Solar Gard® Window Film Selector Guide

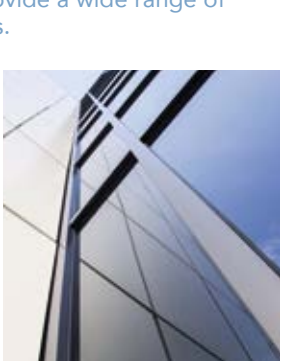
Architectural Window Films for Solar, Energy and Safety Solutions

Photo: Laurent Kronental

Solar Gard® Architectural Window Films

The Solar Gard® Solution

Solar Gard window films provide a wide range of benefits to meet your needs.



Heat and comfort
Whether it's a corner office or tables by an expansive window, keep every area of your building a consistent and comfortable temperature.

Energy consumption
Solar Gard window films are a cost-effective retrofit solution that's easy to install and proven to reduce energy costs by up to 30%.

Reduce carbon emissions
Reduce greenhouse gas emissions and your building's carbon footprint for less money than new windows.

Safety and security
Gain protection against break-ins, vandalism and theft without blocking views or changing your building's external appearance.

Glare
Enjoy your views without having to use blinds to block excessive glare.

Fade control
Block 99% of UV light, the primary cause of interior fading.

Protect your skin
Solar Gard films provide a Sun Protection Factor of 285+ to help protect from harmful UVA and UVB rays associated with skin cancer and premature aging.

Appearance
Choose from a wide array of tints and colors, from optically clear to fully reflective, which allows you to change the appearance of your buildings as much or as little as you like.

Privacy
Protect your occupants from onlookers and passers-by with a reflective film that blocks views into your building.

Solar Gard® Architectural Window Films

Performance Notes

1. Solar Gard® is a participating member of AIMCAL (the Association of Industrial Metallizers, Coaters and Laminators), IWFA, and EWFA. Performance results are calculated using **EN410** methodology and are subject to variations within industry standards and only intended for estimating purposes.

2. 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 basis 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.

3. Performance results for summer solar heat gain reduction and glare reduction are calculated by comparing filmed glass to that of untreated glazing.

4. The mechanical properties of the safety films have been determined according to:

   - ASTM D882 (tensile trength, elongation, yield stress and break strength)
   - ASTM D4380 (puncture strength)
   - ASTM D903-98 (peel strength)

Solar Gard® Films pour vitrages de bâtiment

Liste de terminologie

Performances du film

Lumière visible

TR (%)	Transmission
Re/Ri (%)	Réflexion extérieure/intérieure
GL (%)	Réduction de l'éblouissement

Énergie solaire

TR (%)	Transmission
A (%)	Absorption
R (%)	Réflexion
SIRR (%)	Rejet Sélectif Energie IR @280-2500nm
IRER (%)	Rejet Energie Infrarouge @780-2500nm
UV (%)	Réduction rayons ultraviolets @300-380nm
SC	Coefficient d'ombrage
G	Facteur solaire (g)
SSI	Ratio lumière visible/facteur solaire (TR/G)
TSER (%)	Énergie solaire totale rejetée
TSER (%) -60°	Énergie solaire totale rejetée à un angle de 60°
SHGR (%)	Réduction d'échauffement solaire
E	Emissivité
U (W/m²K)	Valeur U Hiver (W/m²°C)
U Red (%)	Réduction de perte de chaleur en hiver
Tdw (%)	Facteur de décoloration Tdw-ISO @300-700nm
FR (%)	Facteur de réduction de décoloration Tdw-K @300-700nm

Caractéristiques physiques

Tnom / T(µm)	Épaisseur
TS - kg/cm²	Résistance à la traction
ELONG	Élongation
PEEL - g/cm	Résistance au pelage
YIELD - kg/cm²	Résistance à la traction (élongation 5%)
BREAK - kg/cm	Résistance à la rupture
TEAR - kg	Résistance à la déchirure de Grave
PUNC - kg	Résistance à la perforation

Tests de sécurité*

EN 12600	Impact humain
EN 356	Resistance à l'intrusion
ISO 16933, GSA, ASTM et INERIS	Résistance selon

** Pour des informations détaillées sur les nôtres tests de sécurité, visitez www.solargard.fr ou contactez votre installateur Solar Gard le plus proche.*

LISTE DE TERMINOLOGIE

TERMINOLOGY

Pellicole per vetri Solar Gard®: controllo solare et sicurezza

Elenco dei termini

Prestazioni

Luce Visibile

TR (%)	Trasmessa
Re/Ri (%)	Riflessa Esterna / Interna
GL (%)	Riduzione dell'abbagliamento

Energia solare

TR (%)	Energia solare trasmessa
A (%)	Energia solare assorbita
R (%)	Energia solare riflessa
SIRR (%)	Rifiuto IR selettivo @280-2500nm
IRER (%)	Rifiuto di energia IR @780-2500nm
UV (%)	UV respinti da @300-380nm
SC	Coefficiente di ombreggiatura
G	Valore G
SSI	Indice di selettività solare (VLT / SHGC)
TSER (%)	Energia solare totale respinta
TSER (%) -60°	Energia solare totale respinta ad un angolo di 60°
SHGR (%)	Riduzione del coefficiente di ombreaggiatura
E	Emissività
U (W/m²K)	Fattore U invernale (W/m²°C)
U Red (%)	Riduzione perdita di calore invernale
Tdw (%)	Controllo dello scolorimenti Tdw-ISO @300-700nm
FR (%)	Controllo dello scolorimenti Tdw-K @300-700nm

Proprietà fisiche

Tnom / T(µm)	Spessore
TS - kg/cm²	Resistenza alla trazione
ELONG	Elongazione
PEEL - g/cm	Resistenza al distaccamento
YIELD - kg/cm²	Resa dello stress (ad 5%)
BREAK - kg/cm	Resistenza alla rottura
TEAR - kg	Resistenza allo strappo
PUNC - kg	Forza di puntura

Test di sicurezza*

EN 12600	Resistenza all'impatto
EN 356	Antieffrazione
ISO 16933, GSA, ASTM, INERIS	Resistenza esplosione

**per i dettagli sui test di sicurezza e ik report di sicurezza, consultare www.solargard.com o informarsi presso il proprio rivenditore di zona / distributore autorizzato.*

АРХИТЕКТУРНАЯ ПЛЁНКА SOLAR GARD®

ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

характеристика

Видимый спектр

TR (%)	Коэффициент светопропуская
Re/Ri (%)	Коэффициент отражения внешний/внутренний
GL (%)	Коэффициент уменьшения лиов

Солнечная энергия

TR (%)	Коэффициент прозрачности
A (%)	оэффициент поглощения видимого света
R (%)	Коэффициент отражения видимого света
SIRR (%)	Избирательная ИК энергия отклонена 280 - 2500нм
IRER (%)	ИК энергия отклонена 780 - 2500нм
UV (%)	Коэффициент пропускания в УФ-спектре 300 - 380нм
SC	Коэффициент затенения
G	Коэффициент поглощения солнечной энергии
SSI	Коэффициент избирательности солнечной энергии
TSER (%)	Суммарный коэффициент отражения солнечной энергии
TSER (%) -60°	Суммарный коэффициент отражения солнечной энергии (угол 60°)
SHGR (%)	Коэффициент уменьшения солнечной энергии
E	Тепловая эмиссия
U (W/m²K)	U-фактор в зимнее время
U Red (%)	Коэффициент теплопотери в зимнее время
Tdw (%)	Коэффициент выцветания в УФ-спектра 300 - 700нм
FR (%)	Увядание снижение Tdw-K @300-700нм

Физические свойства

Tnom / T(µm)	Номинальная толщина
TS - kg/cm²	Предел прочности
ELONG	Удлинение
PEEL - g/cm	Усилие на отрыв
YIELD - kg/cm²	Предел текучести (при 5%)
BREAK - kg/cm	Усилие на отрыв (при 5%)
TEAR - kg	Усилие на разрыв
PUNC - kg	Усилие на прокол

испытания на безопасность*

EN 12600	Ударопрочность
EN 356	Взломостойкость
ISO 16933, GSA, ASTM, INERIS	сопротивление взрыв

**Для получения официальных данных о результатах тестов зайдите на www.solargard.com или свяжитесь с ближайшим официальным дистрибьютором Solar Gard.*

Solar Gard® Sol- och säkerhetsfilm

Termer och förkortningar

Filmprestanda

Synligt ljus

TR (%)	Genomsläpp
Re/Ri (%)	Reflektion utvändigt/invändigt
GL (%)	Bländningsreduktion

Solenergi

TR (%)	Genomsläpp
A (%)	Absorption
R (%)	Reflektion
SIRR (%)	Selektiv IR-reduktion @280-2500nm
IRER (%)	IR-energireduktion @780-2500nm
UV (%)	UV-reduktion @300-380nm
SC	Skuggkoefficient
G	Solfaktor (g)
SSI	Ratio ljusgenomsläpp/ solfaktor (TR/G)
TSER (%)	Total solenergireduktion
TSER (%) -60°	Total solenergireduktion vid 60° vinkel
SHGR (%)	Reduktion g-värde
E	Emissionsvärde
U (W/m²K)	U-värde vintertid (W/m²°C)
U Red (%)	Reduktion av värmeförlust vintertid
Tdw (%)	Blekningskontroll Tdw-ISO @300-700nm
FR (%)	Blekningsreduktionsfaktor Tdw-K @300-700nm

Fysiska egenskaper

Tnom / T(µm)	Tjocklek
TS - kg/cm²	Dragkraft
ELONG	Sträckningsförmåga
PEEL - g/cm	Hållfasthet flagning
YIELD - kg/cm²	Dragkraft (utsträckning 5%)
BREAK - kg/cm	Brottshållfasthet
TEAR - kg	Rivhållfasthet (Grave)
PUNC - kg	Punkteringsmotstånd

Säkerhetstester*

EN 12600	Personsskydd
EN 356	Intrångsskydd
ISO 16933, GSA, ASTM och INERIS	Explosionsmotstånd

**För detaljerad information kring våra säkerhetstester, besök www.solargard.se eller kontakta din närmaste Solar Gard återförsäljare.*

