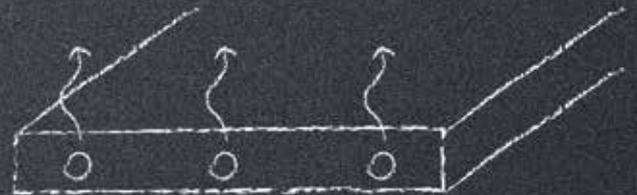


Energy systems

Radiant heating and cooling systems

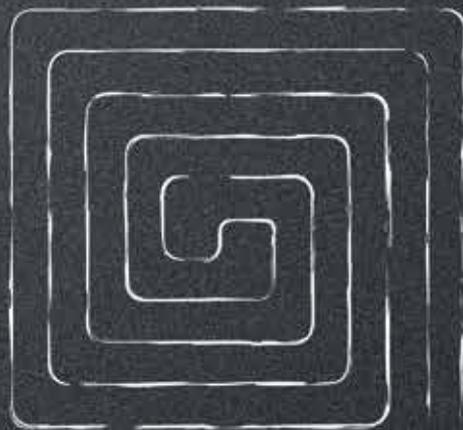


**Efficient
system solutions for all
areas of application**



Living full of energy

The larger the area that radiates heat, the more effective and economical its heating effect will be. In comparison to conventional radiators, the ideal room temperature with a radiant heating system is 1 °C to 2 °C lower.





Heating and cooling systems for convenient all-round comfort

- **The demand for high-quality living spaces in both existing and new buildings is increasing all the time, and this in turn creates an expectation of state-of-the-art temperature equalisation**

Whether it is for residential buildings, offices and commercial premises, industrial facilities, sports halls or open spaces – what used to be exceptional is now the norm: heating and cooling systems optimised to individual needs and cleverly designed to keep up with changing demands. It is therefore hardly surprising that planners and building owners looking for modern and advanced system solutions are now choosing radiant heating and cooling systems. The retrofitting of radiant heating and cooling systems is also gaining in popularity.

In addition to user comfort and greater freedom in architectural design, the decisive criteria in the selection of a radiant heating and cooling system are the energy savings, hygiene and environmental protection it facilitates.

- **Radiant heating for a better quality of life**

When choosing a suitable radiant heating and cooling system for modernisation or new construction projects, the ultimate aim is to create a comfortable home environment.

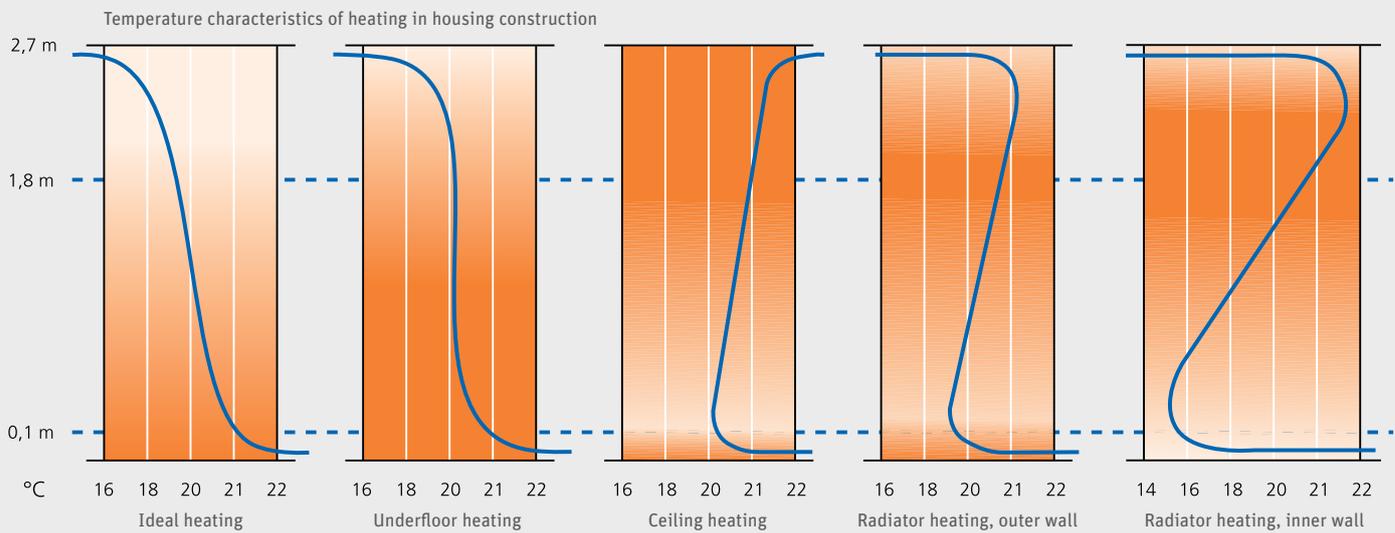
The level of personal comfort experienced by every individual will depend on both objective and subjective parameters. A high level of thermal comfort is produced by heating spaces evenly.

Radiated heat and surface temperatures can be set proactively if one selects the right radiant heating or cooling system.

The lower the temperature on a space's boundary surfaces (walls, floors and ceilings), the higher the temperature the air must be to make the space comfortable, and vice versa. One can compensate for this effect by carefully controlling the temperature of ceilings and walls.

Roth radiant heating and cooling systems

Innovation and high performance for modern living spaces



■ The thinking behind the system

When designing an energy system for building services devices, the need to guarantee a comfortable living climate is a fundamental consideration. The heating and cooling systems developed by Roth for floors, walls and ceilings offer solutions tailored to seasonal needs and individual requirements. They also fulfil the highest expectations in terms of quality and safety, in excess of technical standards.

■ The ideal room temperature profile

You will feel the optimal, finely tunable room temperature profile that the Roth radiant heating and cooling systems can provide as a real contribution to your everyday comfort. Negative factors in a room's climate (such as turbulence, drafts or heat congestion) are a thing of the past. In reality, the system's temperature characteristics correspond closely to the ideal heating system (see graphic).

Experts tell us that the larger the area that radiates heat, the more effective its heating effect will be. The ideal room temperature needed will be between 1 °C and 2 °C cooler than with conventional radiators. The resulting energy saving of 6 to 12% that the system achieves speaks volumes for it, as do its lower system and input temperatures. These systems are also extremely well suited for use in conjunction with equipment that produces renewable energy, such as Roth heat pumps.

■ Heating in winter

The evenly-distributed dispersion of heat over a wide surface area provides the user with a pleasant – practically ideal – room temperature profile. With the low temperature of the heating water it uses, the system is positively predestined for use in combination with environmentally friendly and energy-saving heat sources, with low-temperature and condensing technology and with alternative energy sources.

■ Cooling in summer

Uniform room cooling with no unpleasant draughts is achieved through the radiant cooling effect of the Roth system pipes integrated into the floor, wall and ceiling structures.



Guide Roth radiant heating and cooling systems	Building types						Areas of application			Installation surfaces			Load-distribution/covering layer		Insulation
	Residential and commercial buildings	Administrative buildings	Car dealerships/showrooms	Industrial/factory halls	Sports halls	Outdoor areas	New buildings	Existing buildings/renovation projects	Minimum installation height, minimum mass per unit area	Floor	Wall	Ceiling	Wet construction (screed/plaster)	Dry construction	integrated in the system
Original Tacker system	X	X	X	●			X	●		X			X		X
Flipfix tacker system	X	X	X	●			X	X	X	X			X		
Quick-Energy tacker system with QE high-efficiency screed	X	●					X	X	X	X			X		X
Knob system	X	X	X	X			X	●	X	X			X		X
ClimaComfort dry construction system	X	X			X		●	X	X	X			●	X	X
ClimaComfort panel system	X	X	●		●		X	X	X	X	X		X		X
ClimaComfort compact system	X ●	X	●				●	X ●	X	X					
Milling system	X	X	X				X	X		X			X		
Pipefix system	X	X	X	X	X	X	X	●		X	X	X	X		
Comfort ceilings for cooling and heating	X	X	X				X	X	X			X		X	
Large-scale applications		X	X	X	X	X	X			X	X	X	X		
Concrete core temperature control Isocore	●	X	●	X			X	●		X	X	X	X		

●: building-specific



Roth ServiceXtra

complete solutions with a service package



■ An extra portion of service

With "Roth ServiceXtra", Roth is offering its specialist trade partners a comprehensive service package. It includes the advisory, planning and after-sales services.

The needs of sanitary, heating and air-conditioning specialists take centre stage. With comprehensive **advice** and customised **planning** services, Roth has positioned itself as an expert system provider. The "Roth Information Assistant" (RIA) **service app** provides the installer with comprehensive practical information. **Roth Online** is an online web app provided to quickly create designs. An **installation service** for Roth radiant heating and cooling systems is also included in the offer. **Pre-assembled manifold stations** simplify the installation and save precious time as they are delivered to the site ready for connection. Comprehensive **after-sales services**, warranties and guarantees complete the service package.

In addition, all components of the overall system are finely tuned to each other, working together perfectly and ensuring maximum energy efficiency. The specialist company can use the documents prepared by Roth for applications to be submitted, for example to BAFA (Federal Office for Economic Affairs and Export Control) and as documentation for its customers.

The **Roth system solutions** combines product systems from renewable energy generation and efficient energy storage and distribution through to efficient complete systems.

Are you curious yet? You can find relevant documents at www.roth-werke.de/de/roth-downloads.htm.

■ Certified manufacturer

Our service is backed up by the "Certified manufacturer – Quality, Safety, Service" quality seal of the German Central Association of Plumbing, Heating, and Air Conditioning (Zentralverband Sanitär-Heizung-Klima (ZVSHK)).



Roth ServiceXtra

added value for specialist tradespeople



Advice

■ On-site advice across Germany

With its extensive field service operations all across Germany, Roth is your expert partner for technical support for all your projects. You will get a comprehensive, on-site overview of all Roth radiant heating and cooling systems and your advantages for the respective areas of application.

■ From single-family houses to large-scale applications

Those who would like to enjoy all the advantages of radiant heating and cooling know they can put their trust in the comprehensive Roth system range. Whether a single-family house or a production hall, our field service operations can provide you with advice and assistance.



RIA service app

■ Comprehensive, time-saving service from Roth

Roth offers the "Roth Information Assistant" (RIA) app, which simplifies the work of the installer. It provides extensive information and aids for the Roth radiant heating and cooling systems. The free app is straightforward and easy to use.

> Contact

your Roth contact person by chat/on the telephone

> Product information

Installation videos and documents about our systems

> System finder

Support in choosing the ideal system

> Projects

Documents to help you during commissioning





Planning

■ By professionals for practical use

Our large planning team prepares your projects and finds the best customised solution. Detailed planning is what we do at Roth. Our team of professionals "gets to the heart" of all of your orders.

■ Always a step ahead

In addition to the project planning for the radiant heating and cooling system, you will receive an installation recommendation prepared for the planned project. Heating requirement, heating surface and pipe network calculations as well as installation and assembly planning are also included in the range of services.



Quick design online

■ Register now and start right away

The Roth Online web application works independently from permanently installed software and offers the opportunity to plan underfloor heating online when calculating for quotations. Whole projects, including all the floors, flats and rooms can be recorded easily. Roth Online runs on every web browser and on any device. The results can be exported in PDF format.

