Reliable Condensation Protection For AHU Casings.

AHUs meeting the best thermal bridging class criteria to DIN EN 1886 for condensation prevention on the casing.

robatherm

the air handling company

Casings reliably protected from condensation

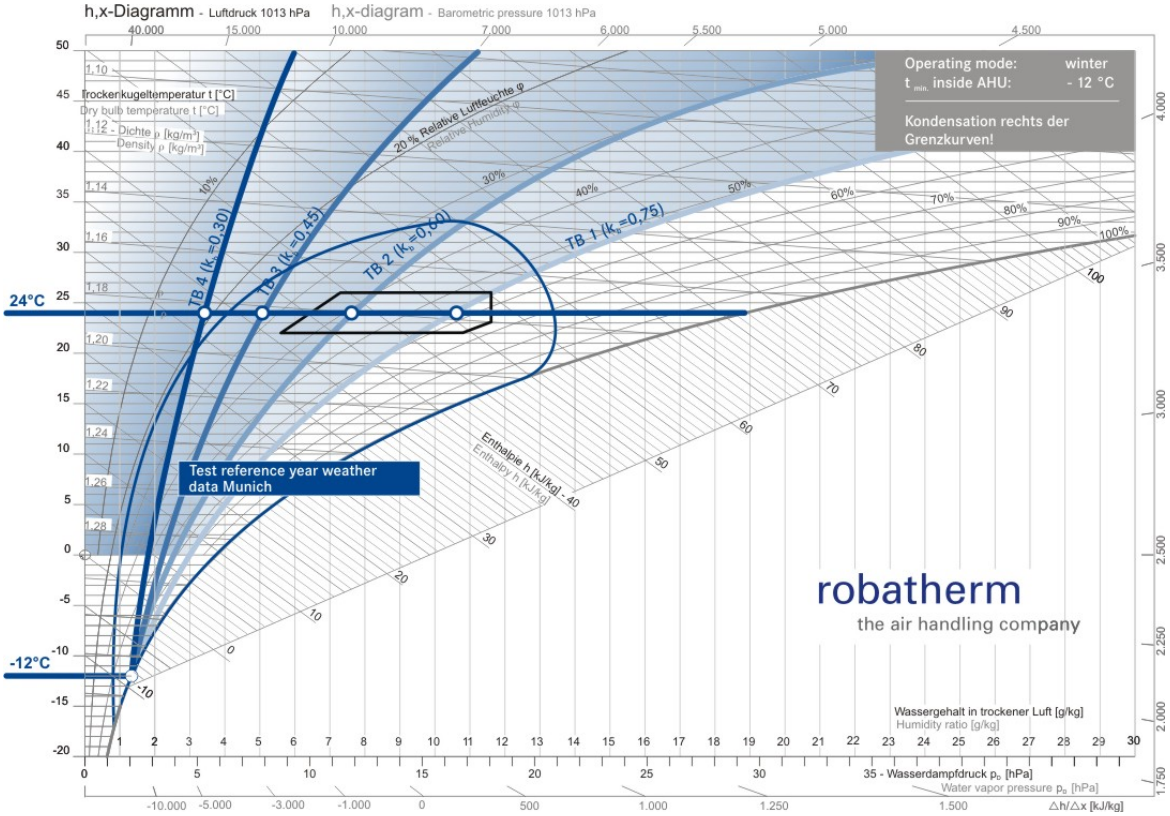
Even in everyday air handling applications, unfavorable weather conditions may give rise to condensation forming on the casing of commercially available air handling units (AHUs). Extreme weather conditions, or mechanical equipment rooms where high temperatures and humidity levels prevail, are observed more and more frequently. AHUs with poor technical characteristics in terms of thermal insulation (thermal bridging) will then experience condensation on the casing surface.

The condensation risk of a casing construction is decisively determined by its quality related to thermal bridging (k_b factor). There are substantial differences between the thermal bridge classes, as well as within each certain thermal bridge class. In contrast, insulation characteristics such as volume weight, insulation thickness, and thermal conductivity are less relevant. It is the quality of thermal decoupling of the entire casing construction that plays the decisive role.

