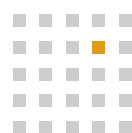


Discover the Future of Heating

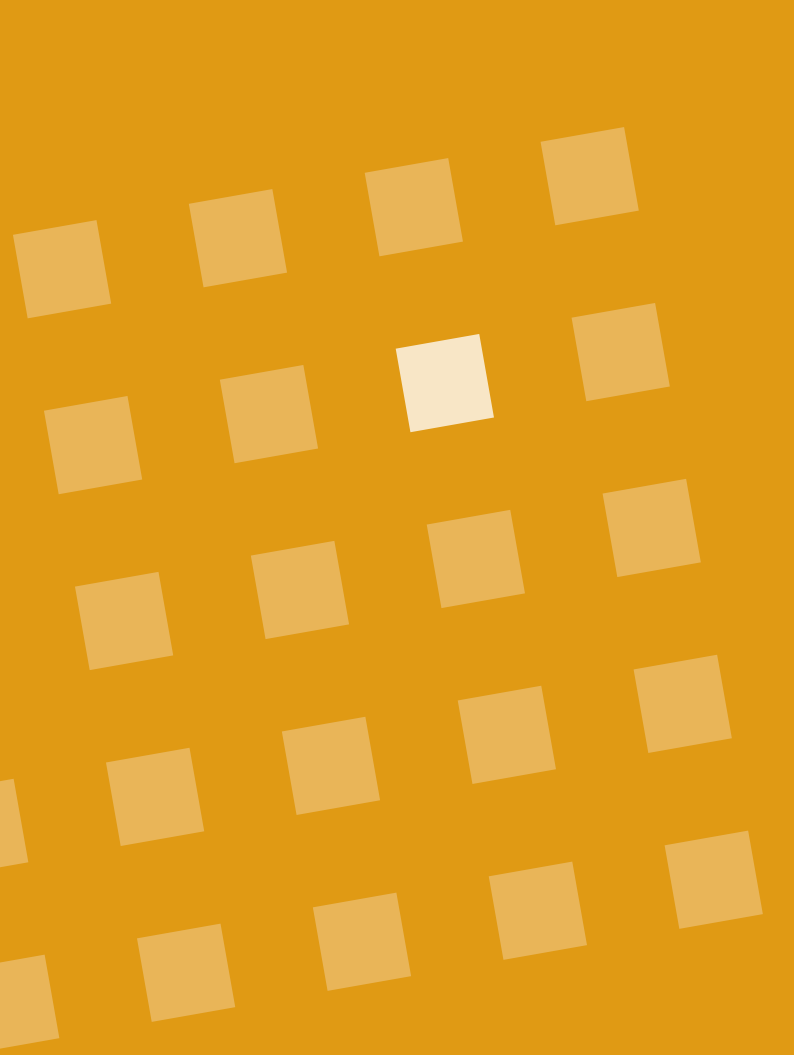
ENERGY-SAVING, FLEXIBLE
PANEL & FRAME HEATING



- cosy
- economic
- environmentally friendly
- future-proof

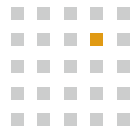


thermofer[®]
THE FUTURE OF HEATING

A decorative graphic in the top-left corner consisting of a grid of squares. The squares are arranged in a pattern that tapers to the right. Most squares are a light orange color, but one square in the second row from the top and third column from the left is white, standing out from the rest.

“Nothing is
as powerful as an idea,
whose time has come.”

VICTOR HUGO



Natural heating for a high quality of life

NATURAL HEATING

From time immemorial, the sun has been warming all creatures on our planet. Its natural thermal radiation is omnipresent, it warms us directly from all sides, indirectly ensures a pleasant air temperature, and we feel comfortable and good. Without this natural thermal radiation there would be no life. This natural and healthy type of warming is the basis of our thermofer[®] panel heating system.

