

3THERMO



Concealed Hybrid Radiators



Surface heating systems are presently the most economic forms of heat distribution. Due to their relatively simple installation, UFH systems have become the most popular heating solutions. Wall heating systems, whose location could guarantee the highest comfort and economic effectivity, were nevertheless used less frequently because of technological limitations and costs generated by the installation. It was only a new patented design of 3THERMO radiators that enabled the transmission of heating energy with only (1-1.5 cm thick) layer of normal plaster, which guaranteed the smallest inertia and the highest power among all other surface heating systems. The latest generation of 3THERMO wall heating systems obtained better safety parameters, which improved functionality of the system (no potential leakage as a result of a damage to the wall, no collisions with the electric systems, etc.).

3THERMO concealed radiators were tested in WTP, a Berlin certified laboratory, as well as in Państwowy Zakład Higieny (The State Hygiene Institution) and in laboratories of ITB (Building Research Institute) as well as Warsaw and Poznań Universities of Technology. It was awarded the first prize at the International Ecology Forum as ECO-INNOVATION of 2015.



How does it work?

1 RADIATOR CORE

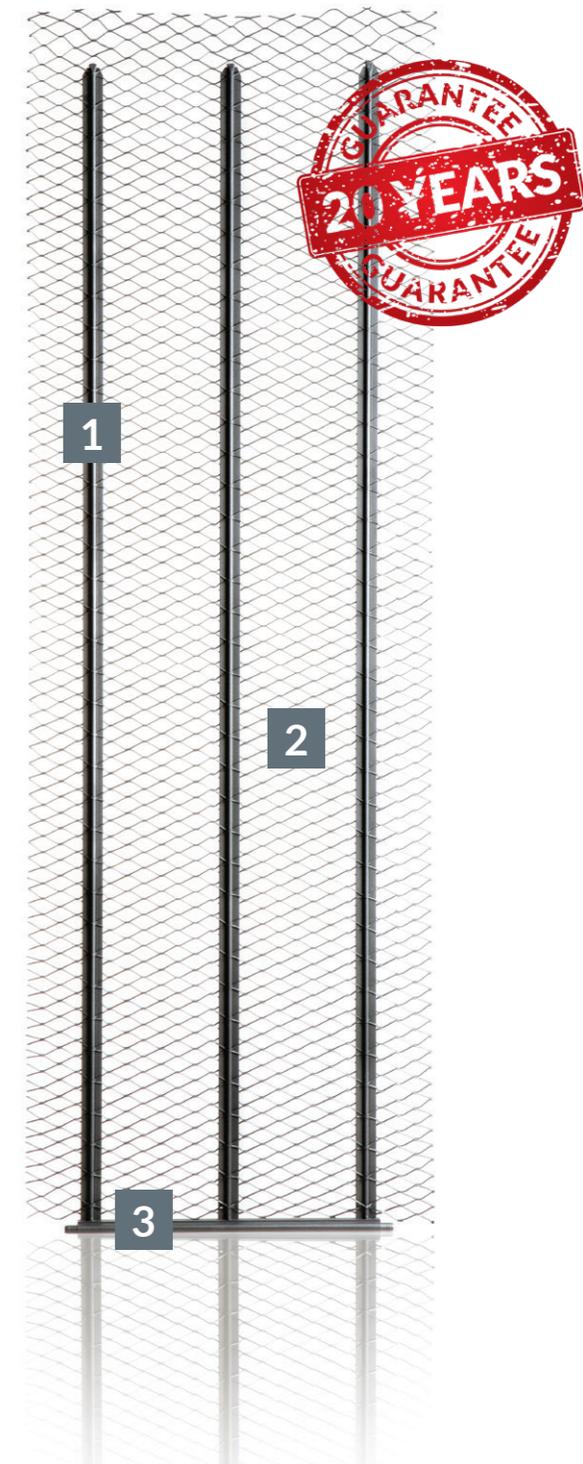
The radiator core transmits heating energy vertically. The core uses a heat pipe technology, enabling vertical transmission of heat without requiring additional external energy, which greatly increases its efficiency. The medium in gas form has the highest diffusion properties, and efficiently transmits internal system energy to the radiator structure. The transmission is also free of negative electrostatic phenomenon.

