

**AAMA 507-12 THERMAL PERFORMANCE REPORT**

**Rendered to:**

**US ALUMINUM INC., DIVISION OF CR LAURENCE CO., INC.**

**SERIES/MODEL: S80 Bi-Fold Door (1" Dual Glazed)**

**TYPE: Swinging Door - Double**

**Report No: C4853.02-116-45**  
**Report Date: 02/21/13**



## AAMA 507-12 THERMAL PERFORMANCE REPORT

Rendered to:

US ALUMINUM INC., DIVISION OF CR LAURENCE CO., INC.  
200 Singleton Drive  
Waxahachie, Texas 75165

Report No: C4853.02-116-45  
Report Date: 02/21/13  
Simulation Date: 02/21/13

### Project Summary:

Architectural Testing, Inc. was contracted by US Aluminum Inc., Division of CR Laurence Co., Inc. to provide U-Factor and Solar Heat Gain Coefficient thermal performance ratings on the S80 Bi-Fold Door (1" Dual Glazed) Swinging Door - Double. The thermal performance ratings were determined in accordance with AAMA 507-12, Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial

### Reference Documents:

AAMA 507-12, Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Buildings

NFRC 100-2010, *Procedure for Determining Fenestration Product U-Factors*

NFRC 200-2010, *Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence*

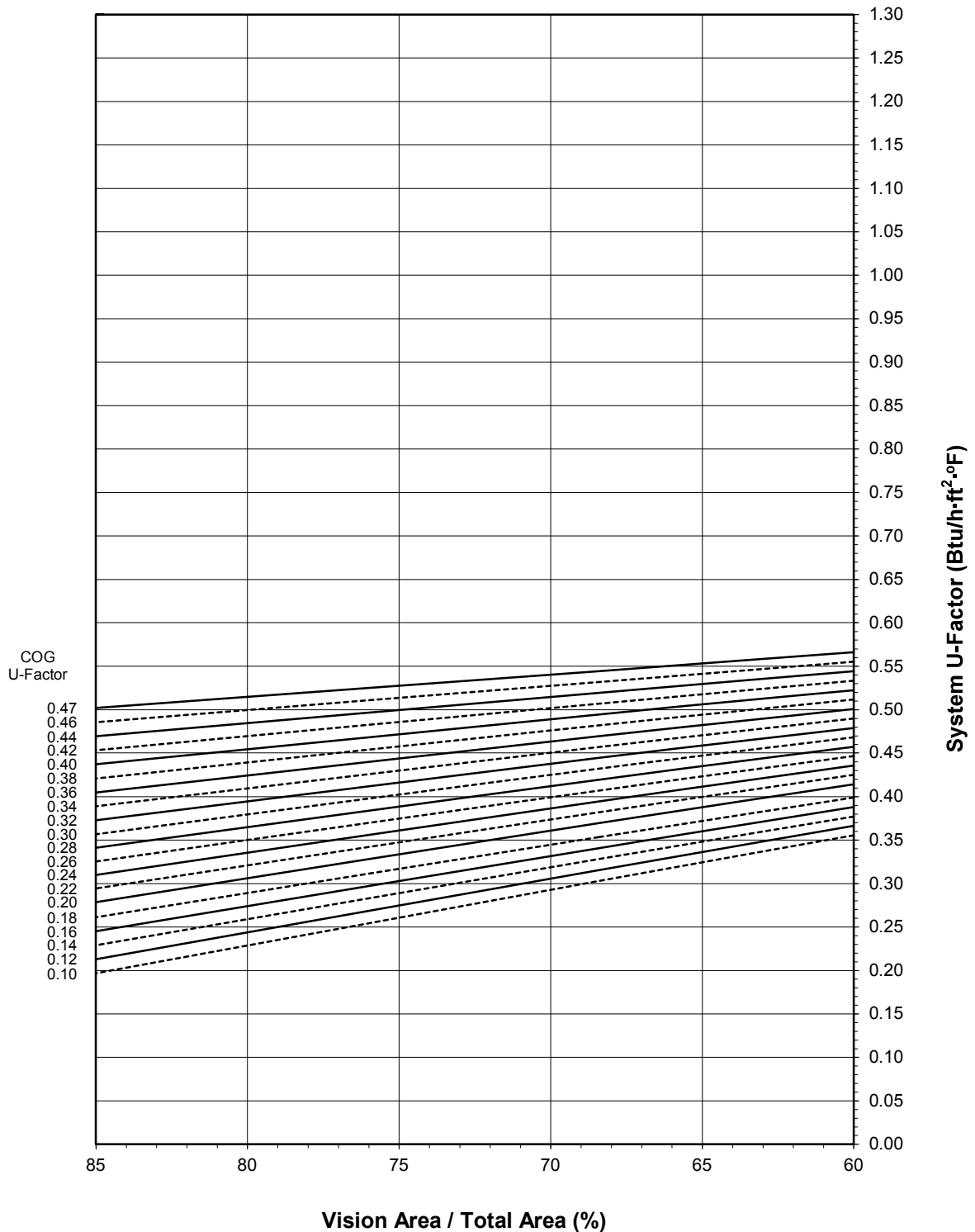
### Simulation Specimen Description:

