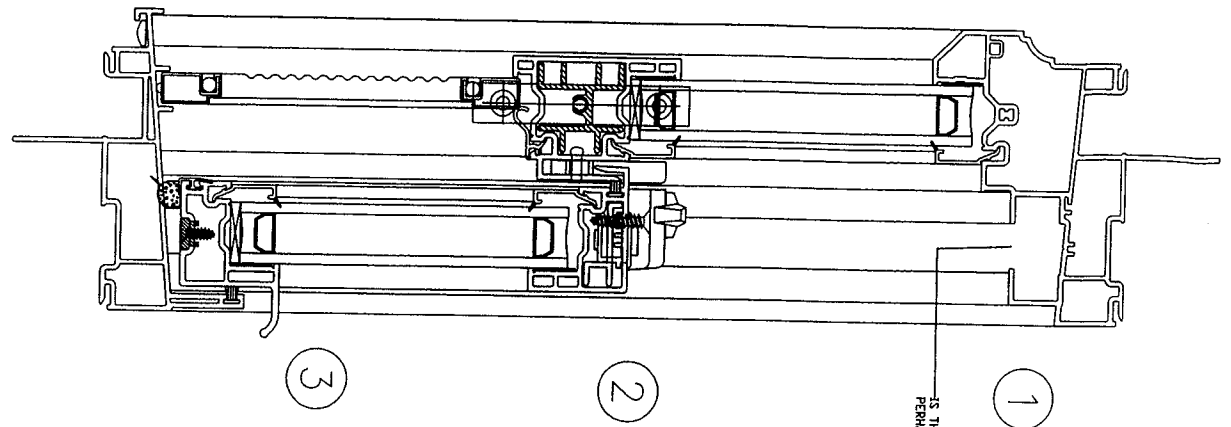


Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089

Date 5/3/05 Tech BSL



TEST OPTION

REV.	DATE	DESCRIPTION	BY

- 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: DHD	Copyright 2003
SIZE: 143093-001 Single Hung	
SCALE: CRS	DATE: 5/23/03
BY: JWP	
CHECKED: 1:1 "C"	
APP. NO. 143093SH-001	



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 5/3/05 Tech ERL

143.000 SH FRAME - BILL OF MATERIALS - NC

ITEM NO.	DESCRIPTION	QUANTITY	PART NO.	FAB DWG. NO	SOURCE
1	HEAD	1	P8687	P8687F01	A
2	SILL	1	P8674 Egress	P8673F03	A
3	JAMBS	2	P8686	P8686F02	A
4	FIXED MEETING RAIL	1	P8511	P8511F10	A
5	SCREEN RETAINER	1	P8263	STRAIGHT CUT	A
6	HORIZONTAL GLAZING BEAD	2	P8127	P8127F01	A
7	VERTICAL GLAZING BEAD	2	P8127	P8127F01	A
9	EGRESS SILL (Optional)	1	P8674	P8674F01	A
10	FIXED MEETING RAIL INSERT	1	6189		EEE, OOO
11	CENTER FIN WEATHERSTRIPPING	2	#12512 or #79543 (includes gasket)		D
12	3/4" INSULATED GLASS	1	290 HT x 187 BK		F, I
14	GLAZING COMPOUND	1	SBC2150		R
15	SETTING BLOCKS (REFER TO IG SUPPLIER GUIDELINES)	AS RECD	1/8" x 3/4"		T
16	BALANCE SYSTEM - CROSSBOW	AS RECD	36" and Less / Over 36" Wide		W
17	BALANCE	2	1000 / 1001		BBB
18		2	1200 / 1201		BBB
19		2	1400 / 1401		BBB
20		2	1600 / 1601		BBB
21		2	1800 / 1801		BBB
22		2	2000 / 2001		BBB
23		2	2200 / 2201		BBB
24		2	2400 / 2401		BBB
25		2	2600 / 2601		BBB
26		2	2800 / 2801		BBB
27		2	3000 / 3001		BBB
28		2	3200 / 3201		BBB
29		2	3400 / 3401		BBB
30		2	3600 / 3601		BBB
31		2	3800 / 3801		BBB
32		2	4000 / 4001		BBB
33	1/2" REAR BRAKE SHOE	2	81020		D
34	KEEPER	1 or 2	13008		D
35	KEEPER RIVET	2 or 4	1/8" DIA. X .315 GRP.		B
36	BALANCE SCREWS	1	#8 X 1" PFH		GGG
37	SCREEN ASSEMBLY	2	3/8" x 3/4"		B, Z
38	FRAME SCREWS (Optional)	2	#8 x 3/4" PPH		B, Z
39	FIXED MEETING RAIL ANCHOR SCREW	2	#8 x 1.00" PPH		B, Z
40	MEETING RAIL INSERT SCREWS	2	#8 X 1 1/2" PPH		Z
41	OPTIONAL MEETING RAIL GASKET	2 EACH	G-A302-L1G153 / G-A302-L1G154		CC

DAYTON TECHNOLOGIES
MONROE, OH COPYRIGHT 2000
NAME: 143.000SH
DWG BY: CRB
CHKD BY: 8/10/2000
DWG NO: 143000SH.XLS



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/05 Tech BL

145.000 SH FRAME - BILL OF MATERIALS - NC					SWEEPLOCK	
ITEM NO.	DESCRIPTION	QUANTITY	PART NO.	FAB DWG. NO	SOURCE	
1	HEAD	1	10008656	10008656F01	A	
2	SILL	1	10008673	10008673F04	A	
3	JAMBS	2	10008658	10008658F01	A	
4	FIXED MEETING RAIL	1	10008515	10008515F01	A	
5	SCREEN RETAINER	1	10008263	STRAIGHT CUT	A	
6	HORIZONTAL GLAZING BEAD	2	10008127	10008127F01	A	
7	VERTICAL GLAZING BEAD	2	10008127	10008127F01	A	
8	EGRESS SILL (Optional)	1	10008674	10008674F04	A	
9	FIXED MEETING RAIL INSERT	1	10008674	10008674F04	A	
10	FIXED MEETING RAIL ANCHOR	2	1539		OOO	
11	CENTER FIN WEATHERSTRIPPING	1	290 HT. x .187 BK		VVV	
12	3/4" INSULATED GLASS	AS RECD			F.I	
13	GLAZING COMPOUND	1	SBC2150		R	
14	SETTING BLOCKS (REFER TO IG SUPPLIER GUIDELINES)	AS RECD	1/8" x 3/4"		T	
15	BALANCE SYSTEM - CROSSBOW	AS RECD	36" and Less / Over 36" Wide		W	
16	BALANCE	2	1000 / 1001		BBB	
17		2	1200 / 1201		BBB	
18		2	1400 / 1401		BBB	
19		2	1600 / 1601		BBB	
20		2	1800 / 1801		BBB	
21		2	2000 / 2001		BBB	
22		2	2200 / 2201		BBB	
23		2	2400 / 2401		BBB	
24		2	2600 / 2601		BBB	
25		2	2800 / 2801		BBB	
26		2	3000 / 3001		BBB	
27		2	3200 / 3201		BBB	
28		2	3400 / 3401		BBB	
29		2	3600 / 3601		BBB	
30		2	3800 / 3801		BBB	
31		2	4000 / 4001		BBB	
32	1/2" REAR BRAKE SHOE	2	81020		D	
33	KEEPER	1 or 2	13008		D	
34	KEEPER RIVET	2 or 4	1/8" DIA X .315 GRP		B	
35	BALANCE SCREWS	2	#8 X 1" PFH		B	
36	SCREEN ASSEMBLY	1	3/8" x 3/4"		GGG	
37	FRAME SCREWS (Optional)	2	#8 x 3/4" PPH		B.Z	
38	FIXED MEETING RAIL ANCHOR SCREW	2	#8 x 1.00" PPH		B.Z	
39	MEETING RAIL INSERT SCREWS	4	#8 X 1 1/2" PPH		B.Z	
40		2			Z	
Rev	Date	Description	By			
DAYTON TECHNOLOGIES						
MONROE, OH COPYRIGHT 2003						
NAME: 145.000SH						
DWN BY: CRB 10/12/2003						
CHKD BY:						
DWG NO: 145000SH.XLS						



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/05 Tech BZ

000.095 SH SASH - BILL OF MATERIALS

ITEM NO.	DESCRIPTION	QUANTITY	PART NO.	FAB DWG. NO	SOURCE
26	LOCK RAIL	1	P8845	P8855-F-06	A
27	STILE	2	P8842	P8852-F-09	A
28	BOTTOM LIFT RAIL	1	P8840	P8850-F-03	A
29					
30	BULB SEAL	1	P8206 / P8202	P8206F01 / P8202F01	A
31	HORIZONTAL GLAZING BEAD	2	P8127	P8127-F-01	A
32	VERTICAL GLAZING BEAD	2	P8127	P8127-F-01	A
33					
34					
35					
36	SASH REINFORCEMENT	1	A6202	A6202-F-01	EEE
37	CENTER FIN WEATHERSTRIPPING	AS REQD	.187 BK. x .290 HT.		
38					
39	LOCK /CAM	1 OR 2	L20010001R01		D
40					
41	TILT LATCH ASSEMBLY	2	78045 / 78145		D
42	PIVOT BAR - 1" SHAPED LOCK IN	2	13036		D
43	PIVOT BAR - STRAIGHT LOCK IN	2	12310 (WILL REQ. DIFFERENT FAB)		D
44	SETTING BLOCKS (refer to IG Supplier Guidelines)	AS REQD	1/8" x 3/4"		
45	GLAZING COMPOUND	2 OR 4	#8 x 3/4 PAINTED PFH		
46	LOCK SCREW	1	#8 x 3/8 PPH		
47	3/4" INSULATED GLASS	4			
48	PIVOT BAR SCREW	2	P8487		A
49					
50	OPTIONAL SASH STOP	2	P5109		A
51	OPTIONAL BALANCE COVER	2			

