



NATIONAL GLASS

DISTRIBUTION

Johannesburg - Cape Town - Port Elizabeth - Pretoria - Nelspruit - East London - George

SOLARSHIELD LAMINATED (PVB) GLASS

STANDARD SIZES

	6.38 mm NS	6.76 mm HPR	7.52 mm HI	8.38 mm NS	8.76 mm HPR	9.52 mm HI
Standard Sizes	2440x2000	2440x2000	2440x2000	3210x2250	3210x2250	3210x2250
	3210x2250	3210x2250	3210x2250	3210x2440	3210x2440	3210x2440
	3210x2440	3210x2440	3210x2440	3660x2440	3660x2440	3660x2440
		3660x2440	3660x2440			

- **NS (Normal Strength) For human impact safety.**
- **HPR (High Penetration Resistance.) For additional security.**
- **HI (High Impact) For security in high risk applications.**

	6.38 mm NS	6.76 mm HPR	7.52 mm HI	8.38 mm NS	8.76 mm HPR	9.52 mm HI
Aquamarine	S	S	S	S	S	S
Blue	S	S	S	S	S	S
Bronze	S	S	S	S	S	S
Grey	S	S	S	S	S	S
Regal Blue	S	S	S	S	S	S
Serene Green	R	R	R			
Silver	S	S	S	S	S	S

NS: NORMAL STRENGTH; **HI:** HIGH IMPACT; **HPR:** HIGH PENETRATION RESISTANT

S: AVAILABLE AS STANDARD; **R:** AVAILABLE ON REQUEST

PRODUCT SPECIFICATIONS

Type of Glass	Colour	Visible Light		Solar Energy					Shading Coefficient	U Value	UV	Noise Control	Safety	Security
		Transmission	Reflection	Total Elimination	Reflectance	Absorption	Direct Transmission	Total Transmission	Ratio (CFG = 0.87)	(W/m).K	Elimination %	ISO rating/STC Value	Rating	Rating
Solarshield	Aquamarine S10	9%	27%	75%	26%	67%	7%	25%	0.29	5.8	99%	33	1	1
Solarshield	Aquamarine S20	19%	19%	67%	18%	67%	15%	33%	0.38	5.8	99%	33	1	1
Solarshield	Aquamarine S30	29%	12%	59%	13%	63%	24%	41%	0.47	5.8	99%	33	1	1
Solarshield	Blue S10	9%	30%	75%	29%	63%	8%	25%	0.28	5.8	99%	33	1	1
Solarshield	Blue S20	20%	20%	67%	20%	64%	16%	33%	0.38	5.8	99%	33	1	1
Solarshield	Blue S30	30%	14%	59%	14%	62%	24%	41%	0.47	5.8	99%	33	1	1
Solarshield	Bronze S10	7%	17%	74%	19%	75%	6%	26%	0.30	5.8	99%	33	1	1
Solarshield	Bronze S20	14%	12%	68%	13%	75%	12%	32%	0.37	5.8	99%	33	1	1
Solarshield	Bronze S30	21%	9%	62%	10%	71%	19%	38%	0.44	5.8	99%	33	1	1

Table continues.....

Solarshield	Grey S10	5%	14%	74%	18%	77%	55%	26%	0.30	5.8	99%	33	1	1
Solarshield	Grey S20	12%	10%	68%	13%	75%	12%	32%	0.36	5.8	99%	33	1	1
Solarshield	Grey S30	18%	8%	63%	10%	73%	17%	37%	0.42	5.8	99%	33	1	1
Solarshield	Regal Blue S10	8%	22%	75%	25%	68%	7%	25%	0.29	5.8	99%	33	1	1
Solarshield	Regal Blue S20	14%	15%	68%	17%	69%	14%	32%	0.37	5.8	99%	33	1	1
Solarshield	Regal Blue S30	24%	11%	60%	12%	66%	22%	40%	0.46	5.8	99%	33	1	1
Solarshield	Silver S10	11%	41%	77%	38%	53%	9%	23%	0.26	5.8	99%	33	1	1
Solarshield	Silver S20	24%	27%	66%	23%	59%	18%	34%	0.39	5.8	99%	33	1	1
Solarshield	Silver S30	35%	18%	58%	16%	57%	27%	42%	0.48	5.8	99%	33	1	1
Solarshield	Serene Green S10	11%	34%	74%	19%	74%	7%	26%	0.30	5.8	99%	33	1	1
Solarshield	Serene Green S20	23%	22%	67%	13%	73%	14%	33%	0.38	5.8	99%	33	1	1
Solarshield	Serene Green S30	36%	14%	60%	10%	69%	21%	40%	0.46	5.8	99%	33	1	1

