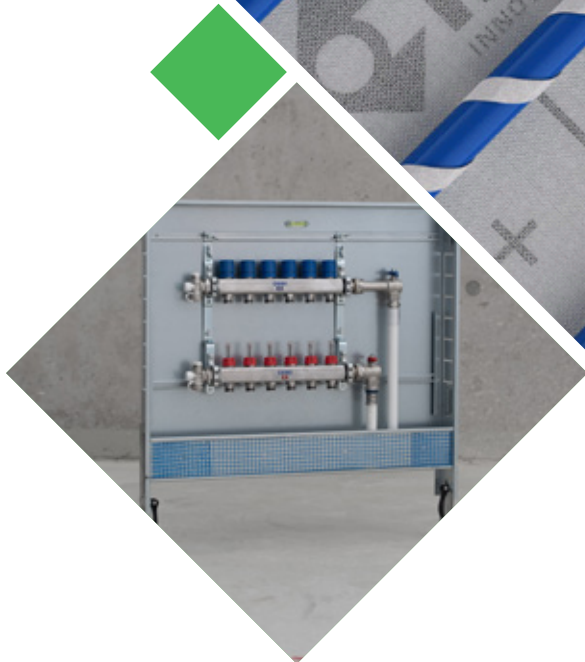


KELOX^{FB}

UNDERFLOOR HEATING
AND COOLING





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Underfloor heating & cooling system

KE KELIT piping systems in floors and walls provide comfortable temperatures for living spaces. Low-threshold heating and cooling is provided via floors and walls with no dust turbulence, making it perfect for allergy sufferers.

Underfloor heating & cooling



Wall heating & cooling





UNDERFLOOR HEATING & COOLING SYSTEM

The energy-efficient solution for a comfortable room climate

The trend in room temperature control is clearly heading towards the "low-temperature variant". Heating and cooling via heat radiation, as an alternative to using conventional radiators and air conditioning systems, significantly reduces the energy requirements in buildings. This technology is an excellent match for renewable energy sources thanks to low system temperatures.

Underfloor heating ... Heating and cooling from the ground up

In top-end housing, this design has become the standard for a high level of home comfort.

Wall heating ... Heating and cooling from all sides

External walls become radiating heating elements with a "wood burning stove effect": People physiologically feel that long-wave radiant heat is "cosy warmth".

Floor and wall heating systems work in the low-temperature range. Often, a difference in room air temperature of just 1 °C means achieving the required living space temperature. Control via thermostat regulates the heating or cooling capacity and generates an even ambient temperature. Heating or cooling a living space using the surfaces enclosing that space saves energy, and as part of a coordinated total solution provides all the requirements for implementing sustainable energy concepts.

Energy-efficient air conditioning systems are easier on the environment and on resources. The aim of KE KELIT is to further develop our products geared towards sustainability and quality.



KE KELIT CORPORATE HEADQUARTERS,
LINZ, AUSTRIA

ABOUT US

The Market Leader From Austria

KE KELIT is a family-owned SME headquartered in Linz on the Danube and we have been involved in developing, manufacturing and marketing innovative piping systems for 75 years. Originally founded in 1945 as an installation company, we are now one of the leading system providers and manufacturers of pipes worldwide. Our range includes application areas of drinking water, heating, cooling, waste water, floor, wall and ceiling heating systems for heating and cooling, compressed air, solar energy applications, refrigeration and district heating.

An International Approach With Proximity To Customers

Today, KE KELIT has manufacturing facilities in Austria and Malaysia; apart from this, we have close ties with strategic partners for manufacturing and developing relevant system components. Since proximity to customers is particularly important in our company, local staff members take care of our customers.

An Innovative Pioneer

More than 150 patents and registered designs demonstrate the in-house development expertise at KE KELIT which has played a major part in our success. In particular, future-oriented connection technology like our tool-less KELOX PROTEC push fittings or induction welding make KE KELIT a leader in innovation and quality.

Our latest innovation driver is the field of CLIMATEFIX floor, wall and ceiling heating systems for heating and cooling where numerous 'Made by KE KELIT' innovations have been developed. Another area is represented by the STEELOX stainless steel pipe system for hygienic drinking water installation.

Aside from this, KE KELIT has developed the world-leading KELOX PROTEC ZETA tool-less push fitting with minimal pressure loss, protected by numerous patents.

Regardless of the project business that people are involved in – whether it be hospitals, hotels or skyscrapers, residential construction, industrial and district heating – you will find products being used that were made by KE KELIT.

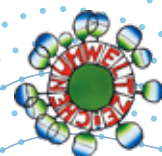


KE KELIT, made in Austria a leading Austrian family-owned company



From left to right Karoline Morawetz-Egger, Karl Egger III, Karl Egger IV, Kristine Egger

- ◆ Products for the whole world
- ◆ Innovative piping and air conditioning systems
- ◆ Focus on future-proof innovations
- ◆ 150 patents
- ◆ Focus on sustainability
- ◆ More than 700 staff members all over the world



Awarded by the
Federal Ministry
with the Austrian ecolabel



ÖNORM-tested



TÜVRheinland®
DIN CERTCO

KELOX ULTRA PE-RT
Reg. No. 3V408 PE-RT
TÜV tested



KELOX FB PIPES

Multi-layer composite pipes -
with outstanding mechanical properties

KELOX FB pipes have the following properties

- ◆ Can be laid without spring-back
- ◆ The installation type can meet any heating technology requirement
- ◆ They have installation characteristics that stay the same regardless of the temperature

KU100 ULTRAPERT

Top layer PE-RT Type 2

PE-RT, mechanical resistance. Stable against all construction chemicals. UV-stabilised.

Adhesive outside layer

Temperature-stable, non-ageing, force-transmitting intermediate layer made from special material.

Inner pipe PE-RT Type 2

Same material as the coating. Resistant against all heating and cooling water, physiologically harmless, smooth and seamless. Colour: transparent

EVOH oxygen barrier

The EVOH oxygen barrier is a guarantee of a long service life for the KELOX FB pipes.

Adhesive inside layer

Same material as adhesive outside layer.

KMU120 ULTRAX

Protective outside layer

PE-RT high temperature-resistant polyethylene. Stable against all construction chemicals. Mechanical resistance. UV-stabilised.

Adhesive outside layer

Temperature-stable, non-ageing, force-transmitting intermediate layer made from special material.

Inner liner

Same material as the outside layer. Stable against all water constituents, physiologically harmless, smooth and seamless. Colour: transparent

Stabilising pipe

Seam welded metal foil pipe made from aluminium (elongation at break approx. 12%), responsible for the exceptional compressive strength.