■ Comprehensive calculation

Roth Online will calculate the underfloor heating according to DIN 1264. The calculation is based on the Roth product range – there are default settings for all the important parameters. Achieve your desired output values with no trouble at all.

■ Intelligent calculation of the materials required

Never forget to include materials or accessories in an order again. Roth Online will automatically calculate all the materials required for a project, total up the quantities used and optimise the choice of package sizes.

Roth ServiceXtra

the needs of our customers are our focus



Installation service

■ Roth accompanies you on the construction site

Roth organises the installation of all Roth radiant heating and cooling systems for you anywhere in Germany. The size of the assembly team can be flexibly adapted to the construction plan at any time.

■ Boosting your capacity

You can easily take on additional orders, even when you are at full capacity. We make it possible for you to meet your deadlines and realise your orders in a timely way. Your bottlenecks and inflexibility are things of the past.

■ “Hassle-free from start to finish” with Roth

Roth is by your side from the planning through to the installation of the underfloor heating. Roth works to provide simple, smooth project development. The installation teams work closely with you to guarantee the highest quality and are trained to work with all Roth radiant heating and cooling systems. The teams document the installation and keep a log of the pressure test. The invoice is sent directly to you by Roth.



Pre-assembled manifold stations

■ Efficient optimisation of labour costs and installation procedures

The manifold stations are available pre-assembled in different versions from stock, or they can be individually constructed based on the customer's needs and delivered ready for connection.

The manifold site can be marked in the object area. Depending on customer requirements, the delivery of doors and frames can be delayed.

Benefits:

- > sources of error are minimised
- > optimised material flow at the construction site
- > including templates for protection during plastering
- > flush-mounted cabinet door receives extra packaging for delivery

■ Quality made to measure

The ready-to-connect distribution systems can be used for all common installations. Whether you're after surface or flush-mounted cabinets, manifolds made of brass or plastic – at Roth, you can find the perfect solution for any site requirements.



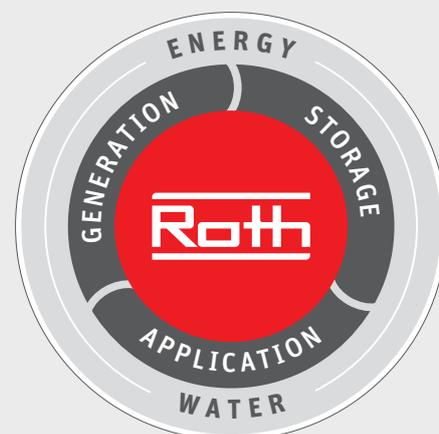
After-sales service

■ Quality for the safety of our customers

High quality products and services form the basis for world-wide insurance protection, which also covers long-term damage in the event of possible defects. A continued liability agreement guarantees insurance protection even in the event that production is discontinued.

Our guarantee document confirms the existence of insurance coverage with a face value of up to 5 million euros for injury to persons and property damage for each individual incident; this cover applies to every Roth radiant heating and cooling systems for a period of up to ten years after start-up.

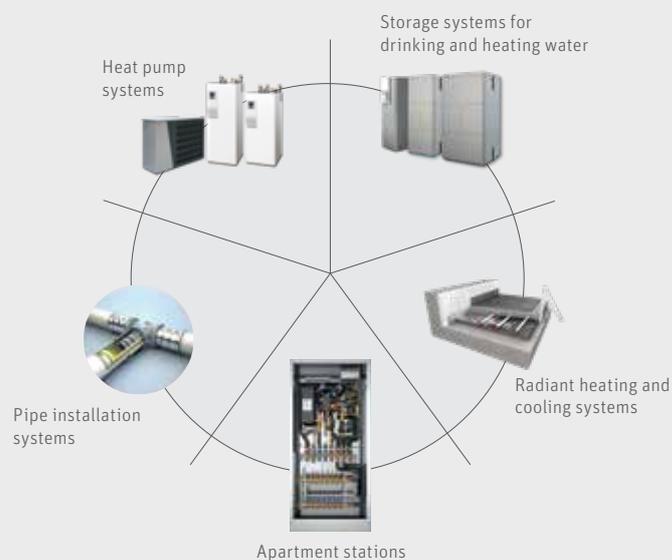
The ZVSHK (German Central Association of Plumbing, Heating and Air Conditioning) warranty agreement rounds out our after-sales service.



System solutions

■ Coordinated components from a single source

Roth always provides the optimally networked complete system for the various requirements. Your expert partner from planning to execution.



**Comfort
begins at home**





Roth system pipes

always on the safe side with S5 CoEx Technology

- > quality with five layers ("S5")
- > system expertise
- > perfect for all requirements



■ Roth system pipes – the right solution for every application

What constitutes the "right" pipe system will depend on the building in question and the needs of its owner. Roth offers the following system pipes that meet the most stringent of quality standards:

- > DUOPEX S5
- > X-PERT S5+
- > PERTEX S5
- > Alu-Laserflex
- > ClimaComfort S5

All pipes are manufactured using our unique, tried-and-tested five-layer CoEx technology. This makes them inseparably bound together to create a sandwich material with a high level of robustness and a long service life.

■ Roth DUOPEX S5 system pipe – the solution when only the very best will do

The five-layer Roth DUOPEX S5 system pipe holds its own against extremely high levels of stress. This pipe meets the most stringent requirements, even those associated with concrete core temperature control and industrial construction.

A continuous stress of 90 °C at an operating pressure of 6 bar and a short-term temperature increase to 110 °C pose no problem for the Roth DUOPEX S5 system pipe, which is interactively cross-linked all along its length.

■ Interactive cross-linking using an innovative and patented manufacturing process

All five layers of the DUOPEX S5 system pipe are co-extruded and then cross-linked along their entire length using a patented manufacturing process. This ensures connections at the molecular level, not only within the individual layers but also between them. As a result, the five-layered pipe is absolutely stable. Cross-linking improves the mechanical, thermal and chemical characteristics of the DUOPEX S5 system pipe, thus providing additional safety.

■ Roth X-PERT S5+ system pipe, PERTEX S5 and ClimaComfort S5 – the solution for challenging applications at low temperatures

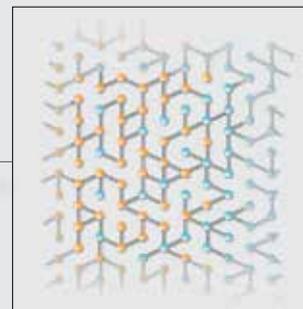
The highly flexible five-layer Roth system pipes, in combination with the Roth system panels, combine to create a system which has been optimised to meet the specific requirements of applications in the low-temperature range.

The high level of material finishing of the Roth system pipes is designed with extra safety in mind, to withstand a continuous thermal stress of 70 °C and short periods of thermal stress at 100 °C.

The system pipes have long-lasting pressure-resistance up to 6 bar with a generous safety reserve factor.



Polyethylene
 Polymer
 EVOH barrier layer
 Polymer
 Polyethylene



All the layers of the Roth DUOPEX S5 system pipe are co-extruded and then cross-linked.

■ **DUOPEX S5, X-PERT S5+ and Clima-Comfort S5 – with that extra level of safety thanks to its high-performance surface layer**

The yellow surface layer of the certified Roth system pipes represent the high-performance surface.

High resistance to wear and integrated UV stability provide additional protection, particularly for use in construction site conditions.

■ **Roth Alu-Laserflex system pipe – stable shape and diffusion-resistant**

The certified Alu-Laserflex system pipe is predestined for dry construction. The aluminium layer of the five-layer system pipe provides stability and an oxygen barrier. The red PE outer layer is the protective layer for the inner pipe.



Roth Alu-Laserflex Ø 14 and 16 mm

5 layers – 5 levels of safety

Roth system pipes offer maximum robustness thanks to their mechanical, thermal and chemical characteristics:

- > protection of the EVOH oxygen barrier against mechanical damage and the harmful effects of external factors such as heat and damp
- > highest level of resistance to deformation caused by concentrated mechanical loads
- > the workings of the radiant heating and cooling systems are optimally protected for subsequent craftsmen in accordance with the Verdingungsordnung für Bauleistungen (Contract Procedures for Building Works (VOB))
- > long service life through the avoidance of oxygen exchange
- > the five layers of the S5 CoEx technology provide optimised linear extension within a narrow tolerance



Approval no. 3V203 PE-Xc
 Approval no. 3V266 PE-RT
 Approval no. 3V331 PE-RT

Roth Original Tacker system

tried and tested time and again

- > perfectly coordinated system solution
- > proven Roth Original Tacker installation technique
- > pipes positioned to the centimetre
- > optimal heat distribution and cooling



■ Roth, the Tacker experts

This system solution features components designed to work together in perfect harmony, providing the basis for mastering sophisticated heating construction tasks. The Roth Original Tacker system (which has proven its worth a million times over) used in conjunction with Roth system pipes provides the ideal foundation for creating a heating supply system that will retain its value in the long term.

The high-quality ex-works prefabrication of all system components makes installation simple with the proven Roth Original Tacker installation technique. Perfection in the result, whether it is for residential, office or industrial construction projects.

■ Roth radiant heating and cooling – comfort can be so easy

Ease of assembly with a high degree of flexibility, paired with operational and building site safety and superior efficiency – this is what characterises Roth radiant heating and cooling systems, even when dealing with unusual floor plans.

The Roth Original Tacker system makes assembly really simple and enables pipes to be positioned to the centimetre, with a view to achieving optimal heat distribution and cooling, even in the most difficult installation situations.

The consistently high quality standards of the individual components and of the overall system are documented by a large number of marks of testing, monitoring and quality.





■ **Roth Original Tacker panels for radiant heating and cooling systems**

Easy, fast, conforming to relevant standards: system composite panels in polystyrene particulate foam. An excellent choice for heat and sound insulation.

They provide a self-enclosed space at the blink of an eye during the pipe-laying stage. This makes the unique, two-sided, self-adhesive overlapping possible.

A secure closure against damp prevents sound and thermal bridges from forming. An imprinted, five-centimetre installation grid makes it easier to put the system pipes exactly in place in accordance with precisely calculated installation distances.

Installation can be carried out on the Roth composite roll or the Roth composite folding panel.

