

siskom Yapı Mühendislik **ZİP PERDE SİSTEMLERİ**

Dış / İç

Avantajları

Görsel Konfor
Doğal Işık Koruma
Doğal Görünüm
Termal Konfor
Doğal Işık

External / Internal

Advantages

Transparency
Natural Light Maintained
Natural Aspect
Thermal Comfort
Natural Light



KARADENİZ'de

İlk Üretici Firma



SISKOM

Yapı Mühendislik

ZIP PERDE SİSTEMLERİ

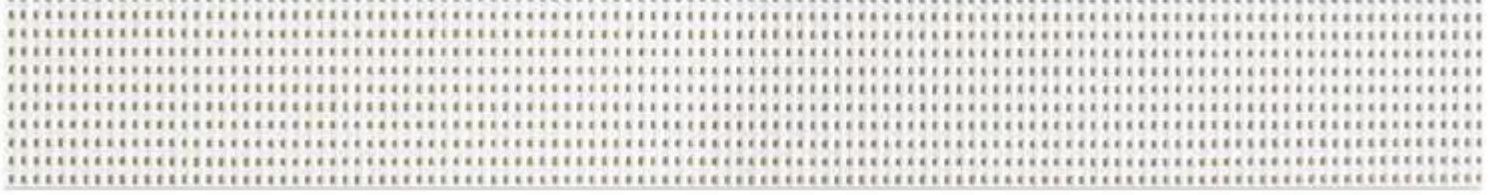
Ana uygulamalar

ZIP perde sistemleri (cephe ve pergola),
dış mekan perde sistemleri,
dikey veranda perdeleri

Main applications

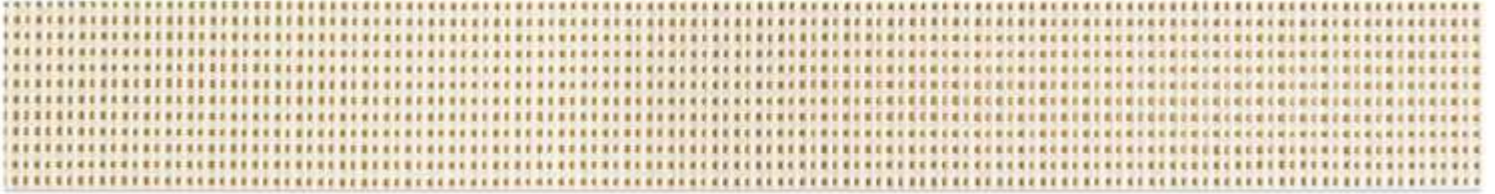
ZIP blinds (façade and pergola),
external blinds,
vertical veranda blinds





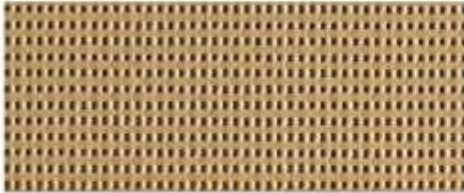
Snow white 267cm

86-50690



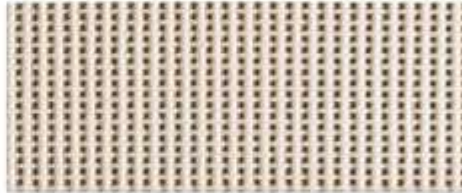
Champagne 267cm

86-2175



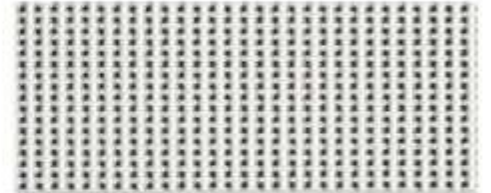
Pepper 267cm

86-2012



Sandy beige 267cm

86-2135



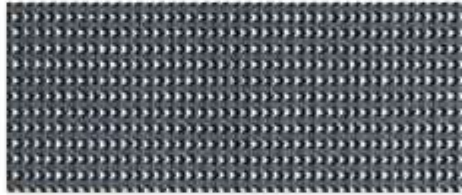
Boulder 267cm

86-2171



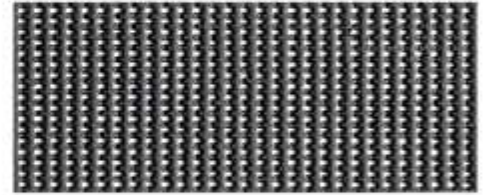
Concrete 267cm

86-2167



Anthracite 267cm

86-2047



Deep black 267cm

86-51176

Güneş ve ışık özellikleri (EN 14501) / Solar and light properties (EN 14501)

Ürün - Product	Renk - Color	TS	RS	AS	TV n-h	ISO 52022-3* "D" tipi camlama" - Type "D" glazing	
						g_{tot}^*	g_{int}^i
86-50690		28	61	11	27	0.11	0.14
86-2175		30	57	13	28	0.11	0.16
86-2012		18	27	55	16	0.08	0.24
86-2135		24	39	37	22	0.09	0.21
86-2171		22	36	42	20	0.08	0.21
86-2167		17	14	69	17	0.07	0.26
86-2047		17	7	76	17	0.07	0.28
86-51176		14	5	81	14	0.07	0.29

TS:	Solar Geçirgenlik (%)	Solar Transimission (%)
RS:	Güneş Işını Yansıtma %	Solar Reflection in %
AS:	Güneş Işını Emme %	Solar absorption in %
TS + RS + AS	= Gelen enerjinin %100ü	= 100% of the incident energy
TV n-h:	Normal Görünür ışık geçirgenliği - yarı küresel olarak %	Normal Visible light transmission - hemispherical in %
g_{ext}^*	Dış Güneş Faktörü	External Solar Factor
g_{int}^i	İç Güneş Faktörü	Indoor Solar Factor

g_{tot}^* (Güneş Faktörü) hesaplaması için cam geçirgenliği ve yansıtması ile perde kompleksinin spektral değerlerini dikkate alır; "D" tipi camı yüzey 2 üzerinde düşük yüzey emisyonu olan yalıtımlı çift cam (4 + 16 + 4; Argon doldurulmuş) $g = 0.32 - U = 1.1$

Takes into account the spectral values of glazing transmission and reflection + blind complex for calculating the solar factor g_{tot}^* Type "D" glazing: insulating double glazing with low emissivity on surface 2 (4 + 16 + 4; Argon filling) $g = 0.32 - U = 1.1$

Uygulamalar / Applications



Uygulamalar

Cephe perdeleri, veranda ve cam çatı perdeleri, düşen kol tente, pergolalar ve sundurmalar, sarılabilir dış perdeler ve gölgelik yelkenler.

Application

Facade blinds, veranda and glass roof blinds, drop-arm awning, pergolas and canopies, roll-up valances and shade sails.



■ Mükemmel Şeffaflık

Soltis Horizon 86, tente indirildiğinde bile dışarıya mükemmel bir görsel temas sağlar. Açık hava kullanımında %93'e kadar ısıyı engelleyerek etkinliğini kanıtlar.

■ Optimize Edilmiş Doğal Işık Katkısı

Soltis Horizon 86, doğal ışık alımını teşvik eder. Bu, şunlar açısından faydalıdır:

- yapay aydınlatma kullanımını azaltarak enerji tasarrufu,
- profesyonel veya özel ortamda bulunan kişilerin refahı, sağlığı ve verimliliği.

■ Uyumlu Renkler

Soltis Horizon 86'nın tüm renkleri, Soltis Perform 92 ile koordine edilmiştir:

- bir binanın tüm cephesini uyumlu hale getirir,
- her cephenin yönlendirmesine göre görsel konfor ihtiyaçlarını karşılar,
- enerji tasarrufu yapmak için termal korumayı ayarlar.

■ Excellent transparency

Soltis Horizon 86 provides excellent outward visual contact to enjoy the view even when the awning is lowered. It proves its efficiency by blocking up to 93% of the heat in outdoor use.

■ Optimised natural light contribution

Soltis Horizon 86 promotes natural light intake. This is beneficial in terms of:

- energy savings by reducing the use of artificial lighting
- the well-being, health and productivity of people in a professional or private environment.

■ Harmonised ranges

All the colours of Soltis Horizon 86 are coordinated with Soltis Perform 92 to:

- harmonises all the facades of a building
- meets visual comfort needs according to each facade's orientation
- adjusts thermal protection to save energy.

■ Teknik özellikler / Technical properties

■ Standartlar / Standards

Açıklık faktörü / Openess factor	14%	
Ağırlık / Weight	380 g/m ²	EN ISO 2286-2
Kalınlık / Thickness	0.45 mm	
Genişlik / Width	267 cm	

■ Rulo uzunluğu / Length of rolls

Standart format - uzunluk 267 cm Standard format - length in 267 cm	40 lm	
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■ Fiziksel özellikler / Physical properties

Kopma mukavemeti (çözü/zemin) Tensile strength (warp/weft)	230/160 daN/5 cm	EN ISO 1421
Yırtılma mukavemeti (çözü/zemin) Tear strength (warp/weft)	45/20 daN	DIN 53.363

■ Alev geciktiricilik / Flame retardancy

Derecelendirme / Rating	B1/DIN 4102-1 • BS 7837 • BS 5867 • Schwerbrennbar-Q1-Tr1 /ONORM A 3800-1 Classe 1 /UNI 9177-87 • M1 /UNE 23.727-90 VKF 5.2 /SN 198898 • 1530.3/ AS/NZS G1 /QOST 30244-94 • Method 1 /NFPA 701- CSFMT19 • Class A /ASTM E84	
Yangın Sınıfı / Euroclass	B-s2,d0	En 13501-1

■ Yönetim sistemleri / Management systems

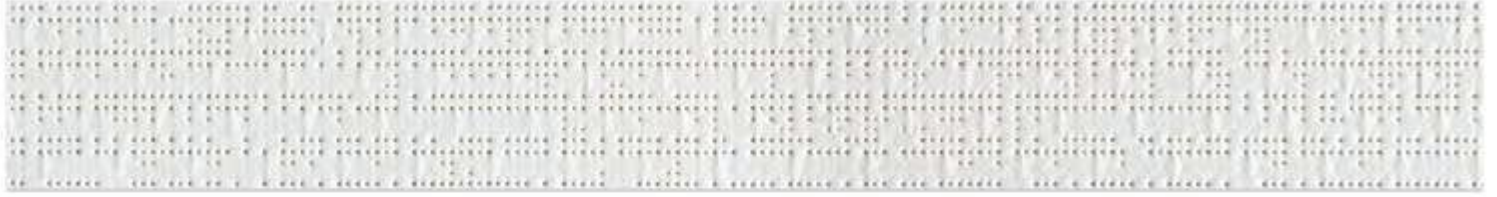
Kalite / For quality		ISO 9001
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■ Sertifikalar, Etiketler, Garantiler, Geri dönüşüm / Certifications, Labels, Warranties, Recycling



