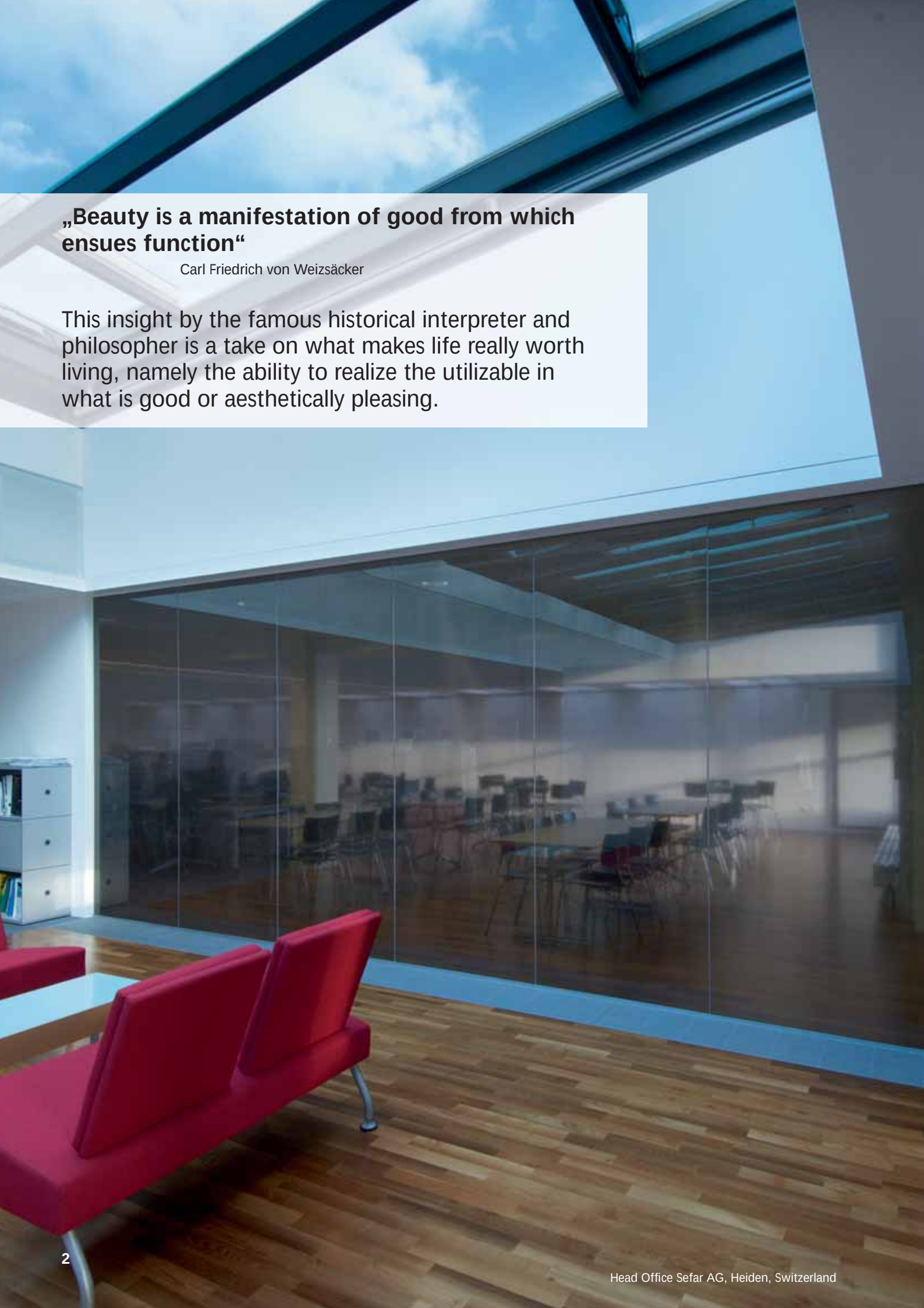
Architecture
Vision

SEFAR

architectural glass & cladding pty ltd



„Beauty is a manifestation of good from which ensues function“

Carl Friedrich von Weizsäcker

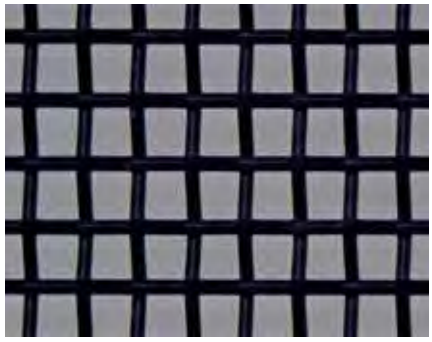
This insight by the famous historical interpreter and philosopher is a take on what makes life really worth living, namely the ability to realize the utilizable in what is good or aesthetically pleasing.

