

## TITLE

SGG STADIP®

## SUBTITLE

Laminated safety and security glass



## DESCRIPTION

Laminated safety and security glass, SGG STADIP or SGG STADIP PROTECT, comprises two or more sheets of glass bonded together with one or more interlayers of polyvinyl butyral (PVB) film.

SGG STADIP glass incorporates a single PVB sheet with a nominal thickness of 0.38 mm, distinguishing it from SGG STADIP PROTECT glass which has a minimum thickness of 0.76 mm. Laminated glasses with different levels of safety and security can be obtained by varying the number and/ or thickness of each of the components.

If the glass breaks, the fragments of glass are held in place by the PVB interlayer(s). In fully framed installations the broken glass retains a residual strength while awaiting replacement.

### Where can it be used

Protection in buildings is increasingly required to comply with current regulations, for insurance purposes or simply to fulfil a genuine need, especially against the risk of injury, vandalism and burglary. In homes, SGG STADIP and SGG STADIP PROTECT glasses can offer appropriate safety and security solutions to meet the combined criterion of protection, aesthetics and performance

### What is it?

SGG STADIP and SGG STADIP PROTECT are made up of two or more sheets of glass bonded together with a plastic interlayer. After the plastic has been placed between the glass sheets, the whole assembly is subjected to heat and pressure. This results in the complete adhesion of the vinyl and the glass.

In the event of breakage, the glass fragments remain bonded to the plastic interlayer. In a fully framed conventional installation the glass fragments are held together and the glass retains a residual strength while awaiting replacement.

## RANGE

A wide range of laminated glazing exists to protect your safety and that of your home. Laminated safety glass combines well with other glass functions intended to improve your comfort such as self-cleaning, solar control, thermally insulating glass and acoustic protection.

The standard SGG STADIP and SGG STADIP PROTECT range comprises two or more leaves of SGG PLANICLEAR clear glass.

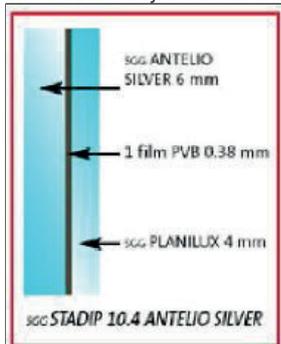
Other glass products can, however, be incorporated:

- SGG DIAMANT extra clear glass
- SGG PARSOL body-tinted glass - Solar control glass from the SGG COOL-LITE or SGG ANTELIO ranges
- SGG PLANITHERM low-emissivity glass
- Certain SGG DECORGLASS or SGG MASTERGLASS patterned glasses. In these cases, the name of the product is added after the SGG STADIP or SGG STADIP PROTECT brand name.

### Example

SGG STADIP 10.4mm ANTELIO SILVER consists of 6 mm SGG ANTELIO SILVER solar control glass, 4 mm SGG PLANICLEAR glass and a 0.38 mm thick PVB interlayer.

The PVB interlayers are available in various colours: clear, diffused or coloured (see SGG STADIP COLOR).

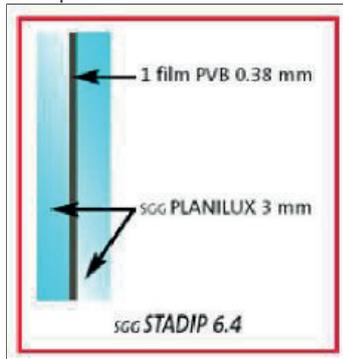


SGG STADIP: protection against injury

- Composition: laminated glass with a single 0.38 mm thick PVB interlayer.
- Name: SGG STADIP XX.1 where X represents the nominal thickness of a sheet of glass;
- The number 1 following the fullstop indicates the presence of a single 0.38 mm thick PVB interlayer.

In the UK, the total thickness of the laminated assembly is denoted to a single decimal point, thus allowing for the overall thickness of the PVB interlayers. E.g. 6.4mm = 2 x 3mm <sup>SGG</sup> PLANICLEAR + 1 x 0.38mm PVB.

Example



## PRODUCT APPLICATION

### Protection against injury

If the glass breaks, the fragments of glass remain bonded to the interlayer. This safety feature, which is often mandatory (for example: in public buildings, schools, creches, etc), is also ideal for residential buildings, where it protects the occupants.

The use of glass in roofs must meet safety, enhanced thermal insulation and solar protection requirements. Safety is ensured by the use of a laminated safety or security glass (inner leaf of the overhead glazing). If an object falls onto the glazing, <sup>SGG</sup> STADIP PROTECT may prevent the object from passing through the glass and also minimises the risk of fragments falling into the space below.

Depending on the composition, <sup>SGG</sup> STADIP PROTECT laminated security glass ensures that structures conform to the regulatory requirements for overhead glazing.

### Guarding and balustrading

<sup>SGG</sup> STADIP or <sup>SGG</sup> STADIP PROTECT laminated safety glass has:

Residual stability in the event of breakage

Retention of the object which caused the glass to break (depending on the required safety and security level) providing that it is accurately sized, installed, supported adequately and that it complies with current regulations and requirements (BS EN12600).

The main areas in which laminated safety and security glass is used are: guarding, glazed partitions and sloping glazing.

### Protection against vandalism and burglary

<sup>SGG</sup> STADIP PROTECT laminated security glass, installed in an appropriate frame, can be an important deterrent to ensure the security of property and occupants in a building.

<sup>SGG</sup> STADIP PROTECT SP laminated security glass contributes to the security of businesses and offices. Combined with additional protection, if required, this glass can be used in shop windows and doors, entrance doors and windows in offices appropriate to the specified levels of protection.

<sup>SGG</sup> STADIP PROTECT laminated security glass is able to meet the P1A & P2A requirement for BS EN 356. The level of the risk and the regulatory requirements determine the necessary level of protection and thus the type of <sup>SGG</sup> STADIP PROTECT or <sup>SGG</sup> STADIP PROTECT SP laminated security glass to use.

This selection is determined by the type and value of the property to be protected, the type of building (for example: building which is easy or difficult to access, private house, etc) and its location (for example: isolated premises, high-risk area, etc).

The risk must be assessed on a case by case basis and must take any insurance specifications into account.

### Protection against firearms

<sup>SGG</sup> STADIP PROTECT bullet-resistant laminated security glass provides protection against armed attack (e.g. financial institutions, banks, guardrooms, official or military units, etc).

The No Splinters (NS) or minimal spall version protects against injury from splinters of glass, which may fly from the rear surface of the glass upon attack.

<sup>SGG</sup> STADIP PROTECT HS protects against bullets from handguns and rifles. <sup>SGG</sup> STADIP PROTECT HC glass protects against shotgun fire.

<sup>SGG</sup> STADIP PROTECT FS combines bullet resistance (against certain firearms) with protection against vandalism and burglary. This glass is therefore suitable for multifunctional applications requiring safety, security and protection.

### Protection against explosions

Minimising the consequences of an accidental or criminal explosion involves the use of glass which protects against the pressure generated by the explosion. For industrial use, any premises located in hazardous areas should use a <sup>SGG</sup> STADIP PROTECT BS type glass.

### Protection against noise

Products in the <sup>SGG</sup> STADIP range have acoustic insulation properties. They can be used in any applications requiring acoustic insulation.

<sup>SGG</sup> STADIP SILENCE laminated acoustic and safety glass can be used in applications where high acoustic insulation is essential (e.g. interpreting booths, residential areas in close proximity to airports, towns or city centres, railway lines or motorways, etc), without compromising the safety performance.

### Protection against UV light

The PVB interlayer in the <sup>SGG</sup> STADIP and <sup>SGG</sup> STADIP PROTECT range filters most UV rays. It can be used to reduce the discoloration of items inside a building that are exposed to direct sunlight. (e.g. shop window displays, curtains, carpets, conservatories etc).

### Glass floor panels

<sup>SGG</sup> LITE- FLOOR is a laminated safety glass which has been specially designed and sized for use in floors.

Note: The behaviour of the polyvinyl butyral (PVB) interlayer varies with temperature. <sup>SGG</sup> STADIP and <sup>SGG</sup> STADIP PROTECT are mechanically stable in a temperature range between 10°C and 45°C, inside the glass assembly.

## ADVANTAGES

This laminated safety glass provides many solutions for the protection of people. If broken, the glass remains bonded to a plastic sheet and is less likely to cause injury to people or property. The plastic sheet also makes penetration more difficult.

These glass products are designed for differing levels of protection, from vandalism to burglary.