S+ ile Serge Ferrari standartların ötesine geçiyor... (daha fazla bilgi için bize danışın)
With S+ Serge Ferrari goes further than the standards... (consult us for further information)





White 267cm

96-8102



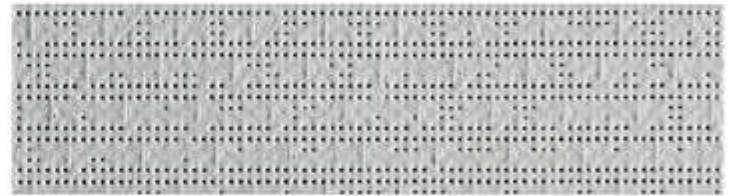
Off white 267cm

96-1103



Sandy beige 267cm

96-2135



Boulder 267cm

96-2171



Platinum 267cm

96-50844



Anthracite 267cm

96-2047

• Güneş ve ışık özellikleri (EN 14501) / Solar and light properties (EN 14501)

	REFERANSLAR REFERENCES	Isı Konforu* (açık alan) Thermal comfort* (outdoor)	Dışarıdan görünürlük Outward visibility	Parlama kontrolü Glare control
	96-8102	★★★★	★★★★	★★★★
	96-1103	★★★★	★★★★	★★★★
	96-2135	★★★★	★★★★	★★★★
	96-2171	★★★★	★★★★	★★★★
	96-50844	★★★★	★★★★	★★★★
	96-2047	★★★★	★★★★	★★★★

*ISO 52022-3 - Yöntem 2 kullanılarak hesaplanan D tipi cam için güneş faktörüne dayanmaktadır. (g=0.32 - U=1.1)

*Based on a solar factor for glazing type D (g=0.32 - U=1.1) calculated using ISO 52022-3 - Method 2

★★★★ çok az etki
very little effect
★★★ az etki
little effect
★★ orta etki
moderate effect
★ iyi
good
★★★★ mükemmel
excellent

DIŞ MEKAN UYGULAMALARI / OUTDOOR APPLICATIONS



Kasofli tente sistemleri
Terrace awnings



Cam çatı perdeleri
Glassroof blinds



Zip perdeler
Vertical blinds



Wind tent sistemleri
Retractable awnings



Pergola ve tente sistemleri
Pergolas and velums



Sabit gögelenendirme
Shade sails



Doğal ışık, modernlik ve konfor

Soltis Lounge 96, terasınızı veya avlunuzu döşemek için ideal bir kumaştır. Mikro delikli tasarımı sizi güneş ışığının ve sıcaklığının etkilerinden korurken hava akışına izin verir. Bu size bir ağaç gölgesi gibi bir gölge sunar.

Natural light, modernity and comfort

Soltis Lounge 96 is the ideal fabric for furnishing your terrace or patio. Its micro-perforated design protects you from the sun's light and heat, while allowing air to pass through it. This provides you with shade similar to that of a tree.

■ Mikro delikli kumaş

Kumaşın mikro delikleri hava dolaşımına izin verir. Bu, genellikle standart akrilik kumaşın altında hissedilen sera etkisini önler.

■ Doğal ışık

Kumaşın açık yapısı evinize ışık girmesine izin verir. Doğal ışığın yanı sıra parlamasız bir dış görünümün tadını çıkarırsınız.

■ Dayanıklı renkler

Kumaşın benzersiz tasarımı ve dayanıklı düz renkleri, terasınıza veya avlunuza modern bir dokunuş getirir.

■ Dayanıklılık

Renklerin yüksek UV direnci, kumaşınızın uzun vadeli estetiğini garanti eder. Pürüzsüz yüzeyi kir, küf ve temizliği kolaylaştırır.

■ Micro-perforated fabric

The fabric's micro-perforations allow air to circulate. This avoids the greenhouse effect usually felt beneath a standard acrylic fabric.

■ Natural light

The fabric's open nature allows light into your house. You'll enjoy natural light as well as a glare-free outward visibility.

■ Enduring colours

The fabric's unique design and its enduring, plain colours bring a touch of modernity to your terrace or patio.

■ Durability

The colours' high UV resistance guarantees your fabric's long-term aesthetics. Its smooth surface resists dirt, mould and facilitates cleaning.

■ Teknik özellikler / Technical properties

Açıklık faktörü / Openess factor	4%	
Ağırlık / Weight	400 g/m ²	EN ISO 2286-2
Kalınlık / Thickness	0.45 mm	
Rulo genişliği / Roll width	267 cm	

■ Rulo uzunluğu / Length of rolls

Standart parça boyutu Standard piece size	40 lm	
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■ Fiziksel özellikler / Physical properties

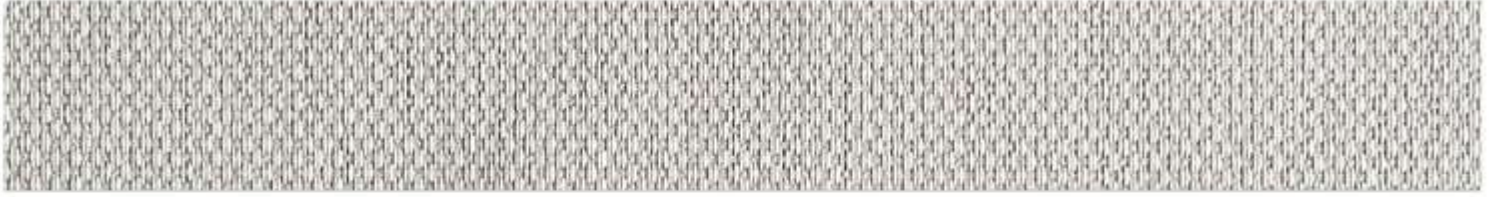
Kopma mukavemeti (çözü/zemin) Tensile strength (warp/weft)	220/220 daN/5 cm	EN ISO 1421
Yırtılma mukavemeti (çözü/zemin) Tear strength (warp/weft)	30/25 daN	DIN 53.363

■ Alev geciktiricilik / Flame retardancy

Yangın Sınıfı / Rating	M2	NFP 92-507
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■ Yönetim sistemleri / Management systems

Sertifikasyon / Certification		ISO 9001
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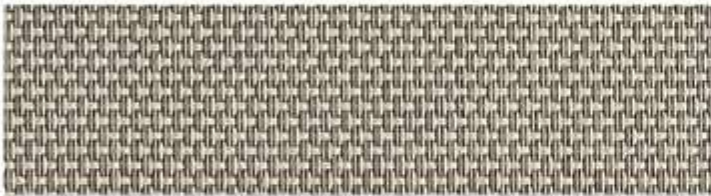
Frost white 320cm

7605-51184



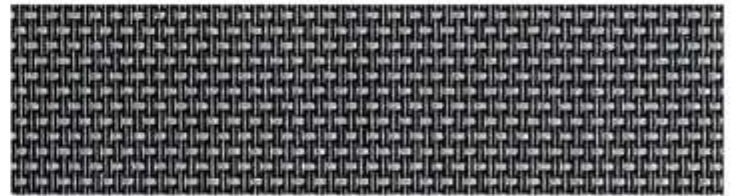
Cumulus 320cm

7605-51186



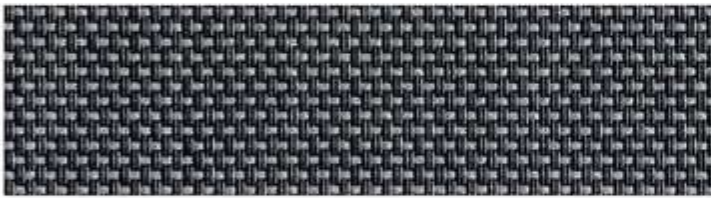
Natural 320cm

7605-51187



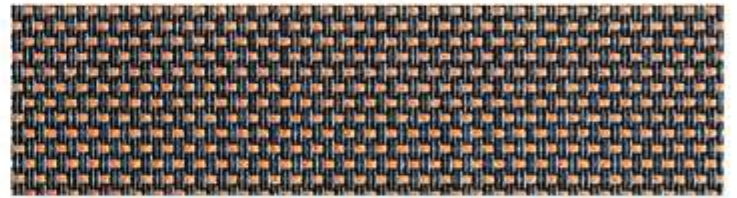
Grey pepper 320cm

7605-51197



Shadow 320cm

7605-51194



Sandalwood 320cm

7605-51196

• Güneş ve ışık özellikleri / Solar and light properties

Ürün - Product	TS	RS	AS	TV n-h	g_{tot}^* EN13363-2 "C" tipi camlama Type "C" glazing	g_{tot}^* EN13363-2 "D" tipi camlama Type "D" glazing	14501 Sınıfı/Class g_{tot}^* EN13363-2 C veya D tipi camlama Type C ou D glazing
7605-51184	9	59	32	8	0.07	0.04	4
7605-51186	6	37	57	6	0.06	0.04	4
7605-51187	7	37	56	7	0.06	0.04	4
7605-51197	5	8	87	5	0.05	0.04	4
7605-51194	5	7	88	5	0.06	0.04	4
7605-51196	6	10	84	6	0.06	0.04	0.4

TS:	Solar Geçirgenlik (%)	Solar Transmission (%)
RS:	Güneş Işını Yansıtma %	Solar Reflection in %
AS:	Güneş Işını Emme %	Solar absorption in %
TS + RS + AS	= Gelen enerjinin %100ü	= 100% of the incident energy
TV n-h:	Normal Görünür ışık geçirgenliği - yarı küresel olarak %	Normal Visible light transmission - hemispherical in %
g_{tot}^*:	Diş Güneş Faktörü	External Solar Factor

g_{tot}^* 'u hesaplamak için cam ve perde kombinasyonu için spektral geçiş ve yansıtma değerlerini dikkate alın.
Cam tipi:
«C»: Düşük emisyonlu, yalıtımlı çift cam - yüzey 3 (4 + 16 + 4; argon dolgu) $g = 0.59 - U = 1.2$
«D»: Düşük emisyonlu, yalıtımlı çift cam - yüzey 2 (4 + 16 + 4; argon dolgu) $g = 0.32 - U = 1.1$
Consider the spectral transmission and reflection values for the glazing + blind combination to calculate the solar factor g_{tot}^* .
Glazing type:
«C»: Low emission, insulating double glazing - face 3 (4 + 16 + 4; argon-filled) $g = 0.59 - U = 1.2$
«D»: Low emission, insulating double glazing - face 2 (4 + 16 + 4; argon-filled) $g = 0.32 - U = 1.1$

* EN 13363-2
detaylı yöntem

* EN 13363-2
detailed method

Ana uygulamalar

ZIP perde sistemleri (cephe ve pergola),
dış mekan perde sistemleri, dikey veranda
perdeleri

Main applications

ZIP blinds (façade and pergola), external
blinds, vertical veranda blinds



Soltis Veozip, eşsiz şeffaflığı sayesinde dış mekan manzaranızın tadını çıkarmak için ideal bir kumaştır. Mat, dokuma görünümü terasınızın sıcak ve zarif tasarımını yansıtacaktır.