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus SX 80

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	78	71
Re/Ri (%)	Reflectance Exterior/Interior	8/8	13/15
GL (%)	Glare Reduction	13	13
Solar Energy			
TR (%)	Transmittance	45	40
A (%)	Absorptance	48	51
R (%)	Reflectance	7	9
SIRR (%)	Selective IR Energy Rejection @280-2500nm	84	87
IRER (%)	IR Energy Rejection @780-2500nm	64	75
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.56	.47
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.39	1.52
TSER (%)	Total solar energy rejected	44	53
TSER (%)-60°	Total solar energy rejected @60° angle	51	62
SHGR (%)	Solar heat gain reduction	35	40
E	Emissivity	0.84	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	55	49
FR (%)	Fade reduction coefficient	35	34

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 53% Rejected

Visible Light UP TO 78% Transmission

UV UP TO 99% Rejection

SENTINEL PLUS SX 80 OSW

SOLEXT

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus SX 50

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	48	44
Re/Ri (%)	Reflectance Exterior/Interior	27/25	29/29
GL (%)	Glare Reduction	47	46
Solar Energy			
TR (%)	Transmittance	37	32
A (%)	Absorptance	32	36
R (%)	Reflectance	31	32
SIRR (%)	Selective IR Energy Rejection @280-2500nm	78	82
IRER (%)	IR Energy Rejection @780-2500nm	63	70
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.44	.38
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.08	1.17
TSER (%)	Total solar energy rejected	56	62
TSER (%)-60°	Total solar energy rejected @60° angle	61	69
SHGR (%)	Solar heat gain reduction	49	51
E	Emissivity	0.78	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	36	33
FR (%)	Fade reduction coefficient	58	55

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy 62% Rejected | Visible Light 48% Transmission | UV 99% Rejection

SENTINEL PLUS SX 50 OSW

SOLEXT

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus QX 70

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	69	62
Re/Ri (%)	Reflectance Exterior/Interior	15/14	19/20
GL (%)	Glare Reduction	24	24
Solar Energy			
TR (%)	Transmittance	40	35
A (%)	Absorptance	37	41
R (%)	Reflectance	23	24
SIRR (%)	Selective IR Energy Rejection @280-2500nm	89	91
IRER (%)	IR Energy Rejection @780-2500nm	88	91
UV (%)	Blocked @300-380nm	>99	>99
SC	Shading Coefficient	.56	.47
G (%)	Solar heat gain coefficient (G-value)	.49	.41
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.41	1.52
TSER (%)	Total solar energy rejected	51	59
TSER (%)-60°	Total solar energy rejected @60° angle	57	66
SHGR (%)	Solar heat gain reduction	44	47
E	Emissivity	0.72	
U	Winter U-factor (W/m2 °C)	5.75	2.80
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	46	42
FR (%)	Fade reduction coefficient	46	43

Physical Properties

Tnom / T(µm) Nominal thickness	80/100
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 59% Rejected

Visible Light UP TO 69% Transmission

UV UP TO 99% Rejection

SENTINEL PLUS QX 70 OSW

SOLEXT

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus QX 40

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	46	42
Re/Ri (%)	Reflectance Exterior/Interior	16/10	18/16
GL (%)	Glare Reduction	49	49
Solar Energy			
TR (%)	Transmittance	29	26
A (%)	Absorptance	45	47
R (%)	Reflectance	26	27
SIRR (%)	Selective IR Energy Rejection @280-2500nm	89	92
IRER (%)	IR Energy Rejection @780-2500nm	89	92
UV (%)	Blocked @300-380nm	>99	>99
SC	Shading Coefficient	.46	.37
G (%)	Solar heat gain coefficient (G-value)	.40	.32
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.16	1.30
TSER (%)	Total solar energy rejected	60	68
TSER (%)-60°	Total solar energy rejected @60° angle	65	73
SHGR (%)	Solar heat gain reduction	54	59
E	Emissivity	0.84	
U	Winter U-factor (W/m2 °C)	5.74	2.80
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	32	29
FR (%)	Fade reduction coefficient	62	61

Physical Properties

Tnom / T(µm) Nominal thickness	100/110
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy up to 68% Rejected

Visible Light up to 46% Transmission

UV up to 99% Rejection

SENTINEL PLUS QX 40 OSW

SOLEXT

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus DX 15

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	14	13
Re/Ri (%)	Reflectance Exterior/Interior	42/17	42/22
GL (%)	Glare Reduction	84	84
Solar Energy			
TR (%)	Transmittance	14	12
A (%)	Absorptance	41	43
R (%)	Reflectance	45	45
SIRR (%)	Selective IR Energy Rejection @280-2500nm	91	92
IRER (%)	IR Energy Rejection @780-2500nm	79	84
UV (%)	Blocked @300-380nm	>99	>99
SC	Shading Coefficient	.27	.20
G (%)	Solar heat gain coefficient (G-value)	.23	.18
SSI	Light to solar heat gain ratio (VLT/SHGC)	.60	.73
TSER (%)	Total solar energy rejected	77	82
TSER (%)-60°	Total solar energy rejected @60° angle	79	85
SHGR (%)	Solar heat gain reduction	73	77
E	Emissivity	0.72	
U	Winter U-factor (W/m2 °C)	5.74	2.80
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	11	10
FR (%)	Fade reduction coefficient	87	86

Physical Properties

Tnom / T(µm) Nominal thickness	50/70
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy up to 82% Rejected

Glare up to 84% Reduction

UV up to 99% Rejection

SOLEXT SENTINEL PLUS DX 15 OSW

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus DX 5

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	5	4
Re/Ri (%)	Reflectance Exterior/Interior	60/15	60/20
GL (%)	Glare Reduction	95	95
Solar Energy			
TR (%)	Transmittance	5	5
A (%)	Absorptance	33	33
R (%)	Reflectance	62	62
SIRR (%)	Selective IR Energy Rejection @280-2500nm	96	97
IRER (%)	IR Energy Rejection @780-2500nm	89	93
UV (%)	Blocked @300-380nm	>99	>99
SC	Shading Coefficient	.15	.10
G (%)	Solar heat gain coefficient (G-value)	.13	.09
SSI	Light to solar heat gain ratio (VLT/SHGC)	.37	1.51
TSER (%)	Total solar energy rejected	87	91
TSER (%)-60°	Total solar energy rejected @60° angle	88	92
SHGR (%)	Solar heat gain reduction	85	89
E	Emissivity	0.71	
U	Winter U-factor (W/m2 °C)	5.74	2.80
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	4	13
FR (%)	Fade reduction coefficient	95	82

Physical Properties

Tnom / T(µm) Nominal thickness	50/70
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 91% Rejected

Glare UP TO 95% Reduction

UV UP TO 99% Rejection

SOLEXT SENTINEL PLUS DX 5 OSW

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ DX 50

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	52	47
Re/Ri (%)	Reflectance Exterior/Interior	17/18	20/23
GL (%)	Glare Reduction	43	42
Solar Energy			
TR (%)	Transmittance	41	36
A (%)	Absorptance	38	42
R (%)	Reflectance	21	22
SIRR (%)	Selective IR Energy Rejection @280-2500nm	74	78
IRER (%)	IR Energy Rejection @780-2500nm	58	66
UV (%)	Blocked @300-380nm	>99	>99
SC	Shading Coefficient	.57	.48
G (%)	Solar heat gain coefficient (G-value)	.50	.42
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.04	1.13
TSER (%)	Total solar energy rejected	50	58
TSER (%)-60°	Total solar energy rejected @60° angle	56	65
SHGR (%)	Solar heat gain reduction	42	46
E	Emissivity	0.86	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	41	37
FR (%)	Fade reduction coefficient	52	50

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 58% Rejected | Visible Light UP TO 52% Transmission | UV UP TO 99% Rejection

SENTINEL DX 50 OSW

SOLEXT

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ DX 35

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	36	33
Re/Ri (%)	Reflectance Exterior/Interior	20/13	21/19
GL (%)	Glare Reduction	60	60
Solar Energy			
TR (%)	Transmittance	32	28
A (%)	Absorptance	45	49
R (%)	Reflectance	23	23
SIRR (%)	Selective IR Energy Rejection @280-2500nm	74	78
IRER (%)	IR Energy Rejection @780-2500nm	60	68
UV (%)	Blocked @300-380nm	>99	>99
SC	Shading Coefficient	.49	.40
G (%)	Solar heat gain coefficient (G-value)	.43	.35
SSI	Light to solar heat gain ratio (VLT/SHGC)	.84	.94
TSER (%)	Total solar energy rejected	57	65
TSER (%)-60°	Total solar energy rejected @60° angle	62	71
SHGR (%)	Solar heat gain reduction	51	55
E	Emissivity	.82	
U	Winter U-factor (W/m2 °C)	5.8	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	29	27
FR (%)	Fade reduction coefficient	66	64

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy up to 65% Rejected

Glare up to 60% Reduction

UV up to 99% Rejection

SENTINEL DX 35 OSW

SOLEXT

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ DX 20

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	20	19
Re/Ri (%)	Reflectance Exterior/Interior	35/15	36/21
GL (%)	Glare Reduction	77	77
Solar Energy			
TR (%)	Transmittance	19	16
A (%)	Absorptance	44	46
R (%)	Reflectance	37	38
SIRR (%)	Selective IR Energy Rejection @280-2500nm	85	87
IRER (%)	IR Energy Rejection @780-2500nm	73	79
UV (%)	Blocked @300-380nm	>99	>99
SC	Shading Coefficient	.34	.26
G (%)	Solar heat gain coefficient (G-value)	.29	.23
SSI	Light to solar heat gain ratio (VLT/SHGC)	.70	.82
TSER (%)	Total solar energy rejected	71	77
TSER (%)-60°	Total solar energy rejected @60° angle	74	81
SHGR (%)	Solar heat gain reduction	66	71
E	Emissivity	0.77	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	17	16
FR (%)	Fade reduction coefficient	80	78

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 77% Rejected

Glare UP TO 77% Reduction

UV UP TO 99% Rejection

SENTINEL DX 20 OSW

SOLEXT

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ DX 5

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	8	8
Re/Ri (%)	Reflectance Exterior/Interior	60/18	60/23
GL (%)	Glare Reduction	91	91
Solar Energy			
TR (%)	Transmittance	8	7
A (%)	Absorptance	32	33
R (%)	Reflectance	60	60
SIRR (%)	Selective IR Energy Rejection @280-2500nm	94	95
IRER (%)	IR Energy Rejection @780-2500nm	86	90
UV (%)	Blocked @300-380nm	>99	>99
SC	Shading Coefficient	.18	.13
G (%)	Solar heat gain coefficient (G-value)	.16	.11
SSI	Light to solar heat gain ratio (VLT/SHGC)	.52	.66
TSER (%)	Total solar energy rejected	84	89
TSER (%)-60°	Total solar energy rejected @60° angle	86	90
SHGR (%)	Solar heat gain reduction	82	85
E	Emissivity	0.75	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	8	7
FR (%)	Fade reduction coefficient	91	91

