EMPUR®

CUT-THERM®

CUT-THERM® milling system

Heating system without additional installation height

A company of the EMGRUPPE®

EMPUR® surface heating systems

Increased comfort and efficiency

The decision to install surface heating is a sensible decision for increased comfort, economy and sustainability. Surface heating systems are ideal for combining with modern heat generators and regenerative sources of energy.

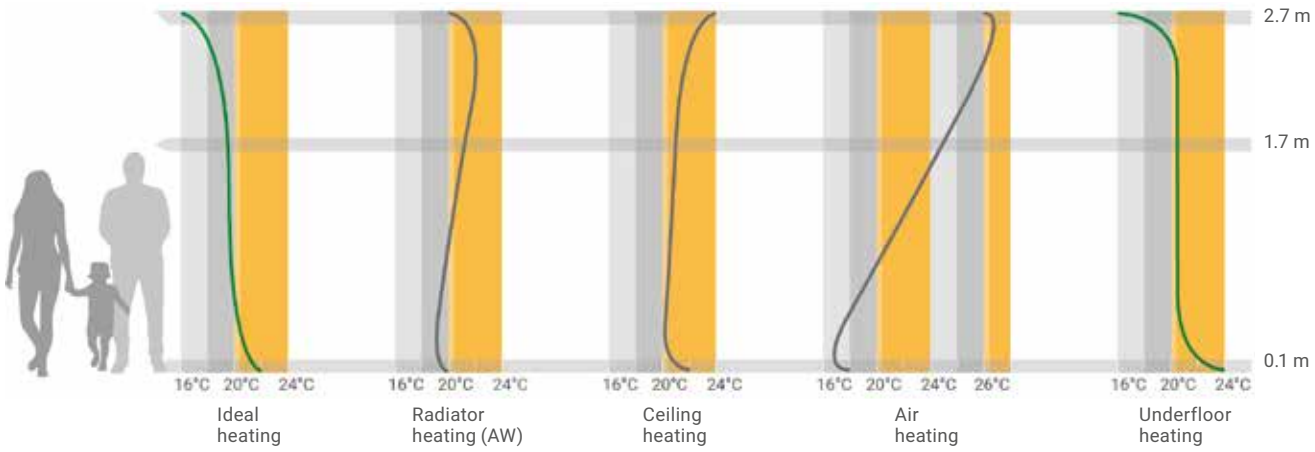
Mild heat radiation from the bottom up creates an increased sense of wellbeing. As a heat source with a large surface area, it can make an exceptional contribution to lowering energy costs at low flow temperatures. In this way, it also makes a significant contribution to sustainability and to protecting the environment.

Underfloor heating is also especially suited to people with allergies, as the heat rises across the entire room and hardly swirls up any dust across the large surface area. It affords the client completely new design possibilities without any visible radiators and increases the building's value in the long term.

Surface heating systems are also being used more and more in modernisation projects. Particular requirements, for example installation height, load capacity, weight, insulating properties and sound absorption can be guaranteed alongside efficient heating.

Surface temperatures

Temperature curve progression: Comparison of "ideal heating" with an underfloor heating system



EMPUR® surface heating systems

Quality “Made in Germany” from one source

EMPUR® Produktions GmbH is a producer and full-range retailer of innovative, high-quality panel heating systems and has the right solution for every requirement:

- **Surface heating/cooling systems for floor, walls and ceilings**
- **Systems without additional installation height or with minimum installation height for modernisation**
- **Diverse systems with composite panels and additional insulation for new buildings in the private, municipal or industrial sectors**
- **System accessories and tools**
- **High-quality heat distribution and drinking water systems**
- **Innovative control technology**

The company manufactures over 90% of the system components in its own production and under its own responsibility on modern equipment at our site in Buchholz-Mendt. We work under a structured quality management system, which is certified by DEKRA in accordance with the DIN EN ISO 9001:2015 international standard.

In the interests of the most objective and neutral product evaluation possible, EMPUR® subjects its products to material testing and certification by nationally recognised testing institutes and assessment centres. High quality, continual and pioneering product developments, technical advice and support, a three-level distribution network across Germany, reliable services, as well as specialist training for wholesalers, specialised craftsmen and planners make EMPUR® a competent partner in the heating industry.