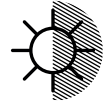
Soltis Veozip ile donatılmış pergolanız, yaşam alanınızın etkili bir uzantısı olarak gerçek bir dış mekan sığınağı yaratır. Rüzgar ve sıcaktan korunarak eğlenceli zamanlarınızın tadını tam anlamıyla çıkaracaksınız, hem de açık hava ortamınız içinde kalarak.

Soltis Veozip is the ideal fabric for enjoying your outdoor view due to its unmatched transparency. Its matt, woven aspect will embody your terrace's warm, elegant design.

As an effective extension of your living space, your pergola equipped with Soltis Veozip creates a real cocoon outside. You'll fully enjoy your fun times sheltered from the wind and heat, while remaining within your outdoor environment.



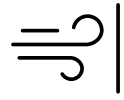
Kumaş görünümü için
doğal elyaf kompozisyon
Hemp-based composition
for natural fabric aspect



UV ışınlarının %95'ini filtreler
Filters up to 95% of UV radiation



Doğal görüntü sağlar
Plays on transparency



Rüzgardan korur
Protects from wind

■ Teknik özellikler / Technical properties

■ Standartlar / Standards

Açıklık faktörü / Openess factor	4%	
Ağırlık / Weight	600 g/m ²	EN ISO 2286-2
Kalınlık / Thickness	0.90 mm	
Rulo genişliği / Roll width	320 cm	
■ Rulo uzunluğu / Length of rolls		
Standart parça boyutu Standard piece size	35 lm	
■ Fiziksel özellikler / Physical properties		
Kopma mukavemeti (çözü/zemin) Tensile strength (warp/weft)	250/170 daN/5 cm	EN ISO 1421
Yırtılma mukavemeti (çözü/zemin) Tear strength (warp/weft)	25/25 daN	DIN 53.363
■ Alev geciktiricilik / Flame retardancy		
Derecelendirme / Rating	M1/NFP 92-507 — B1/DIN 4102-1 — BS 7837 — BS 5867 — CUNO/UNI 91-77 — Classe 1/EN 13373 — Method 1/NFPA 701 — CSFMT19 — Class A/ASTM E84	
Euroclass / Euroclass	B-s2,d0	En 13501-1
■ Yönetim sistemleri / Management systems		
Yangın Sınıfı / Euroclass		ISO 9001

■ Sertifikalar, Etiketler, Garantiler, Geri dönüşüm / Certifications, Labels, Warranties, Recycling



Akıllı İplik Teknolojisi
Smart Yarn Technology



Zip Perde

Zip perde sistemleri, dış mekanları veya büyük cam yüzeyleri rüzgar, güneş ışığı ve böcekler gibi dış etkenlere karşı korumak ve kontrol altına almak için kullanılan özel bir pencere kaplama çözümüdür. Zip perdeler, aynı zamanda "screen perdeleri" olarak da adlandırılır ve aşağıdaki özelliklere sahiptir:

Zip Blinds

Zip blind systems are a specialized window covering solution used to protect and control outdoor spaces or large glass surfaces from external factors such as wind, sunlight, and insects. Zip blinds are also referred to as "screen blinds" and have the following features:

Fonksiyonellik:

Zip perdeler, güneş ışığına karşı koruma sağlar ve iç mekan sıcaklığını kontrol etmek için kullanılır. Aynı zamanda yağmur, rüzgar ve böcekler gibi dış etkenlere karşı da koruma sunar.

Functionality:

Zip blinds provide protection against sunlight and are used to control indoor temperatures. They also offer protection against external elements like rain, wind, and insects.

Estetik Tasarım:

Zip perdeler, modern ve şık bir görünüme sahiptir. Dikey yönde çalışabilen bir sistemle tasarlanırlar ve bu, farklı pencere türlerine uygunluk sağlar.

Aesthetic Design:

Zip blinds have a modern and stylish appearance and can be designed with a system that operates vertically, making them suitable for various types of windows.

Güneş Işığı Kontrolü:

Zip perdeler, güneş ışığını isteğe bağlı olarak engelleyebilir veya iç mekana geçirilebilir. Bu, iç mekanın aydınlatmasını ve sıcaklığını ayarlamak için kullanışlıdır.

Sunlight Control:

Zip blinds can either block or allow sunlight to enter the interior as desired, making it convenient for adjusting indoor lighting and temperature.



Rüzgar Dayanıklılığı:

Bu perdeler, dayanıklı ve rüzgarlı hava koşullarına karşı dirençli olarak tasarlanırlar. Rüzgarla temas ettiğinde dengeli ve sabit kalırlar.

Wind Resistance:

These blinds are designed to withstand strong and windy weather conditions, remaining stable even when in contact with the wind.

Kullanım Kolaylığı:

Otomatik kontrol seçenekleri mevcuttur. Otomasyon, kullanım kolaylığı sağlar ve perdelerin istenen pozisyonda sabit kalmasını sağlar.

Ease of Use:

Zip blinds come with automatic options, providing convenience and allowing the blinds to stay in the desired position.

Sineklik İşlevi:

Zip perdeler, açık havada oturma alanları veya teraslar için idealdir. Aynı zamanda sineklik işlevi görebilir ve böceklerin içeri girmesini engelleyebilir.

Insect Protection:

Zip blinds are ideal for outdoor seating areas or terraces, as they can also function as insect screens, preventing bugs from entering.

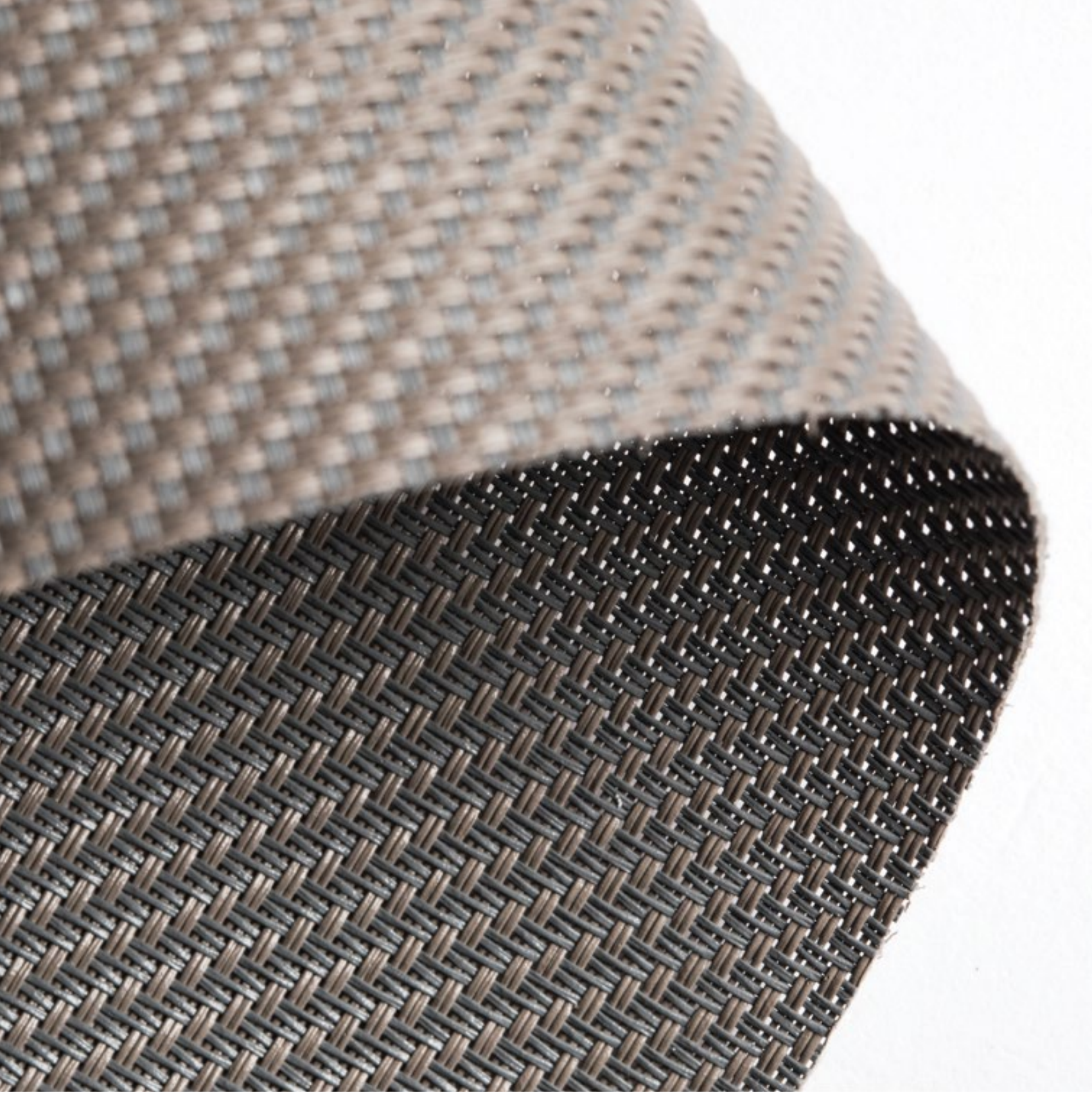
Uzun Ömür:

Kaliteli malzemelerle yapıldığında, zip perdeler uzun yıllar boyunca dayanıklılık ve performans sunabilirler.

