

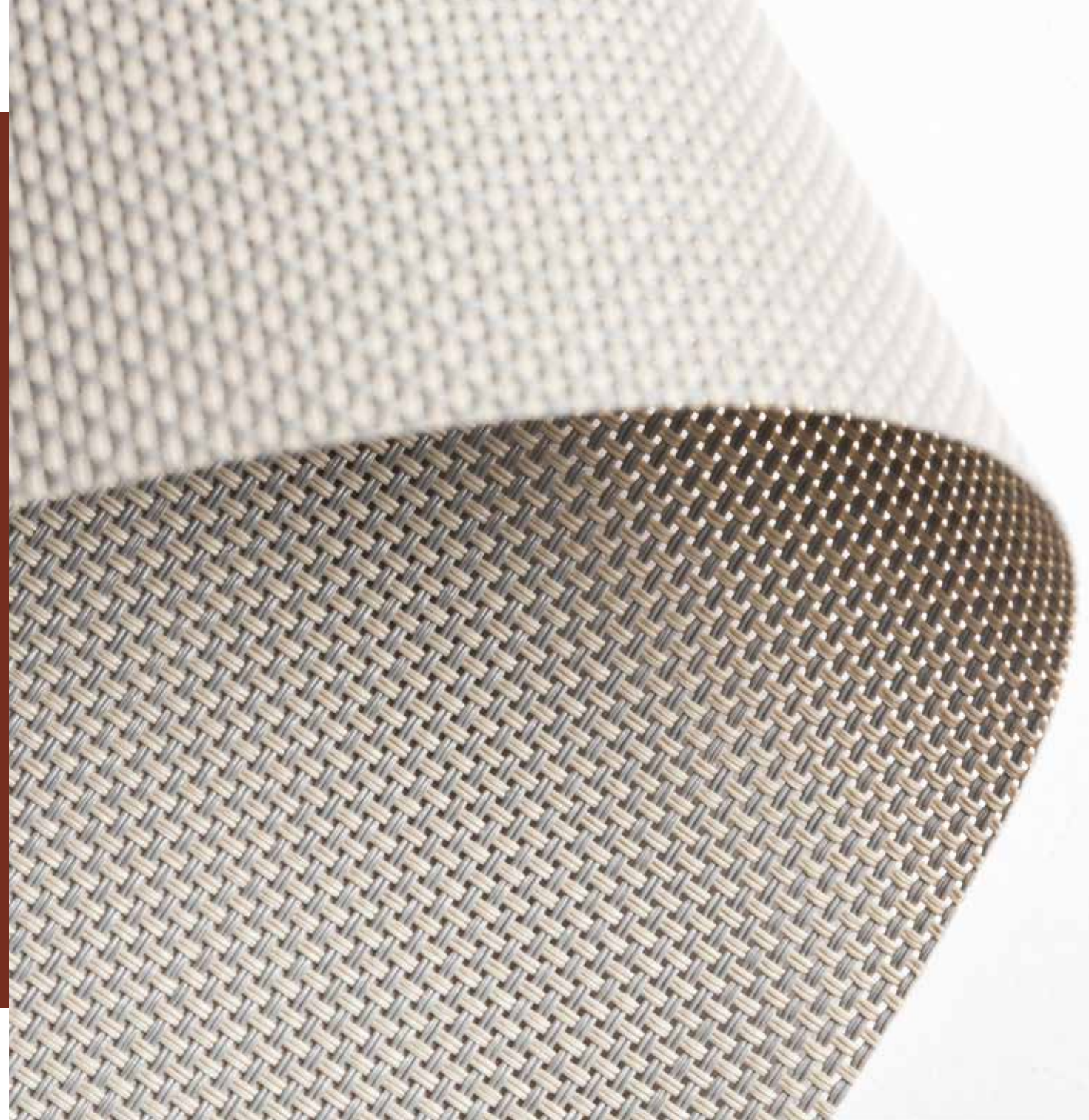
v:si

Natté

**COLLECTION 2018-2021
CLARITY & COMFORT
GLASSFIBRE
OF = 1-10%**



**Your view is key.
Maintain your
privacy and filter
out unnecessary
sunlight.
Meet Visi.**





Natté



GLASSFIBRE

OF = 1-10%

Natté 300 002002 white | white



Natté 380 002002 white | white



Natté 390 002002 white | white



Natté 420 002002 white | white





Natté



GLASSFIBRE

OF = 1-10%

Natté 300 010010 charcoal | charcoal

Natté 380 010010 charcoal | charcoal

Natté 390 010010 charcoal | charcoal

Natté 420 010010 charcoal | charcoal





Natté 300

OF = 10%



Natté 380

OF = 5%

Technical specifications

TECHNICAL SPECIFICATION		UNITY		STANDARD	RESULT
composition				Glassfibre 36% - PVC 64%	
openness factor		%		NBN EN 410	10%
weight		g/m²		NF EN 12127	345
thickness		mm		ISO 2286-3	0,45
density		yarn/cm	warp	ISO 7211/2	18
			weft		18
colour fastness to artificial light				ISO 105 B02	>7
tear strength	original	daN	warp	ISO 4674-1 method 2	4,7
			weft		4,9
elongation up to break	original	%	warp	ISO 1421	2,7
			weft		2,7
breaking strength	original	daN/5 cm	warp	ISO 1421	140
			weft		135
elongation up to break	after colour fastness to artificial light	%	warp	ISO 1421	3,1
			weft		3,2
breaking strength	after colour fastness to artificial light	daN/5 cm	warp	ISO 1421	140
			weft		140
tear strength	after climatic chamber -30°C	daN	warp	ISO 4674-1 method 2	4,8
			weft		4,9
elongation up to break	after climatic chamber -30°C	%	warp	ISO 1421	3,1
			weft		2,7
breaking strength	after climatic chamber -30°C	daN/5 cm	warp	ISO 1421	135
			weft		130
tear strength	after climatic chamber +70°C	daN	warp	ISO 4674-1 method 2	4,8
			weft		4,9
elongation up to break	after climatic chamber +70°C	%	warp	ISO 1421	2,7
			weft		2,7
breaking strength	after climatic chamber +70°C	daN/5 cm	warp	ISO 1421	100
			weft		120
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		30 m			
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