CUT-THERM® milling system

Heating system without additional installation height

CUT-THERM® milling system

Heating system without additional installation height

CUT-THERM® is the quick system solution by EMPUR® that cuts an underfloor heating system into existing floors without causing damage or changing the screed level.

An experienced installation team uses a special floor milling machine to cut grooves for the underfloor heating pipes into the existing screed with virtually no dust (cement, anhydride or mastic asphalt screed with a minimum thickness of 40 mm). Dry screed elements may also be used after a technical consultation. Grooves cannot be cut in concrete floors. The floor lining can be placed into position immediately after the pipes have been laid into the grooves.

The grooves are cut directly into the existing screed, but can also be cut in new buildings! This reduces the construction requirements to a minimum. No floor core refurbishment is required and the clearance heights of the door openings are retained.

With EMPUR® CUT-THERM® you can retrofit an underfloor heating system even when renovating or modernising a building to increase your living comfort and reduce energy costs. This system allows special solutions for demanding challenges to be realised in new buildings.

Our CUT-THERM® milling system impresses

- No additional installation height **(zero installation height)**
- Minimal construction requirements – **NO floor core refurbishment** required
- **Dust-free groove cutting** thanks to integrated suction
- Quick laying of the underfloor heating and **fast construction progress**
- Planning, material delivery and professional implementation from one source

With CUT-THERM® you are always in the green zone

Example: Modernisation of living space up to 120 m²/day, depending on structural conditions and nature of the substrate to be milled

CUT-THERM®	Remove upper flooring	CUT-THERM® milling, installing heating pipes, leak testing	Install floor finish	ZERO INSTALLATION HEIGHT → result: CUT-THERM® is faster, cleaner and more cost-effective than a comparable structural restoration!
Time ▶	▶ 1st day	▶ 2nd day	▶ 3rd day	

CUT-THERM® milling system

Standardised installation

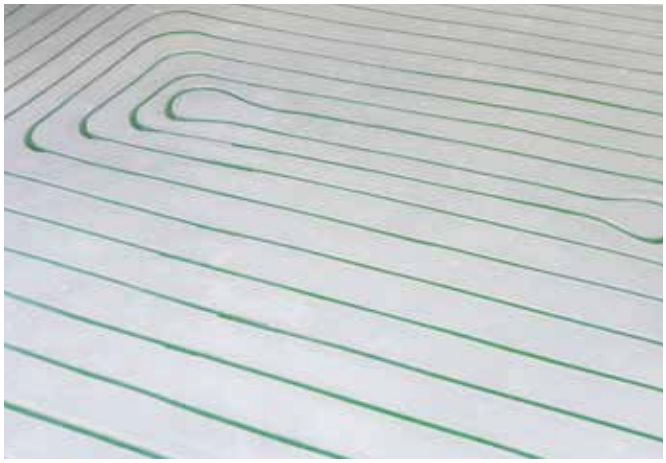
Your route to increased home comfort

Removal of the existing top layers and radiators.

Provision of a flat, clean and dry surface.

Virtually dust-free cutting of the grooves into the existing screed by an experienced installation team according to plans.

Laying of KLIMAPEX® heating pipes in the cut grooves.



Secure fixing of the heating pipes through the clamping effect.

Connecting the underfloor heating pipes to the manifold, filling the system with water and leakage test.

On-site work

- Check of the existing screed thickness (min. 40 mm) before placing the order
- Removal of the existing tiles or top layers and radiators
- Provision of a flat, clean and dry surface
- Preparation of the connection lines and creation of necessary ceilings or wall openings
- Installation of the manifold (advance shipment to the heating-engineer or installer)
- Guarantee of free access to the building incl. parking for the installation vehicle with the required equipment
- On-site power supply* (1 x 32 A/3~/400 V or 2 x 16 A/3~/400 V)
- Closing the grooves depending on the planned floor covering
- Disposal of the cut material

CUT-THERM® scope

An experienced CUT-THERM® installation team* provides the following services:

- Cutting of grooves into the existing screed at a laying distance of 12.5 cm (other distances after technical inspection)
- Laying of the floor heating pipes into the grooves
- Connecting the floor heating pipes to the manifold**
- Leakage test with compressed air according to DIN EN 1264
- Handover of the system to the customer

* All necessary tools and energies are brought along if necessary.
** The connection to the existing heating system is carried out by a specialised company.