Longevity:

When made from high-quality materials, zip blinds can offer durability and long-lasting performance.







Serge 600



Technical specifications

TECHNICAL SPECIFICATION		UNITY		STANDARD	RESULT
composition				Glassfibre 42% - PVC 58%	
openness factor		%		NBN EN 410	5%
weight		g/m ²		NF EN 12127	525
thickness		mm		ISO 2286-3	0,74
density		yarn/cm	warp	ISO 7211/2	18
			weft		14
colour fastness to artificial light				ISO 105 B02	>7
colour fastness to artificial weathering				ISO 105 B04	>7
tear strength	original	daN	warp	ISO 4674-1 method 2	8,5
			weft		7,5
elongation up to break	original	%	warp	ISO 1421	3,1
			weft		2,75
breaking strength	original	daN/5 cm	warp	ISO 1421	260
			weft		225
elongation up to break	after colour fastness to artificial weathering	%	warp	ISO 1421	3,5
			weft		2,8
breaking strength	after colour fastness to artificial weathering	%	warp	ISO 1421	240
			weft		225
elongation up to break	after colour fastness to artificial light	%	warp	ISO 1421	4
			weft		2,9
breaking strength	after colour fastness to artificial light	daN/5 cm	warp	ISO 1421	240
			weft		220
tear strength	after climatic chamber -30°C	daN	warp	ISO 4674-1 method 2	7,8
			weft		7,5
elongation up to break	after climatic chamber -30°C	%	warp	ISO 1421	3
			weft		2,5
breaking strength	after climatic chamber -30°C	daN/5 cm	warp	ISO 1421	225
			weft		200
tear strength	after climatic chamber +70°C	daN	warp	ISO 4674-1 method 2	8,2
			weft		7,2
elongation up to break	after climatic chamber +70°C	%	warp	ISO 1421	2,85
			weft		2,5
breaking strength	after climatic chamber +70°C	daN/5 cm	warp	ISO 1421	180
			weft		185
air permeability		l/m ² .s		ISO 9237	580
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
roll length	50 m / 30 m for all widths > 270 cm				
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

COPACO OUT





Serge 600



Colours & references

front

back



Serge 600 002002 white | white

front

back



Serge 600 008002 linen | white

front

back



Serge 600 008008 linen | linen

front

back



Serge 600 003003 sand | sand

back

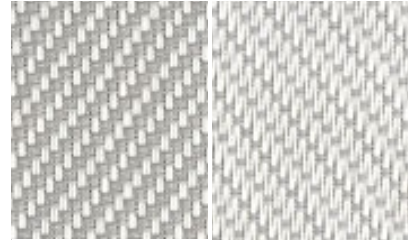
front



Serge 600 003002 sand | white

front

back



Serge 600 002007 white | pearl grey

front

back



Serge 600 008007 linen | pearl grey

front

back



Serge 600 007082 pearl grey | white-sand

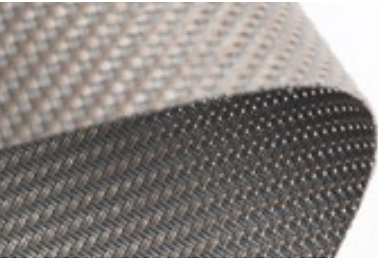
front

back



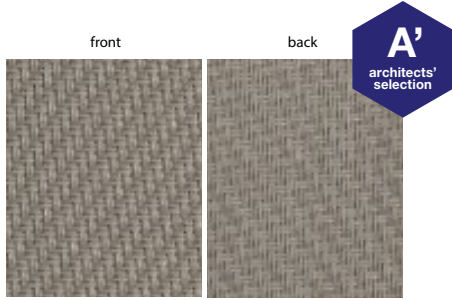
Serge 600 008003 linen | sand

COPACO OUT

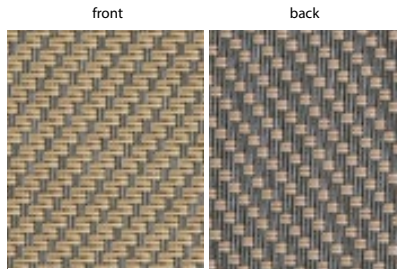


GLASSFIBRE

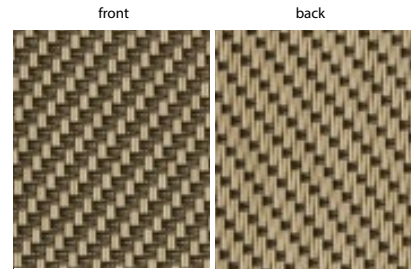
OF = 5%



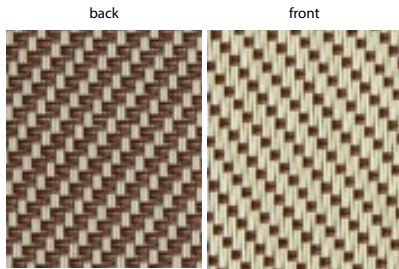
Serge 600 033033 sandstone



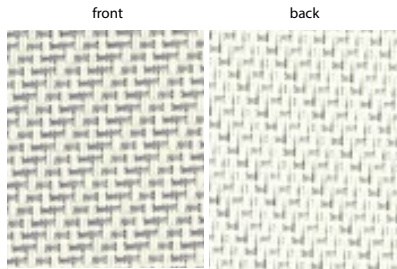
Serge 600 001003 grey | sand



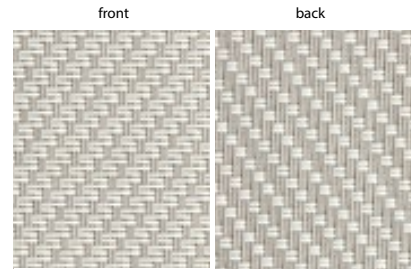
Serge 600 003011 sand | bronze



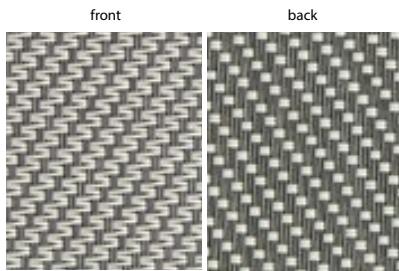
Serge 600 008016 linen | bordeaux



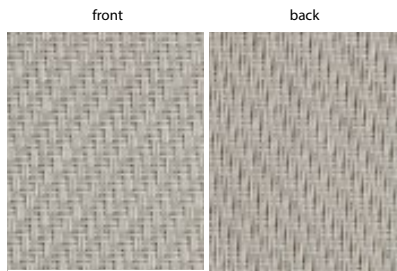
Serge 600 002061 white | white-pearl grey