By slightly warming preferably large and many surfaces in our surroundings (apartment, office, ...) we create similarly natural conditions, in which we live cosily and healthily. Just like the solar radiation, the thermal radiation of the thermofer[®] system comes from almost all directions, and the warm surfaces warm up the room air to a comfortable level. A natural room climate is thus created in which a larger part of the human's heat balance is regulated by thermal radiation and a smaller part through the room air.

SYSTEM PRINCIPLE

"The whole is greater than the sum of its parts" – this quote by Aristotle also applies to the thermofer[®] systems. All of our heating systems' components are carefully matched to reach the greatest possible efficiency. For us, this goes without saying but it is still not enough. "The whole" also means factoring in the building, the room, the insulation, the location, the people and their habits. Only then, the full potential can be exploited in the sense of Aristotle. For you as the user of our system this means: You share some vital data with us, and we lay out the system.

The system principle also allows the integration of our heating into existing and future system technology. Consequently, the integration of regenerative energy generators (photovoltaics, small wind turbines, ...) is possible, as is the connection to conventional and future bus systems. We are convinced that electricity represents the by far most important type of energy of the future. Therefore our heating system is compatible with all important future energy generators, so that you are purchasing a future-proof heating solution.

ECONOMIC AND HEALTHY

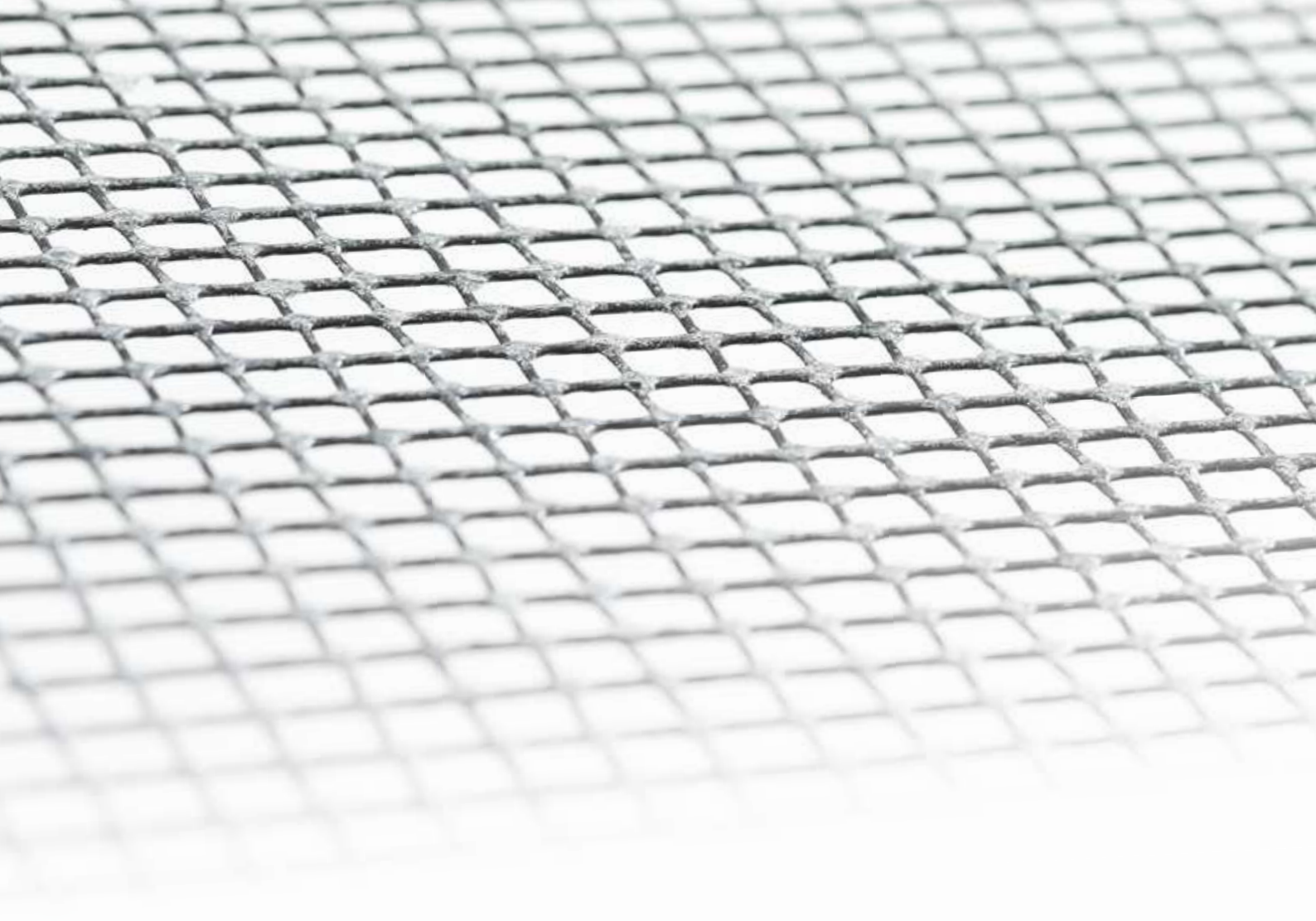
The natural heating principle and the strict implementation of the system concept lead to many advantages of the thermofer[®] panel heating system:

Economy & Comfort

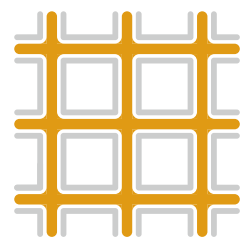
- very low energy consumption and low operating costs
- very affordable heat flow tariffs
- cosiness and wellbeing just like with the good old tiled stove
- up to 70% thermal radiation and 30% convective heat output
- quick response behaviour and clever control technology
- easy and cost-efficient installation
- flexible and invisible fitting into wall, ceiling and floor
- maintenance-free

Ecology & Health

- regenerative energy can be used
- significant reduction in CO₂ emissions
- does not raise dust or allergenic substances
- noiseless



thermofer® | MESH



THE HEART OF THE HEATING SYSTEM IS THE MESH

The heart of the thermofer® panel heating is a thin glass fibre mesh of approximately 1.5 mm that is coated with carbon nanotubes and an insulation material. If you apply a direct or alternating voltage, electricity flows through the carbon nanotubes which create an areal heat distribution due to the small mesh openings. Since this warmth is created through electricity, there are no moving parts in the system, allowing a maintenance-free operation.

Through the netlike structure, the heating element can be incorporated invisibly and close to the surface in a wall, the floor, ceiling or other system construction elements, for example integrated into the surface plaster of a wall.

