

MERMET COLLECTION

HIGH-TECH



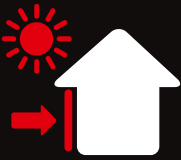
INTELLIGENT FABRICS FOR SOLAR PROTECTION



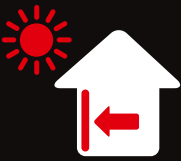
INTERNAL
APPLICATION

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WHAT ABOUT SOLAR PROTECTION ?



Installed externally, Mermet solar protection fabrics offer an **unrivalled thermal protection**. **Dark colours** provide a better heat control than light colours as they absorb more solar energy.

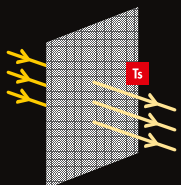


On the contrary, for inside applications, **light or reflective colours** are more efficient thermally as they absorb less heat and reflect more than darker ones.

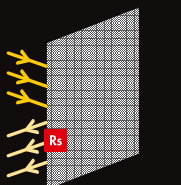
Dark colours guarantee an excellent view through and a perfect glare control. Light colours diffuse more natural light.

HEAT MANAGEMENT - THERMAL FACTORS

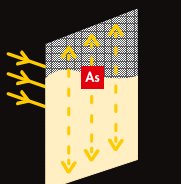
Solar radiation is always partially transmitted through, absorbed or reflected by the fabric. The sum of all 3 equals 100. **$T_s + R_s + A_s = 100\%$ OF SOLAR ENERGY.**



T_s **SOLAR TRANSMITTANCE:** proportion of solar energy transmitted through the fabric. A low percentage means the fabric performs well at reducing solar energy.



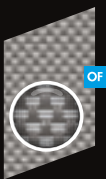
R_s **SOLAR REFLECTANCE:** proportion of solar radiation reflected by the fabric. A high percentage means the fabric performs well at reflecting solar energy.



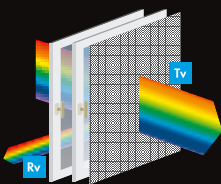
A_s **SOLAR ABSORPTANCE:** proportion of solar radiation absorbed by the fabric. A low percentage means the fabric absorbs little solar energy.

g_{tot} **TOTAL SOLAR FACTOR:** percentage of solar energy which actually penetrates into a room through the blind and glazing. A low value means good thermal performance.

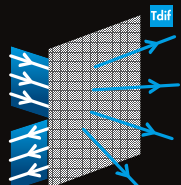
VISUAL MANAGEMENT - OPTICAL FACTORS



OF **OPENNESS FACTOR (T_{vnn}):** relative area of the openings in the fabric (hole). It is considered as independent of the colour. For fabrics with the same weave, it should be measured using the darkest colour in the range.



T_v **VISIBLE LIGHT TRANSMITTANCE (T_{vnh}):** total percentage of light radiated through the fabric over a wavelength of 380 to 780 nm (nanometers), called the visible spectrum (total illumination).



R_v **VISIBLE LIGHT REFLECTANCE (R_{vnh}):** proportion of light reflected by the fabric.

T_{dif} **DIFFUSE TRANSMISSION FACTOR:** correlation of the two factors above: $T_{dif} = T_v - OF$.

The regulations value the **g_{tot} factor** for thermal comfort and **T_v** for visual comfort.

THE BENEFITS OF HIGH-TECH FABRICS

By controlling the effect the sun exerts on buildings, our fabrics guarantee:

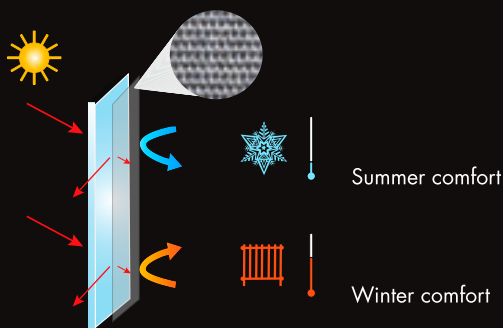
- **Thermal comfort:** summer and winter temperature control
- **Very low emissivity:** **HIGH-TECH fabrics** act as a thermal insulator
- **Visual comfort:** glare control, natural light and total or partial blackout
- **Energy savings:** reduce the use of heating, air conditioning and artificial lighting
- **Aestheticism:** excellent transparency, maintain view to the outside

Compliant with the EN 14501 standard, Mermet® fabrics are suitable for the bio-climatic facades of low-energy or HEQ buildings and meet the requirements of RT 2012 thermal regulations in France as well as international. They play a major role in the ability to obtain credits for eco-efficient or eco-design building certifications such as LEED®, BREEAM®, DGNB®.