Head Office Sefar AG, Heiden, Switzerland

Technical precision fabrics for illumination and design effects

SEFAR® Architecture Vision is a range of high-precision fabrics produced from black synthetic fibers. The yarn thickness is either 140 or 260 micrometer (mµ) depending on the fabric type. The basic product range consists of six fabrics with a mesh opening of between 25% and 70%. Vision fabrics are coated with metals by means of a sophisticated process. The metals used are aluminum, copper, chromium, titanium and gold, as well as an aluminum/copper alloy. One-sided metallic coating is used exclusively in the basic product range. The reverse side of the fabric is neutral in color. On request, both sides of the Vision fabric can be coated. It is even possible to have different metallic coatings on the front and reverse sides of the fabric.

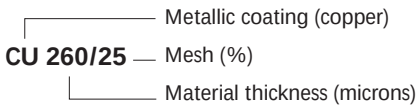
Coated front side of SEFAR® Architecture Vision CU 260/55, magnified approx. 8 times



Coated reverse side of SEFAR® Architecture Vision CU 260/55, magnified approx. 8 times

Product identification and labeling
Six fabrics and six metallic coatings give a basic range of 36 different products. Product identification is a combination of the chemical symbol of the metal used, the yarn thickness of the chosen garn in mµ and the percentage of mesh opening.

Product labeling



Color samples of metal coatings

Aluminum (AL)

Copper (CU)

Aluminum/Copper (AL/CU)

Chromium (CR)

Gold (AU)

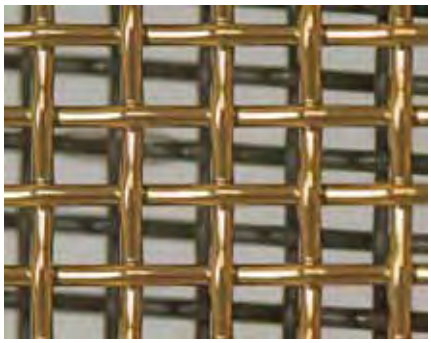
Titanium (TI)

Effective design possibilities and plays of light

The range of six fabrics and metallic coatings including the different combinations featuring double-sided coating produces a diversity of variations. With some additional outlay, the possibilities are virtually endless. Fabric surfaces coated in metal can be further individualized by means of digital printing. The options range from simple wording right up to extensive motifs. Neither the printed surfaces nor the metallic coating itself is visible from the reverse side. Double-sided coated fabrics can be printed separately on the front and reverse sides, while these markings too are only visible on the printed side of the fabric.

Printed SEFAR® Architecture Vision fabric AL 260/55 and magnified approx. 8 times

Lighting effect on fabric AL/CU 140/70



Moiré effect with two layers of SEFAR® Architecture Vision AL/CU 260/55 and magnified approx. 8 times

Multiple fabric layers produce individual moiré effects. Each element is truly a one-off since the fabric will never overlay in exactly the same way twice. Different fabric types, fabrics with various metallic coatings or the combination of coated and uncoated fabrics leave plenty of room for creativity. What all Vision fabrics have in common is their unique interaction with natural or artificial light. Depending on the angle of light source on the fabric surface, its appearance is seen to change and provide a constant interplay with the surroundings. It makes no difference whether the fabric is used in combination with glass, plastics or employed as a fabric surface.

SEFAR® Architecture Vision INLAID
SEFAR® Architecture Vision is a product protected by patent. Processing the fabric places stringent demands on production quality and consistency. For this reason, Sefar works exclusively with selected partners who can guarantee the qualitatively high standards set by us. These companies have tested the applications of the fabric extensively. A special logo highlights the use of SEFAR® Architecture Vision.

SEFAR® Architecture **Vision**
INLAID

Vision and laminated glass

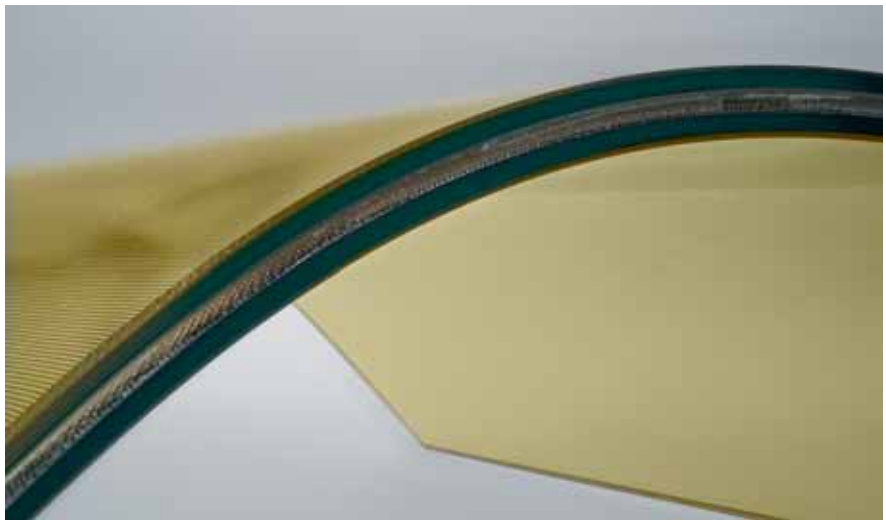
SEFAR® Architecture Vision used in combination with laminated glass opens up multiple fixtures and fittings possibilities from a simple door to a complete glass facade. The fabric lends glass an unusual textile structure and reduces its hard visual quality. Internally, the effect of one-way vision through appropriate room illumination is optimally achieved. Dividing walls fitted with SEFAR® Architecture Vision INLAID can separate rooms optically using the effects of light on the metallic-coated side of the fabric.

