

Shading – consistently block out the sun in summer

Inadequate shading is often the reason why rooms are too hot. The solar protection control therefore has to protect the rooms against direct solar radiation and, when necessary, rectify incorrect blind settings made by employees.

Action

Set the control for the solar protection (slat blinds, roller shutters, façade awnings, window shutters or indoor blinds) so that the sun never shines directly into the room.

Requirement

The building is equipped with a control that automatically regulates the solar protection.

Reducing the indoor temperature by 1°C increases the energy consumption of the air conditioning (cooling) system by 3 percent

What to do

1. Identify “overheated” rooms

Find out which rooms are too warm in summer.

2. Check and correct the control for the blinds

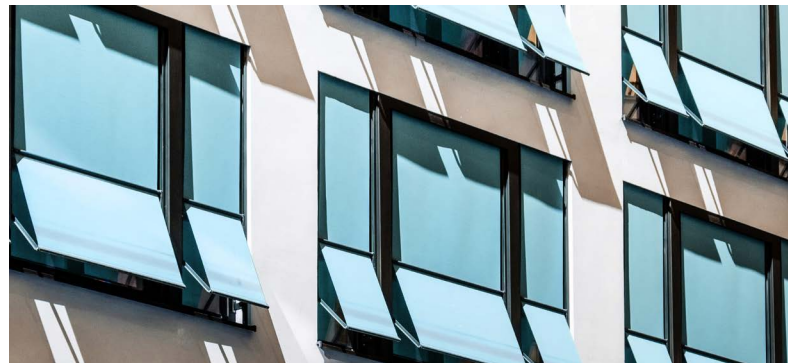
- Solar threshold: is the solar protection closed in case of direct solar radiation? (Also see overleaf.)
- Wind threshold: does the solar protection open correctly? (It should not open simply because there is a gentle wind.)

3. Check the timeswitch programme

Is the timeswitch programme set correctly? If necessary, adjust it to the current situation in your organisation.

4. Inform your employees

Inform your employees about the five tips for a pleasant indoor climate in summer (see overleaf).



5. Note, observe and correct

- Enter the new settings in the logbook.
- Observe the users (are there any complaints?) and correct the set values if necessary.

Costs – effort

Your own labour: about half a working day

Please note!

- On blinds with slats, set the angle so that direct solar radiation is avoided but sufficient light is supplied to the room. This can eliminate the need for electric lighting.
- The solar protection can be operated decentrally (rotary crank handle, roller shutter belts, motor) or centrally (motor). Users should be able to override central systems if necessary. Regardless of the system, employees must be aware that major expenditure (of energy) is required to restore the climate to a comfortable range once rooms become overheated in high summer.

Additional explanations

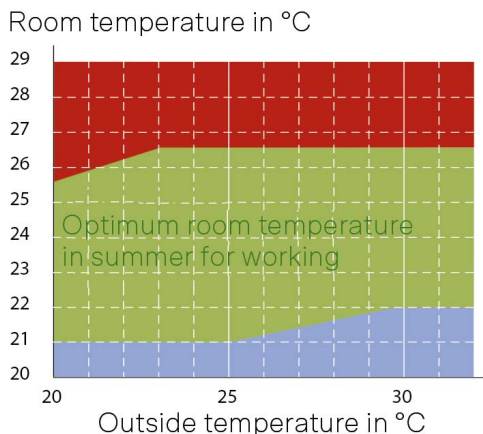
Effectiveness of solar protection

External shading systems with awnings, blinds, shutters or roller shutters are effective. They keep the heat outside the building and reduce incoming thermal radiation by up to 75 percent. If no external shading equipment is available, internal fittings such as roller blinds or curtains are a solution. These are not as effective because sunlight and (thermal) energy are already present in the room. Nevertheless, internal fittings are better than no protection whatsoever.

Solar protection films: special solar protection films are applied to the outside of windows to reflect the sunlight. However, they are not as effective as awnings, blinds or shutters. They also allow less daylight to enter and actually prevent solar radiation from entering when it is wanted in winter.

Correct indoor temperature in summer

When it's hot outside during the summer, the indoor temperature in offices will often rise as well. If you can set the indoor temperature yourself, the values in the following table will guide you:



In summer, the optimum working temperature is between 22 and 26 °C. Avoid lower temperatures because nothing is more disagreeable than coming out of a “cold” office at 18 °C into the blazing summer heat. Please note: your air conditioning system will not cool any faster if you adjust the

thermostat to the lowest possible setting. If you want the indoor temperature to be 24 °C, then set 24 °C. Not 18 °C!

Keep hot air outside!

Close windows and doors when it's warmer outdoors than inside the building. That way, you'll stop the warm outdoor air from entering and keep the pleasantly cool indoor air inside the building at the same time. To help air circulation, you can open the windows on the shaded side of the building or open doors leading into corridors. Also: use night cooling as far as possible. Incidentally: the windows of air-conditioned buildings must always stay closed.

Correct the user settings

To help employees make consistent use of the shading system, the control for the blinds can intervene to take corrective action – for example, to lower all the blinds in the building at 12:30 pm. This closes all the blinds that were open and users must manually “override” the setting again to open them. Another option is to set the control so that it sends out the “Lower blinds” signal every 2 to 3 hours on days when the outside temperature is more than 22 °C and the sun is shining, so “forgotten” blinds are closed. (But please note: users could become annoyed if the intervals are too short).

Correct behaviour for employees

Here are five steps that employees can take to improve the indoor climate noticeably during summer.

- Activate the shading early in the day
- Close doors and windows
- Use night cooling
- Set the right indoor temperature
- Reduce indoor heat dissipation (switch lights off)

Additional information

- [Pleasant indoor climate – five tips for summer; fact sheet to inform employees](#)
- [Stay cool – thermal protection for offices and commercial premises](#)