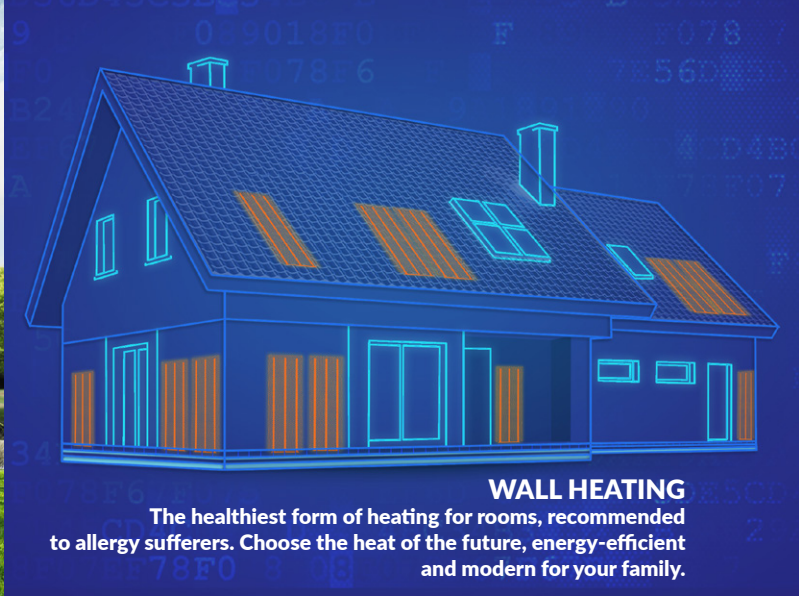
3THERMO

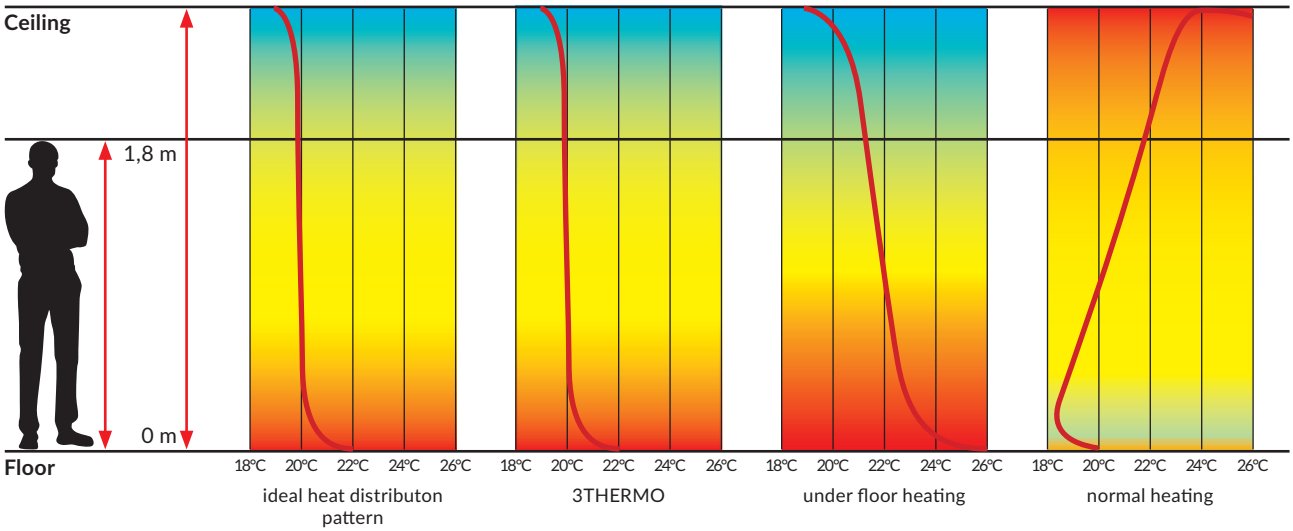
Hybrid Concealed Radiators



WALL HEATING

The healthiest form of heating for rooms, recommended to allergy sufferers. Choose the heat of the future, energy-efficient and modern for your family.

