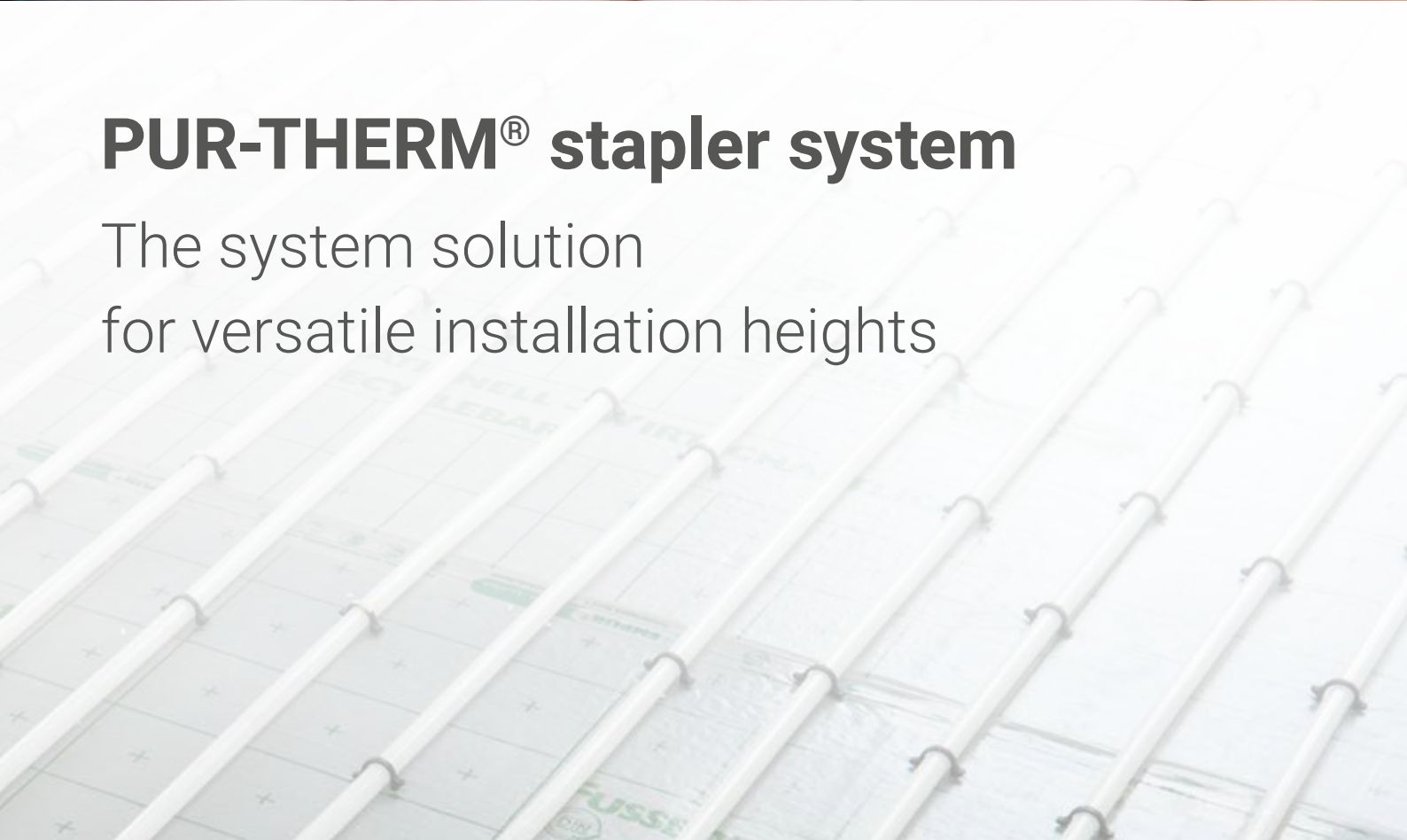


PUR-THERM®



PUR-THERM® stapler system

The system solution
for versatile installation heights



EMPUR® surface heating systems

Increased comfort and efficiency



The decision to install a surface heating/cooling system is a sensible decision for more comfort, economy and sustainability. **The systems can be ideally combined with innovative heating technology based on renewable energies.**