Thanks to our technology based on the use of **glass fibre**, a natural product, our fabrics combine **efficiency and durability**:

- **Chemically inert, non-flammable:** they meet the highest fire safety standards
- **Dimensional stability, durability, mechanical resistance:** they offer a perfect flatness even in large dimensions
- **Any dangerous substances:** they are conform to standard requirements for buildings open to the public

EMISSIVITY IN FOCUS



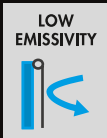
The emissivity of a material is its ability to re-emit the energy received through conduction (heat/cold).

A fabric with low emissivity minimises transmission of heat or cold from the glazing.

It acts as an insulator to ensure comfort in both summer and winter, and allows to optimize the energy consumption of buildings.

COMPARISON OF THERMAL AND OPTICAL PERFORMANCES

Fabrics tested		S2 1% 0210 White Sable	M-Screen Ultimetal® 3030 Charcoal	Satiné 5500 LOW E	Screen Nature Ultimetal® 1307 Black Diamond	Metalized polyester fabric
Measurement of heat point by thermal camera after 3 minutes of exposure						
Rs		59	83	78	73	70
Emissivity		0,89	0,05	0,15	0,10	0,35
g _{tot} internal blind	C : gv = 0,59	0,33	0,23	0,26	0,27	0,28
	D : gv = 0,32	0,17	0,11	0,13	0,12	0,13
Tv		9	3	4	4	4
OF		1	3	3	4	2



S2 1% - SCREEN THERMIC

TECHNICALLY ADVANCED TEXTILE: DOUBLE-SIDED FABRICS

0202

0207

0220

0210

0206

0201

0230

AVAILABLE IN 3% - 5%

GLARE CONTROL

■ Good outward visibility and **PERFECT GLARE CONTROL** with the dark-coloured inside facing fabric: up to **97% OF LIGHT RAYS FILTERED** (Tv = 3%) comfort classification 3 (good effect) according to EN 14501 standard

■ **MAXIMUM HEAT PROTECTION** with the white-coloured outside facing fabric that **REFLECTS SOLAR RADIATION**: up to 87% of solar energy eliminated (gtot = 0,13 / glazing g = 0,32 and U = 1,1)

TECHNICAL DATA

5%

Composition	36% Fibreglass - 64% PVC							
Fire, smoke classification and other official test reports*	M1 (F) - NFP 92 503 BS (GB) - 476 Pt 6 & 7 Class 0 BS (GB) - 5867 Euroclass C-s3-d0 (EU) - EN 13501-1 mounted according to EN 13823 & EN 14716	B1 (DE) - DIN 4102-1 CLASSE 1 (SP) - EN 13773 C UNO (IT) - UNI 9177 FR (US) - NFPA 701 HHV: 15,7 MJ/kg (7,06 MJ/m²)						
Health, safety	Greenguard® GOLD: Guarantee of indoor air quality (VOC) Antibacterial: More than 99% of bacteria destroyed - ASTM E 2180							
Openness factor	1%							
Width	250 cm							
Weight/m²	450 g ± 5% - ISO 2286 - 2							
Thickness	0,58 mm ± 5% - ISO 2286 - 3							

This product's technical data are in conformity with this brochure as of the date of publication. MERMET SAS reserves the right to change the technical data; only those provided on the company's website www.sunscreen-mermet.com shall be deemed to be authentic. Where applicable, MERMET SAS also reserves the right to withdraw this product from sale should any of the technical properties or characteristics set out above prove to be inadequate or rendered impossible as a result of a change in regulations or in knowledge or understanding.

