

SGG COOL-LITE®

*Solar control glass*

Technical Sheet  
United Kingdom

# SGG COOL-LITE®

## *Solar control glass*

### Description

SGG COOL-LITE is a solar control glass manufactured by depositing a coating of metallic oxides by magnetically enhanced cathodic sputtering under vacuum conditions onto clear or body-tinted glass. This coating gives the glass its solar control properties and its distinctive appearance.

There are many types of SGG COOL-LITE coated glass:

- SGG COOL-LITE K and SK provide a spectrally selective solar control performance together with excellent thermal insulation properties.
- SGG COOL-LITE KT is a new generation of "toughenable" SGG COOL-LITE K coatings.
- SGG COOL-LITE ST is unique in that it can be toughened and curved after the coating has been applied.
- SGG COOL-LITE CLASSIC offers an extensive selection of appearance and performance options.

### Applications

- Offices and commercial buildings
- Industrial buildings
- Hotels and restaurants
- Schools and hospitals
- Conservatories and atria glazing

SGG COOL-LITE can be installed in many glazing applications:

- Windows in traditional facades
- Curtain walling
- Exterior structural sealant glazing
- Exterior bolted glass assemblies
- Double-skin applications
- Cladding of external walls
- Overhead and atria glazing

The most appropriate glass is selected using 2 criteria:

- Solar control performance: relative to the amount of direct sunlight, the orientation of the facade and the area to be glazed, the specifier can select the best compromise between the light transmittance (LT) and the amount of solar energy entering the building (solar factor g). Overhead glazing should generally have a much lower light transmittance than facades.

- Appearance (when viewed from the exterior): the aesthetic appearance of the glass (colour, intensity, reflection) depends on 4 factors:

- Orientation of the building
- Surrounding environment
- Glare
- Amount of direct sunlight

The final choice must be made after viewing samples of the proposed glass types in their intended location.

## Advantages

- Solar control: energy saving and more economical use of air conditioning.
- Improved "visual comfort" by reducing glare.
- Multifunctional glazing: when assembled into double-glazed units, sGG COOL-LITE can become a multifunction glass, for example providing enhanced safety, security or comfort (thermal or acoustic).

### *sGG COOL-LITE K and SK*

- Higher light transmission levels and more transparent than other solar control glasses.
- Spectrally selective glasses combining high light transmission levels with a low solar factor, thus reducing air conditioning costs.
- Provide excellent thermal insulation properties when assembled into double-glazed units.
- Have a neutral appearance with low light reflectance when produced on a clear substrate.

### *sGG COOL-LITE KT*

- These selective coatings are very similar in performance and appearance to the sGG COOL-LITE K range.
- They have the added advantage of being "toughenable", so can be held on stock and supplied on a short lead time when toughened glass is required.

### *sGG COOL-LITE ST*

- The ST range can be toughened, curved, enamelled or screen-printed, therefore offering architectural creativity and versatility.
- When used in double or single glazing the coating is always located on face 2 (facing towards the interior of the building).
- Laminated versions: the coating may also be positioned facing the PVB interlayer thus producing a laminated solar control glass with no coating on the outer face. It must be noted that its appearance and performance will differ from a similar laminated product with the coating located on the outer face.
- The sGG COOL-LITE ST coating must not be edge-deleted, when used in double-glazed units or in exterior structural sealant glazing.

### *sGG COOL-LITE CLASSIC*

- Double or single glazing the coating must always be positioned on face 2.
- To obtain facades with a uniform appearance (traditional curtain walling or exterior structural sealant glazing), the same sGG COOL-LITE CLASSIC glass can be used in spandrel areas, by using either opacified single, or double-glazed units when this is permitted by current national regulations.
- The sGG COOL-LITE CLASSIC coating must not be edge-deleted, when used in double-glazed units or in exterior structural sealant glazing.

## Range

The following substrate glasses are used for sGG COOL-LITE coated glass:

- sGG PLANILUX clear glass
- sGG DIAMANT extra clear glass
- sGG PARSOL body-tinted glass

- Using an extra clear glass emphasises the neutrality and transparency of high performance solar control glasses.
  - Using a body-tinted base substrate will offer a vibrant reflected colour.
  - Some coatings give a coloured reflection even when applied to clear glass. This is the case with the sGG COOL-LITE STB 136 and STB 120 coatings, which have a distinctive bluish reflection.
  - A neutral glass always has a slight greenish, bluish, or greyish residual reflected colour. The neutrality of the glass must be checked using a sample of the proposed glass in its intended location.
  - Certain sGG COOL-LITE coatings can be applied to the reverse face of sGG BIOCLEAR self-cleaning glass.
- Please contact SAINT-GOBAIN GLASS for further details.



