

Uponor

Build on comfort  
with Uponor heating  
and cooling systems



# Build on comfort with Uponor heating and cooling

## Uponor Underfloor

Wet System								
New build				Renovation				
Residential		Commercial		Industrial	Residential		Commercial	
Full or partial insulation	No insulation	Full or partial insulation	No insulation		Partial renovation	Total renovation	Partial renovation	Total renovation
Smart	Classic	Smart	Classic	Magna	Minitec	Smart	Minitec	Smart
Klett	Klett Twinboard	Klett	Klett Twinboard			Klett		Klett
Nubos	Nubos foil	Nubos	Nubos foil			Nubos		Nubos
Tecto	Fix	Tecto	Meltaway			Tecto		Tecto

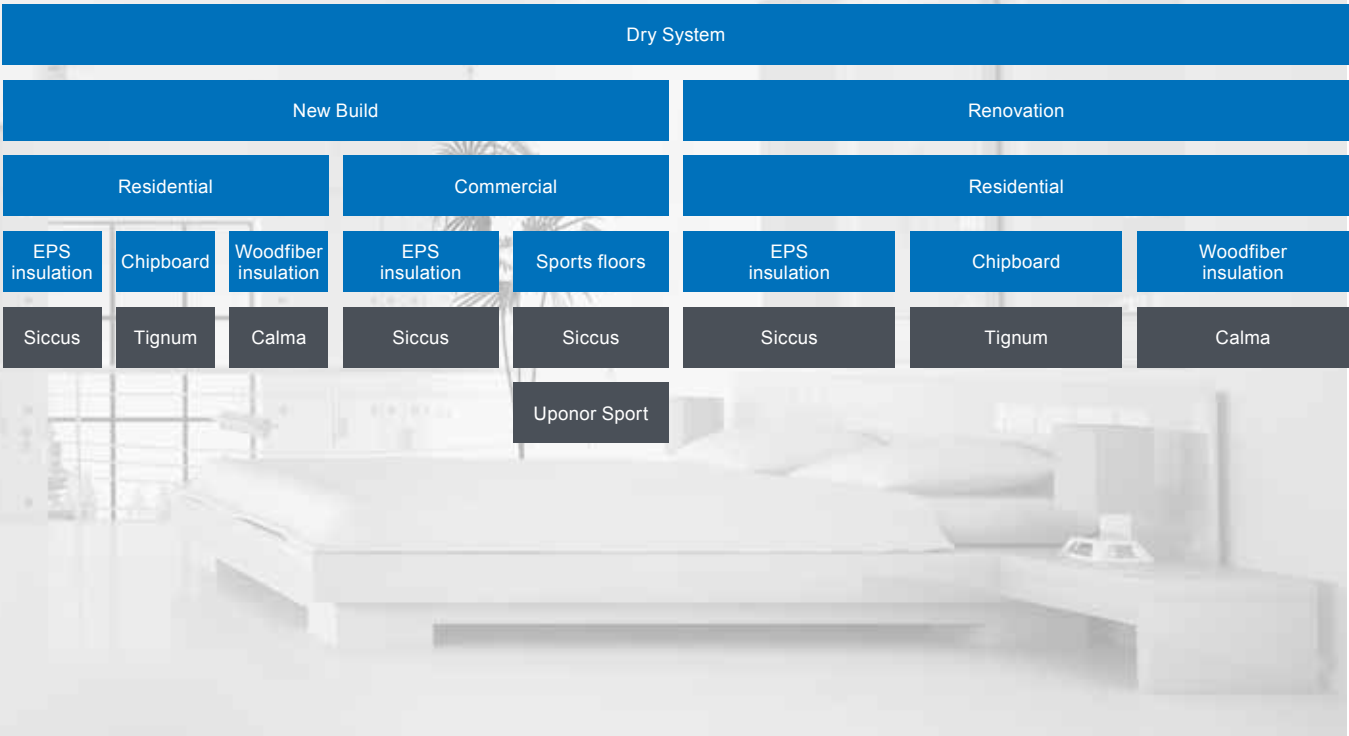
## Uponor Wall heating and cooling

Wet System	Dry System
Fix	Renovis
	Siccus Wall
	Siccus SW

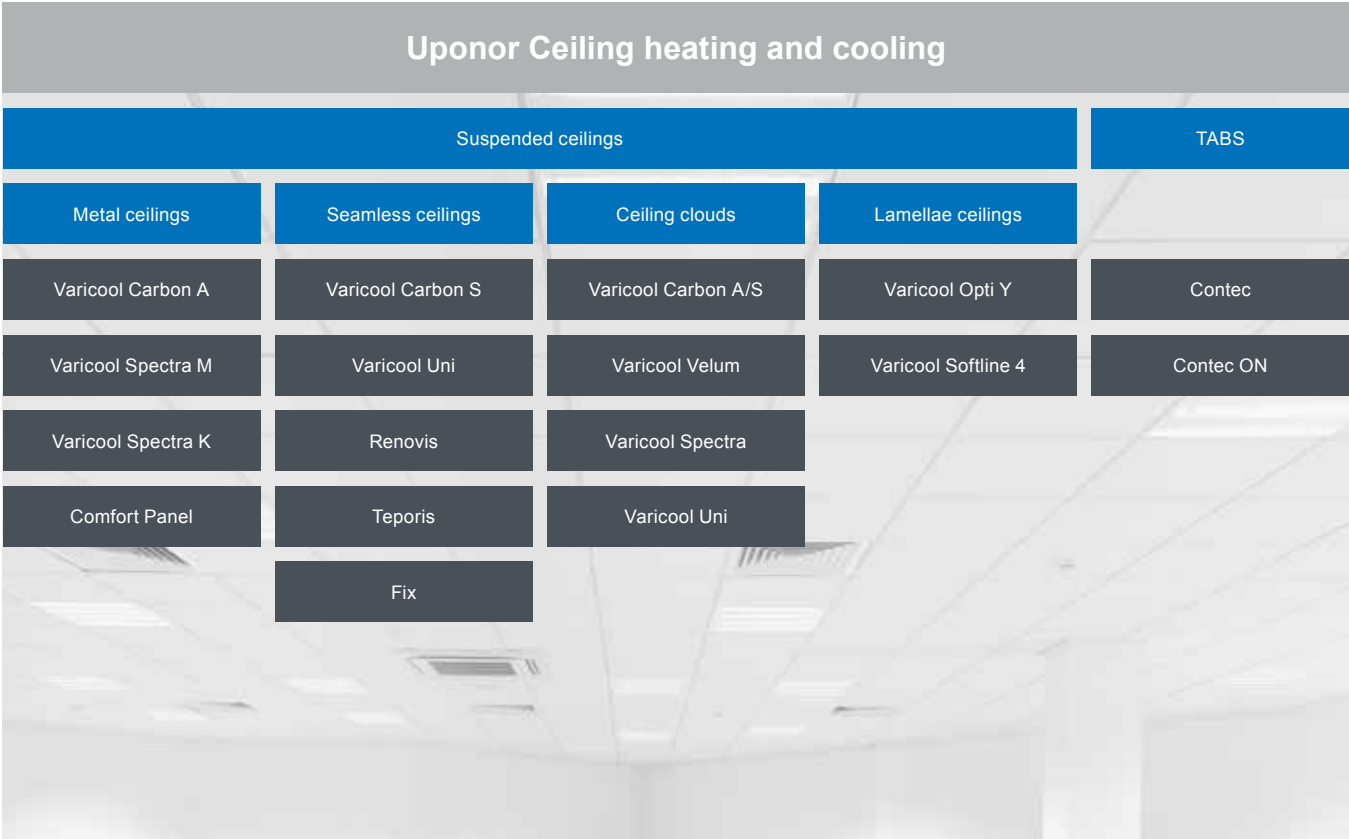


## heating and cooling

Dry System							
New Build				Renovation			
Residential			Commercial		Residential		
EPS insulation	Chipboard	Woodfiber insulation	EPS insulation	Sports floors	EPS insulation	Chipboard	Woodfiber insulation
Siccus	Tignum	Calma	Siccus	Siccus	Siccus	Tignum	Calma
				Uponor Sport			



Suspended ceilings				TABS
Metal ceilings	Seamless ceilings	Ceiling clouds	Lamellae ceilings	
Varicool Carbon A	Varicool Carbon S	Varicool Carbon A/S	Varicool Opti Y	Contec
Varicool Spectra M	Varicool Uni	Varicool Velum	Varicool Softline 4	Contec ON
Varicool Spectra K	Renovis	Varicool Spectra		
Comfort Panel	Teporis	Varicool Uni		
	Fix			



# Added value through radiant heating and cooling

Uponor offers innovative solutions for heating and cooling. The environmentally friendly systems for underfloor heating and cooling, wall heating and cooling, as well as for thermal activation of ceilings in buildings ensure excellent living and working climates. Thanks to their low operating temperatures and comfortable room ambiance, radiant heating systems represent the most energy-efficient method of heat distribution in buildings. Due to higher system temperatures in cooling mode and lower system temperatures in heating mode, radiant systems are perfectly suitable for renewable energy sources. This allows the primary energy consumption and the CO<sub>2</sub> emissions of buildings to be reduced significantly.

Radiant heating can not only heat rooms without draughts and without dust turbulence – it can also be used for cooling purposes. Pleasant room temperatures can thus also be realised in summer without draughts arising – markedly increasing the user acceptance further. And since the entire installation is integrated invisibly in the room surfaces, designing of the interior architecture of the building and rooms is unrestricted.



# via floor, wall and ceiling



## Systems for underfloor heating and cooling

Underfloor heating systems in residential and commercial buildings which mainly require heating are often the first choice. And since the requirements for the design and function of an underfloor heating can differ very much, Uponor offers tailor-made solutions not only for new buildings, but also for renovation. To increase comfort, these systems can also be used to cool rooms.

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## Systems for wall heating and cooling

Whether as a lightweight drywall system or under wet plaster: the Uponor systems for wall heating/cooling ensure a pleasant room climate all year round. In particular during renovation a wall heating surface offers many advantages. For example, it can form a good combination with an underfloor heating in bathrooms if the floor area is not large enough to provide enough heating output for the room. Installation is carried in the wall structure – depending on the system in the stud partitions, on wall profiles or in the case of wet structures directly in the render layer.

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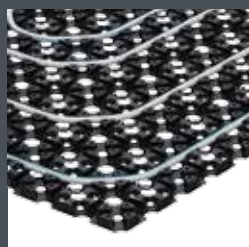
## Systems for ceiling heating and cooling

In particular in buildings that primarily need to be cooled, cooling and heating surfaces in the ceiling are a particularly interesting alternative. Uponor offers various solutions, depending on the object and the cooling and heating requirements of the building. In addition to the classical systems that are mounted directly to the ceiling or in panelled ceilings and are available in different output ranges, the thermal activation of the building structure is also an economical and sustainable variant for energy-efficient building temperature control in particular in office and commercial buildings.

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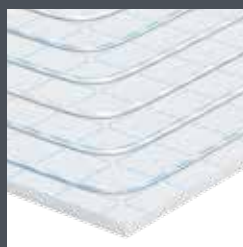
# Select your Uponor underfloor heating/cooling system for your construction project



## Uponor Minitec low-height system

Brief heating-up times, rapid adjustability and low floor heights of 15 mm

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## Uponor Klett wet construction system

Self-attaching for maximum holding force and can be laid without tools

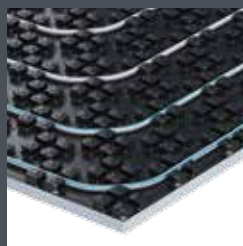
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## Uponor Tecto wet construction system

Many years of tried-and-tested quality with high-quality system components

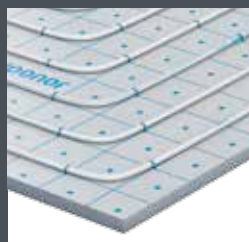
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## Uponor Nubos wet construction system

Optimally harmonised components and optionally with MLCP or PE-Xa pipe

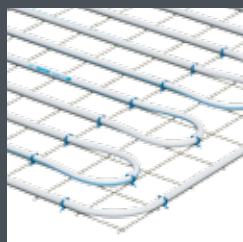
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## Uponor Smart wet construction system

High holding force of the fastening needle in the system foil and optionally with MLCP or PE-Xa pipe.