Technical specifications

TECHNICAL SPECIFICATION		UNITY		STANDARD	RESULT
composition				Glassfibre 36% - PVC 64%	
openness factor		%		NBN EN 410	5%
weight		g/m²		NF EN 12127	380
thickness		mm		ISO 2286-3	0,45
density		yarn/cm	warp	ISO 7211/2	20
			weft		20
colour fastness to artificial light				ISO 105 B02	>7
tear strength	original	daN	warp	ISO 4674-1 method 2	4,9
			weft		4,7
elongation up to break	original	%	warp	ISO 1421	3,7
			weft		3,2
breaking strength	original	daN/5 cm	warp	ISO 1421	160
			weft		160
elongation up to break	after colour fastness to artificial light	%	warp	ISO 1421	3,7
			weft		3
breaking strength	after colour fastness to artificial light	daN/5 cm	warp	ISO 1421	150
			weft		160
tear strength	after climatic chamber -30°C	daN	warp	ISO 4674-1 method 2	5,1
			weft		5,15
elongation up to break	after climatic chamber -30°C	%	warp	ISO 1421	4
			weft		3
breaking strength	after climatic chamber -30°C	daN/5 cm	warp	ISO 1421	150
			weft		140
tear strength	after climatic chamber +70°C	daN	warp	ISO 4674-1 method 2	5,3
			weft		4,8
elongation up to break	after climatic chamber +70°C	%	warp	ISO 1421	3,6
			weft		2,9
breaking strength	after climatic chamber +70°C	daN/5 cm	warp	ISO 1421	120
			weft		120
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		30 m			
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





Natté 390

OF = 3%



Technical specifications

TECHNICAL SPECIFICATION		UNITY		STANDARD	RESULT
composition				Glassfibre 36% - PVC 64%	
openness factor		%		NBN EN 410	3%
weight		g/m²		NF EN 12127	390
thickness		mm		ISO 2286-3	0,50
density		yarn/cm	warp	ISO 7211/2	25
			weft		15
colour fastness to artificial light				ISO 105 B02	>7
tear strength	original	daN	warp	ISO 4674-1 method 2	8,22
			weft		4,83
elongation up to break	original	%	warp	ISO 1421	7,05
			weft		4,45
breaking strength	original	daN/5 cm	warp	ISO 1421	259,2
			weft		178,5
elongation up to break	after colour fastness to artificial light	%	warp	ISO 1421	7,3
			weft		3,6
breaking strength	after colour fastness to artificial light	daN/5 cm	warp	ISO 1421	229,6
			weft		121,3
tear strength	after climatic chamber -30°C	daN	warp	ISO 4674-1 method 2	8,49
			weft		5,22
elongation up to break	after climatic chamber -30°C	%	warp	ISO 1421	7,21
			weft		4,33
breaking strength	after climatic chamber -30°C	daN/5 cm	warp	ISO 1421	252,7
			weft		174,7
tear strength	after climatic chamber +70°C	daN	warp	ISO 4674-1 method 2	8,09
			weft		4,9
elongation up to break	after climatic chamber +70°C	%	warp	ISO 1421	7,15
			weft		3,85
breaking strength	after climatic chamber +70°C	daN/5 cm	warp	ISO 1421	259,4
			weft		156,3
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	30 m				
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



Natté 420

OF = 1%

Technical specifications

TECHNICAL SPECIFICATION		UNITY		STANDARD	RESULT
composition				Glassfibre 36% - PVC 64%	
openness factor		%		NBN EN 410	1%
weight		g/m²		NF EN 12127	420
thickness		mm		ISO 2286-3	0,50
density		yarn/cm	warp	ISO 7211/2	25
			weft		18
colour fastness to artificial light				ISO 105 B02	>7
tear strength	original	daN	warp	ISO 4674-1 method 2	5,13
			weft		3,3
elongation up to break	original	%	warp	ISO 1421	6,71
			weft		4,46
breaking strength	original	daN/5 cm	warp	ISO 1421	244,1
			weft		190,9
elongation up to break	after colour fastness to artificial light	%	warp	ISO 1421	6,65
			weft		4,35
breaking strength	after colour fastness to artificial light	daN/5 cm	warp	ISO 1421	243,8
			weft		180
tear strength	after climatic chamber -30°C	daN	warp	ISO 4674-1 method 2	5,19
			weft		3,44
elongation up to break	after climatic chamber -30°C	%	warp	ISO 1421	6,93
			weft		4,02
breaking strength	after climatic chamber -30°C	daN/5 cm	warp	ISO 1421	266,8
			weft		175,8
tear strength	after climatic chamber +70°C	daN	warp	ISO 4674-1 method 2	5,47
			weft		3,59
elongation up to break	after climatic chamber +70°C	%	warp	ISO 1421	6,66
			weft		3,75
breaking strength	after climatic chamber +70°C	daN/5 cm	warp	ISO 1421	244,5
			weft		162,6
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	30 m				
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





