

SMART HEATING AND COOLING



KLIMASAN –
intelligent solution, perfect climate.



HEAT RADIATION

WARM IN WINTER, COOL IN SUMMER.

HEATING AND COOLING

FOR AN OPTIMAL CLIMATE.



WE ARE RELIABLE.

KLIMA-**TOP** IS YOUR COMPETENT PARTNER.



KLIMAT**OP** has set itself the goal of developing high quality, economical heating and cooling systems, suitable for new buildings, but mostly effective for renovations.

KLIMAT**OP** took into consideration different aspects such as low energy requirements, without compromising comfortability and optimal climate.

KLIMAT**OP** offers KLIMAS**AN**, a heating and cooling ceiling system especially suitable for renovations with low energy output.

The KLIMAS**AN** heating and cooling system, is the basis for an ecological and economical concept, while using renewable energy sources.

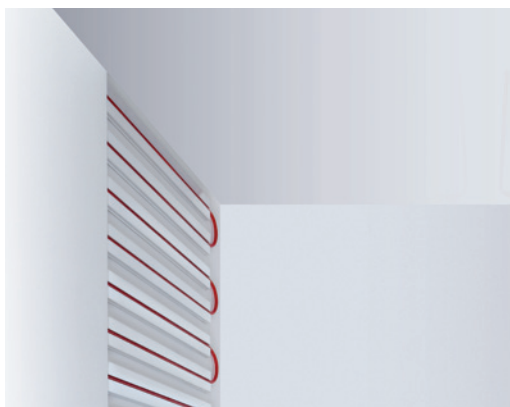
IDEA AND CONCEPT

ENERGY SAVING AND WELL BEING

Radiation heating systems create a comfortable warmth like the sun in springtime or a fireplace. Unfortunately fireplaces are expensive and, in case of building refurbishment, it isn't always possible to build one.

KLIMASAN is an innovative system as it is convenient as much as an underfloor heating, low depth, it creates a fireplace climate and it does it as fast as a radiator with its 5 minutes reaction time. Our system is ideal for heat pumps and solar systems due to its low flow temperature (just 30°C - 35°C). Also suitable for traditional systems which benefit from low system temperatures. The ceiling' surface temperature is approximately at 22°C - 28°C and therefore at a significantly lower temperature than a human body, which creates an extremely comfortable environment.

Whether used as a wall heating or a ceiling heating, the radiation acts directly on the floor surface and provides a pleasant temperature, that doesn't cause an overheating feeling. In numerous buildings where **KLIMASAN** is already in service, the expectations are totally met and the complete satisfaction of its inhabitants is ensured. No wonder, some studies show that using infrared saves up to 30 - 50% of the costs while simultaneously doesn't encourage circulation of dust within the air. **KLIMASAN** system reduces energy output and CO² emission while creating a comfortable and healthy atmosphere.



WALL HEATING

06-07

Wall heating is after the sunlight and the wood fireplace, the best known heating system based on thermal radiation. Reduction in energy demands and pleasant atmosphere are the results of the use of a radiation heating system.



HEATING/COOLING CEILING SYSTEM

08-09

The first ceiling heating was patented in 1907, even now among all heating systems, ceiling heating is the one with the highest radiation performance, has greater energy efficiency, and it can also be used as a cooling system, therefore creates optimal living conditions.

THE PERFECT KIND OF HEATING SYSTEM FOR LOFT CONVERSIONS/ATTICS, RENOVATIONS AND FALSE CEILINGS

The new KLIMASAN profile is a substructure that can be assembled in three easy steps.

1. Cutting and assembling the profile
2. Pipe positioning and water connection to the heating system
3. Assembly of the panels (for example: plasterboard), puttying and finishing (for example: plastering, pargeting, painting, etc.)

