

**block**

# Blockout Déco N203

---

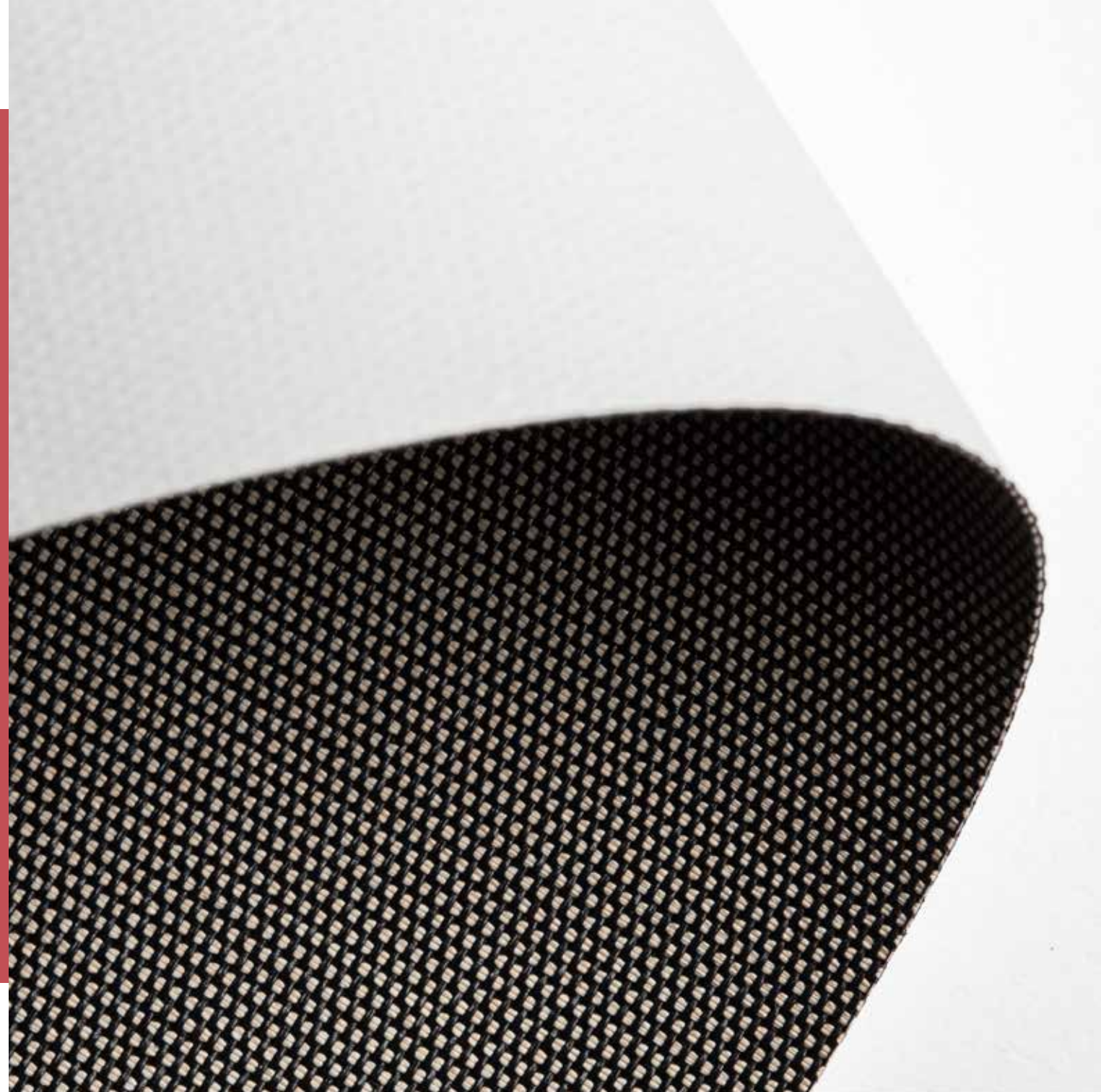
COLLECTION 2018-2021  
BLOCK SUNLIGHT  
BLOCKOUT  
OF = 0%