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 89% Rejected

Glare UP TO 91% Reduction

UV UP TO 99% Rejection

SOLEXT

SENTINEL DX 5 OSW

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus Silver 35

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	34	31
Re/Ri (%)	Reflectance Exterior/Interior	41/37	42/39
GL (%)	Glare Reduction	62	62
Solar Energy			
TR (%)	Transmittance	26	23
A (%)	Absorptance	31	33
R (%)	Reflectance	43	44
SIRR (%)	Selective IR Energy Rejection @280-2500nm	92	88
IRER (%)	IR Energy Rejection @780-2500nm	73	78
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.33	.28
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.01	1.12
TSER (%)	Total solar energy rejected	67	72
TSER (%)-60°	Total solar energy rejected @60° angle	70	77
SHGR (%)	Solar heat gain reduction	61	64
E	Emissivity	0.78	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	27	24
FR (%)	Fade reduction coefficient	68	68

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy up to 72% Rejected | Glare up to 62% Reduction | UV up to 99% Rejection

SOLEXT SENTINEL PLUS SILVER 35 OSW

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus Silver 20

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	16	15
Re/Ri (%)	Reflectance Exterior/Interior	61/58	62/57
GL (%)	Glare Reduction	82	82
Solar Energy			
TR (%)	Transmittance	12	11
A (%)	Absorptance	26	27
R (%)	Reflectance	62	62
SIRR (%)	Selective IR Energy Rejection @280-2500nm	96	95
IRER (%)	IR Energy Rejection @780-2500nm	87	90
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.18	.14
SSI	Light to solar heat gain ratio (VLT/SHGC)	.87	1.04
TSER (%)	Total solar energy rejected	82	86
TSER (%)-60°	Total solar energy rejected @60° angle	84	88
SHGR (%)	Solar heat gain reduction	79	81
E	Emissivity	0.76	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	13	13
FR (%)	Fade reduction coefficient	85	82

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 86% Rejected | Glare UP TO 82% Reduction | UV UP TO 99% Rejection

SOLEXT | SENTINEL PLUS SILVER 20 OSW

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus Stainless Steel 40

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	39	35
Re/Ri (%)	Reflectance Exterior/Interior	18/15	19/21
GL (%)	Glare Reduction	57	57
Solar Energy			
TR (%)	Transmittance	36	32
A (%)	Absorptance	47	50
R (%)	Reflectance	17	18
SIRR (%)	Selective IR Energy Rejection @280-2500nm	79	67
IRER (%)	IR Energy Rejection @780-2500nm	51	60
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.47	.39
SSI	Light to solar heat gain ratio (VLT/SHGC)	.82	.91
TSER (%)	Total solar energy rejected	53	61
TSER (%)-60°	Total solar energy rejected @60° angle	58	68
SHGR (%)	Solar heat gain reduction	45	50
E	Emissivity	0.87	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	26	24
FR (%)	Fade reduction coefficient	69	68

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 61% Rejected

Glare UP TO 57% Reduction

UV UP TO 99% Rejection

SOLEXT

SENTINEL PLUS STAINLESS STEEL 40 OSW

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus Stainless Steel 25

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	24	22
Re/Ri (%)	Reflectance Exterior/Interior	28/25	29/29
GL (%)	Glare Reduction	74	73
Solar Energy			
TR (%)	Transmittance	23	20
A (%)	Absorptance	50	53
R (%)	Reflectance	27	27
SIRR (%)	Selective IR Energy Rejection @280-2500nm	86	79
IRER (%)	IR Energy Rejection @780-2500nm	64	72
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.35	.27
SSI	Light to solar heat gain ratio (VLT/SHGC)	.69	.81
TSER (%)	Total solar energy rejected	65	73
TSER (%)-60°	Total solar energy rejected @60° angle	69	77
SHGR (%)	Solar heat gain reduction	60	65
E	Emissivity	0.86	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	16	15
FR (%)	Fade reduction coefficient	81	80

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 73% Rejected | Glare UP TO 74% Reduction | UV UP TO 99% Rejection

SENTINEL PLUS STAINLESS STEEL 25 OSW

SOLEXT

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus Stainless Steel 15

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	13	12
Re/Ri (%)	Reflectance Exterior/Interior	40/36	40/38
GL (%)	Glare Reduction	85	85
Solar Energy			
TR (%)	Transmittance	13	11
A (%)	Absorptance	50	52
R (%)	Reflectance	37	37
SIRR (%)	Selective IR Energy Rejection @280-2500nm	92	88
IRER (%)	IR Energy Rejection @780-2500nm	74	81
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.25	.18
SSI	Light to solar heat gain ratio (VLT/SHGC)	.54	.69
TSER (%)	Total solar energy rejected	75	82
TSER (%)-60°	Total solar energy rejected @60° angle	78	85
SHGR (%)	Solar heat gain reduction	72	77
E	Emissivity	0.83	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	9	8
FR (%)	Fade reduction coefficient	89	89

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 82% Rejected

Glare UP TO 85% Reduction

UV UP TO 99% Rejection

SENTINEL PLUS STAINLESS STEEL 15 OSW

SOLEXT

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Plus Solar Bronze 20

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	24	22
Re/Ri (%)	Reflectance Exterior/Interior	40/37	40/39
GL (%)	Glare Reduction	73	73
Solar Energy			
TR (%)	Transmittance	14	12
A (%)	Absorptance	26	28
R (%)	Reflectance	60	60
SIRR (%)	Selective IR Energy Rejection @280-2500nm	85	97
IRER (%)	IR Energy Rejection @780-2500nm	91	92
UV (%)	Blocked @300-380nm	>99	>99
SC	Shading Coefficient	.23	.18
G (%)	Solar heat gain coefficient (G-value)	.20	.16
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.21	1.40
TSER (%)	Total solar energy rejected	80	84
TSER (%)-60°	Total solar energy rejected @60° angle	82	87
SHGR (%)	Solar heat gain reduction	77	79
E	Emissivity	.68	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	14	13
FR (%)	Fade reduction coefficient	84	82

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy up to 84% Rejected

Glare up to 73% Reduction

UV up to 99% Rejection

SENTINEL PLUS SOLAR BRONZE 20 OSW

SOLEXT

OSW Exterior Film

Solar Gard® Solar Control Window Films

Sentinel™ Silver 20 PC

ESPECIALLY FOR POLY CARBONATE PC SPECIALEMENT POUR

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	14	13
Re/Ri (%)	Reflectance Exterior/Interior	65/64	65/63
GL (%)	Glare Reduction	85	84
Solar Energy			
TR (%)	Transmittance	11	10
A (%)	Absorptance	25	26
R (%)	Reflectance	64	64
SIRR (%)	Selective IR Energy Rejection @280-2500nm	74	95
IRER (%)	IR Energy Rejection @780-2500nm	86	89
UV (%)	Blocked @300-380nm	>99	>99
SC	Shading Coefficient	.20	.16
G (%)	Solar heat gain coefficient (G-value)	.17	.14
SSI	Light to solar heat gain ratio (VLT/SHGC)	.80	.95
TSER (%)	Total solar energy rejected	83	86
TSER (%)-60°	Total solar energy rejected @60° angle	85	88
SHGR (%)	Solar heat gain reduction	80	82
E	Emissivity	.74	
U	Winter U-factor (W/m2 °C)	5.8	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	14	13
FR (%)	Fade reduction coefficient	84	82

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 86% Rejected

Glare UP TO 85% Reduction

UV UP TO 99% Rejection

SENTINEL SILVER 20 PC OSW

SOLEXT

Interior Film

Solar Gard® Solar Control Window Films

LX 80

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	80	73
Re/Ri (%)	Reflectance Exterior/Interior	9/10	15/15
GL (%)	Glare Reduction	11	11
Solar Energy			
TR (%)	Transmittance	55	48
A (%)	Absorptance	24	29
R (%)	Reflectance	21	23
SIRR (%)	Selective IR Energy Rejection @280-2500nm	73	-
IRER (%)	IR Energy Rejection @780-2500nm	58	55
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.60	.61
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.33	1.19
TSER (%)	Total solar energy rejected	40	39
TSER (%)-60°	Total solar energy rejected @60° angle	47	48
SHGR (%)	Solar heat gain reduction	30	21
E	Emissivity	.75	
U	Winter U-factor (W/m2 °C)	5.5	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	54	49
FR (%)	Fade reduction coefficient	36	34

Physical Properties

Tnom / T(µm) Nominal thickness	75
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy up to 40% Rejected | Visible Light up to 80% Transmission | UV up to 99% Rejection

LX 80

SOL INT

Solar Gard® Solar Control Window Films

LX 70

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	72	65
Re/Ri (%)	Reflectance Exterior/Interior	9/9	15/13
GL (%)	Glare Reduction	20	20
Solar Energy			
TR (%)	Transmittance	39	35
A (%)	Absorptance	31	36
R (%)	Reflectance	30	29
SIRR (%)	Selective IR Energy Rejection @280-2500nm	95	-
IRER (%)	IR Energy Rejection @780-2500nm	81	72
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.46	.52
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.56	1.27
TSER (%)	Total solar energy rejected	54	48
TSER (%)-60°	Total solar energy rejected @60° angle	59	56
SHGR (%)	Solar heat gain reduction	46	33
E	Emissivity	.77	
U	Winter U-factor (W/m2 °C)	5.6	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	47	43
FR (%)	Fade reduction coefficient	45	42

Physical Properties

Tnom / T(µm) Nominal thickness	75
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Gard® Solar Control Window Films