Adhesive inside layer

Same material as adhesive outside layer.

KELOX FB

A SYSTEM TO EVERY INSTALLATION METHOD

Underfloor heating & cooling



Installation systems for underfloor heating and cooling

When selecting the installation system, the construction method (solid construction or timber construction, wall and floor structures), the key factors are the properties of the building material being used and the preferred installation technique. The efficiencies achieved by the various installation techniques and support systems are clearly shown in the performance tables in the KE KELIT KELOX FB handbook.

Installation systems for underfloor heating/cooling:

KELOX FB clamping rail, staple plate, Velcro plate, carrier mat and fixing plate systems and KELOX dry drywall construction system.

Wall heating & cooling



Installation systems for wall heating and cooling

Whereas the proportions of radiant heat and convection are roughly the same for underfloor heating, wall heating is becoming the preferred "radiant heater". As an active surface, wall heating radiates heat in winter and cools the interior temperature in summer on demand.

Installation systems for wall heating & cooling:

KELOX FB clamping rail system

KELOX room control unit - wireless and BUS

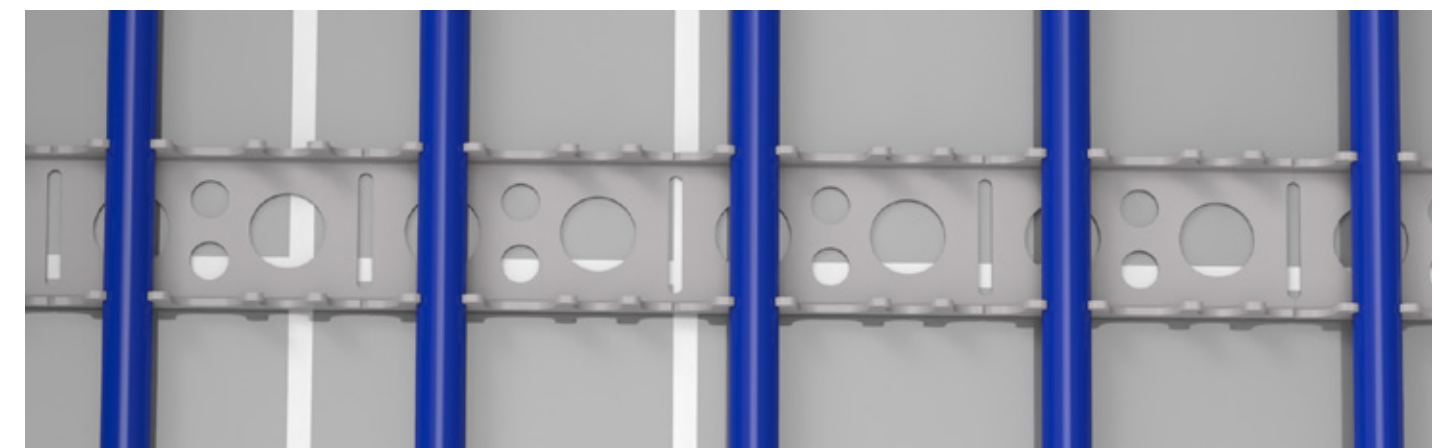
The active areas can be climate-controlled via smartphone. The prerequisite is a locally installed home network (router, wifi, switch, etc.) with connection units providing control of the KELOX room control system.



KELOX FB CLAMPING RAILS FOR FLOOR AND WALL HEATING

These plastic U-profile rails are designed to allow you to easily clip on the pipes that can be laid in a flexible way. You install the pipes on the wall side by hand, whereas underfloor heating pipes are laid in a meandering shape in a standing position with your foot, saving time and taking the strain off your back.

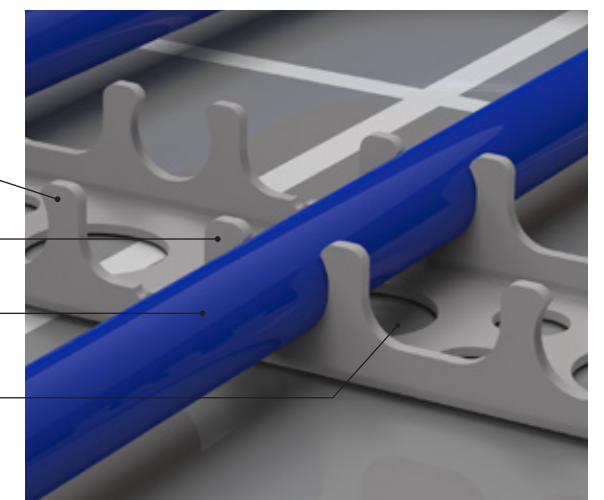
Meander installation exploits the module characteristics of the KELOX FB in a particularly effective way because peripheral zones with increased heat output can be easily supplied.

