

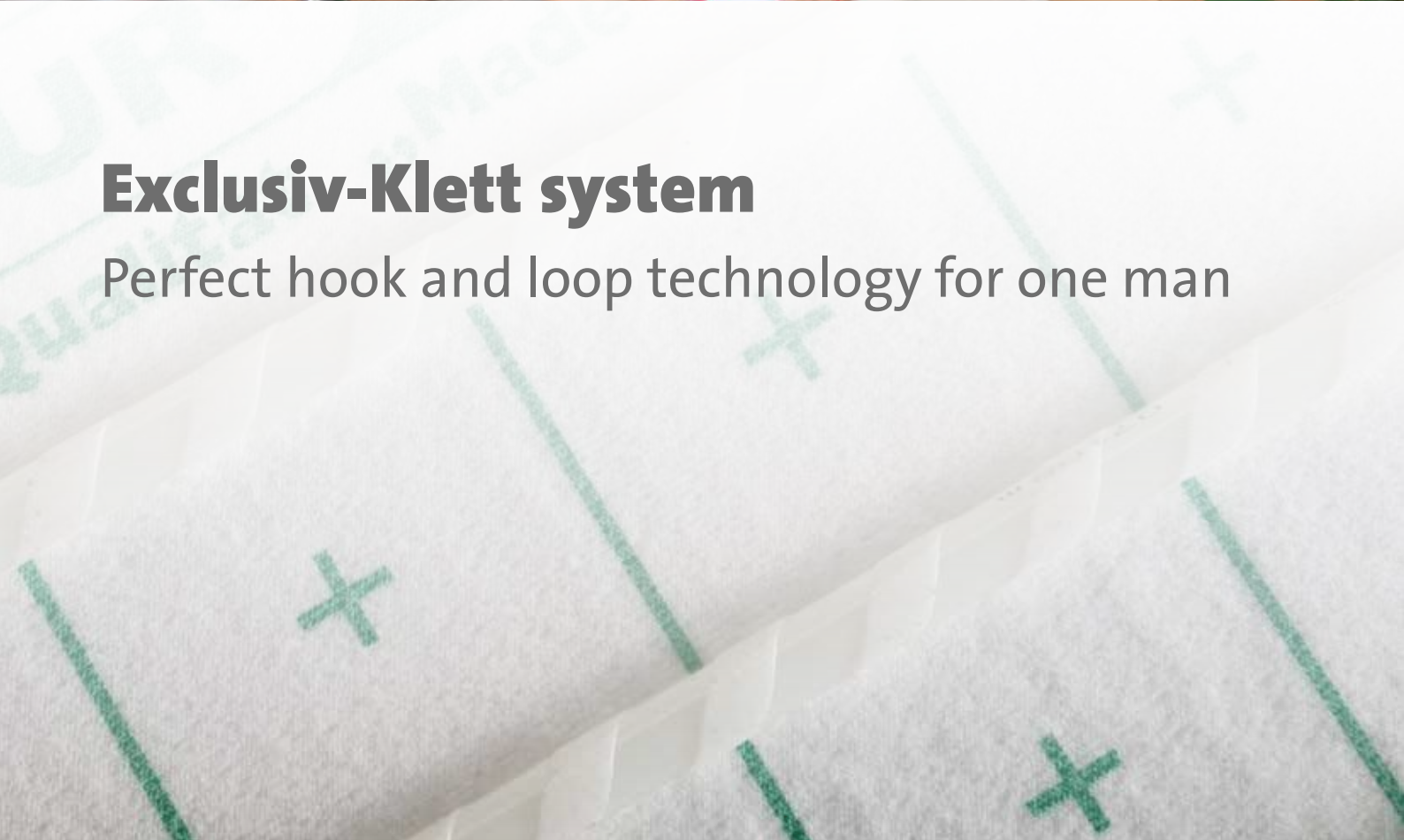
# EMPUR<sup>®</sup>

Exclusiv-Klett



## Exclusiv-Klett system

Perfect hook and loop technology for one man



'Made in Germany' seal of quality

# EMPUR® surface heating systems

Increased comfort and efficiency



The decision to install surface heating is a sensible decision for increased comfort, economy and sustainability. Nowadays, more than 70% of newly-constructed buildings have such a system. Surface heating systems are ideal for combining with modern heat generators and regenerative sources of energy.

