

DEGREE OF COMFORT OFFERED BY A WARM ENVIRONMENT

As we have already seen, the installation of the radiators must follow particular rules, so as to obtain the maximum output. This can be reached if we connect it hydraulically following the classic hook-up or the new Modul System with the UNIVER valve.

However even if you follow the previously-mentioned rules, this may not be sufficient to reach maximum room comfort.

The well being feeling in a warm environment is the combination of various factors, such as the **inner air temperature**, heat loss and the **operating temperature**. The heat loss, which is the difference of temperature at different levels between floor and ceiling, must be the lowest in order to avoid people having a kind of 'cold feet' feeling, due to the great difference of air temperature between floor and ceiling.

The following situations contribute to reduce the heat loss:

- * rational location of horizontal developed radiators, installed in recesses or on external walls to mitigate the negative effects of cold radiation of windows and boundary walls
- * low operating temperatures of the installation with medium Δt between the water in the radiator and the room air equal or little lower than 50° C.
Example:
Medium water temperature 70° C
Medium air temperature 20° C
Medium Δt 50° C
- * limited room height, not higher than 3 m, to avoid excessive air stratification, warmer under the ceiling, leading to an increase in loss of heat

The inner room temperature, which is the average of the inner air temperature and the radiant temperature of walls and windows, gives the degree of well-being for a person, taking into consideration exchanges, occurring between the person and the room air for convection and with the walls and windows for radiance.

There is interdependence between convection and radiance to maintain the same comfort. That is to say that if one increases the other must decrease and vice versa. Having room comfort means that when windows and walls are cold, the inner air temperature has to be higher to balance the heat exchanges between the person and the things surrounding him.

Conversely isolated walls and double glazed windows permit comfort to be reached even with a lower inner room temperature, reducing the body heat losses due to radiance.