2 REINFORCEMENT

Aluminum mesh with a very high conduction coefficient distributes the heat between cores and transmits it to the plaster layer, giving the whole wall properties of a radiator. With regard to its structure (Rabitz formula), it also provides reinforcement for the plaster and prevents the material from shrinking. The mesh is woven between the cores and it is not rigidly connected, which prevents internal stresses in the system or cracking of the plaster.

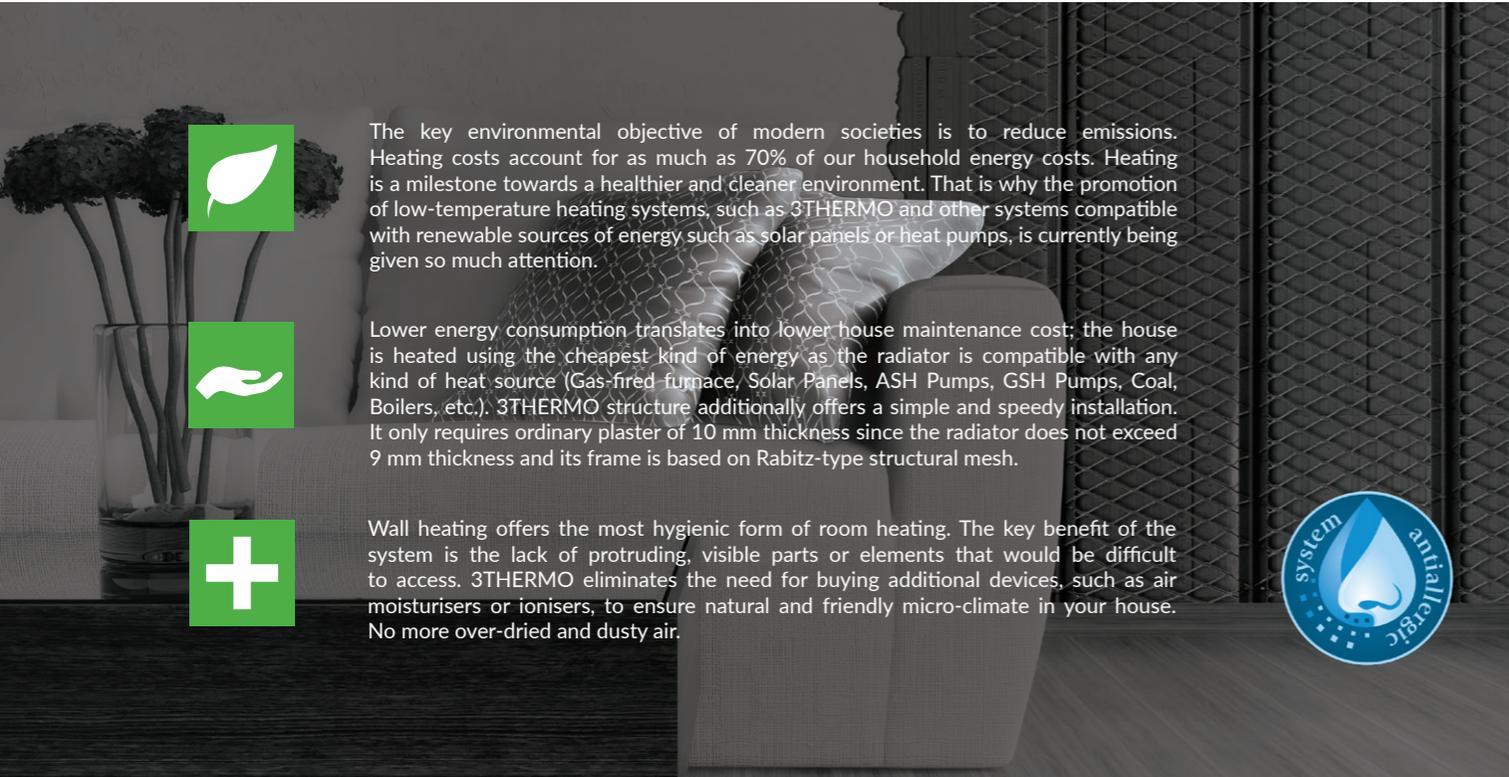
3 WATER COLLECTOR

The lower part of the concealed radiator is used to store heating energy collected from central heating system (or using an electrical element), and transmits it to the radiator which is separated from the hydraulic part. The collector features a water connector (Ø12 nipple) to be connected to the pipe installation on both sides (it can be connected to warm water source on either side). The water collector design completely excludes the ingress of air into the system.



A healthy heating technology

Is air capable of being an effective heat storage? Unfortunately not. As we have learnt in our physics classes, solids such as stone or concrete are far better heat storage systems. Equipped with this knowledge, we decided to develop the idea of wall heating, additionally improving its deficiencies. This is how we created an economic 3THERMO system. The system does not harbor moulds or fungi but prevents their occurrence on walls. It is absolutely hygienic and does not contribute to accumulation of dust and does not require cleaning. The system saves heating energy as it is accumulated in the concrete/plaster mass and not in the air, decreasing heat losses caused by ventilation.



The key environmental objective of modern societies is to reduce emissions. Heating costs account for as much as 70% of our household energy costs. Heating is a milestone towards a healthier and cleaner environment. That is why the promotion of low-temperature heating systems, such as 3THERMO and other systems compatible with renewable sources of energy such as solar panels or heat pumps, is currently being given so much attention.