screenprotectors<sup>®</sup>  
a brand of

**copaco**<sup>®</sup>  
screenweavers

**Keep out sunlight completely. Strike a perfect balance between comfort, stylish and private. Meet Block.**



# Blockout Déco N203



GLASSFIBRE

OF = 0%

## Technical specifications

TECHNICAL SPECIFICATION		UNITY		STANDARD	RESULT
composition				Déco N203 flock laminated	
openness factor		%		NBN EN 410	0%
weight		g/m <sup>2</sup>		NF EN 12127	700
thickness		mm		ISO 5084	0,45
density		yarn/cm	warp	ISO 7211/2	22
			weft		20
colour fastness to artificial light			back	ISO 105 B02	>7
tear strength	original	daN	warp	ISO 4674-1 method 2	2,9
			weft		3,1
elongation up to break	original	%	warp	ISO 1421	7,2
			weft		3,5
breaking strength	original	daN/5 cm	warp	ISO 1421	185
			weft		200
elongation up to break	after colour fastness to artificial light	%	warp	ISO 1421	6,1
			weft		2,9
breaking strength	after colour fastness to artificial light	daN/5 cm	warp	ISO 1421	170
			weft		200
tear strength	after climatic chamber -30°C	daN	warp	ISO 4674-1 method 2	2,4
			weft		2,9
elongation up to break	after climatic chamber -30°C	%	warp	ISO 1421	6,3
			weft		2,8
breaking strength	after climatic chamber -30°C	daN/5 cm	warp	ISO 1421	125
			weft		160
tear strength	after climatic chamber +70°C	daN	warp	ISO 4674-1 method 2	2,7
			weft		3,4
elongation up to break	after climatic chamber +70°C	%	warp	ISO 1421	5,1
			weft		1,4
breaking strength	after climatic chamber +70°C	daN/5 cm	warp	ISO 1421	110
			weft		90
fire classification	Europe			UNE-EN 13501-1:2007	C-s3,d0
	France			NF P92-503	M1
	Italy			UNI 9177	Class 1
	Germany			DIN 4102	B1
	UK			BS 5867	C
	USA			NFPA 701	FR
	Spain			UNE EN 13773-2003	Clase 1
roll length		<b>30 m</b>			
cleaning		with soapy water			
confection		by heat, high frequency or ultrasonic welding			

These properties are given as indicative and don't have any contractual value

## Blockout Déco N203 020302 white | sand-white





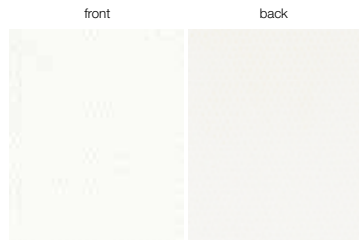
# Blockout Déco N203



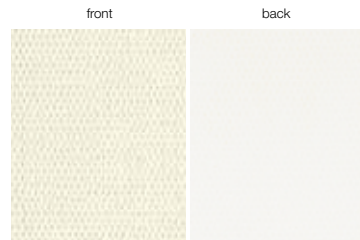
GLASSFIBRE

OF = 0%

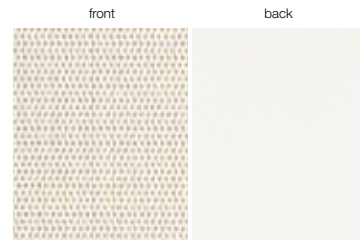
## Colours & references



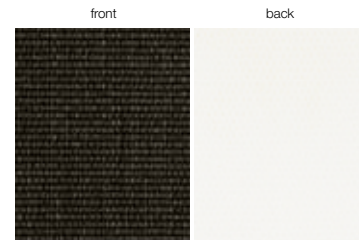
**Blockout Déco N203 020202**  
white | white-white



**Blockout Déco N203 020802**  
white | linen-white



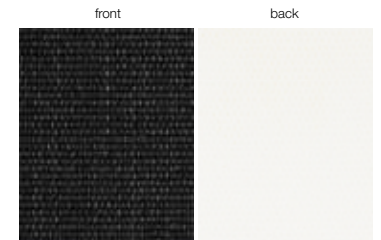
**Blockout Déco N203 020302**  
white | sand-white



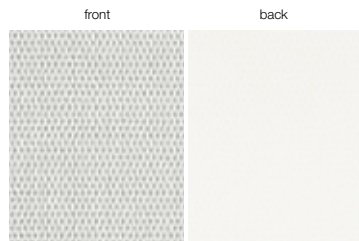
**Blockout Déco N203 101102**  
charcoal | bronze-white



