



Aluminum – Thermal Break

Performance Ratings Guide

Included in this Guide:

Min/Max

Structural Class

Air Infiltration

Egress

U-Factors

Solar Heat Gain Coefficients

Visible Light Transmittance

Sound Transmission Class

Window Type	Series	AAMA Label		Min		Max		Structural Class	Wind Speed	Air Infiltration	Egress Calc. Min. Egress
		Silver	Gold	Width	Height	Width	Height				
Horizontal Slider 12050 XOX	1120							HS-LC25	100	.03	1/2AWW - 2 3/4" AWH - 2 5/8"
Half Vent			X	2 ⁰	1 ⁰	6 ⁰	5 ⁰				4040
Double Vent (max VS = 48")			X	4 ⁰	1 ⁰	12 ⁰	5 ⁰				2040 vent
Half Vent Below / Above (hmr)		X		2 ⁰	2 ⁰	6 ⁰	7 ⁰				2040 vent
Half Vent Below / Above (mulled)			X	2 ⁰	2 ⁰	6 ⁰	7 ⁰				2040 vent
Double Vent Below / Above (hmr)		X		4 ⁰	2 ⁰	8 ⁰	7 ⁰				
Double Vent Below / Above (mulled)			X	4 ⁰	2 ⁰	8 ⁰	7 ⁰				
Single Hung 4676 O/X	1520							H-LC25	100	.05	AWW - 2 5/8" BARSET - 2 3/4"
Single Hung			X	1 ⁶	2 ⁶	4 ⁰	7 ⁶				2660/3050
Double Single Hung (mulled)			X	3 ⁰	2 ⁶	8 ⁰	7 ⁶				2630 vent
Triple Single Hung (mulled)			X	4 ⁶	2 ⁶	12 ⁰	7 ⁶				2630 vent
Picture Window 8060	920							F-HC40	127	.02	N/A
Picture Window			X	1 ⁰	1 ⁰	8 ⁰	6 ⁰				N/A
Octagon			X	2 ⁰	2 ⁰	6 ⁰	6 ⁰				N/A
Picture Window 16080 OOOO <i>Structural tubing is required.</i>	920							F-HC40	127	.01	N/A
Picture Window			X	4 ⁰	1 ⁰	16 ⁰	8 ⁰				N/A
Radius 6060	R20							F-HC45	134	.01	N/A
Full Round			X	2 ⁶	2 ⁶	6 ⁰	6 ⁰				N/A
1/2 Round			X	2 ⁶	1 ³	8 ⁰	4 ⁰				N/A
1/4 Round			X	1 ³	1 ³	6 ⁰	6 ⁰				N/A
Awning 4080 O/X	920							AP-C30	110	.06	N/A
Full Awning			X	1 ⁶	1 ⁶	4 ⁰	3 ⁰				N/A
Double Awning (mulled)			X	3 ⁰	1 ⁶	8 ⁰	3 ⁰				N/A
Double Awning (T-Bar)		X		3 ⁰	1 ⁶	8 ⁰	3 ⁰				N/A
Bottom Awning (mulled, max BS = 36")			X	1 ⁶	2 ⁰	4 ⁰	8 ⁰				N/A
Bottom Awning (T-Bar, max BS = 36")			X	1 ⁶	2 ⁰	4 ⁰	8 ⁰				N/A
Casement 10050 XOX	920							C-C30	110	.12	AWW - 4" AWH - 2 5/8"
Full Casement			X	1 ⁶	1 ⁶	2 ⁶	5 ⁰				2630
Single Casement (mulled, max VS = 30")			X	2 ⁰	1 ⁶	8 ⁰	5 ⁰				5030
Single Casement (T-Bar, max VS = 30")			X	2 ⁰	1 ⁶	8 ⁰	5 ⁰				5030
Double Casement (mulled, max VS = 30")			X	2 ⁰	1 ⁶	5 ⁰	5 ⁰				5030
Double Casement (T-Bar, max VS = 30")			X	2 ⁰	1 ⁶	5 ⁰	5 ⁰				5030
Double Casement XOX (mulled, max VS = 30")			X	3 ⁰	1 ⁶	10 ⁰	5 ⁰				5030
Double Casement XOX (T-Bar, max VS = 30")			X	3 ⁰	1 ⁶	10 ⁰	5 ⁰				5030
Sliding Glass Door 80610 XO	420							SGD-LC25	100	.15	N/A
SGD OX / XO			X	5 ⁰	6 ⁸	8 ⁰	6 ¹⁰				N/A
SGD OXO		X		9 ⁰	6 ⁸	12 ⁰	6 ¹⁰				N/A
SGD OXOX		X		10 ⁰	6 ⁸	16 ⁰	6 ¹⁰				N/A



