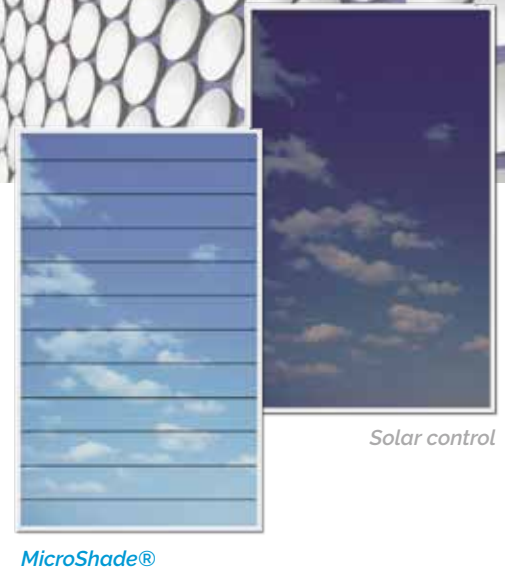


# Comparison Solar control (Suncool 30/17) and MicroShade®

A good indoor climate is important for people to thrive. Employees who thrive are more productive, engaged, happy, loyal and satisfied. In order to obtain a good indoor climate the facades are critical as they will determine the indoor temperature, daylight and view out.

Below the two facade solutions MicroShade® and solar control are compared on the most important parameters for the experienced indoor climate; g-value, beam shading, daylight through the façade, colour rendering and view out. Furthermore the predictability of the solutions is compared.



<b>Thermal indoor climate</b>	g-value*	√	√
	Beam Shading	√	X
<b>Daylight and view out</b>	Daylight*	√	X
	Colour Rendering	95	87
	View out*	100%	100%
<b>Predictability</b>	Wind Stability	√	√
	Control	No control	No control
	Overall Predictability	100%	100%

\*See graph on next page

√: Very good

(√): Good

(X): Poor

X: Very poor

The g-value of the solar control glazing is constant throughout the year at approximately the same level as the MicroShade in summer, as seen on the graph on the next page. The solar control glazing however does not provide a beam shading. The solar control allows app. the same amount of daylight to pass through as the MicroShade, but the direct light is not shaded during summer and the colour rendering is poor, so the overall daylight performance is not as good as the MicroShade. The view out is the same for both solutions when glare is not considered. None of the solutions are sensitive to wind and the overall predictability is 100 % for both solutions since they are fixed.

Below is shown graphs for the two solutions of the monthly effective g-value, average monthly amount of daylight, amount of daylight on a summer day and the number of hours with a view out.

## Assumptions

### Types of glazing

3-layer low energy glazing both for MicroShade® and Suncool 30/17

### Solar control

Suncool 30/17

### Orientation

South façade

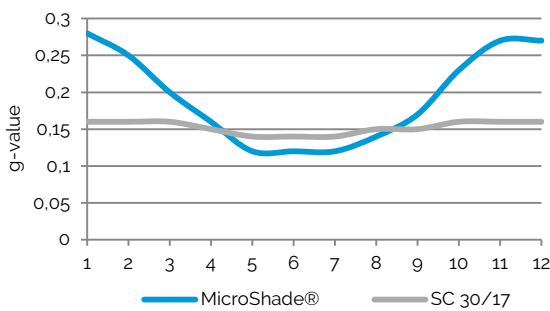
### Weatherdata

Copenhagen, Meteonorm ver. 7.1.1.122

### Effective g-value

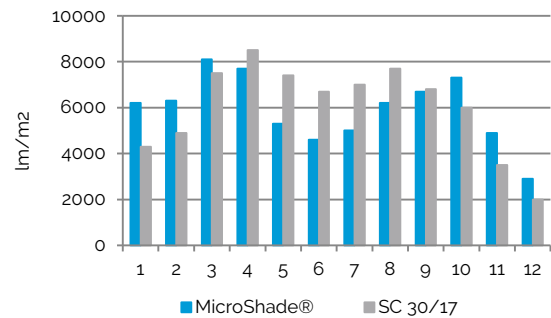
The effective g-value is more or less constant over the year for the solar control, which results in a strong shading during the entire year.

For MicroShade the g-value is lowest during summer and hence keeping the heat out when most needed. During the winter, where the solar irradiation can be used as "free" heating the g-value is higher and hence letting in more solar irradiation.



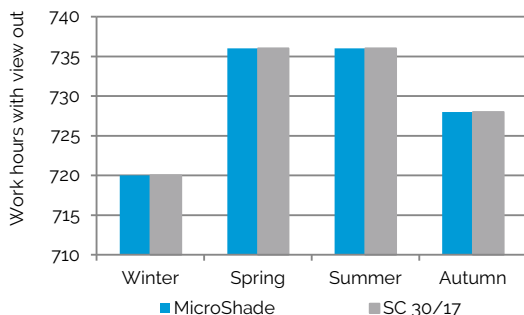
### Daylight trough facade

The amount of daylight through the façade is measured in lumens/m<sup>2</sup>. As seen on the graph the solar control allows more daylight to pass through the façade in summer and less than MicroShade in the winter. The two solutions allow the same amount of diffuse (soft) light to pass, but the direct sun is kept out during summer with MicroShade, while partly allowed during winter.



### View out

The view out is measured by the number of work hours, where it is possible to have a view out. Both with MicroShade® and the solar control glazing it is possible to have a view out at all times. Glare is not taken into considerations.



### Daylight through facade, summer day

On a sunny summer day the daylight levels gets up to app. 18.000 lumens/m<sup>2</sup> for the solar control as it is not able to shade the direct sun, while MicroShade® provides levels below 10.000 lumens/m<sup>2</sup> because it shades the direct sun. There is a large risk that the solar control glazing will cause glare due to the direct light.