EMPUR® – MY **RELIABLE PARTNER IN THE SPECIALIST TRADE** – BY PROFESSIONALS FOR PROFESSIONALS!

We are happy to answer any questions you might have regarding our CUT-THERM® milling system and make you a concrete offer. Give us or your specialist craftsman a call!

NOTE You will find extensive additional information on our milling system on our product microsite www.cut-therm.de.

In the service area of our website (www.empur.com/de/service), we have also included installation videos, general information and our enquiry form.

CUT-THERM® milling system

System components

Included in the scope of delivery

Heating pipe

KLIMAPEX® heating pipe PE-RT 15 x 1,8 mm, green

Pipe made of polyethylene, Type I/II in accordance with DIN EN ISO 22391-2 and DIN 16833, with increased thermal stability and insoluble, diffusion-tight EVOH barrier layer in accordance with DIN 4726, Compression fittings and connection set DG/ 90° (depending on design), angle clamps for supply and return lines as required

3V 204 PE-RT

Manifold technology

Variant 1

System manifold HCM-D, version 2.0 with flow rate indicator incl. connection set 90°, made of brass
(Advance shipment to the specialised tradesperson for installation)

For use with existing low-temperature heating or for retrofitting the heating system to low temperature, for **quick manifold installation**

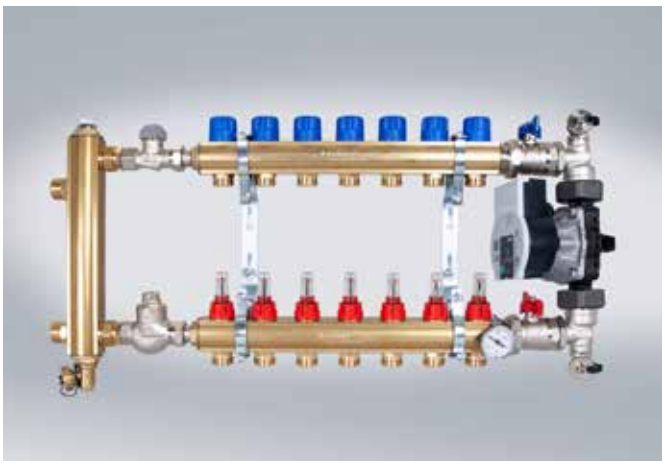
Can be used in EMPUR® "Top Standard" and "Exclusiv" manifold cabinets

Variant 2

HCM-DR control manifold, with high-efficiency pump and thermoseparator, connection set 90° with line regulating valve and control set K, version 2.0 made of brass
(Advance shipment to the specialised tradesperson for installation)

For the integration of CUT-THERM® floor heating into an existing high-temperature heating system in combination with radiators, for **quick manifold installation**

Can be used in EMPUR® "Top Standard plus" and "Exclusiv plus" manifold cabinets



NOTE

The water quality requirements according to VDI 2035 must be adhered to!
Complete your CUT-THERM® milling system with further EMPUR® products such as a heating circuit manifold, manifold accessories, manifold cabinet and control technology in order to enjoy a self-contained EMPUR® system (see page 12 et seq.). We'd be pleased to advise you!

