

# THE ESSENTIAL

GLASS FOR FAÇADES

APRIL 2020

Banka Nivy, Bratislava, Architect: Benoy Architect, London; Photographer: ©Ondrej Synak, Bratislava

BUILDING GLASS





# GLASS SOLUTIONS FOR FACADES

We play our part in designing some of the world's most iconic architectural projects, offering a wide range of innovative glazing solutions for façades. Partners such as visionary architects or contractors striving to deliver the ultimate building envelope have helped establish Saint-Gobain as a key glazing supplier to the global construction industry.

We respond to your needs with solar and heat control, large dimensions, aesthetics, design, total transparency and curved glass.

Our major field is specialized in providing glazing products ideal for hospitals, schools, office buildings, homes and other buildings where solar heat reduction and daylight are needed.

[www.saint-gobain-facade-glass.com](http://www.saint-gobain-facade-glass.com)

## KEY PERFORMANCE FACTORS



### Light transmission (LT)

Percentage of visible light directly transmitted through the glass.



### Reflection outside (LRe)

Percentage of visible light directly reflected from the exterior glass surface.



### Reflection inside (LRI)

Percentage of visible light directly reflected from the interior glass surface.



### Color rendering index

Ability of the glass to keep the colors the same as if they were observed without glazing. Measured with a scale from 1 to 100. A low CRI gives a poor representation of colors, and a high CRI gives a natural and bright representation of colors.



### Ug-value

Measure of the heat loss by penetration of the glass. The lower the Ug-value is, the better the insulating properties are. Expressed in  $W/m^2K$ .



### Solar Factor (g-value)

Percentage of solar energy transmitted through the glass. It measures the ability of a glazing to reduce the heating of the room. The lower the solar factor is, the better it helps to improve the comfort inside of the building.



### Shading Coefficient (SC)

Ratio of the solar factor of a glazing unit to the solar factor of a clear float glass of nominal thickness of 3 mm to 4mm (0.87). The lower the shading coefficient number, the less heat gain and thus more shading is provided.



### Selectivity (LSG)

Ratio between the glass' light transmission and solar factor. When the selectivity of the glass is higher than 2, it gives you twice as much light versus heat.

## GLASS TECHNOLOGY FOR SUSTAINABLE HABITAT

Saint-Gobain Building Glass offers a complete range of energy efficient coated glass and insulated glazing. With solar control, low emissivity, low maintenance and transparency, our glass meets the requirements of low energy consumption buildings.

The technology behind solar control and low emissivity is a thin transparent coating of metallic oxides, deposited on one or two glass panes of a double or triple glazing unit. Invisible thermal shield, this coating retains the heat inside the building and captures the sun heat to keep it outside.

The innovation and the technology developed by Saint-Gobain serve comfort and well-being for sustainable habitat.

# KEY ASSETS



### Protection from the sun heat – Solar Control Glass

Solar control glass reduce overheating within buildings whilst letting the daylight in.



### Protection from the cold – Low-E Glass

Double or triple glazing significantly reduces heat loss to the exterior, reducing the energy usage for internal heating.



### Easy maintenance – BIOCLEAN

BIOCLEAN reduces the required cleaning frequency of glazing, and also reduces the occurrence of external condensation.



### Total transparency – Anti-reflective glass

Anti-reflective glass is a key asset, especially for shop front projects, where reflections on glass must not block the visibility of products.

# HOW TO READ OUR PRODUCT NAMES

## COOL-LITE XTREME 70/33 II

basic performance	TL	g-value/solar factor	processing
XTREME = Extremely selective solar control coatings (triple silver) with reinforced thermal insulation	in double glass unit with 6   16   4	in double glass unit with 6   16   4	II = to be tempered

COOL-LITE SKN	Highly selective solar control (double silver) with reinforced thermal insulation
COOL-LITE K	Selective solar control coatings (single silver) with thermal insulation
COOL-LITE ST	Standard solar control coatings offering full flexibility for processing

## COOL-LITE SKN 183 II

basic performance	color	substrate	TL	processing
K = K-value (Ug-value)	B = blue	0 = DIAMANT	at 6 mm mono pane	II = to be tempered
S = high selective	G = golden	1 = PLANICLEAR		
T = temperable	N = neutral	2 = PARSOL Bronze		
		3 = PARSOL Grey		
		4 = PARSOL Green		
		7 = PARSOL Sapphire blue		

# EASYPRO

EASYPRO is a revolutionary and unique temporary surface protection developed and offered exclusively by Saint-Gobain. Deposited on to-be-tempered coated glass, it delivers effective protection against mechanical damage as well as ageing, during transport and processing, from deposition of the coating until tempering. During tempering, EASYPRO simply burns off without leaving any residue inside or outside the furnace and without any negative impact on the environment or personal health and safety.