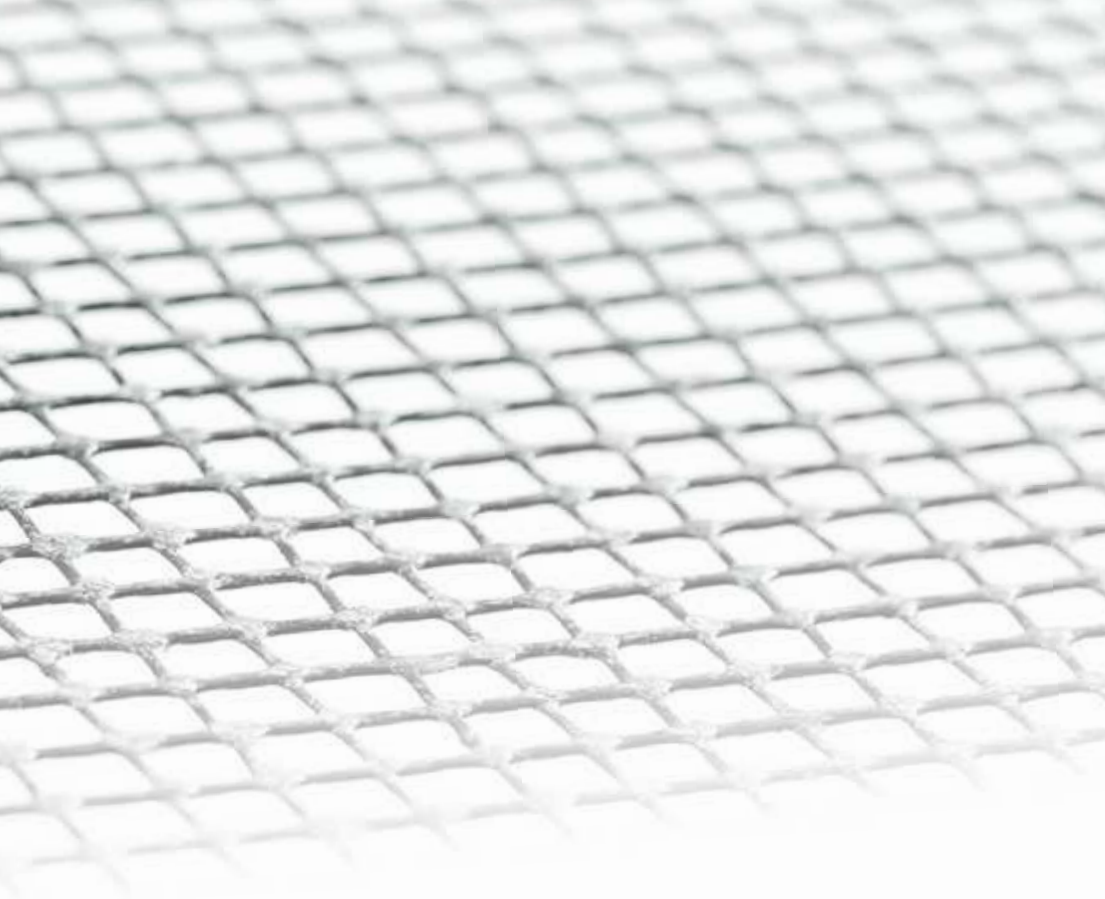
- unique mesh structure with carbon nanotube coating
- heating mesh thickness: 1.5 mm
- power connection: 230 Volt AC or 42 Volt AC (transformed alternating voltage)
- wattage: 210 W/m²



FORMATS

thermofer®|MESH can be delivered confectioned into different measurements and if necessary simply cut to size.





Our Product Range

thermofer® | WALL



PAGE 6

thermofer® | CEILING



PAGE 6

thermofer® | FLOOR



PAGE 8

thermofer® | CONTROL



PAGE 9

thermofer® | TARP



PAGE 10

thermofer® | FRAME



PAGE 11

ADVANTAGES

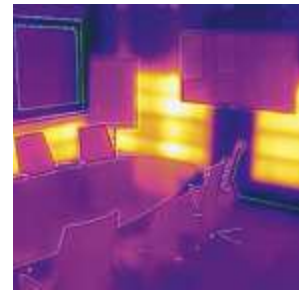
- cosy and pleasant warmth
- healthy and energy-saving feel-good heating
- quick, easy and affordable installation
- flexible, robust and invisible
- versatile application options

ECOLOGY & HEALTH

- regenerative energies utilisable
- significant reduction in CO₂ emissions
- does not raise dust or allergenic substances
- noiseless

ECONOMY & COMFORT

- very low energy consumption and low operating costs
- very affordable heat flow tariffs
- cosiness and wellbeing just like with the good old tiled stove
- up to 70% thermal radiation and 30% convective heat output
- quick response behaviour and clever control technology
- flexible and invisible fitting into wall, ceiling and floor
- maintenance-free



thermofer® | WALL

thermofer® | CEILING



COSINESS FROM THE WALLS

If you feel the heat radiation from all directions, it is the most comfy for you. The thermofer®|WALL system, which is invisibly integrated close to the surface into the plaster layer, is particularly well-suited for this purpose. You can set each heating element to the appropriate temperature to create your individual room climate.