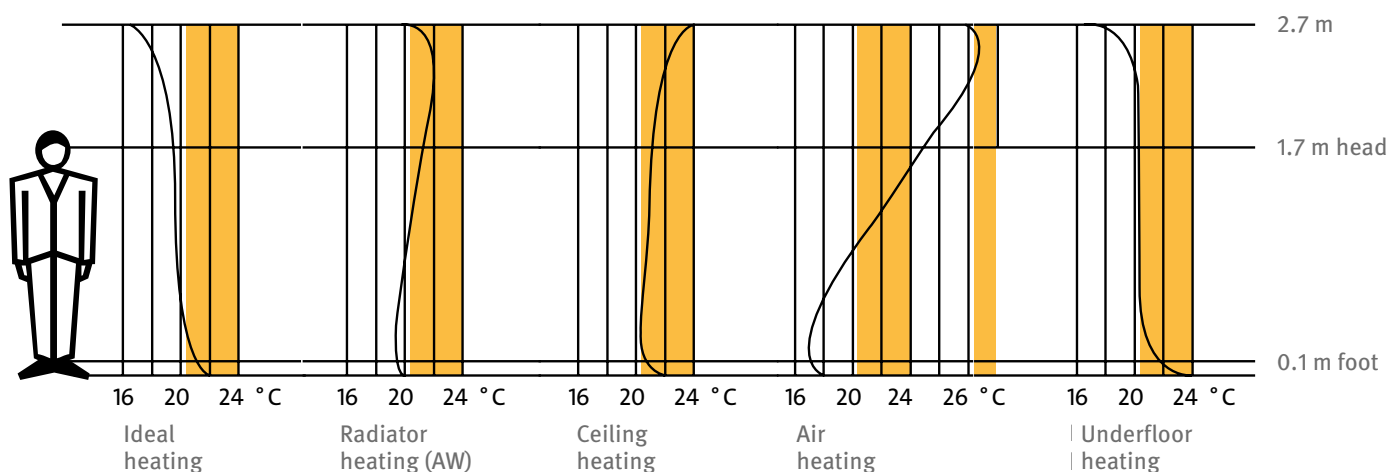
Mild heat radiation from the bottom up creates an increased sense of wellbeing. As a heat source with a large surface area, it can make an exceptional contribution to lowering energy costs at low flow temperatures. In this way, it also makes a significant contribution to sustainability and to protecting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

- Systems without additional installation height or with minimal installation height for modernisation projects
- Versatile systems with composite panels and additional insulation for new buildings in private, communal and industrial areas
- System accessories and tools
- High-quality manifold and control technology

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 company produces and is solely responsible for over 90% of all system components itself using its state-of-the-art systems. We work under a structured quality management system, which is certified by DEKRA in accordance with the DIN EN ISO 9001:2015 international standard.

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.



## “Exclusiv-Klett” system

Perfect hook and loop technology for one man





# “Exclusiv-Klett” system

Perfect hook and loop technology for one man



The EMPUR® Exclusiv-Klett system is an innovative application type. It uses intelligent hook and loop technology to connect the EMPUR® composite panels with the KLIMAPEX® Klett plastic heating pipes.

After the laminated composite panels with one-sided film overhang have been laid, the hook and loop pipe is fixed to the surface with light pressure, according to the pre-printed laying grid and the distance required. The hook and loop tape has excellent adhesion properties, but can be removed and pressed on again to correct the position of the composite panels. To ensure good heat transfer, the heating pipe is uniformly covered with screed.

The hook and loop system components are all developed by EMPUR®, optimally adapted to each other, and produced in-house in Germany.

## Our Exclusiv-Klett system impresses

- Proven quality through in-house production
- One-man laying
- Perfect hook and loop technology for secure connections
- Easy installation of KLIMAPEX® plastic heating pipes
- System panels available with or without insulation or sound absorption
- System components optimally adapted to each other with universal licences



7F 364-F  
7F 365-F

*Exclusiv-Klett  
by EMPUR® is  
simple to install  
alone!*



# “Exclusiv-Klett” system

Perfect hook and loop technology for one man

## Your route to increased home comfort



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



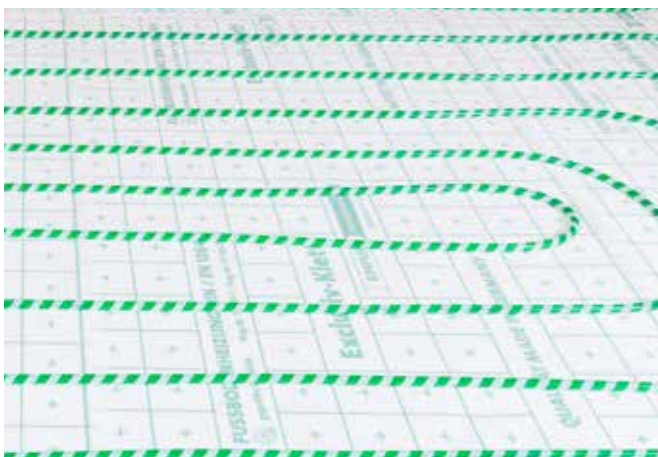
Fixing of the edge-insulation strips on all ascending parts.



