

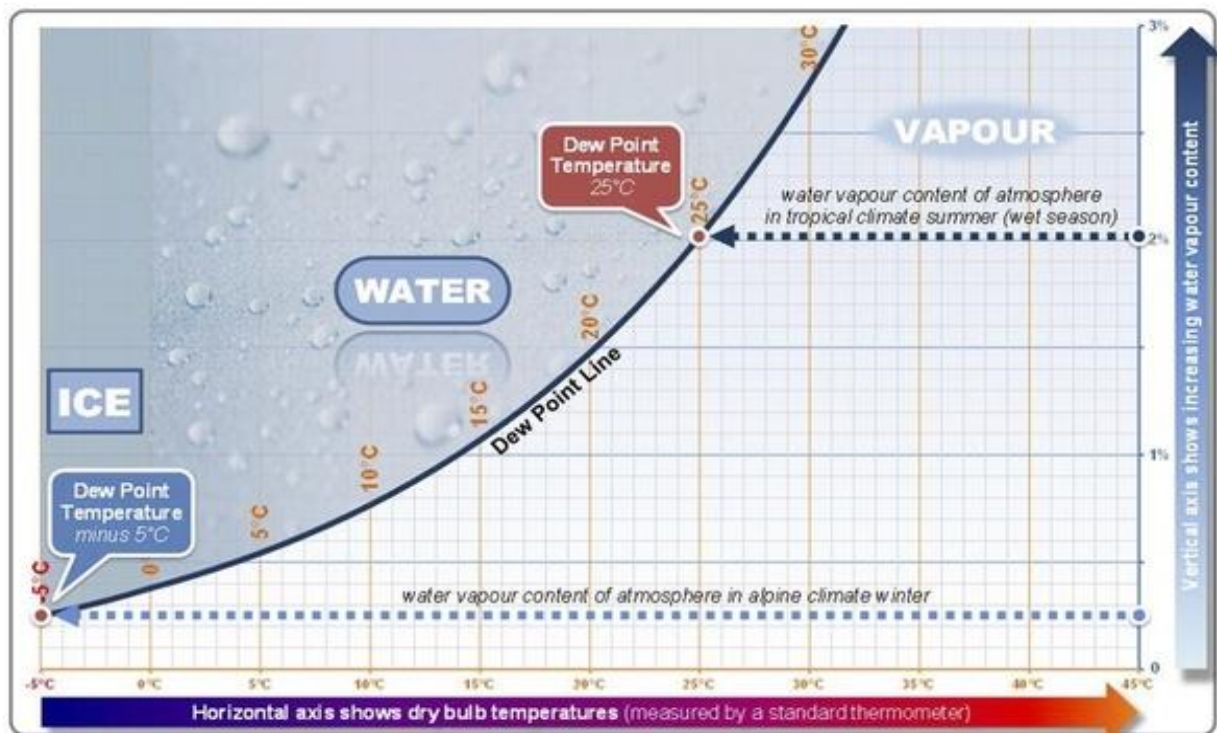
VENTILATION OF THE ROOF COVER IS NECESSARY

There are two important reasons for roof ventilation.