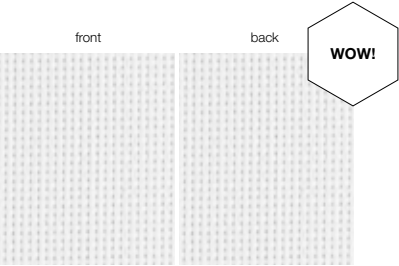
Natté 300



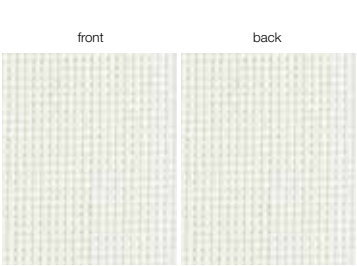
GLASSFIBRE

OF = 10%

Colours & references



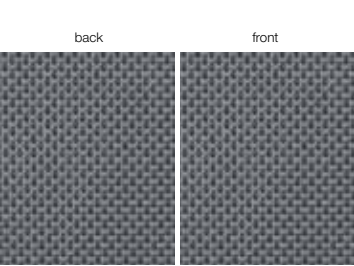
Natté 300 092092 WOW white



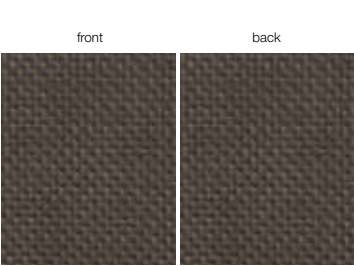
Natté 300 002002 white | white



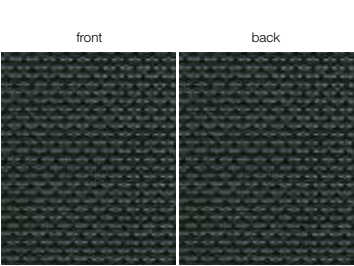
Natté 300 002008 white | linen



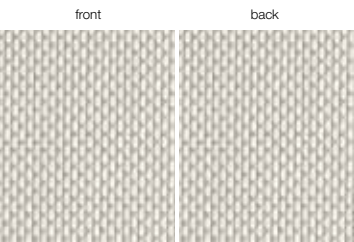
Natté 300 010001 charcoal | grey



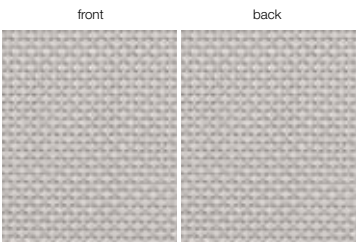
Natté 300 010011 charcoal | bronze



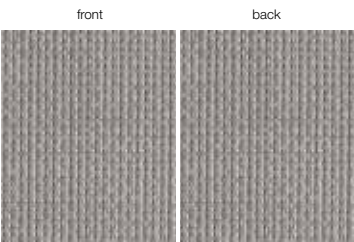
Natté 300 010010 charcoal | charcoal



Natté 300 002007 white | pearl grey



Natté 300 007008 pearl grey | linen



Natté 300 007007 pearl grey | pearl grey

Natté 300	200 cm	250 cm	320 cm
092092 WOW white		•	
002002 white white	•	•	•
002008 white linen	•	•	•
002007 white pearl grey	•	•	•
007008 pearl grey linen	•	•	•
007007 pearl grey pearl grey	•	•	•
010001 charcoal grey	•	•	•
010011 charcoal bronze	•	•	•
010010 charcoal charcoal	•	•	•



Natté 300



GLASSFIBRE

OF = 10%

Solar energetic properties

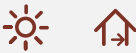
Natté 300 European Standard EN 14501 Calculation G-value according to EN13363-1 version 7.0					SOLAR ENERGETIC PROPERTIES								VISUAL PROPERTIES	
					FABRIC			FABRIC + GLAZING						
								INTERIOR						
								G-factor = total solar energy transmittance						
references	colours				As = Solar Absorptance %	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 %	
		front	back											
092092	WOW white			front	10,1	65	24,9	0,37	0,38	0,36	0,25	23,6	10,7	
				back	10,1	65	24,9	0,37	0,38	0,36	0,25	23,6	10,7	
002002	white white			front	11,6	64,0	24,4	0,37	0,38	0,36	0,25	23,6	10,7	
				back	11,6	64,0	24,4	0,37	0,38	0,36	0,25	23,6	10,7	
002008	white linen			front	19,8	57,7	22,5	0,41	0,41	0,38	0,26	20,4	11,8	
				back	19,9	57,6	22,5	0,41	0,41	0,38	0,26	20,4	11,8	
002007	white pearl grey			front	33,1	46,6	20,3	0,47	0,47	0,42	0,27	17,7	11,8	
				back	33,5	46,2	20,3	0,47	0,47	0,42	0,27	17,7	11,8	
007008	pearl grey linen			front	41,2	38,7	20,1	0,49	0,49	0,44	0,27	17,3	13,8	
				back	41,2	38,7	20,1	0,49	0,49	0,44	0,27	17,3	13,8	

Natté 300					SOLAR ENERGETIC PROPERTIES								VISUAL PROPERTIES	
					FABRIC			FABRIC + GLAZING						
								INTERIOR						
								G-factor = total solar energy transmittance						
references	colours				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 %	
		front	back											
007007	pearl grey pearl grey			front	48,2	33,6	18,2	0,54	0,53	0,46	0,28	15,4	13,0	
				back	48,4	33,4	18,2	0,54	0,53	0,46	0,28	15,4	13,0	
010001	charcoal grey			front	77,0	10,0	13,0	0,62	0,62	0,53	0,30	12,7	12,7	
				back	77,0	10,0	13,0	0,62	0,62	0,53	0,30	12,7	12,7	
010011	charcoal bronze			front	79,5	6,7	13,8	0,64	0,64	0,54	0,30	13,6	13,6	
				back	79,5	6,7	13,8	0,64	0,64	0,54	0,30	13,6	13,6	
010010	charcoal charcoal			front	81,5	5,7	12,8	0,70	0,67	0,55	0,30	12,7	12,7	
				back	81,5	5,7	12,8	0,70	0,67	0,55	0,30	12,7	12,7	

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



Natté 380



GLASSFIBRE

OF = 5%

Colours & references

frontback



WOW!