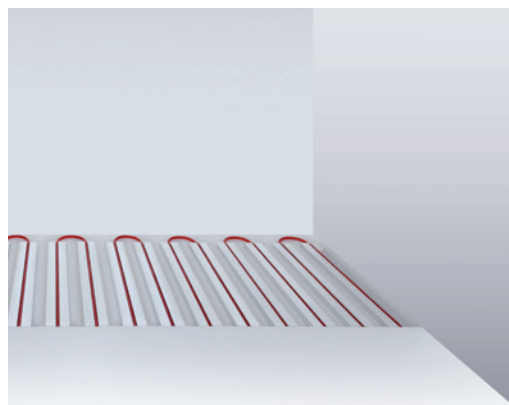
The division of the assembly phase in structured and ordered steps, as well as the conscious decision to maintain a simple system construction, makes it possible for any installer of heating or plasterboard ceilings to install our KLIMASAN system after only 20 minutes training. The KLIMASAN profiles can be adapted to any type of plan, and is therefore a great advantage during a renovation where, often, an irregular and a complicated interior layout is inevitable.

We have solved many issues with a single system, as a building can be fitted with a heating/cooling ceiling, wall or floor system economically and time efficiently. KLIMASAN is also ideal to make baseboard heating. The reduced thickness and a 100% active surface is a winning horse and provide a wide spectrum of possible applications.

KLIMASAN – the smart solution!

UNDERFLOOR HEATING 10

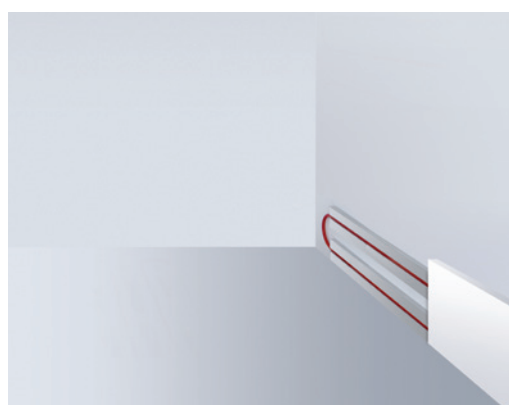
The ancient Romans already knew how to protect themselves from the cold stone floors, and even if the floor heating is not an actual irradiation system is a good alternative to the traditional and outdated radiators. Floor heating can be used where a ceiling or wall heating cannot be installed. Important! The system must be quickly adjustable.



BASEBOARD HEATING 11

KLIMASAN baseboard heating is the easiest way to heat perimeter walls and therefore achieve a similar result such as the one of a wall heating.

Ideal for historic buildings or when high system temperature is available.



WALL HEATING

Warm walls – everything's good



KLIMASAN WALL HEATING, COMFORTABLE WARMTH AND ENERGY SAVING!

Normally human bodies disperse about 70% of heat by conveying it to the surrounding environment. The wall heating **KLIMASAN** radiates all surfaces in the room, heats evenly and our body dissipates much less heat. With this technique the temperature of the room can be 2 - 3°C lower compared to a convective heating. Giving our experience that we gained with previous fittings, it is shown that a temperature of 18°C to 21°C is already sufficient. Of course the **KLIMASAN** system can also be used with higher temperatures.

In older buildings isn't always possible to refurbish the insulation. This could be due to legal, technical or economical reasons. Also in special cases like historic heritage buildings, where improvements on the exteriors are very difficult KLIMASAN is easily applicable.

Until now, low system temperatures and moderate energy costs were a privilege in new buildings, or well insulated older buildings. Thanks to the KLIMASAN heating profiles system everything is achievable even in traditional old buildings.

With KLIMASAN system is now possible to equip almost any building with an irradiation heating system economically, in a short time, without destroying floors and without the need to modify the height of windows, doors or stairs. With KLIMASAN system you can appreciate the pleasant climate of the wall heating in your own home.

Fitting out already existing homes and buildings with a floor heating is normally very expensive and often not feasible. The KLIMASAN system can be installed almost everywhere. The patented KLIMASAN system consists of a radiant substructure coverable with almost any type of ceiling material (for example: plasterboard).

Through thermic radiation with no convection of any kind, this system offers a comfortable climate ideal for anyone, not just for people with allergies.

