

KLIMAPEX®



KLIMAPEX® plastic heating pipes

Controlled quality from one source



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.

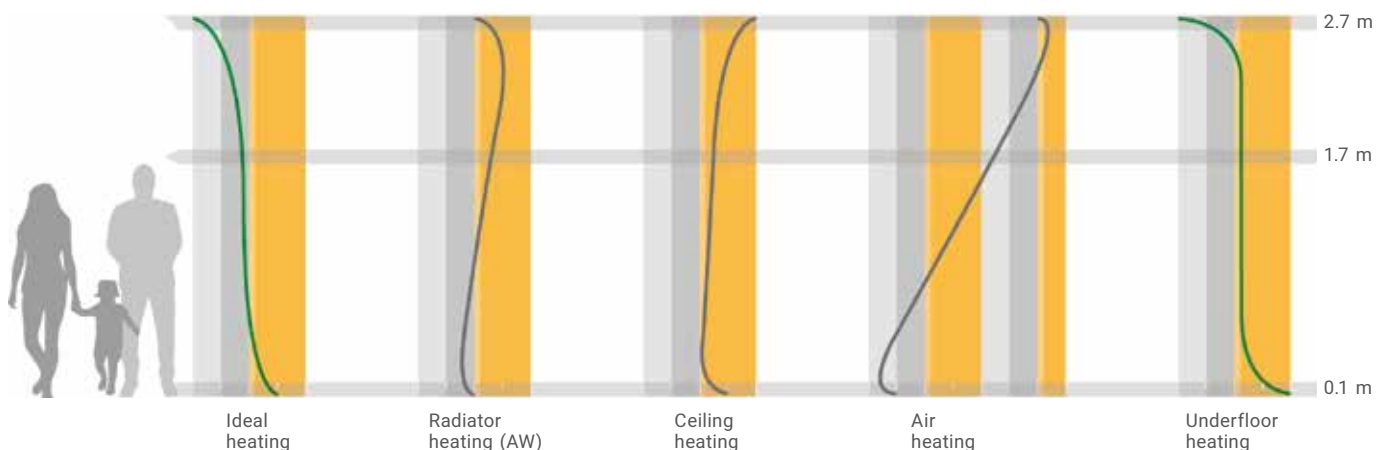
Mild heat radiation from the bottom up creates an increased sense of wellbeing. As a heat source with a large surface area, it can make an exceptional contribution to lowering energy costs at low flow temperatures. In this way, it also makes a significant contribution to sustainability and to protecting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

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.



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Controlled quality from one source



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KLIMAPEX® plastic heating pipes are the ideal combination for all EMPUR® surface heating systems and provide maximum safety and flexibility for all applications. Interruption-free, fast and economic installation is guaranteed, thanks to the system components being perfectly adapted to each other.

The high quality of the KLIMAPEX® plastic heating pipes is guaranteed through internal production, permanent production controls by an experienced quality management team and verification by external testing institutes. DIN-CERTCO certificates and SKZ seals indicate excellent properties. Furthermore, EMPUR® assumes a 10-year material and consequential damage liability, provided only EMPUR® system components are used (see EMPUR® warranty certificate).

Wide variety thanks to in-house production

EMPUR® manufactures KLIMAPEX® plastic heating pipes as PE-Xa and PE-RT pipes in the dimensions 12, 15, 17, 20 and 25 mm. Other dimensions are available upon request.

We manufacture a special hook and loop heating pipe in the dimensions 15 x 1.8 and 17 x 2.0 for our Exclusiv-Klett system.

The heating pipes can be used for underfloor heating, low-temperature heating, high-temperature heating and radiator heating as well as for connecting heaters.

EMPUR® KLIMAPEX® impresses

- Proven quality through in-house production
- Simple assembly thanks to excellent material flexibility
- Resistant to deformation and external influences
- Impervious to stress crack formation
- Optimally matched system components within the EMPUR® surface heating system



3V 204 PE-RT



A 765
A 766

KLIMAPEX® plastic heating pipes

Controlled quality from one source



KLIMAPEX® plastic heating pipes

Controlled quality from one source



Certified quality

Systems (HP production systems) developed specially for the production of EMPUR® KLIMAPEX® heating pipes manufacture polyethylene pipes in the dimensions 12, 15, 17, 20 and 25 for 2 different thermal load grades. The high quality standard of KLIMAPEX® heating pipes is documented and assured through in-house and external monitoring of product and production.