Surface heating systems are presently the most energy-efficient forms of heat distribution. The relatively simple installation on the floor has contributed to the popularisation of this heating solution mainly in the form of the underfloor heating system. Wall heating systems, whose better location could guarantees the highest comfort and cost effectiveness, were nevertheless used less frequently because of technological limitations and generated investment costs. It was only the new design of 3THERMO radiators that enabled the transmission of thermal energy within a standard plaster layer (1-1.5 cm thick), which guaranteed the minimisation of thermal losses and the highest performance among all other surface heating systems. The latest generation of 3THERMO wall heating systems also obtained better safety parameters, which improved the functionality of the system (no potential leaks as a result of a damage to the wall, no collisions with the electrical system, etc.).



How does it work?

1 RADIATOR CORE

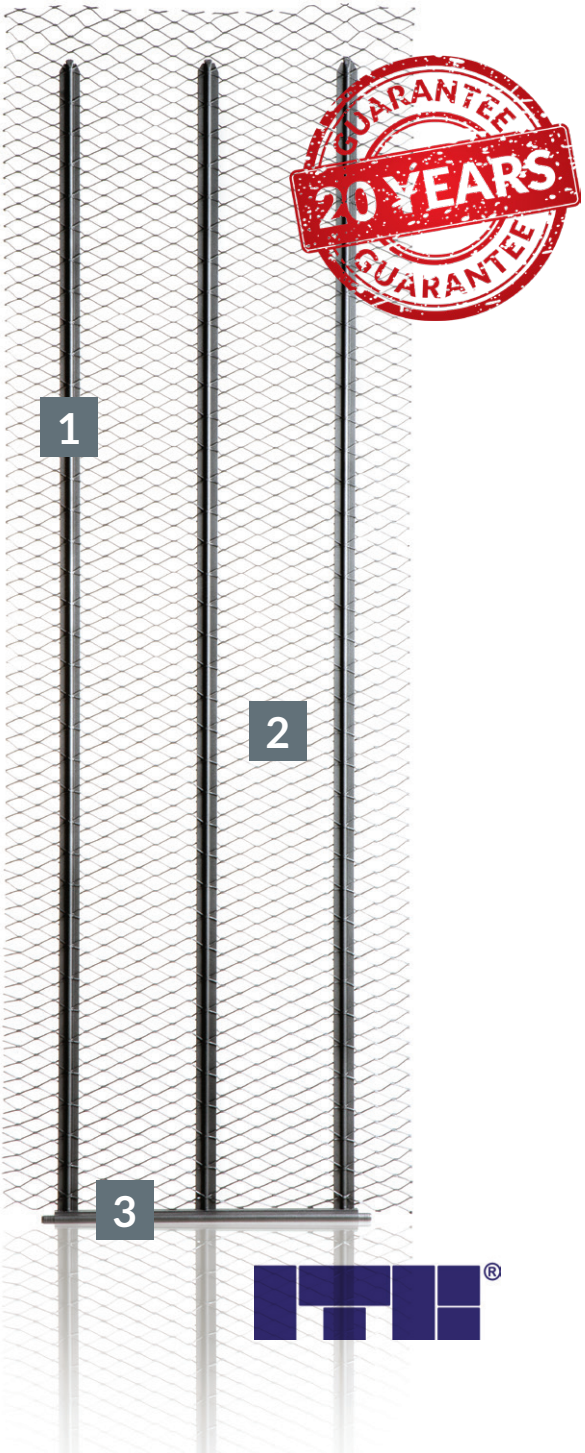
The function of the radiator core is the vertical transmission of thermal energy collected from central heating water, which flows through the water manifold. The use of the radiator core in the design of the concealed radiator allowed for the manufacture of a sufficiently thin structure which can be embedded in a standard plaster layer without any problems. The radiator core just like all other parts of the radiator is made of aluminium alloy subjected to ageing processes in order to increase its resistance to external conditions.

2 REINFORCEMENT

The aluminium mesh stiffens the design and, as an element that enlarges the active area of the radiator, serves the purpose of transferring thermal energy from the radiator cores to plaster. It was designed as the only reinforcement for the plaster with a typical Rabitz formula. The mesh is woven between the cores in order to minimise the internal stresses resulting from the thermal expansion and to eliminate the natural cracking of the plaster.