■ **Made in Germany**

We develop and manufacture all Roth Original Tacker system components in Germany. Roth's range of radiant heating and cooling systems makes it the German market leader worldwide.



unique, two-sided, self-adhesive overlap



Approval no. 7F083
Approval no. 7F087-F

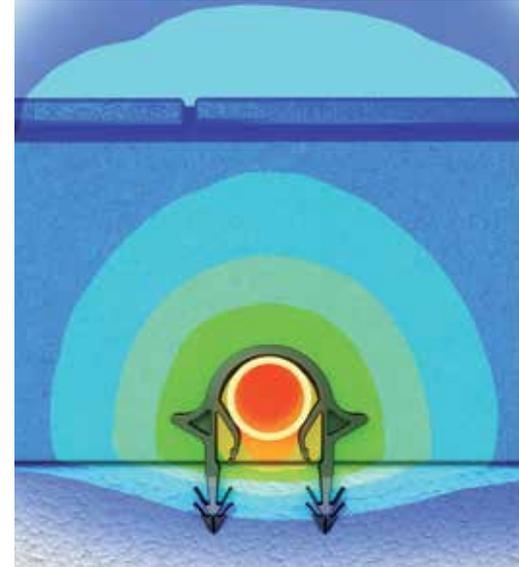
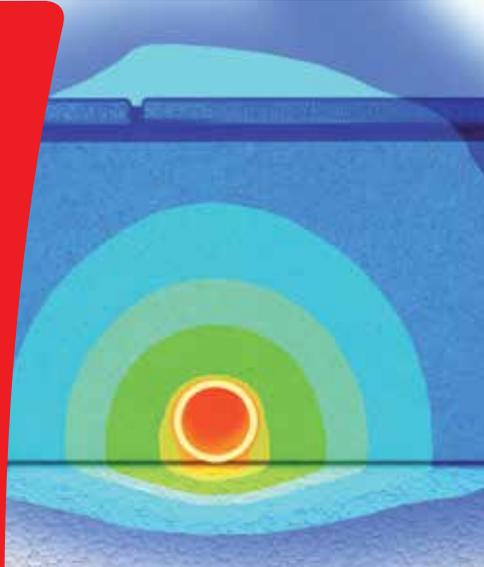


Go to technical information

Roth Original Tacker E^x clips

for that added extra in efficiency, comfort and safety

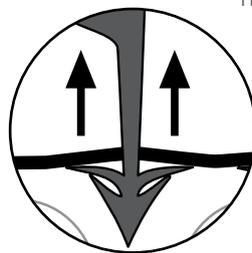
- > pipe raising function
 - pipes completely surrounded by screed
 - optimum transfer and distribution of heat and cooling
- > double anchor barb
 - maximum protection against pipes being ripped out
 - exceptional holding power
 - optimised for easy installation



■ Roth Original Tacker E^x clips for comprehensive energy transmission

Roth Original Tacker E^x clips are fitted with a pipe up-lift function, which ensures that they are installed at a predefined installation depth independently of the dimensions of the pipe. This function guarantees better energy distribution, as the screed always fully encases the pipe, even if the screed is slow-flowing. When used together with our new double barb component, the laying method delivers multiple **benefits** in terms of **energy efficiency, comfort and safety**.

■ Double anchor barb enables easier installation, maximum protection against pipes being ripped out and an unsurpassed holding power



The lower anchor barb in a Roth Original Tacker E^x clip is highly stable and equipped with a sharp cutting edge, while the anchor barb on top of this is exceptionally flexible. This special technology optimises the ease of installation.

The double anchor barb offers optimum protection against pipes being ripped out and maximum holding power, as well as ensuring that pipes are positioned securely and precisely in the Roth system composite panels and rolls, even in harsh site conditions.

■ Scientifically proven

Independent studies by well-known German testing body, the Institut für methodische Analysen, confirm the practical benefits of Roth Original Tacker E^x clips and their conformity with industrial standards. The way that E^x clips lift up the piping gives underfloor heating faster response times and improves control when the temperature changes. Test measurements show that the floor material **warms up up to 15 percent faster** when the pipe up-lift function is used.



Roth Original Tacker Speedstar

by professionals for practical use

- > spring-supported
- > ergonomic
- > easy to maintain



■ Faster installation speeds with the Roth Original Tacker Speedstar

Boasting a slimline housing and weighing just two kilogrammes, the Roth Original Tacker Speedstar stands out with its capacity of 135 Roth Original Tacker E^x clips. The magazine is filled quickly and simply by pushing the welded clip magazine in from above. This significantly reduces the number of times the magazine has to be reloaded during pipe installation.

While laying the pipes, the spring-assisted mechanism means the tacker does not need to be lifted up. The preformed slant in the housing then allows the tacker to glide easily over the clips. The extremely short lifting distance makes it possible to place pipes with very little time or effort required. The Roth Original Tacker Speedstar is height adjustable and can be adjusted to the height of any user. The tacker handle also ensures optimal force transmission and secure handling.



- 1 ergonomic handle
- 2 captive weight to push clips into position
- 3 removable clamps and fitting screw for easy maintenance
- 4 tacker requires no lifting thanks to spring-assisted mechanism and slant in the tacker housing
- 5 collar screw with pressure pin for precise positioning of the ball coupling



Roth Flipfix tacker system

on the insulation, get set, go!

- > for use with already existing insulation
- > proven Roth Original Tacker installation technique
- > adjustable installation configurations and distances
- > only one system component
- > waste-free laying
- > no specialised tools required
- > compact dimensions for storage and transport



■ For all areas of application – just unfold it and you're done

The Flipfix tacker system is suitable for use where insulation made of conventional EPS and PU materials, as well as mineral insulation materials, is installed on site. The easy-to-install system is fitted using the tried-and-tested Roth Original Tacker laying technique.

The two-millimetre thick Roth Flipfix system panel is available in prefabricated five-metre strips. It is folded down to a square metre in a practical zigzag pattern.

Flipfix system panels are simply unfolded on-site and quickly laid without producing any waste. The butt joints are connected only along their long edges using adhesive tape – this quickly produces a closed insulating layer.

■ Recommended implementation of Roth Flipfix with mineral fibre insulation and flow screed from Knauf

Joint experiments carried out with Knauf have confirmed that the Roth Flipfix tacker system can be installed with the Knauf TPT O1 and TPT O3 impact sound insulation panels made of glass wool and the Knauf FE 50 Largo flow screed without any problems.



*The thickness of the panels should be at least 30 mm
 TPT O1 suitable for traffic loads of up to 3 kPa (kN/m²)
 TPT O3 suitable for traffic loads of up to 5 kPa (kN/m²)



Go to technical information

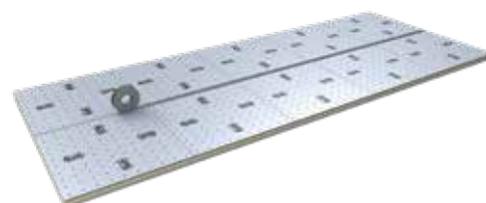
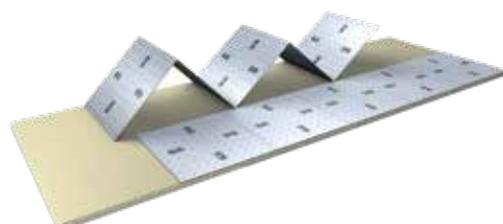


Approval no. 7F395-F
 Approval no. 7F400-F



Roth Flipfix tacker system

- > easy to assemble, time-saving and simple to install thanks to prefabricated 5 m² components folded into one square metre
- > installation grid 5 x 5 cm
- > joining seams with adhesive tape is easy
- > no film layer required to cover the insulation layer
- > no precautions against "floating" needed
- > building material class B2 (normal flammability)



Roth Quick-Energy tacker system with QE high-efficiency screed

fast reaction with minimum installation thickness



■ Convenient fast reaction system with minimal installation thickness

The Roth Quick-Energy tacker system combines ultra-fast energy supply with optimal convenience in terms of comfort and impact sound insulation. With its thin layers, the radiant heating and cooling system with QE high-efficiency screed draws on Roth's Original Tacker laying technique. It comes with a pipe coverage of only 20 millimetres. Thanks to its minimal installation height, the Roth Quick-Energy tacker system guarantees a rapid response.

■ High-performance components for effective solutions

It is the optimum combination of Roth product components that creates the high-performance system solution. The tacker system is used with Roth EPS DES 25-2 system composite panels, 14-millimetre Roth system pipes, the red Roth tacker clips and the QE high-efficiency screed to create a radiant heating and cooling system with an installation height of just 60 millimetres.

The system can be used as a superstructure on concrete ceilings and other ceiling structures. The base must be load-bearing and level. The system also improves impact sound insulation. The fully tested system installation is approved for transport loads of up to two kilonewtons per square metre.





Roth Quick-Energy tacker system with QE high-efficiency screed, Single-family house in Dautphetal, Germany.

■ **Excellent insulation properties providing maximum improvement in footfall sound insulation with minimum installation thickness**

The Roth EPS DES 25-2 system composite panel, which provides a combination of heat and impact sound insulation, reduces the installation height of the floor by up to ten millimetres compared to standard panels with impact sound insulation. Consequently, panel heights of just 25 mm are sufficient to insulate ceilings between living quarters to conform with regulations.

Roth Quick-Energy tacker system with QE high-efficiency screed

- > convenient fast reaction system
- > minimum installation height, fastest heat delivery
- > minimised surface weight
- > improved impact sound insulation
- > QE high-efficiency screed
- > for new construction and renovation
- > reduced installation time
- > for residential and commercial property solutions
- > system certification



Approval no. 7F397-F



Go to technical information

Roth knob system

flexible, problem-free, perfect

- > flexible
- > easy to install
- > optimal knob shape
- > can be used for perpendicular and diagonal laying
- > environmentally friendly installation with very little waste



■ Roth knob panels and accessories

Roth offers a knob panel with high load-bearing capacity and low installation height for use in buildings with increased stress requirements:

- > The special geometry of the knob and its alignment offers the perfect base for laying the Roth system pipes – even with low outside temperatures.
- > Without the use of additional tools, the Roth system pipe is pressed into the knobs with the foot, where it engages audibly and securely.
- > Suitable for all Roth system pipes of diameters 14-17 mm.
- > The door area between two rooms can simply be bridged with the Roth alignment knob in connection with the Roth alignment knob film.
- > When every millimetre of installation height counts: the Roth 14-17 EPS DEO 10 knob panel can even be used when renovating residential buildings.

■ Roth knob film 14 to 17 mm – high quality and stability

The 14-17 mm Roth knob film is suitable for laying on insulation on site. This is ideal in renovation projects, for example, where insulation is already in place and there is only a low installation height available. The highly effective Roth knob film is designed to meet demanding load requirements: for use in industrial radiant heating applications, for example.

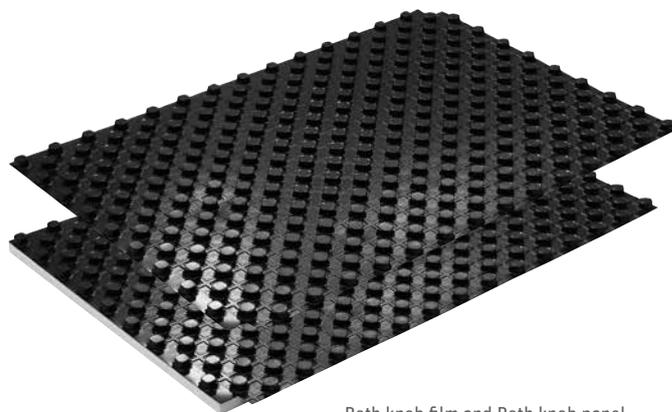




■ An extremely flexible system

The Roth knob system is characterised by a high degree of flexibility and straightforward assembly.

The undercut and the geometry of the individual knobs make it easy to install and secure the system pipes in place. The foam on the back of each individual knob creates an extremely stable installation area which is good to walk on. The diagonal fixing method makes it easier to lay Roth system pipes diagonally.