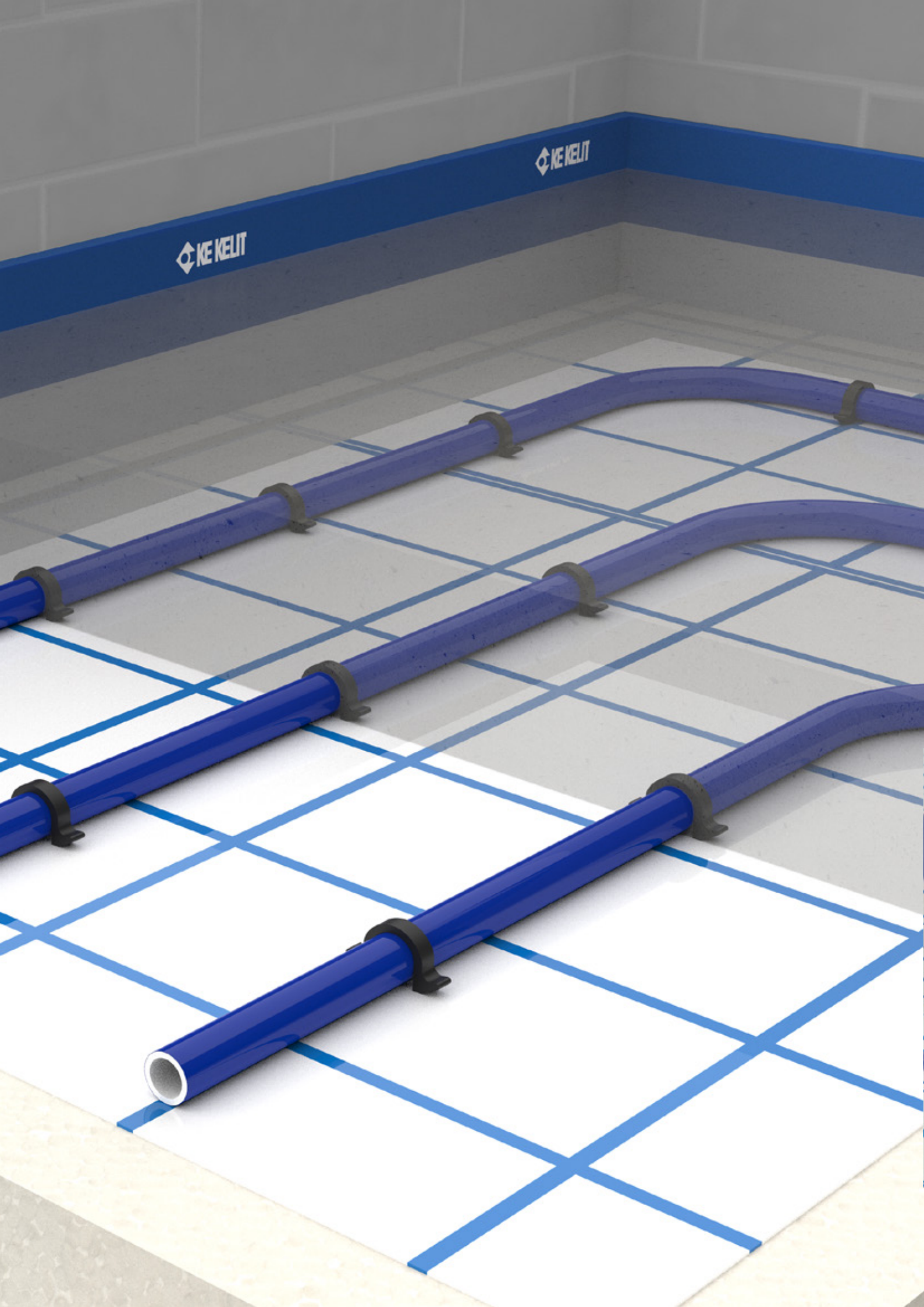


Quality description

The KM610 clamping rail is made of polypropylene and is PVC-free. An adhesive strip on the underside of the clamping rail ensures rapid installation.

- Polypropylene
- Self-clamping pipe mount
- KELOX-ULTRAX KMU120
- Recess for KM612 fixing hook





KELOX FB STAPLE PLATE

The KELOX FB stapling system impresses with its simple processing and flexible handling. The stable yet flexible pipes can be uniformly aligned without measuring and marking because installation is carried out on a defined 50 mm increment installation lattice.

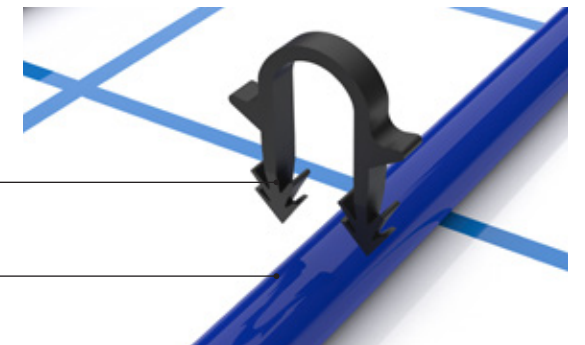
Using the KM611 staples, the pipes are attached to the footfall noise-absorbing KM 635S staple plate.

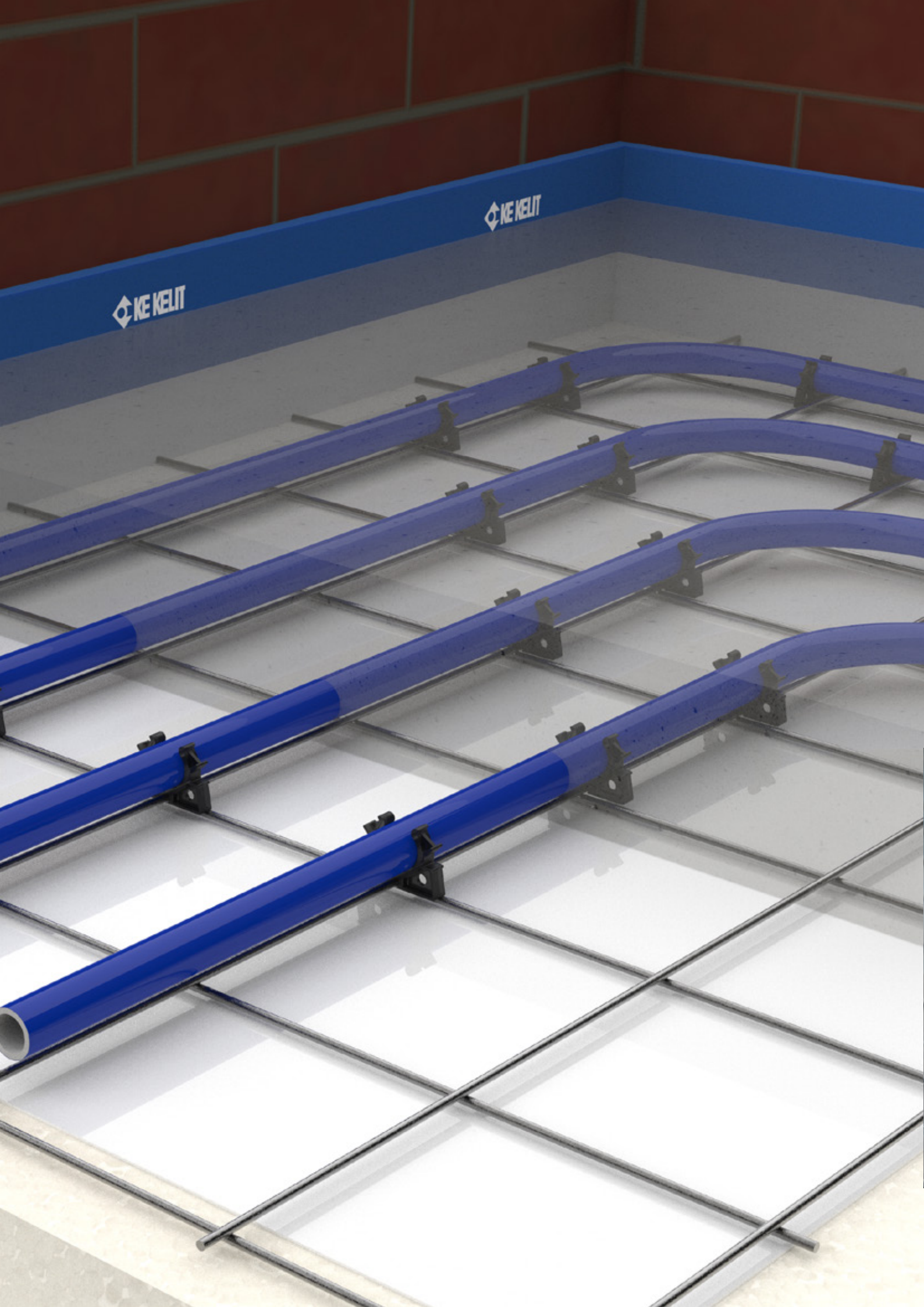
You can install the KELOX FB modular pipes or ULTRA PE-RT pipes in a spiral or meander pattern as preferred.

