

SGG ANTELIO®

*Solar control glass*

Technical Sheet  
United Kingdom

# SGG ANTELIO®

## *Solar control glass*

### Description

SGG ANTELIO solar control glass is manufactured by an online coating process. Metallic oxides are applied onto SGG PLANILUX clear glass or SGG PARSOL body-tinted glass during the manufacture of the glass on the float line. The coating is fused by pyrolysis, which gives it a number of properties:

- Total integration with the surface of the glass
- Strength and stability over time, so the coating can be positioned on the outer face (face 1) or the inner face (face 2) of the glass
- Solar control properties and a reflective appearance

### Applications

- Offices and commercial buildings
- Schools and industrial buildings
- Apartment blocks

SGG ANTELIO glass can be used in most types of façade:

- Windows in traditional façades
- Curtain walling
- Exterior structural sealant glazing
- Exterior glass bolted assemblies
- Double-glazed applications (coating on face 2 or on face 1).



*BRE Bank SA, Poland • Architects :  
Bielyszew, Czyz, Kleinert*

### Advantages

- High light transmittance: good natural lighting of internal areas.
- Reduces solar heat gain: savings in air conditioning.
- Many design options for architects: increased architectural creativity using curved, enamelled or screen-printed SGG ANTELIO.
- Uniform appearance of facades: using the same SGG ANTELIO enamelled in spandrel panels gives a uniform appearance between vision and non-vision areas.

## Range

Four different variations:

- SGG ANTELIO CLEAR on SGG PLANILUX clear glass
- SGG ANTELIO SILVER on SGG PLANILUX clear glass
- SGG ANTELIO EMERALD on SGG PARSOL GREEN body-tinted glass
- SGG ANTELIO BRONZE on SGG PARSOL BRONZE body-tinted glass

All the products can be used in façades, with the coating on face 1 or face 2:

- On face 1, the façade has a more reflective and uniform appearance producing true and vibrant reflections of the surrounding environment.
- On face 2, its appearance and reflection is generally softer and the colour of the base glass is more apparent and accentuates the features of the façade.

SGG ANTELIO : manufacturing sizes						
	Thickness (1) (mm)	Base glass			Dimensions (mm)	
		SGG PLANILUX Clear float glass	SGG PARSOL Body-tinted glass		Length	Width
			Green	Bronze		
Silver	6	x			6000	3210
	8	x				
	10	x				
Clear	5	x			6000	3210
	6	x				
	8	x				
	10	x				
Emerald	6		x		6000	3210
	8		x			
Bronze	5			x	6000	3210
	6			x		
	8			x		
	10			x		

(1) Tolerances : thicknesses of 5 and 6 mm :  $\pm 0.2$  mm; thicknesses of 8 and 10 mm :  $\pm 0.3$  mm

### Glazing for opaque spandrel areas

The overall impression of a fully glazed façade depends on the co-ordination of the vision area glazing and the spandrel area glazing. The external appearance of a glazed façade is also influenced by:

- The weather conditions i.e. if the sky is clear or cloudy
- The amount of sunshine, relative to the geographical location and time of day
- The orientation of the façade and the angle of observation
- The local surroundings
- The interior of the building (brightness, presence and colour of blinds)
- The colour of any framework
- The heat treatment of spandrel panels (toughening or heat-strengthening), as the toughened glass may show slight deformations, inherent to the toughening process

Range .../...

#### *Achieving a uniform appearance with SGG ANTELIO*

There are several solutions available to specifiers using opaque spandrel panels to achieve façades with a uniform appearance. These solutions are mainly based around positioning the coating used in the vision area on either face 1 or face 2. In all cases samples of the proposed glass for both vision and spandrel area glazing should be viewed on site.

- SGG ANTELIO installed with the coating on face 1 (vision area glazing): SGG ANTELIO can be enamelled on the non-coated face using SGG EMALIT EVOLUTION to give a uniform appearance to the vision areas and opaque spandrel area
- SGG ANTELIO installed with the coating on face 2 (vision area glazing): there are a number of different glazing solutions and opacification processes, in particular those based on the SGG COOL-LITE CLASSIC opacified or SGG COOL-LITE ST enamelled range. In some cases, a double-glazed unit incorporating SGG ANTELIO toughened glass (coating on face 2) and SGG EMALIT enamelled glass is used for spandrel area glazing.