Roth knob film and Roth knob panel

Roth knob system

- > available in two EPS qualities: EPS DES 30-2 (1450 x 950 x 50 mm) and EPS DE0 10 (1450 x 950 x 30 mm)
- > support plate and cover film made of polystyrene, building material class B2
- > 5-cm knob grid: all installation distances and shapes are possible within the 5-cm grid
- > effective installation area/panel: 1.26 m²
- > assembled into a single unit ex-works
- > overlap on two sides so that elements can be interconnected
- > improved impact sound insulation



Approval no. 7F396-F
Approval no. 7F399-F



Go to technical information

Roth ClimaComfort dry construction system

low installation height and flexible installation

- > ideal for modernisation projects
- > easy, flexible installation
- > lightweight layer
- > heat conducting lamellas made of high-performance aluminium
- > suitable for dry and wet construction
- > flexible pipe laying and placement direction



Roth ClimaComfort dry construction system;
Frauenkirche church, Dresden, Germany

■ Universal components for flexible solutions

The Roth ClimaComfort dry construction system perfectly satisfies the installation requirements for renovation. It features a low installation height of 25 millimetres for the 14- and 16-millimetre pipe cross-sections.

It can be installed on existing flat flooring that has a sufficient load-bearing capacity or on a timber beam construction. The perfectly matched components guarantee an ideal complete system from Roth.

■ Only one type of system panel for all applications

For easy installation, only one type of system panel is used. This ensures that installation is straightforward, secure and quick. The Roth ClimaComfort dry construction system panels can be combined in all orientations along its 30 cm grid and can be cut to size to fit the geometry of the room. Thanks to a special groove/notch system, precise positioning and alignment of the system panels is guaranteed.

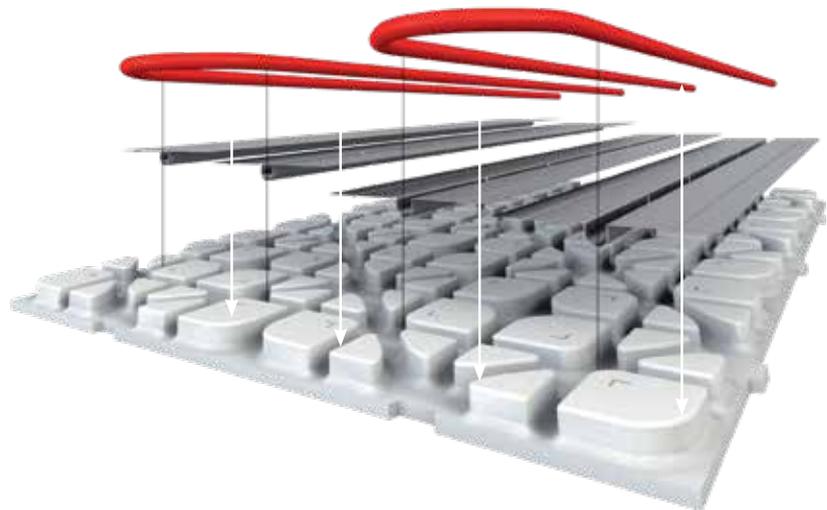
The panel structure permits the heat-conducting lamellas to be affixed simply and securely in various directions. This allows Roth 14 and 16-millimetre Alu-Laserflex system pipes to be laid horizontally, vertically or diagonally. This makes the system particularly suitable for renovation projects and permits a wide range of architectural design freedom, even if the room in question poses difficulties.





■ **Heat-conducting plates made of high-performance aluminium for optimum heat output**

The baffles made of high-performance aluminium guarantee very good heat transfer. The heat-conducting lamellas have predetermined breaking points so that they can be separated into the desired lengths. The smallest possible installation spacing for Roth Alu-Laserflex system pipe is 15 centimetres.



Approval no. 7F402-F



Go to technical information

Roth ClimaComfort panel system

all-round comfort guaranteed

- > energy-efficient, environmentally friendly and highly responsive surface temperature control
- > reduced energy consumption
- > quick assembly times
- > low mass per unit area
- > system pipes easily lock into place
- > unrestricted pipe installation and surface lining



■ Experience all-round comfort in existing and new buildings

The Roth ClimaComfort panel system transforms floors, walls and ceilings into highly efficient and responsive surfaces that distribute energy in order to heat and cool rooms. Roth has developed one type of panel that can be used for all applications. Storage and installation require minimum effort and offer maximum convenience. Unlike conventional wall-mounted radiators, the Roth ClimaComfort panel system provides an even amount of radiant heat from all sides, resulting in a pleasant room temperature. Practically the entire surface area of a room's walls, floor and ceilings can be used for heating/ cooling purposes. In winter, a room can be heated via the floor and/or walls, whilst in summer it can be cooled via the ceiling and/or walls.

■ Economical use of energy and the perfect partner for Roth heat pumps

The system's special energy-saving mode of operation when heating up to an inlet temperature of 35 °C has been optimised for use with the Roth heat pump. Combined with intelligent control technologies, this creates enormous potential for saving energy. Roth's heat pumps complete a range of products which represent a uniform

energy concept specifically designed for renovation projects and new buildings.

■ No restrictions on pipe laying and surface covering – the perfect fit every time

The ClimaComfort panel's design makes for simple, safe pipe installation. The panel dimensions at 25 millimetres high correspond to the dry construction standard size (625 x 1200 mm); the panels can be cut to meet the requirements of any room, irrespective of its size. The system pipe is simply laid out in a grid for an installation spacing of 10 centimetres. To change the direction of the pipe, the end piece is inserted into the system panel.

The ClimaComfort panel consists of an EPS support plate, which is permanently bonded to an aluminium heat-conducting plate. This makes it possible for heating or cooling energy to be transferred evenly and quickly.

The dry construction method keeps assembly times short (no drying phases) and the perfectly coordinated system components ensure that the ClimaComfort panel system responds extremely quickly.

■ Walls and ceilings

The 14-mm ClimaComfort panels can be easily mounted on conventional timber-framed structures for installations in walls or on ceilings. On external walls, the structure can then be easily back-filled with suitable insulating material.

■ Floor

The 14-mm as well as the 16-mm ClimaComfort panels can be used for the floor structure.





■ **Roth ClimaComfort panel system – for direct flooring installation**

Floor installations involving the Roth ClimaComfort panel system can be covered directly with tiles or parquet flooring using suitable adhesives.

Parquet flooring can also be applied directly on to the Roth ClimaComfort panel system. Wooden floors must be approved for use with underfloor heating by the manufacturer.

■ **The Fraunhofer Institute has confirmed the room comfort features of the ClimaComfort panel system**

The positive effects of lining external walls to begin with can be seen in the results of a "comfort study" carried out by the Fraunhofer Institute for Building Physics (IBP). It also reveals that the heat conduction film eliminates the thermal bridges that can interfere with heating performance. If heating or cooling requirements are particularly high, the internal walls can be lined too.

■ **The ceiling as a surface for distributing energy, especially for cooling purposes**

If a room's floor and walls do not cover the energy requirements in question, the ceiling can be brought into play. It makes good sense to line the ceiling, especially if you are converting an attic.

■ **Optimisation thanks to the highly efficient ClimaComfort heat conduction film**

In existing buildings, condensation can make rooms less comfortable and can cause mould formation in critical areas, such as in window reveals and where the ceilings meet the walls. With Roth's high-performance heat conduction film, even condensation in these areas can be prevented by increasing the surface temperature.

The heat conduction film consists of a high-performance heat-conducting composite film and a 5-mm flexible, high-performance insulating layer.



Roth ClimaComfort high-performance temperature control skirting with heat-conducting film and flexible, high-performance insulation



Approval no. 7F309-F/D/W

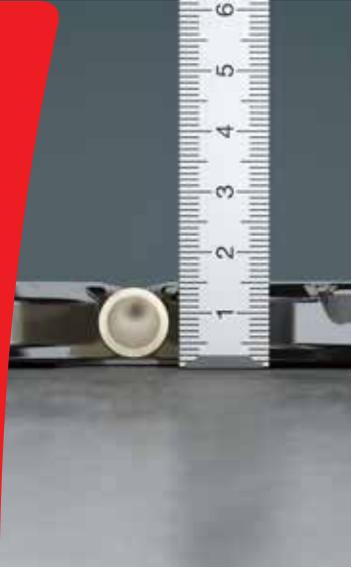


Go to technical information

Roth ClimaComfort compact system

Renovation made easy

- > minimum installation height of 17 mm
- > installation on existing screeds
- > quick, simple and universal assembly, even in unusually shaped rooms that present difficulties



■ Heating and cooling for renovation projects and new builds

Homeowners often want to retrofit under-floor heating into their houses or flats when renovating existing rooms. The Roth ClimaComfort compact system is specially suited for installation on existing screeds for renovations. The extremely low installation set-up of 17 mm and the resulting high system reaction speed open up new opportunities for planning and installation. Depending on the location and conditions of the room in question, the Roth ClimaComfort compact system can be installed without the need to create a step.

For installation on the floor, the installation set-up made of system panels and system pipe is filled with a quick-setting filling and potting compound with high performance capacity. It is easy to introduce this completely through the filling and ventilation openings. The system panel, system pipe and subsurface together make up a solid, load-bearing composite. The system is retrofitted without having to prise up the floor (a time-intensive procedure that generates a lot of dirt).





■ **Minimum installation height, maximum comfort**

The 14-mm high ClimaComfort compact system panel is made of a partially crystalline material. The material and the unique panel structure are responsible for the great stability and toughness. This ensures a high degree of resistance to impact, even though it is easy to install. The system panel can be cut to fit easily and precisely, without cracks forming. The self-adhesive system panel is mounted on the existing subsurface. The special shape with undercutting makes reliable installation of the system pipe possible in a 7.5 cm grid. Diagonal placement at intervals of 10.5 cm is possible.

■ **The optimal choice for bathroom renovations**

When renovating a bathroom by combining the ClimaComfort compact system with an existing heating system with radiators, you can make use of the heat in the return pipes; this is an environmentally friendly method of heating, as the energy is used twice.

A one-stop supplier of energy and sanitary systems for modern building technology, Roth offers high-quality genuine glass showers and pipe installation systems for connecting up drinking and domestic water when carrying out bathroom renovation projects.

■ **Fraunhofer UMSICHT Institute for environmental, safety and energy technology honours the Roth ClimaComfort compact system panel**

The Fraunhofer UMSICHT Institute of Oberhausen, Germany, has awarded Roth's ClimaComfort Compact system panel the prize for innovative environmental protection in the field of plastics processing. The panel is made of 100% recycled PET.