LX 40

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	42	38
Re/Ri (%)	Reflectance Exterior/Interior	6/7	13/8
GL (%)	Glare Reduction	53	53
Solar Energy			
TR (%)	Transmittance	28	25
A (%)	Absorptance	47	50
R (%)	Reflectance	25	25
SIRR (%)	Selective IR Energy Rejection @280-2500nm	95	-
IRER (%)	IR Energy Rejection @780-2500nm	78	68
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.39	.50
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.08	0.76
TSER (%)	Total solar energy rejected	61	50
TSER (%)-60°	Total solar energy rejected @60° angle	65	57
SHGR (%)	Solar heat gain reduction	55	36
E	Emissivity	.75	
U	Winter U-factor (W/m2 °C)	5.5	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	28	26
FR (%)	Fade reduction coefficient	67	65

Physical Properties

Tnom / T(µm) Nominal thickness	75
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

LX 40

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

TrueVue™ 40

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	39	36
Re/Ri (%)	Reflectance Exterior/Interior	14/10	20/11
GL (%)	Glare Reduction	57	56
Solar Energy			
TR (%)	Transmittance	36	32
A (%)	Absorptance	45	46
R (%)	Reflectance	19	22
SIRR (%)	Selective IR Energy Rejection @280-2500nm	70	-
IRER (%)	IR Energy Rejection @780-2500nm	53	50
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.46	.55
SSI	Light to solar heat gain ratio (VLT/SHGC)	.84	.65
TSER (%)	Total solar energy rejected	54	45
TSER (%)-60°	Total solar energy rejected @60° angle	59	43
SHGR (%)	Solar heat gain reduction	46	29
E	Emissivity	.75	
U	Winter U-factor (W/m2 °C)	5.5	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	28	25
FR (%)	Fade reduction coefficient	67	66

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 54% Rejected | Glare UP TO 57% Reduction | UV UP TO 99% Rejection

TRUEVUE 40

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

TrueVue™ 30

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	31	29
Re/Ri (%)	Reflectance Exterior/Interior	22/13	26/14
GL (%)	Glare Reduction	65	65
Solar Energy			
TR (%)	Transmittance	27	23
A (%)	Absorptance	45	49
R (%)	Reflectance	28	28
SIRR (%)	Selective IR Energy Rejection @280-2500nm	82	-
IRER (%)	IR Energy Rejection @780-2500nm	66	59
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.37	.48
SSI	Light to solar heat gain ratio (VLT/SHGC)	.85	.60
TSER (%)	Total solar energy rejected	63	52
TSER (%)-60°	Total solar energy rejected @60° angle	67	59
SHGR (%)	Solar heat gain reduction	57	39
E	Emissivity	.75	
U	Winter U-factor (W/m2 °C)	5.0	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	23	21
FR (%)	Fade reduction coefficient	73	72

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 63% Rejected

Glare UP TO 65% Reduction

UV UP TO 99% Rejection

Interior Film

Solar Gard® Solar Control Window Films

TrueVue™ 15

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	12	11
Re/Ri (%)	Reflectance Exterior/Interior	45/23	46/23
GL (%)	Glare Reduction	87	86
Solar Energy			
TR (%)	Transmittance	9	8
A (%)	Absorptance	44	49
R (%)	Reflectance	47	43
SIRR (%)	Selective IR Energy Rejection @280-2500nm	95	-
IRER (%)	IR Energy Rejection @780-2500nm	85	74
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.19	.32
SSI	Light to solar heat gain ratio (VLT/SHGC)	.63	.35
TSER (%)	Total solar energy rejected	81	68
TSER (%)-60°	Total solar energy rejected @60° angle	83	72
SHGR (%)	Solar heat gain reduction	78	58
E	Emissivity	.75	
U	Winter U-factor (W/m2 °C)	5.5	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	10	9
FR (%)	Fade reduction coefficient	88	88

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy TSER 81% Rejected | Glare 87% Reduction | UV 99% Rejection

Interior Film

Solar Gard® Solar Control Window Films

TrueVue™ 5

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	5	5
Re/Ri (%)	Reflectance Exterior/Interior	45/8	46/8
GL (%)	Glare Reduction	94	94
Solar Energy			
TR (%)	Transmittance	6	5
A (%)	Absorptance	47	52
R (%)	Reflectance	47	43
SIRR (%)	Selective IR Energy Rejection @280-2500nm	96	-
IRER (%)	IR Energy Rejection @780-2500nm	85	74
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.16	.31
SSI	Light to solar heat gain ratio (VLT/SHGC)	.32	.16
TSER (%)	Total solar energy rejected	84	69
TSER (%)-60°	Total solar energy rejected @60° angle	85	73
SHGR (%)	Solar heat gain reduction	81	61
E	Emissivity	.75	
U	Winter U-factor (W/m2 °C)	5.5	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	5	4
FR (%)	Fade reduction coefficient	94	95

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 84% Rejected | Glare UP TO 94% Reduction | UV UP TO 99% Rejection

TRUEVUE 5

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

Sterling 70

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	75	68
Re/Ri (%)	Reflectance Exterior/Interior	13/12	18/17
GL (%)	Glare Reduction	17	17
Solar Energy			
TR (%)	Transmittance	60	53
A (%)	Absorptance	24	28
R (%)	Reflectance	16	19
SIRR (%)	Selective IR Energy Rejection @280-2500nm	59	-
IRER (%)	IR Energy Rejection @780-2500nm	42	42
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.66	.65
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.14	1.04
TSER (%)	Total solar energy rejected	34	35
TSER (%)-60°	Total solar energy rejected @60° angle	42	45
SHGR (%)	Solar heat gain reduction	24	16
E	Emissivity	.80	
U	Winter U-factor (W/m2 °C)	5.6	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	52	47
FR (%)	Fade reduction coefficient	39	36

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 35% Rejected | Visible Light UP TO 75% Transmission | UV UP TO 99% Rejection

Interior Film

Solar Gard® Solar Control Window Films

Sterling 60

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	64	58
Re/Ri (%)	Reflectance Exterior/Interior	17/16	22/19
GL (%)	Glare Reduction	29	29
Solar Energy			
TR (%)	Transmittance	49	43
A (%)	Absorptance	30	34
R (%)	Reflectance	21	23
SIRR (%)	Selective IR Energy Rejection @280-2500nm	70	-
IRER (%)	IR Energy Rejection @780-2500nm	53	49
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.56	.59
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.13	.99
TSER (%)	Total solar energy rejected	44	41
TSER (%)-60°	Total solar energy rejected @60° angle	51	50
SHGR (%)	Solar heat gain reduction	35	24
E	Emissivity	.76	
U	Winter U-factor (W/m2 °C)	5.5	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	45	41
FR (%)	Fade reduction coefficient	47	45

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy STOP 44% Rejected

Visible Light STOP 64% Transmission

UV STOP 99% Rejection

Interior Film

Solar Gard® Solar Control Window Films

Sterling 50

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	49	45
Re/Ri (%)	Reflectance Exterior/Interior	26/24	30/26
GL (%)	Glare Reduction	45	44
Solar Energy			
TR (%)	Transmittance	36	32
A (%)	Absorptance	33	37
R (%)	Reflectance	31	31
SIRR (%)	Selective IR Energy Rejection @280-2500nm	82	-
IRER (%)	IR Energy Rejection @780-2500nm	67	61
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.43	.49
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.14	.92
TSER (%)	Total solar energy rejected	57	51
TSER (%)-60°	Total solar energy rejected @60° angle	62	58
SHGR (%)	Solar heat gain reduction	50	36
E	Emissivity	.69	
U	Winter U-factor (W/m2 °C)	5.3	2.7
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	38	35
FR (%)	Fade reduction coefficient	55	53

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy 57% Rejected | Visible Light 49% Transmission | UV 99% Rejection

STERLING 50

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

Sterling 40

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	41	38
Re/Ri (%)	Reflectance Exterior/Interior	33/30	35/31
GL (%)	Glare Reduction	54	53
Solar Energy			
TR (%)	Transmittance	29	26
A (%)	Absorptance	34	38
R (%)	Reflectance	37	36
SIRR (%)	Selective IR Energy Rejection @280-2500nm	87	-
IRER (%)	IR Energy Rejection @780-2500nm	74	66
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.37	.44
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.13	.87
TSER (%)	Total solar energy rejected	63	56
TSER (%)-60°	Total solar energy rejected @60° angle	68	62
SHGR (%)	Solar heat gain reduction	58	44
E	Emissivity	.68	
U	Winter U-factor (W/m2 °C)	5.3	2.7
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	33	30
FR (%)	Fade reduction coefficient	61	59

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 63% Rejected | Glare UP TO 54% Reduction | UV UP TO 99% Rejection

Interior Film

Solar Gard® Solar Control Window Films

Sterling 20

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	23	21
Re/Ri (%)	Reflectance Exterior/Interior	45/42	46/43
GL (%)	Glare Reduction	75	74
Solar Energy			
TR (%)	Transmittance	16	14
A (%)	Absorptance	36	42
R (%)	Reflectance	48	44
SIRR (%)	Selective IR Energy Rejection @280-2500nm	94	-
IRER (%)	IR Energy Rejection @780-2500nm	84	74
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.24	.34
SSI	Light to solar heat gain ratio (VLT/SHGC)	.95	.62
TSER (%)	Total solar energy rejected	76	66
TSER (%)-60°	Total solar energy rejected @60° angle	79	70
SHGR (%)	Solar heat gain reduction	73	56
E	Emissivity	.67	
U	Winter U-factor (W/m2 °C)	5.3	2.7
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	19	17
FR (%)	Fade reduction coefficient	78	77

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy 76% Rejected

Glare 75% Reduction

UV 99% Rejection

Interior Film

Solar Gard® Solar Control Window Films

Stainless Steel 50

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	48	44
Re/Ri (%)	Reflectance Exterior/Interior	13/11	19/13
GL (%)	Glare Reduction	46	46
Solar Energy			
TR (%)	Transmittance	44	38
A (%)	Absorptance	44	45
R (%)	Reflectance	12	17
SIRR (%)	Selective IR Energy Rejection @280-2500nm	55	63
IRER (%)	IR Energy Rejection @780-2500nm	45	40
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.54	.62
SSI	Light to solar heat gain ratio (VLT/SHGC)	.89	.71
TSER (%)	Total solar energy rejected	46	38
TSER (%)-60°	Total solar energy rejected @60° angle	52	48
SHGR (%)	Solar heat gain reduction	37	20
E	Emissivity	.89	
U	Winter U-factor (W/m2 °C)	5.9	2.9
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	34	31
FR (%)	Fade reduction coefficient	60	58