**Blockout Déco N203 100102**  
charcoal | grey-white



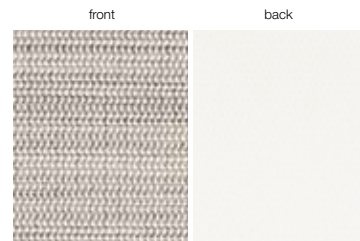
**Blockout Déco N203 101002**  
charcoal | charcoal-white



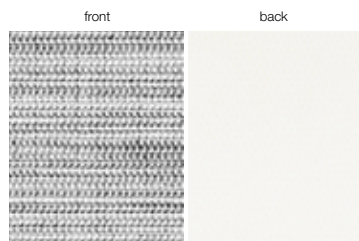
**Blockout Déco N203 020702**  
white | pearl grey-white



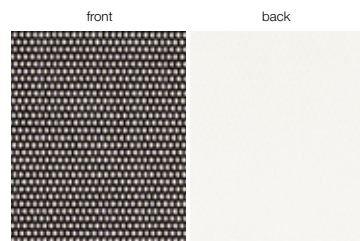
**Blockout Déco N203 020102**  
white | grey-white



**Blockout Déco N203 bicolor 024802**  
white-sand | bronze-white



**Blockout Déco N203 bicolor 024902**  
white-white | charcoal - white



**Blockout Déco N203 100302**  
charcoal | sand-white

Blockout Déco N203	240 cm
020202 white   white-white	•
020802 white   linen-white	•
020302 white   sand-white	•
020702 white   pearl grey-white	•
020102 white   grey-white	•
024802 white-sand   bronze-white	•
024902 white-white   charcoal-white	•
100302 charcoal   sand-white	•
101102 charcoal   bronze-white	•
100102 charcoal   grey-white	•
101002 charcoal   charcoal-white	•

# Blockout Déco N203



GLASSFIBRE

OF = 0%

## Solar energetic properties

Blockout Déco N203 European Standard EN 14501 Calculation G-value according to EN 13363-1+A1:2007			SOLAR ENERGETIC PROPERTIES										VISUAL PROPERTIES	
			FABRIC		FABRIC + GLAZING									
					INTERIOR									
					G-factor = total solar energy transmittance									
references	colours	front	back	As = Solar Absorptance %	Rs = Solar Reflectance %	Ts = Solar Transmittance %	Glazing A - Gv = 0,85 - U = 5,8	Glazing B - Gv = 0,76 - U = 2,9	Glazing C - Gv = 0,59 - U = 1,2	Glazing D - Gv = 0,32 - U = 1,1	Tv = Visible Light Transmittance %	Tuv = UV Transmittance %		
		020202	white   white-white										front	back
		back		back	33,4	66,6	0,0	0,32	0,35	0,35	0,25	0,0	0,0	
020802	white   linen-white	front		front	37,4	62,6	0,0	0,35	0,37	0,36	0,25	0,0	0,0	
		back		back	33,3	66,7	0,0	0,32	0,35	0,35	0,25	0,0	0,0	
020302	white   sand-white	front		front	41,3	58,7	0,0	0,37	0,39	0,38	0,26	0,0	0,0	
		back		back	32,8	67,2	0,0	0,32	0,35	0,35	0,25	0,0	0,0	
020702	white   pearl grey-white	front		front	59,0	41,0	0,0	0,41	0,43	0,40	0,26	0,0	0,0	
		back		back	33,0	67,0	0,0	0,32	0,35	0,35	0,25	0,0	0,0	
020102	white   grey-white	front		front	48,6	51,4	0,0	0,47	0,48	0,43	0,27	0,0	0,0	
		back		back	33,7	66,3	0,0	0,32	0,35	0,35	0,25	0,0	0,0	
024802	white-sand   bronze-white	front		front	41,3	45,9	0,0	0,46	0,47	0,42	0,27	0,0	0,0	
		back		back	41,3	45,9	0,0	0,46	0,47	0,42	0,27	0,0	0,0	
024902	white-white   charcoal-white	front		front	36,9	48,7	0,0	0,45	0,45	0,41	0,27	0,0	0,0	
		back		back	36,9	48,7	0,0	0,45	0,45	0,41	0,27	0,0	0,0	