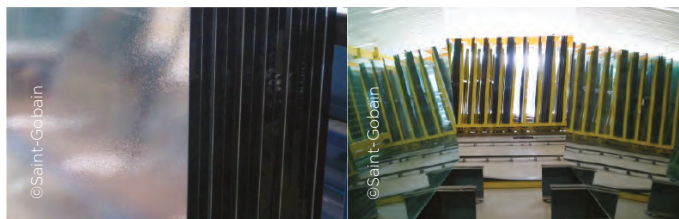
## Developed for the ease of processing, EASYPRO offers flexibility and productivity

- EASYPRO protects the coating so there is a reduced risk of surface scratches when transporting the glass and also increase the shelf life of coated glass on stock or cut offering more flexibility.
- EASYPRO help to save time and money by eliminating time to unseal packs and dispose plastic waste. This also reduces the risk of injury associated with this activity. There is also significant gain in productivity due to tempering cycle times being reduced with EASYPRO. Internal waste can be significantly improved and quality issues can be reduced.



## EASYPRO is a sustainable innovation, minimizing waste and saving energy

- This protective layer not only reduces the amount of packaging used during transportation to protect the glass but as well facilitates loading into trucks, and reduces the carbon footprint during transport.
- It reduces the scraps and damages, thus improving industrial performance during glass processing and generating less waste.
- EASYPRO offers energy saving benefits by allowing reduced temperature levels in the furnace.



## EASYPRO is also an ally for ambitious architectural projects and helps to preserve the aesthetic and performance of the coated glass after tempering

- EASYPRO contributes considerably to the improvement of the quality of glass after tempering, and participates to the reduction of anisotropy. EASYPRO helps not to have to compromise between the quality and the productivity
- EASYPRO on Saint-Gobain solar control coatings guarantees to deliver the most performant glass with optimal aesthetics for the most demanding projects, such as those that boast impressive Overlength large span glass.



## EASYPRO protects today the following to-be-tempered coatings (on PLANICLEAR and DIAMANT):

- COOL-LITE XTREME II (standard with EASYPRO, **except** XTREME SILVER II)
- COOL-LITE SKN II (standard with EASYPRO)
- EASYPRO is also available **on demand** on some COOL-LITE KN II and PLANITHERM II glass for thicknesses from 4 mm (for PLANITHERM II) to 12 mm. Please check with your local sales team. Subject to change



## FOCUS ON OVERLENGTH

To answer a major trend in architecture, we think big. Our large-scale range now includes glass panes with dimensions up to:

# 18 x 3,21 m

The benefits are revolutionary:

- greater design possibilities,
- spectacular optical highlights,
- larger evenly shaped facades,
- panoramic views while benefiting from a high performance glazing.

Coatings available, on DIAMANT or PLANICLEAR (in 8, 10 and 12 mm):

- PLANITHERM II
- COOL-LITE SKN II
- COOL-LITE XTREME II

The glass can be heat treated, laminated, and processed as multifunctional Insulated Glass Units (IGU) or Triple Glazed Units (TGU). Many processing options are possible.

Contact us for individual inquiries.  
Subject to change



# OUR PRODUCTS

## CLIMAPLUS double glazing units

coating	color in reflection	light transmission LT <sup>1</sup> [%]	solar factor g-value <sup>1</sup>	shading coefficient SC	selectivity LT / g
to be tempered / annealed					



### COOL-LITE XTREME for double glazing unit CLIMAPLUS (6 | 16 | 4 mm, 90% Argon) on PLANICLEAR or DIAMANT

Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

COOL-LITE XTREME 70/33 II DIAMANT with EASYPRO	extra clear	71	0,33	0,38	2,15
COOL-LITE XTREME 70/33 DIAMANT	extra clear	71	0,33	0,38	2,15
COOL-LITE XTREME 70/33 II with EASYPRO	neutral	70	0,33	0,38	2,12
COOL-LITE XTREME 70/33	neutral	70	0,33	0,38	2,12
COOL-LITE XTREME 60/28 II DIAMANT with EASYPRO	extra clear	62	0,28	0,33	2,21
COOL-LITE XTREME 60/28 DIAMANT	extra clear	61	0,28	0,33	2,18
COOL-LITE XTREME 60/28 II with EASYPRO	neutral	61	0,28	0,32	2,18
COOL-LITE XTREME 60/28	neutral	60	0,28	0,32	2,14
COOL-LITE XTREME SILVER II DIAMANT	bright silver	50	0,25	0,29	2,00
COOL-LITE XTREME SILVER II	Silver	49	0,25	0,29	1,96
COOL-LITE XTREME 50/22 II DIAMANT with EASYPRO	extra clear	48	0,21	0,24	2,29
COOL-LITE XTREME 50/22 II with EASYPRO	neutral	47	0,21	0,24	2,24