Natté 380 092092 WOW white

frontback



Natté 380 002002 white | white

frontback



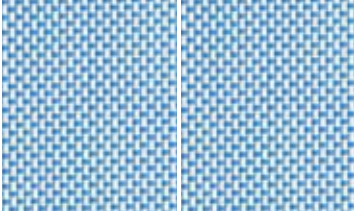
Natté 380 002008 white | linen

frontback



Natté 380 002017 white | pistache

frontback



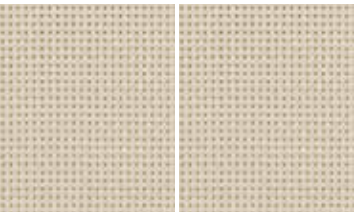
Natté 380 002014 white | turquoise

frontback



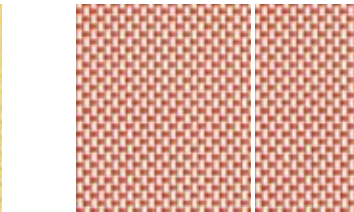
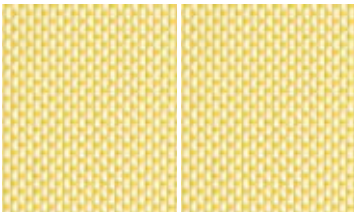
Natté 380 002007 white | pearl grey

frontback



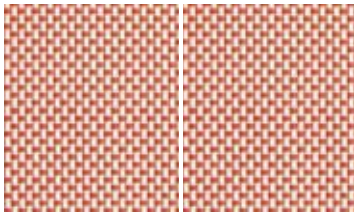
Natté 380 008008 linen | linen

frontback



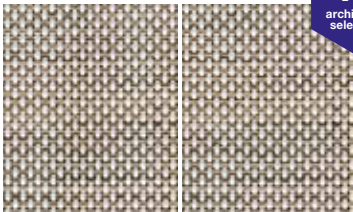
Natté 380 002006 white | yellow

frontback



Natté 380 002005 white | mandarine

frontback



Natté 380 bicolor 002048 white | sand-bronze



Natté 380	200 cm	250 cm	320 cm
092092 WOW white		•	
002002 white white	•	•	•
002008 white linen	•	•	•
008008 linen linen		•	
002006 white yellow		•	
002005 white mandarine		•	
002017 white pistache		•	
002014 white turquoise		•	
002007 white pearl grey	•	•	•
002048 white sand-bronze	•	•	•

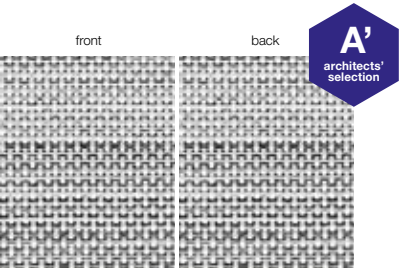


Natté 380

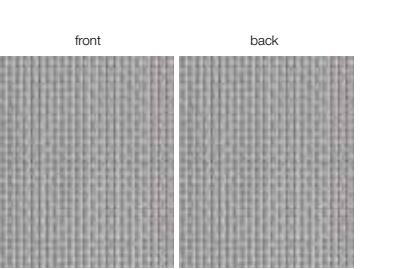


GLASSFIBRE

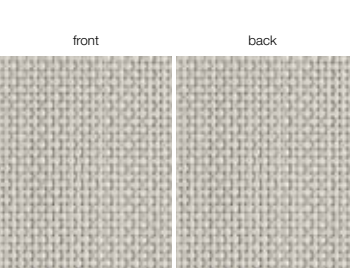
OF = 1-10%



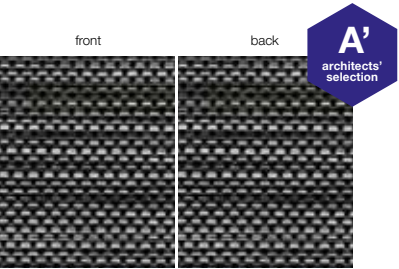
Natté 380 bicolor 002049 white | white-charcoal



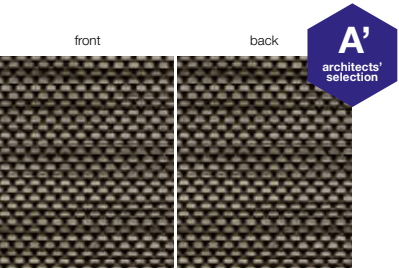
Natté 380 007007 pearl grey | pearl grey



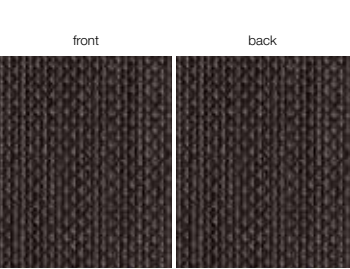
Natté 380 007008 pearl grey | linen



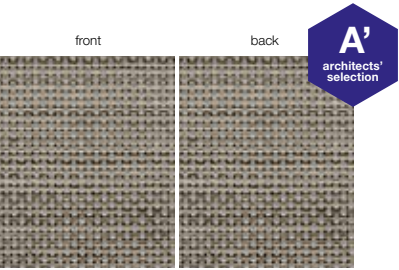
Natté 380 bicolor 010049 charcoal | white-charcoal



