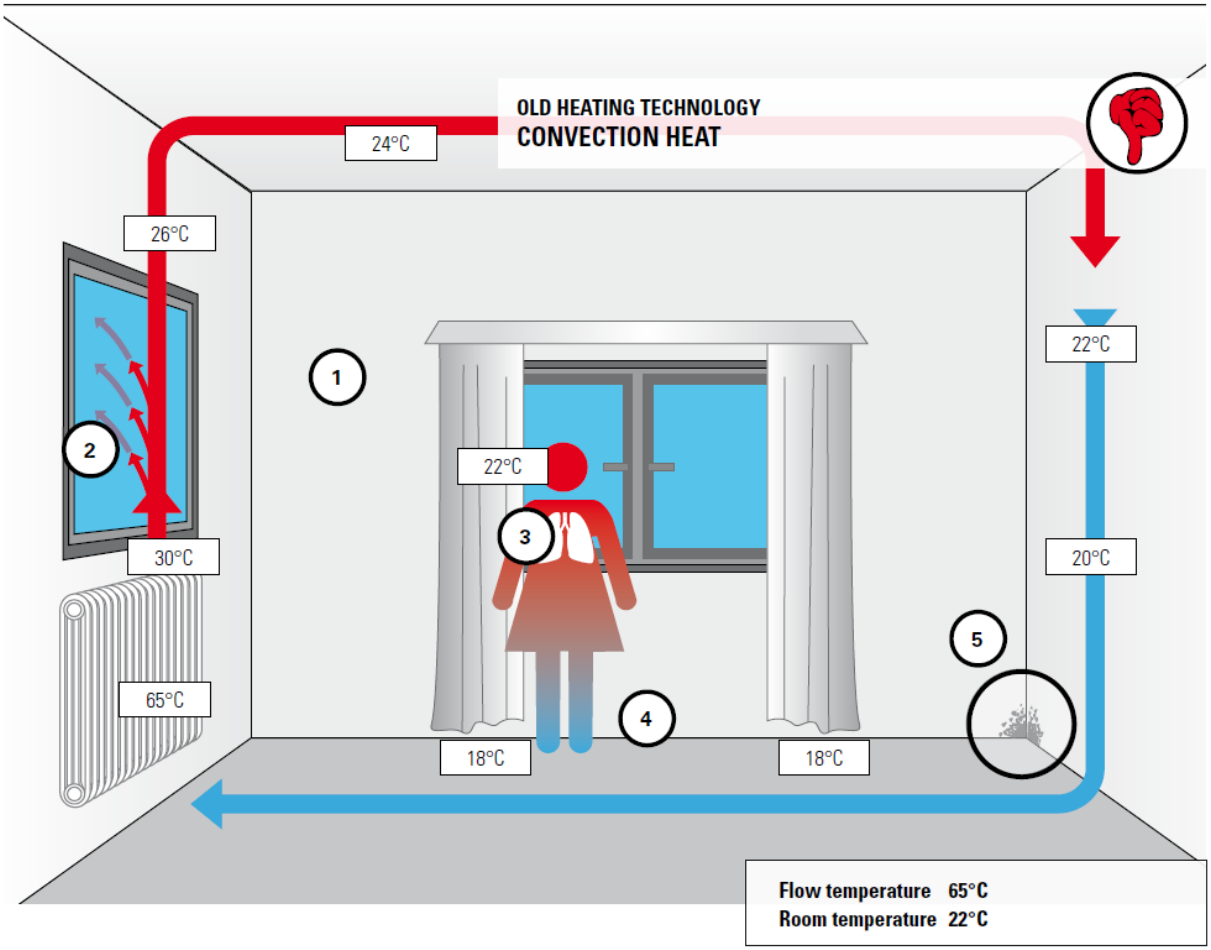


THE CONVECTION HEATING WITH RADIATOR

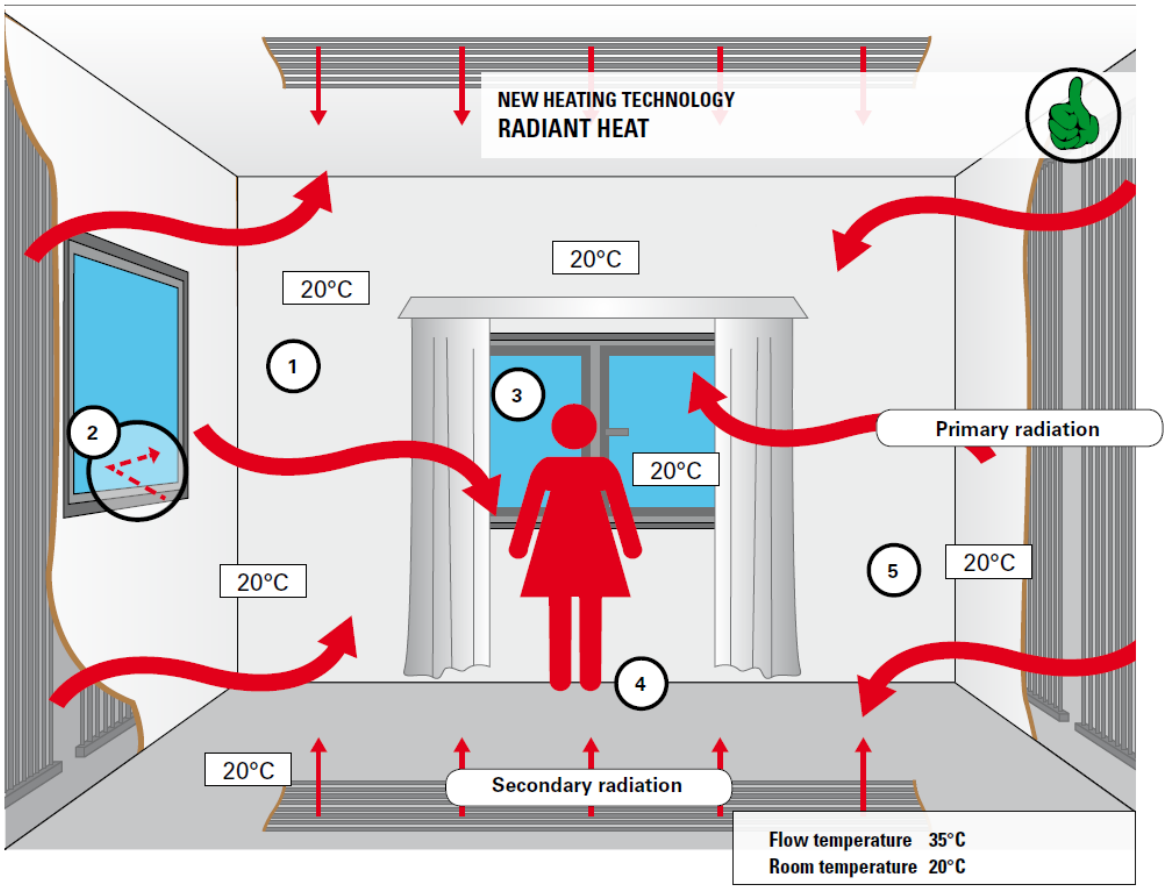
① **Energy loss 1:**
A high air temperature of at least 22°C is required to heat a room with air. Air is a bad heat carrier; therefore the energy costs are high.

② **Energy loss 2:**
Even premium quality windows are the weak point of a house-insulation and result in high energy losses. The air heats up the glass and the engery leaks when venting.

③ **Health at risk:**
The air movement (warm air rises) kills the sense of well-being, too, since asthmatic and allergic persons have a primary problem with raising dust. This dust mixes with our breathing air and can lead to enormous burdens of the organism. An increase of the room temperature requires a reduction of the air humidity. Mucous membranes will dry out. The natural filtration system (nose) will be affected.

④ **Discomfort:**
Feet remain cold, as warm air rises up and is mainly in the upper area of a room. By that a feeling of discomfort is developed. The heating is adjusted to a higher level. The above effects will be increased.

⑤ **Formation of mould:**
Cold air strokes the wall, water condenses and creates the culture medium for the formation of mould.



THE RADIANT HEATING WITH THE NEW AQUATHERM BLACK SYSTEM

① **Energy saving 1:**
Comparable to the sun, the radiant heating first of all heats the solid and liquid materials in a room. Walls, ceilings and floors are constantly heated and the room temperature only in the second step. However, a high air temperature is not required for radiant heatings. An air temperature of 20°C is completely sufficient and provides a comfortable sense of well-being.

② **Energy saving 2:**
There is no loss through the window. Heat radiation is reflected by glass and given back to the room.

③ **Energy saving 3:**
The room temperature is low. Thus you will not have any high energy loss, even when airing. The low air temperature creates a natural and pleasant climate.

④ **Comfort:**
In case of radiant heat, there are no differences in temperature of the room air, like with convection heatings. The head remains cool and the feet warm.

⑤ **Dry walls:**
Since the walls are directly heated, there is no condensation and consequently no formation of mould.