**Series/Model:** S80 Bi-Fold Door (1" Dual Glazed)  
**Type:** Swinging Door - Double  
**Frame Material:** Aluminum Thermally Broken Framing System  
**Material Finish:** Painted Aluminum  
**Specimen Size:** 1920mm wide by 2090mm high (75-1/2" by 82-3/8")  
**Configuration:** Two vision lites separated by one intermediate vertical  
**Drawing Reference:** US Aluminum Drawings MU2012-022-02 thru -04, dated 12/11/12

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US Aluminum Inc., Division of CR Laurence Co., Inc.  
 S80 Bi-Fold Door (1" Dual Glazed) - Swinging Door - Double

System U-Factor vs. Percentage of Vision Area



Note: 1 inch Overall - Dual Glazed Glass (0.47-0.20 COG) with Aluminum Spacer, Dual Glazed Glass with Heat Mirror (0.18-0.10 COG) with Aluminum Spacer



**US Aluminum Inc., Division of CR Laurence Co., Inc.  
 S80 Bi-Fold Door (1" Dual Glazed) - Swinging Door - Double**

**Size Specific U-Factor Matrix\***

<b>Glazing Option</b>	<b>Center of Glass U-Factor</b>	<b>Overall U-Factor</b>
1	0.48	0.54
2	0.46	0.53
3	0.44	0.52
4	0.42	0.51
5	0.40	0.49
6	0.38	0.48
7	0.36	0.47
8	0.34	0.46
9	0.32	0.44
10	0.30	0.43
11	0.28	0.42
12	0.26	0.41
13	0.24	0.39
14	0.22	0.38
15	0.20	0.37
16	0.18	0.35
17	0.16	0.34
18	0.14	0.33
19	0.12	0.32
20	0.10	0.30

Note: 1 inch Overall - Dual Glazed Glass (0.47-0.20 COG) with Aluminum Spacer, Dual Glazed Glass with Heat Mirror (0.18-0.10 COG) with Aluminum Spacer

**US Aluminum Inc., Division of CR Laurence Co., Inc.  
 S80 Bi-Fold Door (1" Dual Glazed) - Swinging Door - Double**

**Size Specific SHGC Matrix\***

Center of Glass SHGC	Overall SHGC
0.75	0.51
0.70	0.48
0.65	0.45
0.60	0.41
0.55	0.38
0.50	0.35
0.45	0.31
0.40	0.28
0.35	0.25
0.30	0.21
0.25	0.18
0.20	0.15
0.15	0.12
0.10	0.08
0.05	0.05

**Size Specific VT Matrix\***

Center of Glass VT	Overall VT
0.75	0.50
0.70	0.47
0.65	0.43
0.60	0.40
0.55	0.37
0.50	0.33
0.45	0.30
0.40	0.27
0.35	0.23
0.30	0.20
0.25	0.17
0.20	0.13
0.15	0.10
0.10	0.07
0.05	0.03

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\*Size Specific U-Factor, SHGC, and VT Matrices are based on the standard Swinging Door - Double specimen size of 1920mm wide by 2090mm high (75-1/2" by 82-3/8"). This represents 68.4% Vision Area / Total Area.