THE ADVANTAGES:

1. ENERGY SAVING AND WELL BEING

- The thermal radiation conveys heat to surfaces (walls, floors, furniture, etc.)
- Lower temperatures but comparable comfort to standard heating systems

2. EASY CHANGE WITHOUT PROBLEMS

- All heating systems are suitable to our system
- Impermeable to oxygen

3. HEALTHIER WARMTH

- Suitable For allergy sufferers as it raises very little dust and mites (mite droppings)
- Higher air humidity

4. FREEDOM OF DESIGN

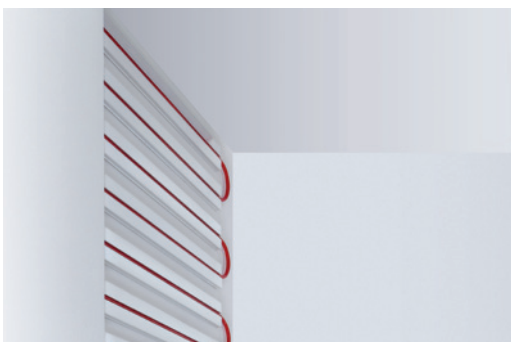
- Free choice of flooring; independent from heating performance
- You choose your floor
- No level change (for example, doors, stairs and windows)

5. ACTIVE AGAINST MOLD

- The walls become warm and therefore dry, dry walls don't get mold

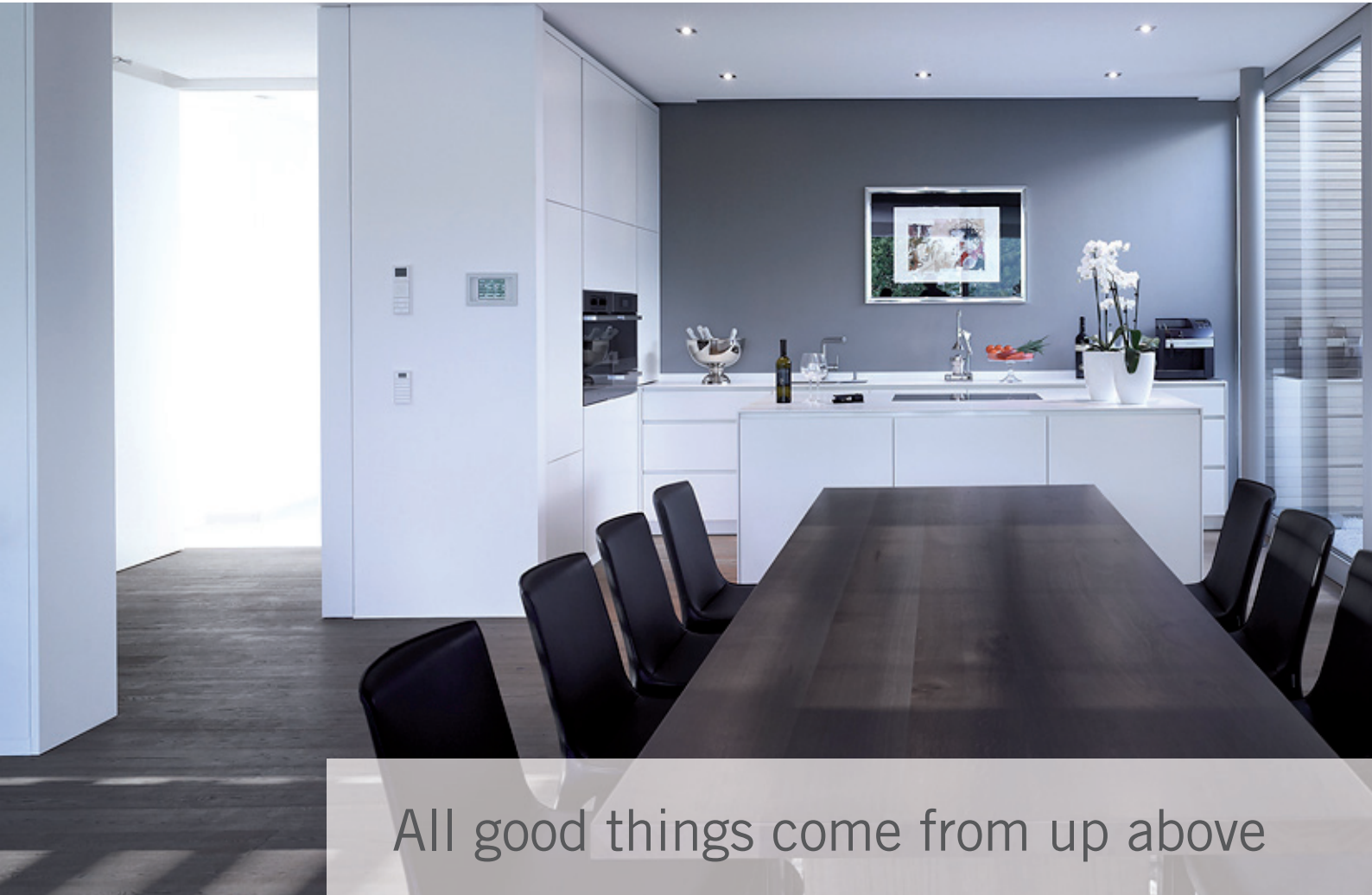
6. CONSTRUCTION THICKNESS FROM 30 MM

- Minimal loss of space



Wall heating creates a comfortable ambient.

CEILING SYSTEM



All good things come from up above



KLIMASAN CEILING SYSTEM - HEATING AND COOLING SYSTEM

Although heating walls are currently generally recognized within the market place there are many false misconception about ceiling heating systems. The ceiling is an ideal location for expansion capacity for an irradiation heating system. No other irradiation system achieves similar results without invasive interventions on the plans. No other area is at the same time so optimal to install a cooling system. The ceiling is the largest net area of the house.

Thanks to the ceiling radiation heating you get a temperature which is horizontally and vertically uniform in the complete area and that creates a very pleasant feeling.