*Frankfurt Police Headquarters,  
Germany  
Architects : KSP Engel and Zimmerman*

**Manufacturing sizes for SGG COOL-LITE****Manufacturing sizes of SGG COOL-LITE K, SK, ST and CLASSIC**

SGG COOL-LITE		Dimensions					
		Standard (mm)		Cut sizes (mm)			
				Maximum		Minimum	
		Length	Width	Length	Width	Length	Width
<b>K and SK</b> 6, 8, 10 mm	non-toughened (annealed)	6000	3210	-	-	-	-
	toughened (SGG SECURIT)	-	-	4500	2440	750	300
<b>ST and KT</b> 4 <sup>(2)</sup> , 6, 8, 10 mm	non-toughened (annealed)	6000	3210	-	-	-	-
	toughened (SGG SECURIT)	-	-	(1)	(1)	(1)	(1)
<b>CLASSIC</b> 6, 8, 10 mm	non-toughened (annealed)	3210	2550	-	-	-	-
	toughened (SGG SECURIT)	-	-	4500	2440	750	300

(1) Max and Min dimensions depend on the capabilities of the transformation site

(2) 4mm only available for ST150 coating

**SGG COOL-LITE K, SK and KT Range**

SGG COOL-LITE K and SK : range			
Appearance in reflection	Base glass for SGG COOL-LITE K and SK coatings		
	SGG PLANILUX Clear float glass	SGG DIAMANT Extra clear glass	SGG PARSOL GREEN Body
Neutral	SKN 174 (1)		
	SKN 172	SKN 072	
	SKN 165*	SKN 065	
	SKN 154	SKN 054	
	KN 169	KN 069	
	KS 155	KN 055	
Silver	KS 147		
Blue	KB 159		
Green			SKN 472
			SKN 465
			SKN 454
			KN 469
			KN 455
			KS 447

(1) SGG COOL-LITE SKN 174 and SKN 165 also exist in a "to be toughened" version SGG COOL-LITE SKN 174 II and SKN 165 II: For more information please contact SAINT-GOBAIN GLASS.

**Spandrel areas:** SGG COOL-LITE K, SK and KNT glass are neutral in appearance, with high light transmittance and transparency levels. Creating a uniform appearance between spandrel and vision areas can sometimes be difficult to achieve. The solution is to use the same coated glass in a double-glazed unit (specially designed for spandrel areas), combined with an SGG EMALIT enamelled glass, in grey or another dark colour. The uniformity of spandrel areas must be checked using a sample of the proposed glass in its intended location.

**SGG COOL-LITE ST : range**

SGG COOL-LITE ST150 is available as standard in the UK. Details of availability of other coatings in the range may be obtained from our marketing department.

SGG COOL-LITE ST: solar control glass that can be toughened and curved		
Appearance in reflection	Base glass for SGG COOL-LITE ST	
	SGG PLANILUX Clear float glass	SGG PARSOL GREEN Body tinted glass
Neutral	ST 150	
	ST 136	
	ST 120	
	ST 108	
Blue	STB 120	
	STB 136	
Green		ST 450
		ST 436
		ST 420
		ST 408
Blue-Green		STB 420
		STB 436

**Spandrel areas:** Enamelled SGG COOL-LITE ST has a different appearance to standard vision areas. To obtain a uniform appearance for spandrel area and vision area glazing the same coated glass must be used:

- either in double-glazed units specially designed for spandrel areas combined with an enamelled opaque glass
- or in prefabricated panels: non-opacified glass in front of a dark-coloured opaque background

**SGG COOL-LITE CLASSIC Range**

SGG COOL-LITE CLASSIC : contrôle solaire		
Appearance in reflection	Base glass for SGG COOL-LITE CLASSIC	
	SGG PLANILUX Clear float glass	SGG PARSOL GREEN Body tinted glass
Silver	SS 108	
	SS 114	
	SS 120	
	SS 132	
Neutral-grey	SR 132	
Blue	TB 130	
	TB 140	
Green		SS 408
		SS 414
		SS 420
		SS 432
Blue-Green		TB 430
		TB 440