### COOL-LITE SKN for double glazing unit CLIMAPLUS (6 | 16 | 4 mm, 90% Argon) on PLANICLEAR or DIAMANT

Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

<b>NEW</b> COOL-LITE SKN 083 II with EASYPRO	extra clear	76	0,41	0,47	1,85
<b>NEW</b> COOL-LITE SKN 083	extra clear	76	0,41	0,47	1,85
<b>NEW</b> COOL-LITE SKN 183 II with EASYPRO	neutral	75	0,40	0,46	1,88
<b>NEW</b> COOL-LITE SKN 183	neutral	75	0,40	0,46	1,88
COOL-LITE SKN 076 II with EASYPRO	extra clear	71	0,38	0,44	1,87
COOL-LITE SKN 076	extra clear	71	0,38	0,44	1,87
COOL-LITE SKN 176 II with EASYPRO	neutral	70	0,37	0,43	1,89
COOL-LITE SKN 176	neutral	70	0,37	0,43	1,89
COOL-LITE SKN 065 II with EASYPRO	extra clear	62	0,35	0,40	1,77
COOL-LITE SKN 065	extra clear	62	0,35	0,40	1,77
COOL-LITE SKN 165 II with EASYPRO	neutral	61	0,34	0,39	1,79
COOL-LITE SKN 165	neutral	61	0,34	0,39	1,79
COOL-LITE SKN 054 II with EASYPRO	extra clear	53	0,29	0,33	1,83
COOL-LITE SKN 054	extra clear	53	0,29	0,33	1,83
COOL-LITE SKN 154 II with EASYPRO	neutral	52	0,28	0,32	1,85
COOL-LITE SKN 154	neutral	52	0,28	0,32	1,85
COOL-LITE SKN 145	neutral	41	0,22	0,25	1,86
COOL-LITE SKN 044 II with EASYPRO	extra clear	42	0,23	0,27	1,87
COOL-LITE SKN 144 II with EASYPRO	neutral	42	0,23	0,26	1,83

4 Solar control coating in contact with PVB modifies performances and aesthetics. Please contact us to get the approved PVB list.

5 Bending results depend on the process; trials should be done for validation.

6 Screen-printing, roller coating, spray, digital printing inks and enamels validation is required.

7 COOL-LITE SKN 154 may have a slight color deviation in transmission with SKN 154 II. Validation of a prototype is recommended if both versions are used on the same facade.

8 This coating can be laminated for use on a facade up to 1,500m<sup>2</sup> and project must be made from a single production batch from SGG.

	reflection outside LRe [%]	reflection inside LRi [%]	Ug-value <sup>2</sup> [W/m²K]	weight [kg/m²]	assessed sound reduc- tion index Rw,P (C, Ctr) <sup>2</sup> [dB]	use as mono glazing (coating on surface #2)	processing possibilities			
							tempering	lamination tested to- wards PVB <sup>4</sup>	bending <sup>5</sup>	screen- printing & enamelling <sup>6</sup>

11	13	1,0	25,0	35(-1;-5)		to be tempered		Yes	
11	13	1,0	25,0	35(-1;-5)					
11	13	1,0	25,0	35(-1;-5)		to be tempered		Yes	
11	13	1,0	25,0	35(-1;-5)					
15	17	1,0	25,0	35(-1;-5)		to be tempered		Yes	
14	17	1,0	25,0	35(-1;-5)					
14	17	1,0	25,0	35(-1;-5)		to be tempered		Yes	
14	17	1,0	25,0	35(-1;-5)					
30	18	1,0	25,0	35(-1;-5)		to be tempered		Yes	
30	18	1,0	25,0	35(-1;-5)		to be tempered		Yes	
16	18	1,0	25,0	35(-1;-5)		to be tempered		Yes	
16	18	1,0	25,0	35(-1;-5)		to be tempered		Yes	

12	13	1,0	25,0	35(-1;-5)		to be tempered			
12	13	1,0	25,0	35(-1;-5)					
12	13	1,0	25,0	35(-1;-5)		to be tempered			
12	13	1,0	25,0	35(-1;-5)					
13	15	1,0	25,0	35(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
13	15	1,0	25,0	35(-1;-5)					
13	15	1,0	25,0	35(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
13	15	1,0	25,0	35(-1;-5)					
17	19	1,0	25,0	35(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
17	18	1,0	25,0	35(-1;-5)			Yes <sup>8</sup>		
16	19	1,0	25,0	35(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
16	18	1,0	25,0	35(-1;-5)			Yes <sup>8</sup>		
18	23	1,0	25,0	35(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
19	23	1,0	25,0	35(-1;-5)			Yes <sup>8</sup>		
18	23	1,0	25,0	35(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
19	22	1,0	25,0	35(-1;-5)			Yes <sup>8</sup>		
19	15	1,1	25,0	35(-1;-5)					
21	15	1,1	25,0	35(-1;-5)		to be tempered	Yes <sup>8</sup>		
20	15	1,1	25,0	35(-1;-5)		to be tempered	Yes <sup>8</sup>		

## CLIMAPLUS double glazing units

coating	color in reflection	light transmission LT <sup>1</sup> [%]	solar factor g-value <sup>1</sup>	shading coefficient SC	selectivity LT / g
to be tempered / annealed					



### COOL-LITE K (with PLANITHERM XN on face #3) for double glazing unit CLIMAPLUS (6 | 16 | 4 mm, 90% Argon) on PLANICLEAR or DIAMANT

Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

COOL-LITE KBT 140	blue	37	0,27	0,31	1,37
COOL-LITE KG 137 annealed	golden	35	0,27	0,31	1,30
COOL-LITE KG 137 tempered	golden	34	0,28	0,32	1,21
COOL-LITE KN 166 II (with EASYPRO on demand)	neutral	60	0,39	0,45	1,54
COOL-LITE KNT 164	neutral	58	0,42	0,49	1,38
COOL-LITE KNT 155	neutral	48	0,35	0,44	1,37
COOL-LITE KNT 140	neutral	38	0,27	0,31	1,41
COOL-LITE KS 138 II	neutral	37	0,25	0,29	1,48
COOL-LITE KS 147	silver	43	0,30	0,34	1,26



### COOL-LITE ST (with PLANITHERM XN on face #3) for double glazing unit CLIMAPLUS (6 | 16 | 4 mm, 90% Argon) on PLANICLEAR or DIAMANT

Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

COOL-LITE ST BRIGHT SILVER DIAMANT	silver	63	0,52	0,60	1,21
COOL-LITE ST BRIGHT SILVER	silver	61	0,51	0,58	1,20
COOL-LITE ST 167	neutral	61	0,49	0,56	1,24
COOL-LITE ST 150	neutral	46	0,38	0,44	1,21
COOL-LITE ST 136	grey	34	0,28	0,32	1,21
COOL-LITE STB 136	blue	33	0,28	0,32	1,18
COOL-LITE ST 120	silver	19	0,17	0,20	1,12
COOL-LITE STB 120	blue	20	0,18	0,21	1,11



### Low-E coating for double glazing unit CLIMAPLUS (4 | 16 | 4 mm, 90% Argon) on PLANICLEAR or DIAMANT

Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

PLANITHERM XN II DIAMANT (with EASYPRO on demand)	extra clear	83	0,67	0,77	1,24
PLANITHERM XN DIAMANT	extra clear	83	0,67	0,77	1,24
PLANITHERM XN II (with EASYPRO on demand)	neutral	82	0,65	0,75	1,26
PLANITHERM XN	neutral	82	0,65	0,75	1,26
PLANITHERM ONE II DIAMANT (with EASYPRO on demand)	extra clear	73	0,54	0,62	1,35
PLANITHERM ONE DIAMANT	extra clear	73	0,53	0,61	1,38
PLANITHERM ONE II (with EASYPRO on demand)	neutral	72	0,53	0,61	1,36
PLANITHERM ONE	neutral	72	0,52	0,60	1,38

<sup>4</sup> Solar control coating in contact with PVB modifies performances and aesthetics. Please contact us to get the approved PVB list.

<sup>5</sup> Bending results depend on the process; trials should be done for validation.

<sup>6</sup> Screen-printing, roller coating, spray, digital printing inks and enamels validation is required.



	reflection outside LRe [%]	reflection inside LRi [%]	Ug-value <sup>2</sup> [W/m²K]	weight [kg/m²]	assessed sound reduc- tion index Rw,P (C, Ctr) <sup>2</sup> [dB]	use as mono glazing (coating on surface #2)	processing possibilities			
							tempering	lamination tested to- wards PVB <sup>4</sup>	bending <sup>5</sup>	screen- printing & enamelling <sup>6</sup>

#### PLANICLEAR

	23	14	1,1	25,0	35(-1;-5)		temperable			
	30	25	1,1	25,0	35(-1;-5)					
	33	28	1,1	25,0	35(-1;-5)		to be tempered			
	20	22	1,0	25,0	35(-1;-5)		to be tempered			
	13	7	1,1	25,0	35(-1;-5)		temperable	Yes		
	16	7	1,1	25,0	35(-1;-5)		temperable	Yes		
	22	9	1,1	25,0	35(-1;-5)		temperable	Yes		
	38	17	1,1	25,0	35(-1;-5)		to be tempered			
	42	34	1,1	25,0	35(-1;-5)		temperable			

#### PLANICLEAR

	32	31	1,1	25,0	35(-1;-5)	Yes	temperable	Yes	Yes	Yes
	32	31	1,1	25,0	35(-1;-5)	Yes	temperable	Yes	Yes	Yes
	21	21	1,1	25,0	35(-1;-5)	Yes	temperable	Yes	Yes	Yes
	19	19	1,1	25,0	35(-1;-5)	Yes	temperable	Yes	Yes	Yes
	23	20	1,1	25,0	35(-1;-5)	Yes	temperable	Yes		Yes
	19	17	1,1	25,0	35(-1;-5)	Yes	temperable	Yes		Yes
	32	26	1,1	25,0	35(-1;-5)	Yes	temperable	Yes		Yes
	21	29	1,1	25,0	35(-1;-5)	Yes	temperable	Yes		Yes

	12	12	1,1	20,0	31(-1;-4)		to be tempered		Yes	
	12	12	1,1	20,0	31(-1;-4)					
	12	12	1,1	20,0	31(-1;-4)		to be tempered		Yes	
	11	12	1,1	20,0	31(-1;-4)					
	22	22	1,0	20,0	31(-1;-4)		to be tempered		Yes	
	23	23	1,0	20,0	31(-1;-4)					
	22	23	1,0	20,0	31(-1;-4)		to be tempered		Yes	
	22	23	1,0	20,0	31(-1;-4)					