On the other side of the partition, the black fabric permits an almost uninhibited view and retains the glass-like openness of the room design. The metalized side of the fabric can be digitally printed with orientation information for use within the building.

When laminated Vision fabric is used as part of the facade, interaction between the building and its environment comes to the fore. Up to 35 filaments per cm provides for unparalleled mirroring of the surroundings and reflection of sunlight. The constantly changing position of the sun, passing clouds and climatic conditions – almost everything is reflected by the fabric and thus by the facade itself. Alongside these design possibilities, a major feature of SEFAR® Architecture Vision is the increased protection it provides from the sun. Further information about this is available overleaf.

Head Office of Sefar AG, Heiden, Switzerland. Glass facades with SEFAR® Architecture Vision fabric CU 140/50, single-side coated

Special applications
Different types of glass and colored or semi-transparent films considerably add to the range of possibilities. Curved glass can also be used as can combinations using mirrors or structured glass. Even a mixture of float and mirror glass with SEFAR® Architecture Vision produces stunning effects. The mirror glows discreetly through the open fabric surface conveying the impression of a uniform moiré. With appropriate illumination, these are often found in spa and wellness areas or as wall decorations.

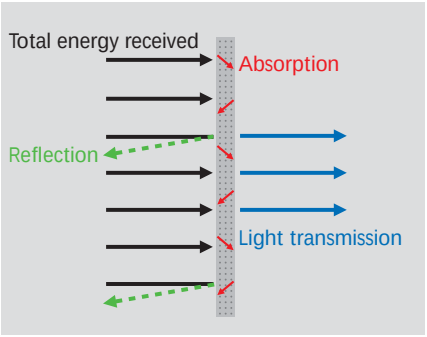


Curved glass with SEFAR® Architecture Vision AL/CU 140/70

Product overview and functional properties

SEFAR® Architecture Vision offers not only multiple design possibilities. Depending on the mesh opening and the metallic coating used, light transmission and thermal conductivity can be influenced. A significant reduction in light and heat transmission is achieved in particular when using the thicker fabrics.

In combination with movable glass panes, a pleasantly shaded room environment can be achieved depending on the amount of external light. At the same time, much of the sun's warmth is reflected away leading to a reduced need for air conditioning which saves energy and helps to protect the environment.



General product overview with g-values and light transmission

Fabric type	140/25	140/35	140/50	140/70	260/25	260/55
General information						
Material thickness (mµ)	140	140	140	140	260	260
Mesh opening (%)	25	35	50	70	25	55
Useable fabric width (cm)	155	155	155	155	155	155
Metallic coating						
Aluminum						
Product identification	**AL 140/25**	**AL 140/35**	**AL 140/50**	**AL 140/70**	**AL 260/25**	**AL 260/55**
g-value (%)	32.8	41.3	50.7	61.6	28.7	53.9
Light transmission Tv (%)	19.7	31.3	44.7	61.8	21.7	49.9
Copper						
Product identification	**CU 140/25**	**CU 140/35**	**CU 140/50**	**CU 140/70**	**CU 260/25**	**CU 260/55**
g-value (%)	33.8	39.9	49.6	62.8	31.2	52.4
Light transmission Tv (%)	19.0	27.7	42.6	61.0	20.0	46.2
Aluminum/Copper						
Product identification	**AL/CU 140/25**	**AL/CU 140/35**	**AL/CU 140/50**	**AL/CU 140/70**	**AL/CU 260/25**	**AL/CU 260/55**
g-value (%)	35.2	42.3	51.0	62.4	33.4	54.5
Light transmission Tv (%)	18.6	29.2	43.0	60.7	21.3	48.7
Chromium						
Product identification	**CR 140/25**	**CR 140/35**	**CR 140/50**	**CR 140/70**	**CR 260/25**	**CR 260/55**
g-value (%)	35.7	41.8	52.2	61.7	32.3	54.8
Light transmission Tv (%)	19.8	29.2	44.4	60.0	20.8	49.1
Titanium						
Product identification	**TI 140/25**	**TI 140/35**	**TI 140/50**	**TI 140/70**	**TI 260/25**	**TI 260/55**
g-value (%)	36.5	42.7	52.1	63.3	33.0	55.1
Light transmission Tv (%)	19.7	29.4	44.0	61.5	18.7	48.9