SGG COOL-LITE K, SK and KT and SGG COOL-LITE CLASSIC: the spectrophotometric performance of the most frequently used references is given for:

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

#### SGG COOL-LITE CLASSIC single-glazing

SGG COOL-LITE CLASSIC											
Single-glazing											
Aesthetic appearance in external reflectance		SILVER				NEUTRAL-	BLUE		PASTEL BLUE		
SGG COOL-LITE CLASSIC		SS 108	SS 114	SS 120	SS 132	SR 132	TB	TB 140	PB 108	PB 114	PB 120
Thickness	mm	6	6	6	6	6	6	6	6	6	6
Coating position (1)	face	2	2	2	2	2	2	2	2	2	2
Light factor											
LT	%	8	14	20	32	32	30	40	9	15	20
LRe	%	42	32	24	13	13	16	10	29	25	21
LRi	%	37	36	33	26	26	29	23	34	34	31
UV	%	3	7	10	14	22	11	16	3	7	9
Energy factor											
T	%	6	12	16	26	30	23	32	8	13	17
Re	%	37	29	22	14	11	17	11	24	21	18
Ri	%	46	42	38	30	26	34	27	41	39	36
A	%	57	59	61	60	59	60	57	69	66	65
Solar factor g		0,18	0,24	0,30	0,40	0,44	0,37	0,45	0,22	0,28	0,32
Shading Coefficient		0,20	0,28	0,34	0,46	0,50	0,42	0,52	0,25	0,32	0,36
U-value	W/(m².K)	4,5	4,7	4,9	5,1	5,4	5,1	5,2	4,7	4,9	5,1

(1) The SGG COOL-LITE CLASSIC coating must be positioned on face 2 of single or double-glazing (never on face 1)



Palacio Euskalduna, Bilbao, Spain

## SGG COOL-LITE CLASSIC single-glazing (cont'd)

SGG COOL-LITE CLASSIC										
Single-glazing										
Aesthetic appearance in external reflectance		GREEN				BLUE-GREEN		AQUAMARINE		
SGG COOL-LITE CLASSIC		SS 408	SS 414	SS 420	SS 432	TB 430	TB 440	PB 408	PB 414	PB 420
Thickness	mm	6	6	6	6	6	6	6	6	6
Coating position (1)	face	2	2	2	2	2	2	2	2	2
Light factor										
LT	%	7	11	16	26	25	33	7	12	16
LRe	%	30	23	18	11	13	8	21	18	16
LRI	%	37	36	33	25	29	23	34	34	31
UV	%	1	2	3	5	4	5	1	2	3
Energy factor										
T	%	4	6	9	15	13	18	4	7	9
Re	%	17	14	11	8	9	7	12	12	10
Ri	%	46	42	38	30	33	26	41	39	36
A	%	80	80	80	78	78	75	83	81	80
Solar factor g		0,20	0,23	0,27	0,32	0,31	0,35	0,22	0,25	0,27
Shading Coefficient		0,22	0,27	0,31	0,37	0,36	0,41	0,25	0,29	0,32
U-value	W/(m².K)	4,5	4,7	4,9	5,1	5,1	5,2	4,7	4,9	5,1

(1) The SGG COOL-LITE CLASSIC coating must be positioned on face 2 of a single or double-glazing (never on face 1)

## SGG COOL-LITE CLASSIC double-glazing

SGG CLIMALIT COOL-LITE CLASSIC											
Double glazing											
Aesthetic appearance in external reflectance		SILVER				NEUTRAL-GREY	BLUE		PASTEL BLUE		
External pane SGG COOL-LITE CLASSIC		SS 108	SS 114	SS 120	SS 132	SR 132	TB 130	TB 140	PB 108	PB 114	PB 120
Internal pane		SGG PLANILUX									
Composition		6(12)6	6(12)6	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	2	2	2	2	2	2	2	2	2	2
Light factors											
LT	%	7	13	18	29	29	27	36	8	14	18
LRe	%	42	32	24	14	14	17	11	29	25	21
LRI	%	38	37	35	29	28	31	26	36	35	33
UV	%	2	5	7	10	15	8	12	2	5	7
Energy factor											
T	%	5	10	14	21	24	19	26	6	11	14
Re	%	37	29	22	14	12	17	12	24	21	18
A1	%	57	60	62	61	60	61	58	69	67	66
A2	%	1	1	2	3	4	3	4	1	2	2
Solar factor g		0,12	0,17	0,22	0,30	0,34	0,28	0,36	0,14	0,19	0,23
Shading Coefficient		0,13	0,20	0,25	0,35	0,39	0,32	0,41	0,17	0,22	0,26
U-value	W/(m².K)										
Air		2,3	2,4	2,5	2,6	2,7	2,6	2,6	2,4	2,5	2,6