KLIMAPEX[®] plastic heating pipes

KLIMAPEX[®] PE-RT 5-layer pipe



PE-RT 5-layer pipe

The PE-RT 5-layer pipe is a premium plastic pipe for harsh building site applications and is also produced as a hook and loop version in-house. The oxygen permeability is considerably below the threshold value stated in DIN 4726. Due to the HP method, the EVOH barrier layer is insolubly bound to the base pipe.

- Pipe made of polyethylene, Type I/II with increased temperature resistance in accordance with DIN EN ISO 22391-2 and DIN 16833
- Base material high-quality PE-MD, with EVOH barrier layer, impermeable in accordance with DIN 4726
- Resistant to deformation and external influences and also impervious to tension-crack formation
- Continuous operating temperature: +70°C
- Maximum temperature: +90°C short-term (max. 2 years)
- Max. operating pressure 4 bar or 6 bar** depending on type
- Meets all requirements of ISO 10508 Class 4+5
- Smallest bending radius: 5 x d (d = outer diameter)
- Laying temperature: -5°C to +30°C



3V 204 PE-RT



K 1691

NOTE

** Our proven KLIMAPEX[®] PE-RT 5-layer pipe is also available as a 6 bar version for PE-RT 15 x 1.8 and 17 x 2.0! This means that multi-storey properties can also be realised without separation between the individual storeys. More safety and the flexibility of the pipe is still maintained.

Available dimensions

Dimension	Ø Internal		
PE-RT 12 x 1.5*	9.0		Roll 120 m
PE-RT 15 x 1.8*	11.4	Pipe, green	Roll 200 m
PE-RT 15 x 1.8*	11.4	Pipe, green	Roll 600 m
PE-RT 17 x 2.0*	13.0		Roll 200 m
PE-RT 17 x 2.0*	13.0		Roll 500 m
PE-RT 20 x 2.0	16.0		Roll 200 m
PE-RT 20 x 2.0	16.0		Roll 400 m

* Hook and loop version of the heating pipes available in the Exclusiv-Klett system

PE-RT 15 x 1.8 and 17 x 2.0 also available as 3-layer pipes for simple laying in residential buildings.



KLIMAPEX® plastic heating pipes

KLIMAPEX® PE-Xa 5-layer pipe



PE-Xa 5-layer pipe

The PE-Xa 5-layer pipe is a premium plastic pipe for harsh building site applications and is also produced as a hook and loop version in-house. The oxygen permeability is considerably below the threshold value stated in DIN 4726. External PE protective layer protects the EVOH barrier layer against damage.

- Pipe made of high-pressure crosslinked polyethylene in accordance with DIN EN ISO 15875, degree of cross-linking $\geq 70\%$ in accordance with DIN 16892/93
- Base material high-quality PE-HD, with EVOH barrier layer, impermeable in accordance with DIN 4726
- Continuous operating temperature: $+95^{\circ}\text{C}$ ($> 1,000$ h)
- Short-term excess temperature: $+110^{\circ}\text{C}$ (max. 100 h)
- Operating pressure: max. 6 bar/Class 5
- Meets all requirements of ISO 10508 Class 4+5
- Smallest bending radius: $5xd$ (d = outer diameter)
- Laying temperature: -5°C to $+30^{\circ}\text{C}$



Application classes:

- 4: Underfloor heating, low-temperature heating, radiator connection system
5: High-temperature heating, radiator connection system

NOTE

PE-Xa 15 x 1.8, 17 x 2.0 and 20 x 2.0 also available as 3-layer pipes for simple laying in residential buildings.

Available dimensions

Dimension	Ø Internal		
PE-Xa 15 x 1.8*	11.4	Roll	200 m
PE-Xa 15 x 1.8*	11.4	Roll	600 m
PE-Xa 17 x 2.0*	13.0	Roll	200 m
PE-Xa 17 x 2.0*	13.0	Roll	500 m
PE-Xa 20 x 2.0	16.0	Drum	600 m
PE-Xa 20 x 2.0	16.0	Roll	400 m
PE-Xa 25 x 2.3	20.4	Drum	600 m

* Hook and loop version of the heating pipes available in the Exclusiv-Klett system



KLIMAPEX[®] plastic heating pipes

KLIMAPEX[®] metal composite pipe PE-RT/AL/PE-RT



Metal composite pipe

Our PE-RT/AL/PE-RT pipe is a premium metal composite pipe for the OPTIMAL II dry construction system. The oxygen permeability is considerably below the threshold value stated in DIN 4726.