#### Performance

The spectrophotometric performance for SGG ANTELIO glass is given:

- For single glazing
- In SGG CLIMALIT double-glazed units, combined with SGG PLANILUX clear float glass
- In SGG CLIMAPLUS enhanced thermal insulation double-glazed units with SGG PLANITHERM TOTAL low-emissivity glass.



*Opus 12 tower, La Defense, Paris, France.  
Architects: Valodé & Pistré*

SGG ANTELIO									
Single glazing									
		SILVER		CLEAR		EMERALD		BRONZE	
Thickness	mm	6	6	6	6	6	6	6	6
Coating position (1)	face	1	2	1	2	1	2	1	2
Light factors									
LT	%	66	66	45	45	53	53	24	24
LRe	%	31	29	32	26	29	20	32	11
LRi	%	29	31	26	32	20	29	11	32
UV	%	32	32	19	19	11	11	5	5
Energy factor									
T	%	63	63	50	50	34	34	29	29
Re	%	25	21	25	19	22	11	26	10
Ri	%	21	25	19	26	11	22	10	26
A	%	13	16	25	31	44	55	45	61
Solar factor g		0,66	0,67	0,56	0,58	0,45	0,48	0,40	0,45
Shading Coefficient		0,76	0,77	0,64	0,66	0,52	0,55	0,46	0,51
U-value	W/(m².K)	5,7	5,7	5,7	5,7	5,7	5,7	5,7	5,7

(1) SGG ANTELIO being a pyrolytic glass, the coating can be used in either face 1 or 2 of external glazing.

SGG ANTELIO									
Double-glazing									
External pane		SGG ANTELIO SILVER	SGG ANTELIO CLEAR	SGG ANTELIO EMERALD	SGG ANTELIO BRONZE				
Internal pane		SGG PLANILUX							
Composition	mm	6(12)6	6(12)6	6(12)6	6(12)6	6(12)6	6(12)6	6(12)6	6(12)6
Coating position (1)	Face	1	2	1	2	1	2	1	2
Light factor									
LT	%	60	60	41	41	48	48	21	22
LRe	%	35	33	33	28	31	22	32	12
LRi	%	31	33	29	34	24	31	17	34
UV	%	23	23	13	14	9	10	4	4
Energy factor									
T	%	51	51	40	40	28	29	23	23
Re	%	27	24	27	21	23	12	27	10
A1	%	14	17	26	32	45	56	46	52
A2	%	8	8	7	7	3	3	4	4
Solar factor g		0,58	0,58	0,47	0,48	0,36	0,37	0,31	0,33
Shading Coefficient		0,66	0,67	0,55	0,56	0,41	0,43	0,36	0,38
U-value	W/(m².K)								
Air		2,8	2,8	2,8	2,8	2,8	2,8	2,8	2,8

(1) SGG ANTELIO being a pyrolytic glass, the coating can be used in either face 1 or 2 of external glazing.

SGG CLIMAPLUS ANTELIO									
Double-Glazing									
External pane		SGG ANTELIO SILVER	SGG ANTELIO CLEAR	SGG ANTELIO EMERALD	SGG ANTELIO BRONZE				
Internal pane		SGG PLANITHERM TOTAL				SGG PLANITHERM TOTAL			
Composition (1)	mm	6(16)6	6(16)6	6(16)6	6(16)6	6(16)6	6(16)6	6(16)6	6(16)6
Solar control coating	face	1	2	1	2	1	2	1	2
Low-E coating position	face	3	3	3	3	3	3	3	3
Light factors									
LT	%	58	58	40	40	46	46	21	21
LRe	%	33	31	33	27	30	21	32	12
LRi	%	28	29	25	30	20	27	14	30
UV	%	19	19	11	11	8	8	3	3
Energy factor									
T	%	39	39	29	29	24	24	16	16
Rext	%	35	32	35	29	24	13	30	14
A1	%	16	19	29	34	48	58	50	65
A2	%	9	10	8	8	4	4	4	4
Solar factor g		0,48	0,48	0,37	0,38	0,30	0,30	0,22	0,24
Shading Coefficient		0,55	0,56	0,43	0,43	0,34	0,35	0,26	0,27
U-value		W/(m <sup>2</sup> .K)							
Air		1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Argon 85 %		1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2

(1) Cavity width 15 or 16mm

#### Processed Product Variations

Although the main function of SGG ANTELIO is solar control, after processing it may also be incorporated into a single or double-glazed unit for multifunctional glazing.