RULE OF THUMB:
REDUCTION OF ROOM TEMPERATURE BY 1°C = 6 % ENERGY SAVING
SURFACE TO BE OCCUPIED = 60-100 % OF THE BUILDING AREA, DEPENDING ON THE BUILDING STRUCTURE

SYSTEM TECHNOLOGY AQUATHERM BLACK SYSTEM

Visual performance heating, diagonal connection

The photos of the high-resolution camera shows its performance clearly: The aquatherm black system for wall heating delivers an even heat distribution into a room, and provides a comfortable room climate.

Example: Metal ceiling panel

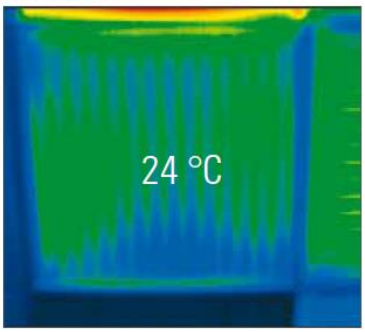
Legend:
Room temperature: 20 °C
Linear heating temperature: 32 °C
Radiation surface temperature: see screen sequence

Original metal ceiling panel

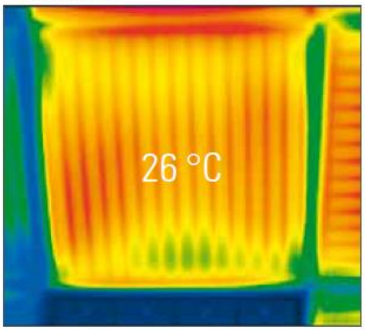
Start of heating

after 1 minute

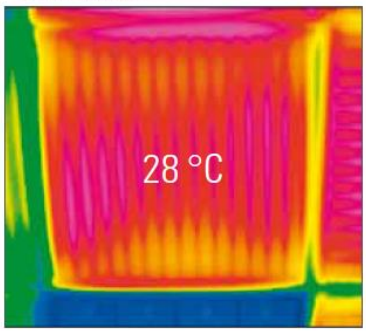
after 1,5 minutes



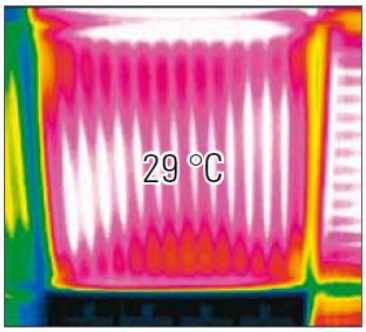
after 2 minutes



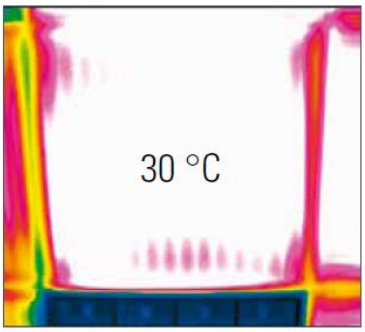
after 2,5 minutes



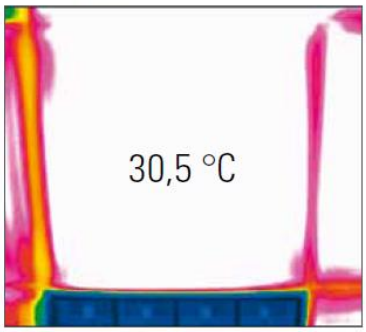
after 3 minutes



after 3,5 minutes



after 4 minutes



Visual performance cooling, diagonal connection

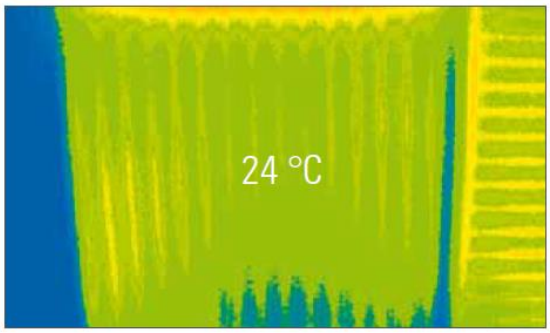
The photos of the high-resolution thermal camera show: The aquatherm black system for cooling ceilings produces a constant cooling performance in a room and therefore provides not only a comfortable but also healthy room climate.