(1) The SGG COOL-LITE CLASSIC coating must be positioned on face 2 of single or double-glazing (never on face 1)

## sGG COOL-LITE ST single-glazing

sGG COOL-LITE ST										
Single glazing										
Aesthetic appearance in external reflectance		NEUTRAL (1)				BLUE	GREEN			
sGG COOL-LITE		ST 108	ST 120	ST 136	ST 150	STB 120	ST 408	ST 420	ST 436	ST 450
Thickness	mm	6	6	6	6	6	6	6	6	6
Coating position (2)	face	2	2	2	2	2	2	2	2	2
Light factor										
LT	%	8	20	37	51	22	6	16	30	42
LRe	%	44	32	22	18	21	32	23	16	14
LRi	%	38	27	18	17	29	38	27	18	16
UV	%	4	15	23	29	13	1	5	8	10
Energy factor										
T	%	6	17	32	45	18	4	10	18	25
Re	%	38	26	18	14	19	17	13	10	9
Ri	%	45	32	21	17	36	45	32	21	17
A	%	55	57	51	40	63	79	77	72	66
Solar factor g		0,15	0,30	0,44	0,56	0,33	0,16	0,28	0,36	0,42
Shading Coefficient		0,18	0,35	0,51	0,64	0,38	0,19	0,32	0,41	0,48
U-value	W/(m².K)	3,6	5,2	5,5	5,7	5,3	3,6	5,2	5,5	5,7

(1) Slight Blue, Grey or Silver tint depending on the coating

(2) The sGG COOL-LITE ST coating must be positioned on face 2 of single or double-glazing (never on face 1)

## sGG COOL-LITE ST double-glazing with sGG PLANILUX

sGG CLIMALIT COOL-LITE ST										
Double glazing										
Aesthetic appearance in external reflectance		NEUTRAL (1)				BLUE	GREEN			
External pane sGGCOOL LITE ST		ST 108	ST 120	ST 136	ST 150	STB 120	ST 420	ST 420	ST 436	ST 450
Internal pane		sGGPLANILUX								
Composition		6(12)6	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	face	2	2	2	2	2	2	2	2	2
Light factor										
LT	%	7	18	33	46	20	6	15	27	37
LRe	%	44	32	23	20	22	32	23	17	15
LRi	%	38	30	23	21	31	38	29	22	21
UV	%	3	11	17	21	9	1	4	6	8
Energy factor										
T	%	5	14	26	37	15	3	8	15	21
Re	%	38	27	18	16	19	17	13	10	10
A1	%	56	57	52	41	63	79	78	73	67
A2	%	1	2	4	6	2	0	1	1	2
Solar factor g		0,11	0,22	0,35	0,46	0,24	0,10	0,18	0,25	0,31
Shading Coefficient		0,12	0,25	0,40	0,53	0,27	0,11	0,20	0,29	0,35
U-value	W/(m².K)									
Air		1,9	2,6	2,8	2,8	2,7	1,9	2,6	2,8	2,8

(1) Slight Blue, Grey or Silver tint depending on the coating

(2) The sGG COOL-LITE ST coating must be positioned on face 2 of single or double-glazing (never on face 1)