##### **Double glazing**

- SGG ANTELIO coatings do not need to be edge-deleted.
- The coating can be positioned on face 2 or face 1 of a double-glazed unit.
- SGG CLIMAPLUS SOLAR double-glazed units with enhanced thermal insulation are assembled using SGG ANTELIO combined with a low-emissivity glass such as SGG PLANITHERM TOTAL.

##### **Toughened glass, heat-strengthened glass, heat-soak test treatment**

The SGG ANTELIO coating is designed to withstand toughening and heat strengthening operations or to undergo the heat-soak test, without altering the appearance or performance of the glass. However, when this glass has been toughened or heat-strengthened, it can no longer be cut, edgeworked or drilled. It is therefore essential that these processes are performed before the glass is toughened or heat-strengthened.

#### ***Curved glass***

SGG ANTELIO can be curved.

#### ***Laminated glass***

SGG ANTELIO can be laminated. The coating is normally positioned on the outer face of the laminated glass. The coating may only be facing the PVB interlayer after consulting our technical department. The specifier must approve and validate the colour differences between laminated and non-laminated SGG ANTELIO.

#### ***Edgeworking and drilling***

SGG ANTELIO glass can be edgeworked and drilled using standard equipment. This also applies to SGG ANTELIO for SGG POINT exterior bolted glass applications.

#### ***Enamelling***

- SGG ANTELIO can be enamelled on the non-coated side (SGG EMALIT EVOLUTION).
- Enamelling can only be carried out on the coated side for specific applications and only after a large sample has been approved.

#### ***Screen-printing***

It is possible to apply an enamelled pattern to SGG ANTELIO by screen-printing (on the non-coated side). However it is not possible to apply an SGG ANTELIO coating to a screen-printed glass.

#### ***Opacification for spandrel areas***

SGG ANTELIO glass can be opacified by enamelling (see above)

#### ***Note***

As with any coated glass, SGG ANTELIO may distort reflected images to some degree, especially when toughened, assembled into a double-glazed unit, channel glazed etc. Depending on the distance, the angle of observation and the ratio of lighting, the appearance of the glass may show slight variations inherent to the product.



*The Main Court, Poland  
Architect: Kowalewski Badowski*

#### Installation Guidelines

- Installation position: the positioning of the coating on either face 1 or face 2 is determined by the performance and appearance required. Coating on face 2 is recommended:
  - in areas where there is a high level of atmospheric pollution
  - when SGG ANTELIO is exposed to water running off non-waterproofed concrete
  - when SGG ANTELIO is used in overhead glazing.

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## Installation Guidelines .../...

- In all cases sGG ANTELIO glass must be installed in accordance with general installation recommendations and current national regulations.
- sGG ANTELIO can be installed in exterior glass bolted assemblies.
- sGG ANTELIO can be installed in exterior structural sealant glazing
- Processors and installers must check in advance that all glazing mastics and sealants used are compatible with the coating. This includes assembly into double-glazed units, standard installation or use in exterior structural sealant glazing.

## Standards and Regulations

- sGG ANTELIO glass, produced and processed in Saint-Gobain Glass factories and subsidiaries, complies with the requirements of class A of European standard BS EN1096 and carries the relevant CE mark as required.
- Exterior structural sealant glazing: processors and installers must check the compatibility of sealants with the sGG ANTELIO coating and their suitability for use in exterior structural sealant glazing in accordance with EOTA (European Organisation for Technical Approvals) ETAG002.  
The suitability of sGG ANTELIO for use in exterior structural sealant glazing has been tested in accordance with ETAG002, with Dow-Corning DC993 and DC3362 silicones covered by an ETA (European Technical Approval).



WEELAND ROAD - EGGBOROUGH GOOLE  
EAST RIDING OF YORKSHIRE DN14 0FD

Email : [glassinfo.uk@saint-gobain-glass.com](mailto:glassinfo.uk@saint-gobain-glass.com)  
[www.saint-gobain-glass.com](http://www.saint-gobain-glass.com)

Distributor