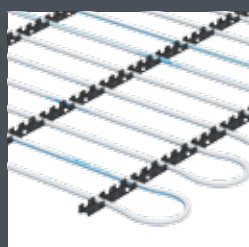
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## Uponor Classic wet construction system

Very flexible and depending on the additional insulation also for high load capacity

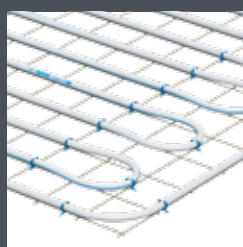
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## Uponor Magna industrial floor heating

Consistent temperature profile, low air speeds, optimal hall utilisation

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## Uponor Meltaway snow and ice elimination

Environmentally friendly snow and ice elimination without chemicals or salt. Comfortable and efficient in operation

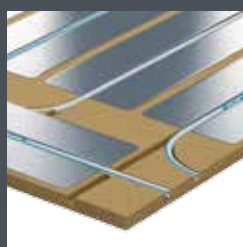
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## Uponor Siccus dry construction system

Lightweight and short construction time through immediate accessibility with dry screed.

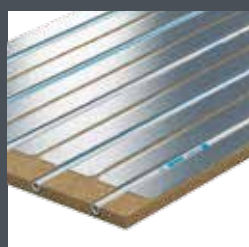
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## Uponor Calma dry construction system

Dry mortarless construction on wood fibre basis with sound insulation for solid ceilings.

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## Uponor Tignum dry construction system

Dry mortarless construction on chipboard basis for wooden construction

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## Uponor Sport and sprung floor heating

Clear separation of heating and sports floor, wide range of applications

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## Uponor Minitec low-height system – heating/cooling with minimum installation height

With a floor height of only 15 mm, the Uponor Minitec low-height system is the perfect solution for subsequent installation of an underfloor heating. For when an underfloor heating is laid on an existing substrate, every millimeter of installation height is important.

The Uponor Minitec low-height system consists of a self-adhesive foil element and Uponor Minitec Comfort Pipe 9.9 mm system pipes. The foil element, in which the Uponor Minitec Comfort Pipe pipes are laid, can be laid without problems on existing screed, wood or tiling. The bonding layer on the rear of the element ensure the fixed bonding to the substrate during mounting. Thanks to the immediate proximity of the top flooring to the pipe, brief heating periods and thus rapid regulation at low heating water temperatures is achieved. With the Uponor Minitec low-height system complete areas or individual rooms, such as bathrooms, can be equipped with a cosy underfloor heating at only minimum constructional work.

### Uponor Minitec low-height system

- Direct laying possible on the existing top flooring
- Low flooring structure
- Minimal mounting work during renovation
- Fast heating-up time and rapid adjustability
- Many years of tried-and tested PE-Xa pipe quality
- Low system temperatures
- Efficient usage of regenerative energies also in old buildings



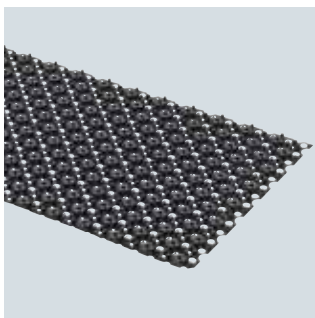
# At only 15 mm floor height almost all existing floors can be covered



The Uponor Minitec low-height system provides the decisive advantage that the existing floor covering can be retained. This saves time and money. However, preparatory measures may be necessary before laying. These depend on the type and structure of the existing substrate.



Uponor Minitec is the ideal underfloor heating for laying on existing screed, floorboards or tiles. It consists of a self-adhesive foil element and Uponor Minitec Comfort Pipe 9.9 mm system pipes. The Uponor Minitec low-height system can be used optimally as near-substrate underfloor heating in residential buildings.



*Uponor Minitec foil element: stable and low pipe panel with integrated pipe guide for observance of laying spaces conforming to standard, for holding Uponor Minitec Comfort Pipe 9.9 mm pipes. Pipe laying straight and diagonal possible, with undercut, deep-drawn pipe retaining studs*



*Uponor Minitec Comfort Pipe 9.9 mm with oxygen diffusion barrier made of EVOH. Colour natural with a blue stripe. Conforms to DIN EN: ISO 15875 "Plastic piping systems for hot- and cold-water systems, cross-linked polyethylene", oxygen tight to DIN 4726.*



*Uponor Quick & Easy connection technology with the M12 widening tool*



*Uponor Fluvia T Push-12 mini pump groups for individual rooms and small heating surfaces. Room temperature regulation optionally via thermostat head with capillary room temperature sensor or Uponor room sensor (wire-based or wireless) with thermal drive. Ideal for connecting the panel heating to an existing high temperature system.*



## Uponor Klett – innovative fastening technology for radiant heating and cooling

Uponor Klett is a rapid and simple-to-lay pipe fastening system for underfloor heating/cooling. The pipes, oxygen tight in accordance with DIN 4726, have a Klett tape wound around them spirally ex works. A suitable bonding foil is bonded across the entire surface on the associated insulation board. The Uponor Klett pipes are pressed onto the bonded insulation board in a calculated spacing. The Klett tape of the pipes then hooks into the adhesive foil of the insulation board and thus fixates the pipe. Klett tape and adhesive foil are optimally matched to each other for maximum retention force.

The printed-on laying grid serves as an orientation aid during laying. Special tools are not required. A further advantage of the system: The Uponor Klett pipes can be combined with the standard system components of the Uponor range of products.

### Uponor Klett wet construction system

- Micro-serration for maximum holding force
- Rapid laying without special tools
- Rapid laying by one person conforming to building-site conditions
- Corrections in position are possible at all times are without limitation during the laying process
- The bonded-on moisture barrier between the screed and insulation layer is not damaged during pipe laying
- Composite pipe Klett MLCP RED or Klett Comfort Pipe
- Rooms with irregular angles can be laid easily
- Reliable through long-year tried-and-tested Uponor quality
- Uponor Klett Silent for a sustainable radiant heating and cooling system with improved step sound protection

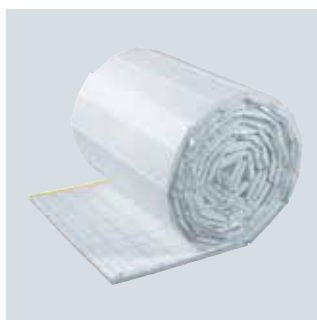
# Uponor Klett – secure pipe fixation with maximum adhesive force



Uponor Klett can be laid rapidly and simply. The pipe is laid either manually or rolled of from by the practical mobile Uponor pipe winder and placed on the laid systems boards. The printed-on laying grid serves as an orientation aid for even pipe spacings (10 x 10 cm). Special laying or fastening tools are not required.

Uponor Klett adapts itself flexibly to any room geometry. And because no setting tools are required to fasten the pipes, Uponor Klett can also be laid easily in cramped spaces such as under sloping roofs, at knee walls or even under landings wit the pipe spacings. This ensures that the required heating output is available across the whole area. When laying Klett pipes the heating pipes, which already have a Klett tape wound around them, are fastened onto to the bonding foil of the pipe holding sheet plate by pressing lightly. The Klett connection ensures continuous pipe application and provides perfect holding force. Corrections in position are possible at any time without damaging the plate surface.

**Uponor Klett is an innovative pipe fastening system for underfloor heating/cooling. The pipes have a Klett tape wound around them spirally. The suitable bonding foil is bonded across the entire surface on the system board. When the pipe is pressed onto the bonded board in the desired position, the Klett tape of the pipes then hooks into the adhesive foil of the insulation board with maximum holding force.**

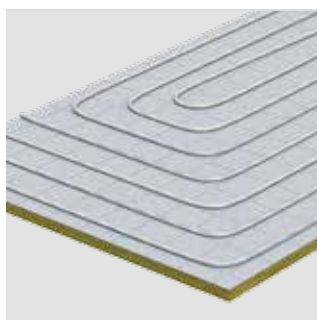


*Uponor Klett roll panel – as the pipe fixation in rolled version with thermal and extra impact sound insulation to DIN EN 13163 and DIN 4108-10, made of EPS rigid foam with bonded-on fabric adhesive foil for overlapping laying, with foil overlength self-adhesive on one side for covering the insulation layer in accordance with DIN 18560.*

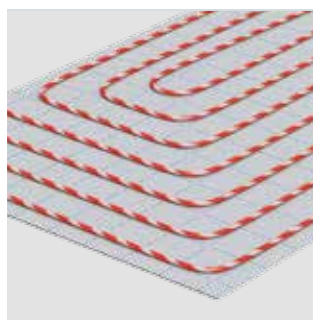


*Uponor Klett Comfort Pipe PE-Xa pipe with oxygen diffusion barrier made of EVOH. Colour natural with a blue stripe.*

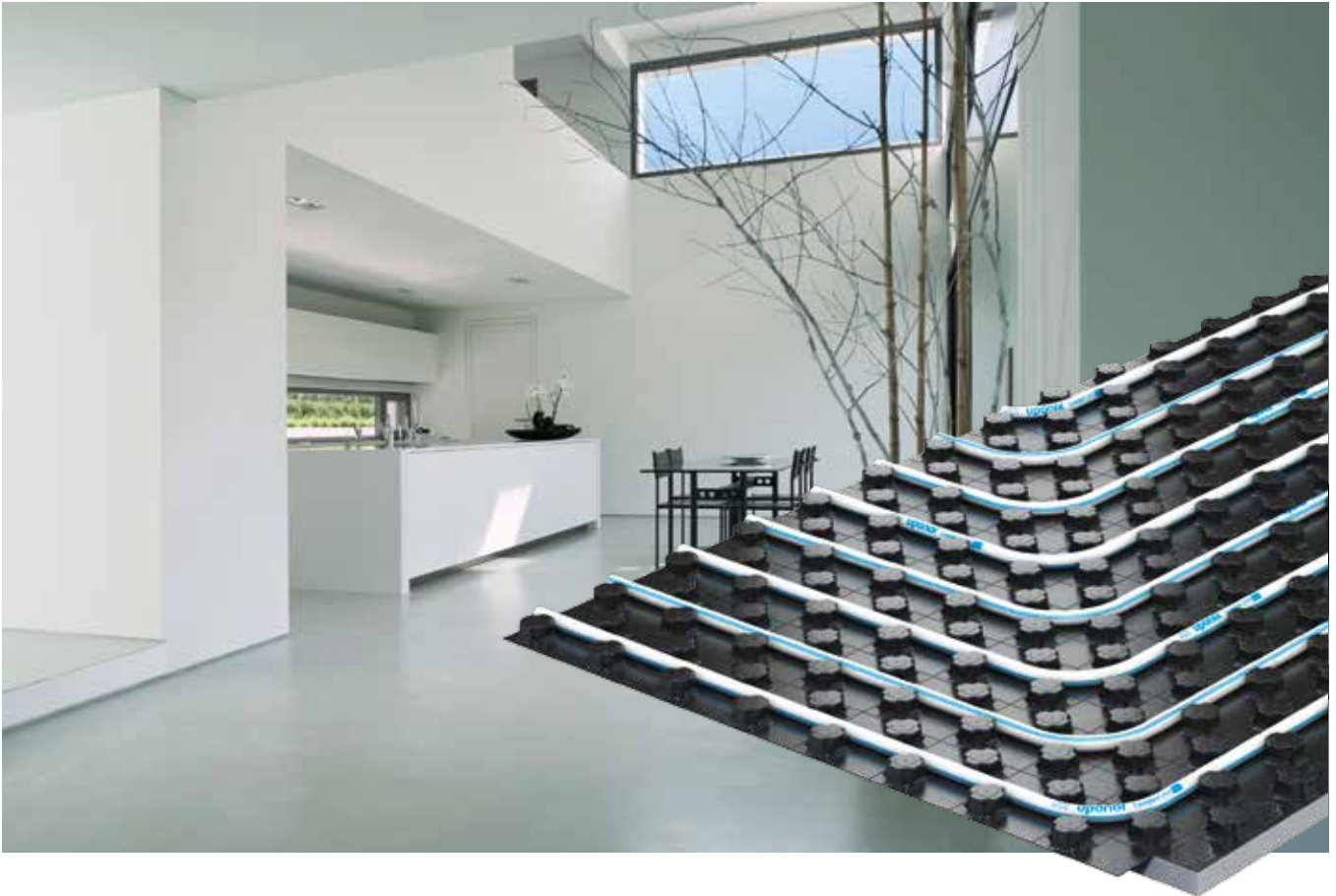
*Uponor Klett MLCP RED composite pipe. Stable in form and oxygen tight. SKZ-monitored.*



*Uponor Klett Silent Klett pipe fixation and mineral fibre insulation in one laying plate. For a sustainable heating and cooling system with improved step sound protection.*



*Uponor Klett Twinboard Ideal for fastening the Uponor Klett pipes to existing insulation. The 2.4 m<sup>2</sup> large foldable hollow-chamber boards do not require much storage space, are easy to transport thanks to their low weight of only 1.9 kg and are very easy to work on the building site.*



## Uponor Tecto wet construction system – the perfect temperature at all seasons

The Uponor Tecto wet construction system is an underfloor heating and cooling system that can be used in single-family houses through to large-scale commercial objects. The system combines comfort, energy efficiency and cost effectiveness. Uponor Tecto wet construction system can be used with different types in the dimensions 14 to 17 mm. The system can therefore be used both to heat in winter and to cool in summer. The large-area even heat distribution ensure pleasant room temperatures with mild radiation heat. An important prerequisite for cosy and energy-efficient radiant heating and cooling is the exact horizontal and vertical position of the pipes with an even screed covering.