Lower energy consumption translates into lower house maintenance cost; the house is heated using the cheapest kind of energy as the radiator is compatible with any kind of heat source (Gas-fired furnace, Solar Panels, ASH Pumps, GSH Pumps, Coal, Boilers, etc.). 3THERMO structure additionally offers a simple and speedy installation. It only requires ordinary plaster of 10 mm thickness since the radiator does not exceed 9 mm thickness and its frame is based on Rabitz-type structural mesh.



Wall heating offers the most hygienic form of room heating. The key benefit of the system is the lack of protruding, visible parts or elements that would be difficult to access. 3THERMO eliminates the need for buying additional devices, such as air moisturisers or ionisers, to ensure natural and friendly micro-climate in your house. No more over-dried and dusty air.



Take care of your family

While building a house we try to cater to all of our families needs, including safety, health and proper level of comfort. Although we might not realise it, a lot depends on the heating format we choose for us and for our children.

Why is heating so important? The heating system we choose for our houses directly affects appropriate moisture of the air we breathe. Unlike viruses, we feel best when relative air moisture is between 40% and 60%. This makes us less susceptible to all kinds of illnesses attributable to a sore throats or over-dried mucous membranes. Being offered an opportunity to breathe moist and not overheated air, free of dust and allergens depositing in heating devices, is an invaluable quality. Such healthpromoting qualities are offered exclusively by wall heating and it is worth bearing in mind while planning a new house for your family.



Research results confirm effectiveness

3THERMO is a manufacturing company which introduced the worlds, first concealed hybrid energy-saving wallradiators on the market. It is an innovative patented design solution invented by Polish engineers who managed to completely eliminate faults and hindrances known in other, earlier wall heating systems.

Due to high efficiency of the active radiator coupled with a high internal energy accumulation capacity in the water collector, the concealed radiator reaches a very high power in the range of heating structures. Long-term performance is guaranteed by hardened aluminum alloy and the lack of moving parts.



SAFETY
There is no possibility of a leakage as a result of damage to the radiator.