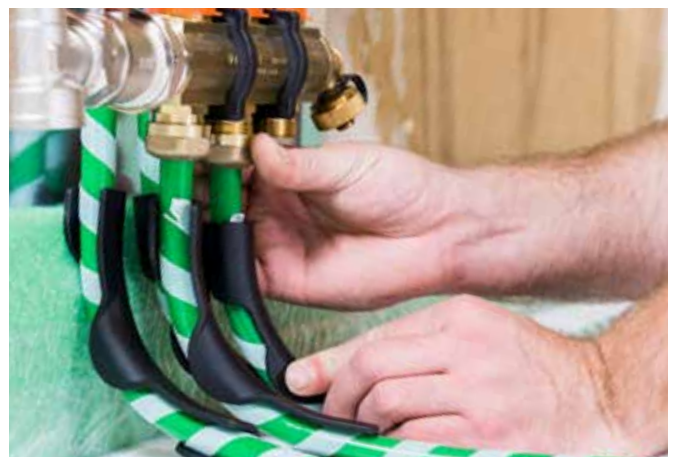
Once the EMPUR® hook and loop panels have been laid overlapping, the overhanging film is fixed to the connecting panel with connecting tape.



Install the KLIMAPEX® hook and loop pipes using the preprinted laying grid by lightly pressing onto the hook and loop panel.



Secure fixing of the heating pipes thanks to excellent bonding properties of the hook and loop tape. Positions can be corrected at any time.



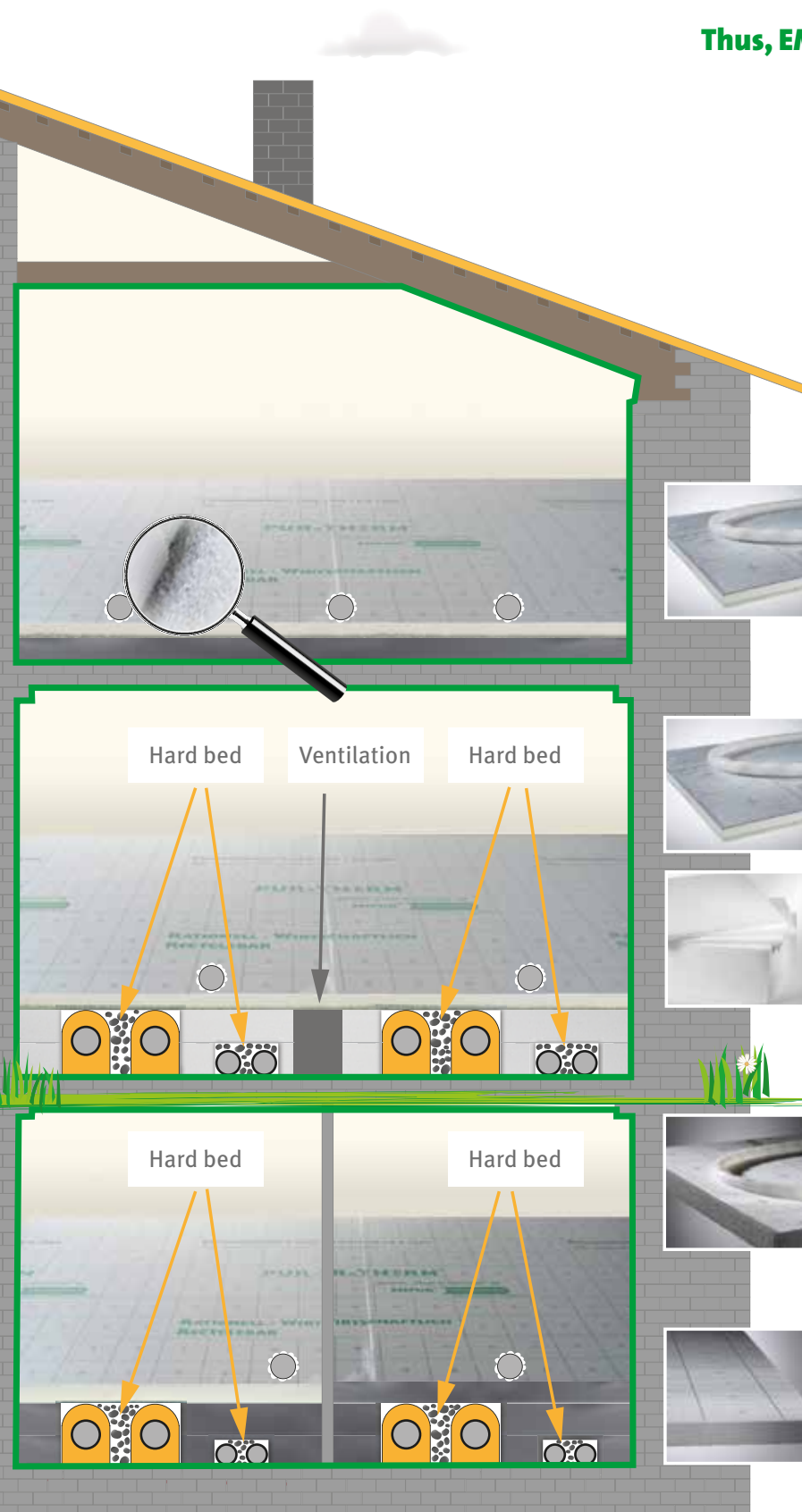
Connecting the underfloor heating pipes to the manifold, filling the system with water and leakage test.