This energy-efficient system is suitable for large and small, low and high-ceilinged rooms, whereby it is particularly economical in high-ceilinged rooms.

The supply voltage is 42 V AC and therefore fulfils the requirements in electrical safety.

thermofer®|WALL is certified as construction product according to EN 13501-1:2010 with the fire classification E.

WARMTH FROM THE CEILING

If the warmth is to come from "heaven", you can use the large and free area of the ceiling as a heat source with the thermofer®|CEILING system. With this system, the proportion of thermal radiation is the highest, and the build and installation is equally simple as with the thermofer®|WALL. At the same time, you own an insulation of the storey ceiling with the fitting. A combination of thermofer®|WALL and thermofer®|CEILING is possible without any complications and in many application cases advisable.



FORMATS/WATTAGE

The thermofer®|MESH can be delivered confectioned into different measurements for the thermofer®|WALL and thermofer®|CEILING systems. If necessary, it can be cut to size. The wattage is 210 W/m².



TOP LAYER (plaster, tile ...)

HEATING FABRIC (thermofer® | MESH)

INSULATION FLEECE (thermofer® | DAMP)

BOND COAT

LOW LAYER STRUCTURE

The just 1.5 mm thick specially coated thermofer®|MESH heating fabric is integrated close to the surface in walls, floors, ceilings or system construction elements. The overall structure of a top layer with heating fabric usually comes to 10 to 20 mm. The surfaces of the wall, floor or ceiling heat up quickly and evenly thanks to the special coating and the tightly woven mesh of the net. The thus heated surfaces radiate pleasant warmth and ensure a cosiness and good room climate within minutes.

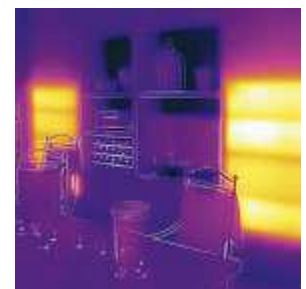
only 10-20 mm layer structure incl. insulation fleece with a very low thermal conductivity $\lambda < 0,02 \text{ W}/(\text{m}^*\text{K})$

EASY AND INVISIBLE FITTING

thermofer®|WALL and thermofer®|CEILING are very easy to install:

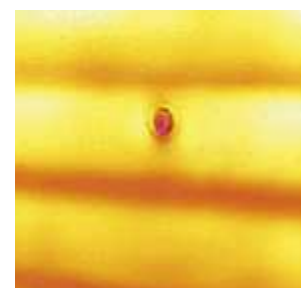
1. Fix the thermofer®|DAMP with a bond coat to the wall.
2. Mount the thermofer®|MESH with a bond coat onto the insulation fleece (thermofer®|DAMP).
3. Run and connect the cable for the energy supply.
4. Apply top later.

And the feel-good heating is ready to go!



VERY ROBUST (NO LEAKAGE)

Through the robust design of the thermofer®|MESH and the unique net structure, retrofitting lamps, curtains, pictures, TV mounts and so forth is no problem. There is no risk of leakage with our system!





thermofer® | FLOOR



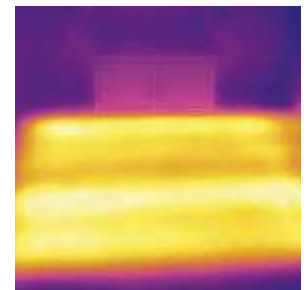
HEAT FROM THE FLOOR

Under floor heating, especially from tiled floors, delivers pleasant warmth and creates a cosy climate. A serious disadvantage that has hindered their widespread distribution has been their great thermal inertia: it takes hours until the room is heated. And again many hours until the room has cooled off.

thermofer®|FLOOR does not have this disadvantage. Through the integration of the heating element close to the surface and the use of an ultra-thin but highly effective insulation layer (thermofer®|DAMP) our floor heating heats up as quickly as the wall heating – in other words in minutes and not hours!