- Pipe made of high-quality polyethylene in accordance with DIN 16833/DIN 16834 with aluminum layer as an oxygen barrier
- Impermeable in accordance with DIN 4726
- Resistant to deformation and external influences and also impervious to tension-crack formation
- Continuous operating temperature: +70°C
- Maximum temperature: +90°C short-term (max. 2 years)
- Operating pressure: Class 5/6 bar
- Meets all requirements of ISO 10508 Class 4+5
- Smallest bending radius: 5xd (d = outer diameter)
- Laying temperature: -5°C to +30°C

Available dimensions

Dimension	Ø Internal	
PE-RT/AL/PE-RT 16 x 2.0	12.0	Roll 200 m
PE-RT/AL/PE-RT 16 x 2.0	12.0	Roll 500 m

Application classes:

- 4: Underfloor heating, low-temperature heating, radiator connection system
- 5: High-temperature heating, radiator connection system



NOTE

PE-RT/AL/PE-RT pipes must be protected against sunlight during transportation and storage. We recommend using flexible springs for the precise bending of metal composite pipes.

KLIMAPEX® plastic heating pipes

Your benefits

For specialised craftsmen and end consumers

- One system, one manufacturer – from consultation and design to component delivery
- Security for end customers and processors – **system components optimally adapted to each other with universal licences**
- Proven quality through **in-house production**
- Easy installation of KLIMAPEX® plastic heating pipes
- Quick and flexible laying of pipes of all dimensions and qualities
- Optimal combination with liquid screeds thanks to the KLIMAPEX® plastic heating pipes being covered in their entirety
- **Many expansion possibilities** – comprehensive EMPUR® range with EMPUR® surface heating systems, additional insulation materials and various system accessories, system tools, manifold and control technology
- 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)

ON THE SAFE SIDE WITH
EMPUR® HEATING PIPES!



KLIMAPEX[®] plastic heating pipes

Application examples



EMPUR[®] surface heating systems

Our manifold technology is optimally attuned to the EMPUR[®] surface heating systems and takes all requirements of our diverse systems into account. This offers both the specialised tradesman and the end consumer security and reliability in the optimum laying of a new heating system in new builds and modernisation projects.

Further information about our surface heating system can be found at our homepage or in personal consultation with your consultant.

Our systems at a glance

- **PUR-THERM[®] stapler system** – exceptional adhesion using staples
- **Exclusiv-Klett system** – perfect hook and loop technology and quick laying
- **top-Nopp[®] nub system** – laying using the press stud method
- **OPTIMAL II dry construction system** – for quick construction progress
- **CUT-THERM[®] milling system** – without increased installation height
- **top-Nopp[®] mini nub system** – for low installation heights
- **OPTIMAL II wall heating** – the dry construction system for your wall
- **Vertical wall heating** – the wet system for your wall
- **Ceiling heating/cooling** – for a comfortable indoor climate all year round
- **XXL-Industry/concrete core temperature control** – efficient temperature control for large areas
- **Sports floor heating** – the solution for sports facilities

KLIMAPEX® plastic heating pipes

Application examples



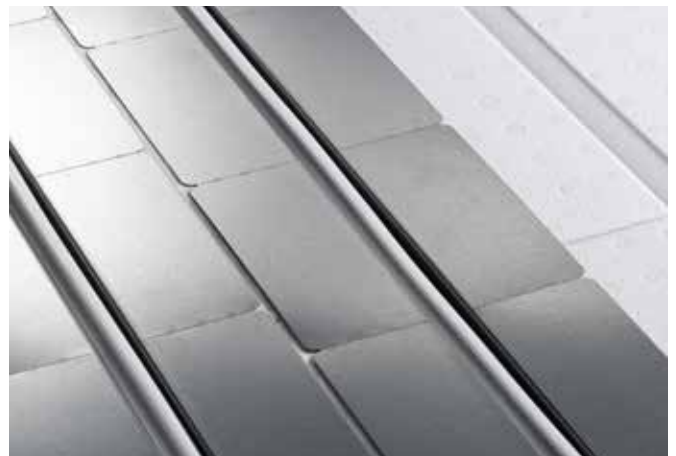
PUR-THERM® stapler system



Exklusiv-Klett- system



top-Nopp® nub system



OPTIMAL II dry construction system



CUT-THERM® milling system



top-Nopp® mini nub system

KLIMAPEX[®] plastic heating pipes

Additional system components



Manifold technology

As almost all EMPUR[®] components are manufactured in-house, we offer you optimum solutions for various applications, including in the field of manifold technology, as an ideal supplement to surface heating systems. We can even create special solutions from brass and stainless steel for client-specific requirements.

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.

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.

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

**We manufacture individual complete distribution solutions on request!
You can find detailed information in our Manifold technology brochure.**

KLIMAPEX® plastic heating pipes

Additional system components



Control technology

EMPUR® offers innovative and perfectly matched control components as another ideal supplement to 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 with 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.

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

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