Transformation from store to home office. The building in question is heated by a heating ceiling covered by a plasterboard false ceiling.





THE ADVANTAGES:

The ceiling heating and cooling system has the same property of the wall system, but it also offers the following advantages:

1. THERMAL RADIATION

- Greater share of infrared compared to all other systems (> 95%)
- Raises less dust than wall heating, baseboard heating and floor heating

2. COOLING

- Heating and cooling with the same system

3. HEAT DISTRIBUTION

- Better distribution within the room due to the activation of the higher net area
- Lower flow temperature compared to all other systems

4. CONSTRUCTIVE THICKNESS FROM 30 MM

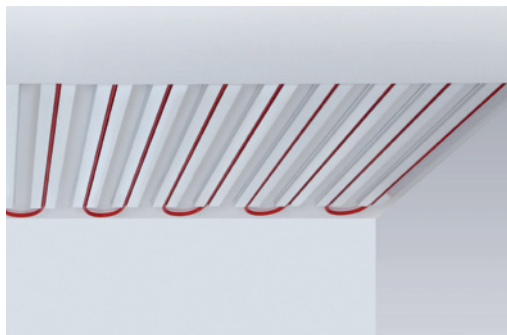
5. RESTRUCTURATION

- In most cases, without having to make expensive thermal insulation – financial saving
- Proven technology
- Also ideal for historic buildings

Traditional heating systems (radiators, floor heating) heat the air in the room and distribute the heat through convection.

When using a ceiling system the principle is based on an exchange of radiation between a hot surface and a cold one, so that the infrared rays move (thermal radiation) from the hot surface to the cold, while the cold body absorbs the energy and becomes warm. The KLIMASAN profiles system therefore does not heat the air in the room, but the surfaces below: floor, walls, furniture, etc.

The cooling system works exactly in the opposite way: the ceiling, which is covered by the cold water absorbs the heat radiations from the room. Floor, walls and furniture, etc. become cool.



UNDERFLOOR HEATING



What the ancient Romans
already knew ...



