System solutions for all areas of application
The larger the heat-radiating surface, the more effective and economical the room heating will be. In comparison with conventional radiators, the ideal room temperature with a floor heating system is 1 °C to 2 °C lower.
The demand for high-quality living spaces in both existing and new buildings is increasing all the time, and with it the expectation of state-of-the-art temperature control.

Whether it is for residential buildings, offices and commercial premises, industrial facilities, sports halls or open spaces – what was an exception to the rule yesterday has now become expected: usage-optimised heating and cooling systems that continually keep pace with individual requirements. It is therefore hardly surprising that the majority of planners and building owners looking for modern and advanced system solutions are now choosing floor heating and cooling systems. The retrofitting of floor heating and cooling systems is also gaining in popularity.

The many innovations introduced by Roth over the years have made a significant contribution to this development. In addition to user comfort and freedom of architectural design, the decisive criteria in the selection of a floor heating and cooling system are energy savings, hygiene and environmental protection.

Floor heating to enhance the home environment

When choosing a suitable floor heating and cooling system for either a new-build or a renovation project, a comfortable home environment is the key aim.

In addition, optimal use must be made of the supplied energy so that the systems can be operated efficiently. The level of thermal comfort experienced by each individual depends on both objective and subjective parameters. Air temperature, air speed, air exchange and air humidity are all values which can be measured. A high level of thermal comfort is achieved when the temperature across the various surfaces of the room is even.

It is also important that heat is emitted by the human body as evenly as possible in all directions. By choosing the right floor heating or cooling system, the radiant temperature and the surface temperatures can be set to positive effect.

If too much heat is drawn off in one area (cold surfaces), it does not feel pleasant to the user, even if the room temperature is within the optimal range. The lower the temperature of the surfaces that enclose the room (walls, floors, ceilings), the higher the temperature to which the air of the room needs to be heated in order to achieve a comfortable environment – and vice versa. It is possible to compensate for this effect by specifically adjusting the wall or ceiling temperature.
Roth floor heating and cooling systems
Innovation and performance for modern living spaces

The ideal room temperature profile
An optimal room temperature profile with precisely adjustable dosing makes the performance capability of Roth floor heating and cooling systems readily perceptible – day in, day out. Equally, negative impacts on room temperature (such as those caused by swirling air, draughts or heat accumulation) are a thing of the past. As a matter of fact, their temperature characteristics correspond almost precisely to ideal heating (see graph). Experts know that the larger the heat-radiating surface, the more effective and economical the room heating will be. In comparison with conventional radiators, the ideal room temperature with a floor heating system is 1 ºC to 2 ºC lower. The resulting energy savings of 6 to 12% speak for themselves, as do the lower system and inlet temperatures. These systems are also extremely well suited for use in conjunction with equipment that produces renewable energy, such as Roth heat pumps and solar collectors. There are additional plus points in terms of hygiene too: the dryness of the heat deprives bacteria and dust mites of the moisture they need for survival.

Feel-good temperatures
As a general rule, comfortable temperatures for heated rooms in winter are considered to be:
- Living areas: 20 - 22 ºC
- Bedrooms: 16 - 18 ºC
- Bathrooms: 24 - 26 ºC

A room is considered comfortable when there is a difference of less than 4 ºC between the surface temperatures and the temperature of the air of the room. If there is a difference of less than 5 ºC between the temperatures of the various surfaces of the room, e.g. between an internal wall and an external wall, the room is also considered very comfortable by the user.

Technical standards stipulate the following maximum permitted surface temperatures for floors:
- In residential or office areas where people spend periods of time: 29 ºC
- In bathrooms: 33 ºC
- In boundary zones: 35 ºC

For reasons of comfort, it is important not to exceed a maximum surface temperature of 40 ºC for walls and ceilings.
<table>
<thead>
<tr>
<th>Building types</th>
<th>Areas of application</th>
<th>Installation surfaces</th>
<th>Load-distribution/covering layer</th>
<th>Dämmung</th>
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<tr>
<td>Residential and commercial buildings</td>
<td>Administrative buildings</td>
<td>Car dealerships/showrooms</td>
<td>Industrial/factory halls</td>
<td>Sports halls</td>
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<tr>
<td>Floor</td>
<td>Wall</td>
<td>Ceiling</td>
<td>Screed/plaster</td>
<td>Dry construction</td>
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- **Guide to Roth floor heating and cooling systems**

<table>
<thead>
<tr>
<th>System</th>
<th>Floor</th>
<th>Wall</th>
<th>Ceiling</th>
<th>Screed/plaster</th>
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<th>Insulation integrated in the system</th>
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</table>

* : Building-specific
The basic concept behind the system

When designing an energy system for technical building installations, the fundamental aim must be to ensure that a comfortable temperature can be achieved within the building’s rooms. The heating and cooling systems developed by Roth offer solutions tailored to seasonal and user-specific requirements. During colder seasons, low-temperature floor heating achieves room temperatures which are warm and comfortable, whilst the Roth System Pipes integrated into the floor structure generate a pleasant cooling effect in the summertime.