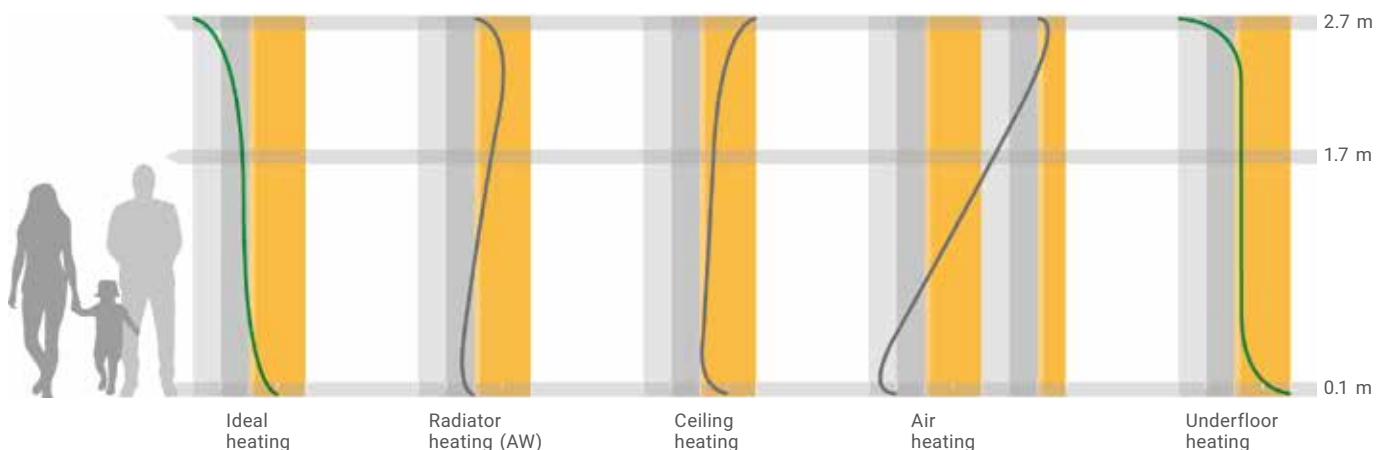
Mild heat radiation creates an increased sense of wellbeing. As a heat source with a large surface area, it can make an exceptional contribution to lowering energy costs at low flow temperatures. In this way, it also makes a significant contribution to environmental protection sustainability.

Panel heating is also especially suited to people with allergies, Noise, draughts and air turbulence do not occur with surface heating and cooling. For the building owner, it offers completely new design possibilities without any visible radiators and increases the building's value in the long term.

The development of the building heating load is now so low, that surface heating systems are also used in modernisation and energy-efficient renovation, which are designed for low installation heights and specially adapted to the existing substrate requirements – **one system for heating and cooling** with unlimited advantages.

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.

The technical information in this brochure represents the state of our knowledge and experience at the time of printing. Unless expressly agreed, however, it does not constitute assurance in the legal sense. The level of experience is constantly evolving. The latest edition of this brochure should always be used. The product applications described may not take into account special conditions in an individual case. Here, suitability for the specific application purpose must be checked. Our products are delivered exclusively on the basis of our general conditions of sale and delivery.



PUR-THERM® stapler system

The system solution for versatile installation heights



PUR-THERM® stapler system

The system solution for versatile installation heights



The EMPUR® PUR-THERM® stapler system is a proven and well-known surface heating system, consisting of PUR-THERM® composite panels, KLIMAPEX® plastic heating pipes and PUR-THERM® staples as its main components.

The PUR-THERM® composite panels are HBCD- and HCFC-free and available in different versions (polyurethane, EPS, with and without sound absorption). As a result of their foamed or laminated highly tear-resistant, multi-layer laminated film, excellent affixing of the staples is achieved when installing the heating pipes. A pre-printed laying grid as well as a single-sided film overhang for overlapped laying makes stapling with the PUR-THERM® stapler system very easy. To ensure good heat transfer, the heating pipe is uniformly covered with screed.