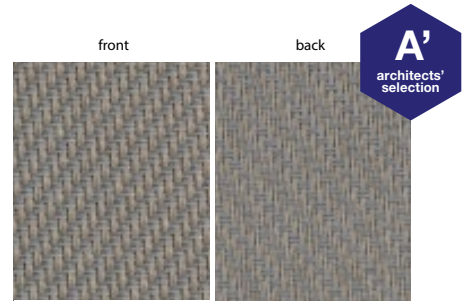
Serge 600 007002 pearl grey | white



Serge 600 001002 grey | white



Serge 600 007007 pearl grey | pearl grey



Serge 600 033001 oyster shell

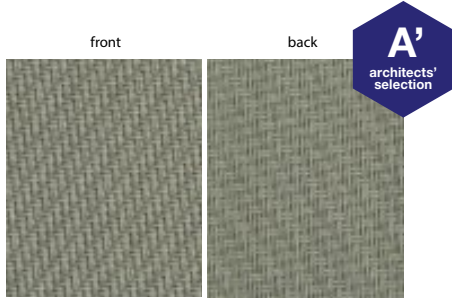
COPACO SERGE 600



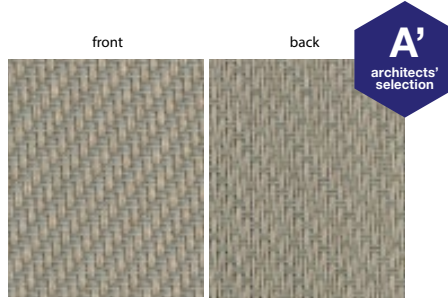
Serge 600



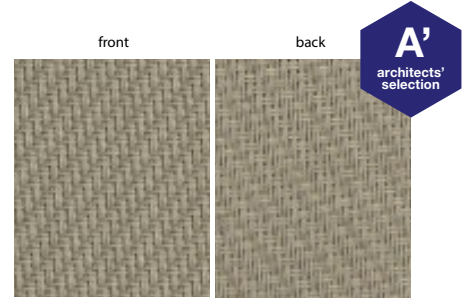
Colours & references



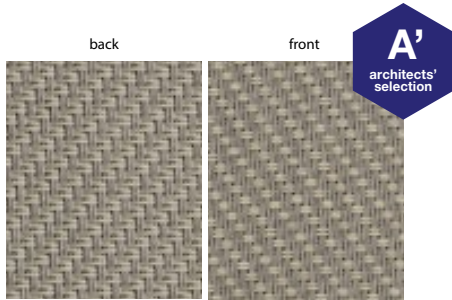
Serge 600 031031 jade river



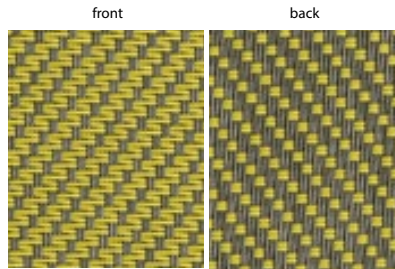
Serge 600 032031 duck egg



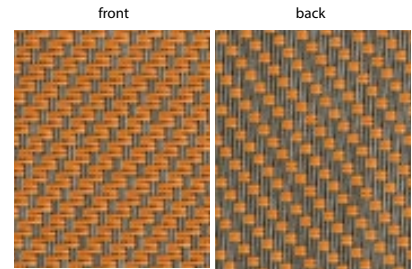
Serge 600 032032 wet sand



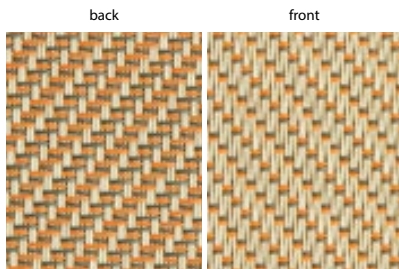
Serge 600 033032 soft clay



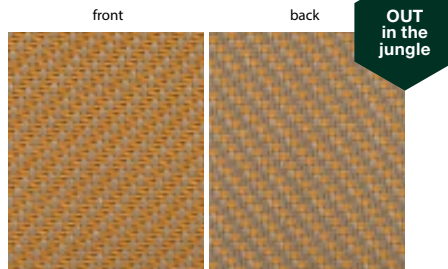
Serge 600 001006 grey | yellow



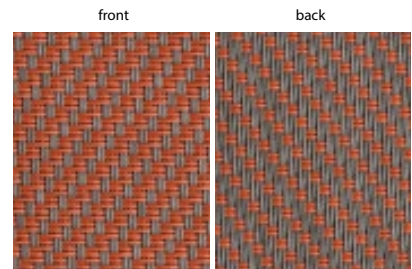
Serge 600 001004 grey | gold



Serge 600 008079 linen | grey-gold

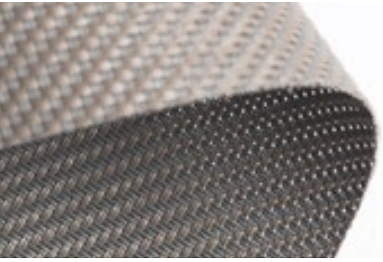


Serge 600 032040 mango



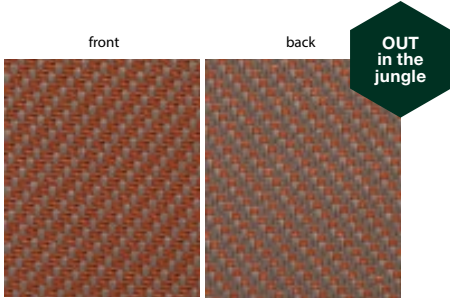
Serge 600 001005 grey | mandarin

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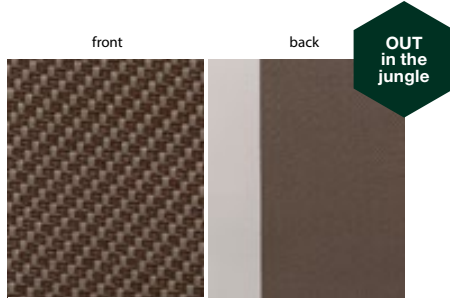


GLASSFIBRE

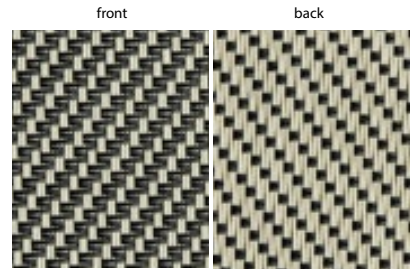
OF = 5%



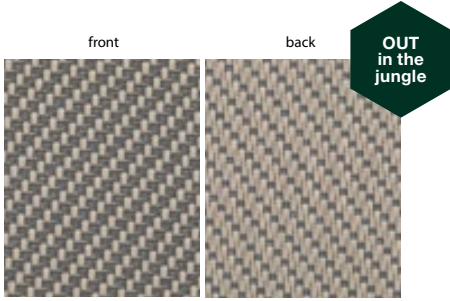
Serge 600 033041 maroon



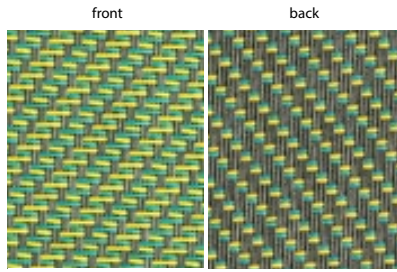
Serge 600 001045 coconut



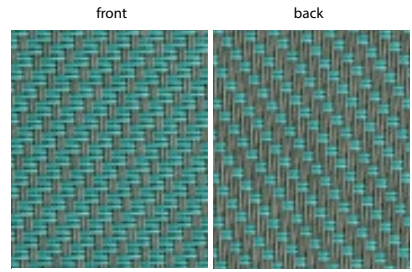
Serge 600 008015 linen | lichen



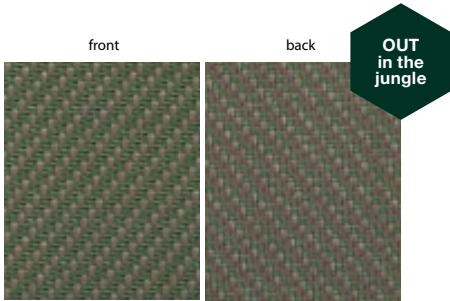
Serge 600 008001 safari



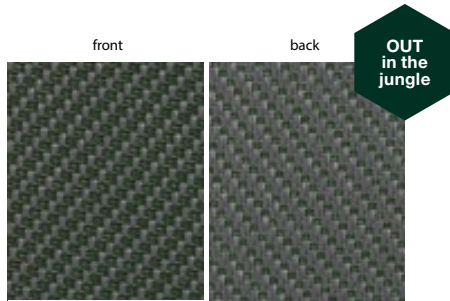
Serge 600 001074 grey | yellow-green



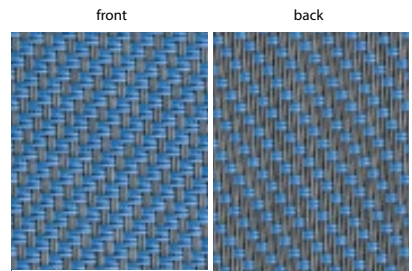
Serge 600 001012 grey | green



Serge 600 033043 moss



Serge 600 001044 palm



Serge 600 001014 grey | turquoise

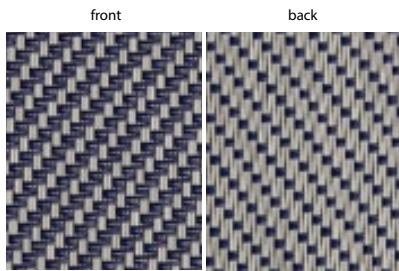
COPACO SERGE 600



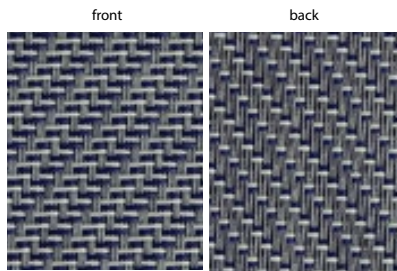
Serge 600



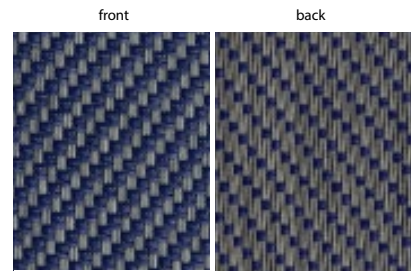
Colours & references



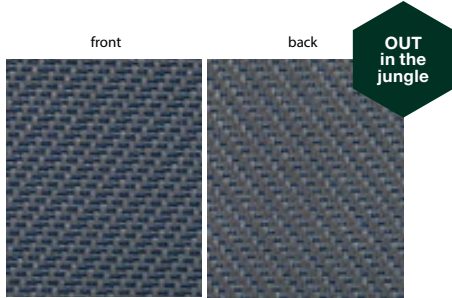
Serge 600 007009 pearl grey | blue azure



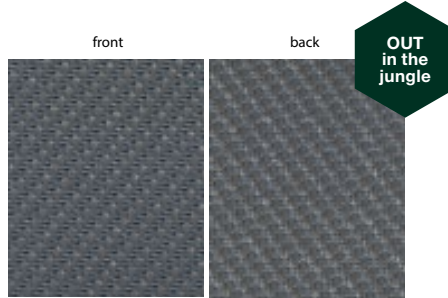
Serge 600 001070 grey | pearl grey-blue azure



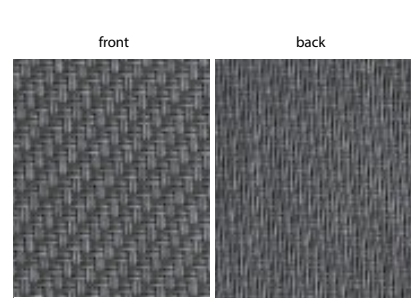
Serge 600 001009 grey | blue azure



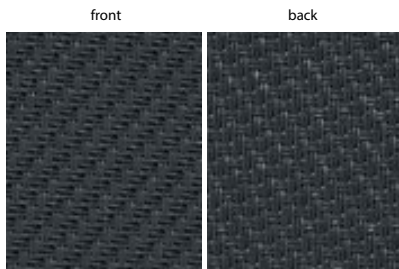
Serge 600 001094 lagoon



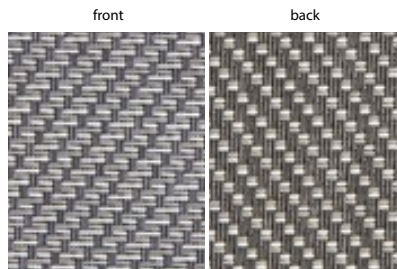
Serge 600 001042 shade



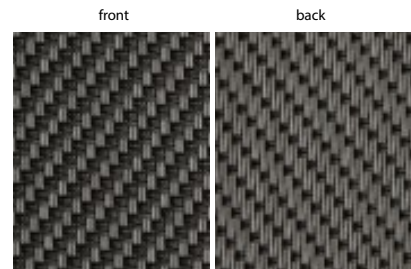
Serge 600 001001 grey | grey



Serge 600 047047 anthracite grey

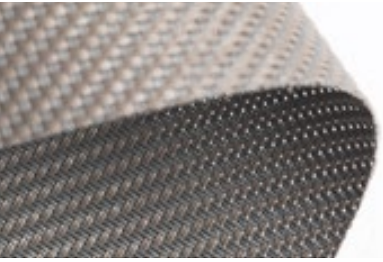


Serge 600 001061 grey | white-pearl grey



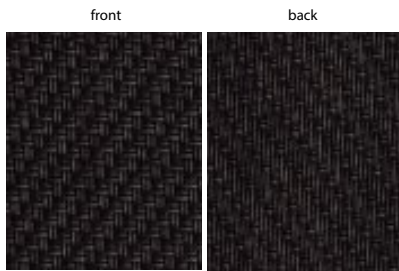
Serge 600 001010 grey | charcoal

COPACO OUT



GLASSFIBRE

OF = 5%



Serge 600 010010 charcoal | charcoal



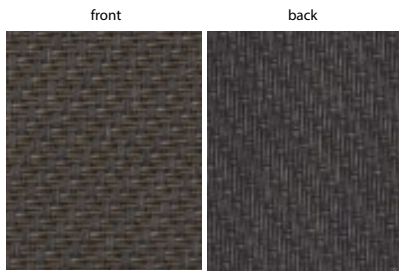
Serge 600 030030 pure black | pure black