## SGG COOL-LITE ST double-glazing with SGG PLANITHERM TOTAL

SGG CLIMAPLUS COOL-LITE ST										
Double glazing										
Aesthetic appearance in external reflectance		NEUTRAL (1)				BLUE	GREEN			
External pane SGG COOL-LITE ST		ST 108	ST 120	ST 136	ST 150	STB 120	ST 420	ST 420	ST 436	ST 450
Internal pane		SGG PLANITHERM TOTAL								
Composition (2)		6(16)6	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 (3) position	face	2	2	2	2	2	2	2	2	2
Low-E coating position	face	3	3	3	3	3	3	3	3	3
Light factor										
LT	%	7	18	33	45	19	6	15	27	37
LRe	%	44	32	23	19	22	32	23	17	15
LRi	%	35	27	20	19	28	35	27	20	18
UV	%	2	8	12	15	7	<1	3	5	6
Energy factor										
T	%	5	11	21	29	12	3	7	13	18
Re	%	38	27	20	19	20	17	13	11	10
A1	%	56	59	54	44	65	79	78	74	69
A2	%	1	3	5	8	3	1	1	2	3
Solar factor g		0,08	0,17	0,28	0,37	0,18	0,07	0,13	0,19	0,24
Shading Coefficient		0,10	0,19	0,33	0,43	0,21	0,08	0,14	0,22	0,28
Coefficient U		W/(m².K)								
Air		1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Argon 90%		1,1	1,2	1,2	1,2	1,2	1,1	1,2	1,2	1,2

(1) Slight Blue, Grey or Silver tint depending on the coating

(2) Cavity width 15 or 16 mm

(3) The SGG COOL-LITE ST coating must be positioned on face 2 of single or double-glazing (never on face 1)

## SGG COOL-LITE K double-glazing

SGG CLIMAPLUS COOL-LITE K										
Double Glazing										
Aesthetic appearance in external reflectance		NEUTRAL				SILVER	BLUE	GREEN		
External pane SGG COOL-LITE		KN 169	KN 155	KN 069	KN 055	KS 147	KB 159	KN 469	KN 455	KS 477
Internal pane		SGG PLANILUX		SGG DIAMANT		SGG PLANILUX		SGG PLANILUX		
Composition		6(16)6	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 and Low-E coating position	face	2	2	2	2	2	2	2	2	2
Light factor										
LT	%	61	50	64	53	43	52	50	41	35
LRe	%	17	17	17	18	44	28	13	13	31
LRi	%	11	10	11	10	40	15	10	10	40
UV	%	17	18	28	29	11	19	7	7	4
Energy factor										
T	%	38	33	46	39	25	35	24	21	16
Re	%	23	22	30	27	45	28	10	10	18
A1	%	34	42	23	33	27	32	64	68	65
A2	%	5	4	1	1	3	5	2	2	1
Solar factor g		0,44	0,38	0,49	0,42	0,29	0,41	0,30	0,27	0,21
Shading Coefficient		0,51	0,44	0,56	0,48	0,33	0,48	0,34	0,31	0,24
U-value		W/(m².K)								
Air		1,5	1,6	1,5	1,6	1,4	1,6	1,5	1,6	1,4
Argon 90%		1,3	1,4	1,3	1,4	1,1	1,4	1,3	1,4	1,1

(1) Cavity width 15 or 16 mm

(2) The SGG COOL-LITE K coating must be positioned on face 2 of double-glazing (never on face 1)

## sGG COOL-LITE SKN double-glazing

sGG CLIMAPLUS COOL-LITE SK										
Double glazing										
Aesthetic appearance in external reflectance			NEUTRAL			NEUTRAL			GREEN	
External pane sGG COOL LITE			SKN 172	SKN 165B	SKN 154	SKN 072	SKN 065B	SKN 054	SKN 472	SKN 465B
Internal pane			sGG PLANILUX			sGG DIAMANT			sGG PLANILUX	
Composition(1)			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 and Low-E coating position (2)	face		2	2	2	2	2	2	2	2
Light factor										
LT	%		67	60	50	69	63	53	54	49
LRe	%		10	16	18	10	16	18	8	12
LRI	%		12	17	20	11	18	21	10	16
UV	%		21	9	9	22	15	14	5	4
Energy factor										
T	%		36	30	24	41	33	26	25	21
Re	%		27	31	32	34	42	43	8	10
A1	%		33	37	42	25	24	30	66	68
A2	%		3	2	2	1	1	0	2	1
Solar factor g			0,41	0,32	0,27	0,43	0,35	0,28	0,30	0,26
Shading Coefficient			0,47	0,38	0,31	0,49	0,40	0,33	0,34	0,29
U-value	W/(m².K)									
Air			1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Argon 90%			1,1	1,1	1,1	1,2	1,1	1,1	1,2	1,1

(1) Cavity width 15 or 16 mm

(2) The sGG COOL-LITE SK coating must be positioned on face 2 of double-glazing (never on face 1)

## Processed Product Variations

Although the main function of sGG COOL-LITE is solar control, after processing it can be used single or double-glazed to provide multifunctional glazing.