### Uponor Tecto wet construction system

- Long-term tried-and-tested floor heating system with quality components
- Can be used both as a heating and a cooling system
- Norm-compliant vertical and horizontal pipe position allows even screed covering
- Laying spacing in 5 cm grid ensure even emission of the heat or or cold
- The insulation layer cover is not pierce when the piping is laid. Therefore also suitable for flowing screed
- High load-bearing (ND 30-2: up to 5 kN/m<sup>2</sup>; ND 11 up to 30 kN/m<sup>2</sup>) and can therefore be used in many areas

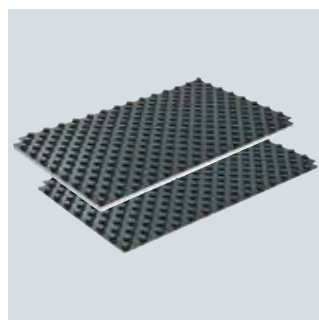
# Uponor Tecto – reliable and long-term tried-and-tested quality



The Uponor Tecto wet construction system can be laid by a single person. The size of the nub panels of 1,450 x 850 mm guarantee high laying performance.

After mounting of the edge insulation strip the Uponor Tecto nub panels are laid on the even load-bearing substrate. The two-sided overlapping of the nub panels is simply pressed onto the studs of the neighbouring elements – this ensures secure and screed-proof connections. With the Uponor Tecto twin strips nub panel residues can also simply be connected to each other without overlapping so hardly any waste arises during laying. In the case of areas without nubs, such as door passages, the Uponor Tecto cover foils with insulating strips underneath are used. They allow proper mounting of the expansion joint profile.

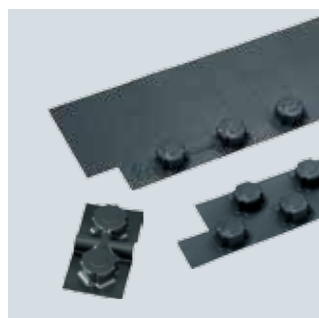
**Uponor Tecto nub panels are used for the installation of underfloor heating/cooling systems in residential buildings and in commercial areas. They are installed in the floor structure below a load distribution layer made of cement or anhydrite screed. These are available in two different versions (ND 30-2 and ND 11) for different floor structures and loads.**



*Uponor Tecto nub panel with insulation ND 11 or ND 30-2 with impact sound insulation. Pipe holding sheet plate made of EPS and back-foamed covering foil. For Uponor system pipes 14 – 17 mm. Laying spacing 10/15/20/25/30 cm. Two-sided overlapping to ensure screed-proof connection.*



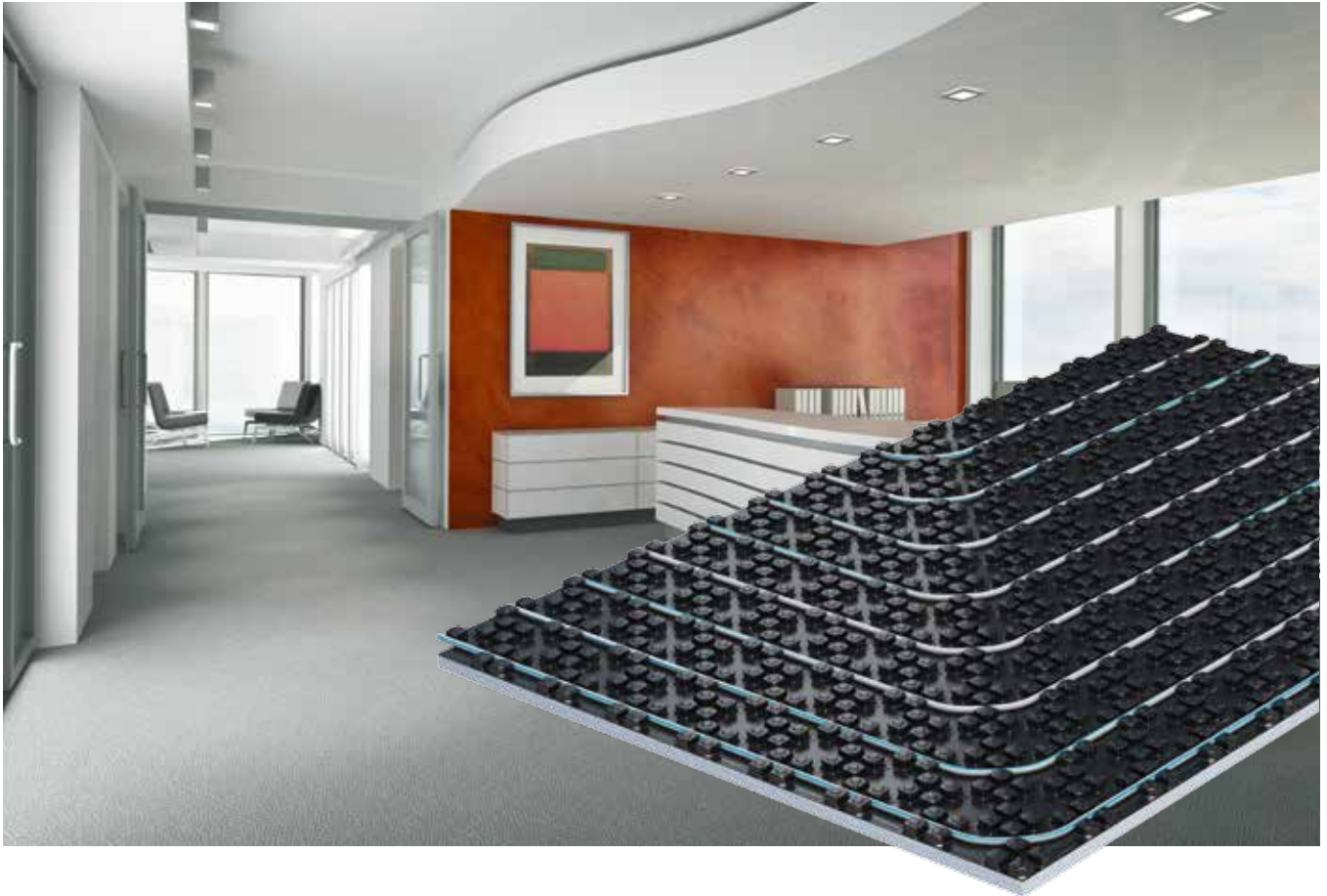
*Uponor Comfort Pipe PLUS – PE-Xa pipe with oxygen diffusion barrier made of VOH and an additional outer protective layer. Colour white with two blue stripes. Conforms to DIN EN: ISO 15875 "Plastic piping systems for hot- and cold-water systems, cross-linked polyethylene", oxygen tight to DIN 4726.*



*Meaningful auxiliary elements such as the Tecto Diagonal pipe fixation, the Tecto twin strips and the Tecto covering foil for door passages complete the Uponor Tecto wet construction system.*



*Uponor MLCP RED composite pipe. Stable in form and oxygen tight.*



## Uponor Nubos wet construction system – rapid, simple laying without special tools

During the development of our components and systems the focus always lies on rapid mounting and laying. The less components are required, the easier mounting is.

In the Uponor Nubos wet construction system we have therefore already integrated three functions: the pipe holder, the insulation layer cover and the insulation. This means that the system can be laid very rapidly and without special tools on the building site. The system pipes are simply pressed into the nub intermediate spaces and in the process fixated norm-compliant in their height and lateral positions. This ensures the complete transfer of the calculated heating output as well as the required screed covering.

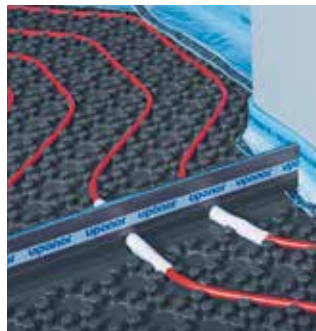
### Uponor Nubos wet construction system

- Only few optimally harmonised components
- Pipe laying from the roll with low waste cut
- Nub panels for norm-compliant fixation of the pipes
- Optionally available as back-foamed EPS insulation in 30 mm or 11 mm and as nub foil for laying on existing insulation on site
- Composite pipe MLCP RED or PE-Xa plastic pipe Comfort Pipe
- Many years of tried-and tested Uponor quality

# Uponor Nubos wet construction system – few, matching components

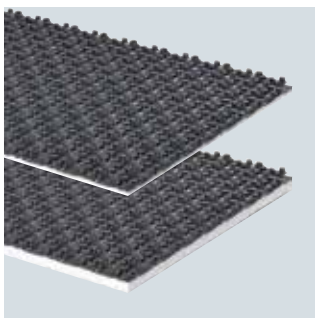


The Uponor Nubos wet construction system is the ideal all-round system for almost any task definition – from private residences through public buildings up to industry architecture. Perfectly matched system components allow tailor-made solutions for all common types of screed, areas of applications and room geometries.

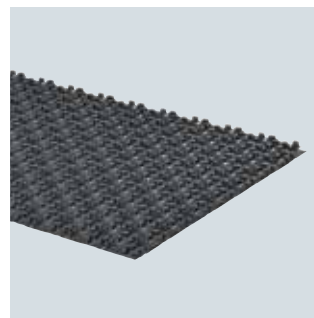


In the Uponor Nubos nub panels we have already integrated three functions: the pipe holder, the insulation layer cover and the insulation. This means that the system can be laid very rapidly and without special tools on the building site. The system pipes are fixated exactly by the system nub panels and enclosed optimally by the screed – characteristics of quality which ensure complete transfer of the calculated heating output, a finely-attuned regulation, and thus economical and energy-efficient operation.

**The Uponor Nubos wet construction system has been developed especially for underfloor heating/cooling systems in residential and non-residential buildings. The Uponor Nubos nub panels are installed in the floor structure below a load distribution layer made of cement or anhydrite screed and are available in three versions (ND 30-2, ND 11 and nub foil without insulation) for different floor structures and loads.**



*Uponor Nubos nub panel for right-angled and diagonal pipe laying in different pipe spacings. Optimal adaptation to existing room geometries with minimal waste cut through two-sided overlapping edge studs. Type ND 30-2 for universal usage in residential and commercial buildings up to 5 kN/m<sup>2</sup> Type ND 11 for service loads up to 30 kN/m<sup>2</sup>.*



*Uponor Nubos nub foil – for laying on existing insulation. Foil element without back-foaming. Vacuum-formed PS deep-drawn foil made of high-impact polystyrene with integrate pipe holder nubs for reliable observance of the pipe spacings and for exact height fixation of the Uponor system pipes.*



*Uponor Comfort Pipe PE-Xa pipe with oxygen diffusion barrier made of EVOH. Colour natural with a blue stripe.*



*Uponor MLCP RED composite pipe. Stable in form and oxygen tight.*



## Uponor Smart – the cost-effective standard system for heating and cooling

Uponor Smart is the cost-effective underfloor heating and cooling in which all components are matched exactly: Thermal and impact sound insulated stapler boards with tear-resistant surface and printed-on laying grid. Flexible, simple to lay system pipes with oxygen diffusion barrier. Stable stacker pins with which the pipe is fixated reliably to the laying plates. Thanks to the flexible pipe routing, Uponor Smart adapts itself optimally to all room geometries and ensures full-surface and cosy heat emission. And through the integrated insulation layer cover with self-adhering foil overlap, Uponor Smart is suitable for both cement and flowing screed.

