

top-Nopp® mini



top-Nopp® mini nub system

The mini-solution for modernisation



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.

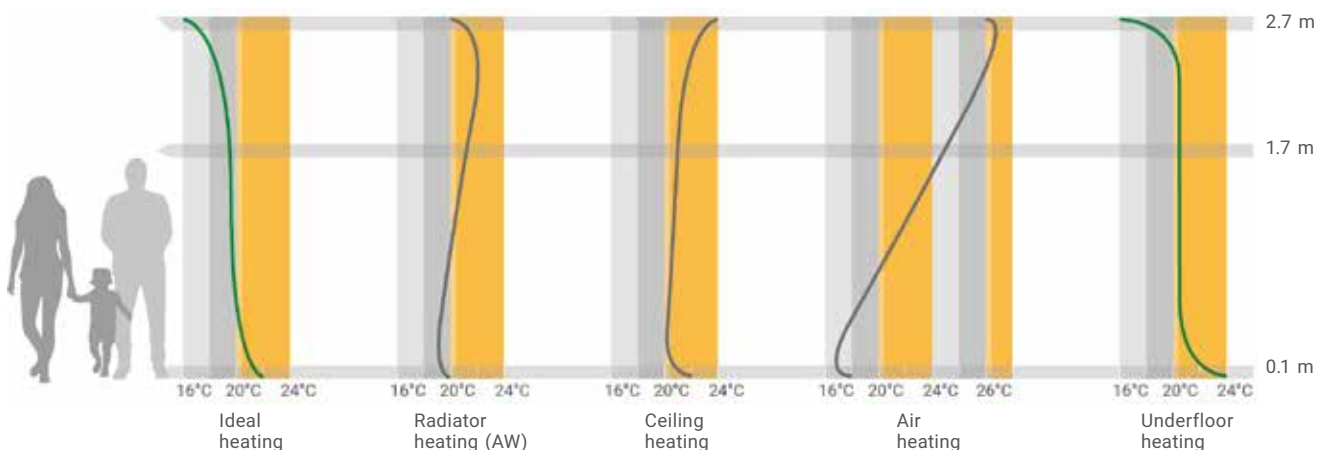
Mild heat radiation from the bottom up creates an increased sense of wellbeing. As a heat source with a large surface area, it can make an exceptional contribution to lowering energy costs at low flow temperatures. In this way, it also makes a significant contribution to sustainability and to protecting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

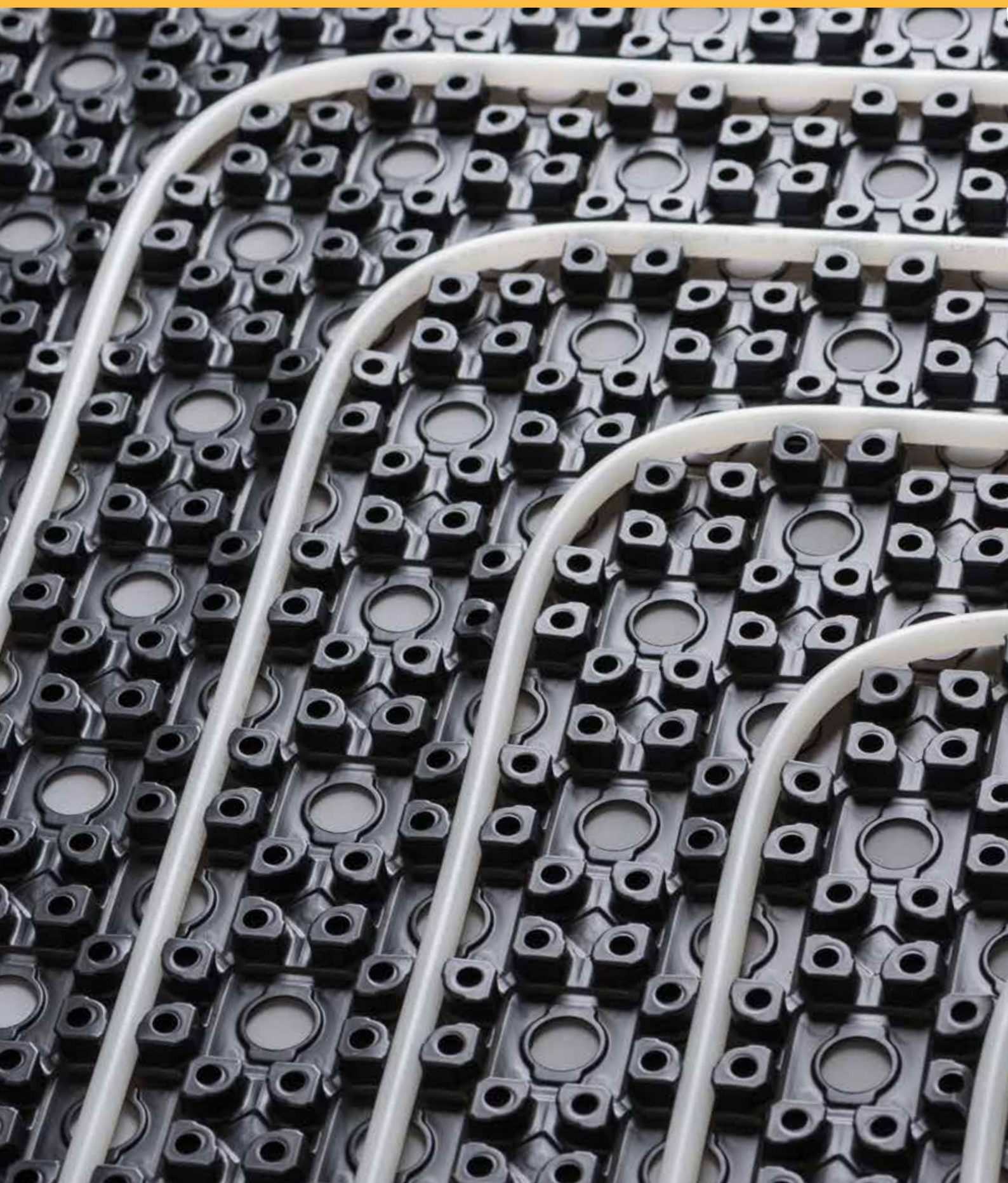
In the interests of the most objective and neutral product evaluation possible, EMPUR® subjects its products to material testing and certification by nationally recognised testing institutes and assessment centres. High quality, continual and pioneering product developments, technical advice and support, 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.



top-Nopp® mini nub system

The mini-solution for modernisation



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The EMPUR® top-Nopp® mini system components consist of a hard-wearing, deep-drawn castellated film and are perfectly supplemented with the KLIMAPEX® high-quality plastic heating pipes. The “mini nub system” can be used whenever a low installation height is required or the existing floor covering cannot be removed.

The system panels are available in two versions: for 12 x 1.5 pipes and 15 x 1.8 mm pipes (green). Following pre-treatment (priming) with the required levelling compound, the system is installed as a composite structure onto the existing floor lining or raw floor, but not directly onto a concrete floor.

During installation the nub panel is fixed to the floor with an adhesive layer underneath it. The double-sided film overhang enables neat laying of the panels. The components can be connected easily, with minimum material loss and in a short time using the press stud method afforded by the male and female nubs, which are arranged in a single row.

The KLIMAPEX® plastic heating pipes are clicked into the nub structure and fastened using perfectly fitting pipe retaining nubs. Thanks to the ideal nub arrangement, the heating pipes can be positioned at different layout distances with ease and flexibility. The heating pipe is uniformly covered with special, thin-layer screed.

The mini nub system components are all developed by EMPUR® and produced in-house in Germany.

Our top-Nopp® mini nub system impresses

- Easy modernisation thanks to **minimal installation heights**
- Can be directly laid onto the existing surface following suitable pre-treatment
- **Proven quality** through in-house production
- Can be walked on after a short time and enables quick construction progress
- **Short reaction time** thanks to minimal pipe overlap

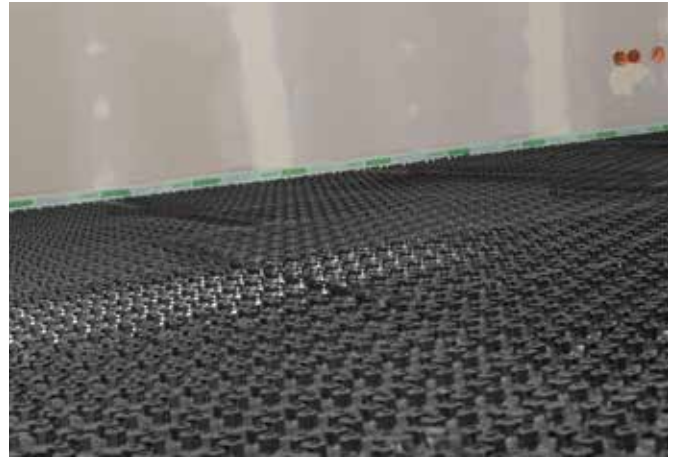
top-Nopp® mini nub system

Standardised installation

Your route to increased home comfort



Pre-treatment of the base with a primer according to the specified surface requirements. Fixing of the edge insulation strip on all ascending parts. A reliable seal must be ensured.



Laying the top-Nopp® mini nub panels, taking into account a gap of approx. 5 cm to ascending parts.



The nub panels are connected via the male and female nubs, which are arranged in a single row, using the press stud method.



The KLIMAPEX® plastic heating pipes click into the nub structure; a secure hold is ensured using perfectly fitting pipe retaining nubs.



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



Potting compound applied to top-Nopp® mini floor heating system according to manufacturer's instructions.

Construction requirements and preparatory measures

The most important prerequisite for a functional composite structure is careful inspection and suitability, as well as any additional pre-treatment of the existing base which may be necessary:

- Checking the substructure for sufficient and permanent load carrying capacity and dimensional stability
- Full removal of old floor coverings, dust, grease and adhesive residues
- Removal of existing holes and joints with a suitable filler
- Ensuring the evenness of the surface pursuant to DIN 18202 for self-levelling masses
- Observance of expansion joints
- Consideration of a room and base temperature of at least +5 °C for laying the materials

EMPUR® – THEY HAVE A
SOLUTION READY FOR EVERY
REQUIREMENT!

We are happy to answer any questions you might have regarding our top-Nopp® mini nub system. Give us or your specialist craftsman a call!

NOTE

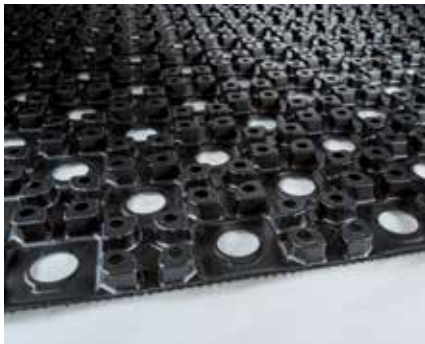
Please find detailed information on the surface requirements in the assembly instructions for the top-Nopp® mini system, point 4, which you can download from our website.



top-Nopp® mini nub system

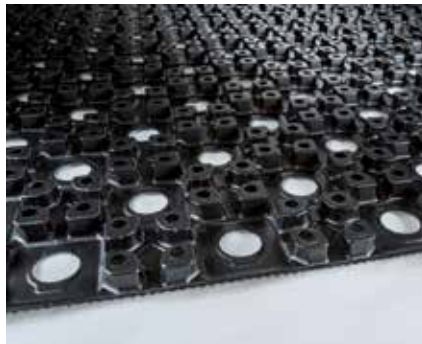
System components





Castellated element top-Nopp® mini for 12 mm pipe

Polystyrene castellated element, B2/E, CFC-free, without insulation, rear adhesive layer with removable protective film, Format: 1,025 x 1,025 mm (useful surface 1 m²), Castellated height: 13 mm



Castellated element top-Nopp® mini for 15 mm pipe

Polystyrene castellated element, B2/E, CFC-free, without insulation, rear adhesive layer with removable protective film, Format: 725 x 1,025 mm (useful surface 0.70 m²), Castellated height: 17 mm



Wall sealing strip 5 x 50 mm

with self-adhesive base and integrated fleece backing



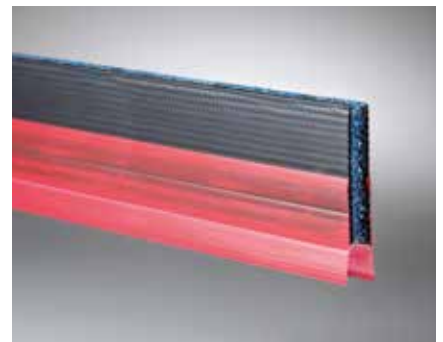
KLIMAPEX® heating pipe PE-RT 12 x 1,5

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



KLIMAPEX® heating pipe PE-RT 15 x 1,8

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



Expansion gap section DF-P

in accordance with DIN 18560, made of PE/PET 40/10 mm black, with levelling base and adhesive strips and horizontal incision



3V 204 PE-RT

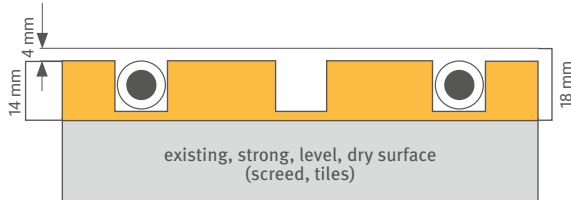
NOTE

Complete your top-Nopp® mini nub 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!

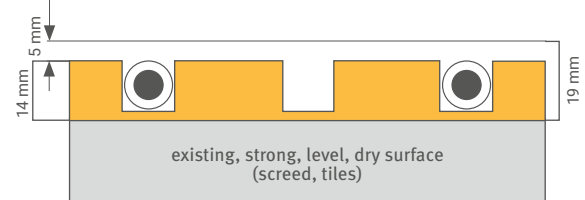
top-Nopp® mini nub system

Example assembly top-Nopp® mini 12

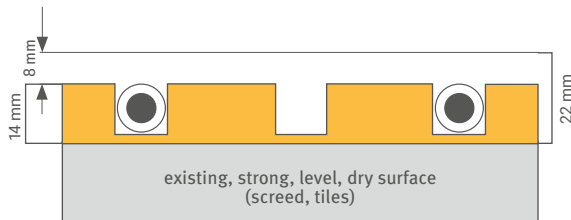
Knauf N 430, gypsum-bound floor levelling filler



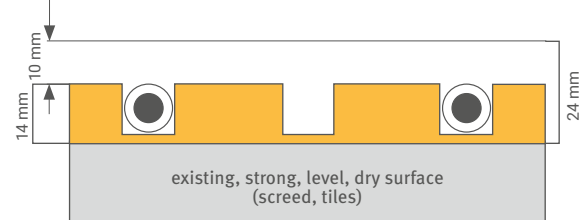
PCI Periplan Extra, Fibre-reinforced floor levelling compound



Knauf N 440, Gypsum-bound floor levelling compound



Weber-Maxit weber.floor 4190, Calcium sulphate-based levelling compound



Calculation aids

System: top-Nopp® mini material requirement/m² floor heating only for 12 mm pipes

		Installation distance (mm)														
		50		70		100		140		150		200		210		Item No.
Insulation and accessories	Installation method:	axially	diagonal	axially	diagonal	axially	diagonal	axially	axially	diagonal	axially	axially	diagonal	axially	diagonal	
Castellated element		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	080050
Edge insulation strip 50 mm		1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	908158
PE-RT 12 x 1.5		20.00	14.30	10.00	7.10	6.70	5.00	4.80	111231							

The screed type, amount (observe minimum coverage) and quality of the levelling compound must be examined in each individual case according to the construction requirements (load, substrate and surface covering) as well as according to the manufacturer's specifications! In the case of all wooden substrates (OSB boards, etc.), please ask explicitly for the manufacturer's specifications regarding the grouting compound and primer, as higher coverage is usually needed here!

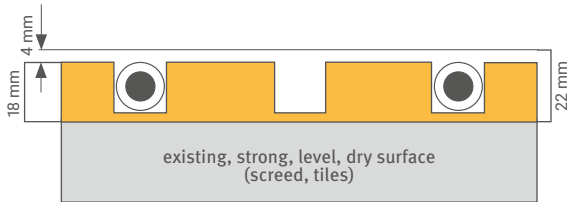
NOTE

Following pre-treatment/priming (match to the levelling compound and substrate!) with the required levelling compound, the system is installed as a composite structure directly onto the existing floor lining or raw floor, but not directly onto concrete.

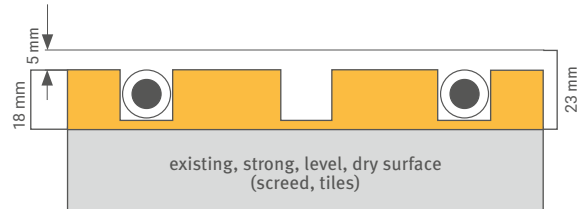
top-Nopp® mini nub system

Example assembly top-Nopp® mini 15

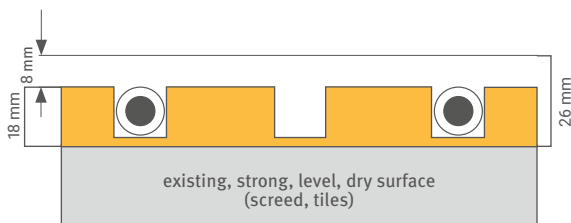
Knauf N 430, gypsum-bound floor levelling filler



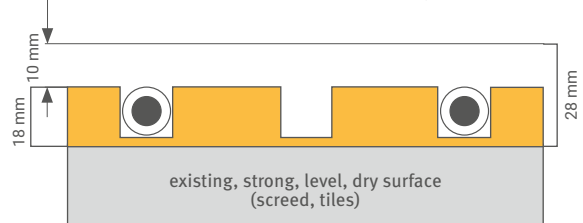
PCI Periplan Extra, Fibre-reinforced floor levelling compound



Knauf N 440, Gypsum-bound floor levelling compound



Weber-Maxit weber.floor 4190, Calcium sulphate-based levelling compound



Calculation aids

System: top-Nopp® mini material requirement/m² floor heating only for 15 mm pipes

		Installation distance (mm)														
		50		70		100		140		150		200		210		Art. Nr.
Insulation and accessories	Installation method:	axially	diagonal	axially	diagonal	axially	diagonal	axially	axially	diagonal	axially	axially	diagonal	axially	diagonal	
Castellated element		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	080051
Edge insulation strip 50 mm		1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	908158
PE-RT 15 x 1.8		20.00	14.30	10.00	7.10	6.70	5.00	4.80	111532							

The screed type, amount (observe minimum coverage) and quality of the levelling compound must be examined in each individual case according to the construction requirements (load, substrate and surface covering) as well as according to the manufacturer's specifications! In the case of all wooden substrates (OSB boards, etc.), please ask explicitly for the manufacturer's specifications regarding the grouting compound and primer, as higher coverage is usually needed here!

NOTE

Following pre-treatment/priming (match to the levelling compound and substrate!) with the required levelling compound, the system is installed as a composite structure directly onto the existing floor lining or raw floor, but not directly onto concrete.

top-Nopp® mini nub system

Your benefits

For specialised craftsmen

- **One system, one manufacturer** – from consultation to design and on to component delivery
- Security for end-clients and processors – system components optimally adapted to each other
- **Proven quality through in-house production**
- Minimal installation height
- **Quick and neat processing** of the castellated panels
- Hard-wearing nub panel (can be walked on)
- Optimal nub arrangement enables the KLIMAPEX® plastic heating pipes to be laid axially (50/100/150 mm) or diagonally (70/140/210 mm)
- **Low weight of material**, enabling easy and non-tiring installation
- Quick laying
- Can be **directly laid onto the existing surface** following suitable pre-treatment (priming) – secure attachment to the surface below thanks to adhesive layer at the back*
- Components are optimally attached to each other thanks to press stud technology
- **Minimal waste** due to overlay technology (press stud technology)
- Simple and secure installation of KLIMAPEX® plastic heating pipes by clicking them in, optimum hold thanks to pipe retaining nubs
- Quick and flexible laying of pipe dimensions and qualities of the same system
- Optimal distribution of the levelling compound around the KLIMAPEX® plastic heating pipe and contact to the surface below thanks to holes in the nubs and panels
- Low surface area weight, ideal for renovating old buildings
- **Quick reaction time** thanks to minimal pipe overlap
- Laying is carried out without additional tools
- Many expansion possibilities – comprehensive EMPUR® range with various system accessories and tools, as well as manifold and control technology products
- Thanks to low heights, the **screed dries quickly**, it can be walked on after a short time and building progress is fast
- Two different versions of the system panels cater for all modernisation requirements
- Easily connected to existing heating systems
- 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)

* Please find detailed information on the surface requirements in the assembly instructions for the top-Nopp® mini system, point 4, which you can download from our website.



top-Nopp® mini nub system

Your benefits

For the end-consumer

- **Easy modernisation** thanks to minimal installation heights
- No swirling up of dust, suitable for **people with allergies**
- Increased **comfort** through gentle heat radiation from the bottom up
- New design possibilities without heaters
- **Increases building value**
- Energy savings through low flow temperatures
- **Barrier-free** modernisation options
- Ideal for modern heat generators (condensing boilers, regenerative heat generators, etc.)
- Can be walked on after a short time and enables quicker construction progress



top-Nopp® mini nub 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!

top-Nopp® mini nub system

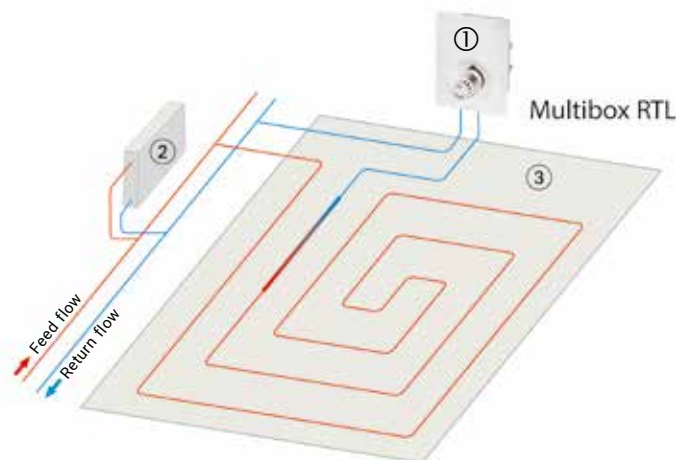
Additional system components

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

top-Nopp® mini nub 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 Exclusive modular-designed control technology (wireless/BUS). So you can also control your heating system via smartphone and PC.

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

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

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

top-Nopp® mini nub 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
- Project planning and designing Geniux 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
- Geniux 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 Geniux heat distribution systems and heat pump systems
- Service for technical building installations

www.em-solution.de