* Reports available on request, please contact Mermet

THERMAL AND OPTICAL FACTORS in the European standard EN 14501

SOF 1%	Thermal factors					Optical factors
	Fabric			Fabric + Glazing / gtot internal blind		Tv
	Ts	Rs	As	C : gv = 0,59	D : gv = 0,32	
Colours (clear side factors)						
0202 White	19	69	12	0,29 2	0,13 3	19
0220 White Linen	17	64	19	0,32 2	0,15 2	15
0207 White Pearl	12	59	29	0,33 2	0,16 2	11
0210 White Sable	12	59	29	0,33 2	0,17 2	9
0201 White Grey	9	54	37	0,35 1	0,18 2	6
0206 White Bronze	4	48	48	0,36 1	0,19 2	4
0230 White Charcoal	3	46	51	0,38 1	0,19 2	3

gv = 0,59: Solar factor of standard glazing (C), low-emission 4/16/4 double glazing filled with Argon (U value thermal transmittance = 1,2 W/m²K).

gv = 0,32: Solar factor of standard glazing (D), reflecting low-emission 4/16/4 double glazing filled with Argon (U value thermal transmittance = 1,1 W/m²K).

Comfort classification according to EN 14501 standard: 1 very little effect 2 little effect 3 moderate effect 4 good effect 5 very good effect

Samples tested according to EN 14500 standard defining the measurements and calculation methods as specified in the standard EN 13363-2 "Solar protection devices combined with glazing calculation of solar and light transmittance - part 2: EN 13363-2 detailed method" and EN 410 "Glass in building - Determination of luminous and solar characteristics of glazing".

M-SCREEN ULTIMETAL® - SCREEN LOW E

THE HIGH-PERFORMANCE METALLIC SCREEN

0202

0220

0702

0707

3001

3010

3030

83% OF SOLAR REFLECTANCE

VERY LOW EMISSIVITY

■ Thanks to its metallic side, the fabric M-SCREEN ULTIMETAL® provides a technical combination of **HIGH SOLAR REFLECTION (83%)** and **EXCELLENT VISIBLE TRANSMISSION (Tv: from 3 to 4%)**, **IRRESPECTIVE OF THE COLOUR SELECTED** for the interior ambience

■ **VERY LOW EMISSIVITY OF 5%**. The fabric acts as a thermal insulator increasing **INTERIOR COMFORT IN BOTH THE SUMMER and WINTER**

■ **TOTAL GLARE CONTROL**: up to 97% of light rays filtered, comfort classification 3 (good effect) according to EN 14501 standard

TECHNICAL DATA

M-SCREEN ULTIMETAL®

Composition	36% Fibreglass - 64% Vinyl							
Fire, smoke classification and other official test reports*	M1 (F) - NFP 92 503 BS (GB) - 476 Pt 6 & 7 Class 0 Euroclass C-s3-d0 (EU) - EN 13501-1 mounted according to EN 13823 & EN 14716	FR (US) - NFPA 701 CLASSE 1 (SP) - EN 13773 C UNO (IT) - UNI 9177 F3 (F) - NF F 16-101 HHV: 13,76 MJ/kg (5,57 MJ/m²)						
Health, safety	Greenguard® GOLD: Guarantee of indoor air quality (VOC) Antibacterial: More than 99% of bacteria destroyed - ASTM E 2180							
Openness factor	3%							
Emissivity	0,05 - EN 12898							
Widths	200 - 285 cm							
Weight/m²	405 g ± 5% - ISO 2286 - 2							
Thickness	0,46 mm ± 5% - ISO 2286 - 3							

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THERMAL AND OPTICAL FACTORS in the European standard EN 14501

M-SCREEN ULTIMETAL® OF 3%	Thermal factors					Optical factors
	Fabric			Fabric + Glazing / gtot internal blind		Tv
	Ts	Rs	As	C : gv = 0,59	D : gv = 0,32	
Colours (metalized side factors)						
0202 White	4	83	13	0,23 2	0,11 3	4
0220 White Linen	4	83	13	0,23 2	0,10 3	4
0702 Pearl White	4	83	13	0,24 2	0,11 3	4
0707 Pearl	4	83	13	0,24 2	0,12 3	4
3001 Charcoal Grey	4	83	13	0,23 2	0,11 3	3
3010 Charcoal Sable	4	83	13	0,23 2	0,11 3	3
3030 Charcoal	4	83	13	0,23 2	0,11 3	3

gv = 0,59: Solar factor of standard glazing (C), low-emission 4/16/4 double glazing filled with Argon (U value thermal transmittance = 1,2 W/m²K).