Blockout Déco N203 European Standard EN 14501 Calculation G-value according to EN 13363-1+A1:2007			SOLAR ENERGETIC PROPERTIES										VISUAL PROPERTIES	
			FABRIC		FABRIC + GLAZING									
					INTERIOR									
					G-factor = total solar energy transmittance									
references	colours	front	back	As = Solar Absorptance %	Rs = Solar Reflectance %	Ts = Solar Transmittance %	Glazing A - Gv = 0,85 - U = 5,8	Glazing B - Gv = 0,76 - U = 2,9	Glazing C - Gv = 0,59 - U = 1,2	Glazing D - Gv = 0,32 - U = 1,1	Tv = Visible Light Transmittance %	Tuv = UV Transmittance %		
		100302	charcoal   sand-white										front	back
		back		back	34,2	65,8	0,0	0,33	0,36	0,35	0,25	0,0	0,0	
101102	charcoal   bronze-white	front		front	93,3	6,7	0,0	0,67	0,66	0,55	0,30	0,0	0,0	
		back		back	33,6	66,4	0,0	0,32	0,35	0,35	0,25	0,0	0,0	
100102	charcoal   grey-white	front		front	90,5	9,5	0,0	0,66	0,64	0,54	0,30	0,0	0,0	
		back		back	33,4	66,6	0,0	0,32	0,35	0,35	0,25	0,0	0,0	
101002	charcoal   charcoal-white	front		front	94,0	6,0	0,0	0,68	0,66	0,55	0,30	0,0	0,0	
		back		back	34,6	65,4	0,0	0,33	0,36	0,35	0,25	0,0	0,0	

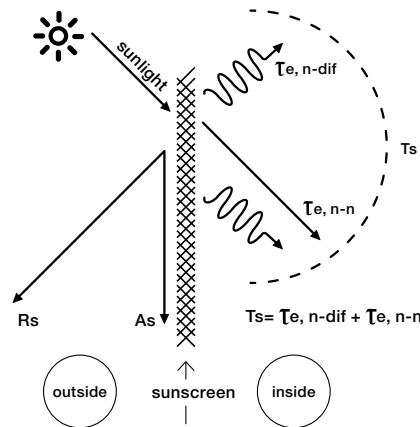
GLAZING A = clear single glazing 4 mm	Gv = 0,85
GLAZING B = clear double glazing (4/12/4), space filled with air	Gv = 0,76
GLAZING C = double glazing (4/16/4), with a low emissivity coating in position 3, space filled with argon	Gv = 0,59
GLAZING D = reflective double glazing (4/16/4), with a low emissivity coating in position 2, space filled with argon	Gv = 0,32

# Working of a sunscreen



## Sunscreen = protection against sunrays

Sunscreen means protection against the sunrays, so the function is the protection against light and heat, which is expressed in several properties.



<b>Rs</b>	Solar reflectance
<b>As</b>	Solar absorptance
<b>Ts</b>	Solar transmittance
<b>Te,n-dif</b>	Diffuse solar transmittance
<b>Te,n-n</b>	Normal solar transmittance

## Classes indicate effect of a sunscreen

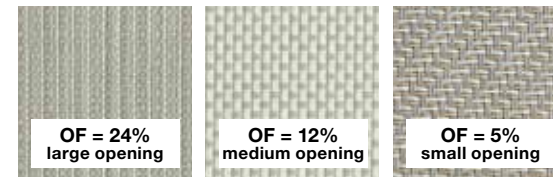
Based on certain properties, the screen can be split up in classes, from 0 to 4. Those classes are used, starting from the norm EN 14501, to indicate the effect of a certain sunscreen.

influence on thermal and visual comfort	
<b>Class 0</b>	very little effect
<b>Class 1</b>	little effect
<b>Class 2</b>	moderate effect
<b>Class 3</b>	good effect
<b>Class 4</b>	very good effect

## Visual properties

### Openness factor

The openness of a screen is indicated by the openness factor = **OF**. The openness coefficient is the relative area of the openings in the fabric seen under a given incidence. The openness factor is seen under a normal incidence.



The sunrays are subdivided in: **Visible light**, **UV-light** and **IR-light**.

