Explanations

Classification of optical and thermal comfort properties

According to standard EN 14501 certain properties of solar protection devices are to be considered. The standard lists properties which quantify visual and thermal comfort and therefore are to be taken into consideration for comparison. While the optical properties are defined by glare control, night privacy, visual contact with the outside and daylight utilization as well as by the color rendering index R_a, the thermal comfort is influenced by total solar energy transmittance g_{tot}. The comfort properties are specified in five classes as shown in the following table:

Influence on optical or thermal comfort

Class	0	1	2	3	4
Effect	very little effect	little effect	moderate effect	good effect	very good effect

Optical factors – for wavelengths between 380 nm and 780 nm – verified in accordance with EN 410 and EN 14500/14501

T_v	Normal/hemispherical light transmittance ($T_{v, n-h}$); specifies the relation of transmitted to total incident light; states the sum of transmitted diffuse light ($T_{v, n-dif}$) and transmitted normal light ($T_{v, n-n}$)
R_v	Normal/hemispherical light reflectance; specifies the relation of reflected to total incident light
A_v	Normal/hemispherical light absorptance; specifies the relation of absorbed to total incident light
$T_{v, n-n}$	Normal/normal light transmittance; value is usually close to openness factor
$T_{v, n-dif}$	Normal/diffuse light transmittance
R_a	Color-Rendering-Index with values between 0 and 100; specifies an object's change of color due to alteration of incident light; the higher the index value, the lower the color distortion
Glare control	Specifies a solar protection device's capacity to protect a person against unpleasant luminance contrasts and thereby glare; it may be caused by solar spots on the work surface as well as direct view into the sun or other light sources with high luminance
Night privacy	Specifies a solar protection device's capacity to protect a person at night against external view in fully extended position
Visual contact	Specifies a solar protection device's capacity to allow a person's view to the outside in fully extended position
Daylight utilization	Specifies a solar protection device's capacity in fully extended position to optimize the usage of daylight and reduce the time during which artificial light is required

Thermal factors – for wavelengths between 280 nm and 2500 nm – verified in accordance with EN 410 and EN 14500

T_s	Normal/hemispherical solar transmittance; specifies the relation of transmitted to total incident solar radiation
R_s	Normal/hemispherical solar reflectance; specifies the relation of reflected to total incident solar radiation
A_s	Normal/hemispherical solar absorptance; specifies the relation of absorbed to total incident solar radiation
T_{UV}	Ultraviolet light transmittance (wavelengths from 280 nm to 380 nm); specifies the relation of transmitted to total UV-radiation
IR (ε)	Emissivity; ratio of energy radiated from a material's surface to that radiated from a blackbody at the same temperature; value between 0 and 1; the lower the number, the better the insulation effect; determined in accordance with EN 15976
g	Total solar energy transmittance of a glazing; specifies the relation of transmitted to total incident solar energy
U_g	Heat transfer coefficient; specifies the glazing's insulation properties, as it reflects the energy flow through a window at a certain temperature; expressed in W/m²K
g_{tot}	Total solar energy transmittance of a glazing in combination with a solar protection device; can either be calculated according to a simplified (EN ISO 52022-1) or detailed method (EN ISO 52022-3)

Technical specifications

Openness factor OF	Specifies the relation of the area of openings to the total area of a textile fabric; measured in accordance
α_w / NRC	Sound absorption coefficient between 0 and 1; specifies a material's absorption properties; the higher the value, the better the textile's capacity to absorb sound; conducted in accordance with EN ISO 354 (reverberation room α_w) / ASTM C423 (reverberation room NRC) / EN ISO 10534-2 (impedance tube α_w); evaluated in accordance with EN ISO 11654
Light fastness	Specifies a fabric's resistance to fading when exposed to artificial light which equals natural daylight; classified in 8 classes (the higher the class, the better the light fastness); measured according to EN ISO 105-B2 for the interior

Flame retardancy

B1	Items labelled B1 fulfill the German fire protection requirements in accordance with DIN 4102-1, building material class B1
BS	Items labelled BS fulfill the British fire protection requirements in accordance with BS 5867-2 Type B
M1	Items labelled M1 fulfill the French fire protection requirements in accordance with NF P 92-507, M1
C1	Items labelled C1 (Classe Uno) fulfill the Italien fire protection requirements in accordance with UNI 9177