DAYTON TECHNOLOGIES

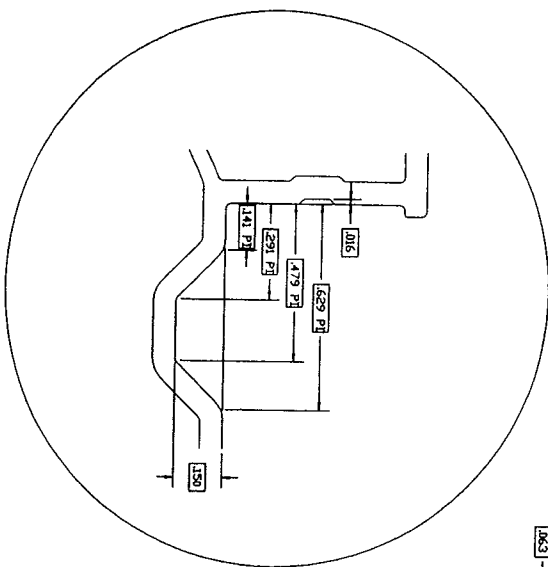
MONROE, OH COPYRIGHT 2004
 NAME: 000.095SH
 DWN BY: CRB 4/6/2004
 CHKD BY:
 DWG NO: 000.095SH.XIS



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
 Date 3/05 Tech E32

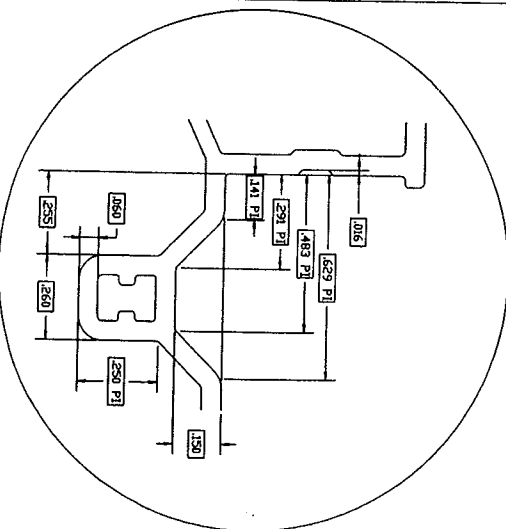


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[illegible]

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/05 Tech ESL



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[illegible]

Test sample complies with these details.
Deviations are noted.

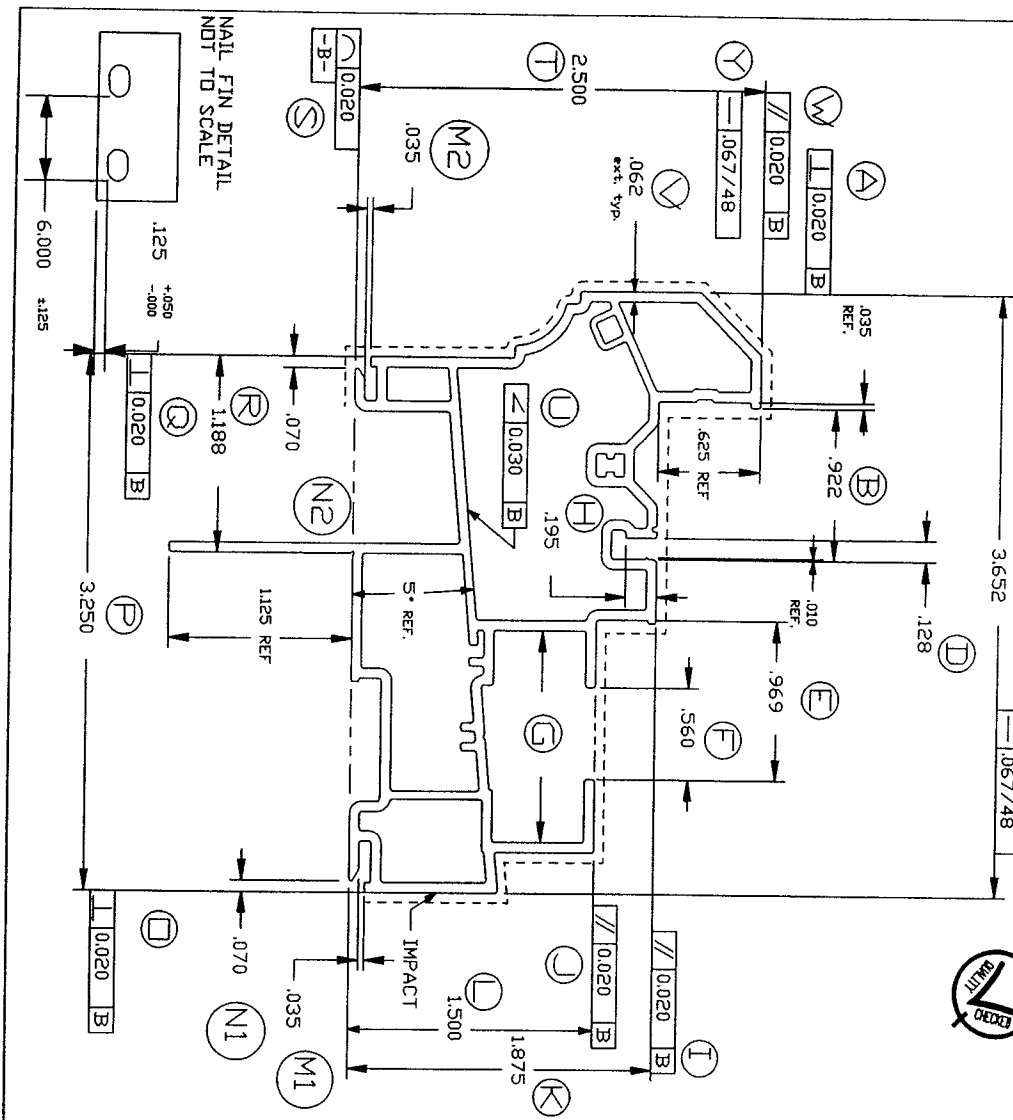
Report# 54089
Date 3/65 Tech 31

UNLESS OTHERWISE NOTED THE FOLLOWING TOLERANCES APPLY

.001 - .010	±.005	1.001 - 1.500	±.020
.011 - .500	±.010	1.501 - 2.000	±.025
.501 - 1.000	±.015	2.001 - 4.000	±.030
UNSPECIFIED ANGLES	±1°	WOODGRAIN SURFACES	ADD .007"
EXPOSED SURFACE		WOODGRAIN SURFACE	

COLOR	WH	DS	EB	W	OTH	CREME	WHITE
PART WT. (LBS/FT)							
RIGID							
CAP							
FLEX							
ALUM							
STEEL							
TOTAL							

- NOTES:
1. EXTERIOR WALL THICKNESS CRITICAL: TO BE MEASURED ON ALL 4 SIDES.
 2. INTERIOR WALL THICKNESS REFERENCE.



PROFILE: 8686

REV	DESCRIPTION	DATE	ENG.
1			

FITS WITH: P8687, P8673, P8127, P5470

IMPACT AREA: NOTED

CONTROL DIMENSIONS

DIM	METH	MIN	ENG	MAX	DIM	METH	MIN	ENG	MAX
A	V	.1020	B	U	V	V	≤	0.030	B
B	V	.902	.922	.942	V	V	.1052	.062	.072
C	V	3.622	3.652	3.682	V	V	∥	0.020	B
D	V	.118	.128	.138	X	G		.067/48	
E	V	.949	.969	.989	Y	G		.067/48	
F	V	.545	.560	.575	Z				
G	G	GALVEE IV - 2			AA				
H	V	.185	.195	.205	BB				
I	V	∥	0.020	B	CC				
J	V	∥	0.020	B	DD				
K	V	1.835	1.875	1.895	EE				
L	V	1.480	1.500	1.520	FF				
M	V	.025	.035	.045	GG				
N	V	.050	.070	.090	HH				
O	V	∥	0.020	B	II				
P	V	3.220	3.250	3.280	JJ				
Q	V	∥	0.020	B	KK				
R	V	.1168	.1188	.1208	LL				
S	V	∥	0.020	B	MM				
T	V	2.480	2.500	2.520	NN				

DAYTON TECHNICAL INDUSTRIES
351 N. ORKUTZ RD.
MUNDOO, OHIO 43050

NAME: MAIN FRAME - SH

DRAWN BY: CRB DATE: 5/22/00

CHECKED BY: DATE:

FILENAME: /pd/ug/profiles/p8686.prt

SCALE: 1:1 DWG NO: p8686.prt



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/05 Tech ERL

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	DIM ARE IN INCHES	DATE	8/20/78
	1" = 16" MAX. 1/4" = 1/8"	DESIGN BY	JEL
	INTERPRET DIM AND TOL PER ASME Y14.5M - 1974	DATE	8/20/78
	THIRD ANGLE PROJECTION	DATE	8/20/78
	NAME	SILL FRAME - SH/DH	
	DWG. NO.	10008673	
	SCALE: 2 1/4" = 1"	SHEET 3	
	REVISION		



Report# 54089
Date 3/05 Tech C32

PART WT. (LBS./FT.)	COLOR ☒ WH ☒ DS ☐ EB ☐ <u>3</u> DTH <u>CEMENT WHITE</u>				
	RIGID	CAP	FLEX	ALUM	STEEL
	.772				
					TOTAL .772

REVISIONS

DESCRIPTION	INTERNAL WALL
1.00	1.00
2.00	2.00
3.00	3.00
4.00	4.00
5.00	5.00
6.00	6.00
7.00	7.00
8.00	8.00
9.00	9.00
10.00	10.00
11.00	11.00
12.00	12.00
13.00	13.00
14.00	14.00
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99.00	99.00
100.00	100.00

FITS WITH

FLINT WILM

P8686, P8127, P5470

IMPACT AREA

IMPACT AREA

CONTROL DIMENSIONS									
ITEM	UNIT	QTY	UNIT	QTY	UNIT	QTY	UNIT	QTY	UNIT
1									
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67				</					