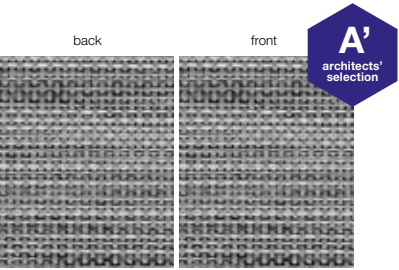
Natté 380 bicolor 010048 charcoal | sand-bronze



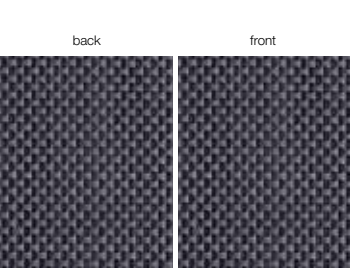
Natté 380 010011 charcoal | bronze



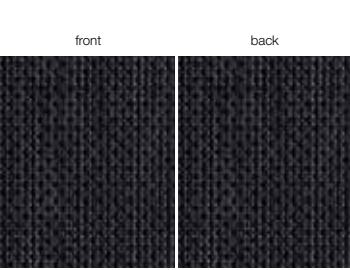
Natté 380 bicolor 007048 pearl grey | sand-bronze



Natté 380 bicolor 007049 pearl grey | white-charcoal



Natté 380 010001 charcoal | grey



Natté 380 010010 charcoal | charcoal

Natté 380	200 cm	250 cm	320 cm
002049 white white-charcoal	•	•	•
007007 pearl grey pearl grey	•	•	•
007008 pearl grey linen	•	•	•
007048 pearl grey sand-bronze	•	•	•
007049 pearl grey white-charcoal	•	•	•
010001 charcoal grey	•	•	•
010049 charcoal white-charcoal	•	•	•
010048 charcoal sand-bronze	•	•	•
010011 charcoal bronze	•	•	•
010010 charcoal charcoal	•	•	•



Natté 380



GLASSFIBRE

OF = 5%

Solar energetic properties

Natté 380 European Standard EN 14501 Calculation G-value according to EN 13363-1 version 7.0					SOLAR ENERGETIC PROPERTIES								VISUAL PROPERTIES	
					FABRIC			FABRIC + GLAZING						
								INTERIOR						
								G-factor = total solar energy transmittance						
references	colours				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 %	
		front	back											
092092	WOW white			front	7,9	63,6	28,5	0,37	0,38	0,37	0,25	26,3	17,5	
				back	7,9	63,6	28,5	0,37	0,38	0,37	0,25	26,3	17,5	
002002	white white			front	10,0	66,6	23,4	0,36	0,37	0,36	0,25	21,8	10,9	
				back	9,9	66,8	23,4	0,35	0,37	0,36	0,25	21,8	10,9	
002008	white linen			front	21,3	59,8	18,9	0,39	0,40	0,38	0,26	16,9	7,9	
				back	21,5	59,7	18,9	0,39	0,40	0,38	0,26	16,9	7,9	
008008	linen linen			front	41,2	41,1	17,7	0,50	0,50	0,44	0,27	15,2	10,2	
				back	41,2	41,1	17,7	0,50	0,50	0,44	0,27	15,2	10,2	
002006	white yellow			front	35,6	45,5	18,9	0,47	0,47	0,42	0,27	17,9	11,0	
				back	35,6	45,5	18,9	0,47	0,47	0,42	0,27	17,9	11,0	
002005	white mandarine			front	50,8	36,4	12,8	0,52	0,52	0,45	0,28	10,0	7,9	
				back	50,6	36,4	12,8	0,52	0,52	0,45	0,28	10,0	7,9	
002017	white pistache			front	39,3	45,7	15,0	0,47	0,47	0,42	0,27	11,9	8,2	
				back	39,2	45,8	15,0	0,47	0,47	0,42	0,27	11,9	8,2	
002014	white turquoise			front	58,0	29,3	12,7	0,56	0,55	0,47	0,28	10,7	9,5	
				back	58,0	29,3	12,7	0,56	0,55	0,47	0,28	10,7	9,5	
002007	white pearl grey			front	35,2	48,8	16,1	0,45	0,45	0,41	0,27	13,6	8,5	
				back	35,4	48,5	16,1	0,45	0,46	0,41	0,27	13,6	8,5	
002048	white sand-bronze			front	41,2	41,1	17,7	0,50	0,50	0,44	0,27	15,2	10,2	
				back	41,2	41,1	17,7	0,50	0,50	0,44	0,27	15,2	10,2	
002049	white white-charcoal			front	35,6	45,5	18,9	0,47	0,47	0,42	0,27	17,9	11,0	
				back	35,6	45,5	18,9	0,47	0,47	0,42	0,27	17,9	11,0	