Vision Area Data

Option No.	COG U-Factor	COG Temperature	Cross Section	Frame Height	Frame U-Factor	Edge U-Factor	Total Product U-Factor		
							60% Vision Area	NFRC 100-2010	85% Vision Area
							58.04" by 63.18"	75.59" by 82.28"	167.01" by 181.80"
1	0.47	44.1	Head	6.4814	0.6819	0.4994	0.5662	0.5444	0.5020
			L. Jamb	5.5122	0.6745	0.4994			
			R. Jamb	5.5122	0.6787	0.4994			
			Mullion	5.5789	0.7019	0.4994			
			Sill	5.6230	0.6843	0.4994			
2	0.46	44.8	Head	6.4814	0.6811	0.4839	0.5553	0.5319	0.4857
			L. Jamb	5.5122	0.6735	0.4839			
			R. Jamb	5.5122	0.6777	0.4839			
			Mullion	5.5789	0.7001	0.4839			
			Sill	5.6230	0.6834	0.4839			
3	0.44	45.8	Head	6.4814	0.6803	0.4683	0.5443	0.5194	0.4695
			L. Jamb	5.5122	0.6726	0.4683			
			R. Jamb	5.5122	0.6768	0.4683			
			Mullion	5.5789	0.6982	0.4683			
			Sill	5.6230	0.6825	0.4683			
4	0.42	46.8	Head	6.4814	0.6796	0.4532	0.5335	0.5070	0.4533
			L. Jamb	5.5122	0.6717	0.4532			
			R. Jamb	5.5122	0.6759	0.4532			
			Mullion	5.5789	0.6965	0.4532			
			Sill	5.6230	0.6816	0.4532			
5	0.40	47.9	Head	6.4814	0.6788	0.4376	0.5225	0.4945	0.4372
			L. Jamb	5.5122	0.6707	0.4376			
			R. Jamb	5.5122	0.6750	0.4376			
			Mullion	5.5789	0.6947	0.4376			
			Sill	5.6230	0.6807	0.4376			
6	0.38	48.9	Head	6.4814	0.6781	0.4226	0.5116	0.4820	0.4210
			L. Jamb	5.5122	0.6698	0.4226			
			R. Jamb	5.5122	0.6742	0.4226			
			Mullion	5.5789	0.6930	0.4226			
			Sill	5.6230	0.6799	0.4226			
7	0.36	50.0	Head	6.4814	0.6774	0.4073	0.5008	0.4695	0.4049
			L. Jamb	5.5122	0.6689	0.4073			
			R. Jamb	5.5122	0.6732	0.4073			
			Mullion	5.5789	0.6911	0.4073			
			Sill	5.6230	0.6790	0.4073			
8	0.34	51.0	Head	6.4814	0.6767	0.3924	0.4900	0.4570	0.3889
			L. Jamb	5.5122	0.6681	0.3924			
			R. Jamb	5.5122	0.6724	0.3924			
			Mullion	5.5789	0.6896	0.3924			
			Sill	5.6230	0.6782	0.3924			
9	0.32	52.0	Head	6.4814	0.6761	0.3773	0.4791	0.4445	0.3729
			L. Jamb	5.5122	0.6672	0.3773			
			R. Jamb	5.5122	0.6716	0.3773			
			Mullion	5.5789	0.6879	0.3773			
			Sill	5.6230	0.6774	0.3773			