European Classification	Describes a material's fire behavior in various criteria according to EN 13501-1; justifies the classification into German or French fire protection classes; e.g. B-s1,d0 or B-s2,d0
NFPA 701	Items labelled NFPA 701 fulfill the US-American fire protection requirements in accordance with NFPA 701-2015 TM#1
California U.S. Title 19	Items labelled California U.S. Title 19 fulfill the Californian fire protection requirements in
CAN	Items labelled CAN fulfill the Canadian fire protection requirements in accordance with CAN/ULC S109-14
Class 1	Items labelled Class 1 have been tested in accordance with EN 1101 and EN 13772 and meet the European fire protection requirements in accordance with EN 1101 and EN 13772. Class 1 has been achieved in accordance with EN 13773.

Product certificates

SCS Advantage™ Gold	CERTIFIED INDOOR AIR QUALITY EXCEPTIONAL PERFORMANCE INDOOR ADVANTAGE GOLD BUILDING MATERIALS	Indoor air quality performance certification for furniture or building materials regarding the emission of VOCs (volatile organic compounds); fulfills requirements of standard SCS-EC10.3-2014v4.0; tested in accordance with CDPH/EHLB Standard Method, ANSI/BIFMA Furniture Emissions Standard and ANSI/BIFMA e.3-2014e
REACh	REACH compliant	Registration, Evaluation, Authorisation and Restriction of Chemicals; describes potential human health and environmental impacts in realms of production and use of chemicals; JM products fulfill the requirements of the current REACh regulation
Standard 100 by OEKO-TEX®	OEKO TEX STANDARD 100 D07-0710 Hohenstein HTTI OEKO TEX STANDARD 100 D21-2487 Hohenstein HTTI	Independent test and certification system for textiles, which shows that products meet international human-ecological requirements for consumers or following downstream production stages; separate certification for Upcycling articles

Sustainable building certifications

BREEAM	BREEAM	Building Research Establishment Environmental Assessment Method; point-based evaluation system of ecological and sociocultural consequences of buildings through all life cycle phases; certification is performed by third parties
LEED	USGBC MEMBER	Leadership in Energy and Environmental Design; US-classification system for environmental friendly, resource preserving and sustainable buildings through all life cycle phases
DGNB	DGNB	German Sustainable Building Council; national green building system that commits to social aims and certification systems for buildings in all life cycle phases; besides social aspects, environmental and economic issues are of interest; thereby the UN Sustainable Development

Sustainability

Upcycling

JM's sustainable product range is continuously extended by fabrics made of at least 80 % recycled post-consumer polyester. 3-4 recycled 1.5 liter PET bottles are processed in one square meter of our Upcycling material. This helps to curb the worldwide pollution caused by plastic waste and recycling extends the life cycle of raw materials, minimizing the demand for virgin resources. The eco-balance of such processes is convincing; energy and above all water consumption are much lower than conventional chemical processing of fibers - a contribution to reduce the ecological footprint.

SCS Recycled Material

Recycled Material Certification by SCS Global Services verifies the percentage of pre-consumer or post-consumer recycled material based on analysis of the material inputs and the manufacturing process. With a certification of the recycled material in our textiles, we aim to effectively support both our sustainability goals and those of our customers. In this way, we are committed to conserve natural resources and promote the qualification of our products for sustainable building programs, e.g. LEED and environmentally preferable purchasing programs

Guarantee declaration

Guarantee
Garantie

Solar protection products by Junkers & Müllers GmbH are exclusively manufactured at the production site in Mönchengladbach, Germany. A machinery with state-of-the-art equipment guarantees highest quality standards. Our highly skilled employees are aware of our responsibility to customers and end consumers with respect to quality and security. Since 2003, Junkers & Müllers GmbH has maintained a quality management system in accordance with ISO 9001, which is constantly reviewed for accuracy by approved institutes. In compliance with recommended care and processing information, we guarantee the above-mentioned quality properties for a total of 5 years after transfer of risks to the customer. Consequences of incorrect handling, processing and care of our products are excluded, as well as not confirmed properties.

Article life span

The life span of our products is at least four years, starting from the commercial launch of these items. Exceptionally successful fabrics will remain in our house range over and above the afore mentioned period. Please request the individual life span for each product by contacting our customer service team.

Icons

transparent | dimout | semi-transparent | blackout | Trevira CS | pearlised | PVC-free

flame retardant | protection against fungal and / or bacterial growth | certified for HP-Latex inks