The improved lambda value means the KM635S FB staple plate EPS-T 650 with a thickness of 30/2 mm has the same insulation value as a conventional PS plate with a thickness of 33/30 mm.

KM611 KELOX FB staples

KMU120 KELOX-ULTRAX FB multilayer pipe





KELOX FB PIPE MAT

Regardless of insulation type, the KELOX FB pipe mat system can be installed quickly. The pipe mat is attached over the cover film and the pipe can be easily attached using lattice mat clips. KM637S wire bag loops reinforce the cohesion of the pipe mats.

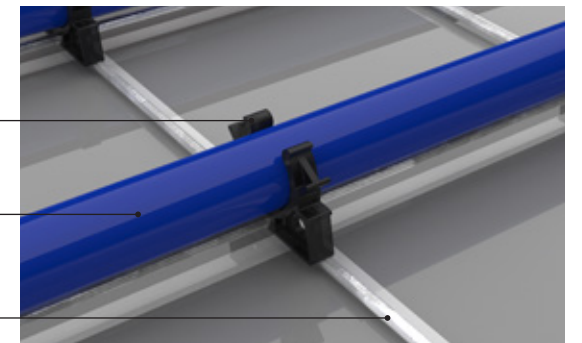
On the KELOX FB pipe mat with clips, you can fix in position both FB multilayer pipes and ULTRA PE-RT pipes as meander or spiral installations.

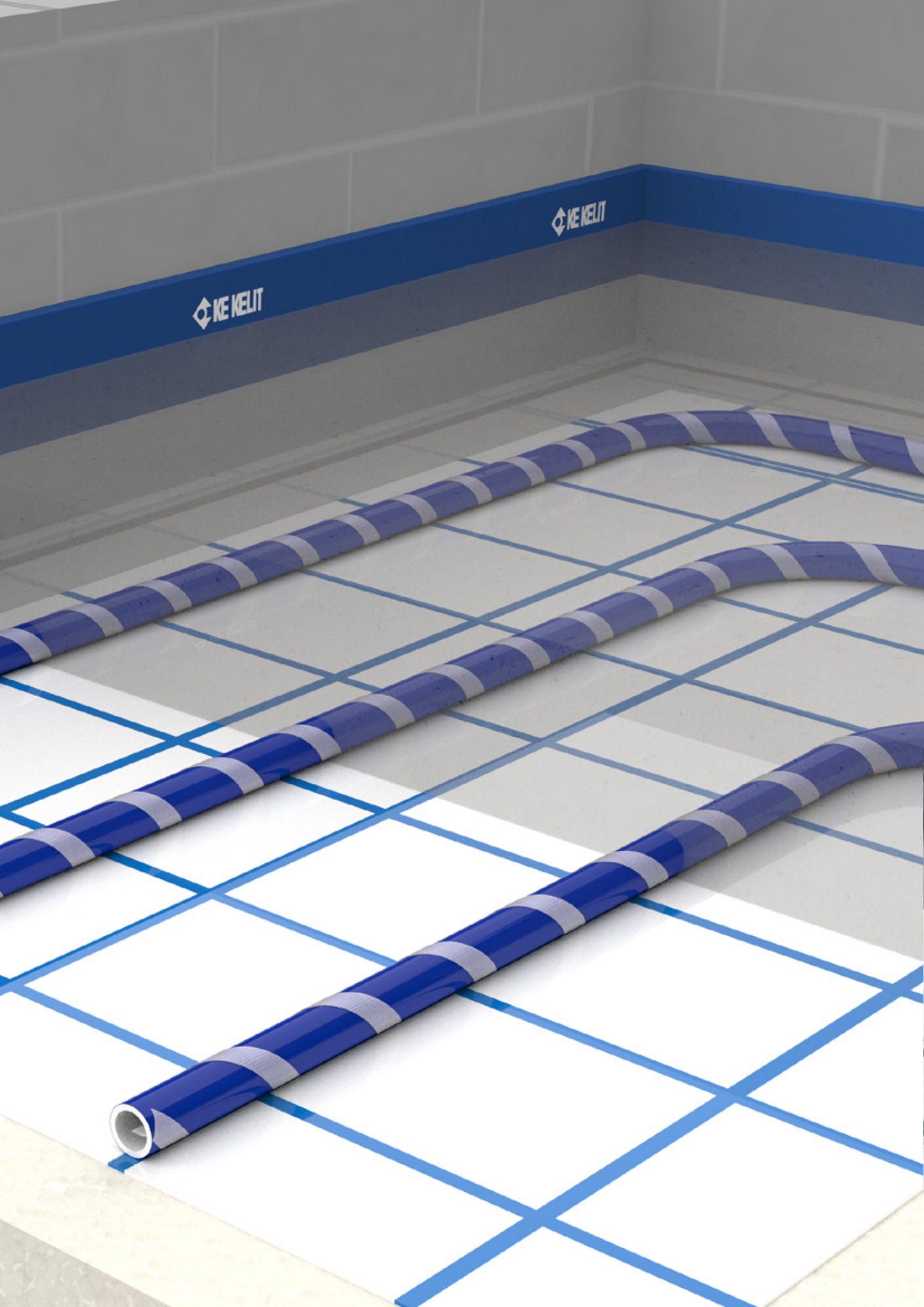
For the FB pipe mat system, the KELOX FB pipes are attached to bare metal pipe mats with KM637C KELOX FB clips.

KM637C KELOX FB clips

KMU120 KELOX-ULTRAX FB multilayer pipe

KM636 KELOX FB pipe mat





KELOX FB VELCRO PANEL

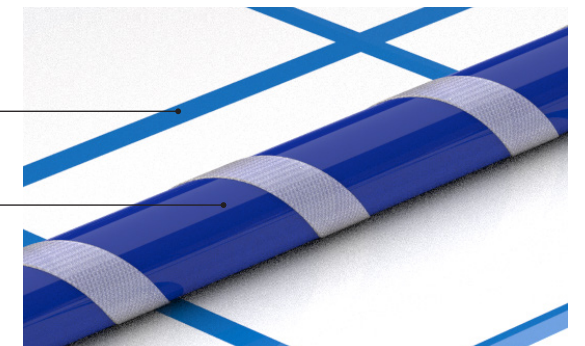
This versatile installation technique for flexible FB Velcro tubes dispenses with rigid fastening clips and impresses thanks to its fast installation on adhesive FB Velcro plates.