**Visible light** (55% of the sun-energy) is that part for which our eyes are most sensitive. How larger the light intensity, how more detrimental for our eyes.

The factor Visible Light Transmittance = **Tv**, is the ratio of visible light that will be transmitted. How lower this factor can be kept, how better for the eyes.

**UV-light** (3% of the sun-energy) is the part of radiation which is detrimental for our health. This factor is indicated by the UV Transmittance = **Tuv**. This is the quantity UV-light transmitted by the sunscreen.

**IR-light** is invisible. This is however 42% of the sun-energy. These rays care for the reheating of solid substances and gases.

### Influence of colours

The choice of the colour has direct influence on the criteria which justify the use of sunscreen protection:

- Protection against visible light, expressed by the factor **Tv**.
- Protection against sun-energy, expressed by the **G** value.
- Protection against secondary heat, expressed by the factor **Qi**.
- Protection against UV-light, expressed by the factor **Tuv**.

## Visual properties: classes

### Glare control

The capacity of the solar protection device to control the luminance level of openings and to reduce the luminance contrasts between different zones within the field.

Tv,n-n	Tv,n-dif			
	Tv,n-dif < 0,02	0,02 ≤ Tv,n-dif < 0,04	0,04 ≤ Tv,n-dif < 0,08	Tv,n-dif ≥ 0,08
Tv,n-n > 0,10	0	0	0	0
0,05 < Tv,n-n ≤ 0,10	1	1	0	0
Tv,n-n ≤ 0,05	3	2	1	1
Tv,n-n = 0,00	4	3	2	2

### Privacy at night

Night privacy is the capacity of an internal or external blind or a shutter in the fully extended position or fully extended and closed position to protect persons, at night in normal light conditions from external view. External views means the ability of an external observer located 5m from the fully extended and closed product, to distinguish a person or object standing 1m behind the protection device in the room.

Tv,n-n	Tv,n-dif		
	0 < Tv,n-dif ≤ 0,04	0,04 < Tv,n-dif ≤ 0,15	Tv,n-dif > 0,15
Tv,n-n > 0,10	0	0	0
0,05 < Tv,n-n ≤ 0,10	1	1	1
Tv,n-n ≤ 0,05	2	2	2
Tv,n-n = 0,00	4	3	2

### Visual contact with the outside

Visual contact with the outside is the capacity of the solar protection device to allow an exterior view when it is fully extended. This function is affected by different light conditions during the day.

Tv,n-n	Tv,n-dif		
	0 < Tv,n-dif ≤ 0,04	0,04 < Tv,n-dif ≤ 0,15	Tv,n-dif > 0,15
Tv,n-n > 0,10	4	3	2
0,05 < Tv,n-n ≤ 0,10	3	2	1
Tv,n-n ≤ 0,05	2	1	0
Tv,n-n = 0,00	0	0	0

### Daylight utilisation

Daylight utilisation is characterised by:

- the capacity of the solar protection device to reduce the time period during the artificial light is required.
- the capacity of the solar protection device to optimise the daylight which is available.

CLASS	0	1	2	3	4
Tv,dif-h	Tv,dif-h < 0,02	0,02 ≤ Tv,dif-h < 0,10	0,10 ≤ Tv,dif-h < 0,25	0,25 ≤ Tv,dif-h < 0,40	Tv,dif-h ≥ 0,40




# Working of a sunscreen



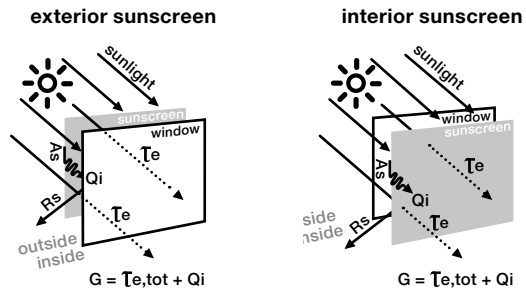
## Thermal comfort

### Fabric

Energy radiated by the sun, will be split up in 3 factors:

factor 1:	factor 2:	factor 3:
 <p><b>As = Solar absorptance</b> is the ratio of the absorbed flux to the incident flux.</p>	 <p><b>Rs = Solar reflectance</b> is the fraction of the incident solar radiation that is directly reflected by the component.</p>	 <p><b>Ts = Solar transmittance</b> is the sum of the (normal) direct solar transmittance and the diffuse solar transmittance. This is the fraction of the total transmitted energy to the total incident solar radiation.</p>
<b>These 3 factors together are always 100%</b>		