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy up to 46% Rejected | Visible Light up to 48% Transmission | UV up to 99% Rejection

Interior Film

Solar Gard® Solar Control Window Films

Stainless Steel 35

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	42	39
Re/Ri (%)	Reflectance Exterior/Interior	15/13	20/14
GL (%)	Glare Reduction	53	53
Solar Energy			
TR (%)	Transmittance	38	33
A (%)	Absorptance	49	49
R (%)	Reflectance	13	18
SIRR (%)	Selective IR Energy Rejection @280-2500nm	60	67
IRER (%)	IR Energy Rejection @780-2500nm	49	42
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.50	.59
SSI	Light to solar heat gain ratio (VLT/SHGC)	.85	.65
TSER (%)	Total solar energy rejected	50	41
TSER (%)-60°	Total solar energy rejected @60° angle	56	50
SHGR (%)	Solar heat gain reduction	42	24
E	Emissivity	.88	
U	Winter U-factor (W/m2 °C)	5.9	2.9
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	29	26
FR (%)	Fade reduction coefficient	66	65

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 50% Rejected | Glare UP TO 53% Reduction | UV UP TO 99% Rejection

Interior Film

Solar Gard® Solar Control Window Films

Stainless Steel 20

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	24	22
Re/Ri (%)	Reflectance Exterior/Interior	28/25	31/26
GL (%)	Glare Reduction	74	73
Solar Energy			
TR (%)	Transmittance	21	19
A (%)	Absorptance	55	55
R (%)	Reflectance	24	26
SIRR (%)	Selective IR Energy Rejection @280-2500nm	78	82
IRER (%)	IR Energy Rejection @780-2500nm	65	52
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.34	.48
SSI	Light to solar heat gain ratio (VLT/SHGC)	.68	.45
TSER (%)	Total solar energy rejected	66	52
TSER (%)-60°	Total solar energy rejected @60° angle	67	57
SHGR (%)	Solar heat gain reduction	60	38
E	Emissivity	.84	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	16	15
FR (%)	Fade reduction coefficient	81	80

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 66% Rejected | Glare UP TO 74% Reduction | UV UP TO 99% Rejection

STAINLESS STEEL 20

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

Stainless Steel 10

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	9	9
Re/Ri (%)	Reflectance Exterior/Interior	43/42	44/42
GL (%)	Glare Reduction	90	90
Solar Energy			
TR (%)	Transmittance	9	8
A (%)	Absorptance	54	56
R (%)	Reflectance	37	36
SIRR (%)	Selective IR Energy Rejection @280-2500nm	90	92
IRER (%)	IR Energy Rejection @780-2500nm	78	63
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.21	.37
SSI	Light to solar heat gain ratio (VLT/SHGC)	.43	.23
TSER (%)	Total solar energy rejected	79	63
TSER (%)-60°	Total solar energy rejected @60° angle	81	68
SHGR (%)	Solar heat gain reduction	75	52
E	Emissivity	.79	
U	Winter U-factor (W/m2 °C)	5.6	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	6	6
FR (%)	Fade reduction coefficient	93	92

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 79% Rejected

Glare UP TO 90% Reduction

UV UP TO 99% Rejection

Interior Film

Solar Gard® Solar Control Window Films

Solar Bronze 50

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	45	41
Re/Ri (%)	Reflectance Exterior/Interior	23/21	27/23
GL (%)	Glare Reduction	50	50
Solar Energy			
TR (%)	Transmittance	30	27
A (%)	Absorptance	35	39
R (%)	Reflectance	35	34
SIRR (%)	Selective IR Energy Rejection @280-2500nm	87	-
IRER (%)	IR Energy Rejection @780-2500nm	73	67
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.38	.45
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.18	.90
TSER (%)	Total solar energy rejected	62	55
TSER (%)-60°	Total solar energy rejected @60° angle	67	61
SHGR (%)	Solar heat gain reduction	56	42
E	Emissivity	.69	
U	Winter U-factor (W/m2 °C)	5.3	2.7
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	27	25
FR (%)	Fade reduction coefficient	68	66

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy TSER 62% Rejected | Glare TGR 50% Reduction | UV TUV 99% Rejection

SOLAR BRONZE 50

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

Solar Bronze 35

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	35	32
Re/Ri (%)	Reflectance Exterior/Interior	29/27	32/28
GL (%)	Glare Reduction	61	61
Solar Energy			
TR (%)	Transmittance	22	20
A (%)	Absorptance	36	41
R (%)	Reflectance	42	39
SIRR (%)	Selective IR Energy Rejection @280-2500nm	92	-
IRER (%)	IR Energy Rejection @780-2500nm	81	73
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.30	.39
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.17	.82
TSER (%)	Total solar energy rejected	70	61
TSER (%)-60°	Total solar energy rejected @60° angle	74	66
SHGR (%)	Solar heat gain reduction	66	50
E	Emissivity	.68	
U	Winter U-factor (W/m2 °C)	5.3	2.7
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	21	19
FR (%)	Fade reduction coefficient	75	74

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy TSER 70% Rejected | Glare GLR 61% Reduction | UV UVR 99% Rejection

SOLAR BRONZE 35

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

Solar Bronze 20

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	22	20
Re/Ri (%)	Reflectance Exterior/Interior	37/36	39/36
GL (%)	Glare Reduction	76	75
Solar Energy			
TR (%)	Transmittance	13	12
A (%)	Absorptance	39	44
R (%)	Reflectance	48	44
SIRR (%)	Selective IR Energy Rejection @280-2500nm	96	-
IRER (%)	IR Energy Rejection @780-2500nm	87	77
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.21	.32
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.04	.63
TSER (%)	Total solar energy rejected	79	68
TSER (%)-60°	Total solar energy rejected @60° angle	81	71
SHGR (%)	Solar heat gain reduction	75	58
E	Emissivity	.66	
U	Winter U-factor (W/m2 °C)	5.3	2.7
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	13	12
FR (%)	Fade reduction coefficient	85	84

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 79% Rejected

Glare UP TO 76% Reduction

UV UP TO 99% Rejection

SOLAR BRONZE 20

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

Silver 50

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	53	49
Re/Ri (%)	Reflectance Exterior/Interior	23/22	27/24
GL (%)	Glare Reduction	41	41
Solar Energy			
TR (%)	Transmittance	41	36
A (%)	Absorptance	36	39
R (%)	Reflectance	23	25
SIRR (%)	Selective IR Energy Rejection @280-2500nm	75	-
IRER (%)	IR Energy Rejection @780-2500nm	58	52
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.49	.55
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.08	.88
TSER (%)	Total solar energy rejected	51	45
TSER (%)-60°	Total solar energy rejected @60° angle	57	53
SHGR (%)	Solar heat gain reduction	44	29
E	Emissivity	.77	
U	Winter U-factor (W/m2 °C)	5.6	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	40	37
FR (%)	Fade reduction coefficient	53	50

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy TSER 51% Rejected | Visible Light VLT 53% Transmission | UV 99% Rejection

SILVER 50

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

Silver 35

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	34	32
Re/Ri (%)	Reflectance Exterior/Interior	38/36	40/37
GL (%)	Glare Reduction	62	61
Solar Energy			
TR (%)	Transmittance	26	24
A (%)	Absorptance	38	41
R (%)	Reflectance	36	35
SIRR (%)	Selective IR Energy Rejection @280-2500nm	86	-
IRER (%)	IR Energy Rejection @780-2500nm	71	62
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.35	.43
SSI	Light to solar heat gain ratio (VLT/SHGC)	.99	.74
TSER (%)	Total solar energy rejected	65	57
TSER (%)-60°	Total solar energy rejected @60° angle	69	63
SHGR (%)	Solar heat gain reduction	60	44
E	Emissivity	.73	
U	Winter U-factor (W/m2 °C)	5.5	2.7
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	28	26
FR (%)	Fade reduction coefficient	67	65

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 65% Rejected | Glare UP TO 62% Reduction | UV UP TO 99% Rejection

SILVER 35

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

Silver 20

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	16	15
Re/Ri (%)	Reflectance Exterior/Interior	58/58	58/59
GL (%)	Glare Reduction	82	81
Solar Energy			
TR (%)	Transmittance	12	11
A (%)	Absorptance	35	41
R (%)	Reflectance	53	48
SIRR (%)	Selective IR Energy Rejection @280-2500nm	94	-
IRER (%)	IR Energy Rejection @780-2500nm	84	73
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.20	.30
SSI	Light to solar heat gain ratio (VLT/SHGC)	.82	.51
TSER (%)	Total solar energy rejected	80	70
TSER (%)-60°	Total solar energy rejected @60° angle	82	74
SHGR (%)	Solar heat gain reduction	77	61
E	Emissivity	.70	
U	Winter U-factor (W/m2 °C)	5.4	2.7
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	14	13
FR (%)	Fade reduction coefficient	84	82

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 80% Rejected

Glare UP TO 82% Reduction

UV UP TO 99% Rejection

SILVER 20

SOL INT

Interior Film

Solar Gard® Solar Control Window Films

Grey/Silver/Grey 10

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	5	5
Re/Ri (%)	Reflectance Exterior/Interior	10/10	17/10
GL (%)	Glare Reduction	95	94
Solar Energy			
TR (%)	Transmittance	10	9
A (%)	Absorptance	66	66
R (%)	Reflectance	24	25
SIRR (%)	Selective IR Energy Rejection @280-2500nm	88	-
IRER (%)	IR Energy Rejection @780-2500nm	74	63
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.26	.44
SSI	Light to solar heat gain ratio (VLT/SHGC)	.19	.10
TSER (%)	Total solar energy rejected	74	56
TSER (%)-60°	Total solar energy rejected @60° angle	77	61
SHGR (%)	Solar heat gain reduction	70	43
E	Emissivity	.83	
U	Winter U-factor (W/m2 °C)	5.7	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	5	4
FR (%)	Fade reduction coefficient	94	95

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy 74% Rejected | Glare 95% Reduction | UV 99% Rejection