Benefits:

- You install KELOX FB Velcro pipes WITHOUT any additional fastening on the FB Velcro plate, ensuring fast and efficient installation.
- The improved lambda value means the KM636 FB Velcro plate EPS-T 650 with a thickness of 30/2 mm has the same insulation value as a conventional PS plate with a thickness of 33/30 mm.

KM636K KELOX FB adhesive Velcro foil

KMU121K KELOX-ULTRAX FB Velcro tube



KELOX FB HOLLOW CHAMBER PLATE

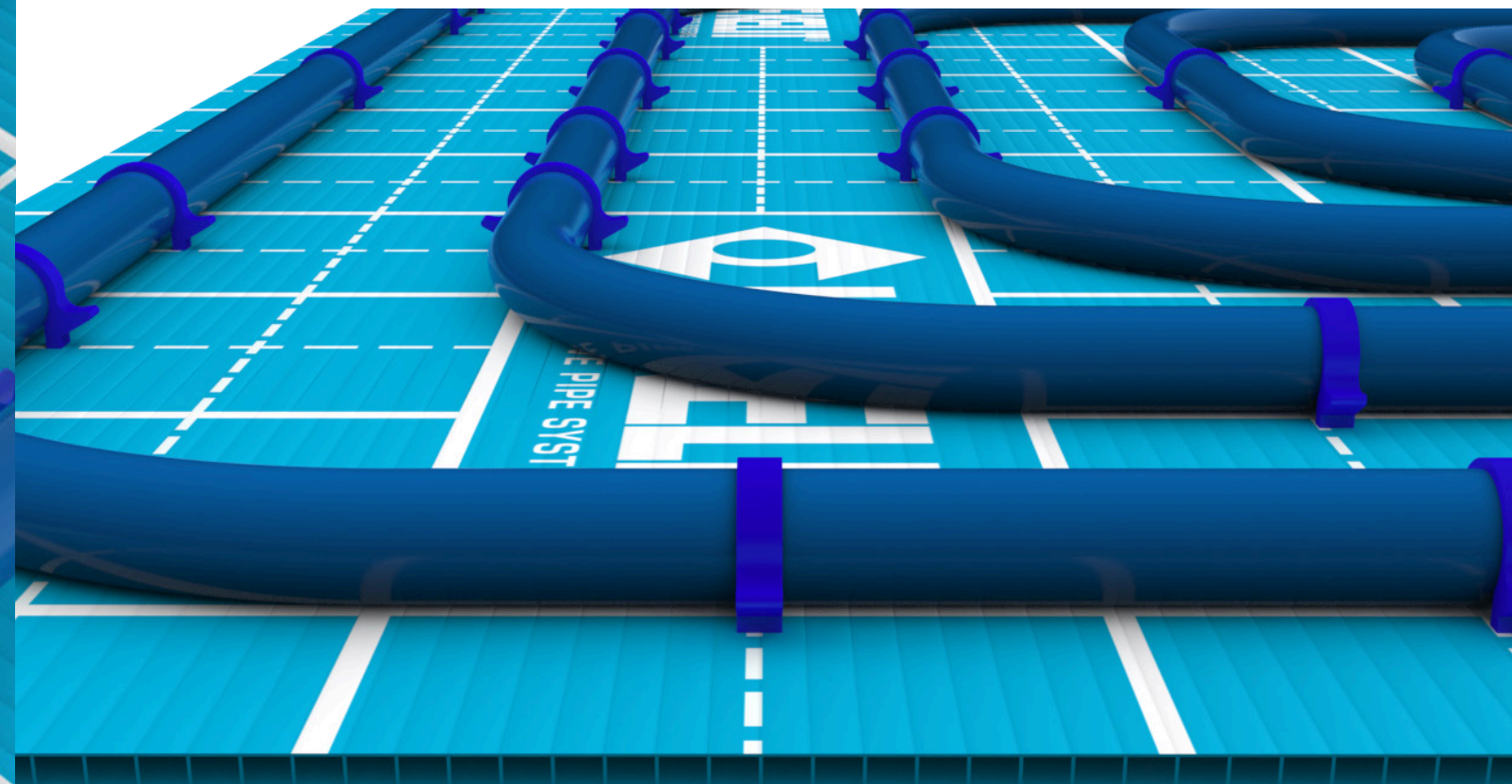
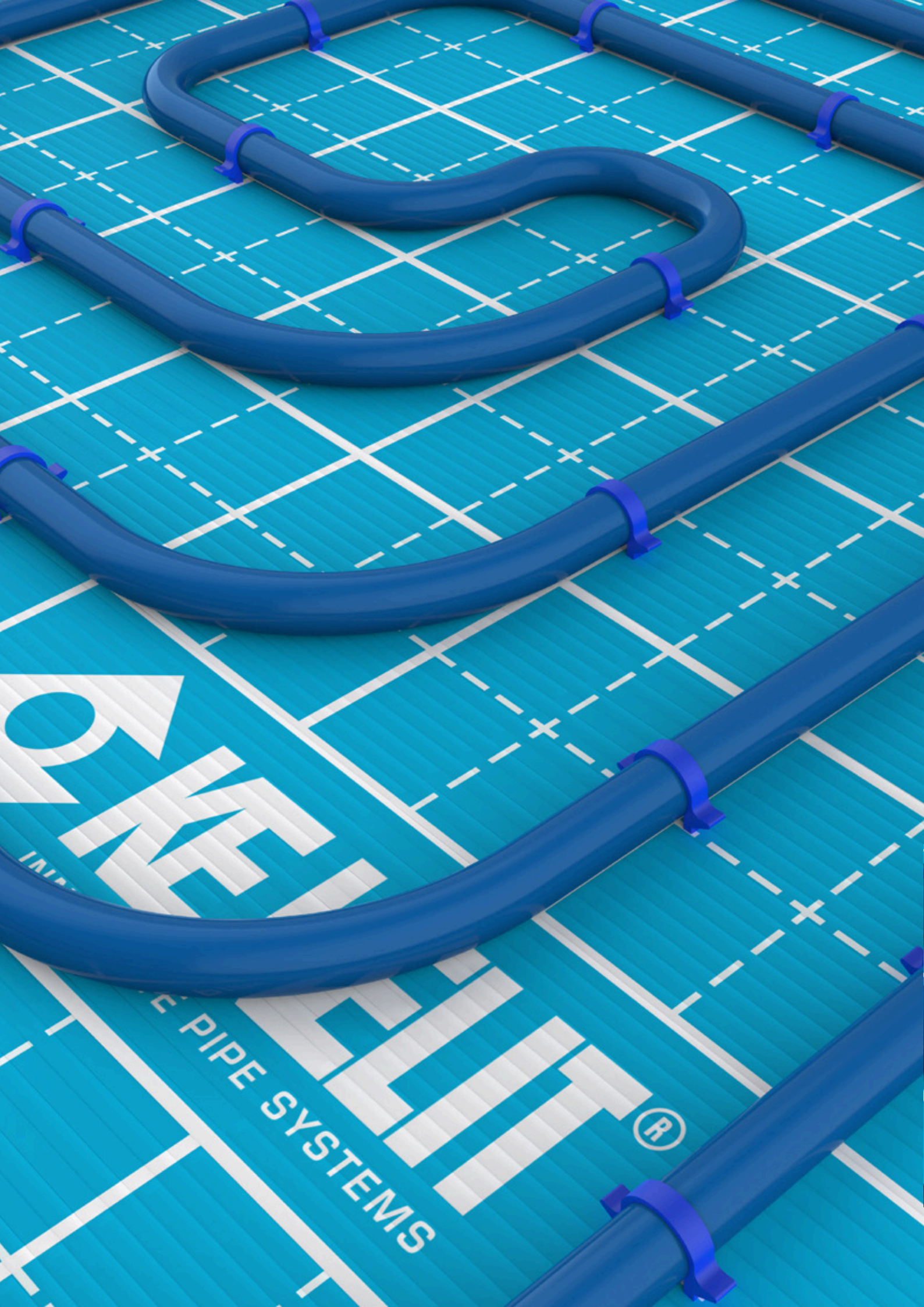
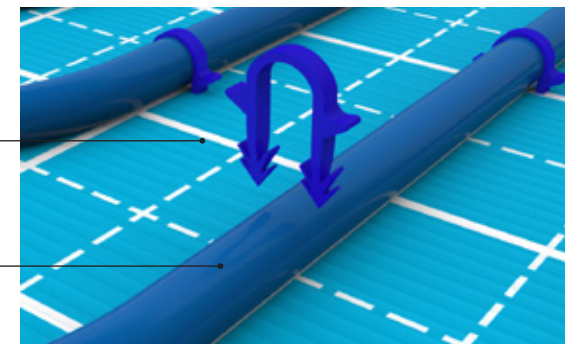
The KELOX FB hollow chamber panel offers a versatile solution as it is suitable for keeping both FB modular pipes and ULTRA PE-RT pipes in position using meander or spiral installation methods.