Example: Metal ceiling panel

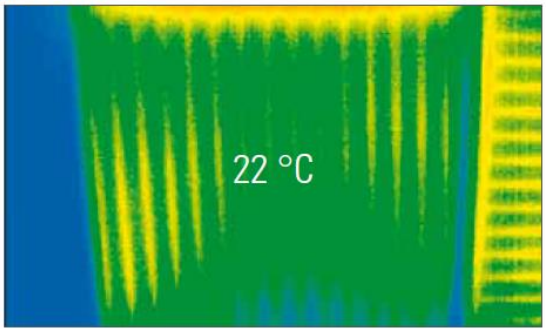
Legend:
Room temperature: 24 °C
Linear cooling temperature: 16 °C
Radiation surface temperature: see screen sequence

Original metal ceiling panel

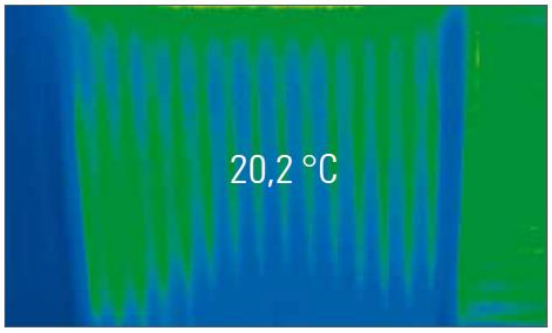
Start of cooling



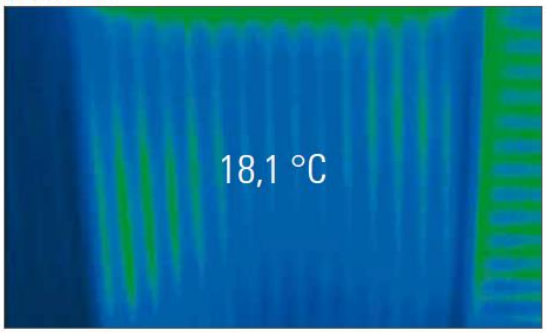
after 1 minute



after 2 minutes



after 4 minutes



after 6 minutes

SYSTEM TECHNOLOGY AQUATHERM BLACK SYSTEM

Visual performance, one-sided connection

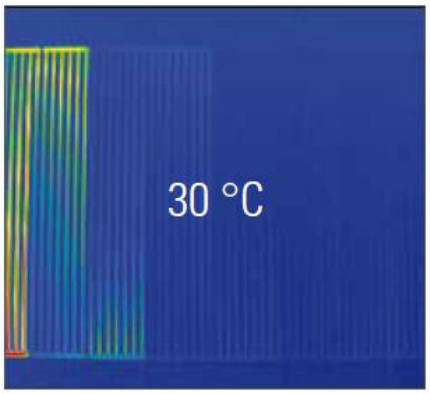
The photos of the high-resolution thermal camera reveal it: The aquatherm black system grid with flow break shows a perfect flow and grants an optimum heat distribution at the wall or ceiling in a little while.

Legend:
Room temperature: 20 °C
Linear heating temperature: 35 °C
Radiation surface temperature: see screen sequence