Natté 380 European Standard EN 14501 Calculation G-value according to EN 13363-1 version 7.0					SOLAR ENERGETIC PROPERTIES								VISUAL PROPERTIES	
					FABRIC			FABRIC + GLAZING						
								INTERIOR						
								G-factor = total solar energy transmittance						
references	colours				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 %	
														front
007007	pearl grey pearl grey			front	50,8	36,4	12,8	0,52	0,52	0,45	0,28	10,0	7,9	
				back	50,6	36,7	12,8	0,52	0,51	0,45	0,28	10,0	7,9	
007008	pearl grey linen			front	39,3	45,7	15,0	0,47	0,47	0,42	0,27	11,9	8,2	
				back	39,2	45,8	15,0	0,47	0,47	0,42	0,27	11,9	8,2	
007048	pearl grey sand-bronze			front	58,0	29,3	12,7	0,56	0,55	0,47	0,28	10,7	9,5	
				back	58,0	29,3	12,7	0,56	0,55	0,47	0,28	10,7	9,5	
007049	pearl grey white-charcoal			front	55,6	30,8	13,6	0,55	0,54	0,47	0,28	12,2	10,3	
				back	55,6	30,8	13,6	0,55	0,54	0,47	0,28	12,2	10,3	
010001	charcoal grey			front	80,9	11,3	7,8	0,66	0,64	0,53	0,30	7,7	7,4	
				back	81,0	11,2	7,8	0,66	0,64	0,53	0,30	7,7	7,4	
010049	charcoal white-charcoal			front	71,2	17,9	10,9	0,53	0,53	0,46	0,28	10,6	9,7	
				back	71,2	17,9	10,9	0,53	0,53	0,46	0,28	10,6	9,7	
010048	charcoal sand-bronze			front	75,7	14,8	9,5	0,64	0,62	0,52	0,30	9,0	8,7	
				back	75,7	14,8	9,5	0,64	0,62	0,52	0,30	9,0	8,7	
010011	charcoal bronze			front	84,8	7,3	7,9	0,68	0,66	0,55	0,30	7,6	7,5	
				back	84,8	7,3	7,9	0,68	0,66	0,55	0,30	7,6	7,5	
010010	charcoal charcoal			front	88,0	5,7	6,3	0,69	0,67	0,55	0,30	6,3	6,3	
				back	88,0	5,7	6,3	0,69	0,67	0,55	0,30	6,3	6,3	

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



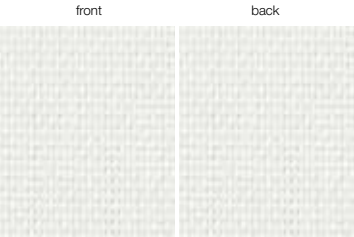
Natté 390



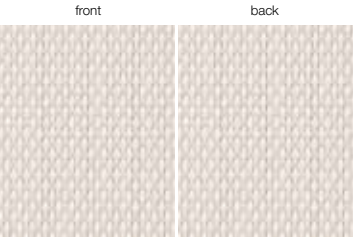
GLASSFIBRE

OF = 3%

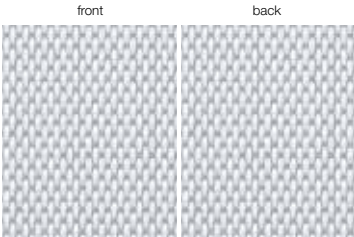
Colours & references



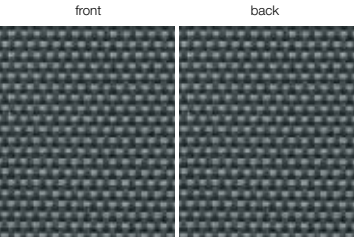
Natté 390 002002 white | white



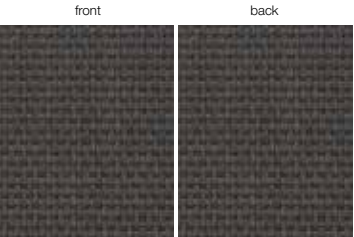
Natté 390 002008 white | linen



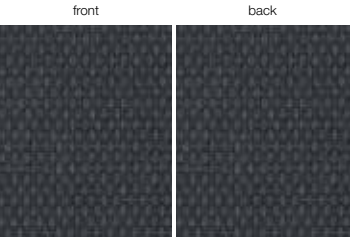
Natté 390 002007 white | pearl grey



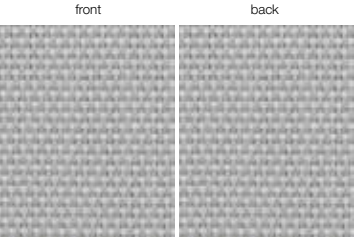
Natté 390 010001 charcoal | grey



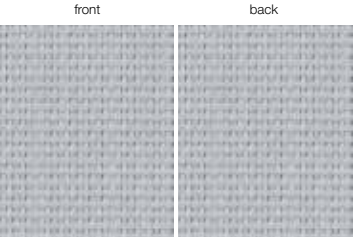
Natté 390 010011 charcoal | bronze



Natté 390 010010 charcoal | charcoal



Natté 390 007008 pearl grey | linen



Natté 390 007007 pearl grey | pearl grey

Natté 390	200 cm	250 cm	320 cm
002002 white white	•	•	•
002008 white linen	•	•	•
002007 white pearl grey	•	•	•
007008 pearl grey linen	•	•	•
007007 pearl grey pearl grey	•	•	•
010001 charcoal grey	•	•	•
010011 charcoal bronze	•	•	•
010010 charcoal charcoal	•	•	•



Natté 390



GLASSFIBRE

OF = 3%

Solar energetic properties

Natté 390 European Standard EN 14501 Calculation G-value according to EN 13363-1 version 7.0					SOLAR ENERGETIC PROPERTIES								VISUAL PROPERTIES	
					FABRIC			FABRIC + GLAZING						
								INTERIOR						
								G-factor = total solar energy transmittance						
references	colours			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 %		
		front	back											
002002	white white			front	12,5	61,4	26,1	0,38	0,39	0,37	0,25	25,2	8,3	
				back	12,5	61,4	26,1	0,38	0,39	0,37	0,25	25,2	8,3	
002008	white linen			front	20,4	55,8	23,8	0,40	0,42	0,39	0,26	21,6	9,4	
				back	20,4	55,8	23,8	0,40	0,42	0,39	0,26	21,6	9,4	
002007	white pearl grey			front	32,2	51,4	16,4	0,41	0,43	0,40	0,26	14,3	5,5	
				back	32,2	51,4	16,4	0,41	0,43	0,40	0,26	14,3	5,5	
007008	pearl grey linen			front	51,4	37,7	10,9	0,47	0,49	0,44	0,27	8,1	5,8	
				back	51,4	37,7	10,9	0,47	0,49	0,44	0,27	8,1	5,8	

