

## China tempered SGP laminated glass manufacturer

Sentry glass® plus interlayer (SGP) for laminated safety glazing is the latest innovation in Dupont's family of glass laminating products. It extends the performance of laminated glass beyond current technologies. Sentry glass® plus inter layer offers 5 times the tear strength and 100 times the rigidity of conventional PVB inter-layer. Because of its added strength, clarity, durability, fabrication and installation ease, it is an excellent candidate for demanding applications in the architectural market place. It can offer improved ballistic protection or thinner constructions than are now possible with conventional laminated glass.

SGP laminated glass inter-layer tear strength is five times than the normal PVB, a hundred times hardness for PVB, is the best material for made Bullet-proof glass.

SGP film with excellent adhesive strength of metal, can bond of online [LOW E glass](#) can be Energy-saving laminated glass, not only has anti sling security, but also with Low E glass energy saving function, possible to replace of Low E [insulated glass](#).

### Specification

Size: Max 3000\*5000mm, Mini 300\*300mm, any customized size could be produced.

Thickness: glass substrates could be 5mm, 6mm, 8mm, 10mm, 12mm, 15mm, etc.,SGP thickness 0.89mm, 1.52mm, 2.28mm,3.04mm, etc.

Glass type: Clear float glass, [low iron float glass](#)/ ultra clear float glass, [tempered glass](#), low-e glass, acid etched glass, screen-printed glass, etc.

### SGP laminated glass characteristics

1. Compare with [PVB laminated glass](#), the strength more higher, more transparent, the best configuration of super clear float glass
2. SGP laminated glass tearing strength is 5 times of PVB laminated glass
3. SGP laminated glass with high strength, can directly to use as the glass curtain wall structures
- 4.Can according to architectural design requires homogenization and heat soak process treatment

### SGP safety Laminated Glass Additional Attributes

Fragment retention if broken.

Meets safety glazing standards.

Hurricane protection

Meets impact& cycling resistant standards.

Intrusion resistance and forced entry

### The superiority SGP film compare PVB film

SGP film laminated glass equivalent thickness = two glass panel plus

PVB film laminated glass equivalent thickness = single panel glass x1.25

## SGP laminated glass performance data

### Performance data

Material Performance	SGP	PVB	Standard
Density (g/cm <sup>3</sup> )	0.95	1.07~1.08	ASTM D-792
Coefficient of linear expansion ( °C <sup>-1</sup> )	10~15x10 <sup>-5</sup> (-20°C ~32 °C)	4x10 <sup>-4</sup>	ASTM D-696
Tensile strength (Mpa)	34.5	20	ASTM D-638
Tear strength (Tear energy) (MJ/m <sup>3</sup> )	50	10-15	ASTM D-638
CSS (Mpa)	>20.7		Du Pont
Elongation (%)	400	275 (ASTM D-412)	ASTM D-638
HDT @ 66 PSI	43°C		ASTM D-696
Haze	<2%	<2	
YID %	<2.5	10-15	(interlayer)
Refractive index	1.5	1.47~1.5	
UV cutoff wavelength (nm)	310	380	
UV screening (%) 3C+0.38+3C	99.98	99.98	

### SGP Laminated safety glass suit to use on below place:

1. Easy happen to personal safety, such as street and sidewalk building glass windows, public buildings glass barriers, balcony doors and windows, interior partition stair glass and guard board, the typical building airport terminal, glass Roof, Glass patio, Tilt installation Glass Windows, even has hailstones and severe bad weathers, glass will not break damage the people.
2. Need to bulletproof, anti-theft, explosion-proof, put the hailstones on the building and that is required to safely isolate visitors to observe place. Such as banks, museums, exhibition halls, jewelry stores and other places need to be transparent but there may be shooting, theft, robbery applied to the bulletproof laminated glass; has explosion hazard, toxic production and testing sites, it is necessary to observe the reaction, but also to prevent explosion and toxic and hazardous materials on human health impact, and also the need to use thick explosion-proof laminated glass to achieve the purpose
3. The Floor, glass corridor. SGP laminated glass can withstand greater pressure and can meet the needs of transparent observation, can be used for submarine window, deep water peep mirror, ornamental aquarium. After printed pattern glass on glass can made high-strength laminated glass can be used as special effects glass floor.
4. high-rise buildings, large public building safety glass. Modern buildings are getting higher and higher, more and more high-rise, the large buildings to withstand greater wind, earthquake and temperature changes in the impact of glass have higher capacity and rigidity, and if damaged but also have A certain remaining bearing capacity and will not fall, adopt SGP film production of laminated glass is more suitable for high and large building. The typical applications such as Guangzhou TV Tower height of 600 meters, Shanghai center the height of 632 meters.
5. Large specification construction glass. Modern building required the single panel glass size more and more larger, adopt SGP film production of more than 10 meters long construction glass or glass column, its

security, ornamental to meet the requirements of these architectural glass. Typical applications such as Shanghai Apple store 12.6m×2.6 meters; Zhangjiajie glass plank road and so on.

### **The sightseeing stand used high quality SGP laminated glass**



### **Low Temperature Performance of SGP laminated glass**



Schubert Club Heilmaier Memorial Bandstand, Minnesota

- Laminated structure, installed in 2002 (structure has seen 3 winters).
- Avg. **summer** high T: **+ 34 °C**, Avg. **winter** low T: **- 20 °C**
- Point-fixed application, open and butt-glazed edges
- No edge delaminations or structural issues

#### Post Glass breakage Strength SGP laminated glass :

- Stiffness and toughness give superior post-glass breakage performance.
- Bellapart designed lightweight, low-slope roof with SentryGlas® Plus. SGP



**Endesa HQ - Madrid, Spain**

Architects: KPF  
Bellapart Engineering  
(Size: 3300 m<sup>2</sup> - Weight: 135T)



SGP laminated glass used on the transparency structural glass :

## Structural glass Transparency structure

The traditional use of steel structure supporting the components, replace by the transparent glass

