

OPTIMAL II



OPTIMAL II dry construction system

One system panel for all instances



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.

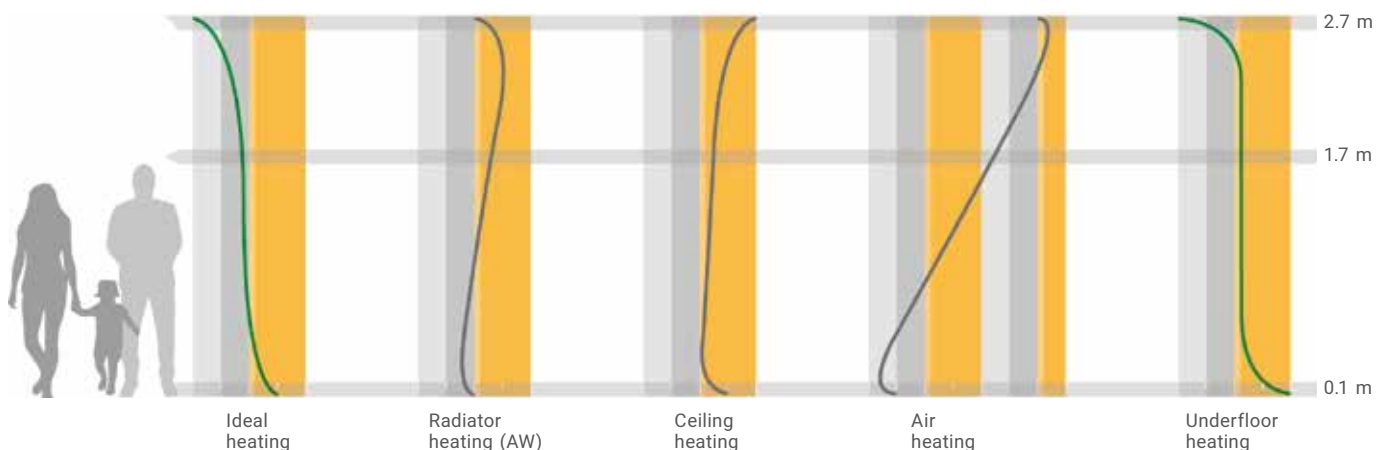
Mild heat radiation from the bottom up creates an increased sense of wellbeing. As a heat source with a large surface area, it can make an exceptional contribution to lowering energy costs at low flow temperatures. In this way, it also makes a significant contribution to sustainability and to protecting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



OPTIMAL II dry construction system

One system panel for all instances



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One system panel for all instances



The OPTIMAL II dry construction system by EMPUR® is useful wherever a low weight is required due to structural reasons or where dry screed components are being used.

The system consists of hard foam panels of the highest rigidity and foam incorporated grooves and pipe redirectors. The aluminium/steel heat conduction plates that are to be inserted ensure quick and even heat distribution. The dry screed load distribution layer can be placed into position immediately after the pipes have been laid.

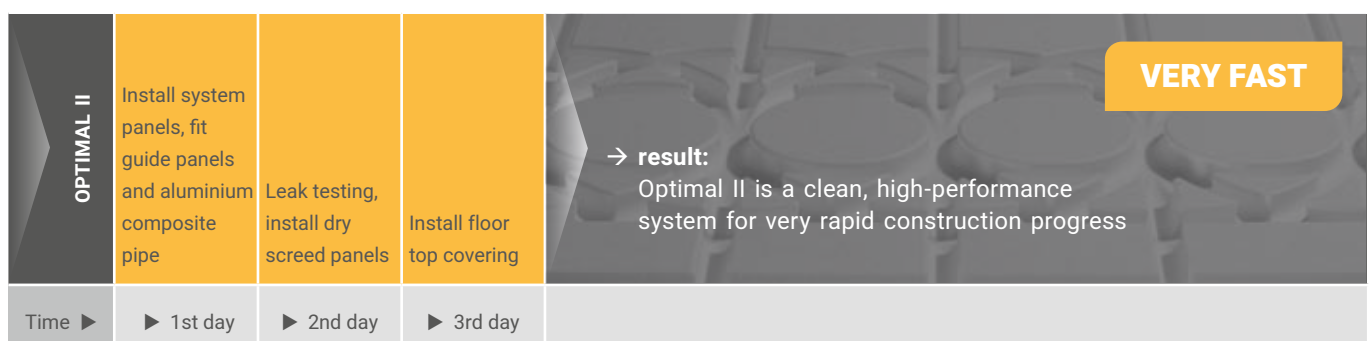
The system panel can be used in many layouts, also ideal as wall panel heating in renovation projects.

Our OPTIMAL II dry construction system impresses

- **Quick laying**
- **Fast construction** progress in combination with dry screed panels
- **Easy handling** of the few system components
- Quick laying of metal connecting pipes through predefined grooves
- **Low surface area weight** – ideal for the renovation of old buildings



The fast solution for renovations or new builds



OPTIMAL II dry construction system

Standardised installation



OPTIMAL II dry construction system

Standardised installation

Your route to increased home comfort



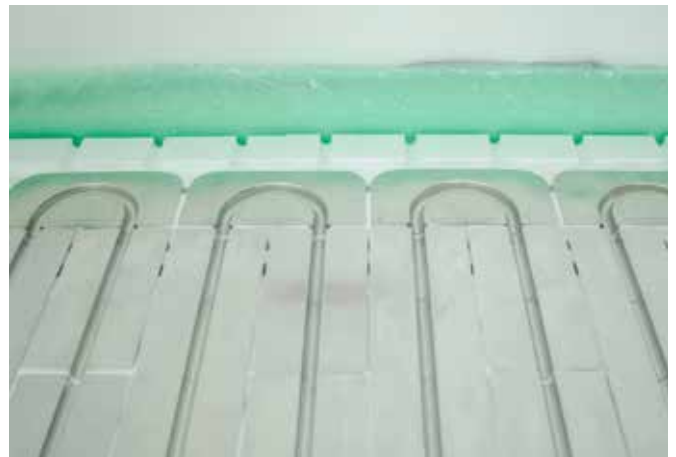
Full-surface laying of the bottom insulation, taking into account the existing supply lines and fixing of the edge insulation strips.



Full-surface laying of the system panels, taking into account the direction of the grooves.



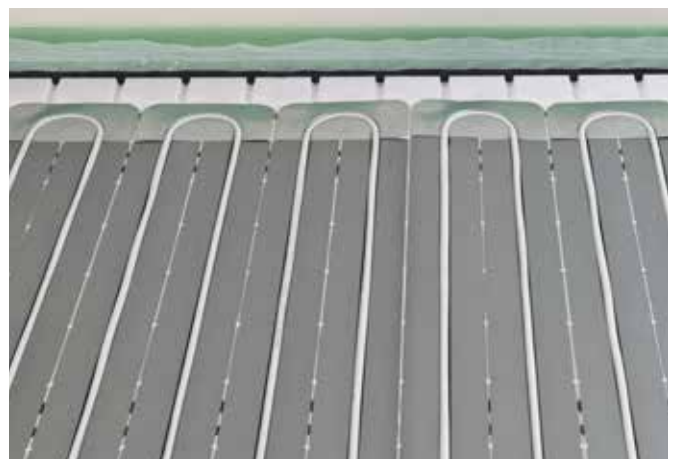
Inserting the aluminium redirection plates into the foamed grooves.



The heat conduction plates are added in the direction of the redirection plates. No special tools are required.



The metal composite pipe is easy to bend and clicks into the sheets with a little pressure.



The clamping effect ensures the composite pipe is securely fixed in the plate.

OPTIMAL II dry construction system

System components



OPTIMAL II dry construction system

System components



System panel RA 12.5/RA 25, WLS 035
Universal panel for continuous laying and redirection



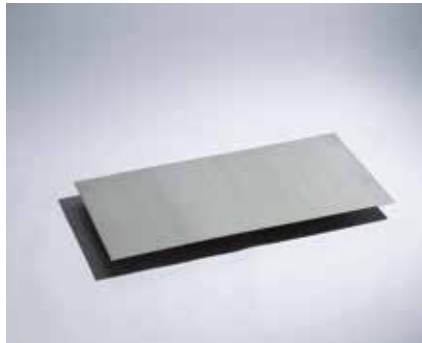
Aluminium redirection plate RA 12.5
for insertion into the system panel



Aluminium heat conduction plate for high thermal output, alternatively galvanised heat conduction plate
with 5 pre-determined breaking points



Edge insulation strips
with self-adhesive base



Load distribution element for doorway
made of galvanised sheet steel



PE cover sheeting



KLIMAPEX® metal composite pipe PE-RT/AL/PE-RT 16 x 2.0
made of polyethylene with welded aluminium jacket, multi-layer composite pipe, diffusion-tight and dimensionally stable



Flexible springs
for the precise bending of metal composite pipes



Compression fitting 16 x 2.0
especially for aluminium composite pipe

NOTE

Complete your OPTIMAL II dry construction 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!

OPTIMAL II dry construction system

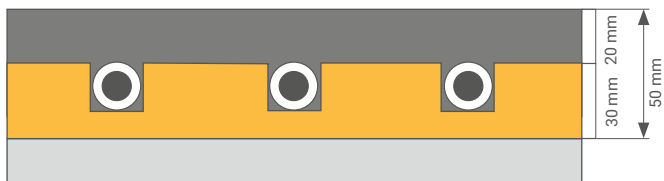
Example assembly



Example: Floor heating

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

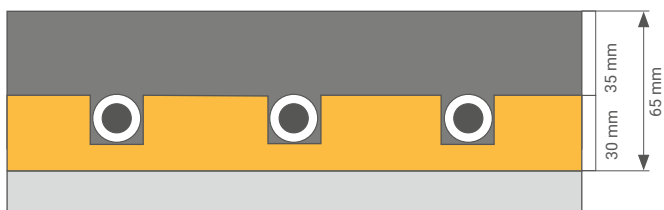
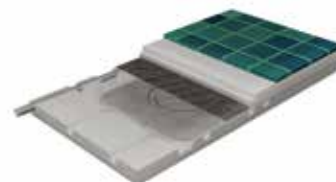
Requirement DIN EN 1264 R = 0.75 m² K/W (U = 1.33 W/m² K)



Dry laying

20 mm dry construction panel
30 mm system panel Optimal II WLS 035

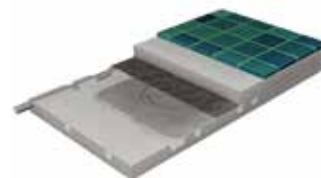
50 mm (without lining) R = 0,857 m² K/W



Wet laying

35 mm anhydrite heating screed
30 mm system panel Optimal II WLS 035

65 mm (without lining) R = 0,857 m² K/W



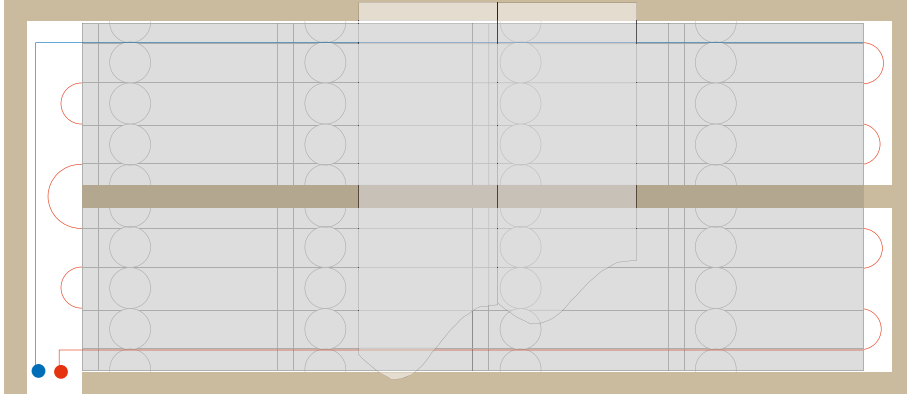
NOTE

Screed, height and quality are to be tested for each individual case according to the site requirements! Laying and application instructions for the dry screed elements used must always be observed!

OPTIMAL II dry construction system

Example assembly

Example: Wall and ceiling heating



1. Mount battens or profiles (distance according to manufacturer's instructions for the gypsum/drywall elements used, but max. 60 cm).
2. Cut system panels to size and clamp between the rafters (keep space for deflectors free).
3. Insert the aluminium baffle plates into the foamed-in grooves. The aluminium heat conduction plates are added in the direction of the baffles. No special tools are required.
4. The metal composite tube is easily bendable and is clicked into the sheets with light pressure. The clamping effect fixes the composite pipe securely in the panel.
5. Cover with PE foil.
6. Cover with plasterboard or suitable wall panels.

OPTIMAL II BY EMPUR® CAN
BE **USED IN UNDERFLOOR,
WALL AND CEILING HEATING!**

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

NOTE

The weight of all the system components to be considered for planning, including the water content of the pipe, but without surface (e.g. cement/dry screed) or covering, can be assumed to be 5 kg/m² at maximum pipe length (RA 12.5) and in the version with aluminium thermal conduction elements.



OPTIMAL II dry construction system

Your benefits

For specialised craftsmen

- **Security for end consumers and processors – system components optimally adapted to each other with universal licences**
- Minimal installation height ≥ 50 mm (without lining)
- **Quick and neat processing** of the system panels
- Robust panel during use with **long-term stability**
- One element for all types of layout with two layout distances (125/250 mm) for a system-compatible laying of the metal connecting pipes
- **Low-weight material**, enabling easy and non-tiring installation
- Quick laying and fast construction progress in combination with dry screed panels
- Easy handling of the few system components
- Plates have **high thermal conductivity** and low weight
- Quick laying of metal composite pipes through predefined grooves
- Secure fastening of the metal connecting pipes in the heat conduction plates through the clamping effect of the redirectors
- **Many insulation materials** available with various strengths
- Suitable for dry screed and wet screed
- **Low surface area weight** in combination with dry construction components
- 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



OPTIMAL II dry construction system

Your benefits

For the end-consumer

- Minimal waste
- **Heat insulation across the entire surface**
- Quick laying and fast construction progress in combination with dry screed panels
- **Low surface area weight** in combination with dry construction components
- 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
- **Highest comfort** thanks to heat radiation
- New design possibilities without radiators
- **Increases building value**
- **Energy savings** through low flow temperatures
- **Comfort** thanks to even heat distribution



OPTIMAL II dry construction system

Additional system components

Manifold technology

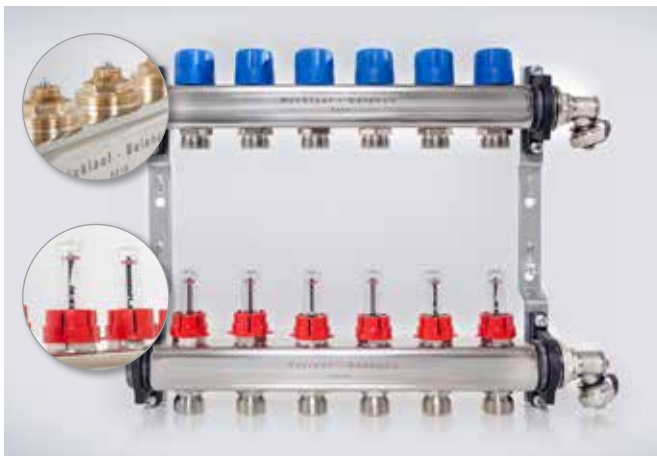
At our Buchholz-Mendt location, EMPUR® produces high-quality manifolds and special solutions from brass and stainless steel for client-specific requirements.

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!

OPTIMAL II dry construction system

Additional system components

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® Geniix complete manifold

The unique Geniix 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® Geniix 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.geniix.de



EMPUR® Geniix complete manifold

NOTE

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

OPTIMAL II dry construction system

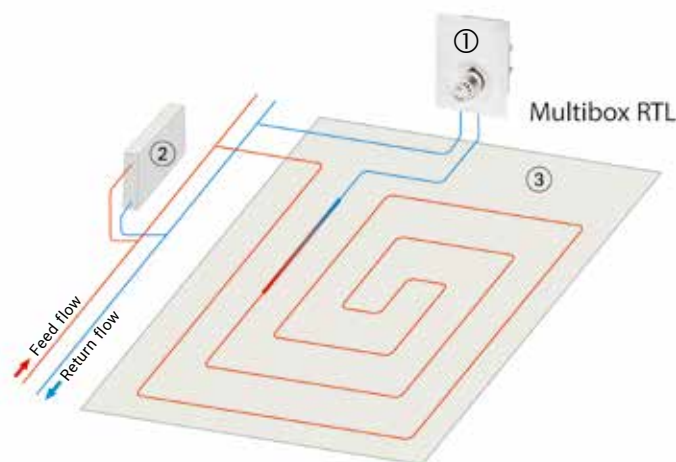
Additional system components

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

OPTIMAL II dry construction system

Additional system components

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

OPTIMAL II dry construction 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!

OPTIMAL II dry construction 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