LABOUR EFFICIENCY
Time of assembly compared to other heating systems. It takes only 1 minute to install a radiator.



RECYCLING
The radiator structure is uniform and the material is wholly recyclable.



ECONOMY
Estimated energetic efficiency compared to convection systems.

Limiting losses translates into savings



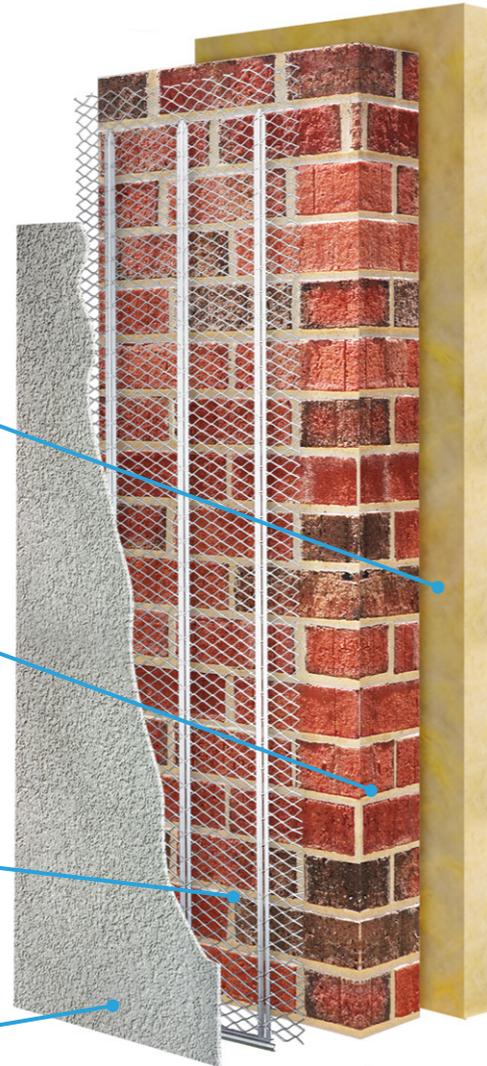
Wall heating combines capacity to accumulate energy in the mass of material covering it (similar to UFH) and has the ability to balance losses exactly in the place of their occurrence, i.e. on the external wall. An ordinary wall becomes an active thermal barrier which screens us from cold external environment. Apart from improving thermal comfort, it lowers inertia and makes heating more effective.

The insulation layer is independent of the heating system and improves ability of the building to retain the warmth inside instead of emitting it outside. The better thermal insulation, the lower amount of energy is required to obtain proper thermal comfort.

The structural wall as an external barrier offers an additional heat resistance. It becomes a natural accumulator of heating energy provided by the wall heating system.

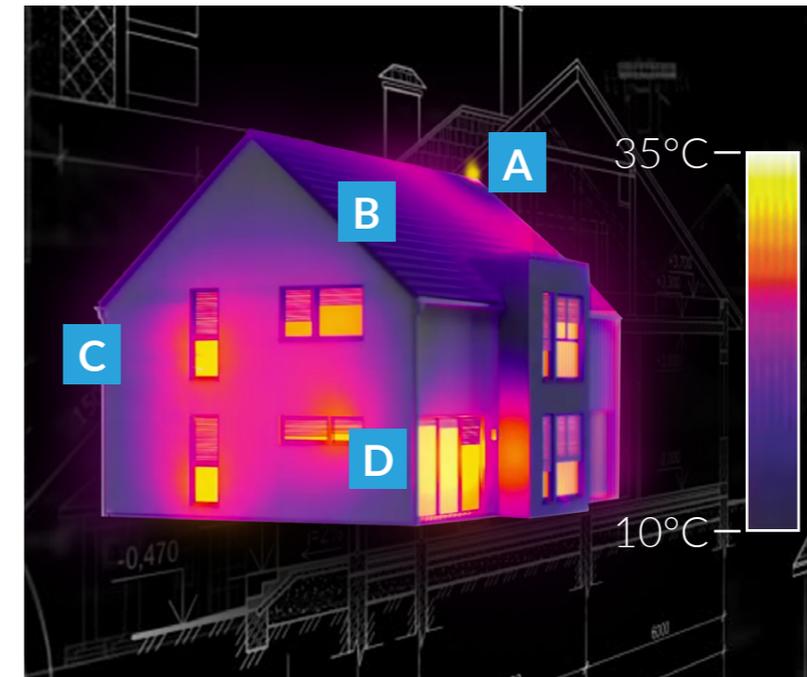
A concealed radiator: the source of heat in the wall system. It distributes heating energy under the plaster with the lowest heating resistance possible. Due to an innovative technology of vertical heat transmission without requiring any additional energy, it may provide heat to the wall system in a highly effective manner without increasing hydraulic resistance in the central heating.