### The G-factor



<b>Rs</b>	Solar reflectance
<b>As</b>	Solar absorptance
<b>Te</b>	Direct solar transmittance
<b>Qi</b>	Secondary heat transfer factor
<b>G</b>	G-factor = total solar energy transmittance

Sunscreens are always used in combination with a glazing. These together will prevent a large quantity of energy, sent by the sun to the earth, which is indicated by the: Total Solar Energy Transmittance, or **G-factor**.

The **G** value is the ratio between the total solar energy transmitted into a room through a window and the incident solar energy on the window. The **G<sub>tot</sub>** is the solar factor of the combination of glazing and solar protection device.

The **G<sub>v</sub>** is the solar factor of the glazing alone. The shading coefficient is defined as the ratio of the solar factor of the combined glazing and solar protection device **G<sub>tot</sub>** to that of the glazing alone **G<sub>v</sub>**.

The total solar energy transmitted through a window consists of two parts:

- 1) Radiation: measured by the solar transmittance: **Te,tot**
- 2) Heat: measured by the secondary heat transfer: **Qi**

$$G = \overline{Te,tot} + Qi$$

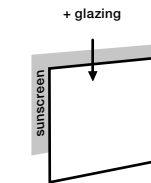
The factor **Te,tot**, is the quantity of energy, which will pass the combination solar protection device and window.

The factor **Qi** is the quantity of heat which is released by the absorption of energy in the sunscreen protection system = combination sunscreen + glazing.

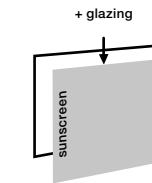
The **G-factor** is the most important factor to explain the efficiency of a combination sunscreen + glazing, as protection against the energy of the sun. The **G-factor** divided into his components explains the difference in efficiency between exterior and interior sunscreen.

$$G = \overline{Te,tot} + Qi$$

#### exterior sunscreen



#### interior sunscreen



The direct solar transmittance **Te,tot** is the same for interior and exterior use of sunscreens.

The secondary heat factor **Qi** for interior sunscreen is bigger then for exterior sunscreen. For interior use, the heat, produced by the absorption of energy, will be transmitted to the room inside. By exterior use, the heat will be transmitted to the outside, without any inconvenience at the inside.

Also the colour of the sunscreen has an influence on the **G-factor**. Dark colours will absorb a lot of sun energy and will transmit this to heat. If the screen is used for exterior, heat will have no influence inside the room, contrary to a screen used for interior. This is why a darker screen is ideal for exterior use and a lighter screen for interior use.

## Thermal comfort: classes

### Total Solar energy Transmittance = G-factor

CLASS	0	1	2	3	4
G <sub>tot</sub>	G <sub>tot</sub> ≥ 0,50	0,35 ≤ G <sub>tot</sub> < 0,50	0,15 ≤ G <sub>tot</sub> < 0,35	0,10 ≤ G <sub>tot</sub> < 0,15	G <sub>tot</sub> < 0,10

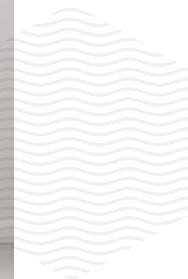
### Secondary Heat transfer = Qi

CLASS	0	1	2	3	4
Qi	Qi ≥ 0,30	0,20 ≤ Qi < 0,30	0,10 ≤ Qi < 0,20	0,03 ≤ Qi < 0,10	Qi < 0,03

### Normal Solar transmittance = protection against direct transmission

The ability of a solar protection device to protect persons and surroundings from direct irradiation is measured by the direct/direct solar transmittance of the device in combination with the glazing. **Te,n-n** is used as measure for this property.

# block sunlight remain privacy







**Screen Protectors SL** · c/ Alessandro Volta Nau 6A-7ª · Pol. Ind. Plans d'Arau  
08787 La Pobla de Claramunt, Barcelona · T +34 93 8088004 · [screen@screenprotectors.com](mailto:screen@screenprotectors.com) · [www.copaco.be](http://www.copaco.be)