Interior Film

Solar Gard® Solar Control Window Films

Ecolux 70

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	68	62
Re/Ri (%)	Reflectance Exterior/Interior	13/4	18/7
GL (%)	Glare Reduction	24	24
Solar Energy			
TR (%)	Transmittance	45	39
A (%)	Absorptance	30	35
R (%)	Reflectance	25	26
SIRR (%)	Selective IR Energy Rejection @280-2500nm	87	89
IRER (%)	IR Energy Rejection @780-2500nm	69	65
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.49	.52
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.40	1.20
TSER (%)	Total solar energy rejected	51	48
TSER (%)-60°	Total solar energy rejected @60° angle	58	57
SHGR (%)	Solar heat gain reduction	44	34
E	Emissivity	.09	
U	Winter U-factor (W/m2 °C)	3.4	2.1
W	Winter heat loss reduction %	40	25
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	41	37
FR (%)	Fade reduction coefficient	52	50

Physical Properties

Tnom / T(µm) Nominal thickness	75
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0
Reaction to Fire (EN 45545)	R1, HL1/HL2, HL3

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

Solar Energy TSER 51% Rejected

Visible Light VLT 68% Transmission

UV TUV 99% Rejection

LOW-E ECOLUX 70

Interior Film

Solar Gard® Safety & Security Window Films

Armorcoat® 4 Mil Clear

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	88	80
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	24	37
IRER (%)	IR Energy Rejection @780-2500nm	19	28
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	63	57
FR (%)	Fade reduction coefficient	26	23

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	100/125
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	10.8
BREAK-kg/cm	Break Strength	22.0
TEAR-kg	Strength (Graves)	3.0
PUNC-kg	Puncture Strength	30.0

Safety Testing*

EN 12600	Human Impact	2B2
INERIS Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0
Reaction to Fire (EN 45545)		R1, HL1/HL2, HL3

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

EN 12600

SBI EN 13823

ARMORCOAT 4 MIL CLEAR

SAFE INT

Interior Film

Solar Gard® Safety & Security Window Films

Armorcoat® 4 Mil Silver 20

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	15	14
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	95	-
IRER (%)	IR Energy Rejection @780-2500nm	84	73
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	13	13
FR (%)	Fade reduction coefficient	85	82

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	100/125
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	10.8
BREAK-kg/cm	Break Strength	22.0
TEAR-kg	Strength (Graves)	3.0
PUNC-kg	Puncture Strength	30.0

Safety Testing*

EN 12600	Human Impact	2B2
INERIS Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor

EN 12600

SBI EN 13823

ARMORCOAT 4 MIL SILVER 20

SAFE INT

Interior Film

Solar Gard® Safety & Security Window Films

Armorcoat® 4 Mil Stainless Steel 50

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	47	43
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	58	-
IRER (%)	IR Energy Rejection @780-2500nm	46	40
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	33	30
FR (%)	Fade reduction coefficient	61	59

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	100/135
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	10.8
BREAK-kg/cm	Break Strength	22.0
TEAR-kg	Strength (Graves)	3.0
PUNC-kg	Puncture Strength	30.0

Safety Testing*

EN 12600	Human Impact	2B2
INERIS Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor

ISO 14001 ISO 9001

EN 12600 SBI EN 13823

ARMORCOAT 4 MIL STAINLESS STEEL 50

SAFE INT

Interior Film

Solar Gard® Safety & Security Window Films

Armorcoat® 4 Mil Stainless Steel 35

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	45	41
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	58	-
IRER (%)	IR Energy Rejection @780-2500nm	47	41
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	32	29
FR (%)	Fade reduction coefficient	62	61

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	100/135
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	10.8
BREAK-kg/cm	Break Strength	22.0
TEAR-kg	Strength (Graves)	3.0
PUNC-kg	Puncture Strength	30.0

Safety Testing*

EN 12600	Human Impact	2B2
INERIS Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor

EN 12600

SBI EN 13823

ARMORCOAT 4 MIL STAINLESS STEEL 35

SAFE INT

Interior Film

Solar Gard® Safety & Security Window Films

Armorcoat® 4 Mil Stainless Steel 20

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	22	20
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	80	-
IRER (%)	IR Energy Rejection @780-2500nm	66	53
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	16	15
FR (%)	Fade reduction coefficient	81	80

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	100/135
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	10.8
BREAK-kg/cm	Break Strength	22.0
TEAR-kg	Strength (Graves)	3.0
PUNC-kg	Puncture Strength	30.0

Safety Testing*

EN 12600	Human Impact	2B2
INERIS Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor

EN 12600

SBI EN 13823

ARMORCOAT 4 MIL STAINLESS STEEL 20

SAFE INT

Solar Gard® Safety & Security Window Films

Armorcoat® 7 Mil Clear

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	88	80
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	26	-
IRER (%)	IR Energy Rejection @780-2500nm	19	28
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	63	57
FR (%)	Fade reduction coefficient	26	23

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	175/200
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	18.9
BREAK-kg/cm	Break Strength	38.5
TEAR-kg	Strength (Graves)	5.3
PUNC-kg	Puncture Strength	52.0

Safety Testing*

EN 12600	Human Impact	1B1
GSA & INERIS	Blast Resistance	YES
Reaction to Fire (SBI EN 13823)		B-s1, d0
Reaction to Fire (EN 45545)		R1, HL1/HL2, HL3

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

ISO 14001 CERTIFIED · ISO 9001 CERTIFIED

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

SAFE INT ARMORCOAT 7 MIL CLEAR

Solar Gard® Safety & Security Window Films

Armorcoat® 8 Mil Clear

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	87	79
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	28	-
IRER (%)	IR Energy Rejection @780-2500nm	20	28
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	62	56
FR (%)	Fade reduction coefficient	27	24

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	200/235
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	21.6
BREAK-kg/cm	Break Strength	44.0
TEAR-kg	Strength (Graves)	6.0
PUNC-kg	Puncture Strength	64.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P1A
ISO 16933, GSA & ASTM Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0
Reaction to Fire (EN 45545)		R1, HL1/HL2, HL3

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

ISO 14001 CERTIFIED · ISO 9001 CERTIFIED

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

ARMORCOAT 8 MIL CLEAR

SAFE INT

Bomb Blast Tested
Interior Film

Solar Gard® SAINT-GOBAIN

Solar Gard® Safety & Security Window Films

Armorcoat® 8 Mil LX 70

EMI Shielding

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	72	66
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	95	-
IRER (%)	IR Energy Rejection @780-2500nm	78	68
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	48	44
FR (%)	Fade reduction coefficient	44	41

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	200/235
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	21.6
BREAK-kg/cm	Break Strength	44.0
TEAR-kg	Strength (Graves)	6.0
PUNC-kg	Puncture Strength	64.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P1A
ISO 16933, GSA & ASTM	Blast Resistance	YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

ISO 14001 CERTIFIED · ISO 9001 CERTIFIED

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

Solar Gard® Safety & Security Window Films

Armorcoat® 8 Mil Silver 35

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	35	33
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	86	-
IRER (%)	IR Energy Rejection @780-2500nm	71	61
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	28	26
FR (%)	Fade reduction coefficient	67	65

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	200/235
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	21.6
BREAK-kg/cm	Break Strength	44.0
TEAR-kg	Strength (Graves)	6.0
PUNC-kg	Puncture Strength	64.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P1A
ISO 16933, GSA & ASTM Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

Solar Gard® Safety & Security Window Films

Armorcoat® 8 Mil Silver 20

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	14	14
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	95	-
IRER (%)	IR Energy Rejection @780-2500nm	84	72
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	13	12
FR (%)	Fade reduction coefficient	85	84

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	200/235
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	21.6
BREAK-kg/cm	Break Strength	44.0
TEAR-kg	Strength (Graves)	6.0
PUNC-kg	Puncture Strength	64.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P1A
ISO 16933, GSA & ASTM Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

ISO 14001 · ISO 9001

ARMORCOAT 8 MIL SILVER 20

SAFE INT

Solar Gard® Safety & Security Window Films

Armorcoat® 8 Mil Stainless Steel 50

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	44	40
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	61	-
IRER (%)	IR Energy Rejection @780-2500nm	48	41
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	30	27
FR (%)	Fade reduction coefficient	65	64

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	200/235
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	21.6
BREAK-kg/cm	Break Strength	44.0
TEAR-kg	Strength (Graves)	6.0
PUNC-kg	Puncture Strength	64.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P1A
ISO 16933, GSA & ASTM Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

ISO 14001 ISO 9001

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

Solar Gard® Safety & Security Window Films

Armorcoat® 8 Mil Stainless Steel 35

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	38	35
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	67	-
IRER (%)	IR Energy Rejection @780-2500nm	53	44
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	27	25
FR (%)	Fade reduction coefficient	68	66

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	200/235
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	21.6
BREAK-kg/cm	Break Strength	44.0
TEAR-kg	Strength (Graves)	6.0
PUNC-kg	Puncture Strength	64.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P1A
ISO 16933, GSA & ASTM Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

ARMORCOAT 8 MIL STAINLESS STEEL 35

SAFE INT

Solar Gard® Safety & Security Window Films

Armorcoat® 8 Mil Stainless Steel 20

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	21	20
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	81	-
IRER (%)	IR Energy Rejection @780-2500nm	66	52
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	15	14
FR (%)	Fade reduction coefficient	82	81

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	200/235
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	21.6
BREAK-kg/cm	Break Strength	44.0
TEAR-kg	Strength (Graves)	6.0
PUNC-kg	Puncture Strength	64.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P1A
ISO 16933, GSA & ASTM Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

ARMORCOAT 8 MIL STAINLESS STEEL 20

SAFE INT

Solar Gard® Safety & Security Window Films

Armorcoat® 10 Mil Clear

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	87	79
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	28	-
IRER (%)	IR Energy Rejection @780-2500nm	19	28
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	62	56
FR (%)	Fade reduction coefficient	27	24

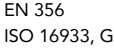
Physical Properties

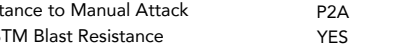
Tnom/T(µm)	Thickness Nominal / Overall	250/300
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	27.0
BREAK-kg/cm	Break Strength	55.0
TEAR-kg	Strength (Graves)	7.5
PUNC-kg	Puncture Strength	80.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P2A
ISO 16933, GSA & ASTM Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*





Solar Gard® Safety & Security Window Films

Armorcoat® 10 Mil Silver 20

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	17	16
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	94	-
IRER (%)	IR Energy Rejection @780-2500nm	83	71
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	15	14
FR (%)	Fade reduction coefficient	82	81