A layer of plaster covers the concealed radiator in 100% making all central heating system parts invisible. The layer also provides external coating to the radiator and contributes to the increase of heat emission surface, also accumulating the heat.



Heat your house, not the planet

The invention of heaters about a hundred years ago transformed the way people had been heating their houses. Earlier methods such as hypocaustum or accumulation tiled stoves employed the phenomenon of heat emission through radiation. The water heater exchanged heat mostly due to forced convection, i.e. by heating the air. Presently, when energy saving and reducing greenhouse effect is the main objective of the modern world, all energy-saving systems have grown in importance. Instead of heating up the volume of the air, it is much more economic to precisely complement for the heat losses only on the external envelope and to limit losses to ventilation.



A VENTILATION

At least 30% of heat energy is wasted through so-called 'chimney losses' and external walls. Heat accumulated in the air rises and escapes through gravitational ventilation systems.

B ROOF

With regard to the importance of heated air in old-type conventional systems, the roof is a huge absorber of heat energy accumulated in the air.

C WALLS

Cold external walls are the largest surfaces cooling the air heated by radiators, and additionally absorb moisture, which increases their tendency to produce mould/damp.

D DOORS AND WINDOWS

A window is capable of transmitting a huge amount of heating energy from solar radiation into the house; unfortunately, it has limited thermal insulation properties and is capable of losing the energy as easily.

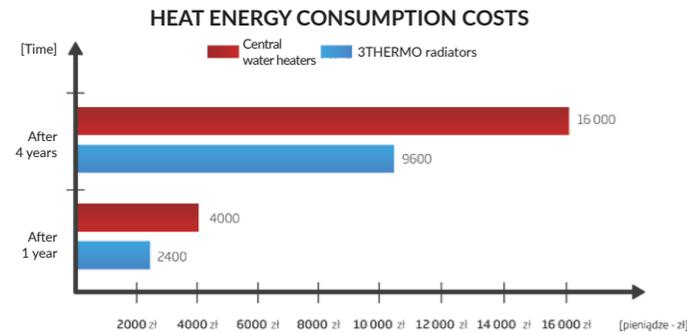
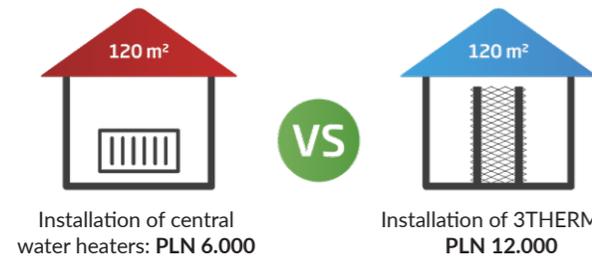
3THERMO wall heating is characterised by the lowest inertia and the highest power among all surface heating systems. This is achieved due to the lowest inward heating resistance as the radiator is only covered by a 10-mm thick layer of plaster, and low amount of water in the system. Surface heating systems presently offer the most economic heating standards capable of generating savings up to 40% compared to conventional systems. This is achieved due to low-temperature heat redistribution and limited losses to ventilation. The wall system additionally reduces labor/time taken for installation on all levels of the property and does not affect the choice of the type of floor, and we do not have to give up the idea of natural wooden floors or carpets.