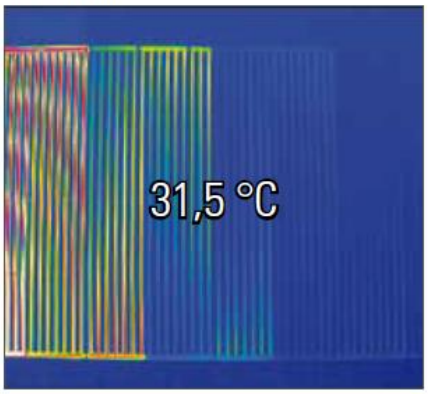
Start of heating

after 1 minute

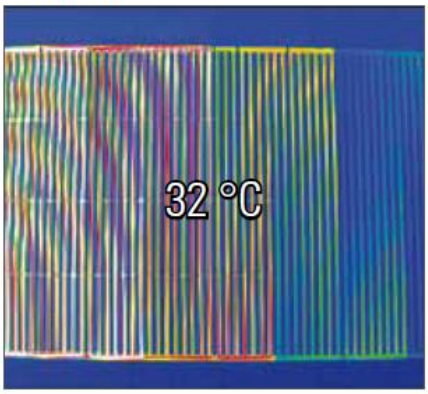
after 2 minutes



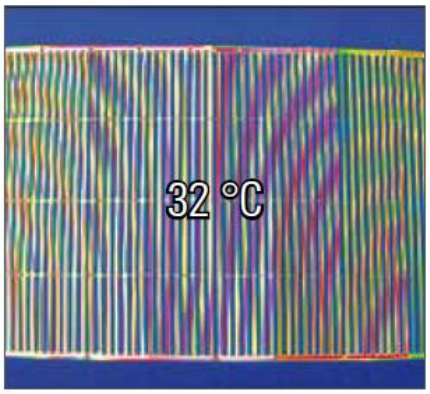
after 3 minutes



after 4 minutes



after 5 minutes

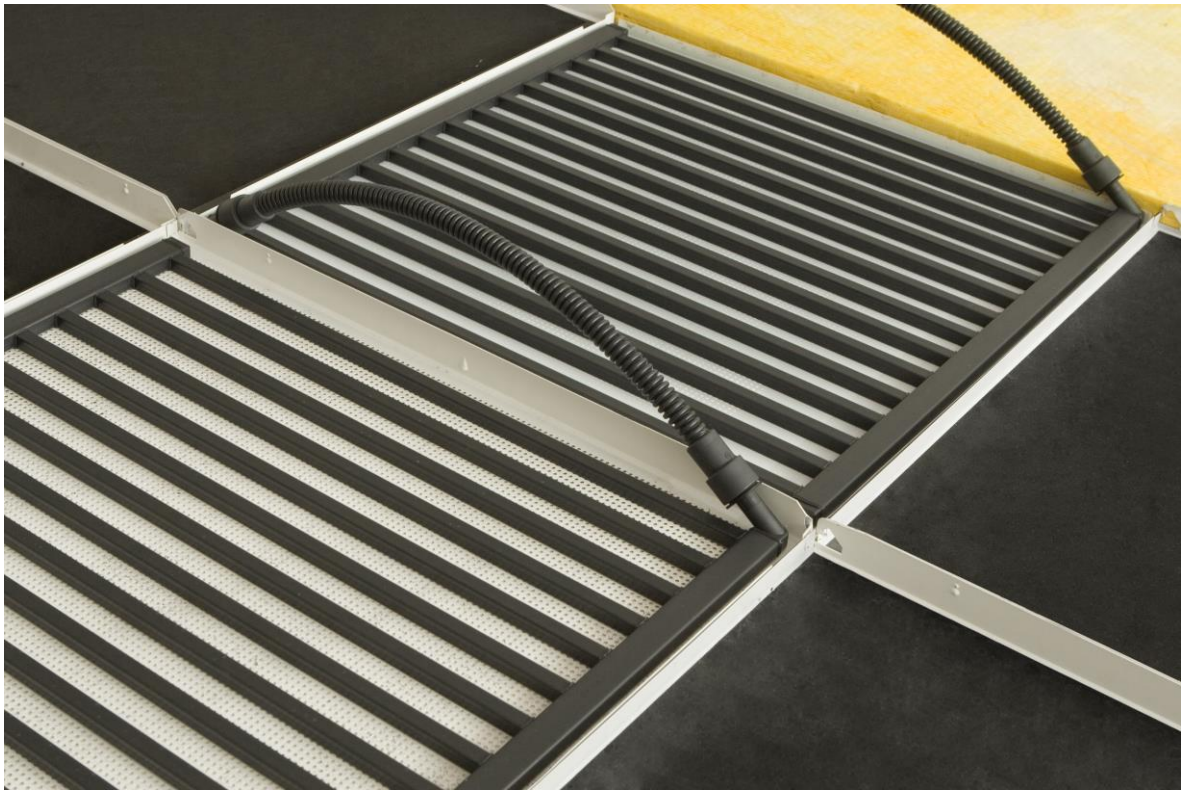


aquatherm black system

aquatherm
state of the pipe

colours of innovation

aquatherm black system



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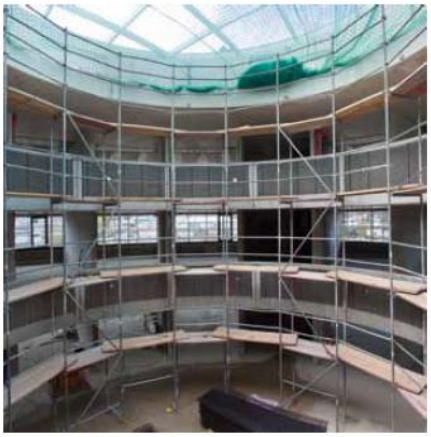




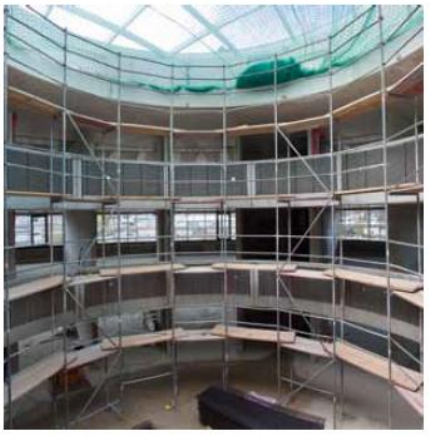


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