DIFF	MEHT	MIN	ENG	MAX	DIM	MEHT	MIN	ENG	MAX
A	✓	☐	0.020	☐	U				
B	✓	3.630	3.632	3.690	✓				
C	✓	.902	.922	.942	✓				
D	✓	.118	.128	.138	X				
E	✓	.180	.195	.205	Y				
F	✓	☐	0.020	☐	Z				
G	✓	.1855	.1875	.1895	AA				
H	✓	☐	0.020	☐	BB				
I	✓	☐	0.020	☐	CC				
J	✓	.1480	.1500	.1520	DD				
K	✓	☐	0.020		EE				
L20	✓	.025	.035	.045	FF				
M20	✓	.050	.070	.090	GG				
N	✓	3.220	3.250	3.280	HH				
O	✓	.1168	.1188	.1208	II				
P	✓	☐	0.020	☐	JJ				
Q	✓	2.470	2.500	2.530	KK				
R	✓	.060	.070	.080	LL				
S	g	☐	0.067/.48		MM				
T	g	☐	0.067/.48		NN				

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351 N. GARVER RD.
DAYTON, OH 45424

NAME:	HEAD FRAME - SH (143,000 PW FRAME)
-------	------------------------------------

BY:	CRB	DATE:	5/12/00
CHECKED BY:		DATE:	

FILENAME: /pd/cad/parts/10008687-A

SCALE:	1 : 1	DWG NO.	10008687-A	A
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Architectural Testing

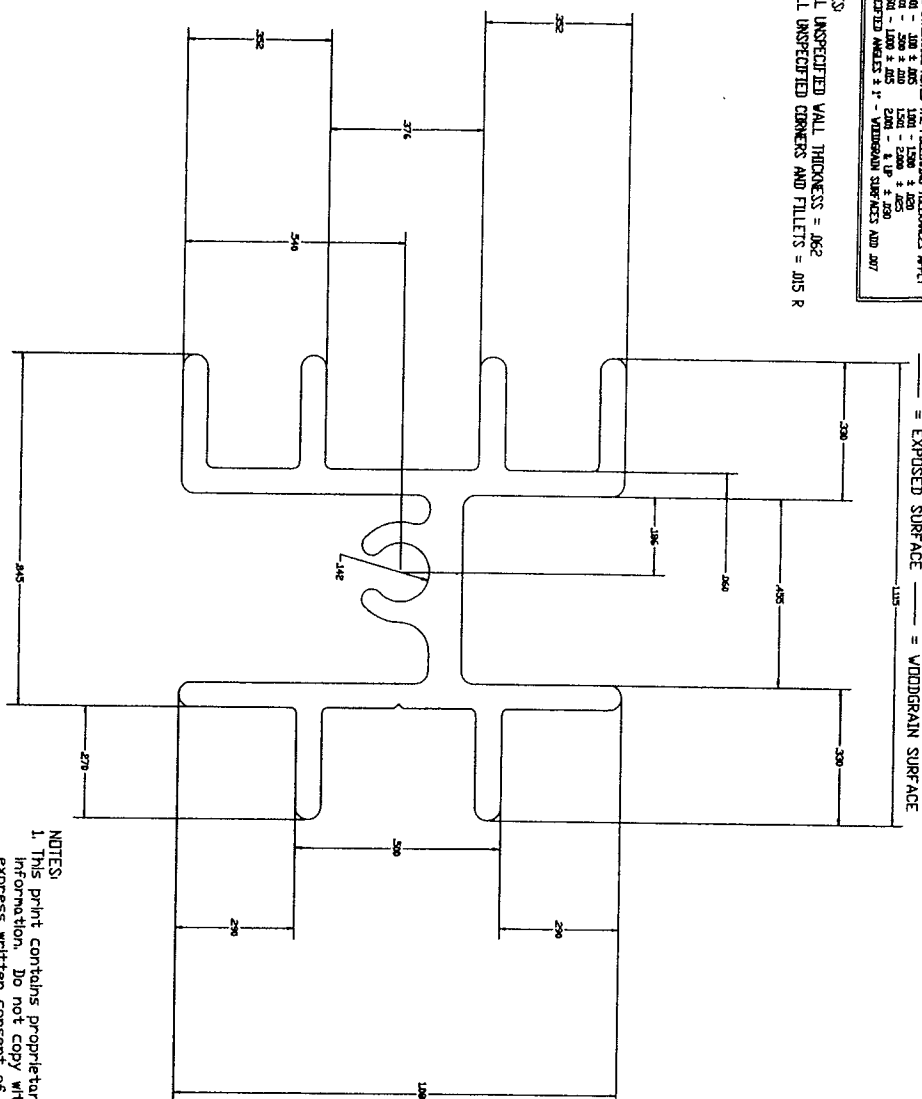
Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/05 Tech EL

NOTES

1. ALL UNSPECIFIED WALL THICKNESS = .062

2. ALL UNSPECIFIED CORNERS AND FILLETS = .015 R



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.

DE V.	JANIL	DESCRIPTION	BY
	-/-/-	DATE: 10/10/2020	

Part Wt (lbs/ft)	Rigid	Cap	Flexi	Alumi	Total
2000-2000-2000		2000-2000-2000	2000-2000-2000	.341	.341
2000-2000-2000		2000-2000-2000	2000-2000-2000	.341	.341

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AN ACCEL CORP. COMPANY

WOMEN FIRST

AN ALCIA COMPANY

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MEETING RAIL REINFORCEMENT

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g. 1

WIDEN A300 GEN SOFT MFC

Yours truly,

Journal of Management Education

Page No. AO103

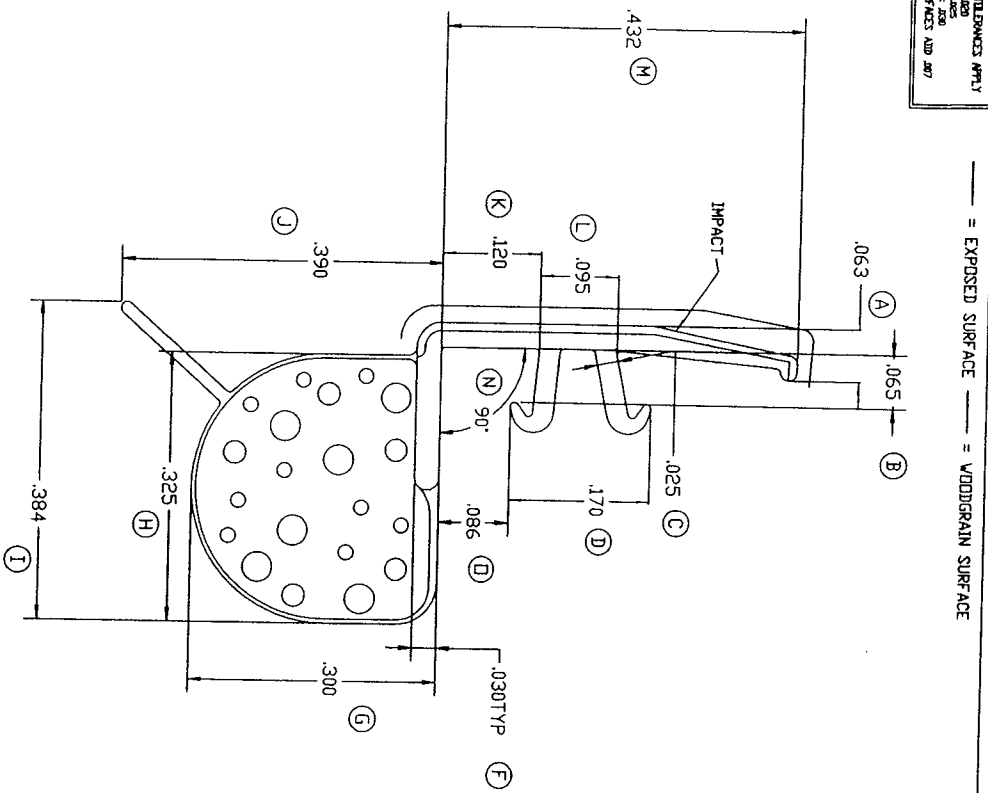


Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/05 Tech ESL

UNLESS OTHERWISE NOTED THE FOLLOWING TOLERANCES APPLY
 .001 - .004 ± .001
 .005 - .009 ± .001
 .010 - .019 ± .002
 .020 - .049 ± .003
 .050 - .099 ± .004
 .100 - .499 ± .005
 .500 - 1.99 ± .006
 2.000 - 4.99 ± .007
 5.000 - 9.99 ± .008
 10.000 - 49.99 ± .009
 50.000 - 99.99 ± .010
 100.000 - 499.99 ± .012
 500.000 - 999.99 ± .015
 1000.000 - 4999.99 ± .020
 5000.000 - 9999.99 ± .025
 10000.000 - 49999.99 ± .031
 50000.000 - 99999.99 ± .039
 100000.000 - 499999.99 ± .050
 500000.000 - 999999.99 ± .063
 1000000.000 - 4999999.99 ± .080
 5000000.000 - 9999999.99 ± .010



REV.	DATE	DESCRIPTION	BY
A	07-23-97	REVISED SWAP AREA & LEAF LENGTH	Joe L
B	08-25-97	REVISED SWAP DIM 7" & 7'	Joe L
C	10-06-97	ADD TYP DIMENSIONS 7" & 7"	Joe L
D	10/13/97	REMOVE "C" & CHANGE 7"	Joe L

7/15 YTH

5480M, 5481, 5700M, 8160, 8880

REV. CLASS		B		IMPACT AREA		NOTED			
CONTROL DIMENSIONS									
DIM	MEIN	MIN	ENG	MAX	DIM	MEIN	MIN	ENG	MAX
A	V	.048	.053	.078	X	---	---	---	---
B	V	.050	.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	---	---	---	---
D	V	.076	.086	.096	LL	---	---	---	---
P	---	---	---	---	MM	---	---	---	---
Q	---	---	---	---	NN	---	---	---	---
R	---	---	---	---	OO	---	---	---	---
S	---	---	---	---	PP	---	---	---	---
T	---	---	---	---	QQ	---	---	---	---
U	---	---	---	---	RR	---	---	---	---
V	---	---	---	---	SS	---	---	---	---
V	---	---	---	---	TT	---	---	---	---
Part Vt	Rigid	Cap	Flexi	Alum	Total	---	---	---	---
Class/FB	.014	.003	.039	---	.056	---	---	---	---

