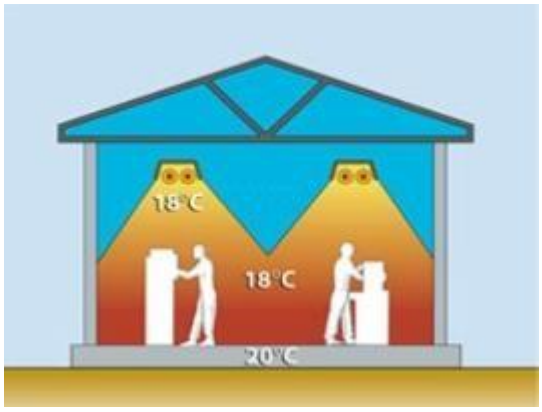
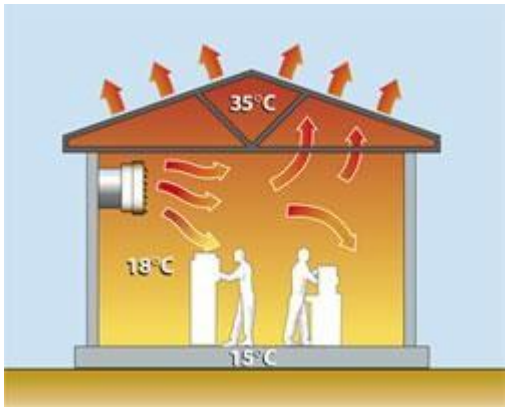
Introduction to radiation

SIABS heaters operate through RADIANT HEATING: all bodies with a temperature above absolute zero (- 273 °C) emit thermal energy in the form of infrared rays (same as the sun), due to the vibration of the atoms that make up the body itself.
This energy travels in straight lines at the speed of light and when it encounters a body with lower temperature is into immediately transformed heat, so it heats only people and surfaces and not the surrounding air.





Heat by radiant heating has **IMPORTANT ADVANTAGES** compared with conventional air heating as it is **transferred only where needed**, without needing to heat the air surrounding people and surfaces object of heating.

In particular, the heating takes place without disturbing people, with constant results at different distances. No air draughts and no movement of dust (harmful for some products). **Noise level is very low.**

Savings

Radiant heating systems lower the cost of initial investment due to the lower installed power necessary and the easiness of installation.

Even higher savings are obtained on running costs thanks to the lower installed power, speed to reach the operating temperature, possibility of heating localised zones and no air stratification.
As partial zones installations are possible you can increase the installed power in successive steps.

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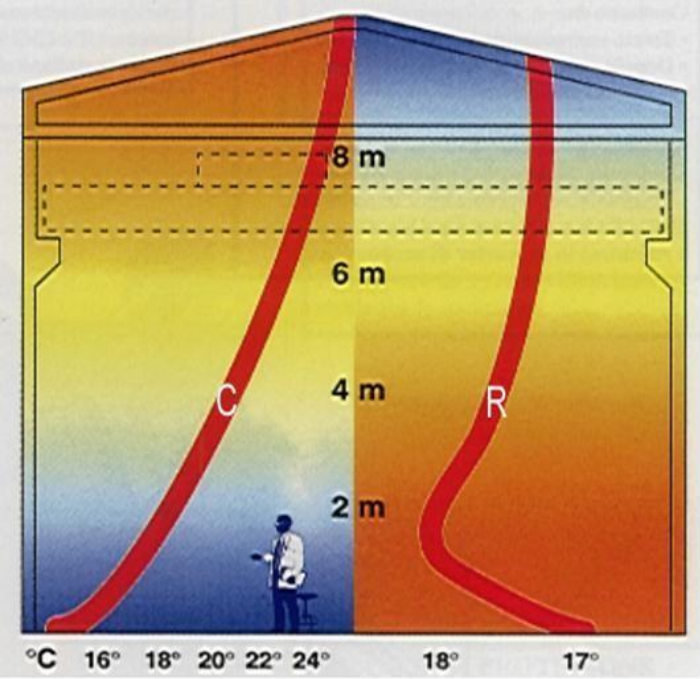
Vertical temperature variation

With a radiant heating systems people and surfaces are heated directly, instead a convection system heats the air to then heat people and surfaces, resulting in increased energy consumption.

Warm air, that is lighter than colder air, naturally rises to the ceiling creating high temperatures under the roof where it is not needed. The warm air heating system has to be designed to supply air at a higher temperature than needed to obtain the required comfort temperature at people's height, this creates significant losses of efficiency.

In the following chart, which shows the variation in temperature inside a building, you can see the difference between a warm air system (curve C) and a radiant heating system (curve R).



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