3 WATER COLLECTOR

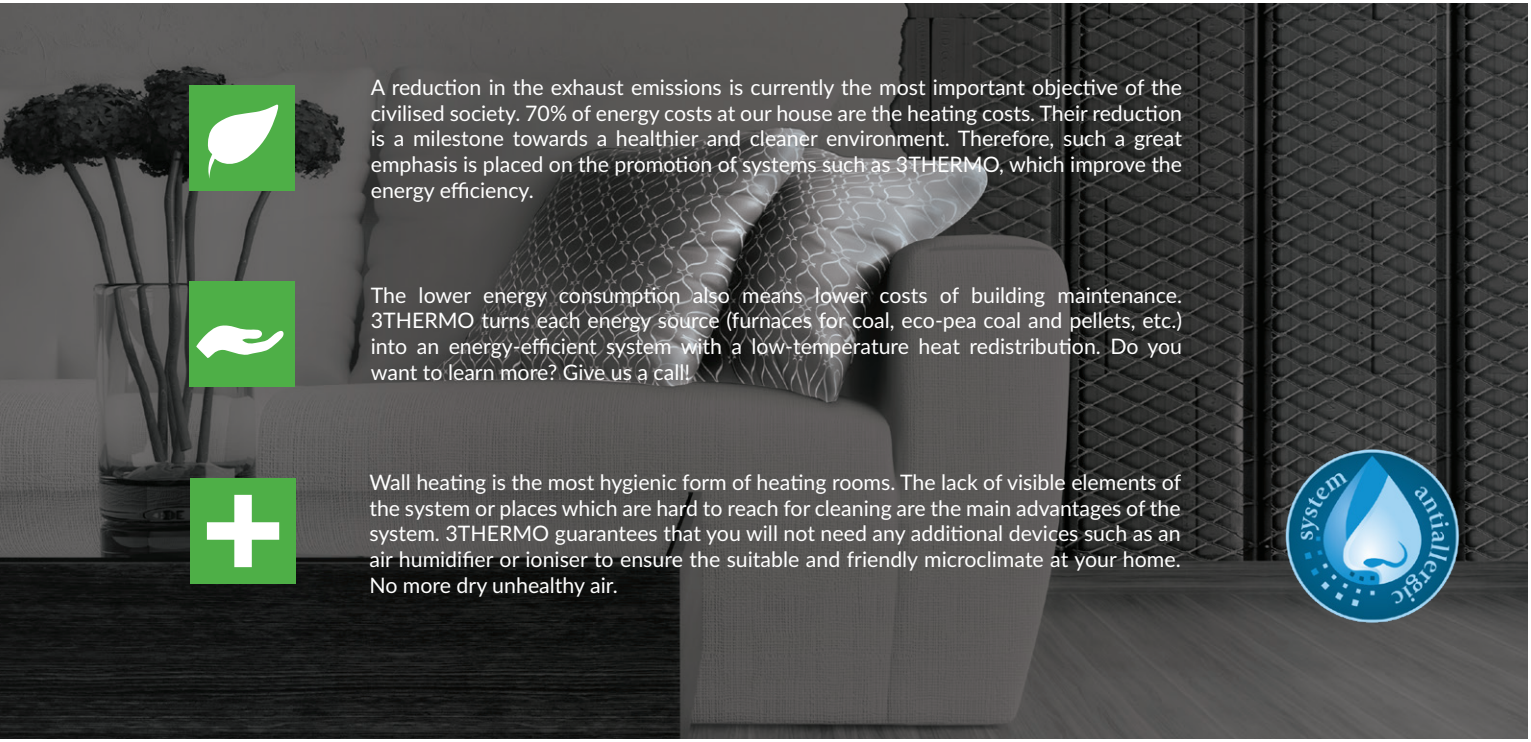
The lower part of the concealed radiator is used to redirect the thermal energy collected from heating water to a radiator core which is separated from the hydraulic part. The manifold features a water connector which is to be connected to the pipework on both sides (it does not matter from which side it is supplied with hot water). The manifold as a heat exchanger has been designed in a manner which completely excludes the possibility of ingress of air into the radiator.



Healthy
heating technology

Is air capable of being a good heat storage? Unfortunately not, it is too elusive and it is the hottest always under the ceiling. Therefore, the systems based on hot air will always generate higher losses than surface heating systems. The best surface from the point of view of comfort and performance of the heating system is the external wall. The wall heating system which has so far been so difficult to implement has been replaced by the underfloor heating system. Owing to the design of 3THERMO concealed radiators, we can provide the surface heating with much greater precision directly at places where losses are generated. Such a high accuracy allows for the heating with the minimum required amount of energy, depending on the current demand. In the case of other systems, we always have to take into account the excess of energy, which we lose for the ventilation. The 3THERMO wall heating efficiency is manifested by the improvement of the performance of the heating system.