Results for g-values and light transmission according to Test #452410 on 10 Nov. 2009, Swiss Federal Laboratories for Materials Testing and Research, St.Gallen (EMPA)

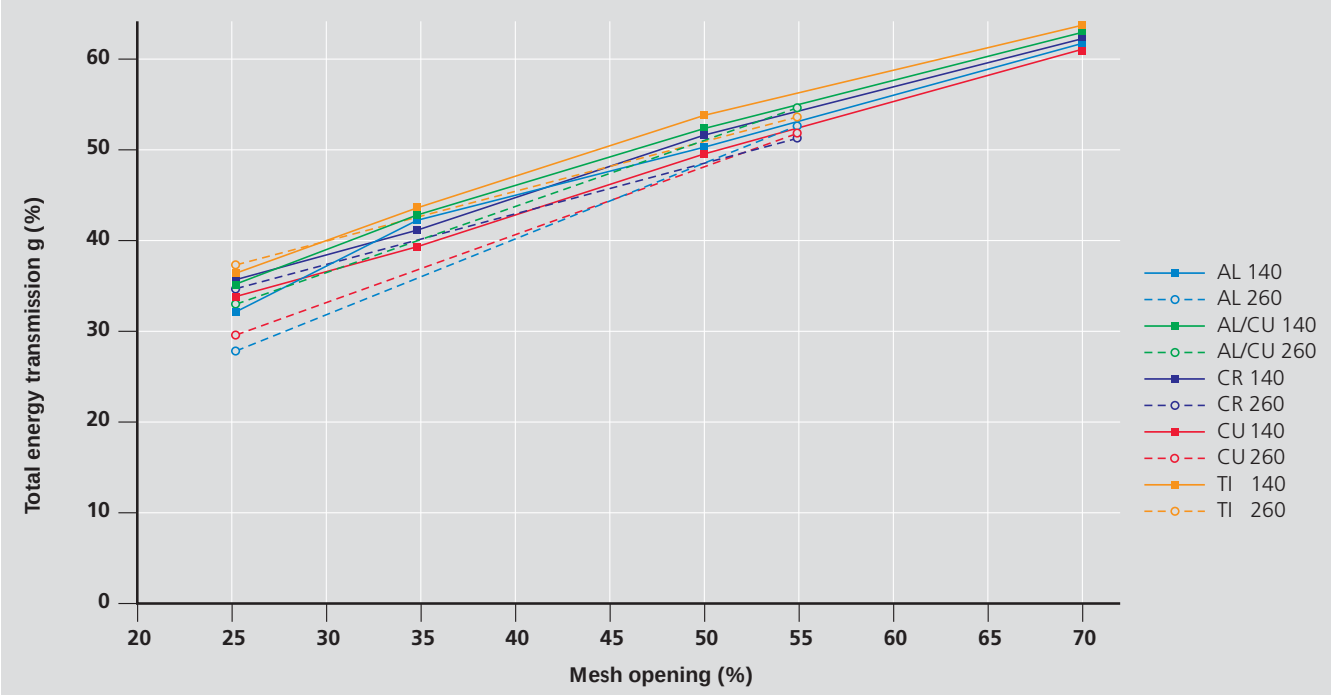
(Details regarding results for gold on request)

The total amount of energy transmission (g-value) according to European Standard DIN EN 410 states how much energy from sunlight reaches the interior room via the glazing.

The higher the g-value, the higher the passive solar energy gain. The lower the value, the better the protection provided against strong sunlight.