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	250/300
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	27.0
BREAK-kg/cm	Break Strength	55.0
TEAR-kg	Strength (Graves)	7.5
PUNC-kg	Puncture Strength	80.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P2A
ISO 16933, GSA & ASTM Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

SAFE INT ARMORCOAT 10 MIL SILVER 20

Solar Gard® Safety & Security Window Films

Armorcoat® 10 Mil Stainless Steel 35

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	43	40
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	62	-
IRER (%)	IR Energy Rejection @780-2500nm	49	42
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	30	28
FR (%)	Fade reduction coefficient	65	62

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	250/300
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	27.0
BREAK-kg/cm	Break Strength	55.0
TEAR-kg	Strength (Graves)	7.5
PUNC-kg	Puncture Strength	80.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P2A
ISO 16933, GSA & ASTM Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

ISO 14001 ISO 9001

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

Solar Gard® Safety & Security Window Films

Armorcoat® 11 Mil Clear

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	87	79
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	30	-
IRER (%)	IR Energy Rejection @780-2500nm	21	28
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	62	56
FR (%)	Fade reduction coefficient	27	24

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	275/315
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	29.7
BREAK-kg/cm	Break Strength	60.5
TEAR-kg	Strength (Graves)	8.3
PUNC-kg	Puncture Strength	83.9

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P2A
ISO 16933, GSA, ASTM & INERIS Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

ISO 14001 · ISO 9001

Solar Gard® Safety & Security Window Films

Armorcoat® 14 Mil Clear

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	87	79
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	32	-
IRER (%)	IR Energy Rejection @780-2500nm	21	29
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	62	56
FR (%)	Fade reduction coefficient	27	24

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	350/400
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	37.8
BREAK-kg/cm	Break Strength	77.0
TEAR-kg	Strength (Graves)	10.5
PUNC-kg	Puncture Strength	105.0

Safety Testing*

EN 12600	Human Impact	1B1
EN 356	Resistance to Manual Attack	P2A/P3A**
ISO 16933, GSA & ASTM Blast Resistance		YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*
*** EN356 IGU P3A 4mm Toughened/12mm/4mmToughened or EN356 IGU P3A Lamell.*

ISO 14001 CERTIFIED · ISO 9001 CERTIFIED

EN 356 · EN 12600 · SBI 16933 · GSA INERIS ASTM · CSTB M1 EN 45545 EN 13501

OSW Exterior Film

Solar Gard® SAINT-GOBAIN

Solar Gard® Safety & Security Window Films

Sentinel™ Plus 4 Mil Clear

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	89	81
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	60	-
IRER (%)	IR Energy Rejection @780-2500nm	18	29
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	60	55
FR (%)	Fade reduction coefficient	20	26

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	100/125
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	10.8
BREAK-kg/cm	Break Strength	22.0
TEAR-kg	Strength (Graves)	3.0
PUNC-kg	Puncture Strength	30.0

Safety Testing*

EN 12600	Human Impact	YES
Reaction to Fire (SBI EN 13823)		B-s1, d0

For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor

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EN 12600

CSTB M1 EN 45545 EN 13501

SENTINEL PLUS 4 MIL CLEAR OSW

SAFE EXT

OSW Exterior Film

Solar Gard® Safety & Security Window Films

Sentinel™ 4 Mil Clear PC

ESPECIALLY FOR POLY CARBONATE PC SPECIALEMENT POUR

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	89	81
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	24	-
IRER (%)	IR Energy Rejection @780-2500nm	-	-
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	68	61
FR (%)	Fade reduction coefficient	20	18

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	100/125
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	10.8
BREAK-kg/cm	Break Strength	22.0
TEAR-kg	Strength (Graves)	3.0
PUNC-kg	Puncture Strength	30.0

Safety Testing*

Reaction to Fire (SBI EN 13823)	B-s1, d0

For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor

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SENTINEL 4 MIL CLEAR PC OSW

SAFE EXT

OSW Exterior Film

Solar Gard® SAINT-GOBAIN

Solar Gard® Safety & Security Window Films

Sentinel™ 8 Mil Clear

Performance Results

		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	88	80
Solar Energy			
SIRR (%)	Selective IR Energy Rejection @280-2500nm	26	-
IRER (%)	IR Energy Rejection @780-2500nm	-	-
UV (%)	Blocked @300 to 380nm	>99	>99
TdW (%)	Fading factor Tdw-ISO @300-700nm	66	59
FR (%)	Fade reduction coefficient	22	20

Physical Properties

Tnom/T(µm)	Thickness Nominal / Overall	175/200
TS- kg/cm²	Tensile strength	2110
ELONG	Elongation	>100%
PEEL-g/cm	Peel Strength	>985
YIELD-kg/cm²	Yield Strength (at 5%)	18.9
BREAK-kg/cm	Break Strength	38.5
TEAR-kg	Strength (Graves)	5.25
PUNC-kg	Puncture Strength	52.0

Safety Testing*

EN 12600	Human Impact	1B1
Reaction to Fire (SBI EN 13823)		B-s1, d0

**For details on available safety testing and test reports, consult www.solargard.com or inquire with your local authorized dealer/distributor*

ISO 14001 CERTIFIED ISO 9001 CERTIFIED

EN 12600

CSTB M1 EN 45545 EN 13501

SENTINEL 8 MIL CLEAR OSW

SAFE EXT

Protection transparent. facile à remplacer

Solar Gard® GraffitiGard Window Films

Graffitigard 2 Mil | 50µ

Physical Characteristics

PERFORMANCE	VALUE	METHOD
Caliper, film only	50µm	Mitutoyo® Series
Caliper, film & adhesive	65µm	Micrometer 293
Tensile Strength (without liner)		
- Transverse direction (TD)	175 N/mm²	ASTM D 882
- Machine direction (MD)	150 N/mm²	
Adhesion, Ultimate (applied to glass)	45 N/m (20 min)	
	92 N/m (24 hours)	ASTM D 903-98
	164 N/m (30 days)	
Scratch Resistance	10.00%	ASTM D 1044 (Taber Abrasion)
Shrinkage without liner	1 mm maximum	30 minutes, 120 °C
Removability from glass	No residual left on glass	

For the optical, light and solar energy performance: see the PCR2 Clear sample page

- R1- HL1/HL2/HL3 according to EN 45545 (public transport); B,s1, d0 according to EN 13501-1:2007+A1:2009 (SBI)
- F1 and M1 acc to French norms
- Class A+ following tests according to NF- ISO 16000 (VOC emissions)

Adhesion is measured by peeling specimens at a 180° angle from the substrate. Peel adhesion is the average result for the strips tested in Newtons per meter. Specimens are applied to substrate using standard application practices. Initial adhesion is measured 20 minutes after application followed by 24 hours.

Scratch resistance is measured testing using the Taber Haze 5130 Abraser. Specimens are subjected to 100 cycles with two 500g weights. Abrasive damage is visually judged and numerically quantified by calculating the difference in haze percentage in accordance with Test Method ASTM D1003 between an abraded and unabraded specimens.

All Solar Gard window films meet classification B-S1,d0 (tests acc to SBI EN13823) and class M1 (tests acc.to NF P 92-501).

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ISO 5660 | BS6853 -B2/-8.4 | BS476-6 BS476-7 | A+ NF-ISO 16000 | CSTB M1 EN 45545 EN 13501

GRAFFITI

GRAFFITIGARD 2 MIL CLEAR

Protection transparent. facile à remplacer

Solar Gard® GraffitiGard Window Films

Graffitigard 4 Mil | 100µ

Physical Characteristics

PERFORMANCE	VALUE	METHOD
Caliper, film only	100µm	Mitutoyo® Series
Caliper, film & adhesive	115µm	Micrometer 293
Tensile Strength (without liner)		
- Transverse direction (TD)	175 N/mm2	ASTM D 882
- Machine direction (MD)	150 N/mm2	
Adhesion, Ultimate (applied to glass)	45 N/m (20 min)	
	92 N/m (24 hours)	ASTM D 903-98
	164 N/m (30 days)	
Scratch Resistance	10.00%	ASTM D 1044 (Taber Abrasion)
Shrinkage without liner	1 mm maximum	30 minutes, 120 °C
Removability from glass	No residual left on glass	

For the optical, light and solar energy performance: see the Armorcoat 4 mil Clear sample page

- R1- HL1/HL2/HL3 according to EN 45545 (public transport); B,s1, d0 according to EN 13501-1:2007+A1:2009 (SBI)
- F1 and M1 acc to French norms
- Class A+ following tests according to NF- ISO 16000 (VOC emissions)

Adhesion is measured by peeling specimens at a 180° angle from the substrate. Peel adhesion is the average result for the strips tested in Newtons per meter. Specimens are applied to substrate using standard application practices. Initial adhesion is measured 20 minutes after application followed by 24 hours.

Scratch resistance is measured testing using the Taber Haze 5130 Abraser. Specimens are subjected to 100 cycles with two 500g weights. Abrasive damage is visually judged and numerically quantified by calculating the difference in haze percentage in accordance with Test Method ASTM D1003 between an abraded and unabraded specimens.

All Solar Gard window films meet classification B-S1,d0 (tests acc to SBI EN13823) and class M1 (tests acc.to NF P 92-501).

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

ISO 5660 | BS6853 -B2/-8.4 | BS476-6 BS476-7 | A+ NF-ISO 16000 | CSTB M1 EN 45545 EN 13501

GRAFFITI

GRAFFITIGARD 4 MIL CLEAR

Protection transparent. facile à remplacer

Solar Gard® GraffitiGard Window Films

Graffitigard 7 Mil | 175µ

Physical Characteristics

PERFORMANCE	VALUE	METHOD
Caliper, film only	175µm	Mitutoyo® Series
Caliper, film & adhesive	191µm	Micrometer 293
Tensile Strength (without liner)		
- Transverse direction (TD)	175 N/mm2	ASTM D 882
- Machine direction (MD)	133 N/mm2	
Adhesion, Ultimate (applied to glass)	50 N/m (20 min)	
	70 N/m (24 hours)	ASTM D 903-98
	102 N/m (30 days)	
Scratch Resistance	10.00%	ASTM D 1044 (Taber Abrasion)
Shrinkage without liner	1 mm maximum	30 minutes, 120 °C
Removability from glass	No residual left on glass	

For the optical, light and solar energy performance: see the Armorcoat 7 mil Clear sample page

- R1- HL1/HL2/HL3 according to EN 45545 (public transport); B,s1, d0 according to EN 13501-1:2007+A1:2009 (SBI)
- F1 and M1 acc to French norms
- Class A+ following tests according to NF- ISO 16000 (VOC emissions)

Adhesion is measured by peeling specimens at a 180° angle from the substrate. Peel adhesion is the average result for the strips tested in Newtons per meter. Specimens are applied to substrate using standard application practices. Initial adhesion is measured 20 minutes after application followed by 24 hours.