Benefits:

- You can install the KELOX FB modular pipes or ULTRA PE-RT pipes in a spiral or meander pattern as preferred.
- Thanks to its simple design and easy handling, the stapling system is one of the most popular systems in private households. The predefined lattice pattern makes installing the heating pipes child's play.

KM638 KELOX FB hollow chamber plate

KMU120 KELOX-ULTRAX FB multilayer pipe



KELOX FB HYBRID VELCRO STAPLE ROLL

The KELOX FB hybrid Velcro staple roll can be used for both stapling and Velcro systems.

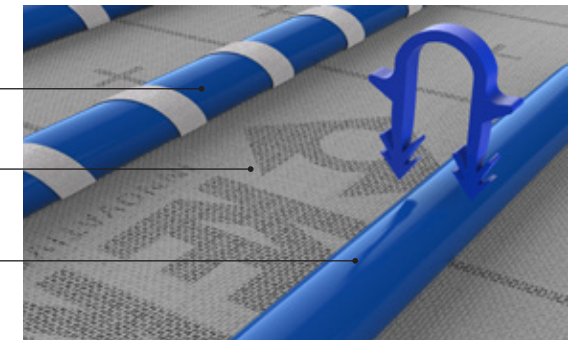
Benefits:

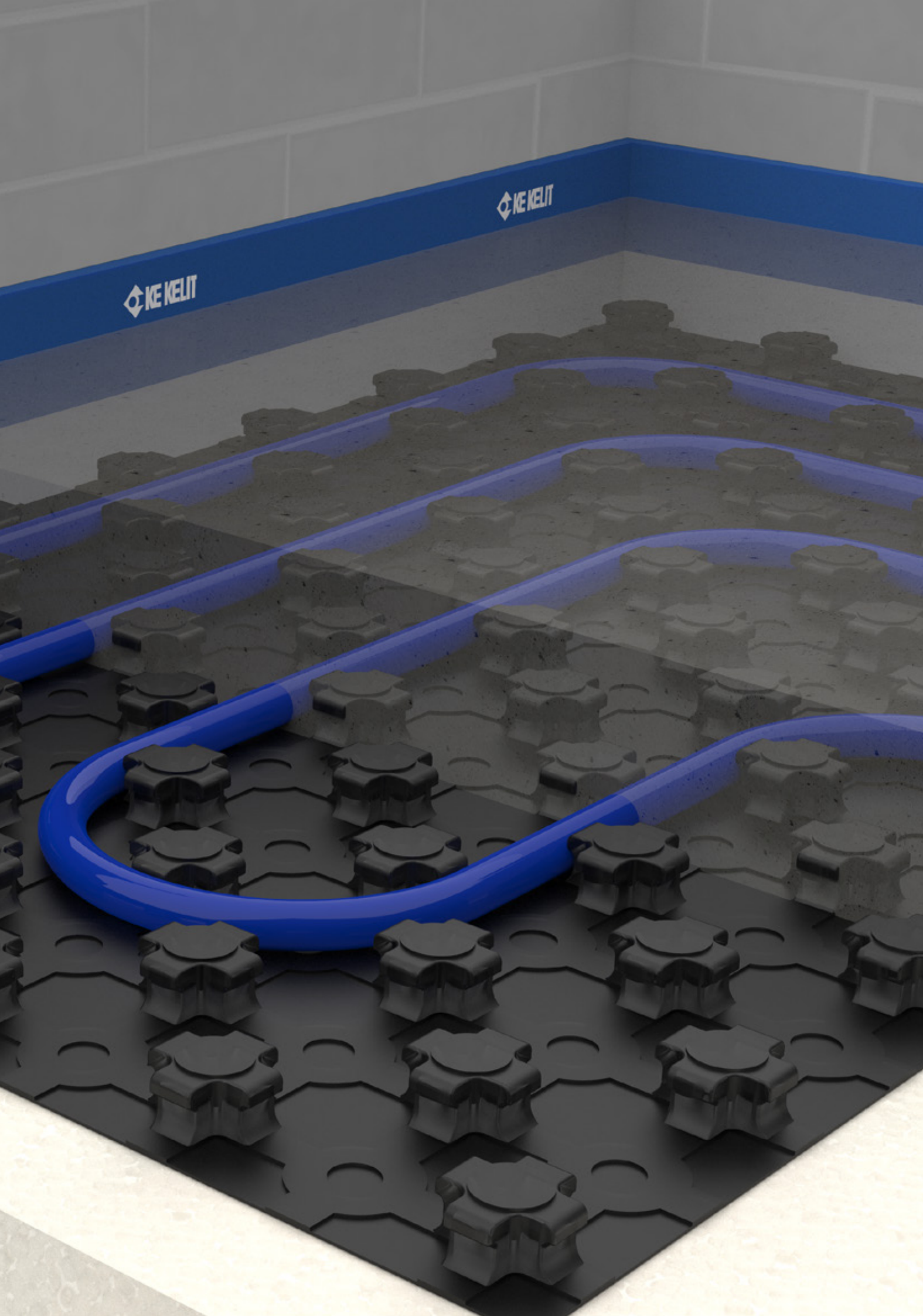
- You can install the KELOX FB modular pipes or ULTRA PE-RT pipes in a spiral or meander pattern as preferred.
- Thanks to its simple design and easy handling, the stapling system is one of the most popular systems in private households. The predefined lattice pattern makes installing the heating pipes child's play.
- The Velcro system is used without any additional fastening, saving work time.