CUT-THERM® milling system

Your benefits

For specialised craftsmen

- One system, one manufacturer – from consultation to design and on to delivery and installation of the components, including pressure testing – **all under one roof**
- Proven system **component quality** and **professional installation** by our own staff
- **Quick and neat solution for the modernisation/renovation of old buildings**
- **No additional installation height (zero-installation-height)**
- Virtually **dust-free cutting of grooves** into the existing screed at the required laying distance (125 mm)
- Simple and secure installation of KLIMAPEX® plastic heating pipes by laying them into the cut pipe grooves
- Secure fastening of the heating pipes through the clamping effect of the redirectors
- Quick and flexible laying of pipe dimensions and qualities of the same system
- Equipment and installation team are organised and coordinated by EMPUR®
- Thus the construction requirements are reduced to a minimum – **no floor core refurbishment**
- No screed placement necessary, placement of levelling compound or flexible adhesive dependent on the type of floor lining
- No additional surface weight
- **Can be adjusted quickly** thanks to minimal pipe overlap
- Many expansion possibilities – comprehensive EMPUR® range with various system accessories and tools, as well as control technology products
- Easily connected to existing heating systems

CUT-THERM® milling system

Your benefits

For the end-consumer

- **Environmental friendliness and future-readiness** thanks to optimal combination with alternative energy types (condensing technology, regenerative heat generators etc.)
- Increased **comfort** through gentle heat radiation from the bottom up
- **No swirling up of dust**, suitable for people with allergies
- New design possibilities without radiators
- **Increases building value**
- **Energy savings** through low flow temperatures
- Easy modernisation – retrofitting possible
- **Barrier-free** modernisation options
- **Quick laying and fast construction progress** – rooms can be used again quickly, as no drying times are necessary
- Clearance heights for the door openings are retained
- Many combination possibilities with all floor coverings bearing the “suitable for underfloor heating” seal

Visit our product microsite
www.cut-therm.de

CUT-THERM® milling system

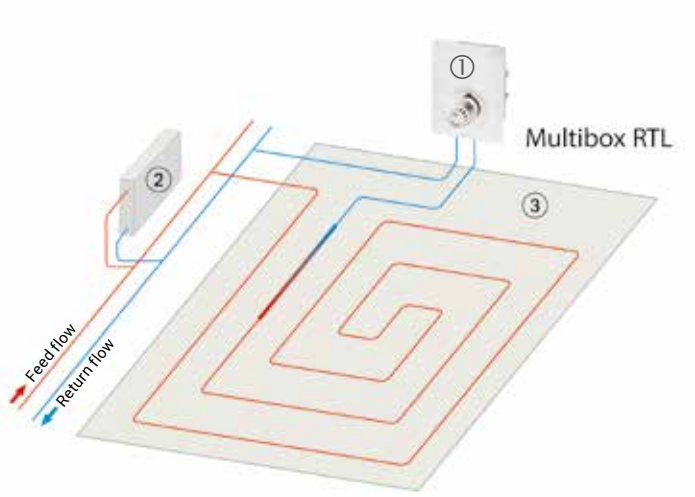
Additional system components

Multibox-RTL individual room control

for the renovation and subsequent installation of underfloor heating in individual rooms, e.g. bathroom. GEG compliant control is possible thanks to the separate detection of the return flow temperature and the room temperature by the thermostat. A simple and low-cost installation that increases comfort and reduces energy costs.

System illustration (example):

Multibox RTL ① in the system return flow of the underfloor heating ③ connected to the return flow temperature limitation in an existing heating system with heating surfaces ②



Manifold accessories

Whether you are installing a low-temperature heating system or you would like to integrate surface heating into a high-temperature heating system. We have the right accessories for you! Here, you will find a selection from our range. Please see our current price list for further components.


Manifold connection set 90°


Actuator “Economy”


Ball valve 3/4" nickel-plated


Overheat thermostat 230 V


Connection set 90° for thermoseparator


1/2" WMZ connection set 90°

Manifold cabinets

Manifold cabinets provide the perfect location for manifolds and control stations. Manifolds can be installed in the traditional way using the 'Top Standard' version as a wall-mounted cabinet and the 'Exclusiv' version as a flush-mounted cabinet.

The large manifolds, control stations and control manifolds are installed in the 'Top Standard plus' manifold cabinet for wall-mounting or 'Exclusiv plus' for flush-mounting.