The cheapest heating format

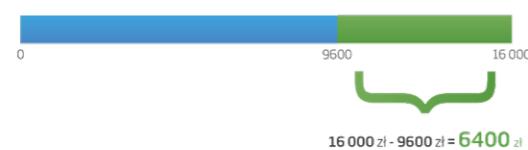
Wall heating, with regard to its economic values and distribution of temperatures, is the best format of surface heating. The wall heating system improves thermal insulation properties of the wall and shifts the dew point, which additionally improves its durability. Wall heating system as a heat emitter achieves the optimal room temperature distribution because it balances and minimises the influence of the cold external wall. Additionally, a wall has a much lower heating resistance than e.g. the floor since it is not limited by the threshold heating parameter and the system is capable of achieving much higher heating power per wall square meter of than per floor square meter. Wall heating on internal envelopes is only used to supplement heating power.



COST OF INVESTMENT FOR BUILDINGS CONSTRUCTED IN LINE WITH WT 2017



TOTAL SAVINGS AFTER 4-YEAR USAGE OF 3THERMO RADIATORS



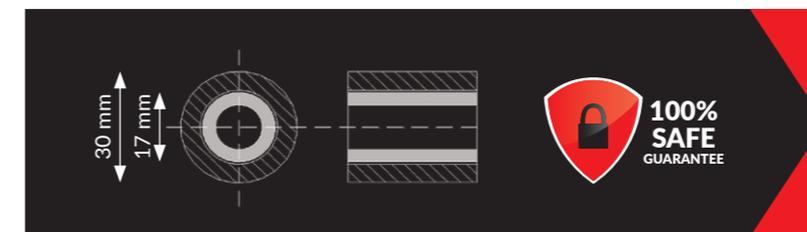
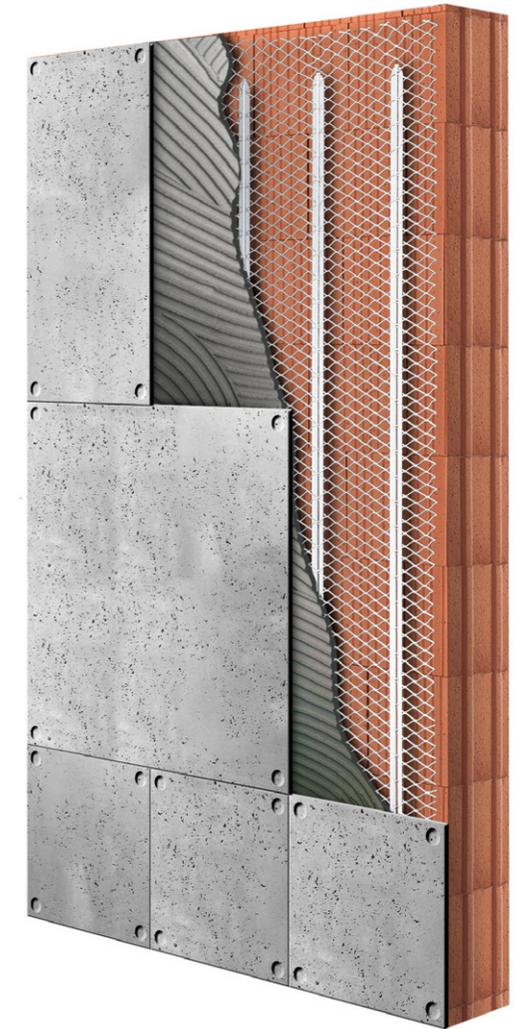
The advantage of the wall heating system over the floor heating system is offered by its location in the zone of the highest heat losses and its real capacity of lowering the air temperature without the loss of thermal comfort. The wall system is also characterised by a lower inertia which enables a more precise control of the heating system and a faster reaction to changing temperatures.