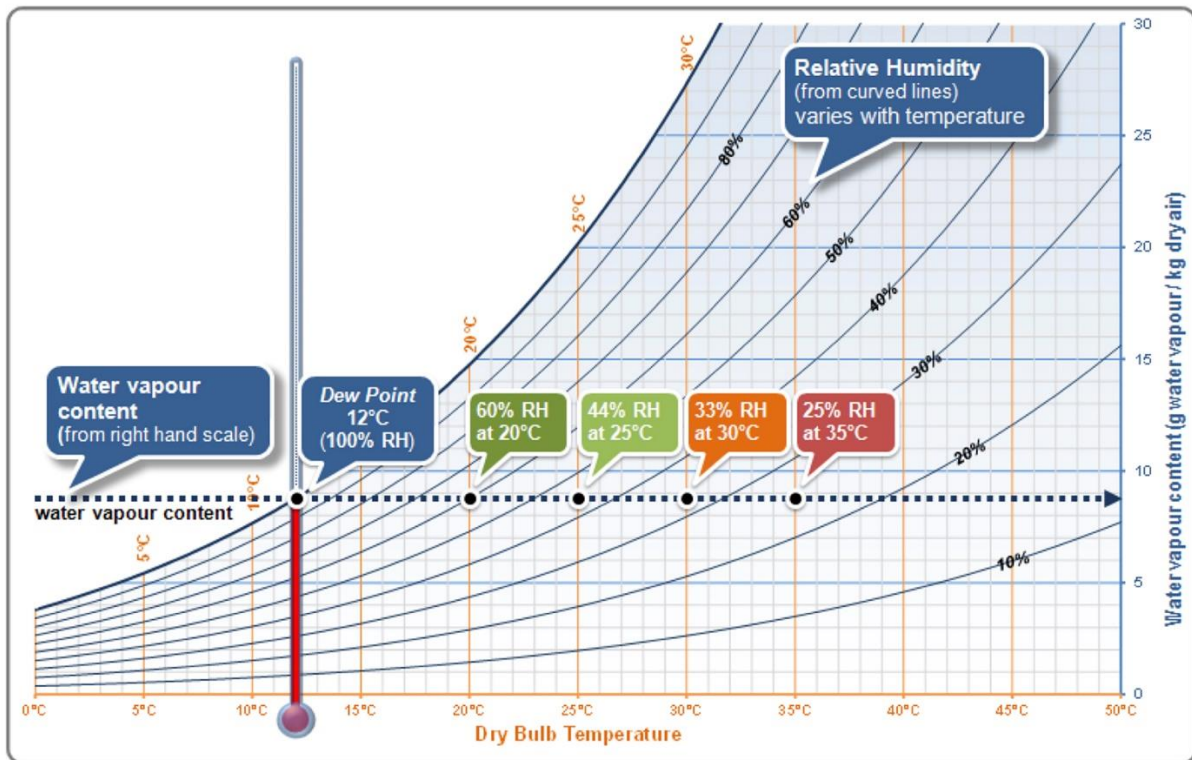
The first has been known for hundreds of years. It is the formation of condensate on the inside of the roof sheathing in bad weather. Condensed water vapor settles on the underside of the covering and then drains down the structure and causes damage.

In order to prevent this undesired phenomenon, it is necessary to realize a sufficiently large ventilation gap between the roofing foil and the roofing. Furthermore, ventilation chimneys, ventilation tiles or ridge strips are placed in the upper part. Nevertheless, after these modifications, there is only a very low natural air exchange. If an excessive amount of condensate appears under the roof cladding, these common ventilation elements are no longer sufficient and a more efficient solution must be sought. This is the wind-powered ventilation turbine. It can ventilate many times more air against the classic passive elements of ventilation. Ventilation turbines are therefore essential, especially for difficult-to-ventilate and extremely stressed roofs.

These active ventilators are mostly used to ventilate sheet metal halls, hangars, warehouses, farm buildings etc. Wherever the roof covering is difficult to breathe (bitumen sheets, PVC foils, trapezoidal sheets, folded sheets, pressed sheets, etc.). In addition to the operating humidity, the metal roofing is heavily loaded by freezing in the winter, which results in the deposition of unwanted water in the structure. The worst situation for these roofs occurs in the winter when the outside temperature is low and around the dew point temperature (the dew point is the temperature to which air must be cooled to become saturated with water vapor). Therefore, problems with condensate also appear on older and relatively problem-free buildings. However, if the roof is well ventilated, it provides reliable protection for decades.



(<https://www.abcb.gov.au/Resources/Publications/Education-Training/Condensation-in-Buildings>)



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The second reason for roof ventilation, which is much more modern and up-to-date, is ventilation of overheated roof cladding during the summer, when the roofing heats up to temperatures above 70 °C and gradually transfers heat through the insulation layers to the building interior. This results in a significant thermal load on the building. Houses equipped with air conditioning units will significantly feel this load in the increased performance of air conditioning and thus the cost of its operation.

If ventilation turbines are used on the roof, which can reduce the temperature under the roof cladding by up to tens of °C, they will significantly lighten the entire construction. The result is a significant reduction in the consumption of the air conditioning unit.