## CLIMAPLUS double glazing units

coating	color in reflection	light transmission LT <sup>1</sup> [%]	solar factor g-value <sup>1</sup>	shading coefficient SC	selectivity LT / g
to be tempered / annealed					



### Low-E coating for double glazing unit CLIMAPLUS (4 | 16 | 4 mm, 90% Argon) on PLANICLEAR or DIAMANT

Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

ECLAZ II DIAMANT	neutral	84	73	83	1,15
ECLAZ DIAMANT	neutral	85	73	84	1,16
ECLAZ II	neutral	83	71	81	1,17
ECLAZ	neutral	83	71	81	1,17
ECLAZ ONE II DIAMANT	neutral	80	61	71	1,31
ECLAZ ONE DIAMANT	neutral	81	62	71	1,31
ECLAZ ONE II	neutral	79	60	69	1,32
ECLAZ ONE	neutral	80	60	69	1,33



### BIOCLEAR for double glazing unit CLIMAPLUS (6 | 16 | 4 mm, 90% Argon) on PLANICLEAR for easy maintenance

Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

BIOCLEAR II	neutral	79	0,76	0,87	1,04
BIOCLEAR	neutral	77	0,74	0,85	1,04
BIOCLEAR XTREME 60/28	neutral	56	0,26	0,30	2,15
BIOCLEAR SKN 176	neutral	66	0,35	0,40	1,89
BIOCLEAR SKN 165	neutral	57	0,32	0,37	1,78
BIOCLEAR SKN 154	neutral	49	0,26	0,30	1,88
BIOCLEAR SKN 145	neutral	39	0,21	0,24	1,86



### VISION-LITE on DIAMANT for anti reflectance

Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

VISION-LITE (laminated glass 44.1) DIAMANT	extra clear	97	0,85	0,97	1,14
VISION-LITE II DIAMANT (6 mm)	extra clear	98	0,87	0,99	1,13
Semi VISION-LITE II (6 mm)	extra clear	94	0,88	1,01	1,07
Semi VISION-LITE (6 mm)	extra clear	94	0,89	1,03	1,06

<sup>4</sup> Solar control coating in contact with PVB modifies performances and aesthetics. Please contact us to get the approved PVB list.

<sup>5</sup> Bending results depend on the process; trials should be done for validation.

<sup>6</sup> Screen-printing, roller coating, spray, digital printing inks and enamels validation is required.

reflection outside LRe [%]	reflection inside LRi [%]	Ug-value <sup>2</sup> [W/m²K]	weight [kg/m²]	assessed sound reduc- tion index Rw,P (C, Ctr) <sup>2</sup> [dB]	use as mono glazing (coating on surface #2)	processing possibilities			
						tempering	lamination tested to- wards PVB <sup>4</sup>	bending <sup>5</sup>	screen- printing & enamelling <sup>6</sup>

12	12	1,1	20,0	31(-1;-4)		to be tempered			
12	12	1,1	20,0	31(-1;-4)					
12	11	1,1	20,0	31(-1;-4)		to be tempered			
12	11	1,1	20,0	31(-1;-4)					
16	18	1,0	20,0	31(-1;-4)		to be tempered			
15	16	1,0	20,0	31(-1;-4)					
16	18	1,0	20,0	31(-1;-4)		to be tempered			
15	16	1,0	20,0	31(-1;-4)					

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18	18	2,6	25,0	35(-1;-5)		to be tempered			
17	17	2,6	25,0	35(-1;-5)					
17	18	1,0	25,0	35(-1;-5)					
16	17	1,0	25,0	35(-1;-5)					
19	19	1,0	25,0	35(-1;-5)					
21	23	1,0	25,0	35(-1;-5)					
21	16	1,1	25,0	35(-1;-5)					

1	1	5,6	20,0	34(-1;-3)					
1	1	5,7	15,0	32(-1;-2)		to be tempered			
5	5	5,7	15,0	32(-1;-2)		to be tempered			
5	5	5,7	15,0	32(-1;-2)					



# OUR PRODUCTS

## CLIMATOP triple glazing units

coating	color in reflection	light transmission LT <sup>1</sup> [%]	solar factor g-value <sup>1</sup>	shading coefficient SC	selectivity LT / g
to be tempered / annealed					



### COOL-LITE XTREME (with PLANITHERM XN on face #5) for triple glazing unit CLIMATOP (6 | 12 | 4 | 12 | 4 mm, 90% Argon)

Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

COOL-LITE XTREME 70/33 II DIAMANT with EASYPRO	extra clear	65	0,31	0,36	2,10
COOL-LITE XTREME 70/33 DIAMANT	extra clear	65	0,31	0,36	2,10
COOL-LITE XTREME 70/33 II with EASYPRO	neutral	63	0,31	0,35	2,03
COOL-LITE XTREME 70/33	neutral	63	0,31	0,36	2,03
COOL-LITE XTREME 60/28 II DIAMANT with EASYPRO	extra clear	57	0,27	0,31	2,11
COOL-LITE XTREME 60/28 DIAMANT	extra clear	56	0,27	0,31	2,07
COOL-LITE XTREME 60/28 II with EASYPRO	neutral	55	0,26	0,30	2,12
COOL-LITE XTREME 60/28	neutral	55	0,26	0,30	2,12
COOL-LITE XTREME SILVER II DIAMANT	bright silver	46	0,24	0,27	1,92
COOL-LITE XTREME SILVER II	Silver	45	0,23	0,27	1,96
COOL-LITE XTREME 50/22 II DIAMANT with EASYPRO	extra clear	44	0,20	0,23	2,20
COOL-LITE XTREME 50/22 II with EASYPRO	neutral	43	0,19	0,22	2,26