DAYTON TECHNOLOGIES

WATER

KORNER, DAVID

LEAF BULB SEAL

JOHN JIN

JOE L

DAVID

12 June 1997

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DAYTON TECHNOLOGIES

Copyright 1995

LEAF BULB SEAL

Joe L 12 June 1997

8 1 1 7" 8" DAY DIMS DAY DIM DIM

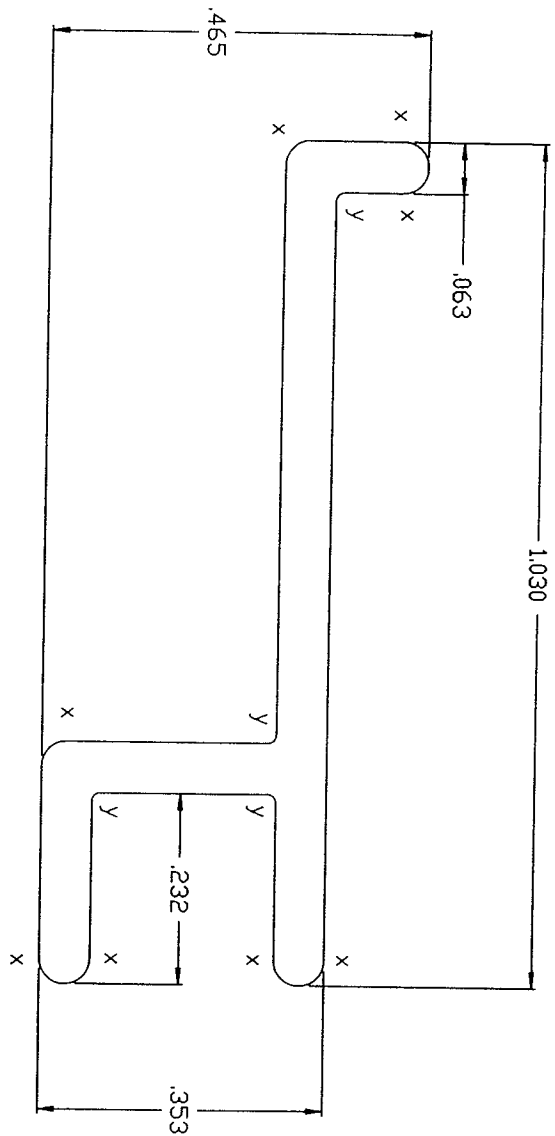
8206 P8206-D



Architectural Testing

Test sample complies with these details.
 Deviations are noted.

Report# 54089
 Date 3/09 Tech PZL



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

Standard Commercial Tolerances
Apply Unless Otherwise Noted

Area :		.103 Sq. In.	
Weight :		.123 Lb./Ft.	
Standard Commercial Tolerances Apply Unless Otherwise Noted			
DAYTON EXTRUDED PLASTICS SPRINGBORO, OHIO Copyright 1994			
NAME:		0093 SASH REINFORCEMENT	
MATERIAL(S)		ALUMINUM	
DRAWN BY:		DAS	
DATE:		3/22/94	
CHECKED BY:		DATE:	
SCALE:		5 : 1 "A"	
CUST. PART NO.		6202	
DATE:		3/22/94	
PART NO.		A6202	
DIE NO.		6202	

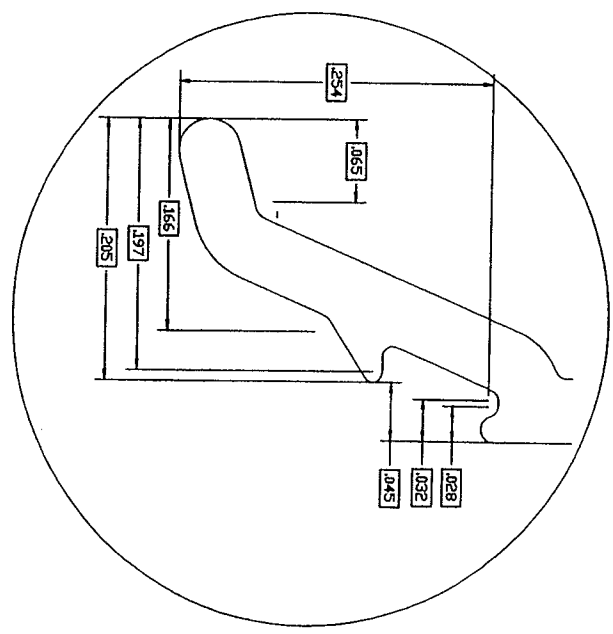
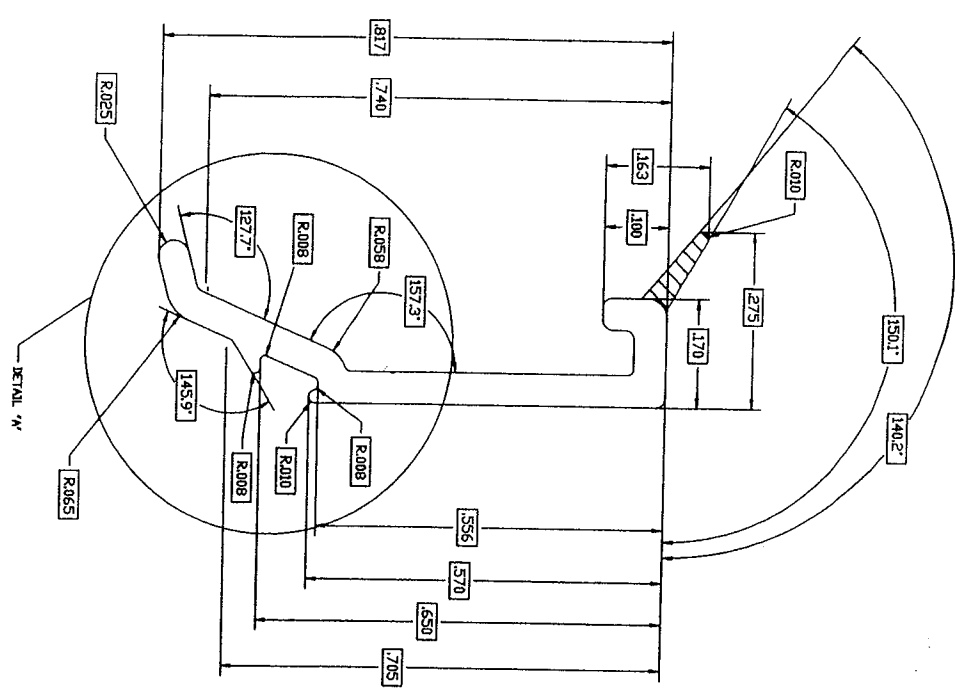


Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/05 Tech BSL

CAD DRAWINGS SHALL BE INCORPORATED INTO DESIGN ACTIVITY.



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UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES	
TOLERANCES		TOL. ON ANGLE ± 1°	
2 PL ± .015		3 PL ± .005	
INTERSECTIONS		DIM AND TOL. PER	
UNLESS NOTED OTHERWISE		THIRD ANGLE PROJECTION	
DESIGNED BY		DATE	
DRAWN BY		DATE	
CHECKED BY		DATE	
APPROVED BY		DATE	
PROJECT NO.		SCALE	
SHEET NO.		SHEET	