3THERMO is the first surface heating system which works together ideally with each control system owing to low inertia. Go to www.3THERMO.com and learn more.



A reduction in the exhaust emissions is currently the most important objective of the civilised society. 70% of energy costs at our house are the heating costs. Their reduction is a milestone towards a healthier and cleaner environment. Therefore, such a great emphasis is placed on the promotion of systems such as 3THERMO, which improve the energy efficiency.

The lower energy consumption also means lower costs of building maintenance. 3THERMO turns each energy source (furnaces for coal, eco-pea coal and pellets, etc.) into an energy-efficient system with a low-temperature heat redistribution. Do you want to learn more? Give us a call!

Wall heating is the most hygienic form of heating rooms. The lack of visible elements of the system or places which are hard to reach for cleaning are the main advantages of the system. 3THERMO guarantees that you will not need any additional devices such as an air humidifier or ioniser to ensure the suitable and friendly microclimate at your home. No more dry unhealthy air.

Take care
of your family

When building a house we try to cater to all needs of our family. Safety, health and proper level of comfort. Although we might not realise it, a lot depends on the heating form we choose for us and for our children.

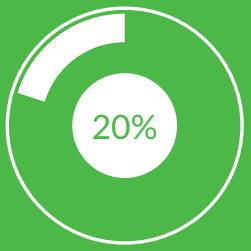
Why is heating so important? The heating system we choose for our houses directly affects appropriate humidity of the air we breathe. The characteristic feature of all heating systems is that they dry out the air! And the dry air causes irritation of upper airways and lower tolerance for viral infections. Only the wall heating systems prevent the dehumidification of air in view of the reversed heat transmission. Now, moisture is additionally released from walls instead of penetrating them, and at the same time the external barriers are dried. The possibility of breathing moist air which is not overheated and which does not mix with dust and allergens as a result of use of heating appliances, is invaluable not only for allergy sufferers.

Research results confirm effectiveness

3THERMO is a manufacturing company which has introduced energy-efficient concealed radiators into the market. This is an innovative structural solution designed by Polish engineers. It eliminated the defects and inconveniences known from other earlier versions of heating systems.

. The high performance of the radiator core coupled with the ability to accumulate large amounts of energy inside the water manifold contributed to the achievement of the unusually high power by the concealed radiator, when we compare it with other structures of this type. The hardened aluminium alloy and the lack of moving parts guarantee the long-lasting operation without the necessity to perform any maintenance activities.

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.

Reduction in losses
translates into savings

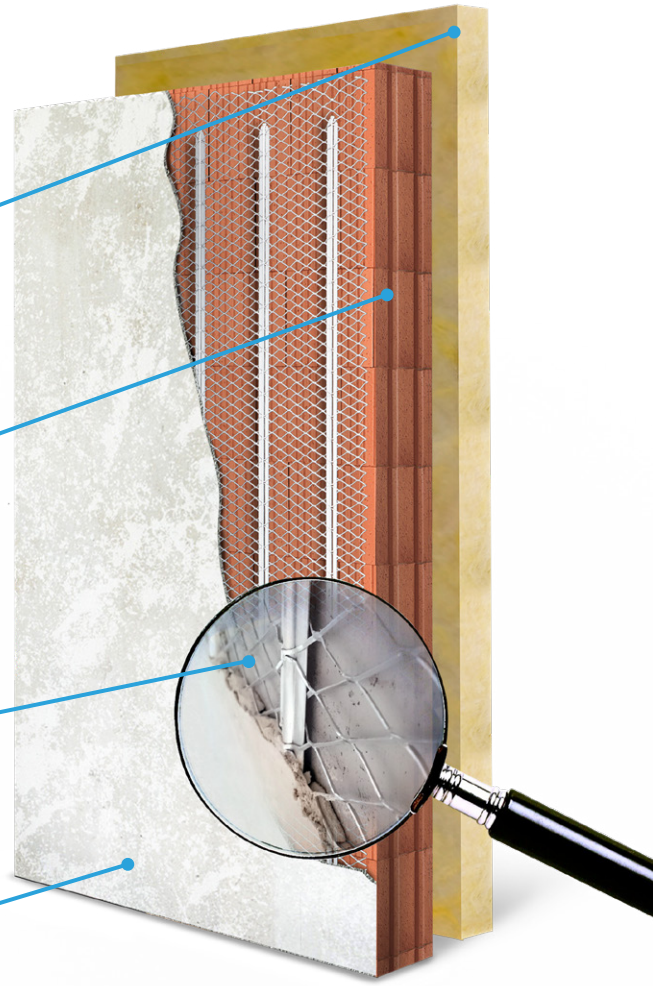
The wall heating combines the ability to accumulate energy in the concrete mass (as is the case with the popular underfloor heating) with the ability to balance losses exactly at the place of their occurrence, i.e. on the external wall. In such a situation an ordinary wall turns into an active thermal barrier which separates us from the cold environment inside the premises. Not only does this increase the heating comfort, but also definitely reduces the inertia and thermal losses.