### COOL-LITE SKN (with PLANITHERM XN on face #5) for triple glazing unit CLIMATOP (6 | 12 | 4 | 12 | 4 mm, 90% Argon)

Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

<b>NEW</b> COOL-LITE SKN 083 II with EASYPRO	extra clear	69	0,38	0,44	1,82
<b>NEW</b> COOL-LITE SKN 083	extra clear	69	0,38	0,44	1,82
<b>NEW</b> COOL-LITE SKN 183 II with EASYPRO	neutral	68	0,37	0,43	1,84
<b>NEW</b> COOL-LITE SKN 183	neutral	68	0,37	0,43	1,84
COOL-LITE SKN 076 II with EASYPRO	extra clear	65	0,35	0,37	1,86
COOL-LITE SKN 076	extra clear	65	0,35	0,41	1,86
COOL-LITE SKN 176 II with EASYPRO	neutral	64	0,34	0,40	1,88
COOL-LITE SKN 176	neutral	64	0,34	0,40	1,88
COOL-LITE SKN 065 II with EASYPRO	extra clear	57	0,32	0,37	1,78
COOL-LITE SKN 065	extra clear	57	0,32	0,37	1,78
COOL-LITE SKN 165 II with EASYPRO	neutral	55	0,31	0,36	1,77
COOL-LITE SKN 165	neutral	55	0,32	0,36	1,72
COOL-LITE SKN 054 II with EASYPRO	extra clear	49	0,27	0,31	1,81
COOL-LITE SKN 054	extra clear	49	0,27	0,31	1,81
COOL-LITE SKN 154 II with EASYPRO	neutral	47	0,26	0,30	1,81
COOL-LITE SKN 154	neutral	47	0,26	0,30	1,81
COOL-LITE SKN 145	neutral	37	0,20	0,23	1,85
COOL-LITE SKN 044 II with EASYPRO	extra clear	39	0,21	0,25	1,86
COOL-LITE SKN 144 II with EASYPRO	neutral	38	0,21	0,24	1,81

<sup>4</sup> Solar control coating in contact with PVB modifies performances and aesthetics. Please contact us to get the approved PVB list.

<sup>5</sup> Bending results depend on the process; trials should be done for validation.

<sup>6</sup> Screen-printing, roller coating, spray, digital printing inks and enamels validation is required.

<sup>7</sup> COOL-LITE SKN 154 may have a slight color deviation in transmission with SKN 154 II. Validation of a prototype is recommended if both versions are used on the same facade.

<sup>8</sup> This coating can be laminated for use on a facade up to 1,500m<sup>2</sup> and project must be made from a single production batch from SGG.

	reflection outside LRe [%]	reflection inside LRi [%]	Ug-value <sup>2</sup> [W/m²K]	weight [kg/m²]	assessed sound reduc- tion index Rw,P (C, Ctr) <sup>2</sup> [dB]	use as mono glazing (coating on surface #2)	processing possibilities			
							tempering	lamination tested to- wards PVB <sup>4</sup>	bending <sup>5</sup>	screen- printing & enamelling <sup>6</sup>

Argon) on PLANICLEAR or DIAMANT

	13	16	0,7	35,0	36(-1;-5)		to be tempered		Yes	
	13	16	0,7	35,0	36(-1;-5)					
	13	16	0,7	35,0	36(-1;-5)		to be tempered		Yes	
	13	16	0,7	35,0	36(-1;-5)					
	16	19	0,7	35,0	36(-1;-5)		to be tempered		Yes	
	16	19	0,7	35,0	36(-1;-5)					
	16	19	0,7	35,0	36(-1;-5)		to be tempered		Yes	
	15	19	0,7	35,0	36(-1;-5)					
	31	20	0,7	35,0	36(-1;-5)		to be tempered		Yes	
	30	20	0,7	35,0	36(-1;-5)		to be tempered		Yes	
	17	20	0,7	35,0	36(-1;-5)		to be tempered		Yes	
	17	20	0,7	35,0	36(-1;-5)		to be tempered		Yes	