Natté 390 European Standard EN 14501 Calculation G-value according to EN 13363-1 version 7.0					SOLAR ENERGETIC PROPERTIES								VISUAL PROPERTIES	
					FABRIC			FABRIC + GLAZING						
								INTERIOR						
								G-factor = total solar energy transmittance						
references	colours			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 %		
		front	back											
007007	pearl grey pearl grey			front	57,6	33,4	9,0	0,49	0,51	0,45	0,28	6,7	5,1	
				back	57,6	33,4	9,0	0,49	0,51	0,45	0,28	6,7	5,1	
010001	charcoal grey			front	83,2	8,5	8,3	0,62	0,62	0,53	0,30	8,2	8,3	
				back	83,2	8,5	8,3	0,62	0,62	0,53	0,30	8,2	8,3	
010011	charcoal bronze			front	87,5	6,8	5,7	0,62	0,63	0,53	0,30	5,7	5,7	
				back	87,5	6,8	5,7	0,62	0,63	0,53	0,30	5,7	5,7	
010010	charcoal charcoal			front	88,2	6,0	5,8	0,62	0,63	0,54	0,30	5,8	5,9	
				back	88,2	6,0	5,8	0,62	0,63	0,54	0,30	5,8	5,9	

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



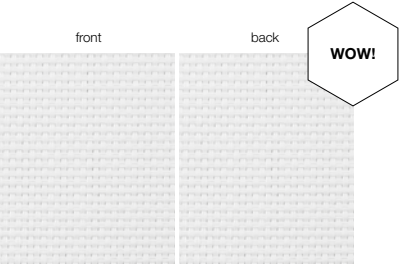
Natté 420



GLASSFIBRE

OF = 1%

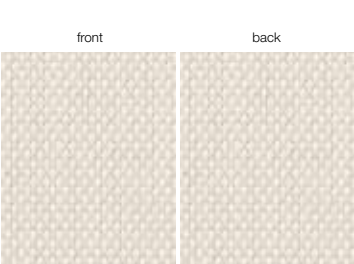
Colours & references



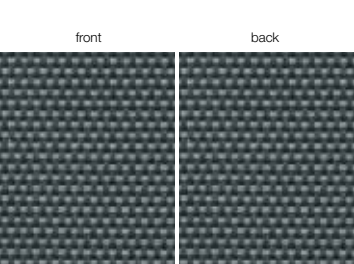
Natté 420 092092 WOW white



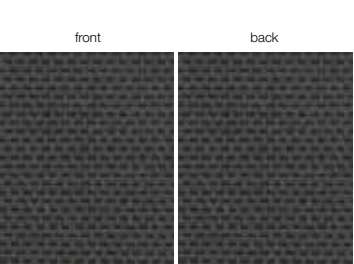
Natté 420 002002 white | white



Natté 420 002008 white | linen



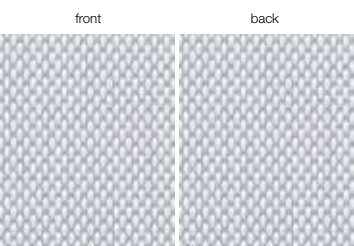
Natté 420 010001 charcoal | grey



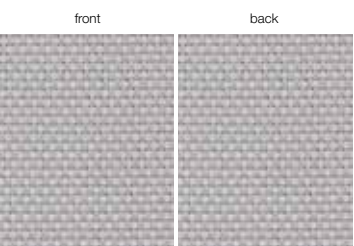
Natté 420 010011 charcoal | bronze



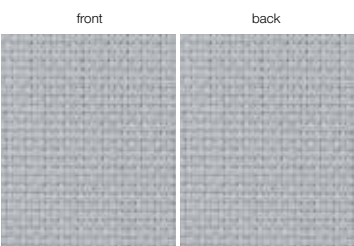
Natté 420 010010 charcoal | charcoal



Natté 420 002007 white | pearl grey



Natté 420 007008 pearl grey | linen



Natté 420 007007 pearl grey | pearl grey

Natté 420	200 cm	250 cm	320 cm
092092 WOW white		•	
002002 white white	•	•	•
002008 white linen	•	•	•
002007 white pearl grey	•	•	•
007008 pearl grey linen	•	•	•
007007 pearl grey pearl grey	•	•	•
010001 charcoal grey	•	•	•
010011 charcoal bronze	•	•	•
010010 charcoal charcoal	•	•	•



Natté 420



GLASSFIBRE

OF = 1%

Solar energetic properties

Natté 420 European Standard EN 14501 Calculation G-value according to EN 13363-1 version 7.0					SOLAR ENERGETIC PROPERTIES								VISUAL PROPERTIES	
					FABRIC			FABRIC + GLAZING						
								INTERIOR						
								G-factor = total solar energy transmittance						
references	colours				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 %	
		front	back											
092092	WOW white			front	8,5	68,2	23,3	0,34	0,36	0,35	0,25	21,1	11,8	
				back	8,5	68,2	23,3	0,34	0,36	0,35	0,25	21,1	11,8	
002002	white white			front	13,1	66,2	20,7	0,34	0,36	0,35	0,25	19,4	3,5	
				back	13,1	66,2	20,7	0,34	0,36	0,35	0,25	19,4	3,5	
002008	white linen			front	23,0	59,1	17,9	0,38	0,39	0,38	0,26	15,0	4,2	
				back	23,0	59,1	17,9	0,38	0,39	0,38	0,26	15,0	4,2	
002007	white pearl grey			front	36,4	48,9	14,7	0,42	0,44	0,41	0,26	12,2	5,1	
				back	36,4	48,9	14,7	0,42	0,44	0,41	0,26	12,2	5,1	
007008	pearl grey linen			front	52,6	39,7	7,7	0,45	0,48	0,43	0,27	5,0	3,2	
				back	52,6	39,7	7,7	0,45	0,48	0,43	0,27	5,0	3,2	