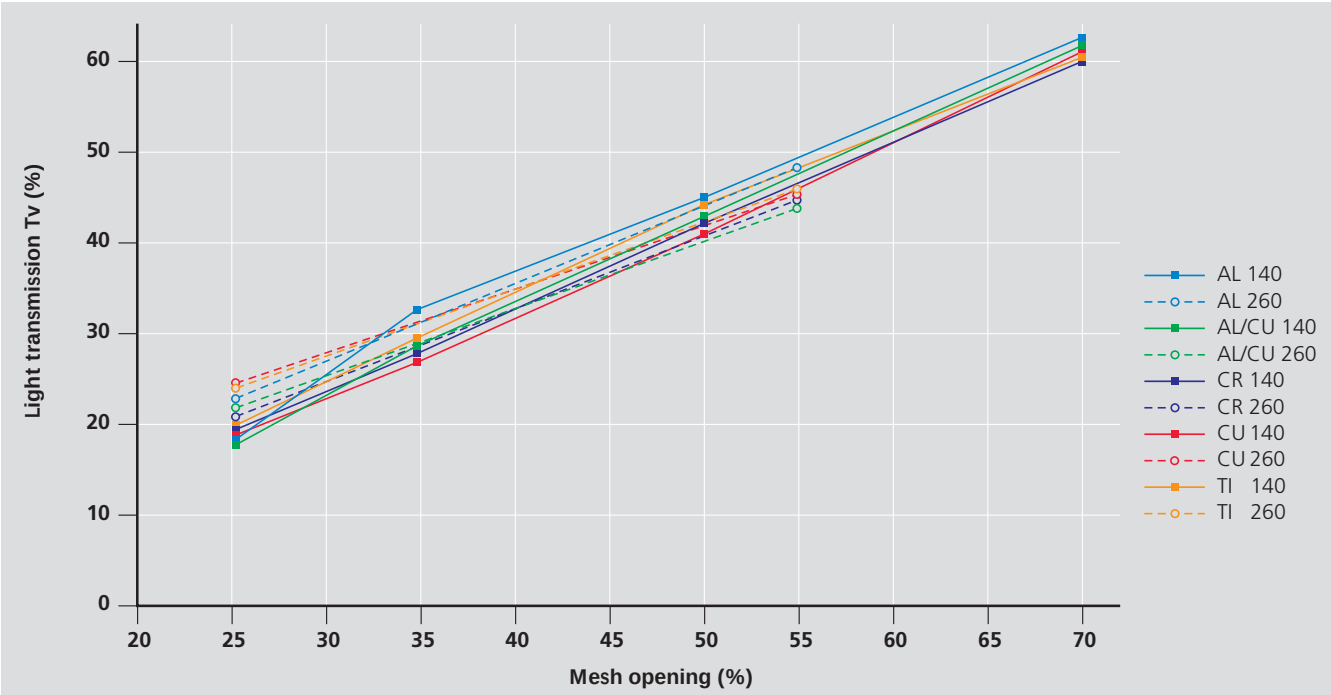
The g-value is derived from two factors: direct sunlight transmission and secondary heat dissipation.

Total energy transmission with glass-fabric combination



Graph from test report by Swiss Federal Laboratories for Materials Testing and Research, St.Gallen (EMPA), #452410 on 10 November 2009

Light transmission with glass-fabric combination

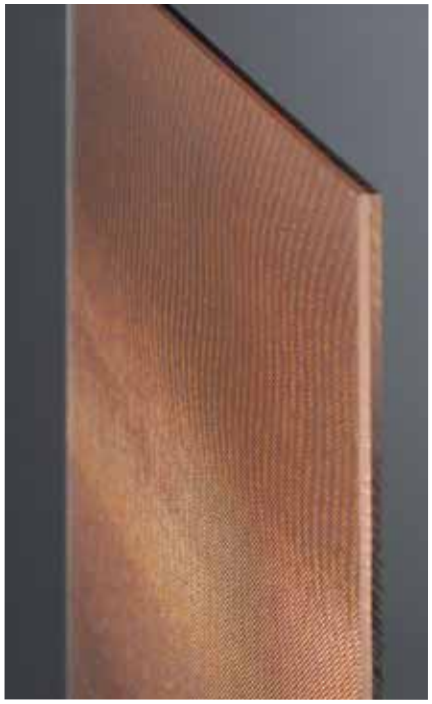


Graph from test report by Swiss Federal Laboratories for Materials Testing and Research, St.Gallen (EMPA), #452410 on 10 November 2009

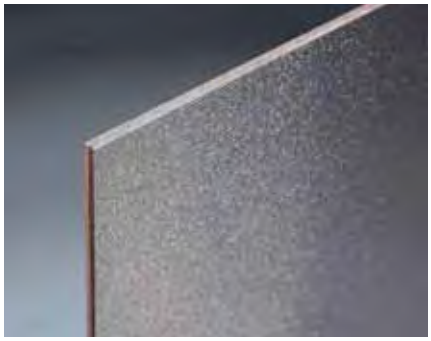
Vision and plastics

Combining SEFAR® Architecture Vision with plastic (PETG) instead of glass makes additional applications possible. Compared with glass, it is much lighter and allows for the construction of three-dimensional structures. With the targeted use of light sources, similar exciting effects can be created as with glass. Other uses exist in particular in relation to temporary architecture and for exhibition or store fittings. The varying requirements of room design can be easily taken into account thanks to its straightforward versatility. Further applications in the field of industrial design are also within the scope of this combination.
Synthetic panels come with a choice of surfaces ranging from completely transparent and satin-finish through to various structures. Interesting effects can be created here as well, similar to the use of different glasses.
PETG has a thickness range of 3 mm – 24 mm, while the continuous working temperature of the product is around 70° C. On request, the plastic can be rendered UV stable making applications out of doors a realistic possibility.