# “Exclusiv-Klett” system

Standardised installation

Thus, EMPUR® professional heating engineers work with “Exclusiv Klett”



## Top floor:

Composite panel PUR/PE 15 “Exclusiv-Klett”  
(Art. no. 070414)

1. Additional insulation DEO

## Ground floor:

Composite panel PUR/PE 15 “Exclusiv-Klett”  
(Art. no. 070414)

2. Additional insulation DEO
1. Additional insulation DEO

## Basement, left:

Composite panel PUR 23 “Exclusiv-Klett”  
(Art no. 070424)

2. Additional insulation DEO WLS 032
1. Additional insulation DEO WLS 032

## Basement, right:

Composite panel “Klett-Kompakt” EPS-DEO 30  
(Art. no. 070236)

2. Additional insulation DEO WLS 032
1. Additional insulation DEO WLS 032

## NOTE

The EnEV certificate is mandatory for correct installation. We are happy to answer any questions you might have regarding our hook and loop system. Give us or your specialist craftsman a call!

# “Exclusiv-Klett” system

## System components

### Composite panels “Exclusiv-Klett”

- **NEW:** Fibreboard “Klett” 2.6 mm
- PUR/PE “Exclusiv-Klett” 15 with sound absorption
- PUR “Exclusiv-Klett” 23 without sound absorption
- Composite panels “Klett-Kompakt” EPS-DEO 30
- Composite panels “Klett” EPS-DES 20-2 and 30-2
- Turbo-Cube “Klett” EPS-DES for large areas in thicknesses 20-2, 25-2, 30-2, 30-3 and 35-3





# “Exclusiv-Klett” system

System components



**KLIMAPEX® heating pipe PE-RT “Klett“**

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

made of polyethylene in accordance with DIN 16833, Type I/II with increased thermal stability and insoluble diffusion-tight EVOH barrier layer



3V 204 PE-RT



**KLIMAPEX® heating pipe PE-Xa “Klett“**

15 x 1.8 / 17 x 2.0 as 5-layer pipe

made of high-pressure crosslinked polyethylene, degree of crosslinking  $\geq 70\%$  in accordance with DIN 16892 and insoluble diffusion-tight EVOH barrier layer



**Connecting tape**

for strong and positive connection of Exclusiv composite panels and additional fixing of pipelines, 30 mm wide