Practical example: Condensation risk in winter

Basic conditions		Condensation starts at	
Installation indoors		TB4 (k_b=0,30)	24 °C, 18 % r. h.
Operating mode	winter	TB3 (k_b=0,45)	24 °C, 28 % r. h.
Outdoor air temperature	-12 °C	TB2 (k_b=0,60)	24 °C, 40 % r. h.
Mech. equipment room temp.	24 °C	TB1 (k_b=0,75)	24 °C, 57 % r. h.

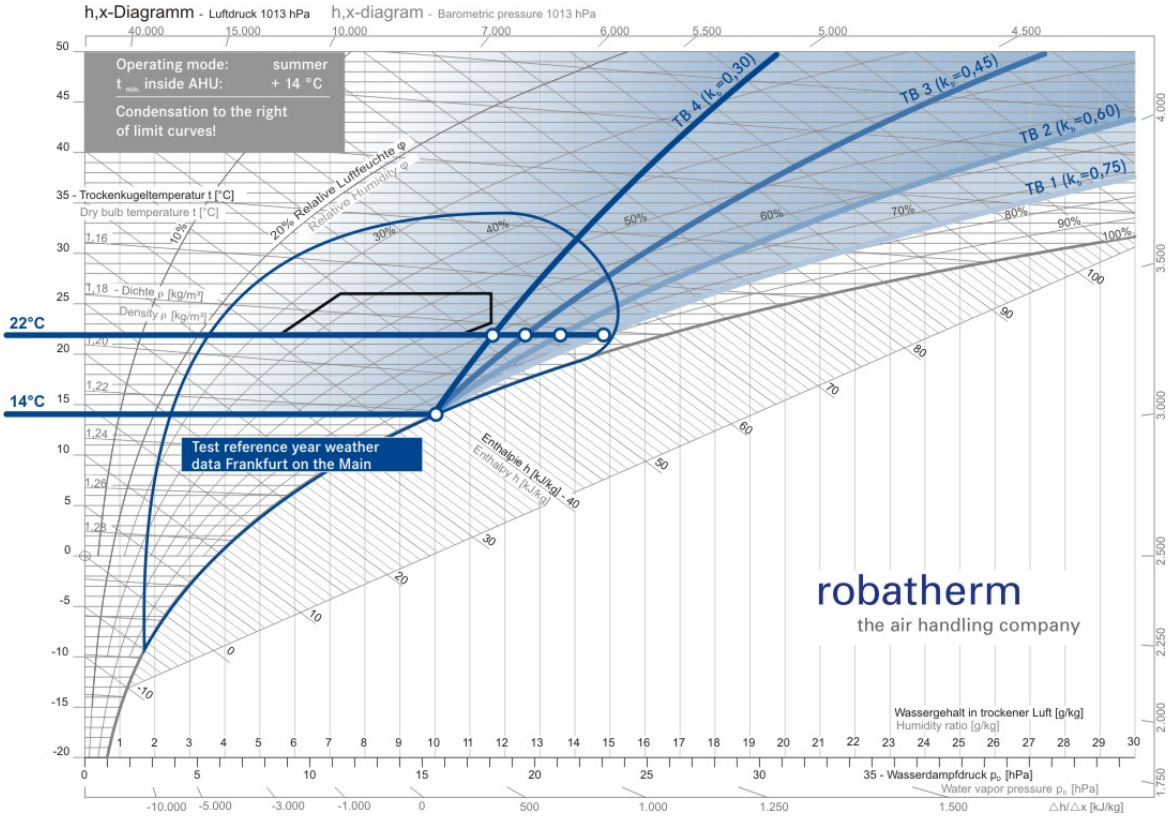
Assuming the above basic conditions, condensation begins in the area to the right of the respective limit curve.



Practical example: Condensation risk in summer

Basic conditions		Condensation starts at	
Installation indoors		TB4 (k_b=0,30)	22 °C, 71 % r. h.
Operating mode	summer	TB3 (k_b=0,45)	22 °C, 76 % r. h.
Temperature after chiller	14 °C	TB2 (k_b=0,60)	22 °C, 82 % r. h.
Mech. equipment room temp.	22 °C	TB1 (k_b=0,75)	22 °C, 89 % r. h.

Assuming the above basic conditions, condensation begins in the area to the right of the respective limit curve.



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