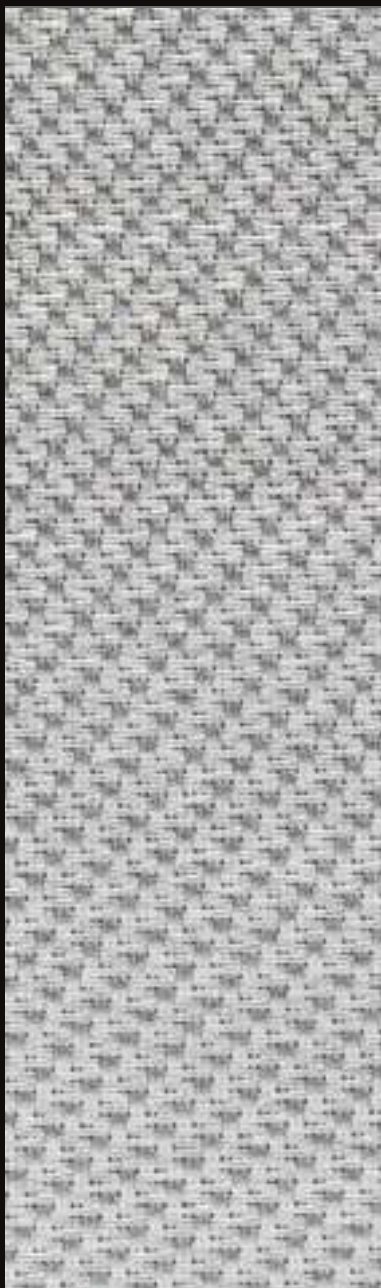
gv = 0,32: Solar factor of standard glazing (D), reflecting low-emission 4/16/4 double glazing filled with Argon (U value thermal transmittance = 1,1 W/m²K).

Comfort classification according to EN 14501 standard: 1 very little effect 2 little effect 3 moderate effect 4 good effect 5 very good effect

Samples tested according to EN 14500 standard defining the measurements and calculation methods as specified in the standard EN 13363-2 "Solar protection devices combined with glazing calculation of solar and light transmittance - part 2: EN 13363-2 detailed method" and EN 410 "Glass in building - Determination of luminous and solar characteristics of glazing".

SATINÉ 5500 LOW E - SCREEN LOW E

THE DOUBLE-SIDED METALLIC SCREEN



LOW E

78%

OF SOLAR REFLECTANCE

EXCELLENT VISUAL COMFORT

- **EXCELLENT HEAT PROTECTION THANKS TO ITS DOUBLE-SIDED METALLIZATION.** The fabric alone **REFLECTS 87% OF SOLAR ENERGY** ($g_{tot} = 0,13$ / glazing $g = 0,32$ and $U = 1,1$)
- Unequalled **EMISSIVITY LEVEL** of **15%** to minimize transmission of heat or cold from the glazing. The fabric acts as an **INSULATOR** for the glazing, increasing **INTERIOR COMFORT IN BOTH THE SUMMER and WINTER**
- **EXCELLENT VISUAL COMFORT:** maintains view to the outside, optimisation of incoming natural light and **TOTAL GLARE CONTROL**, comfort classification 3 (good effect) according to EN 14501 standard

TECHNICAL DATA

SATIN 5500 LOW E		
Composition	42% Fibreglass - 58% PVC	
Fire, smoke classification and other official test reports*	M1 (F) - NFP 92 503 B1 (DE) - DIN 4102-1 Euroclass C-s3-d0 (EU) - EN 13501-1 mounted according to EN 13823 & EN 14716	FR (US) - NFPA 701 HHV: 13,5 MJ/kg (7,02 MJ/m ²)
Health, safety	Greenguard® GOLD: Guarantee of indoor air quality (VOC) Antibacterial: More than 99% of bacteria destroyed - ASTM E 2180	
Openness factor	3%	
Emissivity	0,15 - EN 12898	
Width	240 cm	
Weight/m ²	520 g ± 5% - ISO 2286 - 2	
Thickness	0,65 mm ± 5% - ISO 2286 - 3	

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THERMAL AND OPTICAL FACTORS in the European standard EN 14501

SATIN 5500 LOW E OF 3%	Thermal factors					Optical factors
	Fabric			Fabric + Glazing / g _{tot} internal blind		Tv
Colour	Ts	Rs	As	C : gv = 0,59	D : gv = 0,32	
Satin 5500 Low E	4	78	18	0,26 ②	0,13 ③	4

gv = 0,59: Solar factor of standard glazing (C), low-emission 4/16/4 double glazing filled with Argon (U value thermal transmittance = 1,2 W/m²K).

gv = 0,32: Solar factor of standard glazing (D), reflecting low-emission 4/16/4 double glazing filled with Argon (U value thermal transmittance = 1,1 W/m²K).