Roth ClimaComfort compact system

- > rapid reaction when heating and cooling (ideal when used in conjunction with Roth heat pumps)
- > ClimaComfort S5 system pipe 11 mm of proven X-PERT S5+ quality
- > ClimaComfort compact system panel offers excellent toughness combined with flexibility for easy handling
- > installation on existing screeds (ideal for renovating kitchens and bathrooms, for example)
- > low heating water temperatures lead to energy savings
- > compatible module in the Roth radiant heating and cooling systems product line



Approval no. 7F221-F



Go to technical information

Roth milling system

get started easily with any additional installation layout

- > minimal structural requirements
- > no additional floor structure
- > fast commissioning



■ Milling technique on existing screed

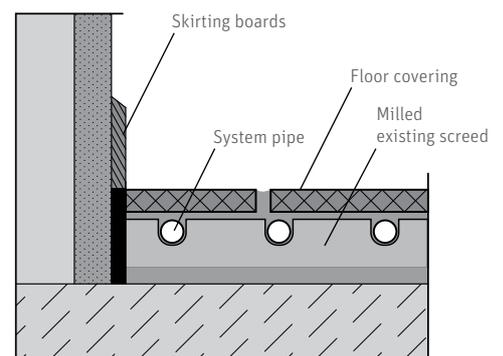
Underfloor heating can also be used in existing buildings **without changing the current depth of the screed** by cutting grooves into the screed for the underfloor heating pipes. The grooves for the system pipes are cut into the existing screed with a special floor milling machine. This also works for cement, anhydride and mastic asphalt screed. This allows the floor covering to be put down immediately after the system pipes have been installed into the pre-cut grooves. A specialist technician (Roth installation service) will have to carry out an inspection beforehand. The grooves are normally cut into existing screed, but this can also be done in new buildings. The grooves are cut at the agreed installation spacing or the spacing is calculated. The minimum thickness of the screed must be 40 mm.

■ “Hassle-free from start to finish” with Roth

Roth is by your side from the planning through to the installation of the underfloor heating. Roth works to provide simple, smooth project development. The installation teams will work closely with you to guarantee the highest quality. The teams document the installation and keep a log of the pressure test.

■ Roth provides safety

Advice, planning, materials and installation: with Roth, you get everything from one source!





■ Procedure

- › Installer contacts a Roth field employee or Roth installation service.
- › Roth creates the planning documents and a materials quote.
- › A quote on the installation comes from Roth installation service.
- › Clarification of questions about the implementation by the installation service.
- › Materials are delivered via the selected wholesaler.
- › Expert installation carried out by installation teams.
- › Handover of installation documentation (printed logs, manifold label, dimensions, photo documentation).
- › Calculation of the installation directly from Roth to the installer:

Roth is a contract/warranty partner

■ Roth installation services

- › Inspection of screed thickness.
- › Milling of grooves into the existing screed at the agreed installation spacing.
- › Installation of the system pipes in the grooves.
- › Connection of the system pipes to the heating circuit distributor.
- › Leak testing for the heating circuits and creation of leak test protocol.
- › Labelling of the heating circuit distributor.
- › Photo documentation
- › Handover of system documentation.
- › Roth manufacturer warranty

Roth milling system

- › minimal requirements on construction – extensive renovation of the existing screed not necessary
- › doors and window sills stay at the same height
- › almost entirely dust-free installation
- › optimum heat distribution
- › fast reaction times due to low structural height
- › reduction of flow temperatures and water quantities
- › use of novel heating technologies in existing buildings

System solutions for passageways

Roth Floorfix

- > easy to install
- > variable system solutions
- > impact sound insulation confirmed
- > no additional installation height



■ Optimal temperature in passageways

Rooms in which heating circuit manifolds for underfloor heating systems are installed or rooms through which a large number of supply lines for heating circuits for other rooms run must be protected against overheating as a result of uncontrolled heat emission. The ability to control the room temperature of these rooms must also be ensured in accordance with **GEG § 63 paragraph 1** (German Building Energy Act).

Heating circuit distributors are often installed in halls or corridors. All the surrounding rooms usually have a temperature of at least 20 °C (24 °C in the bathroom), which means that it is not always possible to guarantee a room temperature below 20 °C in the hall or the corridor when the room is being used as intended. There is no, or minimal, heating load in these rooms.

Also rooms smaller than 6 m², e.g. supply closets, for which the GEG specifications do not require individual room control, must be protected from overheating and surface temperatures that are too high.

Roth Floorfix, the system solution for passageways fulfils these conditions. The system ensures that the release of heat is controlled and the temperatures in passageways are regulated.

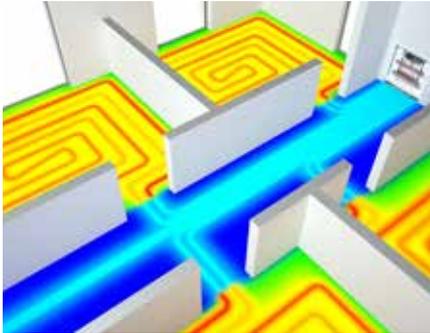
■ Easy-to-install system solution with the Floorfix system package

The Floorfix system package consists of stable Duo System composite panels coated on both sides. The transparent Floorfix folding panels are also included, through which the continuous pipes laid underneath are visible. That means that the pipelines of the heating circuits can be easily attached using our tried-and-true method with the Roth Original Tacker system without damaging the pipes below.

The Floorfix folding panel is made of transparent polypropylene (PP).

■ Properties of the impact sound insulation remain unchanged

The specified improved impact sound insulation of the Roth Duo system composite panels is not negatively affected by the grooves cut to embed the pipes. This has been tested and confirmed by the Fraunhofer Institute Stuttgart.

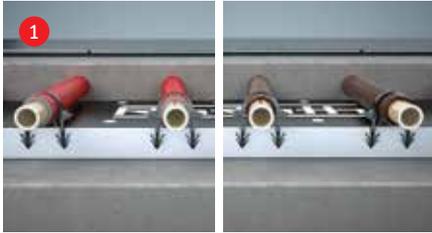


■ **Variants**

It is also possible to carry out the installation in passageways with a combination of other Roth systems.

■ **Heat regulation with Roth Floorfix**

Roth Floorfix minimises the undesired, unregulated thermal output of the continuous supply lines. The passageway can be equipped with a comfortable individual room control by means of a separate heating circuit.



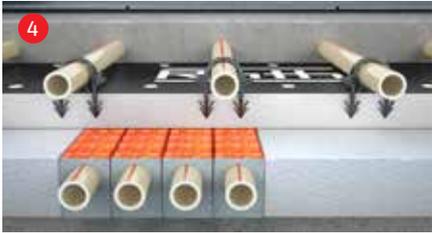
1 Floor construction without smoothing layer or additional insulation



2 Floor construction without smoothing layer or additional insulation



3 Floor construction without smoothing layer or additional insulation for impact sound



4 Floor construction with smoothing layer or additional insulation

Comfort ceilings for cooling and heating

Roth ComfoTop comfort ceilings

- > customised continuous installation without connection fittings
- > low mass per unit area



■ **Intelligent temperature regulation.** **Sustainable thinking.** **Individualised planning.**

The comfort ceilings for cooling and heating designed as a closed system create a comfortable temperature in the room. The greatest part of the heat output is radiation. The resulting low radiation asymmetry of the surfaces that surround the room has a positive influence on the users' comfort levels. The selected media temperatures can provide both heating and cooling with the Roth ceiling solutions.

Experts recognise the essential criteria for a modern heating and cooling system: high level of user comfort, energy savings and hygiene plus the maximum level of freedom in architectural design.

The innovative comfort ceilings for cooling and heating from Roth fulfil all the above criteria: they are based on the principle of "silent cooling", generating cosy warmth in the winter and comfortable, cool room

temperatures in the summer. Roth system solutions make it possible to implement installations in various situations specific to each property.

Thanks to the variability of the various system solutions, even strange and extraordinary layouts can be covered. This means Roth comfort ceilings can create the maximum level of freedom in the architectural design and enable the optimum distribution of cooling and warmth.

The unique Roth brand promise rings true: the highest quality and dependability, from manufacture through project planning, all the way on to assembly.

■ **Operating principle**

The operating principle of the Roth comfort ceilings is that the surface temperature is set a few degrees above or below the room temperature.

Radiation exchange with the ceiling causes the temperature of the walls and floor to change. The total output consists of 2/3 radiation and 1/3 natural convection. The thermal output is determined by the difference between the room temperature and the average surface temperature. A greater temperature difference means a greater output. The customisable size of the Roth comfort ceilings allows inactive ceiling areas to be reduced to a minimum.

■ **Invisible and uncomplicated**

Roth comfort ceilings save on space and resources. They are perfectly suited for renewable energy sources, such as solar heating, heat pumps, geothermal energy collectors and geothermal piles.

It is also possible to use conventional cooling and heating technologies.



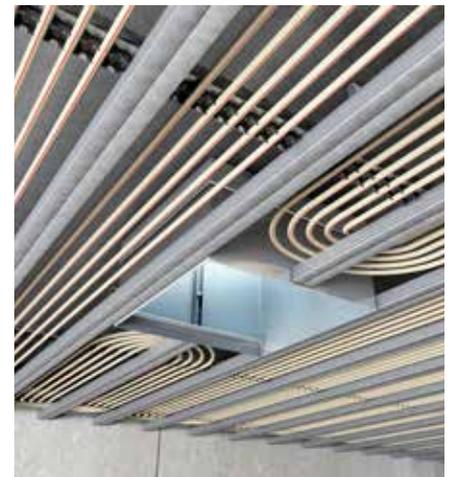
Foto: Toni Rappersberger

■ **Easy, customised continuous installation for rooms of all shapes**

The Roth ComfoTop comfort ceiling for cooling and heating makes it easier than ever before for architects and planners. The system does not require extensive planning or preparation. Quite the contrary, it enables customised, continuous installation without connection fittings all the way to the manifold. This takes the risk of water damage almost down to zero. Furthermore, construction site-related changes in the installation can be implemented without any problems at any time (e.g. ceiling installations, lights).

■ **Roth ComfoTop comfort ceilings – maximum freedom of design**

The flexibility of the ComfoTop comfort ceiling makes it easy to install. Ceiling structures determined by the construction can be easily implemented with unrestricted pipe installation for all the requirements of the property. The ComfoTop comfort ceiling system has been tested in accordance with DIN EN 14240 "Cooling output" and DIN EN 14037 "Heating output". The low areal weight and reduced installation height are special features of the system. The right solution for every room shape.



Roth ComfoTop comfort ceilings

- > no extensive planning required
- > continuous installation
- > lower installation height
- > no preparation required
- > customised pipe installation according to property-specific conditions
- > customised installation (e.g. illumination/audio systems) possible
- > adaptations with module or track changes
- > effective installation of ceiling areas

Roth large-scale applications

flexible, resilient and efficient

- > flexible pipe laying
- > high-performance floor structure
- > its low input temperatures save energy
- > optimal room temperature profile



Roth industrial floor heating,
Roth Werke GmbH production hall, Dautphetal, Germany

■ Roth large-scale applications – high-performance systems for heating and cooling

Roth offers special large-scale solutions for surface temperature control in buildings with exceptional load or structural requirements. This is where Roth pipefix systems come into play, for example, in industrial premises and open spaces. In addition to the pipefix system, the Roth ClimaComfort TBS dry construction system is also available for sport floors. To make use of the storage capacity offered by massive concrete ceilings and wall modules, Roth offers Isocore concrete core temperature control.

■ Roth pipefix system – ready for any challenge

When laying pipes with dimensions of 20 to 25 mm, the pipefix system also offers flexibility in terms of installation arrangements and distances. Thanks to its flexibility, it makes installation easy in any floor, wall or ceiling constructions adapted to meet individual building requirements on site.