Dayton

GLAZING BEAD

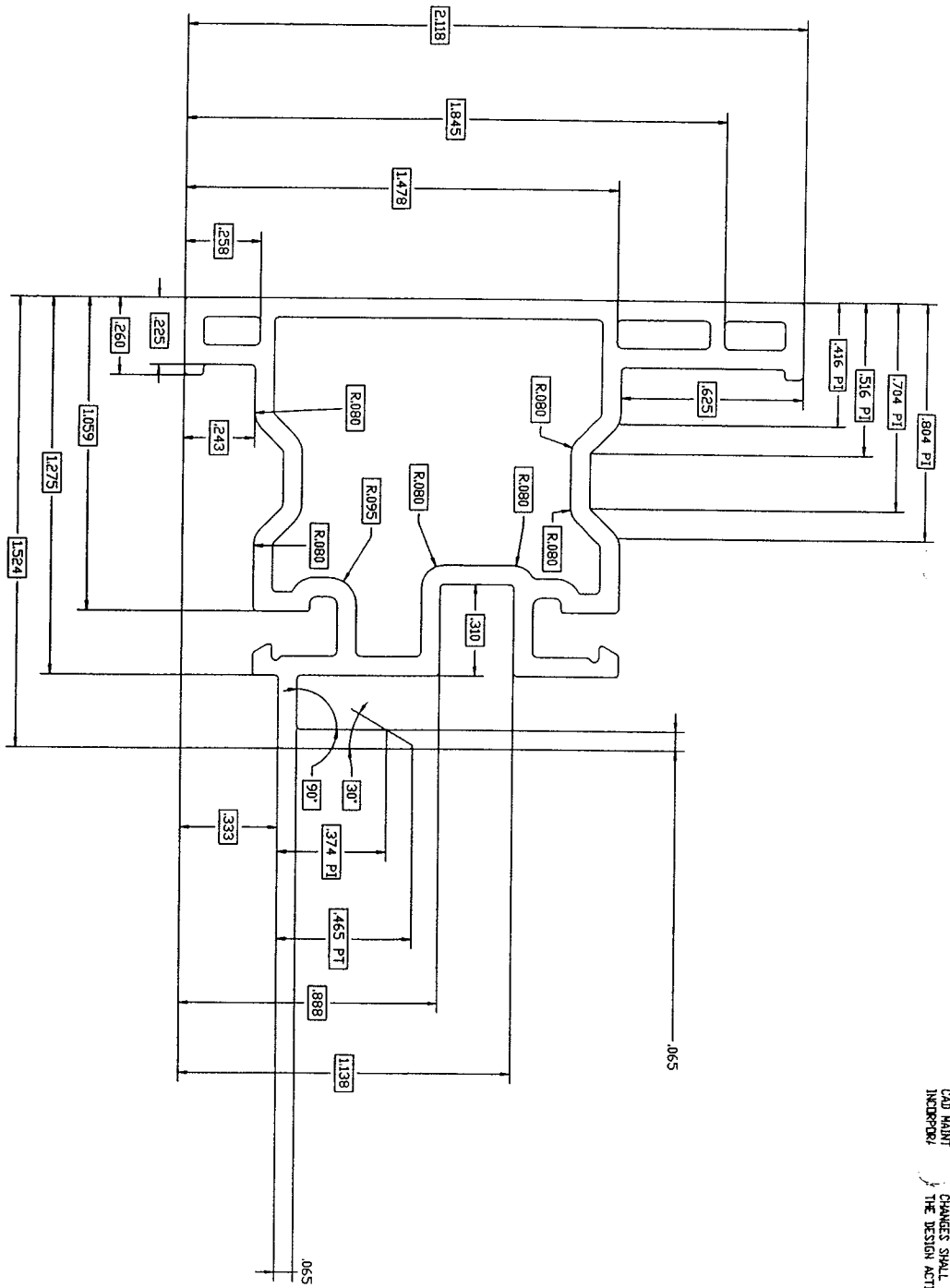


Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/05 Tech ESL

CAD MAINT
CHANGES SHALL BE
INCORPORATED
THE DESIGN ACTIVITY.



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TO CHANGE THIS DRAWING AND ANY
ASSOCIATED DOCUMENTS.

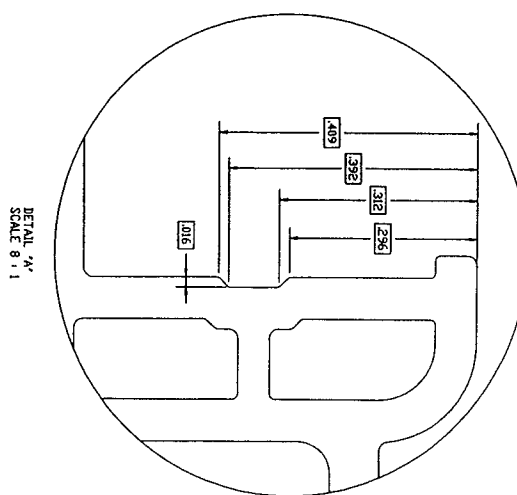
UNLESS OTHERWISE SPECIFIED		DESIGN BY: CDB	
DIM ARE IN INCHES		DATE: 02/07/02	
TOL. IN ANGLE ± 1°		DRAWN BY: CDB	
2 PL ± .01, 3 PL ± .005		DATE: 02/06/06	
INTERSECT ± .005		DATE: 02/06/06	
HOLE SIZE .115 DIA. ± .004		DATE: 02/06/06	
THIRD ANGLE PROJECTION		DATE: 02/06/06	
		TITLE: FIXED MEETING RAIL DIV. NO: 10008515, SRS SCALE: 4:1 (1/8"=1'-0") SHEET: 3	



Architectural Testing

Test sample complies with these details.
Deviations are noted.

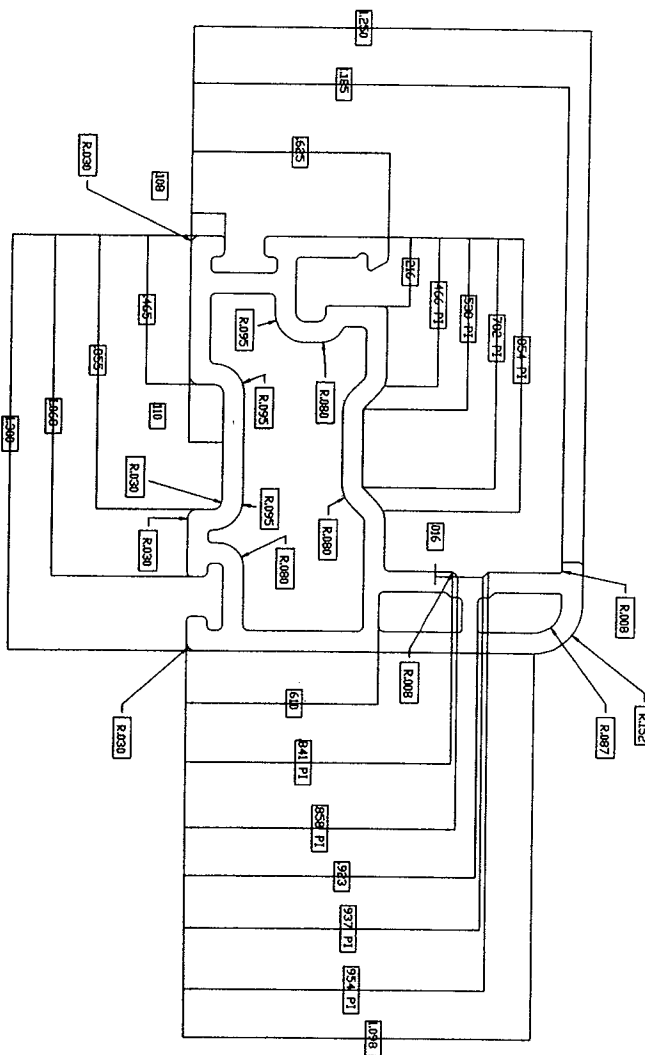
Report# 54089
Date 3/05 Tech B31



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DESIGN BY: CRB DATE: 03/11/07 DRAWN BY: CRB DATE: 03/11/08 AUTH:		PULL/LIFT SASH DATE:		TITLE: 1000B840.SHS3 SHEET: 3	
DAYTON 985 Sevincum Drive Dayton, OH 45424		PULL/LIFT SASH		SCALE: 1/8" = 1'-0" SHEET: 3	



Report# 54089
Date 3/05 Tech E32



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DESIGN BY: CR3 DATE: 03/11/06 DRAWN BY: CR3 DATE: 03/11/06		ITEM NAME: 10008842 SH3 10008842 SH3A		DATE: 03/11/06 SCALE: 4:1	
DAYTON 10008842 SH3A 10008842 SH3		MAIN SASH		REV: 1 DATE: 03/11/06	



Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/65 Tech ESL

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		DAYTON DAYTON ENGINEERING & MANUFACTURING COMPANY DAYTON, OHIO 45424-1099	
UNLESS OTHERWISE SPECIFIED DIM ARE IN INCHES 2 PL. 4 IN. DIA. PINS INTERPCT DIM AND TOL. ASME Y14.5M - 1994		DECISION BY: CR3 DATE: 03/21/11 DRAWN BY: CR3 DATE: 03/21/11 THIRD ANGLE PROJECTION	
		MATERIALS: 1040/cad/parts/8845/ 10008845.SHG	
SCALE: 4:1 (3.5:1)		DWG. NO. 10008845.SHG	
SHEET 3		KEY:	
LDCX SASH			

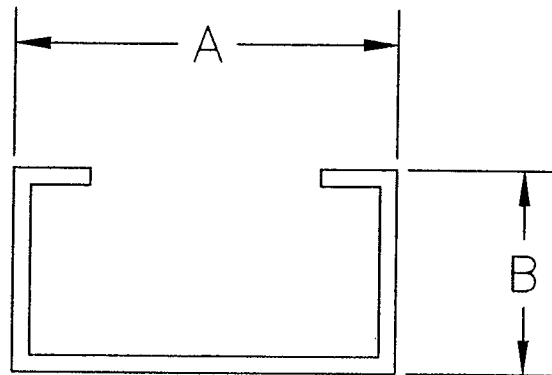


Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/05 Tech EBL

[illegible]

SPACER



Material: STEEL
Width (A): 0.512, 0.45", 0.325"
Height (B): 0.300"
Wall Thickness: 0.010"

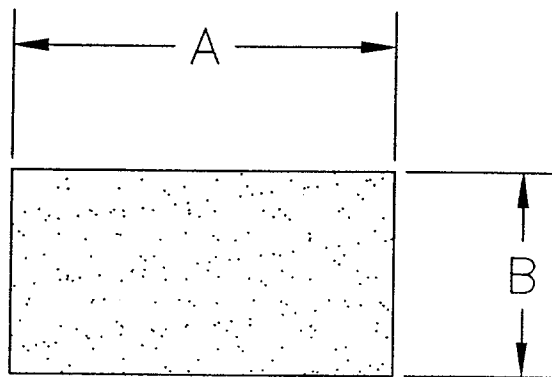


Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/30/05 Tech ESL

SPACER



Material: SILICONE FOAM
Width (A): 0.563, 0.500, 0.375
Height (B): 0.188
Wall Thickness: N/A