ENERGY SAVING AND WELL BEING

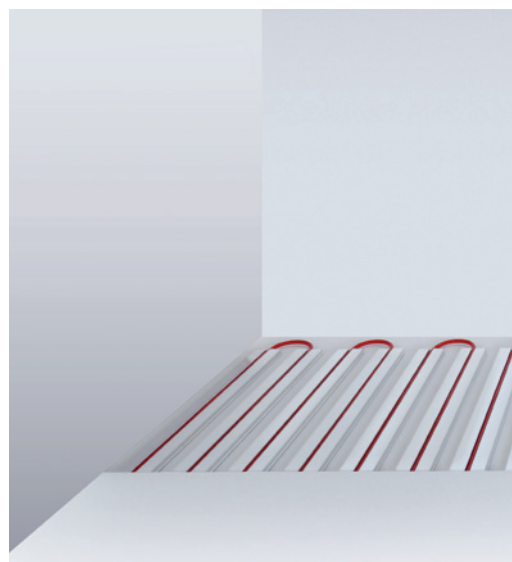
As there are many systems on the market, some might think that it's not necessary to add another one. However our system resolves a problem that other's do not: the installation of underfloor heating while renovating with a minimum thickness.

It is here, that the **KLIMASAN** system opens a new way! The **KLIMASAN** profile serves as a load bearing component. This way, you can directly install the profiles without granular base and without screed. Just screw them on the present wooden beams. Subsequently, pipes and floor panels will be placed.

The result: high performance with 100% of the active surface, quick reaction time and construction thickness from 40mm from the top of the wooden beams.

THE ADVANTAGES:

1. CONSTRUCTIVE THICKNESS FROM 40 MM
2. NO LOAD-BEARING BASE NECESSARY
3. QUICK REACTION TIME
4. HIGH PERFORMANCE
5. DRY INSTALLATION



IT'S IMPOSSIBLE TO BE MORE FLEXIBLE!

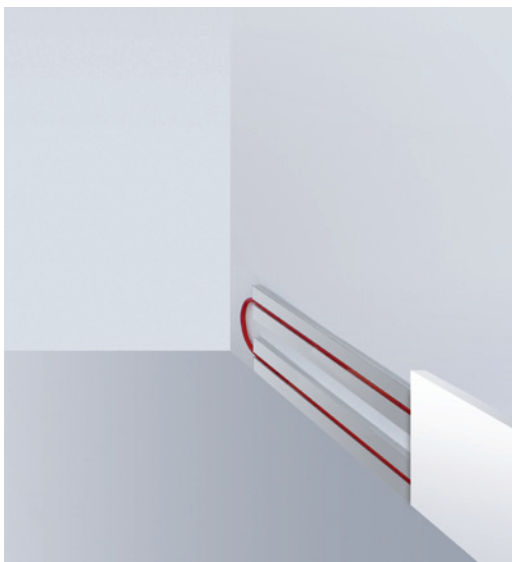
When neither walls, ceiling or floor are available, a very flexible system is required.

KLIMASAN system is the perfect solution used as an heating baseboard.

KLIMASAN baseboard heating heats the air directly in contact with the wall, which then indirectly heats the wall, which in turn radiates the room.

The heating of the room is done so as the wall and ceiling heating systems, primarily via thermal radiation.

This way, the climate and the energetic potential of the heating radiation can be used in any building and with any floor layout with a single system.



ALL THE ADVANTAGES:

1. HIGH FLEXIBILITY
2. CHANGE WITHOUT PROBLEMS
3. RAPID – CONVENIENT – LOW BUILDING WORK EFFORT
4. PREVENTS THE FORMATION OF MOLD
5. CONSTRUCTIVE THICKNESS FROM 30 MM

ECONOMIC, ENERGETICALLY EFFICIENT, COMFORTABLE.
KLIMATOP IS YOUR COMPETENT PARTNER.



KLIMASAN – THE FACTS:

- > ECONOMIC, HIGH PERFORMANCE AND FLEXIBLE, WITHOUT EQUALS
- > PERFECT FOR NEW AND RENOVATED BUILDINGS
- > CONSTRUCTIVE THICKNESS FROM 30 MM
- > HIGH PERFORMANCE AND ENERGY SAVING
- > OPTIMIZED FOR RENEWABLE ENERGY SYSTEMS

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