Serge 600		50 m roll					30 m roll	
		160 cm	190 cm	220 cm	250 cm	270 cm	320 cm	350 cm
colour	code							
grey / grey	001001	.	.	.	.	.	.	.
grey / white	001002	.	.	.	.	.	.	.
grey / sand	001003	.	.	.	.	.	.	.
grey / gold	001004	.	.	.	.	.	.	.
grey / mandarin	001005	.	.	.	.	.	.	.
grey / yellow	001006	.	.	.	.	.	.	.
grey / blue azure	001009	.	.	.	.	.	.	.
grey / charcoal	001010	.	.	.	.	.	.	.
grey / green	001012	.	.	.	.	.	.	.
grey / turquoise	001014	.	.	.	.	.	.	.
shade	001042			.		.	.	
palm	001044			.		.	.	
coconut	001045			.		.	.	
grey / white-pearl grey	001061	.	.	.	.	.	.	.
grey / pearl grey-blue azure	001070	.	.	.	.	.	.	.
grey / yellow-green	001074	.	.	.	.	.	.	.
lagoon	001094			.		.	.	
white / white	002002		.	.	.	.	.	.
white / pearl grey	002007		.	.	.	.	.	.
white / white-pearl grey	002061				.	.	.	
sand / white	003002			.	.	.	.	
sand / sand	003003			.	.	.	.	
sand / bronze	003011			.	.	.	.	

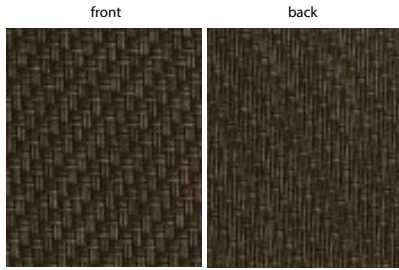
COPACO SERGE 600



Serge 600



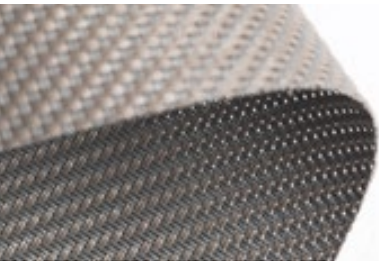
Serge 600 010011 charcoal | bronze



Serge 600 011011 bronze | bronze

Serge 600		50 m roll					30 m roll	
		160 cm	190 cm	220 cm	250 cm	270 cm	320 cm	350 cm
colour	code							
pearl grey / white	007002			.	.	.	.	
pearl grey / pearl grey	007007		.	.	.	.	.	.
pearl grey / blue azure	007009			.	.	.	.	
pearl grey / white-sand	007082				.	.	.	
linen / white	008002		.	.	.	.	.	
linen / sand	008003				.	.		
linen / pearl grey	008007				.	.		
linen / linen	008008		.	.	.	.	.	
linen / lichen	008015				.	.		
linen / bordeaux	008016				.	.		
linen / grey-gold	008079				.	.		
safari	008001			.		.	.	
charcoal / charcoal	010010	.	.	.	.	.	.	.
charcoal / bronze	010011		.	.	.	.	.	
bronze / bronze	011011		.	.	.	.		
pure black / pure black	030030					.	.	
jade river	031031			.		.		
duck egg	032031			.		.	.	
wet sand	032032			.		.	.	
mango	032040			.		.	.	
oyster shell	033001			.		.	.	
soft clay	033032			.		.	.	
sandstone	033033			.		.	.	
maroon	033041			.		.	.	
moss	033043			.		.	.	
anthracite grey	047047					.	.	

COPACO OUT



GLASSFIBRE

OF = 5%

Solar energetic properties

Serge 600 European Standard EN 14501 Calculation G-value according to EN 13363-1 version 7.0					SOLAR ENERGETIC PROPERTIES												VISUAL PROPER- TIES				
					FABRIC			FABRIC + GLAZING													
								EXTERIOR						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	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	13,2	65,9	21,0	0,22	0,20	0,15	0,10	0,36	0,37	0,36	0,25	21,2	4,3				
				back	12,7	66,3	21,0	0,22	0,19	0,15	0,10	0,35	0,37	0,36	0,25	21,2	4,3				
008002	linen white			front	26,4	58,2	15,5	0,20	0,17	0,13	0,09	0,39	0,41	0,38	0,26	13,7	5,3				
				back	28,1	56,4	15,5	0,20	0,17	0,13	0,09	0,40	0,42	0,39	0,26	13,7	5,3				
008008	linen linen			front	32,5	52,5	14,9	0,21	0,17	0,13	0,09	0,43	0,43	0,40	0,26	12,9	5,8				
				back	32,4	52,7	14,9	0,20	0,17	0,13	0,09	0,42	0,43	0,40	0,26	12,9	5,8				
003003	sand sand			front	54,1	36,5	9,4	0,20	0,16	0,11	0,09	0,51	0,51	0,45	0,28	7,7	4,9				
				back	53,6	37,0	9,4	0,20	0,16	0,11	0,08	0,51	0,51	0,45	0,28	7,7	4,9				
003002	sand white			front	39,1	49,2	11,7	0,19	0,16	0,11	0,08	0,44	0,45	0,41	0,27	10,2	4,9				
				back	43,6	44,6	11,7	0,20	0,17	0,12	0,09	0,47	0,47	0,42	0,27	10,2	4,9				
002007	white pearl grey			front	40,9	47,6	11,5	0,19	0,16	0,11	0,08	0,45	0,46	0,42	0,27	10,7	6,0				
				back	33,2	55,3	11,5	0,18	0,15	0,11	0,08	0,40	0,42	0,39	0,26	10,7	6,0				
008007	linen pearl grey			front	45,7	43,5	10,8	0,20	0,16	0,11	0,08	0,47	0,48	0,43	0,27	9,1	5,0				
				back	42,1	47,1	10,8	0,19	0,16	0,11	0,08	0,45	0,46	0,42	0,27	9,1	5,0				
007082	pearl grey white-sand			front	48,7	42,6	8,7	0,18	0,15	0,10	0,08	0,48	0,48	0,43	0,27	7,8	6,1				
				back	52,4	38,9	8,7	0,19	0,15	0,10	0,08	0,50	0,50	0,44	0,27	7,8	6,1				
008003	linen sand			front	49,3	43,9	6,8	0,17	0,13	0,09	0,07	0,46	0,47	0,43	0,27	4,9	2,0				
				back	44,9	48,3	6,8	0,16	0,13	0,08	0,07	0,44	0,45	0,41	0,27	4,9	2,0				

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

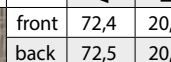
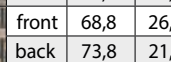
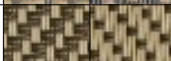
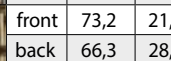
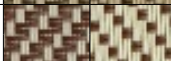
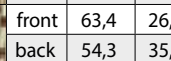
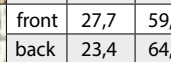
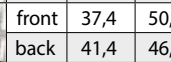
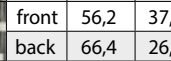
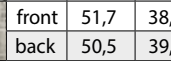
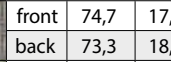
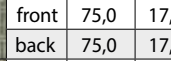
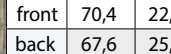
COPACO SERGE 600