Scratch resistance is measured testing using the Taber Haze 5130 Abraser. Specimens are subjected to 100 cycles with two 500g weights. Abrasive damage is visually judged and numerically quantified by calculating the difference in haze percentage in accordance with Test Method ASTM D1003 between an abraded and unabraded specimens.

All Solar Gard window films meet classification B-S1,d0 (tests acc to SBI EN13823) and class M1 (tests acc.to NF P 92-501).

CERTIFIED ISO 14001 CERTIFIED | CERTIFIED ISO 9001 CERTIFIED

ISO 5660 | BS6853 -B2/-8.4 | BS476-6 BS476-7 | A+ NF-ISO 16000 | CSTB M1 EN 45545 EN 13501

GRAFFITI | GRAFFITIGARD 7 MIL CLEAR

Anti UV + Digital Printing

Solar Gard® UV Reduction & Digital Print Window Films

PCR2 Clear

Performance Results	4 mm	4/12/4 mm
Visible Light		
Transmittance %	88	80
Solar Energy		
Selective IR Energy Rejection - SIRR @280-2500 nm %	23	-
IR Energy Rejection - IRER @780-2500 nm %	19	28
UV Blocked @300 to 380 nm %	>99	>99
Fading factor (Tdw-ISO @300-700 nm) %	63	57
Fade reduction coefficient %	26	23

Physical Properties

Thickness Nominal / Overall Tnom / T(µm)	50/75
Tensile strength TS-kg/cm²	1780
Elongation	>100%
Peel Strength g/cm	>160
Yield Strength (at 5%) kg/cm²	5.4
Break Strength kg/cm	11
Tear Strength (Graves) kg	1.5
Puncture Strength kg	15
Reaction to Fire (SBI EN 13823)	B-s1, d0

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Visible Light UP TO 88% Transmission

UV UP TO 99% Rejection

SBI EN 13823

Solar Gard® Solar Control & Decorative Window Films

Clear Frost RA

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	65	60
Re/Ri (%)	Reflectance Exterior/Interior	25/27	29/30
GL (%)	Glare Reduction	28	27
Solar Energy			
TR (%)	Transmittance	61	53
A (%)	Absorptance	18	24
R (%)	Reflectance	21	23
SIRR (%)	Selective IR Energy Rejection @280-2500nm	34	-
IRER (%)	IR Energy Rejection @780-2500nm	31	36
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.65	.63
SSI	Light to solar heat gain ratio (VLT/SHGC)	1.00	.95
TSER (%)	Total solar energy rejected	35	37
TSER (%)-60°	Total solar energy rejected @60° angle	43	47
SHGR (%)	Solar heat gain reduction	25	18
E	Emissivity	.87	
U	Winter U-factor (W/m2 °C)	5.8	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	45	41
FR (%)	Fade reduction coefficient	47	45

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy 37% Rejected

Visible Light 65% Transmission

UV 99% Rejection

Solar Gard® Solar Control & Decorative Window Films

Clear Frost RA 50

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	50	46
Re/Ri (%)	Reflectance Exterior/Interior	31/35	34/37
GL (%)	Glare Reduction	44	43
Solar Energy			
TR (%)	Transmittance	50	42
A (%)	Absorptance	28	36
R (%)	Reflectance	22	22
SIRR (%)	Selective IR Energy Rejection @280-2500nm	-	-
IRER (%)	IR Energy Rejection @780-2500nm	43	43
UV (%)	Blocked @300-380nm	64	72
SC	Shading Coefficient	.63	.64
G (%)	Solar heat gain coefficient (G-value)	.55	.56
SSI	Light to solar heat gain ratio (VLT/SHGC)	.91	.83
TSER (%)	Total solar energy rejected	45	44
TSER (%)-60°	Total solar energy rejected @60° angle	52	55
SHGR (%)	Solar heat gain reduction	37	28
E	Emissivity	.84	
U	Winter U-factor (W/m2 °C)	5.8	2.8
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	46	41
FR (%)	Fade reduction coefficient	46	45

Physical Properties

Tnom / T(µm) Nominal thickness	50/65
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0

CERTIFIED ISO 14001 CERTIFIED

CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 45% Rejected

Visible Light UP TO 50% Transmission

UV UP TO 72% Rejection

Solar Gard® Solar Control & Decorative Window Films

White Opaque RA

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	9	9
Re/Ri (%)	Reflectance Exterior/Interior	70/84	69/84
GL (%)	Glare Reduction	90	89
Solar Energy			
TR (%)	Transmittance	13	12
A (%)	Absorptance	31	36
R (%)	Reflectance	56	52
SIRR (%)	Selective IR Energy Rejection @280-2500nm	71	-
IRER (%)	IR Energy Rejection @780-2500nm	73	66
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.21	.29
SSI	Light to solar heat gain ratio (VLT/SHGC)	.44	.30
TSER (%)	Total solar energy rejected	79	71
TSER (%)-60°	Total solar energy rejected @60° angle	82	74
SHGR (%)	Solar heat gain reduction	76	63
E	Emissivity	.88	
U	Winter U-factor (W/m2 °C)	5.9	2.9
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	7	6
FR (%)	Fade reduction coefficient	92	91

Physical Properties

Tnom / T(µm) Nominal thickness	50
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0

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CERTIFIED ISO 9001 CERTIFIED

Solar Energy UP TO 79% Rejected

Glare UP TO 90% Reduction

UV UP TO 99% Rejection

Solar Gard® Solar Control & Decorative Window Films

Black Opaque RA

Performance Results		4 mm	4/12/4 mm
Visible Light			
TR (%)	Transmittance	0	0
Re/Ri (%)	Reflectance Exterior/Interior	6/7	13/7
GL (%)	Glare Reduction	100	100
Solar Energy			
TR (%)	Transmittance	0	0
A (%)	Absorptance	95	88
R (%)	Reflectance	5	12
SIRR (%)	Selective IR Energy Rejection @280-2500nm	100	-
IRER (%)	IR Energy Rejection @780-2500nm	77	50
UV (%)	Blocked @300-380nm	>99	>99
G (%)	Solar heat gain coefficient (G-value)	.23	.51
SSI	Light to solar heat gain ratio (VLT/SHGC)	.00	.00
TSER (%)	Total solar energy rejected	77	49
TSER (%)-60°	Total solar energy rejected @60° angle	78	56
SHGR (%)	Solar heat gain reduction	73	34
E	Emissivity	.93	
U	Winter U-factor (W/m2 °C)	6.0	2.9
TdW (%)	Fading factor (Tdw-ISO @300-700nm)	0	0
FR (%)	Fade reduction coefficient	100	100

Physical Properties

Tnom / T(µm) Nominal thickness	75
TS - kg/cm² Tensile strength	2110 kg/cm²
Reaction to Fire (SBI EN 13823)	B-s1, d0

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Solar Energy 77% Rejected

Glare 100% Reduction

UV 99% Rejection

Solar Energy Technical Definitions

Visible light transmittance The percent of total visible light that is transmitted through the window film/glass system. The lower the number, the less visible light transmitted.

Visible light reflectance The percent of total visible light that is reflected by the window film/glass system. The lower the number, the less visible light reflected.

Solar transmittance The percent of incident solar radiation that is transmitted through the window film/glass system. The lower the number, the less solar radiation transmitted.

Solar absorptance The percent of incident solar radiation that is absorbed by the window film/glass system. The lower the number, the less solar radiation absorbed.

Solar reflectance The percent of incident solar radiation that is reflected by the window film/glass system. The lower the number, the less solar radiation reflected.

Selective infrared rejection (SIRR) Average value of the IR reflection (part of the spectrum between 780 and 2500 nm).

Infrared energy rejected (IRER) Accumulation of IR energy transmitted through the 'glazing-film' pair. Equivalent to a G value for the IR spectrum (780 - 2500 nm).

Ultraviolet light blocked The percent of ultraviolet (UV) that is blocked by the window film/glass system. The higher the number, the less ultraviolet transmitted.

Shading coefficient The ratio of solar heat passing through window film to the solar heat gain that occurs under the same conditions if the window were made of clear, unshaded double strength window glass. The lower the number, the better solar shading qualities of the window film/glass system.

Solar Energy Technical Definitions

Solar factor (G) Accumulation of solar energy transmitted through glazing fitted with film. with the solar energy absorbed and then re-emitted inside the building. The lower the value, the more heat is retained.

Total solar energy rejected The percent of total solar energy (heat) rejected by the window film/glass system. The higher the number, the more total solar energy (heat) is rejected.

Emissivity The measure of a surface's ability to absorb or reflect far-infrared radiation. The lower the emissivity rating, the better the insulating qualities of the window film/glass system.

Winter U-Factor The amount of heat energy which transfers through an area of $1m^2$ with a temperature difference of 1°C. The lower the U-factor, the better insulating qualities of the window film/glass system.

Solar heat gain coefficient The ratio of the total solar heat passing through a given window product relative to the solar heat incident on the projected window surface at normal solar incidence (i.e. perpendicular to the glazing surface). The lower the coefficient number for a particular window film/glass system, the better it is able to reduce heat.

Tdw-ISO (300-700 nm) ISO method to determine discoloration caused by wavelengths 300 - 700 nm. The lower the value, the less discoloration.

Fading factor (FR) One of two recognized calculationsto determine fading. Covers fading caused by wavelengths/energy from 300 - 700 nm. The lower the value the less fading.

Fade reduction coefficient Relative reduction of the fading (Tdw-ISO) obtained by applying film on reference glass (in this case: 3 mm clear glass).

All Solar Gard window films meet classification B-S1,d0 (tests acc. to SBI EN13823) and class M1 (tests acc.to NF P 92-501).

Solar Gard® Architectural Window Films

Film-to-Glass Checklist

SCAN THE CODE

INFO FILM-TO-GLASS CHECKLIST

What matters most to you…

We're On It!

www.solargard.eu

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