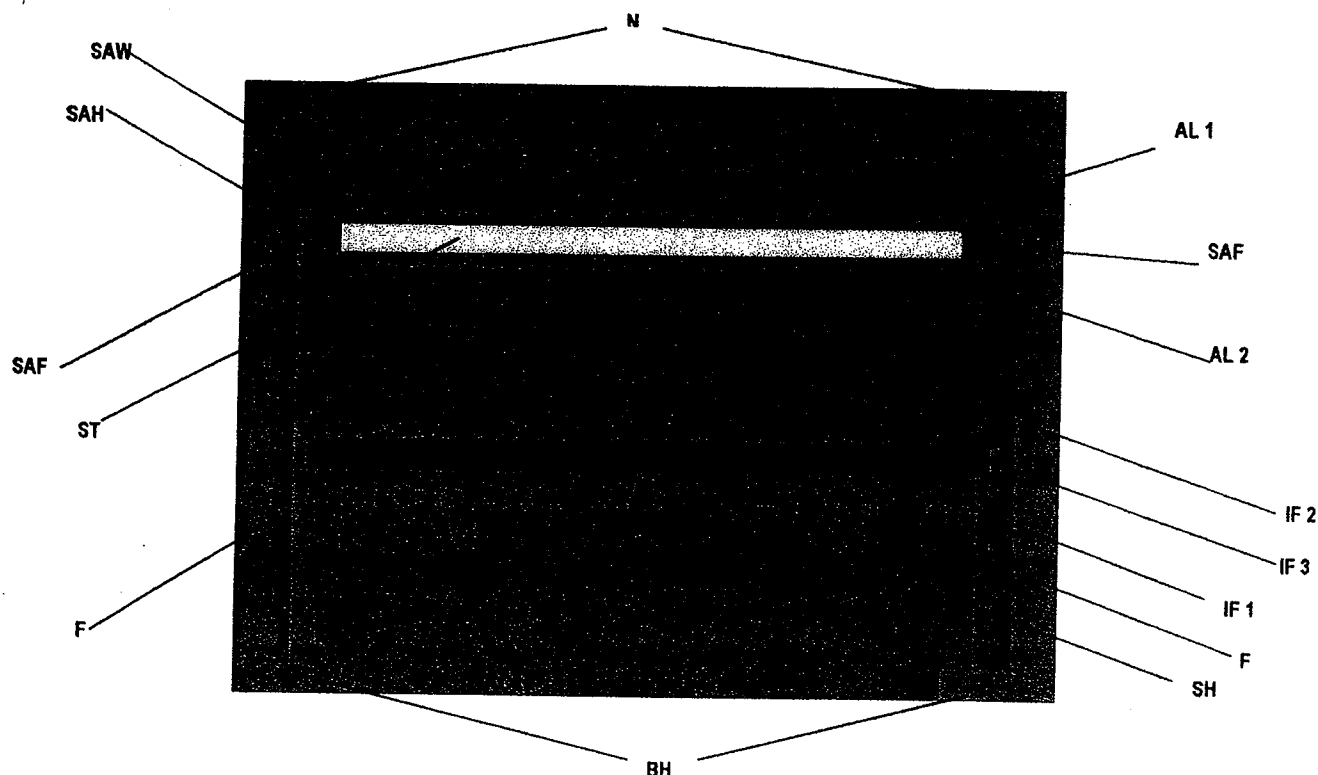


Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/30/03 Tech ES

Legend



Description

Material and Conductivity Imp SI

N	71X	Butyl 1.603 Btu in/hr ft ² °F	0.231 W/m/°C
BH	71X	Butyl 1.603 Btu in/hr ft ² °F	0.231 W/m/°C
TL	71X	Butyl 1.603 Btu in/hr ft ² °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 ² °F	0.221 W/m/°C
SH	Shim	Default aluminum	Default aluminum
AL 1 2	Adhesive	Butyl 1.603 Btu in/hr ft ² °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 ² °F	0.231 W/m/°C
IF 1 2 3	Adhesive	Butyl 1.603 Btu in/hr ft ² °F	0.231 W/m/°C
F	Adhesive	Butyl 1.603 Btu in/hr ft ² °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



Architectural Testing

Test sample complies with these details.
Deviation: none noted.

Report#

54089

Date

3/30/05

ESL

Aircraft	PRD.	CODE	Internal					Exterior				
			Decid.	Alapure	BY	W	H	Decid.	BY	W	H	
376	185		0.185	1.778	0.185-0.277	0.281-1.185	4.382	4.381	4.381-4.501	7.38-7.682		
1584	208		0.208	0.208	0.208-0.285	0.281-0.285	8.100	8.04	8.04-8.06	7.38-7.682		
14	298		0.298	0.298	0.298-0.327	0.328-0.327	8.40	8.07	8.07-8.08	7.18-7.42		
576	378		0.378	0.378	0.378-0.385	0.385-0.385	7.50	7.50	7.50-8.08	7.18-7.42		
1182	248		0.248	0.248	0.248-0.377	0.381-0.377	8.70	8.38	8.38-8.47	7.18-7.42		
38	378		0.378	0.378	0.378-0.404	0.404-0.404	8.50	8.14	8.14-10.08	7.38-7.42		
1232	418		0.418	0.418	0.418-0.438	0.438-0.438	10.30	10.54	10.54-11.05	7.18-7.42		
778	438		0.438	0.438	0.438-0.457	0.457-0.457	11.10	10.23	11.12-11.86	7.18-7.42		
1822	478		0.478	0.478	0.478-0.484	0.484-0.484	11.80	11.43	11.43-12.05	7.18-7.42		
3104	488		0.488	0.488	0.488-0.498	0.498-0.498	12.30	11.43	12.31-12.81	7.18-7.42		
122	508		0.508	0.508	0.508-0.517	0.517-0.517	12.70	12.37	12.70-13.48	7.18-7.42		
1722	528		0.528	0.528	0.528-0.537	0.537-0.537	13.80	13.08	13.48-14.32	7.38-7.682		
376	588		0.588	0.588	0.588-0.598	0.598-0.598	14.30	13.91	14.30-15.04	7.38-7.682		
3884	618		0.618	0.618	0.618-0.638	0.638-0.638	15.50	15.24	15.47-16.21	7.38-7.682		
58	678		0.678	0.678	0.678-0.684	0.684-0.684	16.80	16.48	16.48-16.81	7.38-7.682		
1178	698		0.698	0.698	0.698-0.717	0.717-0.717	17.80	17.08	17.48-18.21	7.38-7.682		
1278	818		0.818	0.818	0.818-0.848	0.848-0.848	20.00	20.20	20.45-21.38	7.38-7.682		
True Usage:												

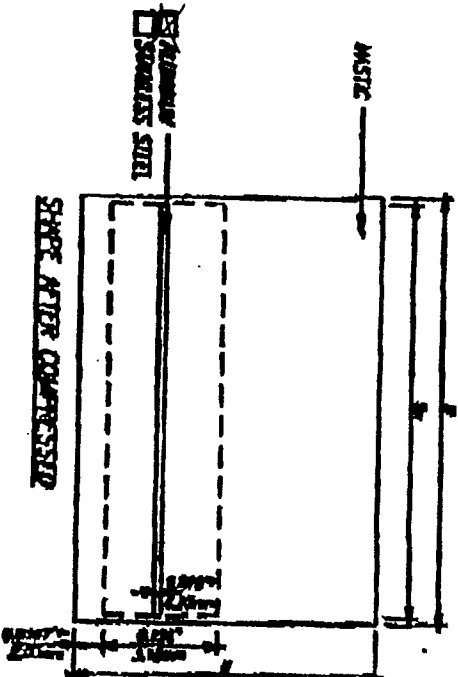
True Library:



Architectural Testing

Test sample complies with these details.
Deviations noted.

Report# 54089
Date 3/30/05 Tech BL

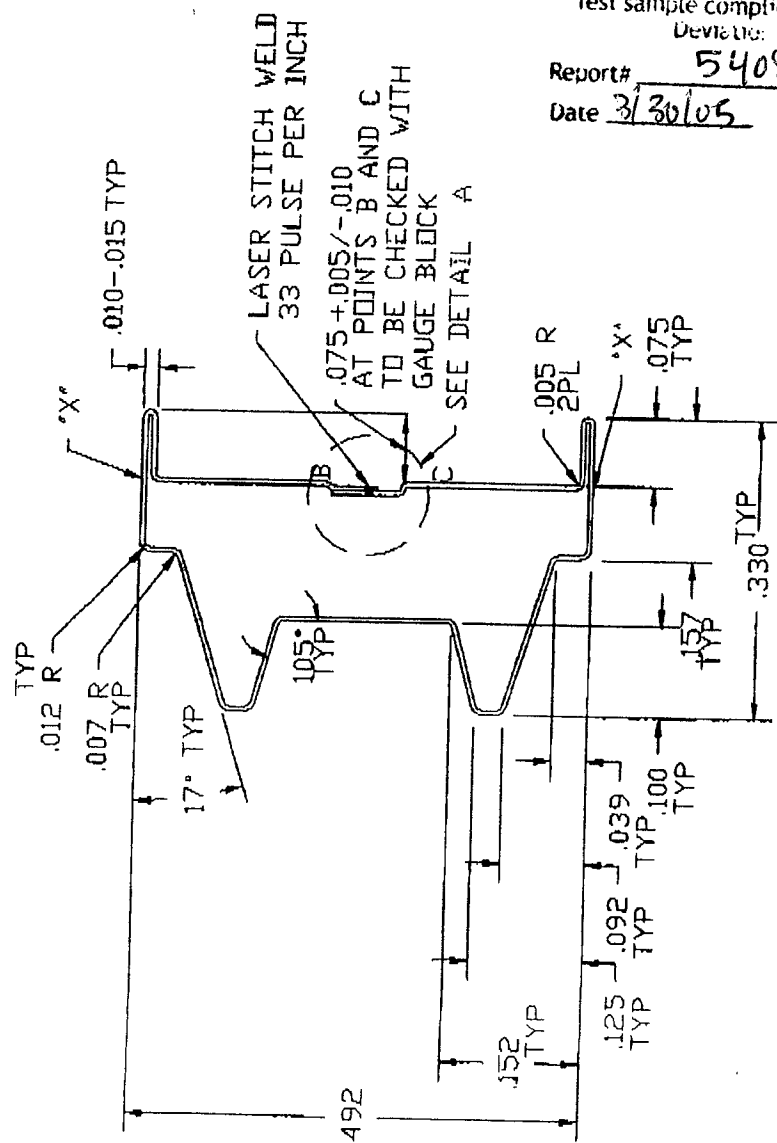


TRUSSEI
Technologies

SPACER LIBRARY
FOR SIMULATIONS

SINGLE SEAL

CAE
29 SEPT 00
M.I.S.



1. MATERIAL: 201 STAINLESS STEEL, .0050 +/- .00025 WALL THICKNESS, ANNEALED TEMPER, 1 CBA FINISH.
2. LASER STITCH WELD 33 PULSE PER INCH, NO EXTERIOR FLASH, NO THROUGH BURNS.
3. SURFACES LABELED "X" MUST BE PARALLEL TO EACH OTHER.
4. SPACER MUST BE CLEAN AND FREE OF DIRT AND OILS.