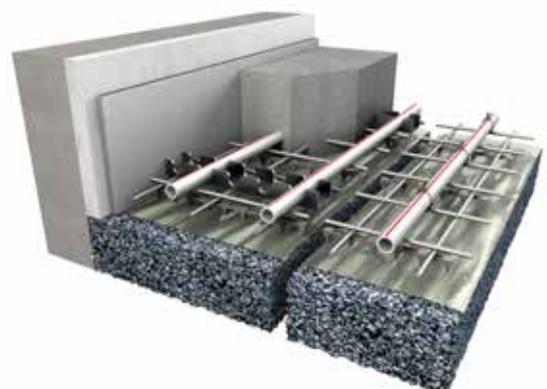
The Roth pipefix system can be used wherever there are any building-specific requirements with regard to installing pipes for radiant heating and cooling systems. Aside from housing construction, the system can also be applied to industrial premises, commercial and office spaces, exhibition rooms, museums, universities, schools, church, sports and multifunctional halls, open spaces and undersoil sports field heating, and in stadium construction.



Approval no. 7F386-F



Go to technical information





Roth industrial radiant heating,
SMA Solar Technology production hall, Niestetal, Germany

■ **Roth industrial radiant heating – withstanding even the most demanding structural requirements**

For high load-bearing requirements in buildings housing heavy machinery, where forklift trucks and HGVs operate, where aircraft are maintained or where high bay warehousing and logistics centres are operated, a strong floor structure is required. Roth industrial radiant heating also saves energy thanks to the low inlet temperatures of the heating water, while pleasant temperatures in those parts of a room where people spend time then drop towards the ceiling to make for an optimal room temperature profile.

Cycle heat and waste heat from production can easily be used to heat Roth industrial radiant heating units, thus minimising operating costs and enabling investment costs to be paid off quickly.

Roth industrial radiant heating can be integrated into all static ceiling and floor constructions and is suited for all types of concrete (reinforced concrete, steel fibre concrete, rolled concrete).

■ **Roth outdoor panel heating**

Roth outdoor area heating is designed to keep car parks, access ramps, car wash facilities or open spaces in pedestrian zones clear of snow and ice. Safety for pedestrians and vehicles can be ensured without using grit. There will no longer be any expenditures for grit and cleaning operations.



Harley Davidson office and sales building,
Western Michigan, USA

Roth sport floors

for all types of use

- > flexible for special project-specific structural requirements
- > optimal comfort
- > ideal surface temperatures
- > pipefix support elements for sprung floors
- > quick implementation
- > easy to install and maintain
- > highly durable Roth system pipes
- > energy-efficient system solution



Roth sport floor heating,
Multi-purpose hall, Dautphetal, Germany

■ Roth sport floor heating – for all kinds of sport floors

Roth has a specially developed pipe fixing system variant of the pipefix system for flexible-surface sprung floors. The support elements for securely fixing the system pipes at the measured installation spacing consist of a prefabricated plastic profile with integrated pipe holders. Using coordinated fixing brackets, the support elements in the Roth pipefix system can be optimally integrated into any sprung floor construction. Direct installation on top of the insulation layer or the existing substructure is also possible.

This system is modularly constructed and consists of only a few system components with a high degree of prefabrication. It can also be combined with the various sprung floor constructions supplied by the different sports floor manufacturers.

Architects, planners and structural engineers will have all the flexibility they need to transform all kinds of usage possibilities into reality.



Pipefix element and retaining bracket for fixing and guiding pipes between the sprung floor supports



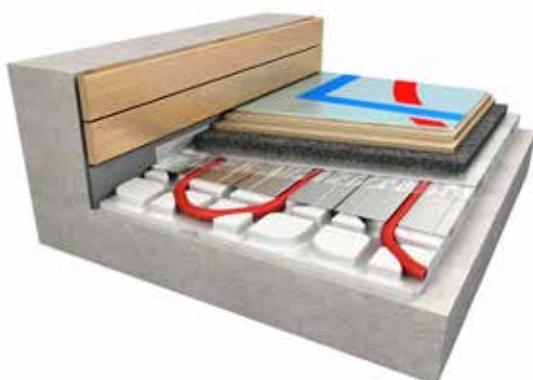
Roth sport floor heating,
Multi-purpose hall, Dautphetal, Germany

■ **Roth ClimaComfort dry construction system for sport flooring**

In addition to traditional sprung floor heating systems, Roth also provides system solutions for surface temperature control in all other sport floor constructions. Flexible-surface sport floors with an elastic layer (sandwich construction) are produced using the Roth ClimaComfort dry construction system.



The heating circuit for the Roth ClimaComfort TBS radiant heating system in the Hinterlandhalle in Dautphetal is connected using a Tichelmann distribution network



Approval no. 7F289-F
Approval no. 7F416-F
Approval no. 7F414-F

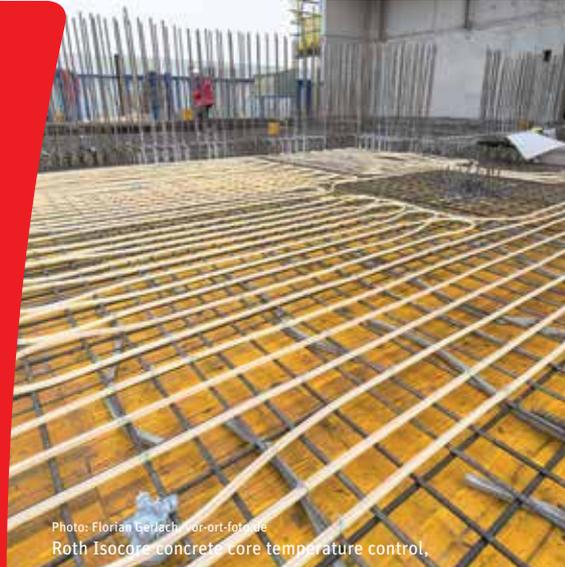


Go to technical information

Roth Isocore concrete core temperature control

forward-looking system technology

- > individualised advice
- > building-specific system solutions
- > variable installation techniques
- > system components that work in harmony with one another
- > comprehensive service



■ Exploiting the heat storage potential of concrete with Roth concrete core temperature control

Roth Isocore concrete core temperature control enables a building's own temperature to be used when temperatures rise or drop by integrating a system of water pipes into solid concrete ceilings and walls, taking advantage of their capacity to store energy. Roth Isocore concrete core temperature control is ideally suited for use in the construction of new office and administrative buildings with high concrete core heat storage potential. Thanks to low system temperatures when

heating is required and the relatively high system temperatures when cooling is what is needed, Roth Isocore can be used in combination with renewable energy sources, such as heat pump systems, to excellent effect. The Roth Isocore is an energy-efficient, environmentally friendly and future-ready system designed for all-year-round building temperature control that keeps environmental factors at the centre of its focus.

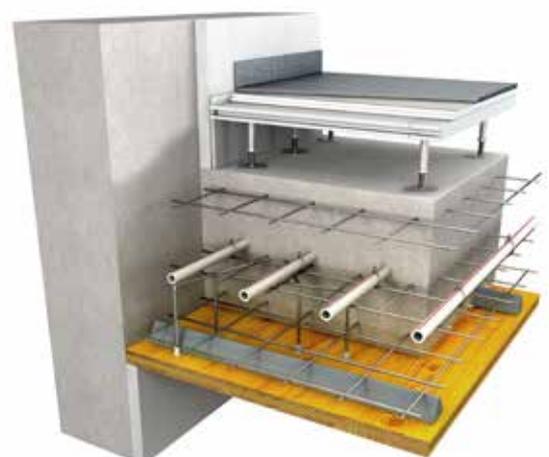




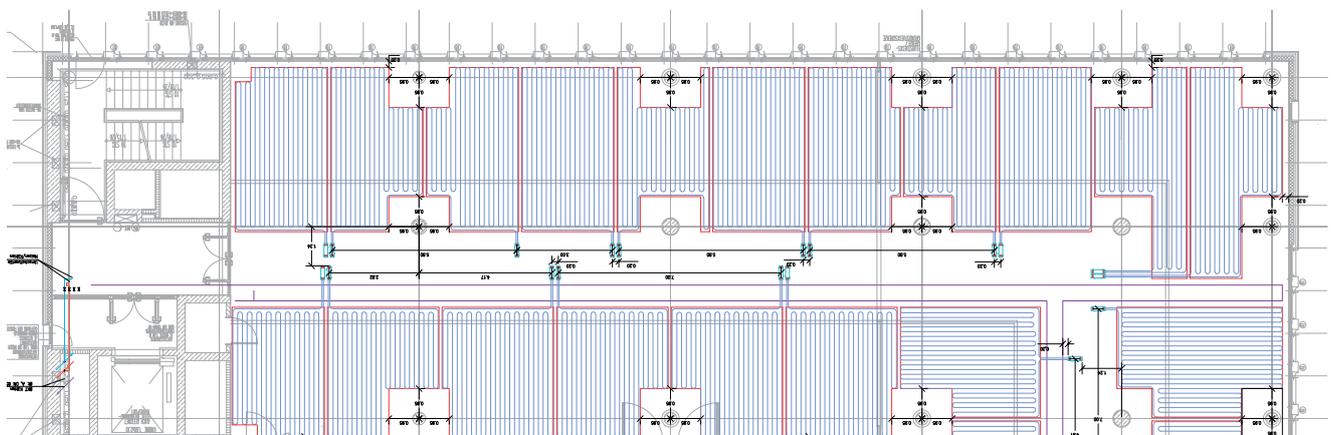
Photo: HÖCHTIEF Projektentwicklung GmbH
 Roth Isocore concrete core temperature control,
 Central bus station, Munich, Germany

Roth Isocore concrete core temperature control

- > individual building-specific system solutions adapted to suit on-site construction specifications for solid ceiling and wall modules
- > installation techniques can be varied to suit the specific requirements of each building
- > variable strategies for integrating the hydraulics into a building's overall engineering system
- > validated system performance data that conforms to all relevant standards
- > comprehensive Roth planning and advice service
- > construction site guidance and building-specific system acceptance
- > support from experts with many years' experience in project development

■ Service and planning

Roth provides you with support during the planning process and offers a comprehensive range of services





Roth control technology for comfort and convenience



EnergyLogic Touchline S wireless controls, heating/cooling



EnergyLogic Basicline wired controls for individual rooms, heating



EnergyLogic Basicline wired controls for individual rooms, heating/cooling

■ Temperature regulation technology

Roth controls for individual rooms guarantee the highest levels of efficiency and effectiveness. They are specially adapted to the needs of the application (whether it be heating or heating and cooling, at 230 V or 24 V) and are extremely easy to use. Due to the very small amount of wiring work it requires, wireless control, while it is also excellent for new builds, is particularly suitable for renovation projects.

Roth EnergyLogic Touchline S

innovative regulation of radiant heating and cooling systems

- > flexible
- > comfortable
- > slim, modern housing design
- > super slim – rounded front
- > easy to maintain and clean
- > energy-efficient operation
- > app for flexible usage



Touchline S Smart
Touchline S Smart IR



Touchline S Sense

■ More comfortable living with the new control system

The innovative radio control system for radiant heating and cooling systems is equipped with the newest electronic and software modules. Numerous system solutions and functions are possible, such as the integration into smart home applications with speech assistance. The new product range includes the four new Touchline S in-room control units Smart, Smart IR, Sense and Standard for individual room control.