### Uponor Smart wet construction system

- Efficiently matched system with few components
- Rapid and easy to install with the ergonomic stapler device
- Rolls and boards with different thermal/impact sound insulation layers allow a wide variety of usages
- DIN-tested PE-RT pipe
- Universal Smart Tacker stapler pins for both pipe dimensions 14 – 16 mm, matching in their length to the various board thicknesses
- Can be used in all types screed in accordance with DIN 18560
- High holding force of the stapler pin in the system foil



# The cost-effective underfloor heating with versatile application options



## Your practical advantages

Mounting of Uponor Smart is carried out rapidly. In the first step the Uponor Smart stapler boards are laid in rows as continuous as possible in the longitudinal room direction. For easier subdivision of the heating circuits the marking grids of the insulation rows lying next to each other should match. Remaining areas in niches, in the area of the door passages as well as remaining strips at the walls are filled subsequently with rests. This ensures that there is almost no waste cut during laying. The heating pipes are subsequently fastened to the boards in the calculated laying spacing using the Uponor Smart stapler pins and the Uponor system stapler and are connected to the heating circuit distributor. The ergonomic stapler device with the large pin supply makes high laying performance and rapid construction progress possible.

**The Uponor Smart underfloor heating/cooling is the cost-effective alternative to standard laying. All the components are matched exactly to each other and are designed for maximum reliability as well as reliable operation.**



*Uponor Smart stapler boards/rolls in different versions with impact sound insulation and thermal insulation made of EPS, also available with reduced insulation layer thickness.*



*Uponor Smart PE-RT system pipes and connection technology for pipe connections and connections to the heating circuit distributor.*



*Uponor stapler device with supply magazine and universal stapler pins 14/16 mm in different lengths, matching the thickness of the stapler board used.*



*Uponor Smart S manifold made of stainless steel for 2 – 16 heating circuits, optionally with or without flow indicator, as well as matching manifold cabinets.*



## Uponor Classic – radiant heating and cooling for residential and commercial buildings

Uponor Classic wet construction system is the ideal underfloor heating and cooling system for variable flooring structures in new residential building construction and in the commercial field. Three different mat grids make optimal adjustment of the heating pipe spacing to the respective heat requirements possible. Coated fixation elements and robust pipe holders fixate the system pipes reliably and ensure optimal screed enclosure in the heating layer.

Heating layer and insulation layer are separated from each other in the Uponor Classic wet construction system. In combination with high-load insulation materials the system can also be used in areas subject to high service loads, such as in car showrooms, manufacturing halls and sales rooms.

Uponor Comfort Pipe PLUS pipes in the practice-oriented dimensions 17 mm and 20 mm allow high heating circuit lengths without connecting points – which is an advantage especially when laying larger surfaces.

### Uponor Classic wet construction system

- Many years of tried-and tested system
- Free insulating material selection for a wide range of applications
- No damage to the insulation layer cover
- Depending on the additional insulation also suitable for use in high load situations.
- Pipe dimensions 17 and 20 mm for longer heating circuits in large areas
- Long-lasting and stress-resistant Uponor Comfort Pipe PLUS pipes

# Uponor Classic wet construction system – for large surfaces

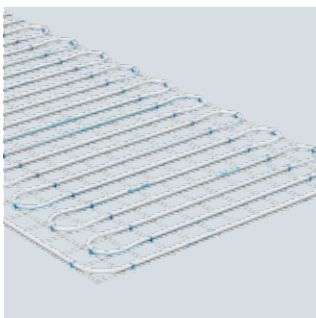


The Uponor Classic wet construction system contains all the components that are required for practice-oriented laying on the building site. Corrosion-protected bearer elements and Uponor Classic pipe holder for the basis for precise positioning of the Uponor Comfort Pipe PLUS heating pipe. The 0.2 mm thick, robust Uponor Multi Foil offers protection against moisture from the screed as a insulating layer cover in accordance with DIN 18560.

Uponor Classic can be laid without problems on the existing insulation. Accessories such as edge insulation strips and joint profiles form the ideal basis for the subsequent laying of cement or flowing screed.



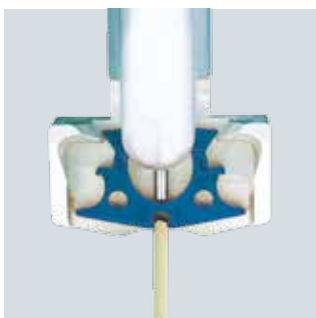
**Uponor Classic wet construction system is the ideal underfloor heating and cooling system for variable flooring structures in new residential building construction and in the commercial field. Three different mat grids make optimal adjustment of the heating pipe spacing to the respective heat requirements possible. In combination with high-load insulation materials the Uponor Classic wet construction system can also be used in areas subject to high service loads.**



*Uponor Classic steel mat – coated for the stable holding of pipes holders and mounting of radiant heating pipes conforming to standards. Material: Steel, primed*



*Uponor Comfort Pipe PLUS – PE-Xa pipe with oxygen diffusion barrier made of VOH and an additional outer protective layer. Colour white with two blue stripes. Conforms to DIN EN: ISO 15875 "Plastic piping systems for hot- and cold-water systems, cross-linked polyethylene", oxygen tight to DIN 4726.*



*Uponor Classic pipe holder – for fastening and fixating the Uponor PE-Xa pipes with the Uponor Clipmaster on the Uponor fixation elements.*



## Uponor Magna industrial floor heating – more space, less costs

The interior of a hall is too precious to waste part of it on a heating system. Conventional heating systems, such as radiators, convectors or ventilation systems furthermore have to be cleaned and maintained at regular intervals. This does not apply to the radiant heating and cooling systems from Uponor. The lower costs reduce the operating costs and simultaneously increase the return of investment.

The Uponor Magna industrial floor heating can be integrated into the floor slab without any problems and thus provide more freedom in planning and using an industrial hall. The entire system operates particularly cost-effectively, since it can be operated at low system temperatures. Heat losses during heat generation and heat distribution can be minimised. And since they are suitable for the use of regenerative energy or production exhaust heat, radiant heating and cooling systems operate particularly energy-efficiently.

### Uponor Magna industrial floor heating

- Optimal space utilisation without interfering system components
- Economical through rapid amortisation and minimal maintenance costs
- Reliable system, tried-and-tested over long periods
- Comfortable even heat distribution in the area of usage without dust turbulence

# Uponor Magna industrial floor heating – using space optimally

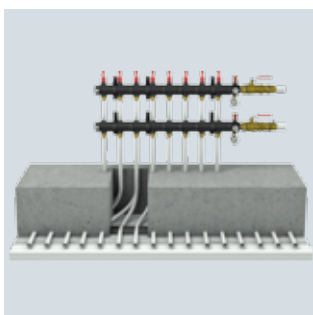


Industrial floor heating are integrated into the structural element and are practically maintenance-free. In addition, no scaffolding or elevating platforms are needed, in contrast to ceiling systems. Even manifolds are not required if the terminating piping is laid within the industrial floor and the connection to the heating circuits is carried out in accordance with the Tichelmann (reverse return) principle. Uponor disposes of the required special know-how.



With Uponor Magna heat is available where it is needed, namely in an area up to approximately 2 m above the heated flooring. This is an advantage in particular at high halls as heat does not accumulate in the higher areas like it is the case with air systems. Therefore, the heat loss via the ceiling can be minimised.

**Uponor Magna industrial floor heating and cooling is integrated directly in the concrete floor slab. In the process the existing mat reinforcements can be used to fasten the pipes. Both conventional hot water heating systems and regenerative heat generators and equipment for waste heat utilisation from industry processes can be used to heat the heating water.**



*The Uponor Magna industrial manifolds can be installed simply and practically, because the modular kit structure allows respectively suitable manifold solutions for a wide variety of requirements and heating area sizes to be established from the separate manifold blocks.*



*The rugged and tried-and-tested Comfort Pipe PLUS PE-Xa pipes are used in Uponor Magna industrial floor heating. Suitable connection techniques, tools and practical accessories round off the range of products.*



## Uponor Meltaway – keeping traffic areas free of snow and ice

When open spaces are covered with snow and ice, Uponor Meltaway snow and ice elimination is the right solution. The radiant heating system integrated in the ground keeps exposed traffic areas, house entrances, ramps, paths, access roads, etc. reliably free of snow and ice. This avoids dangerous slippery snow and ice surfaces and makes tedious and expensive spreading of road salt and clearing of snow superfluous.

The Uponor Meltaway snow and ice elimination is suited in particular for all outdoor surfaces that have a solid surface, such as driveways, ramps, fire brigade and emergency accesses, helicopter pads, traffic structures, sports facilities and hotel parking lots and accesses. Open spaces no longer have to be kept free by means of chemical substances, salt, granulate or by mechanical clearing. A further advantage: Heat emission of the surfaces heated with Uponor Meltaway is regulated sensitively and energy-efficiently. So that the surfaces are kept free of snow and ice around the clock automatically and without personnel deployment.

### Uponor Meltaway

- Many years of tried-and-tested system technology with rugged Uponor PE-Xa heating pipes
- Reliable snow and ice elimination of exposed traffic surfaces
- Personnel and time no longer required for spreading salt and clearing snow
- No damage to the surface by road salt
- Energy-saving operation with needs-based heat application, regulated by the Uponor Smatrix Move PRO supply temperature regulation
- Utilisation of exhaust heat, for example from industrial production possible



## Uponor Arena turf heating – for playability all year round

Cancellation of fixtures due to weather and injured players due to frozen grounds can be very expensive for the owners or clubs. The full plastic system from Uponor ensures that play can continue on sports turfs even in winter. In addition, controlling of the ground temperature extends the grass growth period notably and accelerates draining of surface water into the draining system.

The heating output required for the facility depends, amongst other things, on the geographic location of the turf. Ideally, exhaust heat is used for snow and ice elimination, for example from industry or power utility processes or from an adjacent ice rink. Alternatively, geothermal energy systems can be used to keep turf free of snow and ice.

### Uponor Arena

- Reduced danger of injury for the players
- Matches possible throughout the year without cancellation of fixtures due to the weather
- Extension of the grass growth period
- Low system temperatures, meaning that operation with regenerative energy and exhaust heat is also possible
- Costs and time required to clear snow no longer necessary



*Turf heating systems from Uponor already ensure playability throughout the year in many stadiums*



## Uponor Siccus dry system – lightweight for multiple applications

With the Uponor Siccus dry system a particularly universal radiant heating system was developed that is distinguished by its low design height and its low weight. The Uponor Siccus dry system can be used in a multitude of floor structures both in new buildings as well as in renovation work.

Installation is carried out below a load distribution layer made of dry screed plates or heating screed. Uponor Siccus dry system furthermore offers even heat distribution through the existing heat conducting lamellas. It is suitable for all common top floorings such as tiling, parquet flooring, carpeting or plastic with a maximum of  $R_{\lambda, B} = 0.15 \text{ m}^2 \text{ K/W}$ . The Uponor Siccus dry system only requires a few components: Laying plate, heat conducting lamellas and heating pipe.

With dry screed plates as load distribution layer the system weight amounts to only approx.  $25 \text{ kg/m}^2$ . This is particularly an advantage in the case of wooden beam ceilings with statically low loads, such as when old buildings are renovated. The low-mass flooring structure favours rapid temperature regulation.