Test sample complies with these details.
Deviation: Not noted.

Date 31/30/05 Tech ESL

[illegible]



ALLMETAL

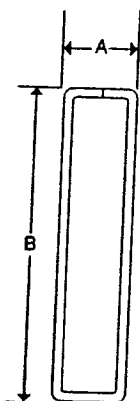
Muntin Bar

Painted, Mill Finish and Anodized Aluminum

TOLERANCE

A, $\pm .005$.127mm

B, $\pm .005$.127mm



The seller hereby expressly disclaims all warranties either expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose. Products are sold 'As Is' and on the condition that the purchasers shall make their own tests to determine the merchantability of such products and their fitness for any particular purpose. The liability of ALLMETAL, INC. for special, indirect or consequential damages for injury to a property for any reason or for any other loss resulting from a product defect or failure shall be limited to the purchase price of the product.

SPECIAL NOTICE

Cleaning and Handling of Muntin Bar

We recommend muntin bar to be wiped clean before installation into an insulating glass unit. A household grade liquid cleaner may be used for this purpose.

To avoid breakdown of painted surfaces, do not use M.E.K., Triethane, Alcohol or like substances for the cleaning of painted muntin bar.

When machining and processing muntin bar in your plant, keep saw tables and work areas free of saw cut filings to avoid scratching the painted surfaces.

FRACTIONAL DECIMAL IN INCHES

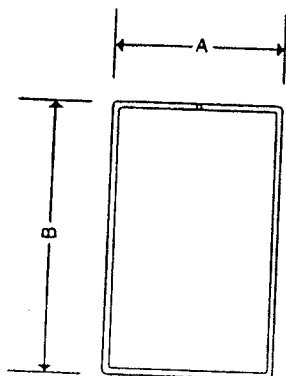
Size	A	B
3/16x1/2	.187	.500
3/16x9/16	.187	.551
3/16x5/8	.187	.630
* 3/16x.610	.187	.610
3/16x3/4	.187	.775
3/16x13/16	.187	.801
3/16x1	.187	1.000
1/4x5/16	.235	.313
1/4x9/16	.235	.562
1/4x5/8	.235	.625
1/4x3/4	.235	.765
1/4x1	.235	1.000
3/8x5/8	.325	.625
3/8x3/4	.325	.750
3/8x7/8	.325	.875
3/8x1	.325	1.000
1/2x3/4	.500	.750
1/2x1/2	.500	.500
1/2x1	.500	1.000
7/16x3/8	.425	.375
7/16x5/8	.438	.625
7/16x1	.438	1.000
5/8x5/8	.625	.625

* Available in Tutone

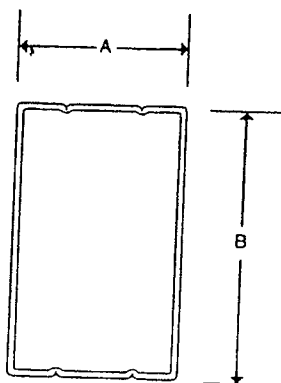
Muntin Bar-ZT & PT - Laser-Welded

Mill Finish and Anodized Aluminum

TOLERANCE



'Zippered' Top



Perforated Top

FRACTIONAL DECIMAL IN INCHES

Size	A	B
.187 x .500	.187	.500
.187 x .625	.187	.625
.187 x .750	.187	.750
.187 x 1.00	.187	1.00
.235 x .500	.235	.500
.235 x .625	.235	.625
.235 x 1.00	.235	1.00
.250 x .750	.250	.750
.312 x .500	.312	.500
.312 x .625	.312	.625
.325 x .500	.325	.500
.325 x .625	.325	.625
.325 x .750	.325	.750
.325 x .875	.325	.875
.325 x 1.00	.325	1.00
.375 x .500	.375	.500
.375 x .625	.375	.625
.437 x .500	.437	.500
.500 x .500	.500	.500
.437 x .625	.437	.625
.625 x .625	.625	.625



Architectural Testing

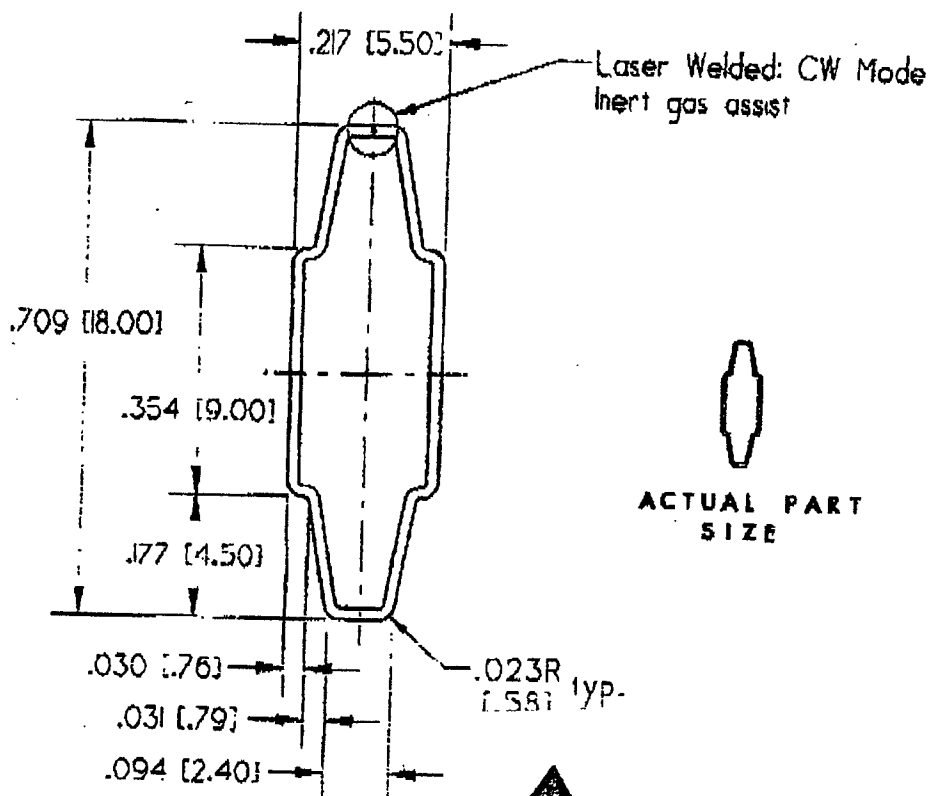
Test sample complies with these details.
Deviation noted.

Report# 54089

Date 3/30/05

tech 82

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



Architectural Testing

Test sample complies with these details.
Deviation noted.

Report# 54089

Date 3/30/05

Tech 92

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

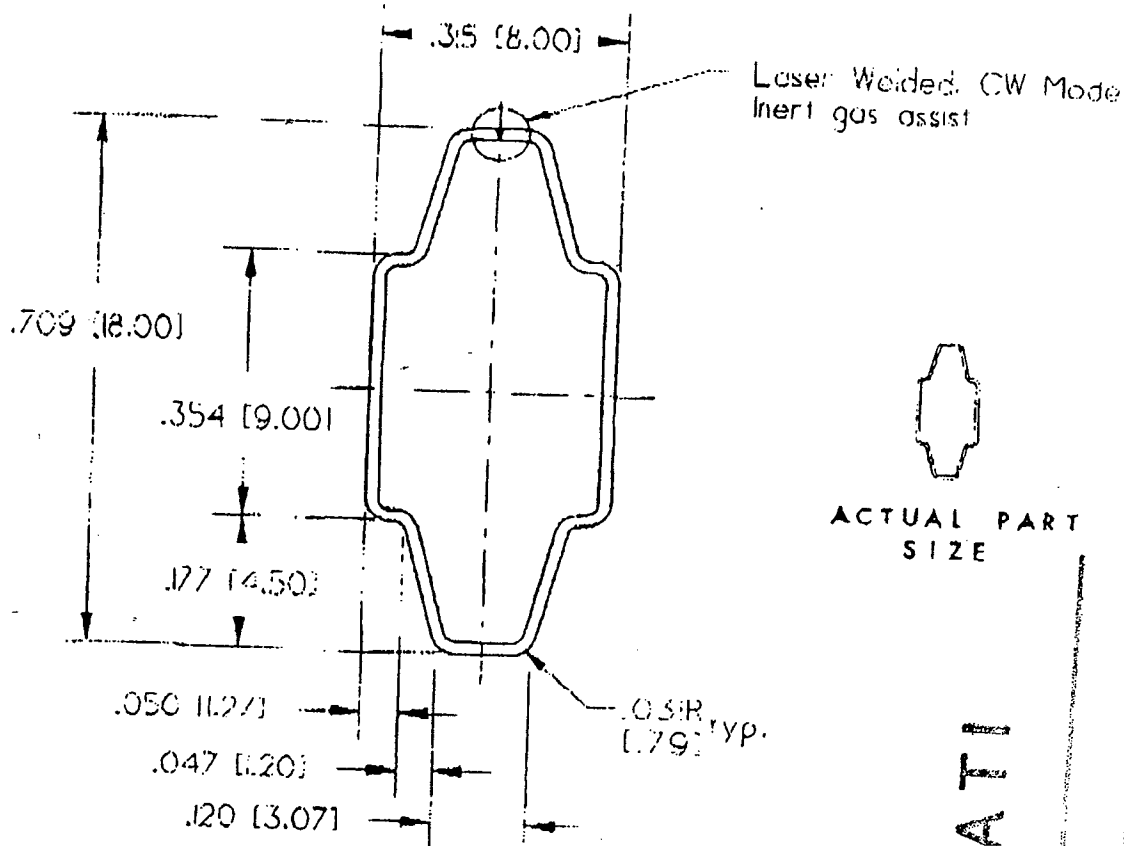
ALLMETAL

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.