Aluminum - Thermal Break Performance Ratings

June 2004

NFRC Tested U-Factors for Thermal Break Windows - NW Aluminum and Intercept Spacer

Without Grids or
SS/SS With Grids or
DS/DS

Mtrl	Window Series	Window Type	CLR/CLR		CLR/HARD LOW-E(2)		Cardinal 172 CLR/SOFT LOW-E(4)	
				ARGON		ARGON		ARGON
TBNS	1120	T.I.E. Slider	0.61	0.59	0.50	0.47	0.46	0.42
TBNS	1520	T.I.E. Single Hung	0.61	0.59	0.50	0.47	0.46	0.42
TBNS	920 PIC	T.I.E. Picture Window	0.54	0.51	0.42	0.39	0.38	0.33
TBNS	920 Awn	T.I.E. Awning	0.60	0.58	0.50	0.47	0.47	0.43
TBNS	920 Case	T.I.E. Casement	0.60	0.58	0.50	0.47	0.47	0.43
TBNS	420	T.I.E. Sliding Door	0.59	0.57	0.48	0.45	0.44	0.40
TBNS	R-20	T.I.E. Radius Window	0.54	0.52	0.43	0.39	0.38	0.34
TBNH	921 Pic	T.I.E. H-Bar Picture Window	0.54	0.51	0.42	0.39	0.38	0.33
TBNH	921 Awn	T.I.E. H-Bar Awning	0.59	0.57	0.50	0.48	0.47	0.44
TBNH	921 Case	T.I.E. H-Bar Casement	0.59	0.57	0.50	0.48	0.47	0.44

A specific glazing option may be 0.01 to 0.02 lower than shown.
 (2) Low E.2 = Hardcoat (PPG Sungate 500 or LOF).
 (4) Low E.04 = Softcoat (Cardinal LoE²).

DS/DS
With Sculptured Grids
&
TS/TS With or Without
Grids

NFRC Tested U-Values for Thermal Break Windows - NW Intercept Spacer

Mtrl	Window Type		CLR/CLR		CLR/HARD LOW-E(2)		Cardinal 172 CLR/SOFT LOW-E(4)	
				ARGON		ARGON		ARGON
TBNS	1120	T.I.E. Slider	0.63	0.60	0.54	0.50	0.50	0.45
TBNS	1520	T.I.E. Single Hung	0.63	0.60	0.54	0.49	0.50	0.45

A specific glazing option may be 0.01 to 0.02 lower than shown.
 (2) Low E.2 = Hardcoat (PPG Sungate 500 or LOF).
 (4) Low E.04 = Softcoat (Cardinal LoE²).



Aluminum Series Performance Ratings Solar Heat Gain Coefficients & Visible Light Transmittance