The stapler system components are all developed by EMPUR® and produced in-house to the "Made in Germany" standard.

Our PUR-THERM® stapler system impresses

- **Security for end customers and processors** – system components optimally adapted to each other with universal licences
- **Simple implementation of thermal insulation requirements** in new and old buildings – best energy footprints with PUR insulation materials
- **Easy handling** with very few system components
- **Minimal waste** due to overlay technology
- **Well-known system** with years of practical experience
- Various system panels available with or without sound absorption
- Heat insulation across the entire surface



7F 136-F

THE BESTSELLER BY EMPUR®
HAS ALREADY PROVEN ITSELF
A THOUSAND TIMES OVER!



We are happy to answer any questions you might have regarding our stapler system. Give us or your specialist craftsman a call!

PUR-THERM® stapler system

Standardised installation

Your route to increased home comfort



Full-surface laying of the bottom insulation, taking into account the existing supply lines.



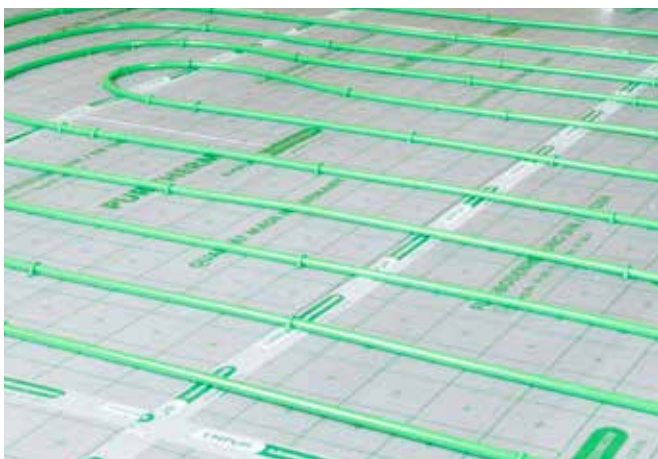
Fixing of the edge-insulation strips on all ascending parts. A reliable seal must be ensured.



Laying of EMPUR® composite panels. The single-sided film overhang overlaps the connecting panel and prevents the penetration of screed.



Installation of the KLIMAPEX® heating pipes using the preprinted laying grid with PUR-THERM® staples and the system tacker.



Secure hold of the heating pipes due to optimum fixing of the staples in the highly tear-resistant, multi-layer composite film.