KMU121K KELOX-ULTRAX FB Velcro tube

KM636T KELOX FB Velcro staple roll

KMU120 KELOX-ULTRAX FB multilayer pipe





KELOX FB FIXING PLATE

Simple, fast, safe and convenient – that's what the KELOX FB fixing plate is all about. Underfloor heating in just a few steps and without the use of tools.

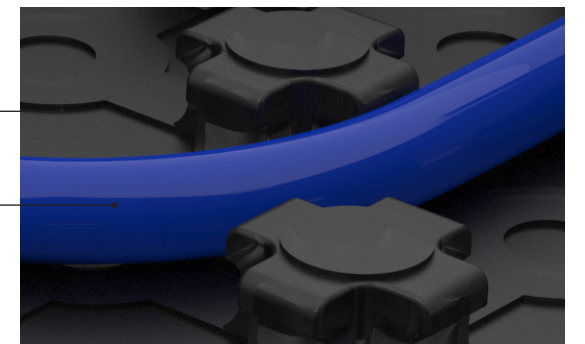
The fixing plate allows the KELOX FB pipes to be secured in the installation-friendly lattice. The robust studs ensure excellent accessibility, which makes the work of other trades easier during construction site operations.

Benefits:

- The pipe-holding nubs also fix the pipe in position in the deflection area
- Ideal for 1-person installation
- Minimises trip hazards
- Very good accessibility
- Can be laid in a spiral or meander

KM613 KELOX FB fixing plate

KMU120 KELOX-ULTRAX FB multilayer pipe



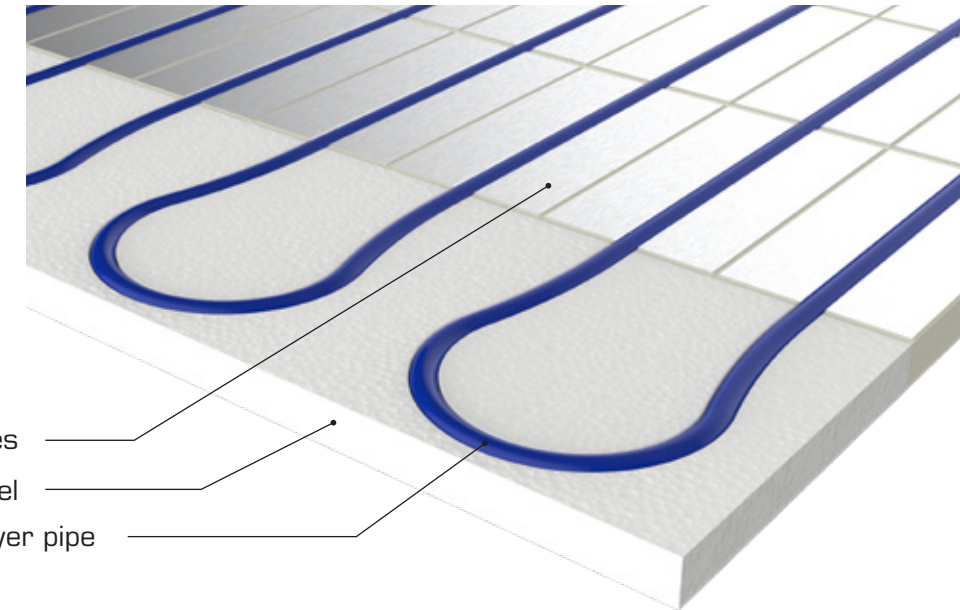


KELOX DRY DRYWALL CONSTRUCTION SYSTEM

Underfloor heating system for all new and old buildings

This universal, optimised underfloor heating system is ideally suited to renovation, extensions and applications in drywall and wooden constructions. Aluminium guide plates ensure optimum heat transfer directly to the upper floor, which makes the system extremely responsive. The system elements, which are made from high-pressure-resistant polystyrene, can be laid directly after pipe laying with different upper floors depending on the traffic load.

The KELOX DRY system elements are prefabricated polystyrene panels with high performance heat-conducting aluminium guide plates laminated across almost the entire surface.



Aluminium guide plates
Prefabricated polystyrene panel
KMU120 KELOX-ULTRAX FB multilayer pipe





KELOX FB SYSTEM COMPONENTS

Stainless steel manifolds – the hub of every active surface

Choose from high-quality stainless steel manifolds with individually adjustable on-site water flow valves:

KMU590E KELOX-ULTRAX FB stainless steel manifold

Benefits to you:

The KMU590E KELOX-ULTRAX FB stainless steel manifold offers a high level of compatibility and easy fitting thanks to the 3/4" Eurocone connection.



KMP590E KELOX-PROTEC FB stainless steel push fitting manifold

Benefits to you:

Die KELOX-PROTEC FB stainless steel push fitting manifold with connection options for KMP552 KELOX-PROTEC quick-push couplings for easier installation.