Natté 420 European Standard EN 14501 Calculation G-value according to EN 13363-1 version 7.0					SOLAR ENERGETIC PROPERTIES								VISUAL PROPERTIES	
					FABRIC			FABRIC + GLAZING						
								INTERIOR						
								G-factor = total solar energy transmittance						
references	colours			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 %		
		front	back											
007007	pearl grey pearl grey			front 60,1	33,9	6,0	0,48	0,50	0,45	0,27	4,0	2,9		
				back 60,1	33,9	6,0	0,48	0,50	0,45	0,27	4,0	2,9		
010001	charcoal grey			front 86,8	9,8	3,4	0,60	0,61	0,52	0,29	3,3	3,3		
				back 86,8	9,8	3,4	0,60	0,61	0,52	0,29	3,3	3,3		
010011	charcoal bronze			front 89,6	7,1	3,3	0,61	0,62	0,53	0,30	3,2	3,3		
				back 89,6	7,1	3,3	0,61	0,62	0,53	0,30	3,2	3,3		
010010	charcoal charcoal			front 90,6	6,2	3,2	0,62	0,63	0,54	0,30	3,2	3,2		
				back 90,6	6,2	3,2	0,62	0,63	0,54	0,30	3,2	3,2		

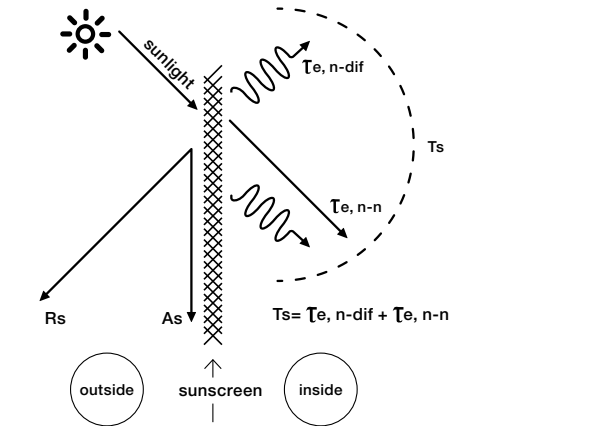
GLAZING A = clear single glazing 4 mm	Gv = 0,85
GLAZING B = clear double glazing (4/12/4), space filled with air	Gv = 0,76
GLAZING C = double glazing (4/16/4), with a low emissivity coating in position 3, space filled with argon	Gv = 0,59
GLAZING D = reflective double glazing (4/16/4), with a low emissivity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



Rs	Solar reflectance
As	Solar absorptance
Ts	Solar transmittance
Te,n-dif	Diffuse solar transmittance
Te,n-n	Normal solar transmittance

Classes indicate effect of a sunscreen

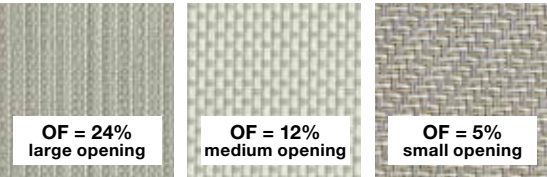
Based on certain properties, the screen can be split up in classes, from 0 to 4. Those classes are used, starting from the norm EN 14501, to indicate the effect of a certain sunscreen.

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



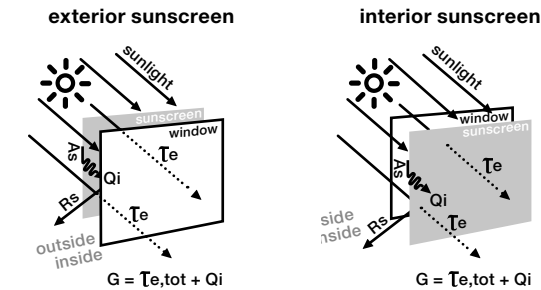
Thermal comfort

Fabric

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

factor 1:	factor 2:	factor 3:
 As = Solar absorptance is the ratio of the absorbed flux to the incident flux.	 Rs = Solar reflectance is the fraction of the incident solar radiation that is directly reflected by the component.	 Ts = Solar transmittance 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.
These 3 factors together are always 100%		

The G-factor



Rs	Solar reflectance
As	Solar absorptance
Te	Direct solar transmittance
Qi	Secondary heat transfer factor
G	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 **Gtot** is the solar factor of the combination of glazing and solar protection device.

The **Gv** 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 **Gtot** to that of the glazing alone **Gv**.

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

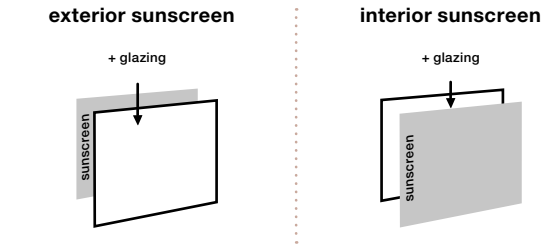
- 1) Radiation: measured by the solar transmittance: **Te,tot**
- 2) Heat: measured by the secondary heat transfer: **Qi**

$$G = Te,tot + Qi$$

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.

$$G = Te,tot + Qi$$



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
Gtot	Gtot ≥ 0,50	0,35 ≤ Gtot < 0,50	0,15 ≤ Gtot < 0,35	0,10 ≤ Gtot < 0,15	Gtot < 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.

clarity & visual comfort





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