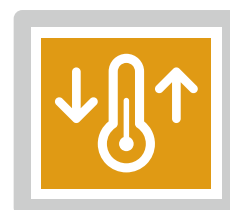
This is only possible with the thermofer®|FLOOR system!

Even heating zones, which were difficult or not at all to realise with classical systems, can be made possible without an additional installation requirement, which again could lead to a significant saving in heating costs.





thermofer® | CONTROL



COMFORTABLE HEATING CONTROL

For all thermofer® systems we offer you a control system aligned with your individual needs. From a simple on/off switch via a thermostat, which controls the surface temperature according to your specifications, all the way to a smart solution that takes into consideration varying values (presence, outside temperature, solar radiation and so on) in its control. thermofer® can thus allow you the maximum comfort and highest possible energy saving.

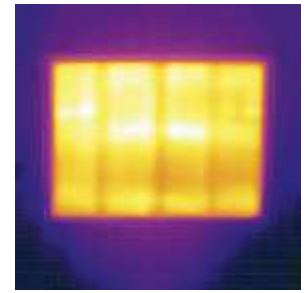
Use your smartphone or tablet as smart switchboard. Regulate the temperature remotely and in this way save money and energy. Whether you are on holiday, at work or shopping – you can check your thermofer® heating, adjust, activate individual profiles or optimise the temperature in single rooms. Comfort, safety and cost savings from anywhere.

Comfort-oriented

- setting the room air temperature
- classic wall thermostat
- Smart app on your smartphone, tablet ...

Application-oriented

- Separate setting of room air and wall temperature
- Zone heating
- Individual room climate



thermofer® | TARP



FLEXIBLE WARMTH

Through its unique set-up the thermofer®|TARP heating element offers you different application options. It can, for instance, be attached to the wall with a mounting set or integrated into a sturdy picture frame (see also thermofer®|FRAME).

You can targetedly deploy the thermofer®|TARP exactly where pleasant warmth is required. The only thing you need to operate the heating element is a normal socket with 230 V AC. It allows us to offer you the use of commercial controls such as, for example, radio-controlled sockets, automatic timers, temperature-controlled control systems ... Thus many different commands can be given, from the simple switching on and off all the way to a temperature-controlled operation via the smartphone.

Through its robust and low-maintenance set-up the thermofer®|TARP offers many different application options, such as:

- work areas
- workshops
- hobby rooms and basements
- construction trailers, containers or similar spaces that need to be heated



FORMATS/WATTAGE

Available in two standard sizes:

1,500 × 1,100 mm	410 Watt (230 Volt)
2,100 × 1,500 mm	820 Watt (230 Volt)





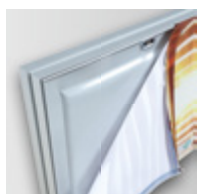
thermofer® | FRAME



EYE-CATCHER AND WARMTH DISPENSER

For the thermofer®|FRAME, the thermofer®|TARP heating element has been integrated into an elegant aluminium frame. Both the front and back are fitted with a high-quality, printable fabric that is easy to exchange. This way, the thermofer®|FRAME can also be deployed well for advertising purposes with changing motifs. What is more, the element can be fitted to a wall with a special mounting set or used as display with a pedestal.

The supply voltage is 230 V AC, the electrical safety according to EN 60335-1 has been certified by Dekra.



Custom printed and easily exchangeable fabric surface.

Through its unique set-up the thermofer®|FRAME offers many different application options, such as:

- large-surface motif heating fixed to the wall
- partition with heating and advertising function
- mobile or fixed element of zone heating in exhibition and sales rooms
- quick set-up and dismantling of a temporarily used heating zone, i.e. for an event



Available in two standard sizes:

1,500 × 1,100 mm	410 Watt (230 Volt)
2,100 × 1,500 mm	820 Watt (230 Volt)





thermofer.com

CE All thermofer® products are CE compliant.



A company of the **RAU GROUP**



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