3THERMO has revolutionised central heating systems with respect to water. It is capable of distributing energy in the wall using an active radiator, and does not require the supply of additional external energy. Earlier wall heating systems had to tackle the problem of water resistance related to vertical transmission of heating energy with water used as a medium. The solution employed by 3THERMO allows to reduce the amount of water in the central heating network.

3THERMO concealed radiator is a simple and light structure. Its assembly is extremely uncomplicated and does not require the usage of specialist, expensive equipment. The system, unlike others, does not feature any complicated connecting elements or an extensive range of fittings. The installation is one-line in a parallel circuit, which essentially reduces the number of connectors required. This makes 3THERMO the quickest central heating system to be installed. The wall system that has until recently been extremely difficult to mount has now, thanks to 3THERMO, become much simpler than mounting standard radiators.

Solutions adjusted to needs

The structure of 3THERMO radiator allows their application in architectural systems previously inaccessible for concealed radiators. The radiator, which is only responsible for the transmission of heat and even distribution of temperatures, is only 8.5 mm thick in its thickest place. Such reduction of thickness without losing the heating power is undeniably revolutionary for water wall heating systems. Open structure of the aluminum conductor allows the radiator to be embedded even in a layer of glue and under any type of wall cladding, be it in the bathroom under a layer of tiles or in the living room under an imitation of a brick or concrete wall.



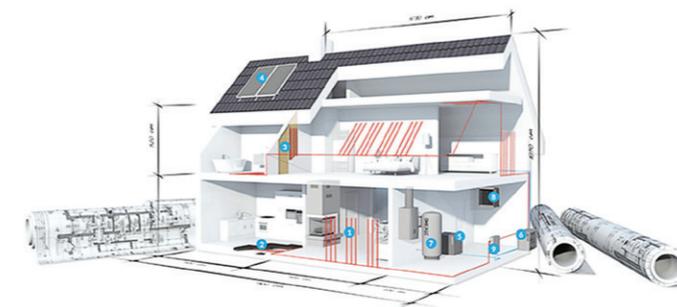
Original 3THERMO water fitting features a rubber pipe. This is the only material that does not rinse off or oxidise, and retains its flexibility at all times, thus guaranteeing 100% tightness of the system. 3THERMO is based exclusively on quality materials.



Gain additional space

Modern interior design trends strive towards nature. They aim at simplicity, clear shapes and natural materials including stone, wood, glass and increasingly more fashionable concrete. Densely-packed structures and unnecessary embellishments are avoided; spaces are open and well-lit. Typical structural elements such as stairs are not hidden but exposed. Fabricated with attention to detail, they make a decorative part of the house rather than just a passage between the lower and upper floor.

Bathrooms have changed as well; hardly anyone can presently imagine their bathroom without a concealed cistern, which is both practical and hygienic. We are reluctant towards protruding parts of central heating, such as heaters or connecting pipes; for this reason we tend to choose surface heating solutions designed for modern interiors. The technology enables introduction of heat inside structural parts of the building such as floors, walls and ceilings. We are not warmed by heaters but by warmth radiating from underneath the plastering or flooring.



It's not just the design



Economy

Reduced consumption of energy is a distinctive feature of surface heating systems, and 3THERMO additionally compensates for losses at the place of their occurrence.



Safety

A radiator concealed in the plaster layer may be damaged, but it will not unseal the water system; the central heating system will continue working.



Health

It is the most hygienic and cleanest heating system in the world! It does not require any cleaning, maintains optimum air moisture, and prevents development of moulds and fungi on walls.



Ecology

3THERMO heats your home and not the planet. Heat is accumulated in the mass of the building and does not escape with air through the ventilation system.



Compatibility

3THERMO may be powered from any type of central heating system, be it a gas-fired furnace, Heat pumps, boiler, a water-jacket fireplace or a solar collector.



Get in touch!



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