Fabric: CU 260/55
Plastic covering: structured (wavy lines)

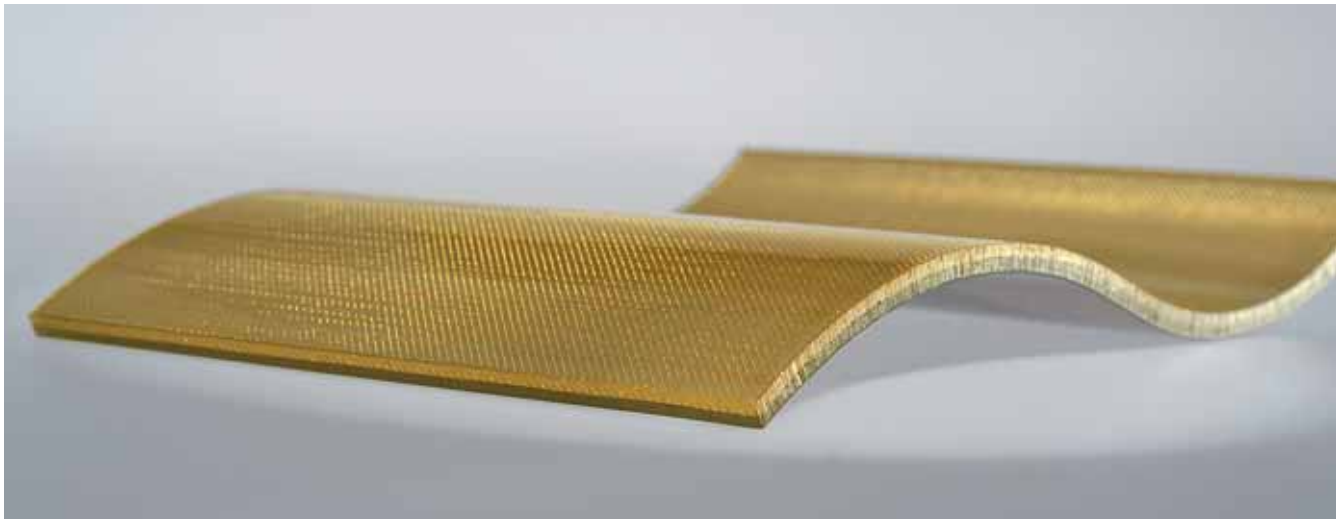


Fabric: CU 260/55
Plastic covering: structured
below: reverse side



Fabric: AU 260/25
Plastic covering: clear

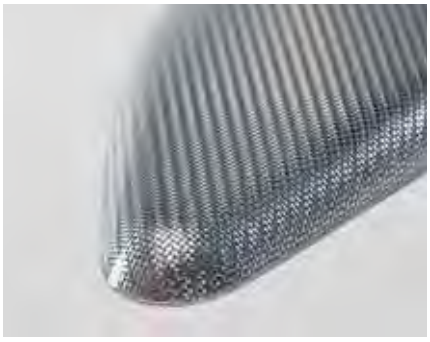
Fabric: CR 140/50
Plastic covering: clear