The Roth EnergyLogic Touchline S controls heating and cooling conveniently and efficiently. The super slim Smart and Sense in-room control units have a mounting plate on the back that allows the devices to be securely attached. Modern radio technology has made extensive electrical wiring to and from the in-room control units unnecessary. The energy-efficient operation means power can be supplied by conventional button cell batteries. The in-room control units can also be connected directly to the 230 V power grid with a retrofittable 230 V accessory component.

■ Modern design for all system sizes

The high-quality housing, the subtle, slim design and the pleasant feel are based on concepts used in high-quality smartphones. The system can be operated with the in-room control unit or the app. The new intuitive Touchline S app is ideal for complex system settings and the creation of individual time programs. It is possible to use a combination of in-room control units.

■ Touchline S Smart/Touchline S Smart IR in-room control unit

Touchline S Smart is operated with three large touch buttons on the front. The high-quality e-paper display has a high contrast for optimal readability. The in-room control unit provides access to all the important settings. For maximum comfort, it also has an integrated humidity sensor. Optionally available with an infrared sensor to determine floor temperature.

■ Touchline S Sense in-room control unit

With Touchline S Sense, operation is controlled exclusively with the app. This allows for a minimalist design without any buttons or indicators. This makes it particularly well suited for use as a "Public Authority Model".





Touchline S Standard



■ **Touchline S Standard in-room control unit**

Touchline S Standard is a wireless in-room control unit with basic features, designed as an entry level model for heating temperature control. App usage is not possible.

■ **Roth Touchline S connection module – Modern design for all system sizes**

The Touchline S connection module is the perfect nexus for the whole Touchline S system. The broad range offers the right system solution for every size and type of building, for new construction as well as renovations. The Touchline S connection modules are available with four, eight and twelve channels. It is possible to couple multiple connection modules for larger systems.

■ **Regulate everything with one app**

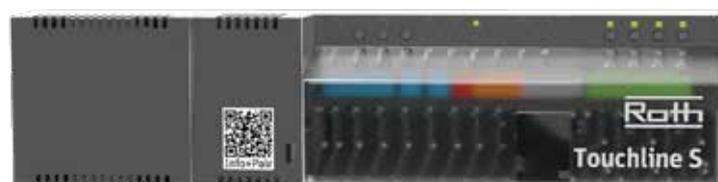
The control system is operated using the Touchline S app for smartphones and tablets (Android and iOS). It simplifies operating, adjusting and managing the system. With the app, multiple systems can be operated from home or when out and about in the same way.

■ **Always up to date**

The integration of smart home components and voice assistant systems is currently in progress. Another in-room control unit, accessories and new functions are in the works. Existing systems can be expanded any time with the current range of functions by updating the software.



Roth Touchline S



Roth Touchline S connection module

Roth EnergyLogic Basicline

compact, flat design

- > smooth front with flush-mounted control knob
- > LED operation or status display glows gently through the device enclosure
- > slimline design, – only 16 mm thick



Room thermostats
Basicline H, H/C and H/E



Room thermostat
Basicline H.A

■ Stylish details in the contemporary home

The flat, smooth design of the high-end plastic enclosure will not date and is also easy to clean. Whether in heating or cooling mode (red and blue respectively), the LED display glows gently through the high-gloss enclosure and the colour provides an attractive highlight in the home. Operation is simple thanks to the flush-mounted control knob on the enclosure.

Depending on the model, high-quality clamp-type or plug-in terminals are used for electrical connection of the room thermostats.

■ Basicline H room thermostat

The cable connected Basicline H electronic room thermostat is used for the standard function “H” (heating). It offers the following benefits:

- > extremely simple to use
- > built-in red LED display
- > reduced input for energy savings
- > completely silent
- > easy to connect using high-quality plug-in terminals

■ Basicline H/E in-room thermostat

The Basicline H/E in-room thermostat is similar to the Basicline H. It has two extra connection terminals, which are reserved for an external temperature sensor. It is available in both a 24 V and a 230 V model.

■ Basicline H.A in-room thermostat

The Basicline H.A in-room thermostat is similar to the Basicline H. Its analogue temperature scale, which shows no digits or Celsius details, makes it particularly easy and intuitive to use. It is available in a 230-V variant.

■ Basicline H, i in-room thermostat

The Basicline H, i in-room thermostat differs from the Basicline H in that it has a concealed internal temperature setting. It is particularly suitable for use in public buildings. It is available in both a 24 V and a 230 V model.



The Basicline connection modules are designed to provide a fast, easy to understand and secure connection between the in-room thermostats and the system actuators



Room thermostat
Basicline H, i
The “Public
Authority” Model

Clock thermostat
Basicline T



■ **Basicline T clock thermostat**

Roth’s digital Basicline T in-room thermostat for heating modes comes with a built-in weekly timer, a large illuminated two-line display and five modern sensor buttons. It is suitable for pilot control together with all 230 V Basicline in-room thermostats. Together with the optional temperature sensor, it can be used to monitor and regulate the floor surface temperature. A large selection of operating modes gives you many options to choose from: automatic, comfort, reduced power and frost-protection temperature, as well as a party and holiday function.

- > large, modern display
- > wear-resistant sensor buttons
- > high-quality, extremely flat enclosure
- > easy-to-clean surface finish throughout
- > individually programmable temperature profile
- > reduced output
- > tamper-proof design for public buildings
- > optimal energy savings

■ **Basicline H/C 230 V room thermostat**

The Basicline H/C 230 V in-room thermostat is suitable for controlling the temperature in both heating and cooling mode. The switch between heating and cooling mode is fully automatic for all Basicline H/C thermostats thanks to a centrally emitted switching signal, e.g. from a heat pump. Operation is therefore extremely simple and convenient for the user.

The thermostat can also be connected to the Roth floor and wall temperature sensor (optional).

The LED display is illuminated in either red or blue, so the user can see the current operating mode on each individual in-room thermostat.

- > simple to use
- > built-in red/blue LED display
- > reduced input for energy savings
- > completely silent
- > optional mode to disable cooling

■ **Basicline H/C 24 V room thermostat**

The Basicline H/C 24 V room thermostat is similar to the Basicline H/C 230 V room thermostat, but it also comes with a connection for the RFTP1 dew point sensor. This sensor detects values which are below the dew point and temporarily switches off the cooling operation. The thermostat flashes blue when the values detected are below the dew point.

The area of application for the 24-V model ranges from floor heating/cooling to ceiling heating/cooling, with temperature and dew point monitoring on a room-by-room basis.



16 mm



Extremely flat design!

Roth EnergyLogic Basicline control system

flexible allocation via high-quality rotary switches



New: Roth Basicline AM-8 flex connection module



Roth Basicline AM-6, AM-10 heating, AM-10 heating/cooling connection modules

■ Basicline connection modules

The Roth connection modules provide a fast, easy to understand and secure connection between the in-room thermostats and the system actuators. The high-quality, compact housing can be fitted quickly and easily onto standard top-hat rails or directly onto the rear wall of the switch cabinet. Actuators, an integrated fine-wire fuse and standard robust cable clamps ensure quick and safe connections. Roth Basicline connection modules are optimised for all Basicline series thermostats.

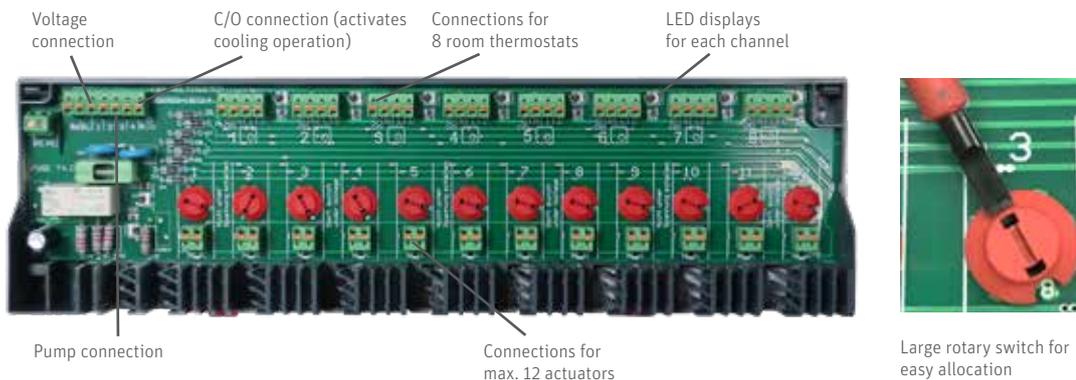
■ Basicline AM-8 flex connection module

The new Basicline AM-8 flex connection module allows for simple, flexible allocation of the actuators to the respective room thermostat via high-quality rotary switches. It is suitable for use with up to 8 room thermostats, including heating/cooling, as well as a maximum of 12 Roth 230 V actuators. The electronics are protected by a high-quality housing with a transparent cover and cable clamp. The model still has LED displays for the power, pump output and the individual rooms.

■ Basicline AM-6 connection module, Basicline AM-10 connection module, heating

Connection unit for the secure and ordered wiring of up to 6 or 10 Roth Basicline H 230 V or Basicline T room thermostats as well as a maximum of 18 Roth actuators. With pump output for controlling the pump in line with requirements and reduced input for switching the reduction signal when a clock thermostat is connected.

■ Basicline AM-8 flex connection module internal mechanism





Roth FlatConnect apartment station with integrated connection module

■ **AM-10 Basicline connection module, heating/cooling**

The Basicline AM-10 heating/cooling connection modules offer the greatest range of functions and are able to connect up to 10 Roth Basicline room thermostats, including heating/cooling and a maximum of 18 actuators.

The models still have LED displays, optional heating and cooling switchover input for Roth heat pumps and an input for the Roth moisture sensor with watchdog function. They also include an intelligent pump output with a pump anti-jamming feature, a valve anti-jamming feature and a reduced input for switching the reduction signal.

■ **Roth AM-8 flex connection module – ideal addition to the Roth FlatConnect apartment station**

The Roth AM-8 flex connection module is the ideal addition in combination with the pre-assembled Roth FlatConnect apartment station. As the apartment stations are pre-assembled at the factory in accordance with the project-specific requirements, the actuators can also be pre-wired at the factory with the AM-8 flex connection module for the arrangement of the individual rooms of the Roth radiant heating systems.

This will reduce the effort required for the installation at the construction site to a minimum.

Only connecting the electrical connection cables of the Roth room thermostats to the connection terminals, which means allocating the actuators to the rooms and the matching room thermostat to the rotary switch, is needed to complete the functional installation on site for the individual room control.

Plug & Play – complete, state-of-the-art hydraulic and electrical installation unit consisting of a Roth FlatConnect apartment station and a Roth AM-8 flex connection module.

Roth EnergyLogic Basicline control system

- > heating and cooling operation
- > up to 8 room thermostats and 12 actuators
- > practical rotary switch
- > LED displays
- > high-quality housing with a transparent cover and cable clamp
- > with pump connection for proper pump control

Roth control stations

quick, simple commissioning



■ Roth small-area control station – The tried-and-tested connection

The small-area control station with a maximum thermal output of 2 kW is used for connecting radiant heating systems to existing radiator heating systems.

Two underfloor heating circuits can be connected with the device's dual coupling. The room temperature is controlled via a Roth room thermostat and the integrated actuator (providing fixed-value temperature control).