Comfort classification according to EN 14501 standard: ① very little effect ② little effect ③ moderate effect ④ good effect ⑤ very good effect

Samples tested according to EN 14500 standard defining the measurements and calculation methods as specified in the standard EN 13363-2 "Solar protection devices combined with glazing calculation of solar and light transmittance - part 2: EN 13363-2 detailed method" and EN 410 "Glass in building - Determination of luminous and solar characteristics of glazing".

SCREEN NATURE ULTIMETAL[®] - SCREEN NATURE

MINERAL COMPOSITION: INCOMBUSTIBLE

*Only available in 240 cm

1301

1302

1303*

1304

1305

1306*

1307*

74% OF SOLAR REFLECTANCE

EXCELLENT TRANSPARENCY

- **TRANSPARENT THERMAL SHIELD:** the **METALIZED SIDE**, facing the window, rejects up to 88% of solar energy **IN ALL COLOURS** (gtot = 0,12 / glazing g = 0,32 and U = 1,1)
- **VERY LOW EMISSIVITY OF 10%.** The fabric acts as a **THERMAL INSULATOR**, delivering interior comfort in summer and winter
- Excellent **GLARE CONTROL**

TECHNICAL DATA

SCREEN NATURE ULTIMETA [®]		
Composition	Glass fabric with fire-proof PVC-free and halogen-free coating (contains fluorine)	
Fire, smoke classification and other official test reports**	M0-M1 (F) - NFP 92 503 B1 (DE) - DIN 4102-1 BS (GB) - 476 Pt 6 & 7 Class 0 Euroclass A2-s1-d0 (EU) - EN13501-1 mounted according to 13823 & EN 14716	C UNO (IT) - UNI 9177 FR (US) - NFPA 701 FO - NF F 16-101 HHV: 1,59 MJ/kg (0,26 MJ/m²)
Health, safety	Oeko-Tex Standard 100 class IV: No chemicals harmful to health and safety of users Greenguard [®] GOLD: Guarantee of indoor air quality (VOC) Antibacterial: More than 99% of bacteria destroyed - ASTM E 2180	
Openness factor	4%	
Emissivity	0,10 - EN 12898	
Widths	180 - 240 cm (depending on colours*)	
Weight/m²	165 g ± 5% - ISO 2286 - 2	
Thickness	0,21 mm ± 5% - ISO 2286 - 3	

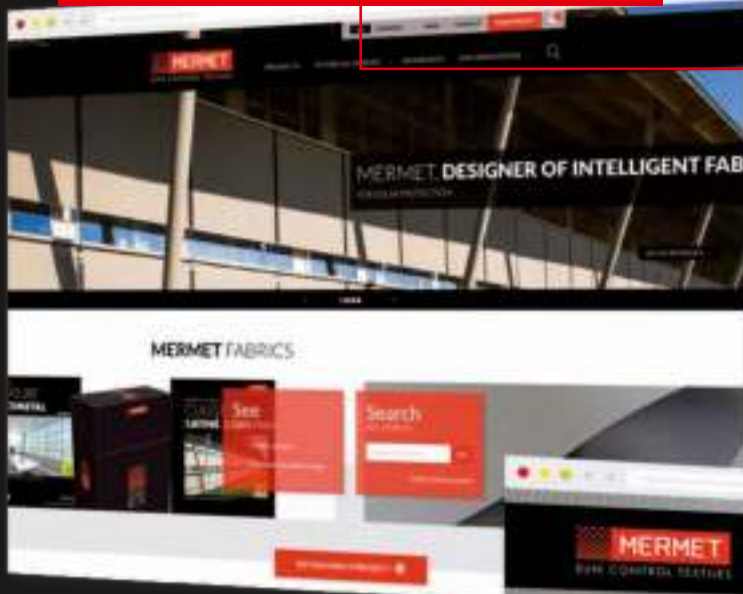
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THERMAL AND OPTICAL FACTORS in the European standard EN 14501