**Double glazing**

- sGG COOL-LITE ST and CLASSIC coatings do not need to be edge-deleted. However, sGG COOL-LITE K, KT and SK must be edge-deleted.
- The coating must always be positioned on face 2 of the double-glazed unit.
- To obtain sGG CLIMAPLUS SOLAR enhanced thermal insulation double-glazed units, sGG COOL-LITE ST or CLASSIC glass must be combined with a low-emissivity glass such as sGG PLANITHERM TOTAL.
- sGG COOL-LITE K, KT or SK coatings have integral thermal insulation properties, therefore a low-emissivity glass is not required.



NH Hotel, Frankfurt, Germany  
Architect : KSP Architekten

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

- The sGG COOL-LITE ST and KT coatings are very durable, enabling the glass to be toughened, heat strengthened and to undergo the heat soak test after the coating has been applied to the glass.
- sGG COOL-LITE K, SK and CLASSIC must be toughened, heat strengthened or undergo heat soak test treatment before the coating is applied, with the exception of SKN 174 and SKN 165 B which are available in "to be toughened" versions- SKN 174 II and SKN 165 II. These products must be toughened or heat strengthened before installation to match with the appearance and aesthetics of the corresponding sGG COOL-LITE SKN 174 or SKN 165B. Please contact SAINT-GOBAIN GLASS for details
- Heat treatments do not alter either the colour or the performance of sGG COOL-LITE coated glasses.
- When sGG COOL-LITE glass has been toughened or heat-strengthened, it can no longer be cut, edgeworked or drilled. These processes must always be carried out before toughening or heat strengthening.

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

- Only sGG COOL-LITE ST\* coated glass can be curved.
- All other sGG COOL-LITE coatings cannot be curved (neither before or after application of the coating).

\*sGG COOL-LITE ST 136 and ST 120, please contact SAINT-GOBAIN GLASS.

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

- sGG COOL-LITE glass can be laminated. The coating is located on face 4 of the laminated glass (on the outside of the 2nd sheet).
- sGG COOL-LITE ST can also be laminated with the coating positioned facing the PVB interlayer (face 2 of the first sheet of glass). This product will have a different performance and appearance from that of laminated glass where the coating is located on face 4.
- sGG COOL-LITE CLASSIC is only available laminated with the coating in contact with the PVB for specific applications and must receive approval from our technical department.
- It is not possible to laminate sGG COOL-LITE K or SK with the coating in contact with the PVB.
- In all cases, the specifier must verify the colour differences between laminated and non-laminated sGG COOL-LITE. sGG COOL-LITE KT: for laminated glass with the coating facing the PVB, please contact us.

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

- sGG COOL-LITE K, KT and SK and CLASSIC glass can only be edgeworked or drilled using machinery designed for low-emissivity coated glass.
- sGG COOL-LITE ST glass can be edgeworked and drilled using standard equipment. These operations would be required when sGG COOL-LITE is used in structural glass applications such as sGG POINT.

#### ***Enamelling***

Only sGG COOL-LITE ST glass can be enamelled. Lead-free enamel must be used.

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

- An enamelled pattern can be applied to an sGG COOL-LITE ST coating by screen printing with lead-free enamel.
- sGG COOL-LITE K, SK or CLASSIC coatings cannot be screen-printed. It is however possible to apply an sGG COOL-LITE K, KT SK or CLASSIC coating to an sGG SERALIT screen-printed glass.

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

- sGG COOL-LITE ST: it is recommended that opacification is carried out using lead-free enamel. Opacification using lacquer should only be carried out after checking compatibility with the coating.
- sGG COOL-LITE CLASSIC : these coatings can be opacified by applying an opacifier to the coating. The compatibility of the opacifier with the coating must be checked.
- sGG COOL-LITE K, KT and SK: these coatings cannot be opacified. Spandrel areas can be created:
  - either using opacified sGG COOL-LITE CLASSIC or sGG COOL-LITE ST glass
  - or using the same coating in double-glazed units specially designed for spandrel panels, with an opacified glass such as sGG EMALIT EVOLUTION enamelled glass on the inner pane
  - or using another product in single glazing e.g. sGG EMALIT EVOLUTION