### Uponor Siccus dry construction system

- Light and easy-to-work dry construction for floor and wall installation
- Short mounting time through only few optimally harmonized components
- Short construction time through immediate accessibility with dry screed
- No additional moisture permeation into the building through dry construction
- Can also be used on substrates with limited loads thanks to the low system weight
- Low flooring structure of only approx. 55 mm with drywall boards
- Composite pipe or PE-Xa pipe



# Uponor Siccus dry system – light design with low structural height



Uponor Siccus dry system plays out its strengths in particular in the modernisation of old buildings since low construction heights and low weight are the decisive factors. Together with the heat conducting lamellas, the Uponor Siccus laying plates form the basis for precise positioning of the Uponor system pipes. The 0.2 mm thick, robust Uponor Multi Foil offers protection against moisture from the screed as an insulating layer cover in accordance with DIN 18560 and ensures the separation of screed and heating system. Installation is carried out in the flooring structure below a load distribution layer made of dry screed plates or heating screed. Depending on the requirements Uponor Siccus can be combined with an additional thermal and/or impact sound insulation.



**The Uponor Siccus dry system can be used universally as an underfloor heating in a multitude of floor structures both in new buildings as well as in renovation work. In addition the system is optimally suitable for energy-related retrofit thanks to its low structure height and its low weight.**



*Uponor Siccus laying plate – laying plate made of EPS with pipe routing channels for holding the Uponor Siccus heat conducting lamellas. Laying spacing 15 / 22.5 / 30 cm.*



*Uponor Siccus heat conducting lamellas – stable aluminium lamellas with omega groove for optimal heat transfer to the system pipe 2-fold pre-punching for simple shortening without tools of the lamella size 120 x 1180 mm.*



*Uponor Comfort Pipe PLUS – PE-Xa pipe with oxygen diffusion barrier made of VOH and an additional outer protective layer. Colour white with two blue stripes. Conforms to DIN EN: ISO 15875 "Plastic piping systems for hot- and cold-water systems, cross-linked polyethylene", oxygen tight to DIN 4726.*



*Uponor MLCP RED composite pipe. Stable in form and oxygen tight.*



## Uponor Calma – underfloor heating with extra sound reduction

Uponor Calma is an underfloor heating system specially developed to provide extra sound reduction. This system is installed directly on an existing floor, and is therefore suitable for renovation purposes where there is no limitation in maximal floor thickness.

The sound reduction plates, Uponor Calma fiber panels, should be used together with Uponor Multi heat emission plates. Uponor Calma offers different solutions for wooden and concrete floors that are quick to install and almost waste-free. Additional elements for the distribution area complete the system.

### Uponor Calma, dry construction system

- Quick to install and virtually waste-free
- Sound reduction included
- Environmentally friendly thanks to recyclable fibre material
- Suitable for both wooden and concrete floors
- Few components, optimally matched
- Many years of tried-and-tested Uponor quality

# Uponor Calma – quick to install and environmentally friendly



The Uponor Calma components ensure a smooth and easy installation process that is fully compliant with all relevant construction norms and regulations. The pipes are positioned and fixed in place in the heat emission plates. These features not only ensure that heat output is transferred exactly as calculated, they also enable precision temperature control and lead to substantial savings on energy and operational costs.



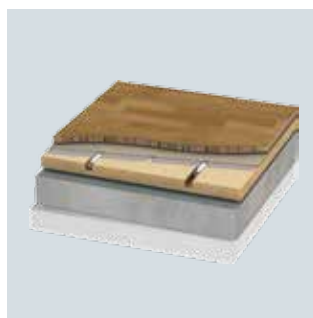
- High quality, robust system pipes in two dimensions: 17 and 20 mm diameter
- Fibre panels in two different thicknesses depending on pipe size: 24 mm thick for Uponor Comfort Pipe PLUS 17x2.0 mm and 36 mm thick for Uponor Comfort Pipe PLUS 20x2.0 mm
- Additional sets for the distribution area
- Pipe installation in heat emission plates without additional clips
- Note! Ceramic tile is not recommended as floor finish for this underfloor heating solution!



**Uponor Calma is an underfloor heating system specially developed to give extra sound reduction. This system is installed directly on an existing floor, and is therefore suitable for renovation purposes where there is no limitation in maximal floor thickness.**



*Uponor Calma fibre panel on wooden joist*



*Uponor Calma fibre panel on concrete floor*



## Uponor Tignum – flexible for many floor constructions

Uponor Tignum is used for quick installation on joist direct in a timber floor approx. 600 mm. It is flexible to use since it is suitable for many "on joist" floor constructions. For an easy installation the Uponor Tignum plate is made for Uponor Comfort Pipe PLUS 17 x 2.0mm. You can either make the grooves on the plates with our milling machine or you use the pre-produced turning panel.

### Uponor Tignum dry construction system

- Short installation time
- For different covering layers. Tiles need dry screed layer.
- Suitable for many "on joist" floor constructions
- Low static weight
- Low floor construction height:

# Uponor Tignum – suitable for many "on joist" floor constructions



Just a few components for a fast installation: panel, turning plate, multi heat emission plate extra and heating pipe. Use the Uponor milling machine to make grooves or use specially made turning plates. The panels are easily cut with a circular saw. The plates are easily divided by bending them only. The pipes are positioned and fixed in place in the heat emission plates.

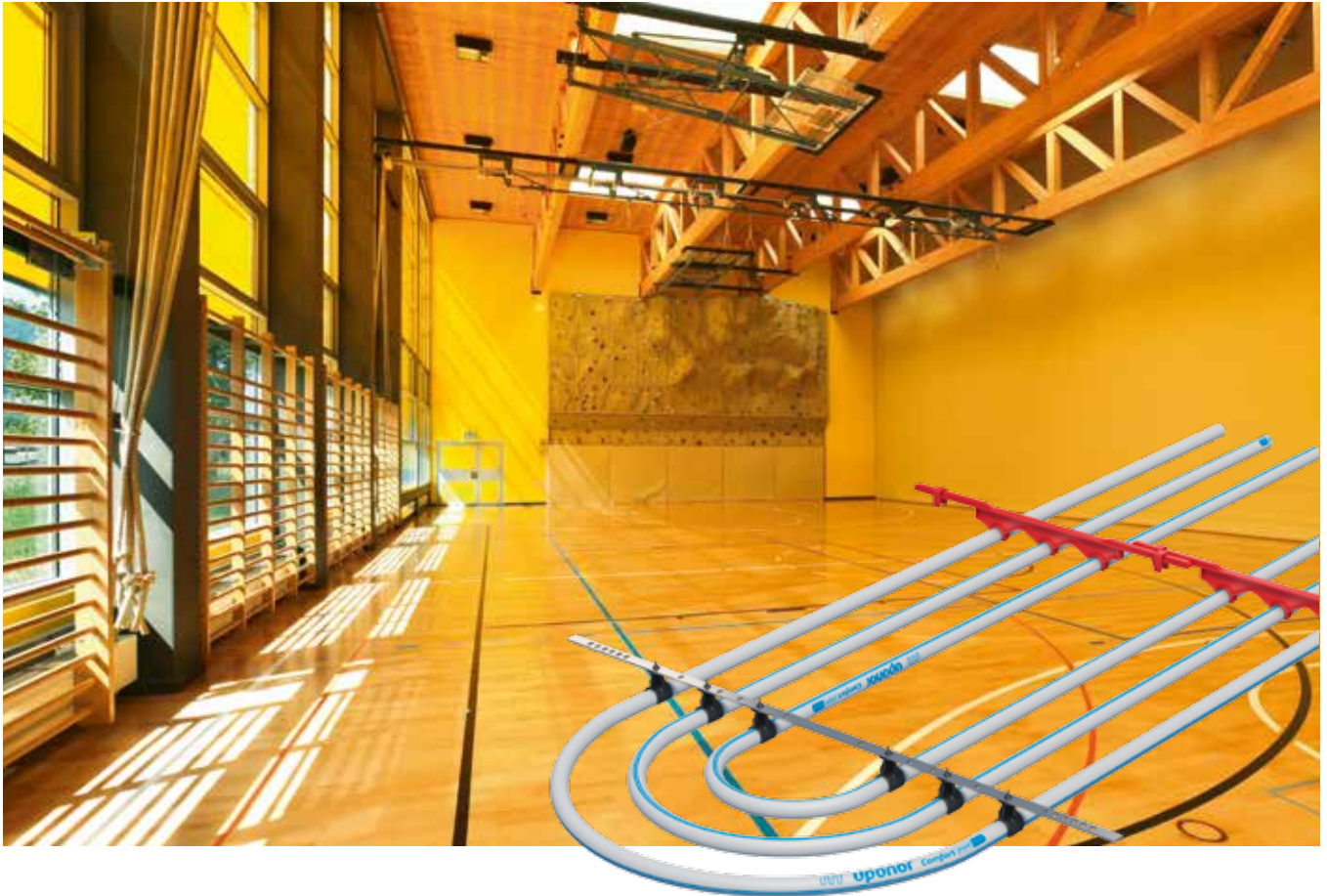
- High quality, robust system pipe in dimension 17 mm available
- Special Uponor Tignum panel with a thickness of 22 mm for Uponor Comfort PLUS pipe
- Uponor Tignum turning plate for a fast installation and can be used in combination with our panel
- Pipe installation in heat emission plates without additional clips
- Note! Uponor Tignum is not intended for use as a working floor



**Uponor Tignum is used for quick installation on joist directly in a timber floor approx. 600 mm. It is flexible to use since it is suitable for many "on joist" floor constructions.**

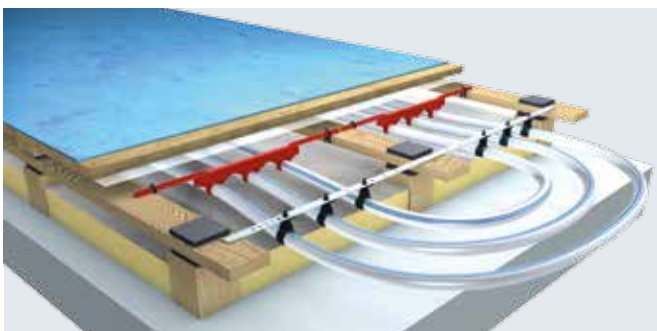


*Uponor Tignum panel on wooden joist*



## Uponor sports floor heating – it's the technique that counts

When designing sports floors a difference is made between floors that are area-elastic, combined elastic, mixed elastic and point elastic. The following sections illustrate Uponor sports floor heating systems using tested area- and point-elastic sports floor designs. However – we also provide solutions for other designs – just ask us.



*At Uponor Sport the heating pipes are installed directly under the subfloor by means of special holding rails to achieve optimal heat radiation.*

### Uponor sports floor heating

- Energy-efficient low-temperature heating
- High comfort through optimal room temperatures
- Even horizontal and in particular vertical distribution of the room temperature
- Draughts and dust turbulence are avoided
- No disturbing or even dangerous system components in the way of the occupants
- Short mounting periods
- Hygienic and easy-to-clean sports floor surface
- Maintenance- and cleaning-free piping system in the structural element

**Uponor Sport is the optimal solution for the heating of area-elastic sprung floors. Sprung floors consist of a springing wooden substructure, combined with an elastic layer made of PVC or linoleum. The Uponor pipe registers are fastened in special pipe holders directly under the subfloor.**



## Uponor Siccus Sport – added value rapid installation

Uponor Siccus Sport is the underfloor heating for area-elastic sports floors in sandwich construction. Integrated in the sports floor, Uponor Siccus Sport reduces the danger of sports injuries and at the same time ensures optimal heat comfort without influencing the elastic sports floor properties – two important factors when planning sports-hall floors.