**Laying gloves “Klett“**



**Door tensioner**

with rotating bezel, open extending length min. 570 mm – max. 960 mm



**Ceiling tensioner**

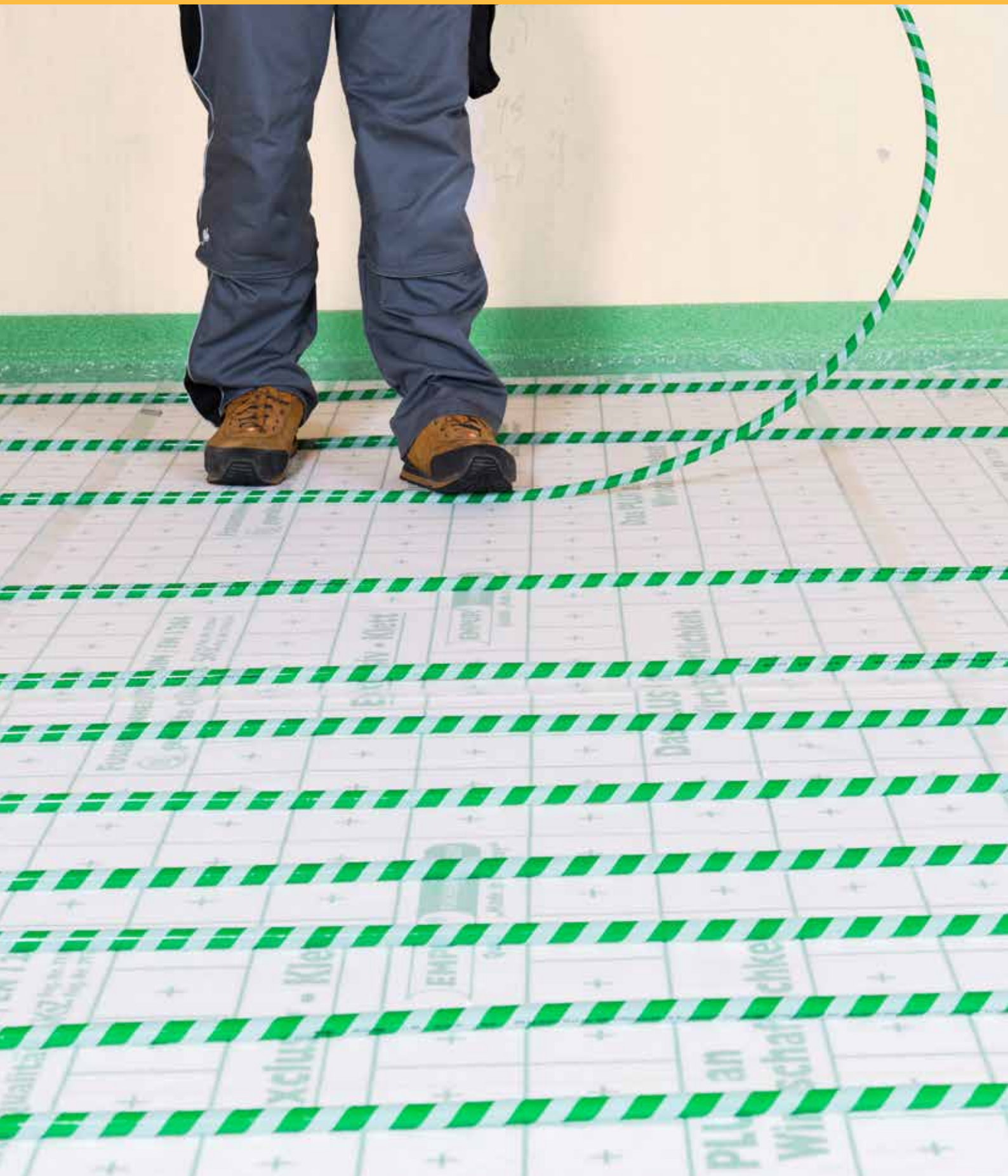
with rotating bezel, open, adjustable from min. 1,650 mm – max. 2,800 mm

## NOTE

Complete your Exclusiv-Klett 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 14 et seq.). We'd be pleased to advise you!

# “Exclusiv-Klett” system

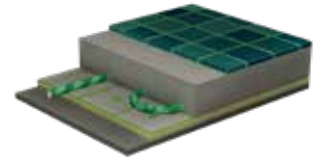
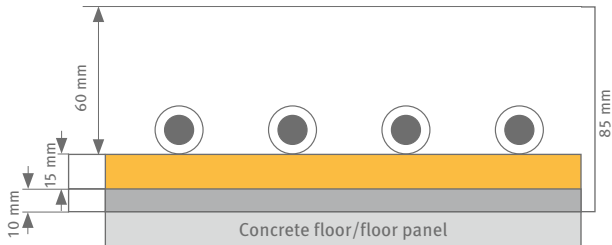
Perfect hook and loop technology for one man





