INSULATION & DESIGN WITH GLASS SANCO®

SANCO® tips

Condensation with insulating glass

The problem is well-known. When the weather turns cold, the windows mist up, sometimes on the inside and sometimes on the outside, and very quickly the search is on for the guilty party. The problem is relatively easy to solve and customers – that is the building owners and also the tenants – should know how to solve it, as over the long term serious damage can be prevented.

Condensation (the precipitation of water vapour) occurs when air meets colds surfaces. The damp air cools. As is well known, cold air cannot hold as much moisture, so the excess humidity condenses on the surface. In the case of insulating glass the condensation can form on the inside or the outside.

Condensation on the room side

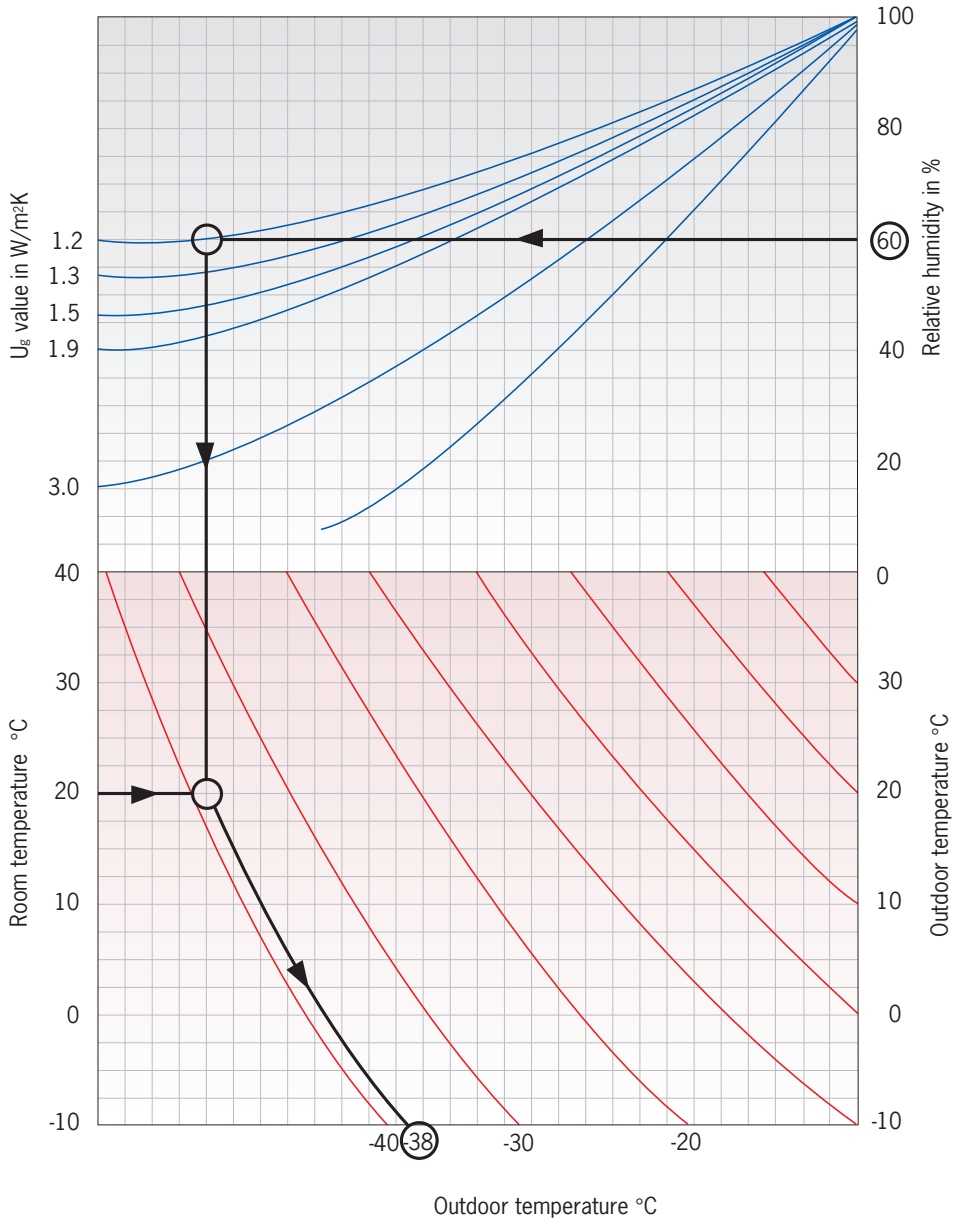
Damp rooms such as bathrooms, swimming pools or other rooms with high humidity, to some extent also kitchens, are particularly affected. Modern window designs have better sealing than old windows. As a result there is less heat loss, but the removal of humidity is also prevented. Repeated, short ventilation can, however, mostly prevent condensation.
New high thermal insulating glass like SANCO Plus already contributes to a reduction in the condensation on the inside. The side facing the room is warmer than with conventional insulating glass. As a result there is virtually no longer any cold window surface where damp room air can form condensation. Nevertheless, even with modern and therefore tightly-sealed windows, ventilation should not be ignored. Refreshing the air is important for people, it invigorates the spirit and fresh air heats up quicker, also yielding an energy saving.

Condensation on the outside

The surface of the glass facing the weather is relatively cold. For this reason condensation is formed, if the level of humidity is high. High thermal insulating glass with a low U_g value in particular heats up little on the outside. This aspect of low energy flow to the outside is at the same time an advantage that saves heating costs. Of course, condensation on the outside occurs more or less frequently depending on the weather. Roof windows are particularly seriously affected, as they are subjected to temperature fluctuations more than vertical glazing.

The solution: SANCO Plus® EN

Dew point diagram (in accordance with DIN 4701)



- The condensation on insulating glass, whether inside or outside, depends on physical aspects and the weather. Occasional condensation on the outside surfaces as a result of changing climatic conditions cannot be avoided.
- SANCO Plus significantly reduces the condensation on the inside. Occasional condensation on the outside is, however, also a sign of the high quality of the thermal insulation and as a result of the energy saving.
- Thus modern thermal insulating glass cannot suppress physical facts – instead these occurrences are indicative of the quality of the products.
- When advising the customer, the dew point diagram is therefore an excellent instrument for showing the building owner the advantages of high thermal insulating glass.

Example:
Assumptions:
Relative humidity: 60 %
Insulating glass SANCO Plus EN
U_g value: 1,2 W/m²K
Room temperature: 20 °C

Result:
In theory condensation will form on the outer surface of the glass pane on the room side at an outdoor temperature of approx. -38 °C.

You will find more information in the SANCO application notes.