SUNGUARD
WINDOW FILMS

SPECIFICATION.

WINDOW FILM TYPE: SAFETY & SECURITY - SILVER REFLECTIVE - HIGH

SAFETY & SECURITY.

Sunguard Safety and Security Window Films, are fabricated with a super resilient layer of high-tensile polyester and aggressive adhesives to provide exceptional impact resistant capabilities. A combined safety/security and solar/privacy window film which has a reflective appearance. Provides our highest level of daytime privacy with optical transparency. Used where both high levels of heat and glare reduction are essential. Rejects up to 80% of solar energy, helping reduce heat build-up, and energy costs, increasing occupant comfort. Rejects up to 82% of glare. Reduction of hot spots helps increase HVAC efficiency and lower energy costs. Shields 99% of UV radiation, helping to reduce fading of valuables, fabrics and furnishings. Constructed with a durable scratch resistant coating for easy cleaning.

PHYSICAL PROPERTIES NOMINAL.

Nom. Thickness:
4 Mil - 100/125 microns
8 Mil - 200/235 microns
10 Mil - 250/300 microns
12 Mil - 350/400 microns
Tensile strength: 2,100 kg/cm2
Melting point: 260 – 265°C

*Infrared rejection = 1 - average unweighted transmittance using ASTM E 903.

**Tdw-ISO is the percentage of transmitted light that causes fading. A lower number means more protection against fading.

***EN356 IGU P3A 4mm Toughened/12mm/4mm Toughened or EN356 IGU P3A Lamell.

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

SOLAR ENERGY REJECTED. UP TO:	GLARE REDUCTION. UP TO:	UV REJECTED. UP TO
80%	82%	99%

EN 356	EN 12600	ISO 16933	GSA ASTM	CSTB M1 EN 45545 EN 13501

PERFORMANCE PARAMETERS FOR DIFFERENT WINDOW TYPES	4 MIL CLEAR		8 MIL CLEAR		10 MIL CLEAR		14 MIL CLEAR	
	4MM SINGLE CLEAR	4/12/4MM DOUBLE CLEAR	4MM SINGLE CLEAR	4/12/4MM DOUBLE CLEAR	4MM SINGLE CLEAR	4/12/4MM DOUBLE CLEAR	4MM SINGLE CLEAR	4/12/4MM DOUBLE CLEAR
VISIBLE LIGHT.								
Transmittance %	16	15	16	15	16	15	16	15
Reflectance exterior %	58	58	58	58	58	58	58	58
Reflectance interior %	58	59	58	59	58	59	58	59
Glare reduction %	82	81	82	81	82	81	82	81
SOLAR ENERGY.								
Solar heat gain reduction %	77	61	77	61	77	61	77	61
Total solar energy rejected %	80	70	80	70	80	70	80	70
Transmittance %	12	11	12	11	12	11	12	11
Reflectance %	53	48	53	48	53	48	53	48
Infrared rejection @780 - 2500 nm %*	84	73	84	73	84	73	84	73
Ultraviolet light blocked @300 to 380 nm %	>99	>99	>99	>99	>99	>99	>99	>99
Fade control UV Tdw-ISO @300 - 700 nm %**	14	13	14	13	14	13	14	13
Fade reduction %	84	82	84	82	84	82	84	82
PHYSICAL PROPERTIES.								
Tnom/T (µm) Nominal/overall thickness	100/125		200/235		250/300		350/400	
Tensile strength - kg/cm²	2110		2110		2110		2110	
Elongation	>100%		>100%		>100%		>100%	
Peel strength - g/cm	>985		>985		>985		>985	
Yield strength - kg/cm² (at 5%)	10.8		21.6		27.0		37.8	
Break strength - kg/cm	22.0		44.0		55.0		77.0	
Tear strength - kg (Graves)	3.0		6.0		7.5		10.5	
Puncture strength – kg	30.0		64.0		80.0		105.0	
SAFETY TESTING.								
EN 12600 Human impact	2B2		1B1		1B1		1B1	
EN 356 Resistance to manual attack	N/A		P1A		P2A		P2A/P3A***	
ISO 16933, GSA or ASTM Bomb blast resistance	N/A		Y		Y		Y	

FILM PERFORMANCE. (4MM SINGLE CLEAR)