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

The structural wall, as external envelope provides an additional heating resistance and makes the emission of heat more difficult.

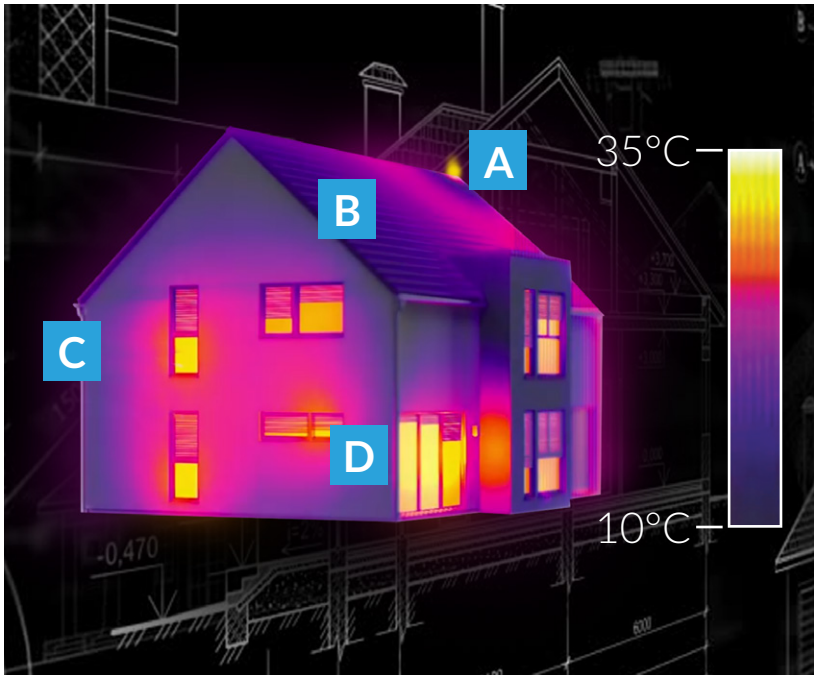
Concealed radiator – the source of heat in the wall system. As it is embedded in a thin layer of plaster, it distributes the thermal energy all over its surface. The thinner the coverage of the heating system, the lower the thermal resistance to the room interior.

Plaster with the built in 3THERMO system dissipates heat into the room and directly compensates for thermal losses resulting from the conductivity of the envelope. The average temperature of the wall surface does not exceed 25°C, which ensures the ideal comfort, lack of convection and perceptible thermal radiation.



Heat your house, not the planet

The invention of heaters about a hundred years ago changed the way people had been heating their houses. The heaters improved the comfort as they compensated for thermal losses directly under the window at the coldest spot. However, their greatest disadvantage is the transmission of a large amount of thermal energy into the air, which increases its mobility and results in the achievement of the highest temperature under the ceiling. This whole volume of air heated under the ceiling (with a temperature ranging between 25 and 27◦C) is a loss. The surface heating owes its economy to the fact that it may dissipate heat using a lower temperature, and the wall heating (just like heaters) additionally does at places where the highest losses occur (on the external wall). This results in the lowest possible inertia and precision in the dosing of thermal energy.



The 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 form of heating, which is capable of generating savings up to 40% compared to conventional systems. This is achieved mainly as a result of the low-temperature heat redistribution and limited losses into ventilation. The wall system additionally does not determine the type of a floor covering, so there is no need to give up on the natural wooden floors.

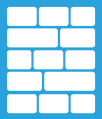
A VENTILATION

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.

The cheapest heating format

Wall heating, taking into account the economy 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 water vapour condensation point, which additionally improves the wall's durability. The 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, the wall has a much lower heating resistance than e.g. the floor since it is not limited by the threshold heating parameter. This means that the system is capable of achieving much higher heating power per square meter of the wall area than per square meter of the floor. The wall heating on internal envelopes is only used to supplement the heating power.