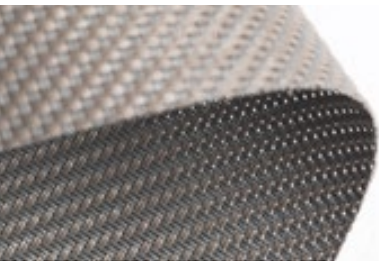
Serge 600



Solar energetic properties

Serge 600 European Standard EN 14501 Calculation G-value according to EN 13363-1 version 7.0					SOLAR ENERGETIC PROPERTIES												VISUAL PROPER- TIES		
					FABRIC			FABRIC + GLAZING											
								EXTERIOR					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	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																
033033	sandstone			front	72,4	20,5	7,1	0,22	0,17	0,11	0,09	0,60	0,59	0,50	0,29	6,8	6,6		
				back	72,5	20,4	7,1	0,22	0,17	0,11	0,09	0,60	0,59	0,50	0,29	6,8	6,6		
001003	grey sand			front	68,8	26,5	4,7	0,19	0,15	0,09	0,08	0,56	0,56	0,48	0,29	4,5	3,9		
				back	73,8	21,5	4,7	0,20	0,15	0,10	0,08	0,59	0,59	0,50	0,29	4,5	3,9		
003011	sand bronze			front	73,2	21,1	5,7	0,21	0,16	0,10	0,09	0,60	0,59	0,50	0,29	5,0	4,0		
				back	66,3	28,0	5,7	0,19	0,15	0,10	0,08	0,56	0,55	0,48	0,28	5,0	4,0		
008016	linen bordeaux			front	63,4	26,1	10,5	0,23	0,19	0,13	0,10	0,57	0,57	0,48	0,29	8,4	4,2		
				back	54,3	35,3	10,5	0,21	0,17	0,12	0,09	0,52	0,52	0,45	0,28	8,4	4,2		
002061	white white-pearl grey			front	27,7	59,8	12,4	0,17	0,15	0,11	0,08	0,38	0,40	0,38	0,26	11,6	3,4		
				back	23,4	64,2	12,4	0,16	0,14	0,10	0,07	0,35	0,37	0,36	0,25	11,6	3,4		
007002	pearl grey white			front	37,4	50,9	11,7	0,19	0,16	0,11	0,08	0,43	0,44	0,40	0,26	9,9	5,4		
				back	41,4	46,9	11,7	0,19	0,16	0,11	0,08	0,45	0,46	0,42	0,27	9,9	5,4		
001002	grey white			front	56,2	37,2	6,7	0,18	0,14	0,09	0,08	0,50	0,51	0,45	0,28	6,6	5,5		
				back	66,4	26,9	6,7	0,20	0,16	0,10	0,08	0,56	0,56	0,48	0,28	6,6	5,5		
007007	pearl grey pearl grey			front	51,7	38,3	10,1	0,20	0,16	0,11	0,09	0,50	0,50	0,44	0,27	8,4	6,0		
				back	50,5	39,4	10,1	0,20	0,16	0,11	0,09	0,50	0,50	0,44	0,27	8,4	6,0		
033001	oyster shell			front	74,7	17,0	8,3	0,23	0,19	0,12	0,10	0,62	0,61	0,51	0,29	8,0	7,9		
				back	73,3	18,4	8,3	0,23	0,18	0,12	0,10	0,62	0,60	0,51	0,29	8,0	7,9		
031031	jade river			front	75,0	17,9	7,1	0,22	0,18	0,11	0,09	0,62	0,61	0,51	0,29	7,0	6,8		
				back	75,0	17,9	7,1	0,22	0,18	0,11	0,09	0,62	0,61	0,51	0,29	7,0	6,8		
032031	duck egg			front	70,4	22,5	7,1	0,21	0,17	0,11	0,09	0,59	0,58	0,50	0,29	6,6	6,2		
				back	67,6	25,3	7,1	0,21	0,16	0,11	0,09	0,57	0,57	0,49	0,29	6,6	6,2		

COPACO OUT



GLASSFIBRE

OF = 5%

Solar energetic properties

Serge 600 European Standard EN 14501 Calculation G-value according to EN 13363-1+A1: 2007					SOLAR ENERGETIC PROPERTIES												VISUAL PROPER- TIES		
					FABRIC			FABRIC + GLAZING											
								EXTERIOR					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	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																
032032	wet sand			front	63,8	27,9	8,3	0,21	0,17	0,11	0,09	0,56	0,56	0,48	0,28	7,4	6,9		
				back	63,8	27,9	8,3	0,21	0,17	0,11	0,09	0,56	0,56	0,48	0,28	7,4	6,9		
033032	soft clay			front	67,5	24,7	7,8	0,21	0,17	0,11	0,09	0,58	0,57	0,49	0,29	7,3	7,0		
				back	69,7	22,5	7,8	0,22	0,17	0,11	0,09	0,59	0,58	0,50	0,29	7,3	7,0		
001006	grey yellow			front	64,6	29,0	6,4	0,20	0,15	0,10	0,08	0,55	0,55	0,47	0,28	6,2	4,4		
				back	71,4	22,2	6,4	0,21	0,16	0,11	0,09	0,59	0,58	0,50	0,29	6,2	4,4		
001004	grey gold			front	65,5	29,5	4,9	0,18	0,14	0,09	0,08	0,55	0,55	0,47	0,28	4,3	3,7		
				back	72,3	22,8	4,9	0,20	0,15	0,10	0,08	0,59	0,58	0,49	0,29	4,3	3,7		
008079	linen grey-gold			front	50,0	38,8	11,2	0,21	0,17	0,12	0,09	0,50	0,50	0,44	0,27	9,1	6,6		
				back	45,6	43,2	11,2	0,20	0,16	0,11	0,09	0,48	0,48	0,43	0,27	9,1	6,6		
032040	mango			front	56,8	34,2	9,0	0,20	0,16	0,11	0,09	0,52	0,52	0,46	0,28	6,8	5,9		
				back	59,6	31,4	9,0	0,20	0,16	0,11	0,09	0,52	0,52	0,46	0,28	6,8	5,9		
001005	grey mandarine			front	65,6	27,7	6,8	0,20	0,16	0,10	0,08	0,56	0,56	0,48	0,28	5,7	5,1		
				back	71,5	21,7	6,8	0,21	0,17	0,11	0,09	0,59	0,59	0,50	0,29	5,7	5,1		
033041	maroon			front	66,5	25,9	7,6	0,21	0,17	0,11	0,09	0,57	0,57	0,48	0,29	6,4	6,2		
				back	69,6	22,8	7,6	0,21	0,17	0,11	0,09	0,57	0,57	0,48	0,29	6,4	6,2		
001045	coconut			front	78,3	14,4	7,3	0,23	0,18	0,12	0,10	0,64	0,62	0,52	0,30	7,1	7,0		
				back	77,5	15,2	7,3	0,23	0,18	0,12	0,10	0,64	0,62	0,52	0,30	7,1	7,0		

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

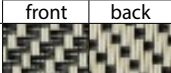
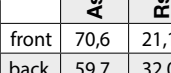
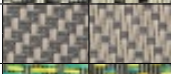
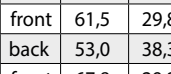
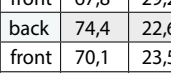
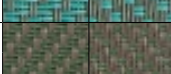
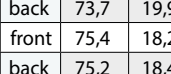
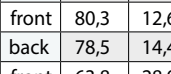
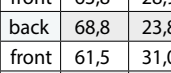
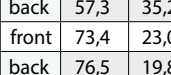
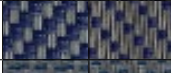
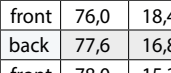
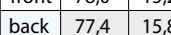
COPACO SERGE 600



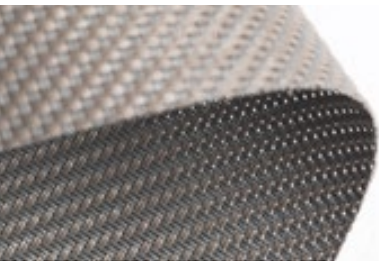
Serge 600



Solar energetic properties

Serge 600 European Standard EN 14501 Calculation G-value according to EN 13363-1+A1: 2007					SOLAR ENERGETIC PROPERTIES												VISUAL PROPER- TIES		
					FABRIC			FABRIC + GLAZING											
								EXTERIOR					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	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																
008015	linen lichen			front	70,6	21,1	8,3	0,23	0,18	0,12	0,09	0,60	0,59	0,50	0,29	7,8	3,9		
				back	59,7	32,0	8,3	0,20	0,16	0,11	0,09	0,54	0,54	0,47	0,28	7,8	3,9		
008001	safari			front	61,5	29,8	8,7	0,21	0,17	0,11	0,09	0,55	0,55	0,47	0,28	7,9	6,4		
				back	53,0	38,3	8,7	0,21	0,17	0,11	0,09	0,55	0,55	0,47	0,28	7,9	6,4		
001074	grey yellow-green			front	67,8	29,2	3,0	0,17	0,13	0,08	0,07	0,55	0,55	0,47	0,28	2,7	2,3		
				back	74,4	22,6	3,0	0,18	0,14	0,09	0,07	0,58	0,58	0,49	0,29	2,7	2,3		
001012	grey green			front	70,1	23,5	6,5	0,21	0,16	0,10	0,09	0,58	0,58	0,49	0,29	6,0	5,4		
				back	73,7	19,9	6,5	0,22	0,17	0,11	0,09	0,60	0,60	0,50	0,29	6,0	5,4		
033043	moss			front	75,4	18,2	6,4	0,22	0,17	0,11	0,09	0,61	0,60	0,51	0,29	6,0	5,8		
				back	75,2	18,4	6,4	0,22	0,17	0,11	0,09	0,61	0,60	0,51	0,29	6,0	5,8		
001044	palm			front	80,3	12,6	7,1	0,23	0,18	0,12	0,10	0,65	0,63	0,53	0,30	7,0	6,9		
				back	78,5	14,4	7,1	0,23	0,18	0,12	0,10	0,65	0,63	0,53	0,30	7,0	6,9		
001014	grey turquoise			front	63,8	28,9	7,3	0,20	0,16	0,10	0,08	0,55	0,55	0,47	0,28	6,3	6,0		
				back	68,8	23,8	7,3	0,21	0,17	0,11	0,09	0,58	0,58	0,49	0,29	6,3	6,0		
007009	pearl grey blue azure			front	61,5	31,0	7,5	0,20	0,16	0,10	0,08	0,54	0,54	0,47	0,28	4,4	3,4		
				back	57,3	35,2	7,5	0,19	0,15	0,10	0,08	0,52	0,52	0,45	0,28	4,4	3,4		
001070	grey pearl grey-blue azure			front	73,4	23,0	3,6	0,19	0,14	0,09	0,08	0,58	0,58	0,49	0,29	3,0	2,9		
				back	76,5	19,8	3,6	0,20	0,15	0,09	0,08	0,60	0,59	0,50	0,29	3,0	2,9		
001009	grey blue azure			front	76,0	18,4	5,6	0,21	0,16	0,10	0,09	0,61	0,60	0,51	0,29	4,7	4,6		
				back	77,6	16,8	5,6	0,22	0,17	0,11	0,09	0,62	0,61	0,51	0,29	4,7	4,6		
001094	lagoon			front	78,0	15,2	6,8	0,23	0,18	0,11	0,09	0,63	0,62	0,52	0,30	6,6	6,5		
				back	77,4	15,8	6,8	0,23	0,18	0,11	0,09	0,63	0,62	0,52	0,30	6,6	6,5		

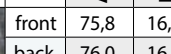
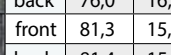
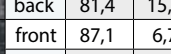
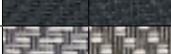
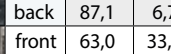
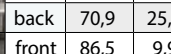
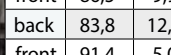
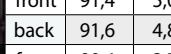
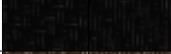
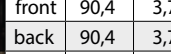
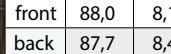
COPACO OUT