Our latest manifold generation offers a significantly reduced assembly effort for specialised trades in combination with the EMPUR® manifold cabinets. With the specially developed **quick manifold assembly technology**, the manifolds are simply suspended in the guide rails of the manifold cabinet and fixed using two fillister head screws.

Additional benefits of the new generation of manifold cabinets include easy connection of the primary connections, time savings when feeding through electrical connection cables and, of course, secure and flexible mounting options.

Manifold cabinet 'Top Standard' version

Manifold cabinet 'Exclusiv' version

CUT-THERM® milling system

Additional system components

Control technology

EMPUR® offers innovative and perfectly matched control components as an ideal addition to versatile surface heating systems. We offer cable-bound standard solutions for conventional surface heating, as well as solutions for heating/cooling applications with heat pumps depending on the type of application and installation.

In the case of retrofitting or modernisation, mostly wireless variants are used, which can be combined with modern heat generators.

We offer individual automation options with our Exclusiv modular-designed control technology (wireless/BUS). So you can also control your heating system via smartphone and PC.

The individual product ranges are supplemented using control terminal strips that – depending on the equipment – can also control a circulation pump. Timer modules and digital timers round-off the product range.

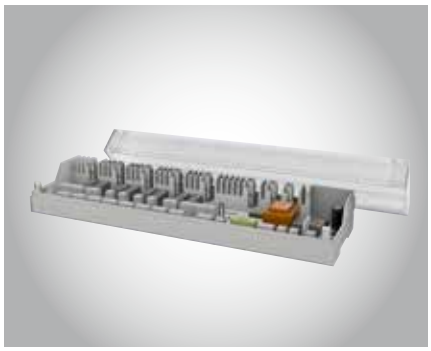
Opposite you will find a selection of our range. Please see our current price list for further components.

Give us a call. We'd be pleased to advise you!

Room operating unit 230 V/24 V analogue standard heating/cooling

Room operating unit 230 V/24 V Standard plus heating/cooling with display

Wireless/BUS room operating unit with display



Control terminal strip Balance heating/cooling 230 V

Humidity monitoring with external sensor

Wireless/BUS base station

Dew point monitor 230 V for top-hat rail mounting

Dew point sensor type 2 for dew point monitor 230 V

Dew point sensor type 3 for dew point monitor 230 V

You can find detailed information in our Control technology brochure.

EMPUR®

Your specialists for surface heating systems

Expertise, reliability and commitment are **EMPUR**®'s strengths. In addition to the production and sale of high-quality surface heating systems and components, the company's range of services also includes comprehensive services relating to the planning and installation of our complete systems.

EMPLAN®'s specialist engineers and planning consultants are available to help you with their expertise in demanding property planning in almost all TBE (Technical Building Equipment) areas such as heating, air conditioning, ventilation, plumbing and electrical.

We have bundled our many years of experience in the installation of surface heating systems into our **EM**SOLUTION® and support tradesmen to complete their construction projects on time.

EMPUR®, **EM**PLAN® and **EM**SOLUTION® together form the **EM**GRUPPE®. Thus, the three core areas of expertise – production, planning and installation – come from a single source.

TBE . PLANNING . CONCEPTS

EMPLAN®

- Planning surface heating and cooling systems for new builds, modernisation projects and customised solutions
- Project planning for heating, ventilation and air conditioning applications, electrical engineering and swimming pool technology
- Creation of performance specifications
- Project planning and designing Geniax projects
- Energy planning and assessment of residential and non-residential buildings (EnEV/GEG certificates)
- Construction supervision for technical building systems

www.em-plan.net

TBE . PRODUCTION . SALES

EMPUR®

- Plastic heating pipes, insulation and composite panels for surface heating and cooling systems for new builds and modernisation projects
- Manifold and control technology
- Geniax heat distribution systems
- Accessories and tools
- Customised solutions for industrial, sports and commercial buildings

www.empur.com

TBE . ASSEMBLY . SERVICE

EMSOLUTION®

- Installation of surface heating and cooling systems in new build and modernisation projects
- Installation of the CUT-THERM® milling system
- Commissioning of Geniax heat distribution systems and heat pump systems
- Service for technical building installations

www.em-solution.de

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