SCREEN NATURE ULTIMETAL [®] - OF 4%	Thermal factors					Optical factors
	Fabric			Fabric + Glazing/gtot internal blind		Tv
Colours (metalized side factors)	Ts	Rs	As	C : gv = 0,59	D : gv = 0,32	
1301 Titanium	6	74	20	0,28 2	0,13 3	6
1303 Platinum	6	74	20	0,27 2	0,13 3	6
1302 Inox	6	74	20	0,29 2	0,14 3	5
1304 Iron	5	74	21	0,27 2	0,13 3	5
1305 Carbon	5	74	21	0,28 2	0,14 3	5
1306 Bronze	5	74	21	0,28 2	0,14 3	5
1307 Black Diamond	4	73	23	0,27 2	0,12 3	4

gv = 0,59: Solar factor of standard glazing (C), low-emission 4/16/4 double glazing filled with Argon (U value thermal transmittance = 1,2 W/m²K).
gv = 0,32: Solar factor of standard glazing (D), reflecting low-emission 4/16/4 double glazing filled with Argon (U value thermal transmittance = 1,1 W/m²K).
Comfort classification according to EN 14501 standard: 1 very little effect 2 little effect 3 moderate effect 4 good effect 5 very good effect
Samples tested according to EN 14500 standard defining the measurements and calculation methods as specified in the standard EN 13363-2 "Solar protection devices combined with glazing calculation of solar and light transmittance - part 2: EN 13363-2 detailed method" and EN 410 "Glass in building - Determination of luminous and solar characteristics of glazing".

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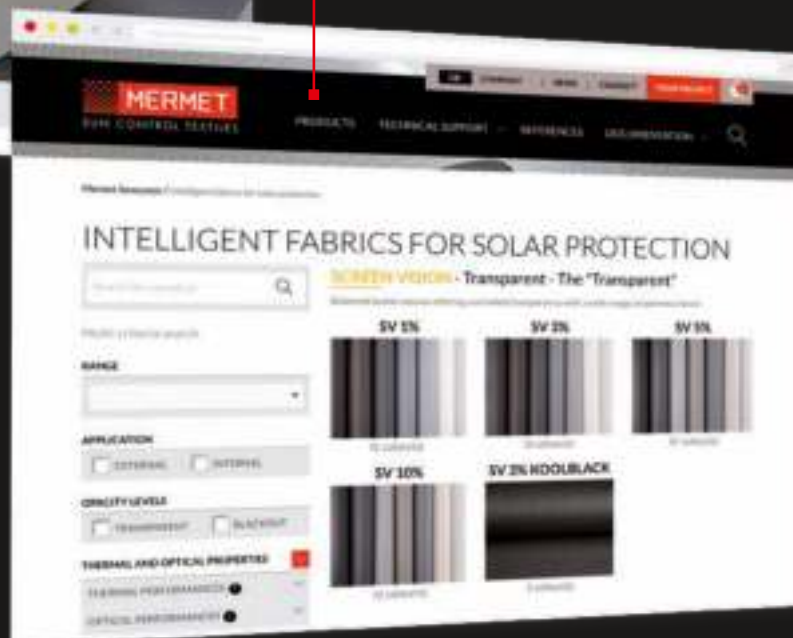



FIND IN 3 CLICKS THE FABRIC BEST SUITED to your project

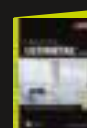
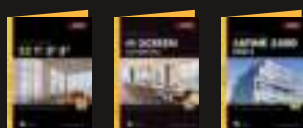
- A search engine with performances criteria
- Many documents for download
- All products information available
- A library of references

SERVICE

- Calculation of solar factor gtot (glazing + blind)
- Spectral values and thermal & optical factors available on request
- Specification sheet
- A4 samples and prototypes
- Training on fabrics functionality



 **MERMET COLLECTION** offers a wide choice of fabrics for external and internal application, from transparency to total darkness, for thermal and optical comfort. To receive other brochures from the collection, **contact us**.



SCREEN VISION / DESIGN / THERMIC / LOW E

EXTERNAL SCREEN CLASSIC

SCREEN NATURE

BLACKOUT 100 %

ACOUSTICS



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