GLASSFIBRE

OF = 5%

Solar energetic properties

Serge 600 European Standard EN 14501 Calculation G-value according to EN 13363-1+A1: 2007					SOLAR ENERGETIC PROPERTIES												VISUAL PROPER- TIES		
					FABRIC			FABRIC + GLAZING											
								EXTERIOR					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	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																
001042	shade			front	75,8	16,7	7,5	0,23	0,18	0,12	0,10	0,62	0,61	0,51	0,29	7,4	7,2		
				back	76,0	16,5	7,5	0,23	0,18	0,12	0,10	0,62	0,61	0,51	0,29	7,4	7,2		
001001	grey grey			front	81,3	15,1	3,5	0,20	0,16	0,10	0,08	0,63	0,62	0,52	0,30	3,6	3,5		
				back	81,4	15,1	3,5	0,20	0,16	0,10	0,08	0,63	0,62	0,50	0,30	3,6	3,5		
047047	anthracite grey			front	87,1	6,7	6,2	0,23	0,18	0,11	0,09	0,66	0,65	0,54	0,30	6,2	6,1		
				back	87,1	6,7	6,2	0,23	0,18	0,11	0,09	0,66	0,65	0,54	0,30	6,2	6,1		
001061	grey white-pearl grey			front	63,0	33,2	3,9	0,17	0,13	0,08	0,07	0,52	0,53	0,46	0,28	3,6	3,0		
				back	70,9	25,2	3,9	0,19	0,14	0,09	0,08	0,57	0,57	0,49	0,29	3,6	3,0		
001010	grey charcoal			front	86,5	9,9	3,6	0,22	0,16	0,10	0,09	0,66	0,64	0,54	0,30	3,6	3,4		
				back	83,8	12,6	3,6	0,21	0,16	0,10	0,08	0,64	0,63	0,53	0,30	3,6	3,4		
010010	charcoal charcoal			front	91,4	5,0	3,6	0,23	0,17	0,10	0,09	0,69	0,67	0,55	0,30	3,6	3,6		
				back	91,6	4,8	3,6	0,23	0,17	0,10	0,09	0,69	0,67	0,55	0,30	3,6	3,6		
030030	pure black pure black			front	90,4	3,7	5,9	0,18	0,14	0,09	0,07	0,64	0,64	0,54	0,30	5,9	5,9		
				back	90,4	3,7	5,9	0,18	0,14	0,09	0,07	0,64	0,64	0,54	0,30	5,9	5,9		
011011	bronze bronze			front	88,0	8,1	3,9	0,22	0,17	0,10	0,09	0,67	0,65	0,54	0,30	3,8	3,8		
				back	87,7	8,4	3,9	0,22	0,17	0,10	0,09	0,67	0,65	0,54	0,30	3,8	3,8		
010011	charcoal bronze			front	87,4	6,5	6,1	0,18	0,14	0,09	0,07	0,62	0,63	0,54	0,30	6,1	6,2		
				back	87,9	6,0	6,1	0,18	0,14	0,09	0,07	0,62	0,63	0,54	0,30	6,1	6,2		

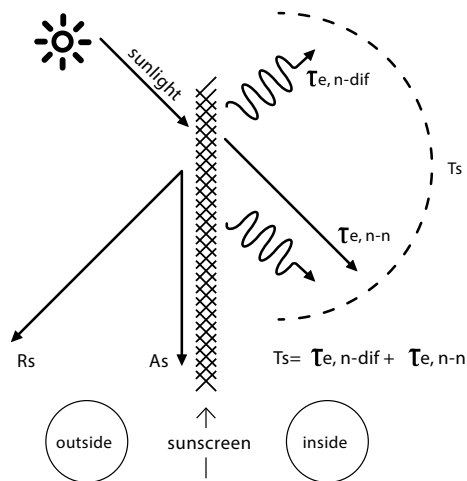
GLAZING A = clear single glazing 4 mm	Gv = 0,85
GLAZING B = clear double glazing (4/12/4), space filled with air	Gv = 0,76
GLAZING C = double glazing (4/16/4), with a low emissivity coating in position 3, space filled with argon	Gv = 0,59
GLAZING D = reflective double glazing (4/16/4), with a low emissivity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

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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 = T_v , 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 = T_{uv} . 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 T_v .
- Protection against sun-energy, expressed by the G value.
- Protection against secondary heat, expressed by the factor Q_i .
- Protection against UV-light, expressed by the factor T_{uv} .



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.

$T_{v,n-n}$	$T_{v,n-dif}$			
	$T_{v,n-dif} < 0,02$	$0,02 \leq T_{v,n-dif} < 0,04$	$0,04 \leq T_{v,n-dif} < 0,08$	$T_{v,n-dif} \geq 0,08$
$T_{v,n-n} > 0,10$	0	0	0	0
$0,05 < T_{v,n-n} \leq 0,10$	1	1	0	0
$T_{v,n-n} \leq 0,05$	3	2	1	1
$T_{v,n-n} = 0,00$	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.

$T_{v,n-n}$	$T_{v,n-dif}$		
	$0 < T_{v,n-dif} \leq 0,04$	$0,04 < T_{v,n-dif} \leq 0,15$	$T_{v,n-dif} > 0,15$
$T_{v,n-n} > 0,10$	0	0	0
$0,05 < T_{v,n-n} \leq 0,10$	1	1	1
$T_{v,n-n} \leq 0,05$	2	2	2
$T_{v,n-n} = 0,00$	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.

$T_{v,n-n}$	$T_{v,n-dif}$		
	$0 < T_{v,n-dif} \leq 0,04$	$0,04 < T_{v,n-dif} \leq 0,15$	$T_{v,n-dif} > 0,15$
$T_{v,n-n} > 0,10$	4	3	2
$0,05 < T_{v,n-n} \leq 0,10$	3	2	1
$T_{v,n-n} \leq 0,05$	2	1	0
$T_{v,n-n} = 0,00$	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
$T_{v,dif-h}$	$T_{v,dif-h} < 0,02$	$0,02 \leq T_{v,dif-h} < 0,10$	$0,10 \leq T_{v,dif-h} < 0,25$	$0,25 \leq T_{v,dif-h} < 0,40$	$T_{v,dif-h} \geq 0,40$

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Working of a sunscreen

Thermal comfort

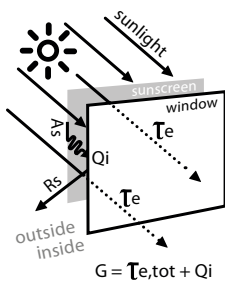
Fabric

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

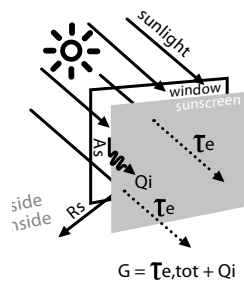
factor 1:	factor 2:	factor 3:
 As = Solar absorptance is the ratio of the absorbed flux to the incident flux.	 Rs = Solar reflectance is the fraction of the incident solar radiation that is directly reflected by the component.	 Ts = Solar transmittance is the sum of the (normal) direct solar transmittance 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

exterior sunscreen



interior sunscreen



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_{tot}** is the solar factor of the combination of glazing and solar protection device.

The **G_v** 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_{tot}** to that of the glazing alone **G_v**.

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

- 1) Radiation: measured by the solar transmittance: **T_{e,tot}**
- 2) Heat: measured by the secondary heat transfer: **Q_i**

$$G = T_{e,tot} + Q_i$$

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

COPACO OUT



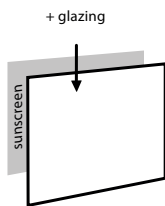
The factor **$T_{e,tot}$** , is the quantity of energy, which will pass the combination solar protection device and window.

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

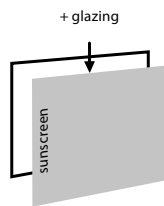
The **G-factor** is the most important factor to explain the efficiency of a combination sunscreen + glazing, as protection against the energy of the sun. The **G-factor** divided into his components explains the difference in efficiency between exterior and interior sunscreen.

$$G = T_{e,tot} + Q_i$$

exterior sunscreen



interior sunscreen



The direct solar transmittance **$T_{e,tot}$** is the same for interior and exterior use of sunscreens.

The secondary heat factor **Q_i** 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 _{tot}	G _{tot} ≥ 0,50	0,35 ≤ G _{tot} < 0,50	0,15 ≤ G _{tot} < 0,35	0,10 ≤ G _{tot} < 0,15	G _{tot} < 0,10

Secondary Heat transfer = Q_i

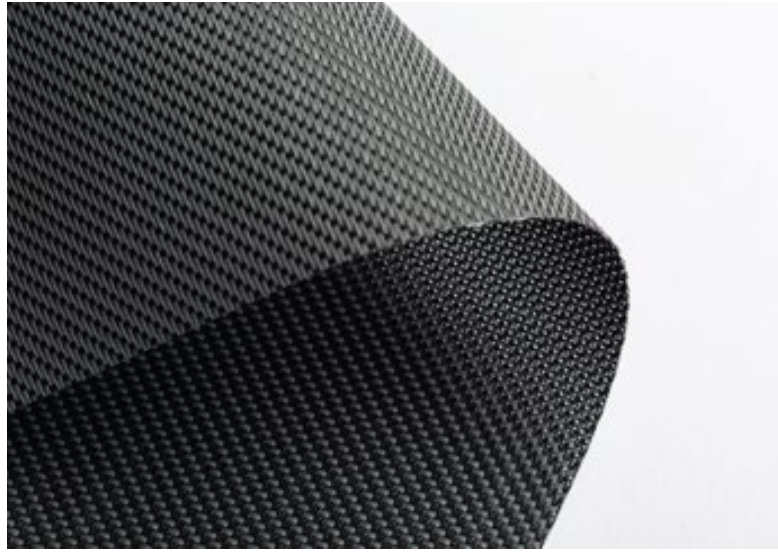
CLASS	0	1	2	3	4
Q _i	Q _i ≥ 0,30	0,20 ≤ Q _i < 0,30	0,10 ≤ Q _i < 0,20	0,03 ≤ Q _i < 0,10	Q _i < 0,03

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. $T_{e,n-n}$ is used as measure for this property.

COPACO SERGE 600

reflects
sunlight
outdoors



COPACO OUT

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