TOLERANCES EXCEPT AS NOTED		TITLE 5.5 x 18mm Contour Muntin Bar (CMB)		DRN. BY G. Matthews
DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002		MATERIAL .016" [.41mm] 3105 Aluminum		CK. BY
DECIMAL MM .XX .XXX ± .13 .06		FINISH FULL RANGE (MILL. ANOD., PAINTED)		APPR. BY
ANGULAR ± 1°		SCALE 4:1	DATE 4/17/97	DWG. NO. 1020301010XX255

FILENAME:CM85518J

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



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54084
Date 3/30/05 Tech 81

4/17/97		Weld note changed, I
12/9/97		Initial Release
DATE	SYM.	



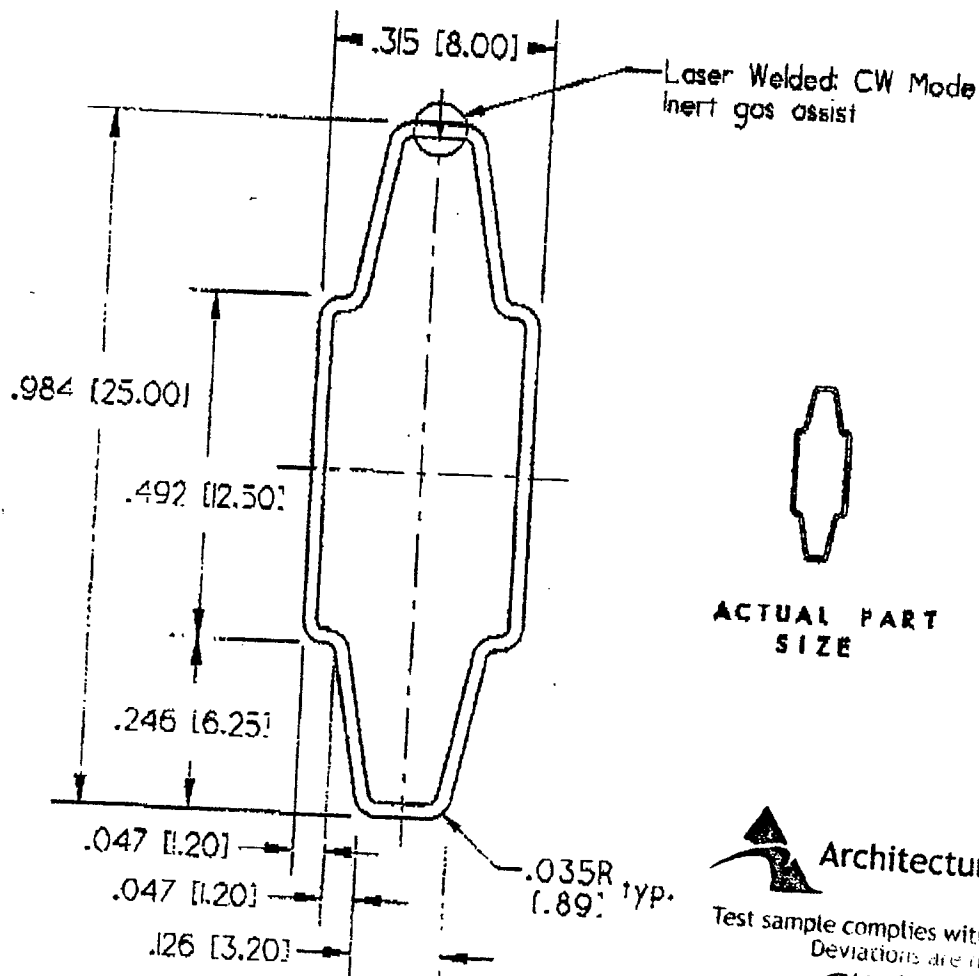
ALLMETAL

DRM	
DRM	
DRN	CK
HETARY	OR WHOLLY
ION OF	

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

FILENAME: CMB818J

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



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089

Date 3/30/05 Tech SL

4/17/97		Weld note changed. Title block changed			
4/1/95		Gauge changed from .016 to .020			GRM
12/9/92		Initial Release			GRM
DATE	SYN.	REVISION			GRM
			AUTH.	DRN.	CK.



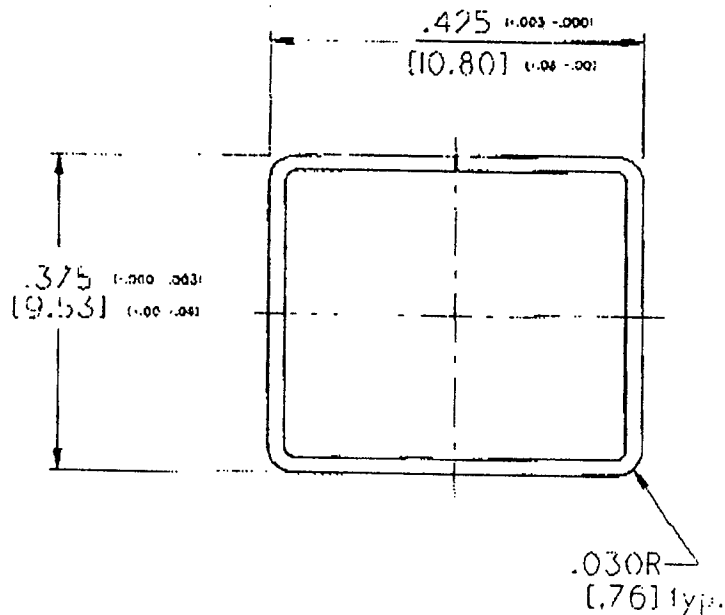
ALLMETAL

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OR IN PART WITHOUT THE EXPRESS PERMISSION OF
ALLMETAL INC.

TOLERANCES EXCEPT AS NOTED		TITLE		DRN. BY G. Matthews	
DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002		8 x 25mm Contour Muntin Bar (CMB)		CK. BY	
DECIMAL MM .XX .XXX ± .13 .08		MATERIAL .020" [.51mm] 3105 Aluminum		APPR. BY	
ANGULAR ± 1°		FINISH FULL RANGE (MILL, ANOD., PAINTED)		S.O. NO.	
SCALE 4:1	DATE 4/17/97	DRG. NO. 1020301010XX380			

FILENAME: CMB825J

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



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 54089
Date 3/30/05 Tech BL

ACTUAL PART
SIZE

FILENAME: \\MB\0185\716X38

DATE	SYM.	REVISION		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.				
TOLERANCES EXCEPT AS NOTED		TITLE 7/16 x 3/8 MB (Muntin Bar)			DRN BY <u>G. Matthews</u>	
DECIMAL INCHES .XX .XXX .XXXX ± .01 .005 .0002		MATL. .0185 [.47mm] 3105-H24 Aluminum			CK. BY	
DECIMAL MM .XX .XXX ± .13 .06		FINISH ALL BUT ANODIZED			APPL. BY	
ANGULAR ± 1°		SCALE 5:1	DATE 11/15/01	DWG. NO. 1020108018XX124		
					S.O. NO.	

11/14/2003 16:18 FAX 15135395407

11/13/2003 THU 17:36 FAX 8124643131 AMERICAN WINDOW & GLASS

11/06/2003 10:24 8644396065

22/05/97

12:33

LINGEMANN GMBH + 8644330074

DAYTON TECH ENG.

HELIMA HELVETION

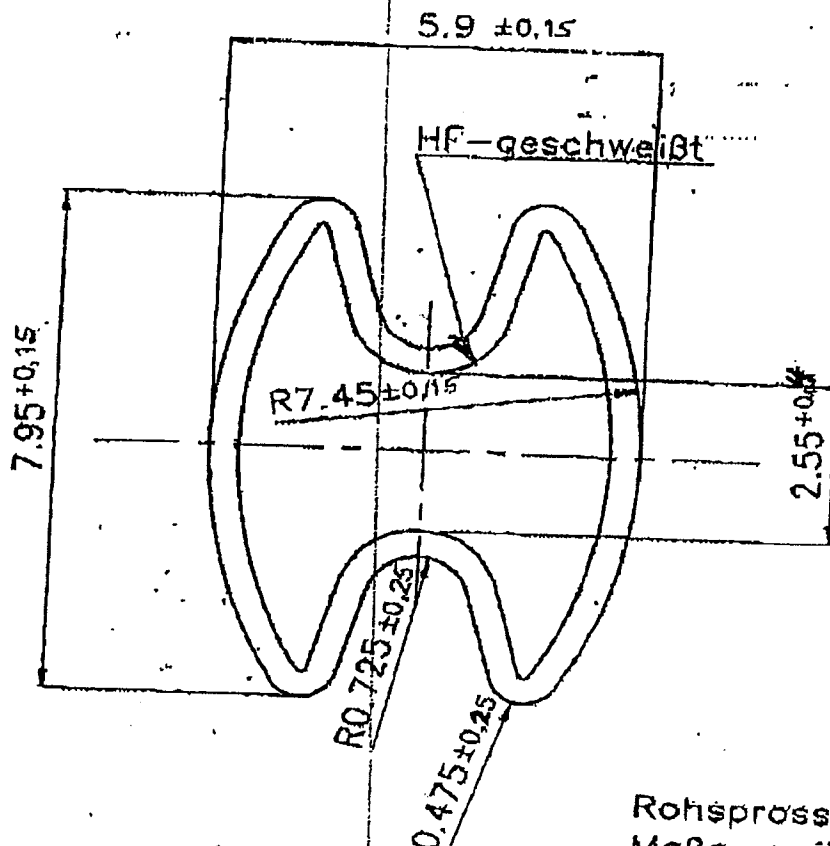
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009/010

PAGE 02/02

NR. 329

024



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Verteiler: BTL
CM3
Produkt
AV

Report# 54089

Date 3/30/05 Tech ESL

M1

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

Werkstoff: Bd 0,4 +0,04 -0,03		AI 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.
Reorb.	24.07.	Höflinghoff	
Gepr.			
Maßstab: 10:1		Benennung: Einbausprosse, geschweißt	
Maßstab ohne Teil-Angabe DIN 7168-m		Zeichnungsnummer: KP 8x1,5G	
Private Wkt		Ä1	

Helmut Lingemann
GmbH & Co.
Aluminium-Press und
Werkzeug
Am Dockershäuschen 52
42111 Wuppertal



-Nr.
1

Erstellt durch: