

Anti-reflective glass
SGG VISION-LITE[®]

*Assembly, installation
and maintenance*

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1- The product

SGG VISION-LITE is a glass with very low light reflectance (1%). It is available in laminated form, using SGG DIAMANT extra-clear glass.

The 2 external faces of the laminated glass have transparent oxide coatings or metal nitride coatings which, by reducing the reflectance of the surface of the glass, improve the transparency of the glass and the visibility of objects viewed through it.

In comparison with standard clear glass, SGG VISION-LITE glass has:

- much greater transparency;
- an extremely low light reflectance level;
- a higher light transmittance level;
- much better colour contrast.

The residual reflection has a bluish colour and can vary slightly. This reflection is only visible when the glass is viewed at a certain angle and under certain lighting conditions and where there is a difference in brightness between the exterior and the interior, and depends on the environment. The residual reflected colour reduces and virtually disappears when the glass is viewed at an acute angle.

Whatever angle it is viewed from, the reflectance of SGG VISION-LITE glass is lower than that of non-coated glass. It is most effective when the glass is viewed from a perpendicular angle. This effectiveness decreases as the angle from which it is viewed narrows.

Durability

The SGG VISION-LITE coating meets the class A durability criteria of European standard EN1096-2.

Defects

The SGG VISION-LITE coating meets the requirements of standard EN 1096-1: acceptability criteria for defects in coated glass (spots, pinholes, punctual defects, scratches).

2- General instructions

Never use adhesive films (self-adhesive) or adhesive labels on the coating of SGG VISION-LITE.

Detection of the coating

It is not easy to mark the SGG VISION-LITE coating. A special coating detector can be obtained from SAINT-GOBAIN GLASS. In the absence of a detector, the anti-reflective coating can be identified using the flame from a cigarette lighter and observing the 2 reflections which are perpendicular to the glass:

1st case: the 2 reflections of the flame are yellow: the glass is uncoated;

2nd case: the foreground reflection is blue, and the background reflection is yellow: the glass has a single anti-reflective coating; the coating is on the side of the flame;

3rd case: the foreground reflection is yellow and the background reflection is blue: the glass has a single coating; the coating is on the other face;

4th case: the 2 reflections of the flame are blue: the glass is SGG VISION-LITE with a coating on each face.

Handling

Finger marks and dirt on the SGG VISION-LITE coating, which would require additional cleaning procedures, must always be avoided. The glass must always be handled with clean gloves. When handling, remember that there is a coating on both faces of the glass.

Scratches are visible when viewed from a wide angle (reflected). They are more visible than on clear non-coated glass.

Regular checks must be made to ensure that anything in contact with the coating (tables, suction cups, transport rollers, protective paper, etc) is clean and free from particles of glass which could scratch and damage the coating.

3- Transporting to the site

Care must be taken to ensure that the SGG VISION-LITE coating is not damaged during transport: either by fixings, or being hit by items from the road (gravel), etc.

Stacks of standard cut sizes are transported in boxes (recommended) or in holders:

- At the top and bottom of the stack:
 - they should be protected using "CELL-AIR" type foam packing sheet.
- Between each sheet of glass:
 - protection using Lucite type powder;
 - or soft, neutral (non acid), clean, crease-free interleaving paper;
 - or small non-adhesive cork separating pads (recommended), or with neutral adhesive, which leaves no marks on the coating.

The stacks of standard cut sizes are wrapped and protected. Desiccant is only used for long journeys when there is a risk of condensation forming between the sheets of glass.

4- Déballage

SGG VISION-LITE must be stored in a dry, well-ventilated location. Traces of moisture which have dried on the surface of the glass are very difficult to remove.

When loading or unloading, suction cups can be used on the SGG VISION-LITE coating, taking the following precautions:

- clean suction cups;
- or if preferred, use "CELL-AIR" type foam packing sheet between the suction cup and the SGG VISION-LITE coating. This protection (recommended) helps to prevent the suction cup leaving marks.

When handling the glass, the sheets must be prevented from sliding against one another; the sheet must be separated from the sheet next to it, before it is lifted up.

If tongs are used, a check must be made to ensure that they will not damage the coating; clean undamaged rubber.

5- Assembly and installation

Protection of the sheets of glass

- The same precautions must be taken as those for SGG COOL-LITE CLASSIC coated glass.
- During transport and on site, it is essential that the glass is protected from dirt and splashes of materials such as gravel, concrete, plaster, mortar, etc. If the surface of the glass becomes dirty, the dirt must be removed immediately, before it dries or hardens, using plenty of water.
- It is also strongly recommended that rainwater is prevented from running onto the glass. Do not leave water to dry on the coating: the glass should therefore be rinsed with clean water and dried.

Cleaning on-site

- Cleaning must be carried out using plenty of water, and all dirt must be removed.
- A clean sponge must be used, which must be rinsed regularly during the cleaning process to avoid particles of dirt scratching the coating.
- To avoid the formation of marks (as a result of water drying), it is also recommended that the glass is correctly dried using a scraper or a soft cloth.

Installing the glazing

- Care must be taken not to damage the coating by using tools made of soft materials (for example clean plastic hammer, wooden blocks), together with lubricants which do not leave any residue on the surface of the glass.
- When using a silicone-based sealant, it must be prevented from escaping outside the glazing channel, and must not get onto the surface of the glass. If it does, remove it immediately before it starts to harden or dry. If it is allowed to dry, the only way of removing the silicone is to use dilute acetone with a soft cloth (caution never use any sharp tool such as a razor blade).

Never use adhesive films (self-adhesive) or adhesive labels on the coating of SGG VISION-LITE.

Never use any sharp tool such as a razor blade.

After assembly

- Do not use materials such as chalk or lime to indicate the presence of glass, as they are abrasive and could damage the coating.
- However, since SGG VISION-LITE glass is very transparent, its presence must be indicated, by hanging a notice or a sign on it or by placing a marking strip across it in order to draw attention to it. This sign must indicate, in the local language, the precautions to be taken, and in particular the prohibition of any contact with the SGG VISION-LITE coating using a sharp or metal object, which could scratch it.
- Important: If work on the site has not been completed, the glass must be protected from any risk of impact which could damage the coating (for example, cover the glazing with wood panels).

6- Maintenance and cleaning

- Regular cleaning is necessary in order to maintain a good anti-reflective effect. The frequency with which it is cleaned depends on the atmospheric conditions and the environment.
- The cleaning should be carried out using plenty of water, ammonia if required, or a neutral window cleaning product.
- A sponge, chamois leather or undamaged rubber scraper may be used. These must all be cleaned regularly during the washing process to avoid particles of dirt damaging the coating. The water must be changed more frequently than usual, for the same reason.
- Dilute alcohol may also be used (pure alcohol is prohibited).
- It is essential to dry the glass correctly in order to avoid the formation of coloured marks resulting from impurities in the water (limescale, etc.). The glass can be dried using a scraper or a soft cloth.
- **Caution: do not rest a ladder against the glass during cleaning.**

Since SGG VISION-LITE glass is very transparent, its presence must be indicated.

If work on the site has not been completed, the glass must be protected.

Regular cleaning is necessary in order to maintain a good anti-reflective effect.

It is essential to dry the glass correctly.

7- Cleaning products

Permitted cleaning equipment

- Sponge
- Soft cloth
- Chamois leather
- Rubber scraper (rubber clean and undamaged), generally used for window cleaning.

Permitted cleaning products

- Ammonia highly diluted in water (1 or 2 capfuls in a bucket of water)
- Neutral cleaning products usually used for cleaning windows (with a low concentration of anionic surfactants)
- Sidolin window cleaning product
- Ajax window cleaning product
- Alcohol diluted in an aqueous solution
- For heavy soiling: slightly diluted alcohol (ethanol, methanol, alcohol), slightly diluted acetone.

Products which we recommend for normal cleaning

- Clean water on its own, with no other product. If required, the addition of ammonia highly diluted in the water (1 or 2 capfuls in a bucket of water). The glass can be dried using an undamaged scraper or a soft cloth.

Prohibited products and equipment

- Pure alcohol
- Pure acetone
- Cleaning products containing abrasive particles
- Acids, soda, strong bases
- Bleach
- Chemical scouring liquids
- Scouring sponges and cloths
- Steel wool
- Razor blades
- Etc, ...

If labels are used on the glass, it is compulsory to use electrostatic labels, without glue, which do not leave any adhesive marks.

8- Precautions

Adhesive labels

- If labels are used, it is compulsory to use non-adhesive electrostatic labels, which do not leave a mark.

After installation of the glass

- The user must not stick advertising labels or paint advertisements on the SGG VISION-LITE coating. Other methods must be used, such as signs suspended behind the glass (in the window, if it is a shop).
- If work on the site has not been completed, the glass must be protected from any risk of impact which could damage the coating (for example, cover the glazing with wood panels).

Marking

- Since SGG VISION-LITE glass is very transparent, it is sometimes necessary to make its presence apparent (using a sign or another method) to avoid the risk of accidents to passers-by.

Lighting

- Users are strongly advised not to locate lighting in such a way that it shines directly or at an acute angle onto SGG VISION-LITE glass (as is sometimes the case in shop windows). Such lighting could either cause too strong a reflection of the direct light on the glass, or cause an interference phenomenon on the surface of the glass visible in the reflection (this is the case with lighting which shines onto the glass at an acute angle). Diffused, indirect lighting is strongly recommended for the anti-reflective effect of SGG VISION-LITE to be most effective.
- In the case of shop windows, for an effect of greater transparency it is also advisable to use a light background colour behind the SGG VISION-LITE glass and to provide adequate lighting in the shop window. For a good anti-reflective effect, we would not recommend using dark colours (grey, brown, dark blue, etc.).

SGG VISION-LITE used in horizontal applications

- For roof applications, it is not recommended to position the anti-reflective coating facing towards the outside (face 1). For this kind of application, the external SGG VISION-LITE laminated pane should only have a single anti-reflective side, which must face the inside.
- For horizontal interior applications (museum display cabinets, shelves, tables etc), precautions must be taken to avoid frequent and excessive finger marks and the risk of scratching.

9- Warranty

- The SGG VISION-LITE coating is guaranteed for a period of 5 years: a guarantee is given that the anti-reflection function and transparency of SGG VISION-LITE glass will be maintained for a period of 5 years under normal conditions of use and subject to the processing, handling and maintenance guidelines and recommendations mentioned earlier being observed. This performance concerns the light reflectance and transmittance of SGG VISION-LITE glass (average values are given for information only and may be subject to modification).
- Optical quality of SGG VISION-LITE: the optical or colour defects permitted in single glazing are defined in Section 1 “The product” in this document. Optical faults are identified when the glass is received.
- This warranty does not apply to:
 - broken glass or cracked glass;
 - glass which has not been specified, transported, stored, handled, installed, assembled, cleaned, used or maintained in accordance with the instructions given in this document;
 - replacement glass, after expiry of the warranty period for the initial glazing.
- In the event of a complaint, please contact your distributor. If any fault is found by the technical department, SAINT-GOBAIN GLASS will endeavour to supply newly manufactured SGG VISION-LITE glass free of charge, but will not be responsible for the costs of removing and refitting the glazing. The replacement must be delivered to the same place as the initial order.
- This warranty is exclusive and defines the sole responsibility of SAINT-GOBAIN GLASS.

This document contains all essential instructions for the assembly, installation and maintenance of SGG VISION-LITE glass sheets.

All documents previously published by SAINT-GOBAIN GLASS are replaced by the present document.

SAINT-GOBAIN GLASS has taken every reasonable measure to ensure that the information contained in the present leaflet was exact at the time of its publication.

However, SAINT-GOBAIN GLASS keeps the right to modify or add any information without previous notice.

SAINT-GOBAIN GLASS is not liable for the possible lack of information on SGG VISION-LITE products that would not be contained in the present document.

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