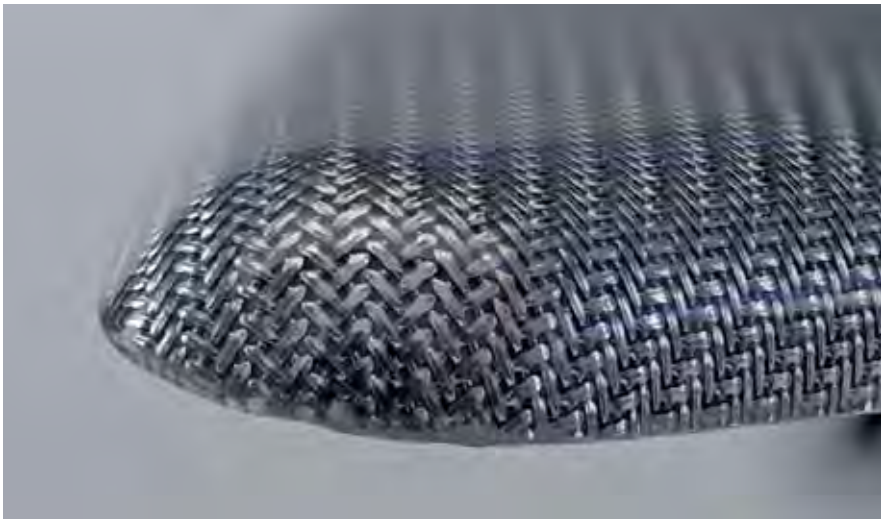


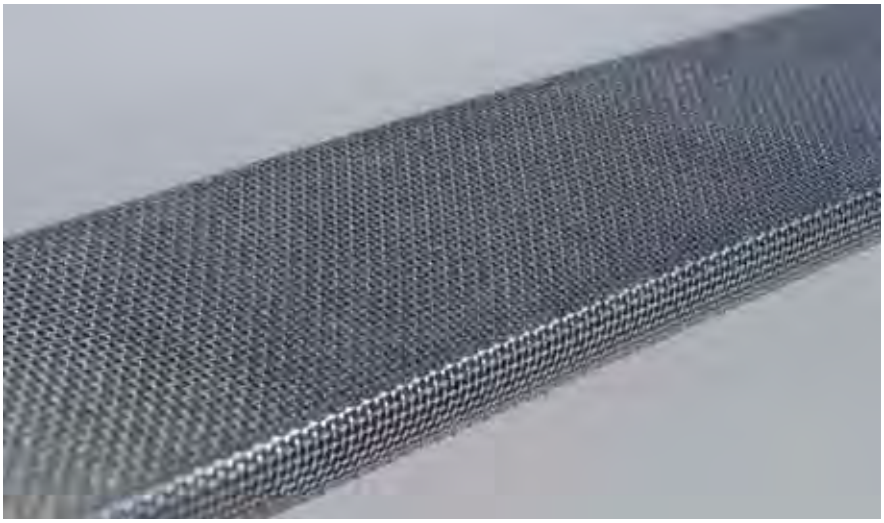
Vision and industrial design

SEFAR® Architecture Vision when used as a fabric surface covering offers further possibilities in the field of industrial or interior design. This lightweight, flame retardant, synthetic material with single-side metallic coating has critical advantages over all-metal meshes. The most obvious is its considerably lower weight, which plays an important role in portable consumer goods or transportation. Less weight means lower energy costs in transit – an important economic criterion these days.
In addition to its weight advantage, straightforward and cost effective processing is a further deciding factor. Previously considered to be an impossibility, three-dimensional forms have suddenly become a reality thanks to the tear-resistant fabric.
The various metallic coatings ranging from cool aluminum and warm copper or gold to hi-tech titanium create the desired effect for each and every industrial or interior design. Printing onto the fabric is also possible and the final step is to cover the metallic coating with a stable and durable protective lacquer. The pleasing textile-like appearance of the finished product remains unchanged.

Fabric: AL 260/55
(below left, below right, center)