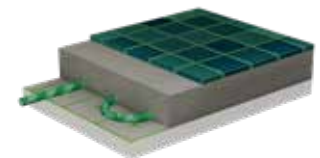
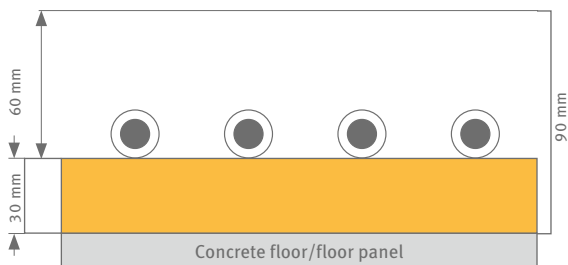
### Separating ceiling above rooms with similar use (20°C/20°C)

Requirement DIN EN 1264 R = 0.75 m<sup>2</sup> K/W (U = 1.33 W/m<sup>2</sup>K)



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

**85mm (without lining) R = 0.857 m<sup>2</sup> K/W**

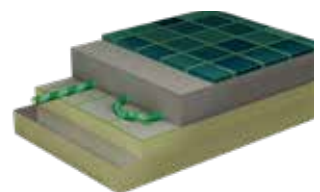
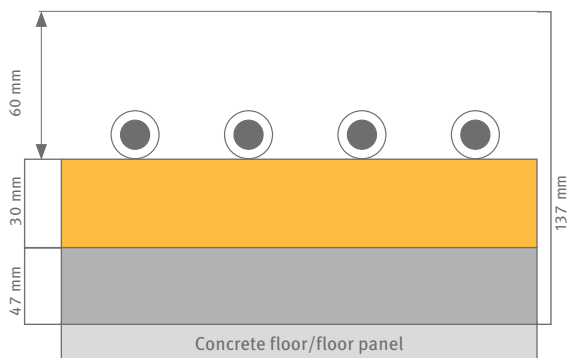


60 mm heating screed incl. system pipe 15 x 1.8 mm  
30mm composite panel “Klett“ EPS-DES 30-2 WLS 040

**90 mm (without lining) R = 0.75 m<sup>2</sup> K/W**

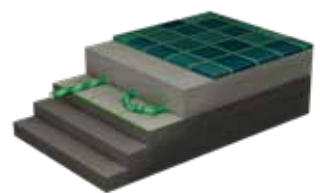
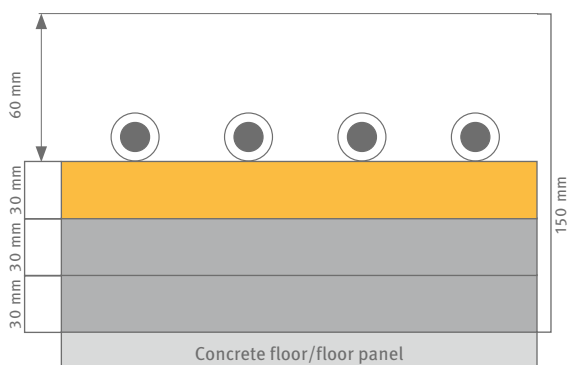
### Insulation in accordance with EnEV

The energy performance certificate of the building must be drafted and checked to determine the floor insulation below the underfloor heating against soil, unheated rooms and rooms with limited heating. Examples of underfloor heating with special thermal protection against unheated rooms or rooms that are heated intermittently, rooms below or ground-floor rooms with “Klett“ composite panels and heating pipe 15 x 1.8.



60 mm heating screed incl. system pipe 15 x 1.8 mm  
30 mm composite panel “Klett-Kompakt“ EPS-DEO WLS 032  
47 mm additional insulation PUR 47 WLS 024

**137 mm (without lining) R = 2.890 m<sup>2</sup> K/W**



60 mm heating screed incl. system pipe 15 x 1.8 mm  
30 mm composite panel “Klett-Kompakt“ EPS-DEO 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 m<sup>2</sup> K/W**