Vision Area Data

Option No.	COG U-Factor	COG Temperature	Cross Section	Frame Height	Frame U-Factor	Edge U-Factor	Total Product U-Factor		
							60% Vision Area	NFRC 100-2010	85% Vision Area
							58.04" by 63.18"	75.59" by 82.28"	167.01" by 181.80"
10	0.30	53.1	Head	6.4814	0.6755	0.3624	0.4683	0.4320	0.3568
			L. Jamb	5.5122	0.6664	0.3624			
			R. Jamb	5.5122	0.6708	0.3624			
			Mullion	5.5789	0.6863	0.3624			
			Sill	5.6230	0.6766	0.3624			
11	0.28	54.2	Head	6.4814	0.6748	0.3475	0.4574	0.4195	0.3412
			L. Jamb	5.5122	0.6656	0.3475			
			R. Jamb	5.5122	0.6702	0.3475			
			Mullion	5.5789	0.6850	0.3475			
			Sill	5.6230	0.6760	0.3475			
12	0.26	55.2	Head	6.4814	0.6742	0.3327	0.4466	0.4070	0.3256
			L. Jamb	5.5122	0.6649	0.3327			
			R. Jamb	5.5122	0.6694	0.3327			
			Mullion	5.5789	0.6834	0.3327			
			Sill	5.6230	0.6752	0.3327			
13	0.24	56.3	Head	6.4814	0.6736	0.3180	0.4358	0.3945	0.3100
			L. Jamb	5.5122	0.6641	0.3180			
			R. Jamb	5.5122	0.6686	0.3180			
			Mullion	5.5789	0.6819	0.3180			
			Sill	5.6230	0.6744	0.3180			
14	0.22	57.3	Head	6.4814	0.6729	0.3033	0.4250	0.3820	0.2944
			L. Jamb	5.5122	0.6633	0.3033			
			R. Jamb	5.5122	0.6679	0.3033			
			Mullion	5.5789	0.6804	0.3033			
			Sill	5.6230	0.6737	0.3033			
15	0.20	58.4	Head	6.4814	0.6723	0.2887	0.4142	0.3695	0.2786
			L. Jamb	5.5122	0.6626	0.2887			
			R. Jamb	5.5122	0.6671	0.2887			
			Mullion	5.5789	0.6790	0.2887			
			Sill	5.6230	0.6730	0.2887			
16	0.18	59.5	Head	6.4814	0.6660	0.2685	0.3989	0.3534	0.2612
			L. Jamb	5.5122	0.6546	0.2685			
			R. Jamb	5.5122	0.6593	0.2685			
			Mullion	5.5789	0.6630	0.2685			
			Sill	5.6230	0.6653	0.2685			
17	0.16	60.6	Head	6.4814	0.6653	0.2539	0.3881	0.3407	0.2451
			L. Jamb	5.5122	0.6537	0.2539			
			R. Jamb	5.5122	0.6585	0.2539			
			Mullion	5.5789	0.6614	0.2539			
			Sill	5.6230	0.6645	0.2539			
18	0.14	61.7	Head	6.4814	0.6649	0.2384	0.3772	0.3281	0.2291
			L. Jamb	5.5122	0.6532	0.2384			
			R. Jamb	5.5122	0.6580	0.2384			
			Mullion	5.5789	0.6603	0.2384			
			Sill	5.6230	0.6640	0.2384			



**Vision Area Data**


Option No.	COG U-Factor	COG Temperature	Cross Section	Frame Height	Frame U-Factor	Edge U-Factor	Total Product U-Factor		
							60% Vision Area	NFRC 100-2010	85% Vision Area
							58.04" by 63.18"	75.59" by 82.28"	167.01" by 181.80"
19	0.12	62.8	Head	6.4814	0.6643	0.2238	0.3663	0.3155	0.2130
			L. Jamb	5.5122	0.6524	0.2238			
			R. Jamb	5.5122	0.6573	0.2238			
			Mullion	5.5789	0.6589	0.2238			
			Sill	5.6230	0.6633	0.2238			
20	0.10	63.9	Head	6.4814	0.6637	0.2092	0.3554	0.3028	0.1967
			L. Jamb	5.5122	0.6517	0.2092			
			R. Jamb	5.5122	0.6566	0.2092			
			Mullion	5.5789	0.6575	0.2092			
			Sill	5.6230	0.6626	0.2092			

Architectural Testing will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing, Inc. for the entire test record retention period. The test record retention end date for this report is February 21, 2017.

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For ARCHITECTURAL TESTING, INC.:

SIMULATED BY:



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Gurminder Virk  
Simulation Engineer

REVIEWED BY:



Digitally Signed by: Kevin Louder

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Kevin S. Louder  
Project Engineer

GV:GV  
C4853.02-116-45

Attachments (pages): This report is complete only when all attachments listed are included.  
Appendix A: Drawings and Bills of Material (6)