EDGE WORKING

- The edges of all heat absorbing glass must be polished to reduce the possibility of thermal breakage.
- Polished edges eliminate the presence of vented faults, chips and flaws.
- Smooth polished edges are best produced by a straight line polishing machine.

TERMS AND DEFINITIONS

Visible Light

This is made up of all colours of the rainbow, it is the light humans can see. Also known as “white light”.

Visible Light Transmission

The percentage of visible light transmitted through the glass when the sun shines at right angles to the surface of the glass. Higher visible light transmission makes a building look more transparent from the outside and creates a lighter airier interior.

Visible Light Reflection

The percentage of visible light reflected from the surface of the glass, when the sun shines at right angles to the surface of the glass. The reflection increases as the angle of the sun decreases.

Solar Energy

Solar energy is high temperature energy radiated by the sun. It is the energy received from the sun on the surface of the earth. This includes the energy from the ultraviolet, visible and infrared segments of the solar spectrum.

- **Solar Heat Elimination**
The portion of the sun’s energy stopped by the glass or glazing system. This value will change when subjected to varying environmental conditions. The environmental conditions, which affect solar heat elimination, include air speed against both surfaces of the glass and temperature.
- **Solar Energy Control**

A solar control glazing system **Reflects, Absorbs and Transmits (RAT)** solar energy. Laminated glass contains an interlayer. Energy that would pass through clear glass is absorbed by this interlayer. A variety of interlayer colours are available to absorb solar radiation – the darker the colour, the greater the solar control. The increased use of glass in architecture today makes it imperative to consider the comfort of a building's occupants and energy efficiency.

- **Reflectance**
The parts of the sun's energy which is reflected by the glass.
- **Absorption**
The part of the sun's energy which is absorbed.
- **Direct Transmission**
The part of the sun's energy which passes directly through the glass.
- **Total Energy Transmission**
The sum of the direct energy transmission and the portion of the absorbed energy that is radiated to the interior of the glazing system. Also called Solar Heat Gain Coefficient (SHGC).

Shading Coefficient

Shading Coefficient is a measure of the total amount of heat passing through the glazing (known as the solar heat transmittance) compared with that through a single clear glass. Clear Float Glass (CFG) has a shading coefficient of 1. Therefore, a shading coefficient of 0.50 represents a reduction of 50% of the heat that would have been transmitted when compared to a single sheet of CFG. In other words the higher the shading coefficient, the more solar heat is allowed into the building.

How to calculate?

$SC = \text{Total Energy Transmission (TET) of the glass} / 87$ (87 is the total energy transmission for CFG)

U-factor (U-value)

The lower the better!! The U-factor measures how well a product prevents the conductance/transfer of heat or cold through building material. A lower U-factor means a better insulated window or door.

Ultraviolet Light (UV)

The invisible rays of the spectrum that are outside of the visible spectrum at its short-wavelength violet end. Ultraviolet rays are found in everyday sunlight and can cause fading of paint finishes, carpets and fabrics.

Safety and Security Ratings:

1. Normal Strength (NS) for human impact safety (0.38mm PVB interlayer)
2. High Penetration Resistant (HPR) for additional security (0.76mm PVB interlayer)
3. High Impact (HI) for security in high-risk applications (1.52mm PVB interlayer)

Coated Glass

Glass with a chemical coating applied to one surface of the glass. The coating can provide such enhanced performance characteristics such as privacy, solar control or mirror effects.

Coated Interlayer

Interlayer made from multiple stacks of coating also known as sputtered coated products.

Annealed Glass

To prevent or remove stresses in glass by controlled cooling. It is in fact "ordinary" glass as taken from the production line and stored in stock plates. Annealed glass, when broken, gives large fragments with sharp edges and so is not classified as a safety glass.