### Uponor Siccus Sport

- Comfortable even heat distribution without dust turbulence
- No system components in the sports area
- Manifold application options in a wide range of sports floors



**Uponor Siccus Sport is the underfloor heating for area-elastic sports floors in sandwich construction. Integrated in the sports floor, Uponor Siccus Sport reduces the danger of sports injuries and at the same time ensures optimal heat comfort without influencing the elastic sports floor properties.**

*Uponor Siccus Sport floors are based on a 15-mm thick elastic layer made of permanently elastic special composite foam with high volume weight. The sports floors tested to DIN 18032 Part 2 attain their high stability through 2 offset load distribution panels*





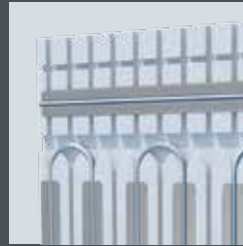
# Select your Uponor wall heating/cooling system for your construction project



## **Uponor Fix wet construction system**

The high-quality PE-Xa pipes are mounted directly on the masonry

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## **Uponor Siccus dry construction system**

Profiles thermal insulation bearing element with heat conducting lamellas for even heat distribution

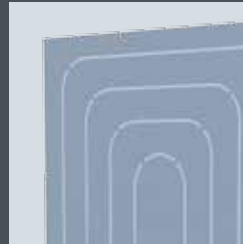
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## **Uponor Siccus SW partition wall system**

Light, ready-to-connect elements with handy dimensions for installation in partition walls

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## **Uponor Renovis dry construction system**

Gypsum plasterboard with integrated pipes. Modular and ideal for use in renovation

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## Uponor Fix wet system – cosy wall heating and cooling systems

When the task is to control the temperature of rooms cosily and inexpensively through radiant systems, Uponor Fix is a real all-rounder. Depending on the selected pipe dimension, it can be installed and operated for heating and cooling on the wall or – if mainly cooling is required – also as a ceiling system. Ceiling and wall applications can be combined freely. The Uponor Fix wet construction system thus provides double benefits: pleasantly cool in summer, pleasantly warm in winter and flexible enough for temperature jumps in spring and autumn.

### Uponor Fix wet construction system

- Different pipe materials and dimensions with the suitable fastening rails for wall or ceiling installation can be selected
- Thinner plaster layer required than for comparable systems with thicker system pipes
- Can be regulated rapidly thanks to the thin plaster layer
- Can also be used with clay plaster
- Many years of tried-and-tested system pipes and connection techniques
- Low system temperatures, meaning that operation with regenerative energy is also possible

# Uponor Fix – universal application with only a few components



Uponor Fix is available with PE-Xa pipes having the dimensions 14 mm and 9.9 mm as well as with MLCP RED composite pipes having the dimension 14 mm. Meaning that the suitable system can be simply selected for the desired wall or ceiling design and plaster layer thickness. When laid on a wall, the wall rails are first mounted vertically at a spacing of approx. 60 cm on the substrate that is sufficiently level and load-bearing. Subsequently the Uponor heating pipe is pressed into the rails at the calculated spacing and professionally plastered.

This wall structure allows a fixed and stable bond of plaster and wall. Alternatively, Uponor Fix can also be mounted on a suitable wall insulation system. Uponor Fix can be laid on both exterior and interior walls.

**Uponor Fix is used in walls as a radiant heating/cooling system. The PE-Xa system pipes are integrated into the plaster, with the minimal plaster covering allowing very brief response times and thus rapid adaptation to changing operating states.**



*The compact Uponor Minitec connection box is integrated into the wall structure and offers direct connection possibilities for up to three heating circuits.*



*The Uponor Fix wet plaster systems can be installed simply and rapidly with the practical system accessories.*



## Uponor Siccus Wall – and walls become heating systems in next to no time

Wherever low construction heights, a low weight per unit and installation in dry wall systems are the decisive factors, Uponor Siccus is ideal. Uponor Siccus Wall is in its element wherever dry wall construction with wall heating and short construction times are required. Because no construction moisture arises.

Uponor Siccus Wall consists of a laying plate, heat conducting lamellas made of aluminium and the tried-and-tested Uponor Comfort Pipe PLUS PE-Xa pipes or optionally also with the dimensionally-stable Uponor composite pipes. Thanks to its compatible system components, the Siccus Wall system can be combined optimally with the Siccus underfloor heating. This allows large heating or alternatively cooling areas to be realized even in small rooms with a relatively high heat requirement, such as bathrooms. The Uponor Siccus laying plate furthermore contributes towards thermal insulation of the wall surface thanks to its thermal resistance of  $0.622 \text{ m}^2\text{K/W}$ .

### Uponor Siccus Wall dry construction system

- Rapid building progress through dry mortarless construction
- Heat conducting lamellas ensure even heat distribution
- Thanks to low system weight can be used on practically any wall
- Lower heat losses through integrated insulating layer
- Brief heating-up time and rapid regulation
- Can optionally be used with Uponor Comfort Pipe PLUS PE-Xa pipes or composite pipes

**Uponor Siccus Wall is the optimal dry mortarless construction solution for walls that are to be used for heating. Thanks to its low weight it fulfils the requirements that are placed on lightweight construction during renovation.**



## Uponor Siccus SW – integrating wall heating systems simply into partition walls

Thanks to Uponor Siccus SW partition wall elements, lightweight walls, such as room partitions or subsequently erected intermediate walls, can be used simply and without much effort as room heating and/or cooling systems. This allows, for example additional wall heating/cooling surfaces to be created – also during energy-specific retrofit – for even more efficient use of regenerative heat generators.

The pre-mounted elements with the already integrated system pipes are customised to the usual profile distances in partition walls (625 mm, to DIN 18181) and can therefore be integrated lightly into the partition walls. Subsequently the walls are covered with conventional drywall boards. Thanks to the low element weight of about 2.4 kg/unit, one-person mounting is possible.

### Uponor Siccus SW dry construction system

- Subsequently erected partition walls also become efficient heating/cooling surfaces through Siccus SW
- Light prefabricated elements with integrated Uponor Comfort Pipe PLUS pipes 4 x 2 mm and handy dimensions for one-person mounting
- Norm-compliant partition spacing of 625 mm to DIN 18181
- Brief heating-up time and rapid regulation
- Can be used both in new buildings as well as in renovation work for heating/cooling.

**Thanks to the installation of Uponor Siccus SW partition walls become heat transfer surfaces. Uponor Siccus SW allows clear separation of the various functions. Uponor Siccus SW can be used both for heating and for cooling in different building types.**



## Uponor Renovis dry system – modular and energy-efficient

Especially when renovating the subsequent installation of a radiant heating/cooling system is often very difficult or impossible to realise in wet construction. This is where Uponor Renovis has its strengths.

Thanks to its dry mortarless construction and its modular structure Uponor Renovis is outstandingly suitable for the energetic (partial) renovation and upgrading of existing buildings. In this context Uponor Renovis fulfils two requirements at the same time: on the one hand it ensures cosy room temperatures throughout the year as a heating/cooling panel, on the other hand the surface of the panels can be used directly for the substrate for the new wall covering. Since Uponor Renovis only requires very low operating temperatures of approximately 35 °C, it is the perfect heating system in combination with alternative heat generators such as condensing boilers, heat pumps and solar heating support.

Thanks to its large heat-transferring surface, Uponor Renovis is also very suitable for cooling rooms in summer, for example in combination with a reversible heat pump. If a brine water heat pump with geothermal probes is used, the water temperature in the geothermal probe is often enough to cool the rooms sufficiently without additional cooling energy.

### Uponor Renovis dry construction system

- Ready-to-connect gypsum plasterboard 15 mm with integrated pipe register of Uponor PE-Xa pipe
- High heating outputs
- Heating panel and new wall/ceiling surface in one
- Mounting on common CD Profiles 60/27, optionally with customer installed insulating layer
- Simple interconnection of individual modules by means of Tichelmann ring circuits
- Uponor PE-Xa pipings in the modules and as supply lines with Q&E connection technique

# Uponor Renovis – the solution for energetic retrofit



**The Uponor Renovis radiant heating/cooling system consists of a gypsum plasterboard in which the Uponor PE-Xa pipes have already been integrated in the factory. It allows the temperature control of rooms via walls and ceilings in dry mortarless construction. An extensive Uponor range of products is available for professional interconnection of the panels in accordance with the Tichelmann principle.**

The elements can be mounted with a substructure consisting of common CD Profiles 60/27 onto almost any substrate to the wall – like a drywall panel. After the connection joints have been filled and ground, the Renovis elements can simply be processed further.

Uponor Renovis consists of only a few perfectly matched components. The main components are the only 15-mm thick Renovis panels in three sizes with the already integrated PE-Xa heating pipes 9.9 x 1.1 mm. During the dimensioning of the pipe lengths, the lengths required for connection to the supply line have already been taken into consideration. The supply line is usually laid according to the Tichelmann principle and also consists of PE-Xa pipes.

Uponor Q&E fittings are used for the connection and interconnection of the pipes. This is a connecting technique of Uponor, in which the pipe end with locking ring is widened mechanically, and then pushed onto the fitting. There it shrinks back to the fitting contour by itself thanks to the "memory effect" and seals. Uponor Renovis is completed by an extensive range of distribution and regulation components that are, for the greater parts, also used in other radiant heating/cooling systems of Uponor.



*Uponor Renovis panels for use as individual heating and cooling panels, for installation on walls or ceilings in buildings, equally suited for renovation and new buildings. Mounting on standard profile structure CD 60/27.*



*Uponor Renovis connection set For connecting Uponor Renovis panels to the low-temperature heating system by means of Quick & Easy connection technology, for example in accordance with the Tichelmann principle.*



*Uponor Quick & Easy connection technology with the M12 widening tool*

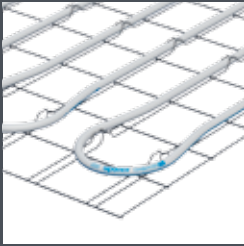


*Uponor Fluvia T Push-12 mini pump groups for individual rooms and small heating surfaces. Room temperature regulation optionally via thermostat head with capillary room temperature sensor or Uponor room sensor (wire-based or wireless) with thermal drive. Ideal for connecting the radiant heating to an existing high temperature system.*





# Select your Uponor ceiling heating/cooling system for your construction project



## Uponor Contec (TABS)

Modules for thermal activation of concrete components, as Contec ON near to the surface and controllable

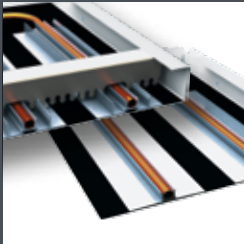
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## Uponor Varicool Carbon A

Panelled ceiling elements for high cooling loads. With integrated pipe registers, embedded in a matrix of expanded natural graphite

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## Uponor Varicool Spectra

Heating/cooling elements for closed metal ceilings or as freely suspended ceiling sails

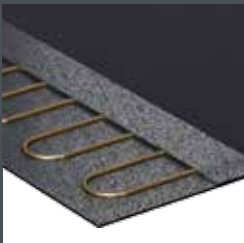
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## Uponor Comfort Panel

Ready-to-connect panelled ceiling heating/cooling elements. Also for subsequent installation in standard panelled ceiling constructions

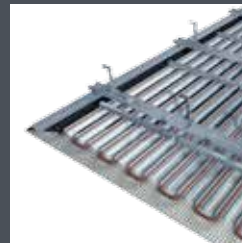
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## Uponor Varicool Carbon S

Seamless heating/cooling ceilings with heat conducting layer made of expanded natural graphite

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## Uponor Varicool Uni

Heating/cooling system as gypsum plasterboard ceilings with jointless surface

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## Uponor Renovis

Ready-to-connect gypsum plasterboard elements with integrated pipings for wall and ceiling dry construction during renovation

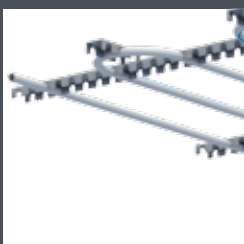
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## Uponor Teporis

Gypsum plasterboard elements with integrated pipings and rear heat insulation for suspended ceilings

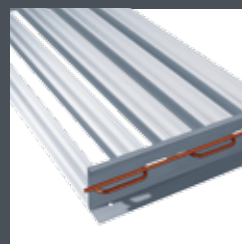
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## Uponor Fix 9.9

Wet plaster rail system for ceiling heating/cooling system with minimal plaster thickness

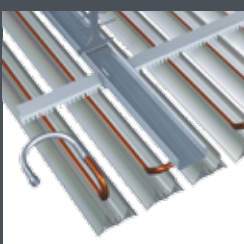
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## Uponor Varicool Opti Y

Predominantly convective high-output lamella system for cooling rooms. Optionally visible or concealed mounting above grid ceilings

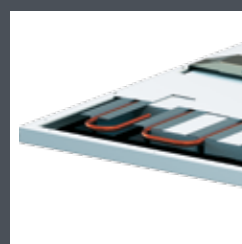
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## Uponor Varicool Softline 4

High-output ceiling cooling system as design elements without separate ceiling cladding

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## Uponor Varicool Velum

Elegant and compact heating and cooling ceiling sails. With excellent acoustic features for echo reduction

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## Uponor Contec – building temperature control with thermally active concrete components

Concrete components such as concrete ceilings can be used for inexpensive cooling or heating of multi-storey buildings, such as office and commercial buildings. Uponor Contec registers through which water flows are inserted into the concrete ceiling to thermally activate the components. In the process Uponor Contec does not only use the ceiling surfaces for heat exchange, but also the storage capability of the concrete ceiling for time-delayed "loading" of the ceiling with regeneratively gained cooling, for example through the reverse cooling with cold outdoor air overnight. The resultingly cooled ceiling can then absorb heat from the building again during the day.