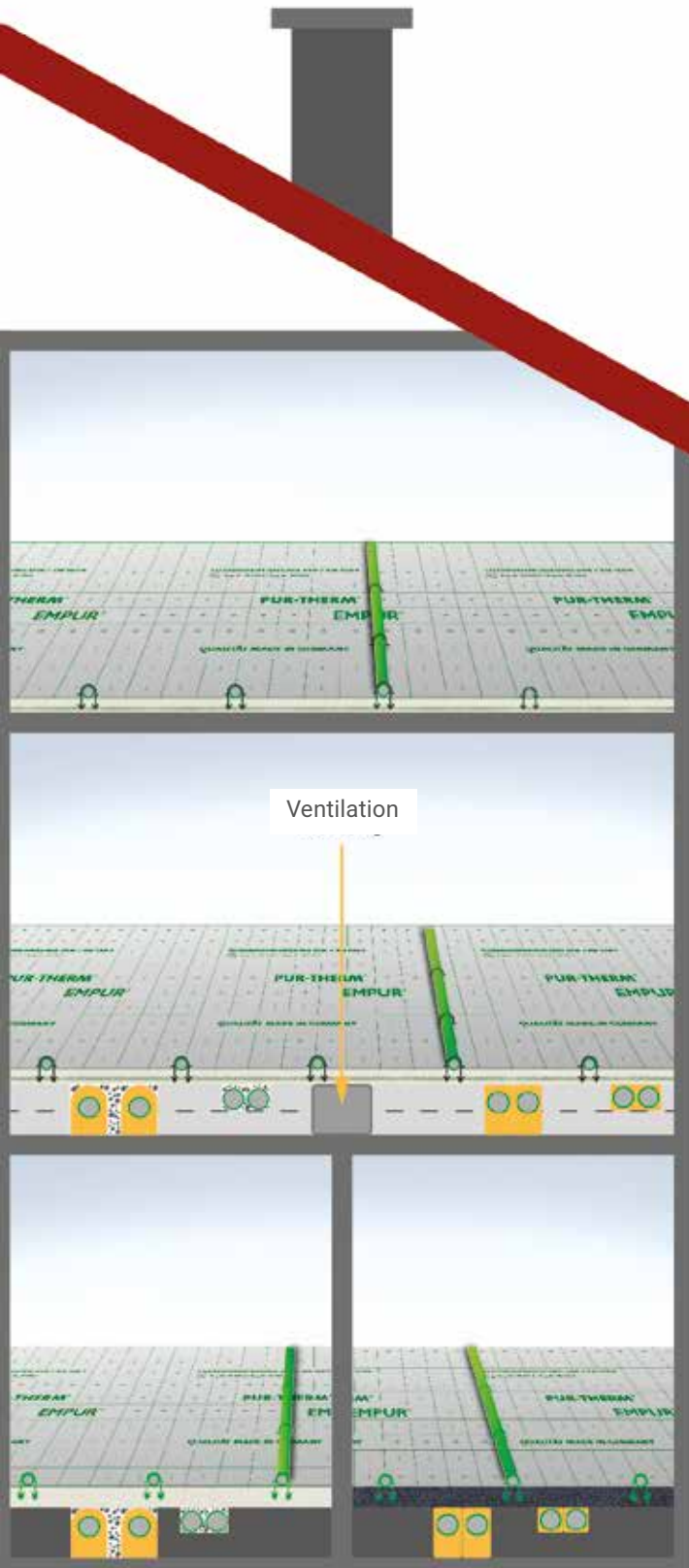
Connecting the underfloor heating pipes to the manifold, filling the system with water and leakage test.

PUR-THERM® stapler system

Standardised installation

Thus, EMPUR® professional heating engineers work with PUR "Exclusiv"

Optimal laying in the PUR-THERM® House



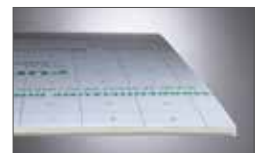
Top floor:

- Composite panel PUR/PE 23 "Exclusiv" (Item no. 042300)



Ground floor:

- Composite panel PUR/PE 14 "Exclusiv" (Item no. 041400)
- 2. Additional insulation EPS DEO dm WLS 035
- 1. Additional insulation EPS DEO dm WLS 035



Basement, left:

- Composite panel PUR 33 "Exclusiv" (Item no. 043400)
- 2. Additional insulation EPS DEO dm WLS 032
- 1. Additional insulation EPS DEO dm WLS 032



Basement, right:

- Composite panel "Kompakt" EPS DEO dm 30 (Item no. 023060)
- 2. Additional insulation EPS DEO dm WLS 032
- 1. Additional insulation EPS DEO dm WLS 032



NOTE

Heat and sound insulation certificates must always be observed!