June 2004

Aluminum

Type	Glazing	SHGC			VT		
		No Grids	Flat Grids	Sculptured Grids	No Grids	Flat Grids	Sculptured Grids
Sliders	Clr / Clr	0.68	0.63	0.57	0.67	0.61	0.54
1110H / 1180H / 1280H	Brz / Clr	0.56	0.52	0.48	0.51	0.46	0.41
1110	LoE172 / Clr	0.39	0.37	0.33	0.60	0.54	0.48
ALCS / ALRH / ALRZ	LoE170 / Clr	0.36	0.33	0.30	0.58	0.52	0.47
ALSS / ALNS	Clr / LOF	0.64	0.58	0.54	0.62	0.56	0.50
	Azurlite / Clr	0.43	0.40	0.37	0.58	0.52	0.47
Single Hungs	Clr / Clr	0.68	0.62	0.57	0.67	0.61	0.54
1510 / 1580 / 1680	Brz / Clr	0.57	0.52	0.48	0.51	0.46	0.41
ALNS / ALRH / ALRZ	LoE172 / Clr	0.40	0.36	0.33	0.60	0.53	0.48
ALCS / ALSS	LoE170 / Clr	0.36	0.33	0.30	0.58	0.52	0.47
	Clr / LOF	0.63	0.58	0.53	0.62	0.56	0.50
	Azurlite / Clr	0.44	0.40	0.37	0.58	0.52	0.47
Fixed	Clr / Clr	0.71	0.65	0.62	0.73	0.67	0.63
910C / 910	Brz / Clr	0.58	0.54	0.51	0.55	0.51	0.48
ALCS / ALNS	LoE172 / Clr	0.39	0.37	0.35	0.65	0.60	0.56
	LoE170 / Clr	0.35	0.33	0.31	0.63	0.58	0.55
	Clr / LOF	0.65	0.60	0.58	0.68	0.62	0.58
	Azurlite / Clr	0.44	0.41	0.39	0.63	0.58	0.55
Fixed	Clr / Clr	.	0.65	0.59	0.75	0.67	0.60
710	Brz / Clr	0.59	0.53	0.49	0.56	0.51	0.45
ALSC	LoE172 / Clr	0.40	0.36	0.33	0.66	0.60	0.53
	LoE170 / Clr	0.35	0.32	0.30	0.64	0.58	0.52
	Clr / LOF	0.66	0.60	0.55	0.69	0.62	0.56
	Azurlite / Clr	0.44	0.40	0.37	0.60	0.58	0.52
Casement / Awnings	Clr / Clr	0.61	0.57	0.54	0.60	0.55	0.53
910C / 910	Brz / Clr	0.51	0.48	0.45	0.45	0.41	0.40
ALCS / ALNS	LoE172 / Clr	0.36	0.33	0.32	0.53	0.49	0.47
	LoE170 / Clr	0.33	0.31	0.30	0.52	0.48	0.46
	Clr / LOF	0.58	0.55	0.52	0.56	0.51	0.49
	Azurlite / Clr	0.39	0.37	0.35	0.52	0.48	0.46
Door	Clr / Clr	0.69	0.62	0.57	0.68	0.61	0.55
450 / 415	Brz / Clr	0.57	0.52	0.47	0.51	0.46	0.41
A45S / A451 / ALNS	LoE172 / Clr	0.39	0.36	0.33	0.61	0.55	0.49
	LoE170 / Clr	0.35	0.33	0.30	0.59	0.53	0.47
	Clr / LOF	0.64	0.58	0.53	0.63	0.57	0.51
	Azurlite / Clr	0.44	0.40	0.37	0.59	0.53	0.47
SKYLIGHT	Clr / Clr	0.73	/	/	0.74	/	/
780	Brz / Clr	0.60	/	/	0.56	/	/
VINS	LoE172 / Clr	0.40	/	/	0.66	/	/
	LoE170 / Clr	0.36	/	/	0.64	/	/
	Clr / LOF	0.67	/	/	0.69	/	/
	Azurlite / Clr	0.45	/	/	0.64	/	/

12/1/2003

LoE 170 = Suncoat™ LoE² Milgard's standard LoE for Aluminum



MILGARD ALUMINUM SERIES SOUND TRANSMISSION CLASS (STC)

1110 Horizontal Slider – Test Size 6040

Test Number	TL-98-412	TL-98-411	TL-98-409	TL-98-410
Glass Type	7/32 LAM / 7/32 LAM	7/32 LAM / 3/16	7/32 LAM / 1/8	1/8 / 1/8
STC	32	31	32	29
EWR	34	33	33	30
OITC	29	28	27	25

1510 Vertical Slider – Test Size 4060

Test Number	TL-98-404	TL-98-398	TL-99-202	TL-99-200
Glass Type	7/32 LAM / 3/16	7/32 LAM / 1/8	3/16 / 1/8	1/8 / 1/8
STC	32	32	31	27
EWR	33	33	31	28
OITC	28	28	26	24

910 Picture Window – Test Size 6040

Test Number	TL-98-402	TL-98-403	TL-98-400	TL-98-401
Glass Type	7/32 LAM / 7/32 LAM	7/32 LAM / 3/16	7/32 LAM / 1/8	1/8 / 1/8
STC	35	34	33	29
EWR	35	36	33	30
OITC	30	30	28	24

710 Picture Window – Test Size 6040

Test Number	TL-99-150	TL-99-151	TL-99-154	TL-99-149
Glass Type	7/32 LAM / 7/32 LAM	7/32 LAM / 3/16	7/32 LAM / 1/8	1/8 / 1/8
STC	37	35	34	30
EWR	36	35	33	30
OITC	29	29	27	24

910 Casement – Test Size 3050

Test Number	TL-98-394	TL-98-396	TL-98-397	TL-98-395
Glass Type	7/32 LAM / 1/4	7/32 LAM / 1/8	1/4 / 1/8	1/8 / 1/8
STC	36	36	35	30
EWR	36	36	35	31
OITC	30	30	30	26

450 Patio Door – Test Size 6068

Test Number	TL-98-407	TL-98-408	TL-98-405	TL-98-406	TL-01-374	TL-01-375
Glass Type	7/32 LAM / 7/32 LAM	7/32 LAM / 1/8	1/4 / 1/8	1/8 / 1/8	3/16 / 1/8	3/16 / 3/16
STC	29	31	30	27	31	30
EWR	30	32	31	28	31	31
OITC	26	26	26	22	25	26

- ◆ **STC = SOUND TRANSMISSION CLASS**
- ◆ **EWR = EXTERIOR WALL RATING**
- ◆ **OITC= OUTSIDE INSIDE TRANSMISSION CLASS**

12/01/03