# “Exclusiv-Klett” 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**
- Minimal installation height  $\geq 75$  mm with PUR/PE 15 or 63 mm with fibreboard “Velcro” (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 for system-compatible laying of the KLIMAPEX® plastic heating pipes
- **Low-weight material**, enabling easy and non-tiring installation
- Turbo-Cube rolls in versions with various insulation materials enable quick laying even in large rooms
- **Quick, one-man installation**
- Easy laying – easy and quick laying out of the insulation materials
- One-sided hook and loop film overhang for optimal attachment to the EMPUR® hook and loop tape
- **Minimal waste due to overlay technology**
- Easy installation of the KLIMAPEX® plastic heating pipes thanks to the hook and loop pipes being easy to press onto the hook and loop panel; correcting the pipes’ positioning is possible without damaging the insulation material surface
- **Optimum hold** of Exclusiv-Klett heating pipes on the EMPUR® “Klett“ composite panels with more than 200 attachment points/cm<sup>2</sup> – perfect hook and loop technology for secure attachment
- Quick and flexible laying of pipes of all dimensions and qualities
- **Many insulation materials** available in various strengths
- Optimal combination with calcium sulphate liquid screeds thanks to the KLIMAPEX® plastic heating pipes being completely covered
- Door and ceiling tensioners enable quick and economical laying
- 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**
- No entry of moisture under the floor and no sound bridges – secure surface sealing using a system-suitable connecting tape (no damage to the insulation layer)
- 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)





# “Exclusiv-Klett” system

Your benefits

## For the end-consumer

- Various system panels available with or without insulation or sound absorption
- Heat insulation across the entire surface
- Problem-free implementation of the **Energy Savings Regulation (EnEV) 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
- Underfloor 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



# “Exclusiv-Klett” 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.



PUR-THERM® stainless steel manifold, Series 03, 2-12 heating circuits

### Stainless steel manifold

#### System manifold HKV-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 for filling, bleeding and draining, rotating, packaged and enclosed. All packaged in a carton and with identification plates.

**NEW** for quick manifold installation



PUR-THERM® brass manifold, Version 2.0, 2-12 heating circuits 1" IT or 13-16 heating circuits 5/4" IT

### 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 for filling, bleeding and draining, rotating, packaged and enclosed. All packaged in a carton and with identification plates.

**NEW** for quick manifold installation

### NOTE

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



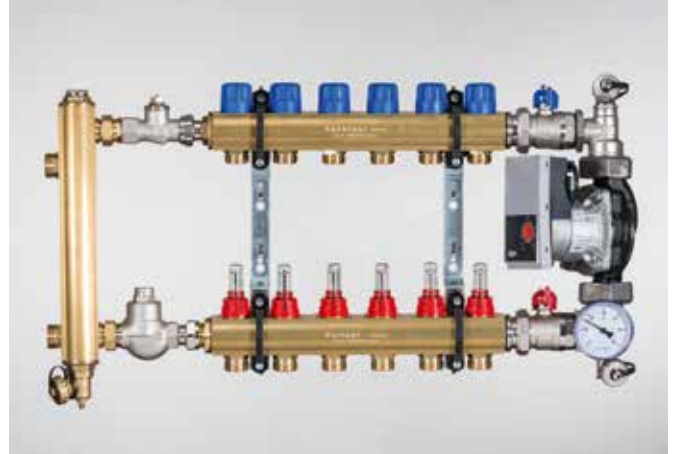
# “Exclusiv-Klett” system

Additional system components

## Control manifold

### Control manifold HKV-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. In box with nameplates to identify the manifold outlets. Suitable for variable or constant flow temperature control in combination with control set V or K for the hydraulic integration of low-temperature underfloor heating in an existing heating system.



Control manifold HKV-DR with high-efficiency pump and thermoseparator, Version 2.0, 2-16 heating circuits

**NEW** for quick manifold installation

### NOTE

The water quality requirements according to VDI 2035 must be adhered to! To protect the flow rate indicator and fittings, we recommend that old systems are rinsed thoroughly and to check for the installation of a dirt trap. Use ‘Top Standard plus’ or ‘Exclusiv plus’ manifold cabinets in combination with this! Thermostatic head control set K or actuator control set V must be ordered separately! Control terminal strip with pump logic required, overheat thermostat recommended, WMZ set upon request!

## EMPUR® Geniax complete manifolds

The unique Geniax 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® Geniax 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.