PUR-THERM® stapler system

System components



PUR-THERM® composite panels

- PUR/PE "Exclusiv" in thicknesses 14, 23 and 36 and/or 68 with sound absorption
- PUR "Exclusiv" 23, 33 and 40 without sound absorption
- Turbo-Cube EPS-DES for large areas in thicknesses 20-2, 25-2, 30-3 and 35-3
- Composite panels EPS-DES and EPS-DEO in various thicknesses

PUR-THERM® stapler system

System components



Staples for PUR-THERM® stapler system and pipes up to Ø 20 mm, 50-unit magazines

long, green and **short** specially for combi composite panels PUR/PE 23 mm, black



PUR-THERM® system tacker

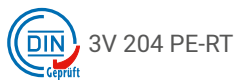
Precise, low-wear stainless steel tool for handling magazine-loaded staples, with curved magazine and ergonomic grip



KLIMAPEX® heating pipe PE-RT

12 x 1.5 / 15 x 1.8 (green) /
17 x 2.0 / 20 x 2.0 as 5-layer pipe or
15 x 1.8 (green) / 17 x 2.0 as 3-layer pipe

made of polyethylene, Type I/II in accordance with DIN EN ISO 22391-2 and DIN 16833 with increased thermal stability and insoluble, impermeable EVOH barrier layer according DIN 4726



KLIMAPEX® heating pipe PE-Xa

15 x 1.8 / 17 x 2.0 / 20 x 2.0 / 25 x 2.3
as 5-layer pipe or

15 x 1.8 / 17 x 2.0 / 20 x 2.0 as 3-layer pipe

made of high-pressure crosslinked polyethylene in accordance with DIN EN ISO 15875 and DIN 16892/16893 and insoluble, impermeable EVOH barrier layer according DIN 4726



NOTE

Complete your PUR-THERM® surface heating 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 14 et seq.). We'd be pleased to advise you!

PUR-THERM® stapler system

Example assembly

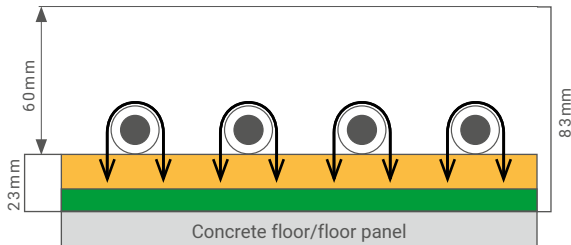


PUR-THERM® stapler system

Example assembly

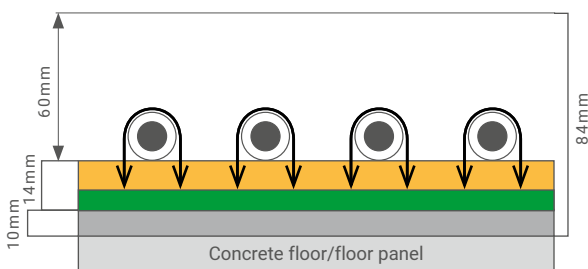
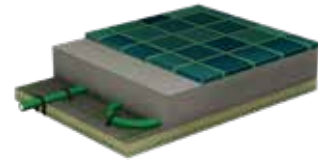
Insulation for flat partition ceiling above rooms with similar use (19°C/19°C)

Requirement DIN EN 1264 R = 0.75 m² K/W (U = 1.33 W/m²K)



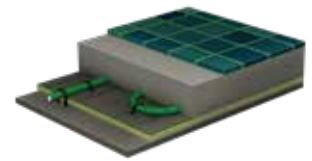
60 mm heating screed incl. system pipe 15 x 1.8 mm
23 mm composite panel PUR/PE 13 + 10 mm

83 mm (without lining) R = 0.780 m² K/W



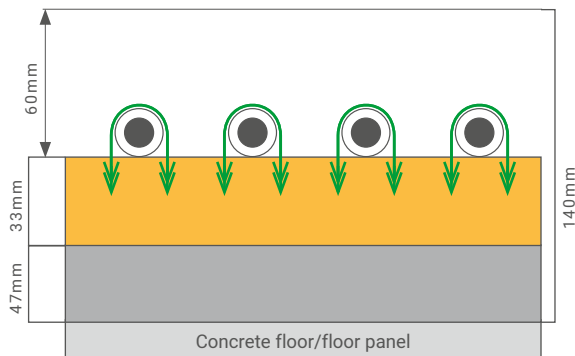
60 mm heating screed incl. system pipe 15 x 1.8 mm
14 mm composite panel PUR/PE 9 + 5 mm
10 mm additional insulation EPS-DEO WLS 032