n) on PLANICLEAR or DIAMANT

	15	16	0,7	35,0	36(-1;-5)		to be tempered			
	15	16	0,7	35,0	36(-1;-5)					
	14	16	0,7	35,0	36(-1;-5)		to be tempered			
	14	16	0,7	35,0	36(-1;-5)					
	15	18	0,7	35,0	36(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
	15	18	0,7	35,0	36(-1;-5)					
	15	17	0,7	35,0	36(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
	15	17	0,7	35,0	36(-1;-5)					
	18	21	0,7	35,0	36(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
	18	20	0,7	35,0	36(-1;-5)			Yes <sup>8</sup>		
	18	20	0,7	35,0	36(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
	18	20	0,7	35,0	36(-1;-5)			Yes <sup>8</sup>		
	19	24	0,7	35,0	36(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
	20	24	0,7	35,0	36(-1;-5)			Yes <sup>8</sup>		
	19	23	0,7	35,0	36(-1;-5)		to be tempered	Yes <sup>8</sup>	Yes	
	20	23	0,7	35,0	36(-1;-5)			Yes <sup>8</sup>		
	20	17	0,7	35,0	36(-1;-5)					
	22	18	0,7	35,0	36(-1;-5)		to be tempered	Yes <sup>8</sup>		
	21	17	0,7	35,0	36(-1;-5)		to be tempered	Yes <sup>8</sup>		

## CLIMATOP triple glazing units

coating	color in reflection	light transmission LT <sup>1</sup> [%]	solar factor g-value <sup>1</sup>	shading coefficient SC	selectivity LT / g
to be tempered / annealed					



**COOL-LITE K (with PLANITHERM XN on face #3 and #5) for triple glazing unit CLIMATOP (6 | 12 | 4 | 12 | 4 mm, 90% Argon)**  
Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

COOL-LITE KBT 140	blue	33	0,24	0,27	1,38
COOL-LITE KG 137 annealed	golden	31	0,24	0,28	1,29
COOL-LITE KG 137 tempered	golden	31	0,24	0,28	1,29
COOL-LITE KN 166 II (with EASYPRO on demand)	neutral	55	0,34	0,39	1,62
COOL-LITE KNT 164	neutral	52	0,37	0,42	1,41
COOL-LITE KNT 155	neutral	43	0,30	0,35	1,43
COOL-LITE KNT 140	neutral	34	0,24	0,27	1,42
COOL-LITE KS 138 II	neutral	33	0,22	0,26	1,50
COOL-LITE KS 147	silver	39	0,27	0,31	1,44



**COOL-LITE ST (with PLANITHERM XN on face #3 and #5) for triple glazing unit CLIMATOP (6 | 12 | 4 | 12 | 4 mm, 90% Argon)**  
Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

COOL-LITE ST BRIGHT SILVER DIAMANT	silver	58	0,45	0,52	1,29
COOL-LITE ST BRIGHT SILVER	silver	56	0,44	0,50	1,27
COOL-LITE ST 167	neutral	55	0,42	0,48	1,31
COOL-LITE ST 150	neutral	42	0,33	0,37	1,27
COOL-LITE ST 136	grey	31	0,24	0,27	1,29
COOL-LITE STB 136	blue	30	0,24	0,27	1,25
COOL-LITE ST 120	silver	17	0,15	0,17	1,13
COOL-LITE STB 120	blue	18	0,15	0,18	1,20



**Low-E coating for triple glazing unit CLIMATOP (4 | 12 | 4 | 12 | 4 mm, 90% Argon) on PLANICLEAR or DIAMANT**  
Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

PLANITHERM XN II DIAMANT (with EASYPRO on demand)	extra clear	76	0,56	0,64	1,36
PLANITHERM XN DIAMANT	extra clear	76	0,56	0,64	1,36
PLANITHERM XN II (with EASYPRO on demand)	neutral	74	0,54	0,62	1,37
PLANITHERM XN	neutral	74	0,54	0,62	1,37
PLANITHERM ONE II DIAMANT (with EASYPRO on demand)	extra clear	60	0,40	0,46	1,50
PLANITHERM ONE DIAMANT	extra clear	60	0,39	0,44	1,54
PLANITHERM ONE II (with EASYPRO on demand)	neutral	59	0,39	0,45	1,51
PLANITHERM ONE	neutral	59	0,38	0,43	1,55

<sup>4</sup> Solar control coating in contact with PVB modifies performances and aesthetics. Please contact us to get the approved PVB list.

<sup>5</sup> Bending results depend on the process; trials should be done for validation.

<sup>6</sup> Screen-printing, roller coating, spray, digital printing inks and enamels validation is required.



	reflection outside LRe [%]	reflection inside LRi [%]	Ug-value <sup>2</sup> [W/m²K]	weight [kg/m²]	assessed sound reduc- tion index Rw,P (C, Ctr) <sup>2</sup> [dB]	use as mono glazing (coating on surface #2)	processing possibilities			
							tempering	lamination tested to- wards PVB <sup>4</sup>	bending <sup>5</sup>	screen- printing & enamelling <sup>6</sup>

#### Argon) on PLANICLEAR

24	16	0,7	35,0	36(-1;-5)		temperable			
30	26	0,7	35,0	36(-1;-5)					
33	28	0,7	35,0	36(-1;-5)		to be tempered			
21	23	0,7	35,0	36(-1;-5)		to be tempered			
14	11	0,7	35,0	36(-1;-5)		temperable	Yes		
17	11	0,7	35,0	36(-1;-5)		temperable	Yes		
23	12	0,7	35,0	36(-1;-5)		temperable	Yes		
39	19	0,7	35,0	36(-1;-5)		to be tempered			
43	33	0,7	35,0	36(-1;-5)		temperable			