The advantage of the wall heating system over the floor heating system is its location in the zone of the highest heat losses and its real capacity of lowering the air temperature without the noticeable loss of thermal comfort. The wall system is also characterised by 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 hydraulics. 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 hydraulic resistance related to the vertical transmission of thermal energy with water used as a medium. The solution employed by 3THERMO allowed to reduce the amount of water in the central heating network significantly.

The 3THERMO concealed radiators are simple and lightweight structures. Their assembly is very easy and does not require the use of specialist and expensive tools. The system does not feature any complicated connecting elements or an extensive range of fittings as is the case with other systems. This is a single-line installation in a serial 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 install, has now, thanks to 3THERMO, become simpler than the installation of standard heaters.

Customised solutions

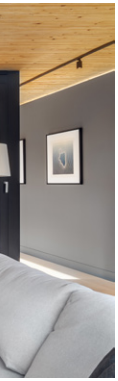
The structure of the 3THERMO radiator enables the use of wall heating in architectural layouts which have not been available for such solutions before. The radiator which is responsible for the transmission of heat and the even distribution of temperatures is 8.5 mm thick at the thickest place. Such a reduction in thickness without the loss of the heating power is undeniably a true revolution for water wall heating systems. The openwork structure of the aluminium conductor allows the radiator to be embedded in a layer of glue, under tiles in a bathroom.

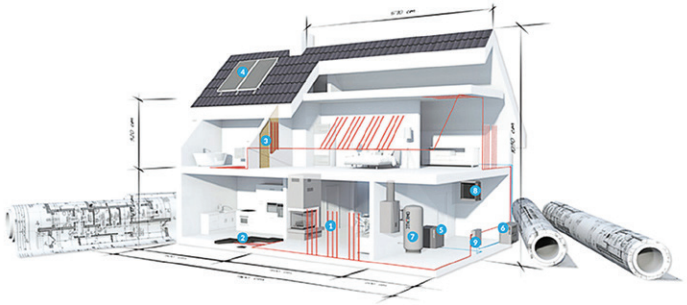
100% SAFE GUARANTEE

The 3THERMO concealed radiator is a part of the central heating system. It does not introduce water under the plaster, as it distributes thermal energy from the water manifold using radiator cores. Such a design ensures safety and eliminates risks related to accidental damage to the wall. Nevertheless, the hydraulic part of the 3THERMO system requires the connection of the system taking into account all standards, therefore the warranty is strictly related to the installation performed by a qualified fitter. It must always be remembered that a leak test should be performed before the closure of the system.

Gain additional space to make your own arrange-ments at your house

The modern architecture of interiors is a turn towards nature. Simple forms, clear shapes and natural materials including stone, wood, glass and increasingly fashionable concrete are now prevalent. Densely-packed structures and unnecessary embellishments are avoided; spaces are open and well-lit. Typical structural elements such as stairs are not hidden any more but rather exposed. Fabricated with attention to details, they rather resemble a decoration and not an element of vertical circulation spaces. Changes also refer to the equipment; nowadays no one would even imagine a bathroom without a concealed flushing cistern, which is both practical and more hygienic. We are also reluctant to tolerate protruding parts of the central heating system, such as radiators or connecting pipes; for this reason we tend to choose surface heating solutions designed for modern interiors. This technology allows for the introduction of heat inside structural elements of the building such as floors, walls and ceilings. In such a case the heating is not provided by heaters but rather the warmth radiating from underneath the plastering or flooring.





It is not just the design that matters

Economy

Reduced energy consumption is the characteristic feature of surface heating and the wall heating additionally reduces the inertia of the system.

Safety

The radiator core concealed under a layer of plaster may be destroyed but one way or another this will not unseal the hydraulic system; the central heating system will continue working.

Health

This is the most hygienic heating system in the world! It does not require cleaning, maintains the optimal air moisture and prevents moulds on walls.

Ecology

3THERMO heats your house, not the planet. The heat supplied to the plaster does not dissipate so quickly as in the air, and the system increases the energy efficiency of the building.

Compatibility

3THERMO can be supplied from any central heating system using a furnace for gas or eco-pea, fireplace with a water jacket or solar collector.

Get in touch!

3THERMO

www.3thermo.co.uk
info@3thermo.uk
01279 655 897

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