84 mm (without lining) R = 0.857 m² K/W



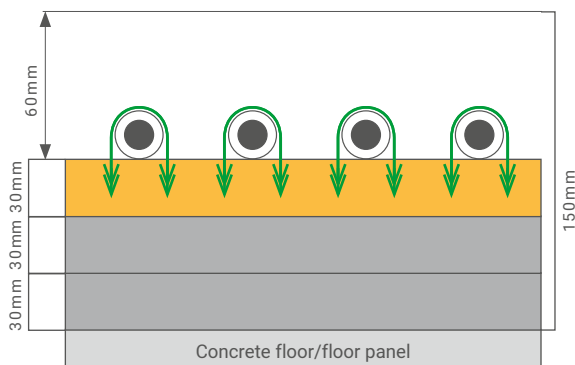
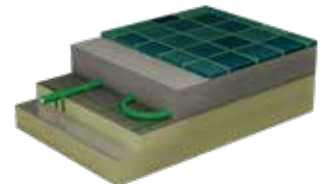
Insulation against ground, outside air or unheated/partially heated rooms (cellar)

The required insulation results from the energy certificate of the building in compliance with the current requirements of the Building Energy Act (GEG) and is prepared by the building planner/architect.



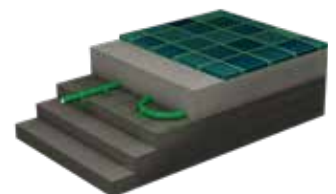
60 mm heating screed incl. system pipe 15 x 1.8 mm
33 mm composite panel PUR 33
47 mm additional insulation PUR 47 ALU/PUR/ALU

140 mm (without lining) R = 3.333 m² K/W



60 mm heating screed incl. system pipe 15 x 1.8 mm
30 mm composite panel "Kompakt" WLS 032
30 mm additional insulation EPS-DEO WLS 032
30 mm additional insulation EPS-DEO WLS 032

150 mm (without lining) R = 2.813 m² K/W



NOTE

The example set-ups cannot take into account the special conditions of the individual case. The suitability must be checked for the specific application. Requirements for statics, heat, moisture or sound insulation must always be taken into account and specified by the building designer!

PUR-THERM® stapler system

Your benefits

For specialised craftsmen

- One system, one manufacturer – from consultation and design to component delivery
- **Security for end clients and processors – system components optimally adapted to each other with universal licences**
- Proven quality through **in-house production**
- Minimum installation height ≥ 74 mm with PUR/PE 14 (without lining)
- Quick and neat processing of the system panels
- Robust panel during use with **long-term stability**
- Pre-defined laying grid (50 mm) as an orientation aid when positioning the KLIMAPEX® plastic heating pipes
- **Low-weight material**, enabling easy and non-tiring installation
- Turbo-Cube panels in versions with various insulation materials enable quick laying even in large rooms
- Easy laying – easy and quick laying out of the insulation materials, short installation times
- **Easy handling of the few system components**
- Single-sided film overhang for overlapped laying
- **Minimal waste due to overlay technology**
- Quick and flexible laying of pipes of all dimensions and qualities
- Simple and secure installation of KLIMAPEX® plastic heating pipes with the staple system
- The staple system enables an **ergonomic working position** and is easy to use. The low weight ensures non-tiresome working. Pre-loaded staples are lodged into the composite film safely and quickly.
- **Foamed, highly tear-resistant, multi-layer composite film** for exceptional staple adhesion and secure installation of the KLIMAPEX® plastic heating pipes
- **Many insulation materials** available with various strengths
- Optimal combination with calcium sulphate liquid screeds thanks to the KLIMAPEX® plastic heating pipes being completely covered
- Many expansion possibilities – comprehensive EMPUR® range with PUR additional insulation materials and various system accessories and tools, as well as manifold and control technology products
- **Well-known system with years of practical experience**
- 10-year material and consequential damage liability on EMPUR® heating pipe with exclusive use of our system components subject to compliance with further warranty conditions (see EMPUR® warranty certificate)