■ Roth horizontal fixed-value control set with high-efficiency pump

A compact control station for constant input temperature control in radiant heating systems with side connection to the heat source with a thermal output of up to 14 kW. The control set is designed for use in manifold cabinets and requires an installation depth of at least 150 mm. The scope of delivery includes a control set with a high-efficiency pump, a thermostat head, a capillary tube temperature sensor and a safety temperature limiter.



■ Roth fixed-value control set with high-efficiency pump, type 3

A compact control station for constant input temperature control in radiant heating systems (fixed-value temperature control) with a thermal output of up to 14 kW. The control set is designed for use in manifold cabinets and is installed directly on the heating circuit manifold. The scope of delivery includes a state-of-the-art high-efficiency pump, as well as additional ball valves and a thermometer.



■ **Roth weather regulated control station with high-efficiency pump, type 3**

A compact weather regulated control station for radiant heating and cooling systems with a thermal output of 14 kW. The control station is fitted ex-works with a CC-HC climate controller and outside temperature sensor.

It is designed to be integrated into the manifold cabinet and connected directly to the heating circuit manifold.



■ **Roth RKR 3 H/K control station**

A control station that includes an integrated CC-HC climate controller for central, weather-dependent input temperature control (weather-regulated temperature control) for radiant heating and optional radiant cooling. The compact, preassembled unit is completely enclosed in an EPP casing with fully insulated hydraulics conforming to GEG (German Building Energy Act) regulations. The Roth RKR 3 H/K control station is designed with an enhanced thermal output of up to 18 kW for detached or semi-detached homes.



■ **Roth CC-HC climate controller**

The climate controller is easy to operate, with two configurable heating programs and ten separate weekly programs. It features a large display that constantly shows the input temperature and outside temperature, as well as the status of the mixer and circulation pump, and the current operating mode. It also gives you the option of activating additional components such as heat sources or switching valves.

The benefits of Roth control stations

- > Roth's control stations are categorised in energy efficiency class A and comply with the 2013 and 2015 ERP Directives
- > suitable for renovations and new buildings
- > quick, simple commissioning
- > easy to operate
- > ideal for renovations and retrofitting



Roth heating circuit manifold

a well rounded unit



Roth Original Tacker system,
Marburg main station, Germany

■ Roth heating circuit manifolds keep you cosy and comfortable

The heating circuit manifold ensures that each individual heating circuit is hydraulically balanced and maintains room temperatures at a constant level, thus keeping the building's residents cosy and comfortable.

Through the system's ability to regulate temperatures in each room individually, it allows users to set in-room temperatures according to their needs.

The flow distributor and return flow collector, made from circular brass shaped strips, can be connected from the left or right via the 1" flat-sealing external thread.

The flow and return pipes are staggered, making them easier to assemble. The heating circuits are connected using a 3/4" Euro cone. The manifold is pre-mounted on sound-insulated consoles.

The valve cores are carefully chosen to be well suited to Roth actuators. This makes the heating circuit manifold an integral part of the system solutions offered by Roth. It is available with between 2 and 14 connections and with or without flow volume indicator. The heating circuit manifold can be used for all Roth system pipes in sizes from 11 to 20 mm.



■ Roth actuator

- > only 1 watt of power consumption
- > compact and high-quality
- > simple plug-in installation
- > completely watertight (IP54)

Roth plastic manifold

the new energy-efficient generation of manifolds



Roth Thermaset plastic manifold



Roth plastic manifold with flow rate indicator G1"

Eligible
for KfW
subsidies

■ Dynamic, fast and energy-efficient

The plastic manifolds are remarkably light and ideally suited to heating and cooling operations. The fibre-reinforced plastic is of high quality and durable and offers good insulation properties in terms of noise, condensation and heat loss. The plastic manifold can be adapted to various installation conditions thanks to the segmental design. They can be used for two to twelve heating circuits. The high degree of prefabrication, which includes leak testing, enables fast installation and ensures high levels of safety. The maintenance-free system solution is eligible for KfW subsidies and suitable for new-builds and upgrades.

■ Roth Thermaset valve technology

Once the water flow settings of the Roth Thermaset plastic manifold for individual heating circuits have been applied during installation, there is no need for a specialist tradesman to undertake further readjustments. The valve technology can adapt to the conditions in the hydraulic pipe network for the heating system. This means the water volume in the respective heating circuit for the radiant heating and cooling system is always correct. It also ensures operation is based on requirements and a high degree of comfort for the user.

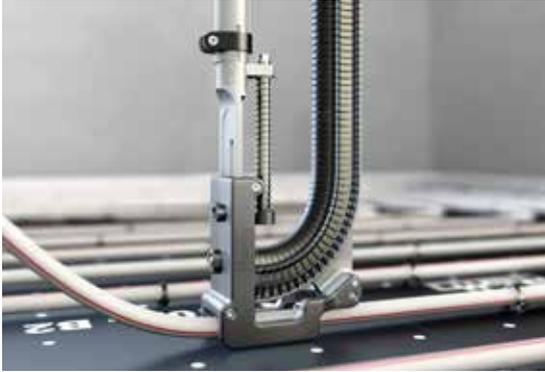
Roth plastic manifold

- > high flexibility and options for modification
- > fast installation and tried-and-tested safety
- > long service life thanks to use of fibre-reinforced plastic
- > good insulation properties
- > easy to install and maintenance-free
- > optimal comfort and efficiency
- > eligible for KfW subsidies

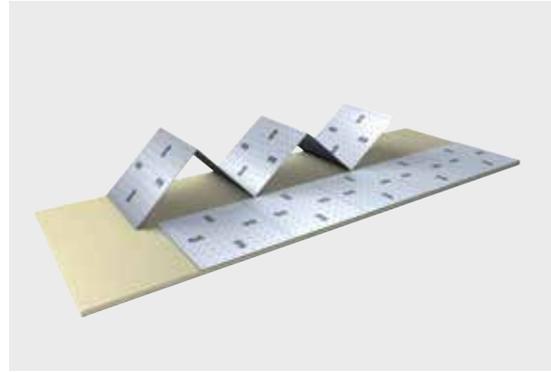
additional advantages of Roth Thermaset

- > simple hydraulic adjustment
- > valve technology can be adapted flexibly to dynamic pipe network conditions

Systems at a glance



Roth Original Tacker system



Roth Flipfix tacker system



Roth Quick-Energy tacker System



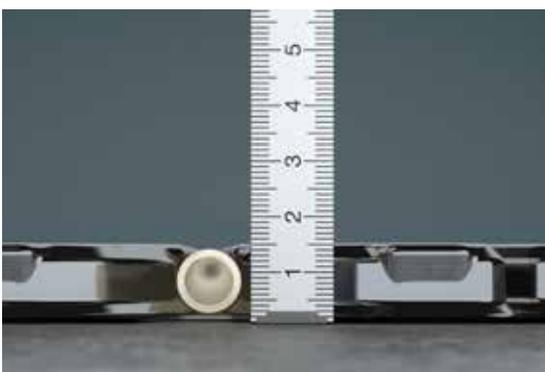
Roth knob system



Roth ClimaComfort dry construction system



Roth ClimaComfort panel system



Roth ClimaComfort compact system



Roth milling system



Roth wall heating



Roth comfort ceilings for cooling and heating



Roth industrial radiant heating



Roth outdoor panel heating



Roth sport floor heating



Roth Isocore concrete core temperature control



Current installation and product films can be found by using the accompanying QR code, on our website and on our YouTube channel.

References

actual examples that speak for themselves



- 1 **Roth ClimaComfort dry construction system**
Frauenkirche church, Dresden, Germany
- 2 **Roth Original Tacker system**
Roth Plastic Technology administrative building,
Dautphetal, Germany
- 3 **Roth ClimaComfort compact system**
Residential complex at Luggesmühle,
Bottrop, Germany





4 **Roth Original Tacker system**
Spa at Linsberg, Austria

5 **Roth Isocore concrete core temperature control**
Rheinisches Landesmuseum
(Rhine-land Regional Museum)
Bonn, Germany

6 **Roth pipefix system**
St. Jakobi "Kulturkirche"
cultural centre,
Stralsund, Germany



References

actual examples that speak for themselves



- 7 **Roth industrial radiant heating**
Kleiner commercial premises,
Kempton, Germany
- 8 **Roth ComfoTop comfort ceilings**
Fingerhaus office building,
Frankenberg, Germany
- 9 **Roth underfloor heating**
Town hall, Sulzbach-Rosenberg, Germany



10 **Roth Isocore concrete core temperature control**
City hall, Marburg, Germany

11 **Roth Quick-Energy tacker system**
Roth Original Tacker system
Residential building, Dautphetal, Germany

12 **Roth Original Tacker system**
FSV Buchenau clubhouse,
Dautphetal, Germany

Roth sets the standard

as a "certified manufacturer" of the ZVSHK



... for a strong partnership
with the trades.



■ Orientation and safety for the sanitary, heating and air-conditioning industry

The title "Certified Manufacturer – Quality, Safety, Service" is bestowed by the German Central Association of Plumbing, Heating and Air Conditioning (ZVSHK) in a transparent process to honour manufacturers who support the operational processes of sanitary, heating and air-conditioning specialists by means of

- > high-quality products,
- > extensive service offerings and
- > investments in research and development

to the best of their ability.

■ Innovation, not standstill

The requirements of our industry are continually developing further. As well, new or improved services are constantly being developed with which manufacturers can support craft workshops.

For that reason, the ZVSHK seal of quality is an agile symbol of quality. This means: the central association regularly checks to make sure the currently valid quality criteria are fulfilled by the "certified manufacturers" to guarantee actual service quality for the workshop. The quality criteria themselves are put under the microscope once a year and adapted to current developments where needed. **Working together for better quality!**

For more information, please visit: www.zvshk.de/qualitaetszeichen/

Our strengths your benefits

Innovation

- > Early identification of market requirements
- > In-house materials research and development
- > In-house engineering
- > The company is certified in accordance with ISO 9001

Services

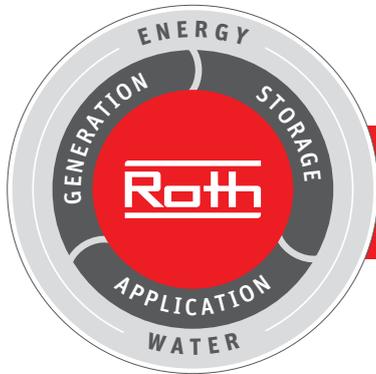
- > Extensive field network of qualified sales professionals
- > Hotline and project planning service
- > Factory training courses, planning and product seminars
- > Fast availability of all Roth brand product ranges throughout Europe
- > Comprehensive warranty

Product performance

- > Complete range of easy-to-install product systems
- > Manufacturing expertise for the complete product range within the Roth Industries group of companies



Roth



Roth energy and sanitary systems

Generation

- Solar energy systems <
- Heat pump systems <

Storage

- Storage systems for
Drinking and heating water <
- Combustibles and biofuels <
- Rainwater and waste water <

Use

- > Radiant heating and cooling systems
- > Apartment stations
- > Pipe installation systems
- > Shower systems

Roth

ROTH WERKE GMBH
Am Seerain 2
D-35232 Dautphetal
Telephone: +49 (0)6466/922-0
Fax: +49 (0)6466/922-100
Email: service@roth-werke.de
www.roth-werke.de