Concrete core activation is suitable for buildings with a low to medium-sized cooling load in order to counteract heating up in summer. In buildings with medium-sized to high cooling loads the concrete core activation can be used to cover the base load with the aim of dimensioning any air-conditioning unit additionally needed for the minimum air exchange smaller.

### Uponor Contec concrete core activation

- Structural element piping system for new office and commercial buildings
- Higher thermal comfort throughout the year at lower investment and operating costs
- Optimal possibilities for using regenerative energy sources
- Conforms to the sustainability certificates for buildings, for example LEED, BREEAM and DGNB

# Uponor Contec – innovative, eco-friendly and inexpensive

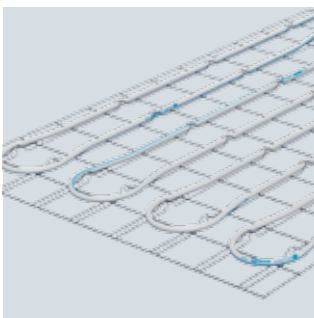


The Uponor Contec modules consist of special pipe bearing mats with formed-in pipe clips that are equipped in the factory with the rugged PE-Xa pipe 20 x 2.3 mm. Each Uponor Contec module contains already integrated connecting lines for connection to the distribution line or to a distributor. In the planning phase the surfaces to be used of the respective building project are determined and equipped with suitable Contec modules. Modules in different sizes are available in order to adapt to the respective circumstances of a building project.

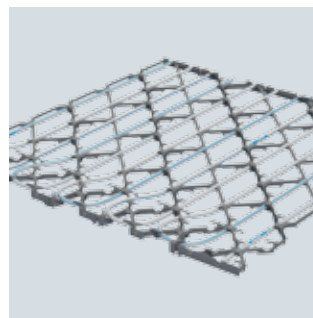


The near-surface system Uponor Contec ON can be used as a stand-alone system or in combination with Uponor Contec in order to compensate peak loads or when a room-specific regulation of individual rooms or zones is required. The near-surface concrete core activation Uponor Contec ON responds rapidly to load changes and allows relatively high cooling and heating outputs. In addition it is possible to integrate thermal socket connectors Contec TS as well into the ceiling. The sophisticated design of the socket connectors makes it possible to subsequently connect ceiling sails to the operational system, without having to drain the piping system.

**Uponor Contec is used for the thermal activation of building components made of concrete (TABS). This allows these components to be used for heating and cooling purposes.**



*The Uponor Contec TS modules are prefabricated object-specifically in different sizes in the factory and can be inserted into almost any concrete ceiling and wall structure.*



*The Uponor Contec ON plastic special pipe carrier guarantees the exact height of the pipe in a level of a few millimeters above the ceiling underside. At the same time it acts as the spacer for the lower reinforcement.*



*Uponor Contec TS thermal socket connectors for the combination of Contec concrete core activation with additionally thermally active ceiling sails or high-output cooling ceiling elements.*



*With Contec TS ceiling sails can also be connected subsequently to the piping system without the pipe having to be emptied.*



## Uponor Varicool Carbon A – heating and cooling on graphite basis

Uponor Varicool Carbon A is a water-supported high-output heating and cooling ceiling system. The heating/cooling register consists of pipes that are embedded in a matrix of expanded natural graphite and are connected securely with the ceiling cladding. The system operates mainly in accordance with the radiation principle which offers high room comfort, optimal energy efficiency and a draught-free feel-good atmosphere.

The ceiling system is characterised by manifold application and design options. It is preferably used in office and commercial buildings, in sales outlets as well as in training and conference rooms with high thermal loads.

### Uponor Varicool Carbon A

- Architecturally appealing ceiling surfaces
- Combination of thermally active and passive ceiling areas possible
- Optimally suited for renewable energy sources, through higher system temperatures in cooling cases or lower system temperatures in heating cases
- Combination with lights of different designs as well as other ceiling installations and structures such as sprinklers are possible without problems
- Up to 20% lower configuration compared to conventional cooling ceilings, and thus reduced system costs possible



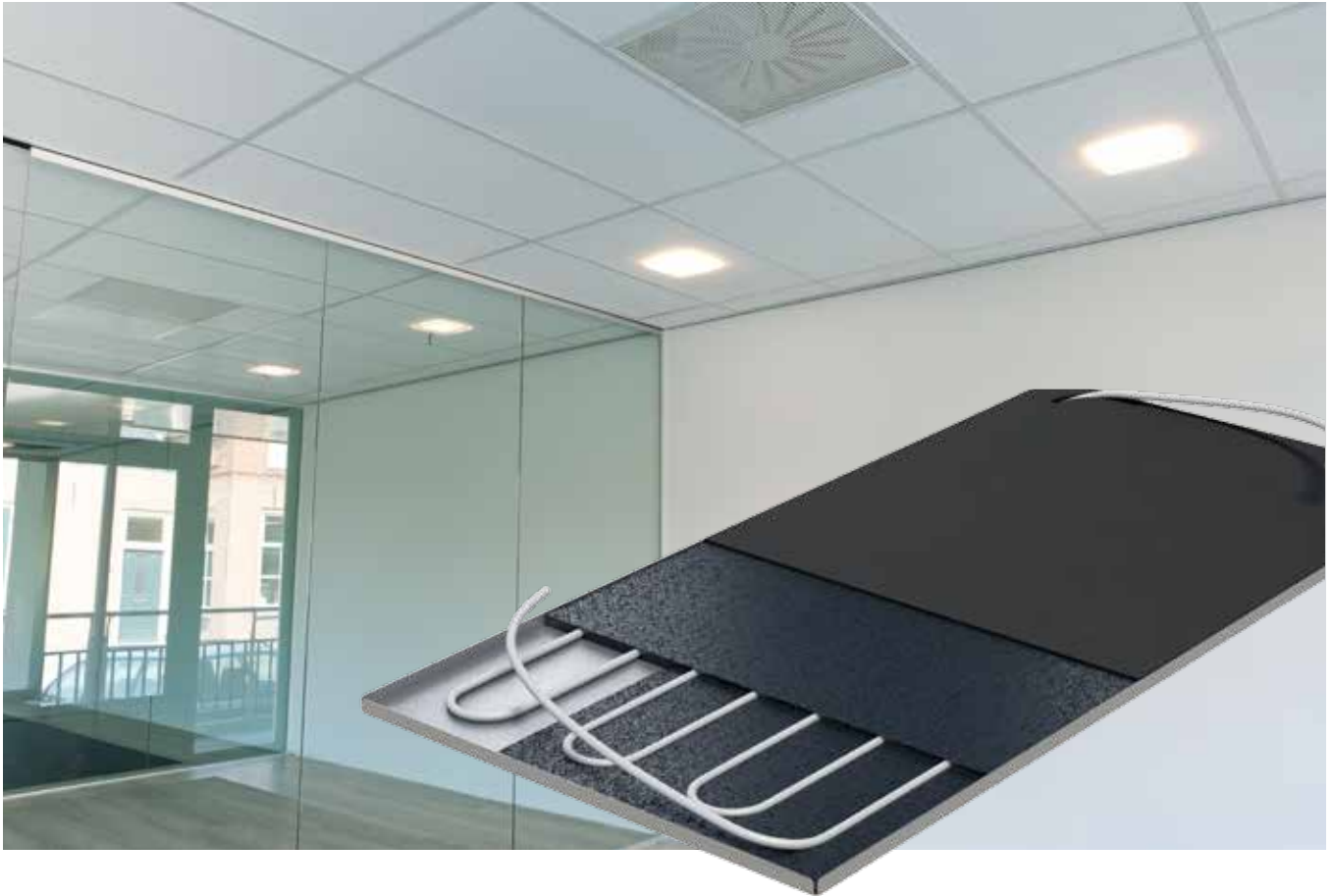
## Uponor Varicool Spectra – heating/cooling ceiling system as a closed metal ceiling

Uponor Varicool Spectra is a water-supported heating and cooling ceiling system at which the heating/cooling register can be connected securely through an innovative magnetic connection (Uponor Varicool Spectra M) or through a bonding connection (Uponor Varicool Spectra K) with the ceiling cladding. The system operates as a closed metal cooling ceiling mainly in accordance with the radiation principle which offers high room comfort, optimal energy efficiency and a draught-free feel-good atmosphere. In addition good room acoustics result from a specially developed acoustic fleece that is bonded into the perforated ceiling cladding.

The ceiling system is characterised by manifold application and design options. It is preferably used in office and commercial buildings, in sales outlets as well as in training and conference rooms, as well as treatment rooms in hospitals.

### Uponor Varicool Spectra

- Architecturally appealing ceiling surfaces
- Good heating and cooling outputs through outstanding heat transfer between profile system and ceiling cladding
- Combination of thermally active and passive ceiling areas possible
- High degree of sound absorption through perforated metal ceiling boards with acoustical fleece
- Optimally suitable for renewable energy sources, for example geothermal energy and heat pumps
- Combination with lights of different designs as well as other ceiling installations and structures such as sprinklers are possible without problems

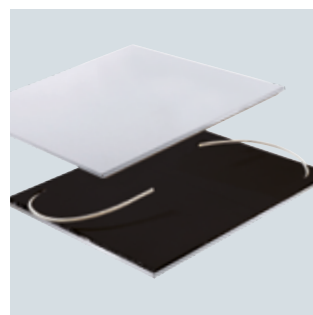


## Uponor Comfort Panel – optimal cosiness

The Uponor Comfort Panel is a thermally active ceiling panel system installed in suspended ceilings. It is used in new buildings as well as renovations, for cooling but also heating. The thermally active panels are inserted easily and rapidly into a visible metal rail substructure like at a conventional grid ceiling and connected at the pipe end with each other. Ceiling areas without thermal activation are covered with visually identical passive panels.

### Uponor Comfort Panel

- Cooling output up to 92.5 W/m<sup>2</sup> at 10 K sub-temperature possible
- Simple and rapid mounting
- Compatible with existing metal rail constructions
- Homogeneous view of ceiling from below



*Visually appealing view from below and above with the connection points*  
 625-mm grid or  
 615 x 1240 mm (two-field grid) or  
 615 x 615 mm (one-field grid)  
 600-mm grid or  
 590 x 1190 mm (two-field grid)  
 or 590 x 590 mm (one-field grid)



## Uponor Varicool Carbon S – the jointless high-output system for heating and cooling

Uponor Varicool Carbon S is a water-supported heating/cooling ceiling system that mainly operates in accordance with the radiation principle. Joint- and direction-less ceiling surfaces can be created with this design for particular architectural demands.

The structure is adapted to the wishes for flexible room design, high heating and cooling output and difficult room geometries with unvarying functionality. Uponor Varicool Carbon S allows a pleasant room climate. Lighting elements and further components, such as loudspeakers, sprinklers, etc., can be integrated into the ceiling without problems. In view of the high output capabilities only small thermally active surfaces are required. Thermally passive areas can be closed by means of common and inexpensive gypsum plasterboards.