KMP590Z KELOX-PROTEC FB - 10 bar stainless steel push fitting manifold

Benefits to you:

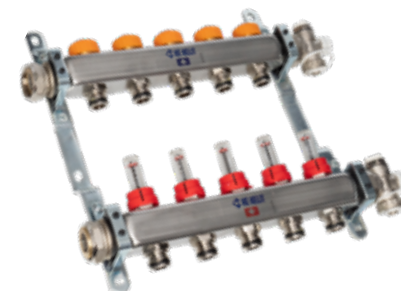
Connection option for KMP552 KELOX-PROTEC quick-push couplings and application area up to 10 bar.



KMP590D KELOX-PROTEC FB control push fitting manifold

Benefits to you:

The KMP590D KELOX-PROTEC FB control push fitting manifold with automatic return flow and hydraulic balancing of the individual return flow valves, suitable for the KM596 KELOX thermal motor.



All technical data and product descriptions for our manifolds can be found in the KELOX FB handbook.

KELOX FB SYSTEM COMPONENTS

KM576 manifold cabinet

The torsion-resistant KM576 manifold cabinet made of galvanised sheet steel with a cabinet depth of just 75 mm is a space-saving marvel. A stacking frame can be mounted without tools as a clean cover for the manifold box, and with a depth of 145 mm, this allows the manifold cabinet to be easily installed in solid and lightweight partition walls.

The extending feet of the cabinet body with a custom length for floor structures up to 32 cm and an integrated spirit level make the KM576 manifold cabinet the easiest to install manifold cabinet in the KE KELIT product range.

Benefits to you:

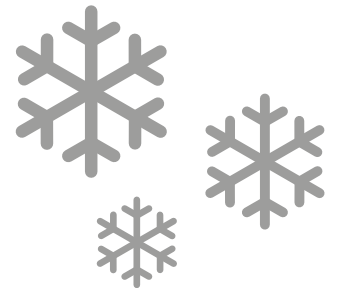
- ◆ Torsion-resistant
- ◆ Horizontal alignment with integrated spirit level
- ◆ Factory-installed rail mounting system for the manifold bracket
- ◆ A lattice as a adhesive base for plaster in the base area
- ◆ Cutouts in the frame for connection pipes for electrical and pipe installations
- ◆ Extra long, height-adjustable feet
- ◆ Optional skirting boards in RAL 9016





UNDERFLOOR HEATING SYSTEMS

... for greater safety in winter



Underfloor-heated spaces meet the highest safety requirements for traffic routes, including in winter. Open spaces clear of snow and ice ensure that ground markings are visible, increase sure-footedness and provide non-slip surfaces.

Ideal applications include:

- ◆ Helicopter landing pads
- ◆ Hospital exit routes and ramps
- ◆ Entrances and exits, e.g. parking garages or underground car parks
- ◆ Public spaces
- ◆ Paths, e.g. in front of hotels, retirement homes or public buildings
- ◆ Stairways

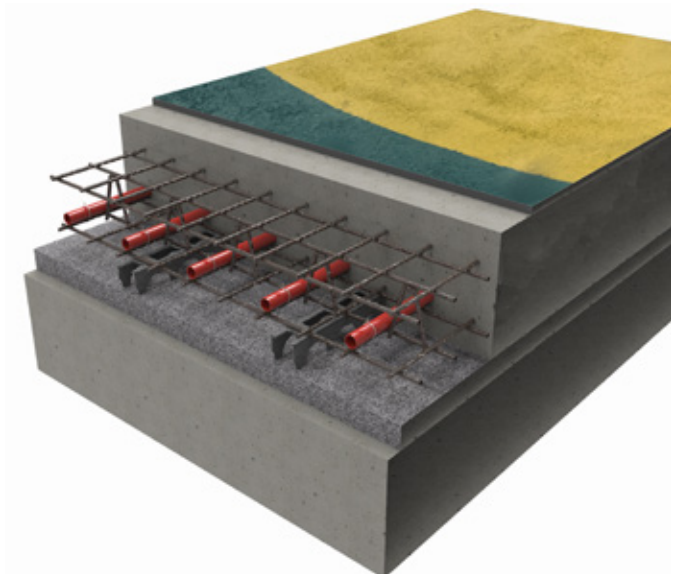
... for greater comfort at home

Whereas underfloor heating is prescribed in many locations in public areas, underfloor-heated spaces in the home not only ensure safety but also comfort.

Hours of onerous snow shovelling from parking spaces and driveways are eliminated.

Concrete screed, slabs in sand, grit or gravel – underfloor heating systems can be installed in almost any flooring type.

KELOX ULTRA PE-RT pipes, which are filled with a water/glycol mixture and ensure large-scale heating of asphalt surfaces, are used for floor constructions with integrated underfloor heating in outdoor areas.



THE CONNECTION MAKES ALL THE DIFFERENCE

High quality connections from the tried and trusted KELOX FB product range are available for the permanently leakproof connection of KU100 ULTRA PE-RT pipes.

These are processed using the established KELOX tools and are compatible with all KELOX mouldings such as screw connections, press fittings and push fittings for maximum flexibility.



KM220 KELOX euro screw fittings

For connecting to installation components and manifolds with 3/4" eurocone (male thread), non-porous metallised brass, including nut (female thread), support sleeve with O-rings and clamping ring.



KMP410 KELOX-PROTEC couplings

Push-fit couplings made from brass, incl. support sleeves, O-rings, withdrawal barriers and a protector ring as an insertion locking device.



KMP552 KELOX-PROTEC quick-push couplings

Quick-push coupling, made of brass, fits FB manifolds KMP590E, KMP590D and KMP590M, incl. support sleeves, O-rings, withdrawal barriers and a protector ring as an insertion locking device.



KWP410 KELOX-PROTEC PPSU couplings

Push-fit coupling equal or reduced, made of PPSU, incl. support sleeves, O-rings, withdrawal barriers and a protector ring as an insertion locking device.



KMU410 KELOX-ULTRAX couplings

Press-fit coupling made of non-porous metallised brass, incl. support sleeves with O-rings and steel or stainless steel press-fit sleeves, "leak before pressed".



KMW410 KELOX-ULTRAX-W couplings

Zeta value-optimised press-coupling, equal or reduced, made from dezincification-resistant brass, including support sleeves with O-rings and stainless steel press-fit sleeves "leak before pressed", audible leakage signal at air-pressure testing.



KWW410 KELOX-WINDOWX-W couplings

Zeta value-optimised press-coupling, equal or reduced, made from PPSU, including support sleeves with O-rings and stainless steel press-fit sleeves "leak before pressed", audible leakage signal at air-pressure testing.





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