PUR-THERM® stapler system

Your benefits

For the end-consumer

- **Various system panels available with or without sound absorption**
- **Heat insulation across the entire surface**
- PUR panels with the highest heat insulation value for reduced installation height – forward-thinking heat insulation
- Simple implementation of thermal insulation requirements in new and old buildings
- Ideal for modern heat generators (condensing boilers, regenerative heat generators, etc.)
- No swirling up of dust, making it suitable for people with allergies
- **Maximum comfort** thanks to heat radiation
- New design possibilities without radiators
- **Increases building value**
- **Energy savings** through low flow temperatures
- Floor heating for all layouts
- **Comfort** thanks to even heat distribution
- **Well-known system with years of practical experience**
- **Energy efficiency** – best energy footprint with PUR-THERM® products



PUR-THERM® stapler system

Additional system components

Manifold technology

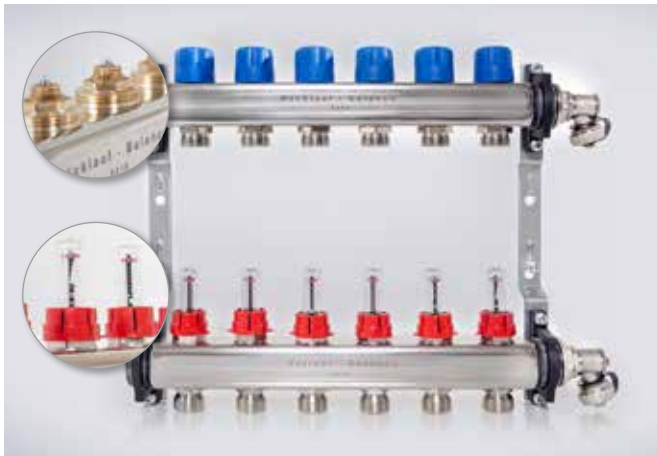
At our Buchholz-Mendt location, EMPUR® produces high-quality manifolds and special solutions from brass and stainless steel for client-specific requirements.

The structural design of our new manifold generation requires significantly less effort for specialised craftsmen to assemble 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.

Thanks to extensive manifold accessories, we enable the right connection in every situation for a perfectly adapted system – ranging from connection sets and heat volume measurement sets to line regulating or zone valves, pointer thermometers and restrictors.

You can find detailed information in our Manifold technology brochure.

Stainless steel manifold



Stainless steel manifold, series 03 Balance, 2-12 heating circuits 1" IT

System manifold HCM-D Balance with integrated, dynamically regulating valves

Complete manifold made of 1" stainless steel section pipe in the pressure range 17-60 kPa, can be preset for flow rates of 30-300 l/h, 50 mm valve clearance, fully installed in the factory on the manifold holder with sound insulation inserts. Return valves (top) with a blue protective cap, EMPUR® actuators can be installed directly instead. Feed flow (bottom) with flow indicator **without scaling** for shut-off and function display. Heating circuit connections 3/4" Eurocone, 2 manifold end pieces with reducer (rotatable) for filling, bleeding and draining.



Stainless steel manifold, series 03, 2-12 heating circuits 1" IT

System manifold HCM-D, series 03 with flow rate indicator

Stainless steel section pipe complete manifold with integrated valves, 50 mm valve clearance. Pre-assembled in the factory on the manifold holder with sound insulation inserts for fast assembly in the manifold cabinet, return flow valve (top) with blue protection cap, EMPUR® actuators can be installed directly instead. Feed flow (bottom) with controllable and adjustable flow rate indicators (0-2.5 l/min.), heating circuit connections 3/4" euroconus. 2 manifold end-pieces with reducer (rotatable) for filling, bleeding and draining.

NOTE

The water quality requirements according to VDI 2035 must be adhered to!

