

ECO

Dynamic Sun Reactive Transition Smart Glass **SSG® VariShield**



Micron NAND Facility, Singapore

Throughout the day, interior spaces will be exposed to the sun at different times and angles. SSG® VariShield is a smart glass powered by Suntuitive that offers the solution of uneven exposure to the sun by intuitively tinting when heated by direct sunlight, hence eliminating the need for blinds, shades or curtains.

SSG® VariShield, which allows approximately 50% transmission of visible light on cloudy days, at night or even early in the morning, will intuitively tint in full sunlight to achieve potentially 10% or less transmission into the interiors, depending on the sunlight angle and intensity. This reduced transmission also reduces the sun's glare, heat and ultraviolet rays. It offers people a better environment to live, work & study throughout the day.

The laminated insulated construction provides additional heat insulation which is most effective for warm climates. As SSG® VariShield automatically dims when there is direct sunlight, it is most suited for buildings with East and West facings as well as for skylights and canopies.

THE TECHNOLOGY

SSG® VariShield is a Dynamic Sun Reactive Transition Smart Glass which basically adopts a thermochromic approach to create a change in tint. The original state of glass is slightly tinted when it is not receiving heat from the sun. However, when it is

exposed to heat from direct sunlight, the glass will then react by tinting to a darker shade. Essentially, this smart glass tints according to the amount of heat received at different times of the day to achieve a comfortable and soothing interior space for the occupants.

The variable light transmission tinting requires only that the glass be heated by direct sunlight; there are no wires, electrodes, power supplies, or control apparatus required. SSG® VariShield only needs heat to be activated, which also means you will never have to worry about a technical glitch.



GreenHub, Singapore

USES AND APPLICATIONS

- Airport terminals
- Glass façades
- Hospitals
- Hotels
- Office buildings
- Private residences
- Restaurants
- Shopping malls
- Skylights and sunroofs
- Windows

PRODUCT FEATURES

ACOUSTIC BARRIER

SSG® VariShield laminated glass provides excellent acoustic performance. When used in an insulated glass configuration, it further enhances its sound insulation properties against external noise.

DESIGN VERSATILITY

SSG® VariShield allows flexibility in design possibilities with its variation of different glass types to meet the individual performance requirements.

ENERGY CONSERVATION

SSG® VariShield provides natural daylighting and allows for decreased use of electrical lighting, thus electrical demand is lowered. As SSG® VariShield is very energy efficient, it will be possible for buildings and homes to install smaller, less expensive cooling systems.

GLARE CONTROL

The warmer the glass surface gets, the darker SSG® VariShield's tint becomes. With this variable light transmission tinting, SSG® VariShield intuitively eliminates glare into interior spaces.

HEAT INSULATION

By controlling solar heat gain, SSG® VariShield lowers the amount of air conditioning loading, especially during mid-day when the heat from the sun is at its peak.

SAFETY AND SECURITY

SSG® VariShield incorporates the same PVB (Polyvinyl Butyral) base material used in laminated safety glass. The PVB interlayer holds the glass in place when the glass breaks, providing enhanced safety and security for the end-user.

ULTRAVIOLET SCREENING

SSG® VariShield is able to block 99% of UV light and dramatically reduces the sunlight's damaging effects on furnishings and fading of interior fabrics.

DAYLIGHT OPTIMISATION

While reducing glare, SSG® VariShield is able to optimise light transmission. This in turn allows sufficient light penetration into the building.

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Thermochromic Glass **SSG® VariShield**

PERFORMANCE INFORMATION Performance comparison of SSG® VariShield products

Product Make-up	Light Trans. (%)	SC	SHGC	U-Value (W/m²K)
Set A: SSG® A59/28				
13mm SSG® VariShield Laminated + 12mm Airspace + 6mm SSG® A59/28 Low E #05 Glass	56	0.40	0.35	1.51
13mm SSG® VariShield Laminated + 12mm Airspace + 6mm SSG® A59/28 Low E #05 Glass (Film temperature @ 25°C)	39	0.32	0.28	1.51
13mm SSG® VariShield Laminated + 12mm Airspace + 6mm SSG® A59/28 Low E #05 Glass (Film temperature @ 65°C)	7	0.15	0.13	1.51
Set B: SSG® A72/39				
13mm SSG® VariShield Laminated + 12mm Airspace + 6mm SSG® A72/39 Low E #05 Glass (Film temperature @ 15°C)	53	0.39	0.34	1.56
13mm SSG® VariShield Laminated + 12mm Airspace + 6mm SSG® A72/39 Low E #05 Glass (Film temperature @ 25°C)	48	0.36	0.32	1.56
13mm SSG® VariShield Laminated + 12mm Airspace + 6mm SSG® A72/39 Low E #05 Glass (Film temperature @ 45°C)	27	0.27	0.24	1.56
13mm SSG® VariShield Laminated + 12mm Airspace + 6mm SSG® A72/39 Low E #05 Glass (Film temperature @ 65°C)	8	0.18	0.15	1.56

***U-Value calculated in terms of summer values.**

SPECIFICATIONS : Production Sizes

Minimum Size (W/mm x H/mm)	Maximum Size (W/mm x H/mm)
300 x 300	1,600 x 5,700

SSG® VariShield is also available in an electric option. Get in touch with us for more information!