

Solar Control, Safety and Security Window Films: Performance Results

Panorama Hilite

1/8 Single Pane Clear	No Film	Hilite 70	Hilite 55	Hilite 40	Hilite 25	Hilite 15
Visible light						
Transmittance %	90	72	59	42	23	12
Reflectance exterior %	9	9	8	6	6	5
Reflectance interior %	9	9	8	7	6	6
Glare reduction %	0	20	34	53	75	87
Solar energy						
Transmittance %	83	37	34	27	19	17
Absorptance %	9	28	36	43	53	60
Reflectance %	8	35	30	30	28	23
Total solar energy rejected %	14	55	56	60	65	65
IR rejection (780 to 2500nm)	21	95	95	95	95	95
Solar heat gain coefficient	.86	.45	.44	.40	.35	.35
Light to solar heat gain ratio (VLT/SHGC)	1.05	1.61	1.33	1.05	.65	.35
Solar heat gain reduction %	0	48	48	53	59	60
Thermal energy						
Emissivity	.84	.77	.78	.75	.77	.74
Winter U-factor (Btu hr/ft ² °F)	1.04	1.00	1.01	.99	1.00	.99
Summer U-factor (Btu hr/ft ² °F)	.94	.90	.90	.89	.90	.88
Winter heat loss reduction %	0	4	3	5	4	5
Ultraviolet light						
Blocked (300 to 380 nm) %	27	>99	>99	>99	>99	>99
Fade control						
UV Tdw-ISO (300 to 700 nm) %	85	47	39	28	15	8
Fade reduction %	0	45	54	67	82	91
Physical properties						
Thickness (Film only)	3	mils				
Tensile Strength ASTM D 882	30,000	lbs/in ²				
Elongation ASTM D 882	>100	%				
Yield Stress (5%) ASTM D 882	15,000	lbs/in ²				
Break Strength ASTM D 882	90.0	lbs/in				
Yield Strength (5%) ASTM D 882	45.0	lbs/in				
Tear Strength (Graves) ASTM D 1004	5.0	lbs				
Tensile Modulus ASTM D 882	500,000	lbs/in ²				
Puncture Strength ASTM D 4830	49.5	lbs				
Peel Strength ASTM D 903	>2,500	g/inch				
Poisson's Ratio ASTM D 882	0.38					
Abrasion Resistance (100 Cycles) ASTM D 1003-92, ASTM D 1044	<5	%				

Notes

- Solar Gard is a participating member of AIMCAL (the Association of Industrial Metallizers, Coaters and Laminators), IWFA, and EWFA.
- These test data contain only results arrived at after employing specific test procedures and standards. The included data do not constitute a recommendation for, endorsement of, or certification of the product or material tested. These data are provided for informational purposes only and are not to be considered part of the basic representation or warranty, expressed or implied, including the implied warranties of merchantability or fitness for a particular purpose, that its products will conform to these test data. Solar Gard's limited warranty should be carefully reviewed prior to purchasing any Solar Gard product. Extrapolation of data from the sample or samples relation to the batch or lot from which data were obtained may not correlate and should be interpreted accordingly with caution. Solar Gard shall not be responsible for variations in quality, composition, appearance, performance, or other feature of similar subject matter produced by persons or under conditions over which Solar Gard has no control.
- Performance results calculated using NFRC methodology and LBNL Window 7.2 software, and are subject to variations within industry standards and only intended for estimating purposes.
- IR rejection = 1 - Average unweighted transmittance
- Performance data is subject to change without notice.

Performance Results

1/8 Double Pane Clear	No Film	Hilite 70	Hilite 55	Hilite 40	Hilite 25	Hilite 15
Visible light						
Transmittance %	81	65	54	38	21	11
Reflectance exterior %	16	16	15	13	13	13
Reflectance interior %	16	13	11	8	6	6
Glare reduction %	0	20	34	53	75	87
Solar energy						
Transmittance %	69	32	30	24	17	14
Absorptance %	18	37	43	49	57	63
Reflectance %	13	31	27	27	26	23
Total solar energy rejected %	24	51	50	52	53	52
Solar heat gain coefficient	.76	.49	.50	.48	.47	.48
Light to solar heat gain ratio (VLT/SHGC)	1.08	1.34	1.06	.79	.44	.23
Solar heat gain reduction %	0	35	33	36	38	37
Thermal energy						
Emissivity	.84	.77	.78	.75	.77	.74
Winter U-factor (Btu hr/ft ² °F)	.48	.47	.47	.47	.47	.46
Summer U-factor (Btu hr/ft ² °F)	.50	.49	.49	.49	.49	.49
Winter heat loss reduction %	0	2	2	2	2	4
Ultraviolet light						
Blocked (300 to 380 nm) %	41	>99	>99	>99	>99	>99
Fade control						
UV Tdw-ISO (300 to 700 nm) %	74	42	35	25	14	8
Fade reduction %	0	38	46	58	71	78

Film-to-Glass Guide

Single pane; clear or tinted	n/a	●	●	●	●	●
Double pane; clear or tinted	n/a	●	●	●	■	■
Double pane; low-e Surface #2	n/a	●	●	●	■	■
Double pane; low-e Surface #3	n/a	●	●	▲	■	■

● = Approved ▲ = Caution, Film-to-Glass Application approval is required ■ = Tempered Only

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