- In facades, sGG COOL-LITE must be glazed with the coating on face 2 (facing towards the interior of the building).
- sGG COOL-LITE must be glazed in accordance with current national standards. The setting and location of the glass, the permitted deflection for the frames of insulated glass units and the dimensions of channels are not specific to sGG COOL-LITE glass.
- sGG COOL-LITE glass can be installed in exterior bolted glass assemblies.
- sGG COOL-LITE glass can be installed in exterior structural sealant glazing. sGG COOL-LITE ST and CLASSIC, in monolithic or double-glazed units, are ideal for this application. In opacified monolithic spandrel panels, sGG COOL-LITE CLASSIC glass is supplied without opacifier on areas of exterior structural sealant glazing.
- sGG COOL-LITE K and SK coatings are always edge-deleted and must be assembled into a double-glazed unit. As a result the appearance around the edge must be considered.
- Glass processors and installers must check that all mastics and sealants are compatible with the coating, both for assembly into double-glazing and for traditional installation or use in exterior structural sealant glazing.

#### **Notes**

- Like all coated glass, sGG COOL-LITE may distort reflected images to some extent, especially if it is toughened, installed into a double-glazed unit, channel-glazed, etc. The appearance of the glass may show some variations inherent to the product, depending on the distance and angle of observation and the ratio of internal and external lighting of the building.
- Likewise, as with all coated solar control glasses, slight variations in the reflected colour are considered to be normal.

#### **Recommendations for installation of monolithic glass in spandrel area glazing**

Spandrel area glazing refers to opacified sGG COOL-LITE ST or sGG COOL-LITE CLASSIC glass, or glazing located in front of an opaque surface. sGG COOL-LITE K and SK glass cannot be used in monolithic glazing for spandrel areas.

#### **Opacified glass**

- Avoid all contact with any harsh products (solvents, acids, alkalis, etc) during storage, transportation and installation, as this may cause damage to the opacifier.
- Openings should be made at the bottom of frames to allow the channels to drain. These openings must be created in such a way as to avoid any water entering. They must be checked regularly to ensure they are operating correctly.
- The glass must be channel-glazed on all 4 sides and calculated accordingly. For other systems ask our technical department for details.
- The edges of opacified sGG COOL-LITE CLASSIC glass must not be exposed to and be protected from adverse weather conditions (eg: using a metal profile).
- Corrosive materials or those which may give off corrosive fumes (acid, ammonia, cement water, acetic silicones, etc) may damage the opacifier. These must not be placed near the glass (if in any doubt, please contact SAINT-GOBAIN GLASS)

#### **Non-opacified glass**

- Non-opacified glass must only be used after consultation with our technical department.
- Heat-strengthened or toughened glass must be positioned in front of a uniform background so that the structures they are covering do not show through.
- If the light transmittance of the glass is higher than 14%, an opacified glass must be used.

#### **Double-glazed units**

- The use of double-glazed glass units in opaque spandrel panels or in front of an opaque surface is only possible if it is permitted by UK regulations.
- In all cases, this use must comply with the technical rules concerning: the width of the cavity, thickness of the glass, toughening requirements etc. Please contact SAINT-GOBAIN GLASS for assistance.

#### **Installation of pre-fabricated panels**

- The frame in which the spandrel panel assembly is placed must be drained. In the case of a ventilated assembly, the frame must allow for ventilation of the spandrel panel.
  - The various components of the spandrel panel assembly are supported on the same setting and location elements.
  - The system for fixing the assembly must never cause any shear stress either in the assembly or in the seal bonding the glass onto the frame, either as a result of external stresses or as a result of the differential expansion of the components.
- For further information, see the document entitled "sGG COOL-LITE, Instructions for use".

sgg COOL-LITE coated glass produced and processed in Saint-Gobain Glass factories and subsidiaries complies with the requirements of European standard BS EN1096.

- sgg COOL-LITE ST and sgg COOL-LITE CLASSIC comply with the requirements of class B of standard BS EN1096.
- sgg COOL-LITE K and SK comply with the requirements of class C of standard BS EN1096.
- Exterior structural sealant glazing: processors and installers must check the compatibility of sealants with the sgg COOL-LITE 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 COOL-LITE CLASSIC and sgg COOL-LITE ST coatings 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).

These tests do not apply to sgg COOL-LITE K, KT and SK coatings as they must be edge-deleted before assembly into double-glazed units.

Distributor
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