Brass manifold

System manifold HCM-D, version 2.0 with flow rate indicator

Complete manifold made of brass section pipe with integrated valves, 50 mm valve clearance, return flow valve (top) with blue protection cap. Pre-assembled on manifold holders with sound insulation inserts. EMPUR® actuators can be installed directly instead. Feed flow (bottom) with controllable and adjustable flow rate indicators (0-2.5 l/min.). Heating circuit connections 3/4" euroconus. 2 manifold end-pieces with reducer (rotatable) for filling, bleeding and draining.



Brass manifold, version 2.0, 2-16 heating circuits 1" IT or 5-16 heating circuits 5/4" IT

Control manifold

Control manifold HCM-DR, version 2.0 with high-efficiency pump and thermoseparator

Manifold made of brass section pipe with integrated valves, 50 mm valve clearance. Pre-assembled on manifold holders with sound insulation inserts. Return flow valve (top) with blue protection cap. EMPUR® actuators can be installed directly instead. Feed flow (bottom) with controllable and adjustable flow rate indicators (0-2.5 l/min.). Heating circuit connections 3/4" euroconus. Suitable for variable or constant flow temperature control in combination with control set V or K for the hydraulic integration of low-temperature under-floor heating in an existing heating system.



Control manifold HCM-DR with high-efficiency pump and thermoseparator, version 2.0, 2-9 heating circuits 1" IT or 10-16 heating circuits 5/4"

EMPUR® Geniex complete manifold

The unique Geniex pump technology in the unit together with the high-quality EMPUR® components such as the manifold, manifold cabinet etc. facilitates the installation and operation of modern surface heating systems (e.g. underfloor or wall heating systems) as well as conventional heating systems.

The **EMPUR® Geniex heat distribution system*** is a flexible surface heating and control system which enables appropriate, customised heating in all rooms in residential and non-residential buildings.

The advantages of individual production and the production expertise set standards in manifold technology.

* For more information, see www.geniex.de



EMPUR® Geniex complete manifold

NOTE

The water quality requirements according to VDI 2035 must be adhered to!

PUR-THERM® stapler system

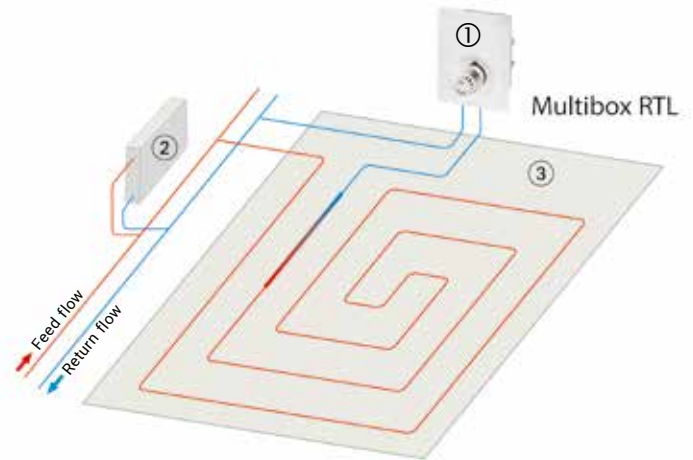
Additional system components

Multibox-RTL individual room control

for the renovation and subsequent installation of under-floor 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.



Actuator "Economy"



Zone valve



Manifold connection set 90°



1/2" WMZ connection set passageway



Connection set 90° for thermoseparator



Box wrench, open SW 30

Manifold cabinets

Manifold cabinets provide the perfect location for manifolds and control stations. The variants 'Top Standard' version as a wall-mounted cabinet and the 'Exclusiv' version as a flush-mounted cabinet are available for the conventional assembly.

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

PUR-THERM® stapler 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. Dew point/humidity monitors and digital room temperature controllers with clock function round off the programme.

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!

PUR-THERM® stapler system

Additional system components



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.



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 **EMSOLUTION®** and support tradesmen to complete their construction projects on time.

EMPUR®, **EMPLAN®** and **EMSOLUTION®** together form the **EMGRUPPE®**. 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
- 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