EMPUR® Geniax complete manifolds

# “Exclusiv-Klett” system

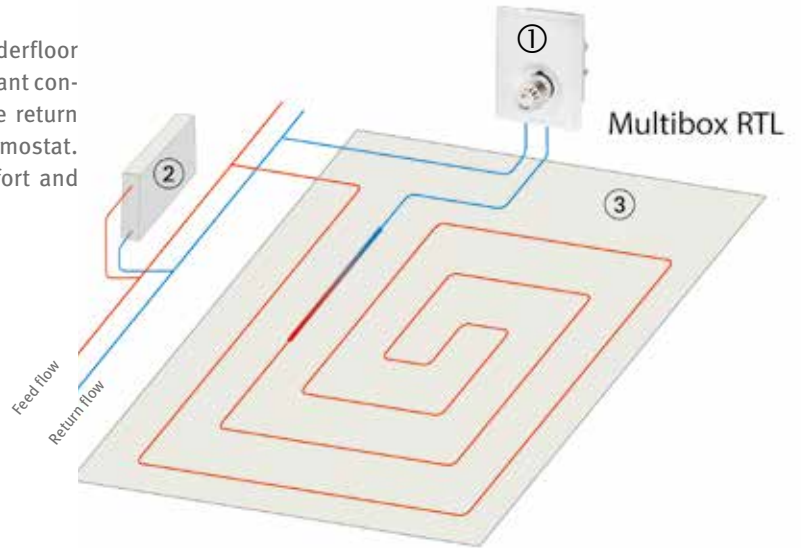
Additional system components

## Multibox-RTL individual room control

for the renovation and subsequent installation of underfloor heating in individual rooms, e.g. bathroom. EnEV 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.



Thermostat head “K” control set for HCM-DR



Actuator PUR DRIVE “V” control set for HCM-DR



Ball valve 3/4” nickel-plated for HCM-DR



Overheat thermostat 230 V for HCM-DR



Connection set 90° for thermoseparator for HCM-DR



DG connection set for thermoseparator for HCM-DR

# “Exclusiv-Klett” system

Additional system components

## Manifold cabinets

PUR-THERM® manifold cabinets provide the perfect location for manifolds and control stations. PUR-THERM® 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.

The newest generation of EMPUR® manifold cabinets has been completely reworked and is manufactured from galvanised and foil-coated sheet steel. These offer adjusted suspension rails for the EMPUR® heating circuit manifold. With the specially developed ‘**quick manifold assembly technology**’, the manifolds are simply suspended in the guide rails of the manifold cabinet and fixed with two 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

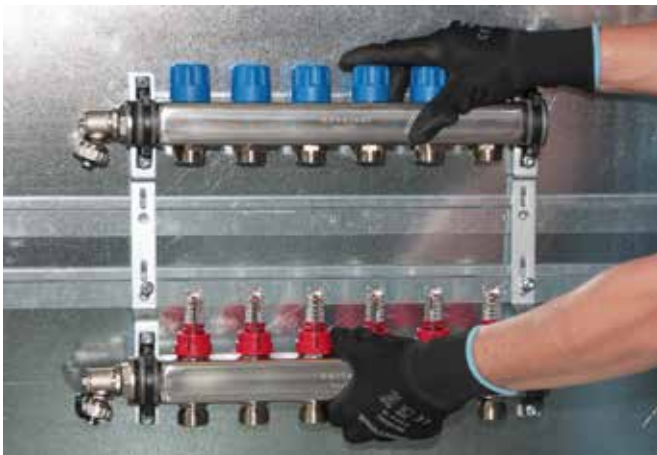


Manifold cabinet 'Exclusiv' version

**NEW** for quick manifold installation

## Quick manifold assembly in only 2 steps

1. Suspend in the manifold cabinet rail



2. Secure with screws





# “Exclusiv-Klett” 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 jewel of our control technology is EMPUR® Smart Home, which makes the integrated home automation solutions possible.

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!**



# “Exclusiv-Klett” system

## Additional system components



Room operating unit 230 V/24 V analogue standard heating



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



Wireless/BUS room operating unit with display



Regulator terminal strip (6/10 zones) 230 V/24 V heating/cooling



Humidity monitoring with external sensor



Wireless/BUS base station



EMPUR® Smart Home Server



Basic module for EMPUR® Smart Home control terminal strip 230 V, wireless (2/6 zones)



Control terminal strip EMPUR® Smart Home 230 V, wireless (6 zones)



Room control unit for EMPUR® Smart Home wireless control terminal strips



## 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.

**EM plan's** specialist engineers and planning consultants are available to help you with their expertise in demanding property planning in almost all TGA 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.

**planning**  
**EM-plan**

- 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 for Smart Home solutions
- Planning and designing Geniux projects
- EnEV (energy saving ordinance) certificates according to DIN 18599
- Construction supervision for technical building systems

[www.em-plan.net](http://www.em-plan.net)

**production**  
**EMPUR®**

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

[www.empur.com](http://www.empur.com)

**installation**  
**EM-solution**

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

[www.em-solution.de](http://www.em-solution.de)