### Uponor Varicool Carbon S

- Very high heating and cooling output through the usage of expanded neutral graphite for thermal activation
- Suitable especially for areas with very high thermal loads and highest architectural requirements
- Brief response times at homogeneous heat distribution across the surface
- Optimally suited for renewable energy sources, through higher system temperatures in cooling cases or lower system temperatures in heating cases
- Processing as for gypsum plasterboards
- Passive areas possible with common gypsum plasterboards
- Ready-to-mount boards with very low weight
- Integration of lights, air outlets, fire alarm devices, sprinklers, loudspeakers, etc. possible



## Uponor Varicool Uni – the jointless gypsum board heating/cooling system

The water-supported cooling and heating ceiling system Uponor Varicool Uni, that mainly operates in accordance with the radiation principle, is characterised by manifold application and design options. Joint- and direction-less ceiling surfaces can be created with this design for particular architectural demands. The structure is adapted to the wishes for flexible room design even at difficult room geometries with unvarying functionality.

The Uponor Varicool Uni cooling and heating ceiling system allows a pleasant room climate and excellent room acoustics. Due to the design principle the fastening profiles for the ceiling cladding are not required in the area of active cooling areas. This results in a larger ceiling surface that can be activated for higher cooling and heating outputs.

Lighting elements and further components, such as loud-speakers, sprinklers, etc., can be integrated into the ceiling.

### Uponor Varicool Uni

- High sound absorption and no draughts
- Optimally suitable for renewable energy sources
- Integration of further ceiling installations possible, for example lights, fire alarms, air outlets
- High heating and cooling outputs through the activation of the ceiling areas across the entire area





## Uponor Renovis – rapid installation at the ceiling and maximum flexibility

Uponor Renovis consists of a 15-mm thick gypsum plasterboard in which the high-quality Uponor pipes have already been integrated in the factory. The elements can be mounted with a substructure consisting of common CD profiles onto almost any surface to the ceiling – like a drywall panel. Tedious demolition work is therefore not required. This means that an existing property can be refurbished rapidly even while it is being used. After the connection joints have been filled and ground, the Uponor Renovis elements can be processed further directly.

With Uponor Renovis individual rooms can be fitted with a radiant heating. The connection with a simple Tichelmann distributor furthermore reduces the work required for designing and dimensioning the heating circuits, the regulation and the installation.

### Uponor Renovis

- Installation on all ceiling surfaces
- Integration of air outlets, light sources and other electrical devices possible
- Room comfort at low temperature of the heating system
- Can be used individually at walls and ceilings for heating and cooling



## Uponor Teporis dry plasterboards – ideal for new buildings and renovation

Uponor Teporis dry mortarless construction is a time-saving solution for the installation of panel heating and cooling systems preferably on the ceiling. Mounted on a metal or wooden substructure in dry mortarless construction the construction time is reduced notably in comparison to conventional systems. The tried-and-tested Uponor system pipe is already integrated completely into the system board for heating and cooling. A barrier located above the plasterboard prevents unwanted energy losses to the ceiling cavity. The low pipe spacing of the pipings ensures that the heating or cooling energy is emitted rapidly to the room.

### Uponor Teporis

- Heating and cooling without distracting fan noise
- Can be used both in new buildings as well as in renovation work
- Low system temperatures, meaning that operation with regenerative energy is also possible
- Fire behaviour: B-s1, d0 (tested in accordance with standard EN 13501-1:2007)



## Uponor Fix 9.9 – perfect for effective ceiling temperature control

When the task is to control the temperature of rooms cosily and inexpensively through panels, the Uponor Fix 9.9 wet system is a real all-rounder. It can be used both for heating and cooling as well as at walls and ceilings. This is particularly interesting at predominant cooling requirement. If the emphasis lies on heating, the wall surfaces are outstandingly suitable for room temperature control.

Thanks to the low plaster covering, the Uponor Fix 9.9 wet system can furthermore be regulated very rapidly and simply. Ceiling and wall applications can be combined freely. The Uponor Fix wet system provides double benefits: pleasantly cool in summer, pleasantly warm in winter and flexible enough for temperature jumps in spring and autumn.

### Uponor Fix 9.9

- Low structure height and thinner plaster layer through small pipe dimension
- Universal system for the ceiling and wall mounting with only a few optimally matched system components
- Many years of tried-and-tested and rugged Uponor Comfort Pipe PE-Xa pipe
- Rapid regulation through low plaster cover
- Low system over- and undertemperatures, meaning that operation with regenerative energy is also possible



## Uponor Varicool Opti Y – the lamella cooling system for maximum cooling output

Uponor Varicool Opti Y is a predominantly convective high-output lamella system for cooling rooms. The lamella cooling elements are suitable for use as individually suspended ceiling modules, as large surface lamella ceiling or for concealed mounting above grid ceilings for rooms of all types.

Particular features are the high area-specific mainly convective cooling output and the large free ceiling cross-section. Sprinklers, smoke detectors, air outlets, lighting fittings, etc. can be installed in the intermediate areas between the lamellas. A combination with any air guidance systems is furthermore possible. The modularly structured ceiling system is also suitable for covering heating requirements.

### Uponor Varicool Opti Y

- High, silent cooling output without draughts
- Lamella spacings of 100 mm to 150 mm allow the combination with ceiling installations such as sprinklers, lighting fittings, etc.
- Can be combined with any ventilation systems
- Depending on the visual requirements visible or concealed mounting is possible
- Modules optionally available from folding frame



## Uponor Varicool Softline 4 – aluminium panelling ceiling

The heating/cooling ceiling Uponor Varicool Softline 4 is a visually very appealing aluminium panel ceiling that is conceived for standard outputs of 146 W/m<sup>2</sup> for cooling cases and 142 W/m<sup>2</sup> in heating cases for the compensation of high thermal loads. The extraordinarily high output for cooling ceilings is due on the one hand to the good thermal conductivity properties of the aluminum profiles that ensure a low temperature at the underside of the ceiling and thus high radiation heat exchange. On the other hand the relatively high share of joints favour the natural room air flow of the profiles, resulting in strengthening of the convective cooling effect.

Uponor Varicool Softline 4 is suitable as a design element for the interior design, meaning that a separate ceiling cladding is not required. The visible profiles can be powder-coated or anodized for highest demands. All colours can be selected freely in accordance with the RAL tones.

Glare-free illumination of the room is possible through the high light reflection of the profiles, in particular if metallic anodized colours are chosen.

### Uponor Varicool Softline 4

- Architecturally appealing ceiling appearance
- Can be combined with concrete core temperature control
- Very high cooling and heating output
- Can be combined with different lighting and ventilation concepts
- Acoustically advantageous through curved profile structure and joints between the profiles
- Optionally anodized or coated profile surface for highest aesthetic demands



## Uponor Varicool Velum – the elegant and compact high-performance ceiling sails

Uponor Varicool Velum heating and cooling ceiling sails combine a high cooling output with draught-less cosiness, are sound-absorbing and reflect diffuse light onto the workplace. The elegant, compact design fulfils high architectural demands and blend harmoniously into the modern office architecture.

The extremely flat Uponor Varicool Velum ceiling sail that seems to float in the room can be used for heating and cooling in accordance with the radiation principle. The mild radiation heat results in a particularly even heating of the room which is felt as particularly pleasant by humans. In cooling operation the ceiling sails acts as a radiation absorber that directly absorbs the heat to be removed from the room. The rising room area is cooled further on its surface.

### Uponor Varicool Velum

- Extremely flat structure
- High cooling output
- Utilisation of the storage mass of the concrete ceiling (hybrid ceiling sail)
- Good room acoustics through integrated sound-absorbing elements
- Pleasant draught-less room climate without dust circulation
- Visually appealing design



## Uponor Varicool Spectra – high-output ceiling sails

Thanks to the visually appealing construction and filigree realisation the "free floating" Uponor Varicool Spectra heating/cooling ceiling elements blend harmonically into their surroundings and set architectural accents. Uponor Varicool Spectra is characterised by manifold application and design options. It is used as a ceiling sail preferably in office and administrative buildings, in sales outlets as well as in training and conference rooms, either as a full-load system or as a peak-load system.

Thanks to the low weight of the individual parts and the practical dimensions, the cooling ceiling sails can be mounted simply and flexibly.

### Uponor Varicool Spectra

- High area-specific cooling and heating output
- Individual room temperatures through temperature control by zone at island solutions.
- High user acceptance and satisfaction
- Optimally suitable for renewable energy sources, for example geothermal energy and heat pumps
- Filigree and visually appealing design of the sails
- Can be combined with concrete core temperature control for peak-load coverage and sound absorption
- Concealed hydraulic connection of the ceiling elements into the basic ceiling via thermal socket-outlets, such as Contec TS



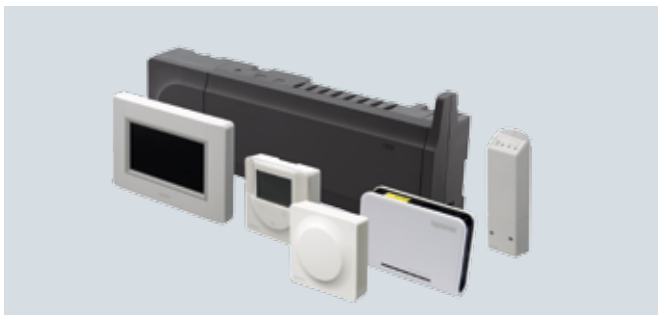


# Intelligent supplements for overall radiant heating and cooling

Because we attach great importance to the subject we have drawn up a separate brochure. There we inform about Uponor manifolds, pump groups for the supply, room temperature control via wireless and many further possibilities from the extensive range of products of the Uponor manifolds and controls technology.

## The Uponor distribution and regulating technology

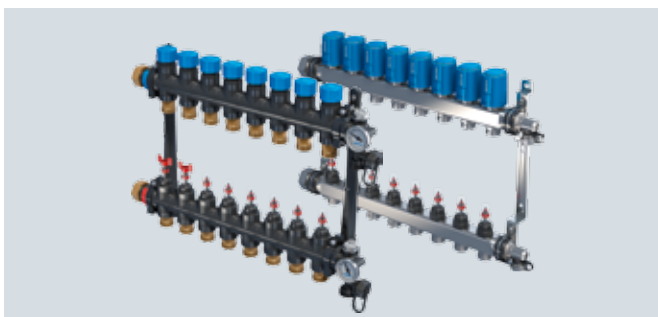
- Rapid installation, minimal cabling
- Flexibility through modular system structure
- Low maintenance level
- No manual balancing at the manifold required
- Simple and intuitive operation
- Software upgrade options
- First-class temperature control for more comfort and less energy consumption



*Uponor Smatrix – completely integrated control systems for radiant heating and cooling with intelligent room, zone and supply temperature controls. Modular and extensible systems that are easy to install and that fulfil the requirements of each and every building project. With autobalancing technology that can save up to 20 % of the energy, cooling function with condensation protection and the option of remote access through the Uponor Smatrix App.*



*Uponor Comfort Port – prefabricated manifolds to customer requirements save time and mounting costs. With our controls stations pre-mounted in the factory about 250 actions less are required on the building site. For professional handicraft businesses who are often subjected to time and cost stress during order realisation pre-mounting is a clear plus in time and cost efficiency.*



*Uponor manifolds made of plastic or stainless steel, for every application from residential construction through to industry application including connection fittings, manifold cabinet systems, controls and shut-off valves, and many more.*



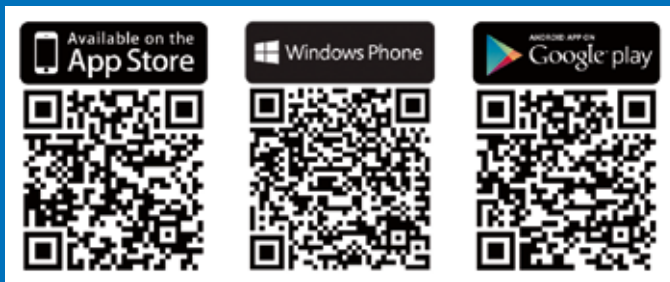
*Uponor Fluvia pump groups – compact supply temperature regulating stations for any application which supply the required water temperature to the respective radiant heating/cooling systems of Uponor.*





# Uponor

Everything you need in one App:  
Uponor PRO



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