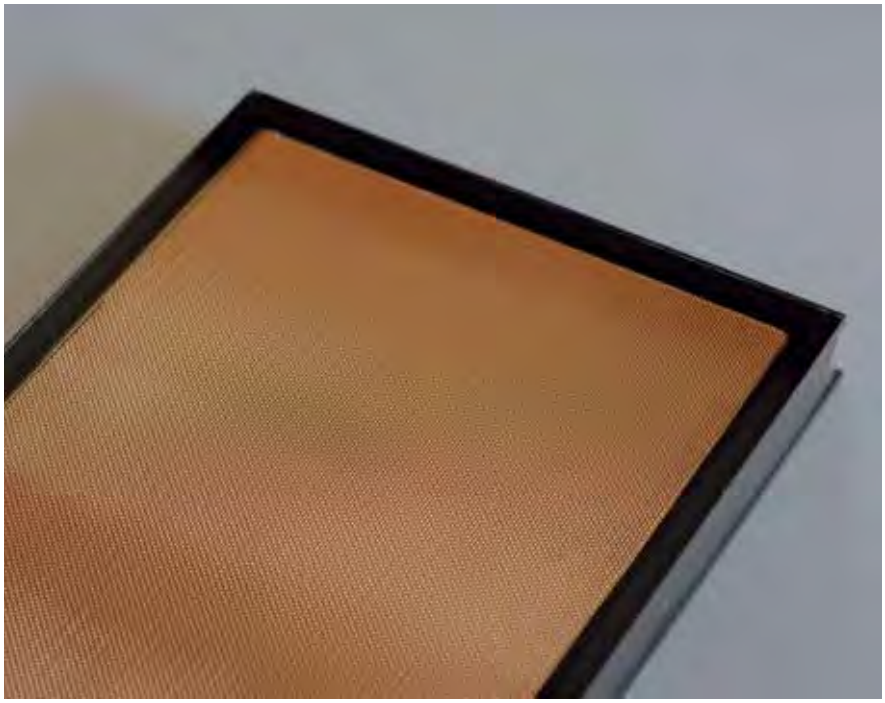


Fabric: AL 260/55

Vision and insulating glass

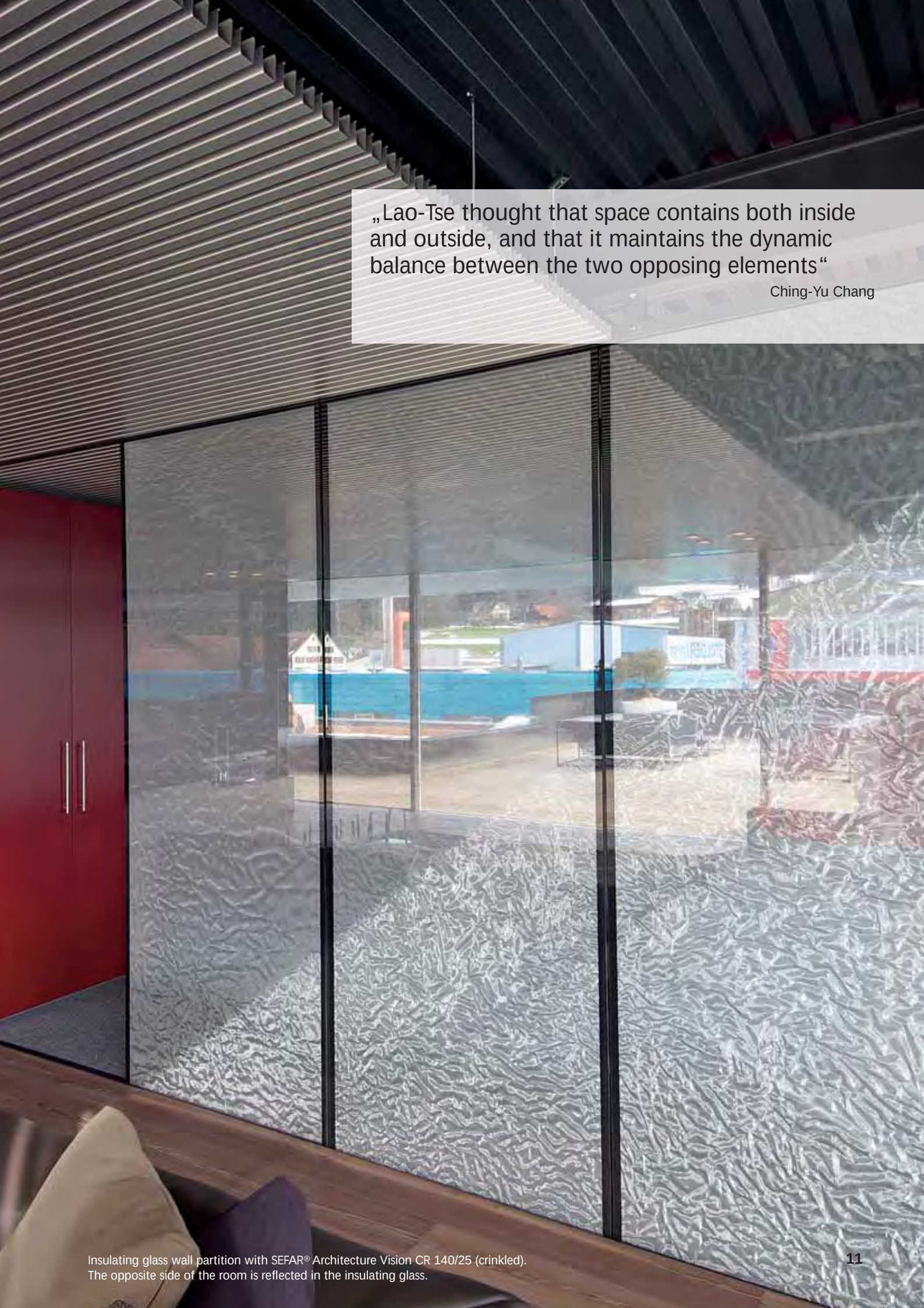
SEFAR® Architecture Vision can also be supplied in a special insulating glass. In this case, the fabric is not laminated but tensioned across the frame and enclosed between the two glass panes. Besides the use of flat fabric as in laminated glass, here it can also be utilized three-dimensionally. For this purpose, the fabric is crumpled and then fixed to the frame. With careful lighting, the three-dimensional effect is further enhanced. Since the fabric is crumpled by hand, no single frame is ever identical.
Fabric printing is also possible for this type of application as are moiré effects.
The combination of flat fabric and crumpled fabric frames produces yet further interesting design possibilities.

Insulating glass with SEFAR® Architecture Vision CU 260/55 and AL/CU 260/55



Insulating glass with SEFAR® Architecture Vision CR 140/50 (two layers)

Detail of SEFAR® Architecture Vision CR 140/25 (crinkled)



„Lao-Tse thought that space contains both inside and outside, and that it maintains the dynamic balance between the two opposing elements“

Ching-Yu Chang

Insulating glass wall partition with SEFAR® Architecture Vision CR 140/25 (crinkled).
The opposite side of the room is reflected in the insulating glass.