#### Argon) on PLANICLEAR

34	31	0,7	35,0	36(-1;-5)	Yes	temperable	Yes	Yes	Yes
33	30	0,7	35,0	36(-1;-5)	Yes	temperable	Yes	Yes	Yes
22	22	0,7	35,0	36(-1;-5)	Yes	temperable	Yes	Yes	Yes
20	21	0,7	35,0	36(-1;-5)	Yes	temperable	Yes	Yes	Yes
23	21	0,7	35,0	36(-1;-5)	Yes	temperable	Yes		Yes
19	19	0,7	35,0	36(-1;-5)	Yes	temperable	Yes		Yes
32	27	0,7	35,0	36(-1;-5)	Yes	temperable	Yes		Yes
21	29	0,7	35,0	36(-1;-5)	Yes	temperable	Yes		Yes

15	15	0,7	30,0	32(-1;-5)		to be tempered		Yes	
15	15	0,7	30,0	32(-1;-5)					
14	14	0,7	30,0	32(-1;-5)		to be tempered		Yes	
14	14	0,7	30,0	32(-1;-5)					
33	33	0,7	30,0	32(-1;-5)		to be tempered		Yes	
33	33	0,7	30,0	32(-1;-5)					
32	32	0,7	30,0	32(-1;-5)		to be tempered		Yes	
32	32	0,7	30,0	32(-1;-5)					

## CLIMATOP triple glazing units

coating	color in reflection	light transmission LT <sup>1</sup> [%]	solar factor g-value <sup>1</sup>	shading coefficient SC	selectivity LT / g
to be tempered / annealed					



**Low-E coating for triple glazing unit CLIMATOP (4 | 12 | 4 | 12 | 4 mm, 90% Argon) on PLANICLEAR or DIAMANT**  
Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

ECLAZ II DIAMANT	neutral	78	0,61	0,70	1,28
ECLAZ DIAMANT	neutral	79	0,62	0,71	1,27
ECLAZ II	neutral	76	0,59	0,68	1,29
ECLAZ	neutral	77	0,60	0,69	1,28
ECLAZ ONE II DIAMANT	neutral	70	0,48	0,55	1,46
ECLAZ ONE DIAMANT	neutral	72	0,48	0,55	1,50
ECLAZ ONE II	neutral	69	0,47	0,54	1,47
ECLAZ ONE	neutral	70	0,47	0,54	1,49



**BIOCLEAR (with PLANITHERM XN on face [#3 and] #5) for triple glazing unit CLIMATOP (6 | 12 | 4 | 12 | 4 mm, 90% Argon)**  
Values given according to the standards <sup>1</sup>EN 410, <sup>2</sup>EN 673 and <sup>3</sup>EN ISO 140-3/717-1

BIOCLEAR II	neutral	71	0,53	0,61	1,34
BIOCLEAR	neutral	69	0,52	0,60	1,33
BIOCLEAR XTREME 60/28	neutral	51	0,24	0,28	2,13
BIOCLEAR SKN 176	neutral	60	0,32	0,37	1,88
BIOCLEAR SKN 165	neutral	52	0,30	0,34	1,73
BIOCLEAR SKN 154	neutral	45	0,24	0,28	1,88
BIOCLEAR SKN 145	neutral	35	0,19	0,22	1,84

<sup>4</sup> Solar control coating in contact with PVB modifies performances and aesthetics. Please contact us to get the approved PVB list.

<sup>5</sup> Bending results depend on the process; trials should be done for validation.

<sup>6</sup> Screen-printing, roller coating, spray, digital printing inks and enamels validation is required.

reflection outside LRe [%]	reflection inside LRi [%]	Ug-value <sup>2</sup> [W/m²K]	weight [kg/m²]	assessed sound reduc- tion index Rw,P (C, Ctr) <sup>2</sup> [dB]	use as mono glazing (coating on surface #2)	processing possibilities			
						tempering	lamination tested to- wards PVB <sup>4</sup>	bending <sup>5</sup>	screen- printing & enamelling <sup>6</sup>

15	15	0,7	30,0	32(-1;-5)		to be tempered			
15	15	0,7	30,0	32(-1;-5)					
14	14	0,7	30,0	32(-1;-5)		to be tempered			
14	14	0,7	30,0	32(-1;-5)					
24	24	0,7	30,0	32(-1;-5)		to be tempered			
21	21	0,7	30,0	32(-1;-5)					
23	23	0,7	30,0	32(-1;-5)		to be tempered			
21	21	0,7	30,0	32(-1;-5)					

90% Argon) PLANICLEAR for easy maintenance

17	17	0,7	35,0	36(-1;-5)		to be tempered			
17	16	0,7	35,0	36(-1;-5)					
18	20	0,7	35,0	36(-1;-5)					
17	19	0,7	35,0	36(-1;-5)					
20	21	0,7	35,0	36(-1;-5)					
22	24	0,7	35,0	36(-1;-5)					
21	15	0,7	35,0	36(-1;-5)					

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This commitment is driven by our Glass Forever program, with the help of all our stakeholders, employees, customers, partners, and suppliers.

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