Heating in winter

A pleasant, almost ideal room temperature profile for the user is achieved by the evenly-distributed dispersion of heat over a large surface. With its system-dependent low heating water temperatures, this system is all but predestined for use in combination with environmentally friendly and energy-saving heat generators, with low temperature and calorific value technology and with alternative energy sources.

Cooling in summer

Uniform room cooling without unpleasant draughts is achieved via radiant cooling by means of the Roth System Pipes integrated into the floor structure. From the point of view of control engineering, the Roth heating and cooling system is designed in such a way that, when cooling, both drops in floor surface temperature to below 19 °C (deemed the critical level in terms of comfort, according to DIN 1946), and vertical temperature shifts between two relevant measuring points (0,1 to 1,1 m) of two kelvins can be sensibly avoided. Dew point monitoring is integrated in order to effectively prevent condensation caused by weather-related, elevated room humidity. Cooling water can be generated by means of system pipes placed in the ground, heat pumps, chiller units or surface water, etc.

Roth Heating and Cooling System
a feeling of comfort the whole year round
Roth System Pipes
always on the safe side with five-layer CoEx Technology

All good things come in ... fives.
And piping, the arteries of a perfectly planned and optimally functioning floor heating and cooling system

You can benefit five times over from a professional system. The new Roth pipe philosophy makes this possible. The five-layer construction of the Roth DUOPEX S5®, X-PERT S5®+ and ClimaComfort® S5 System Pipes equates to five real benefits for you. All pipes are manufactured using our unique, tried-and-tested five-layer CoEx Technology.

Quality through five layers ("S5")
In order to meet the high requirements they must fulfil on site and during transport, the Roth DUOPEX S5®, X-PERT S5®+ and ClimaComfort S5 System Pipes are constructed in five layers. These are inseparably bound together by means of the S5 CoEx Technology to create a sandwich material with a high level of robustness and a long service life.

System expertise – Roth system solutions for demanding applications
As the inventor of the Tacker system, Roth is among the leading suppliers of floor heating and cooling systems. With millions of systems proving their worth out in the field, Roth comes equipped with years of experience and thus with the greatest amount of technological know-how. The Roth Original Tacker® System and the Roth Knob System fulfil the highest expectations in terms of quality and safety, in excess of technical standards.
Service

- Extensive field network of qualified sales professionals
- Hotline and project planning service
- Factory training courses, planning and product seminars
- 10-year spare parts provision and after-sales guarantee following discontinuation of the product range
- Fast availability of all Roth brand product ranges throughout Europe

Guarantee and warranty

Quality for the safety of our customers: we consider this to be an obligation – from the creation of the product through manufacturing and storage, all the way to delivery. High-quality products and services form the basis for worldwide 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. The details are defined in a certificate of warranty. This 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 floor heating and cooling system for a period of up to ten years after start-up.

Customer satisfaction

Building owners expect reliability and preservation of value from their property. Roth systems offer the customer the assurance of always having chosen the "best in class" as far as floor heating and cooling systems are concerned. They create a lasting sense of well-being by distributing energy in a way that is pleasant for the building users and increase the value of the property in question too.

These services are further enhanced by our membership of the Handwerkermarke Craftsmen’s Association.
Roth DUOPEX S5®, X-PERT S5®+ and ClimaComfort S5 perfect for all requirements

- Roth DUOPEX S5®, X-PERT S5®+ and ClimaComfort S5 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 system pipes that meet the most stringent of quality standards.

- S5 CoEx Technology – high quality for every area of use

You will always find the perfect solution to your building’s specific requirements for a floor heating and cooling system, with pipes featuring the proven and unique S5 CoEx Technology.

Thanks to quintuple co-extrusion in a single production process, the sandwich material of the Roth System Pipes guarantees optimal adhesion between the pipe layers.

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 floor 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
- Optimised linear extension within a narrow tolerance field through the five layers
Roth DUOPEX S5® and X-PERT S5®+ System Pipes
an excellent team

- **Roth DUOPEX S5® System Pipe – the solution where only the very best will do**

  The 5-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 95 °C at an operating pressure of 6 bar and a short-term temperature increase to 110 °C is no problem for the Roth DUOPEX S5® System Pipe, which is interactively cross-linked throughout.

- **Interactive cross-linking using an innovative and patented manufacturing procedure**

  All five layers of the DUOPEX S5® System Pipe are co-extruded and then subsequently cross-linked throughout by means of a patented production 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. Interactive cross-linking improves the mechanical, thermal and chemical characteristics of the DUOPEX S5® System Pipe and provides additional safety reserves.

- **Roth X-PERT S5®+ System Pipe – the solution for challenging applications in the low-temperature range**

  The average thermal stress during heating is falling, as a result of the Energiesparverordnung (Energy Savings Regulation [EnEV]).

  The highly flexible five-layer Roth X-PERT S5®+ System Pipe, in combination with the Roth System Panels, is a system which has been optimised to meet the specific requirements of applications in the low-temperature range.

  The "X" in X-PERT S5®+ represents the excellent finish of the material. It is designed with extra safety in mind, to withstand a continuous thermal stress of 70 °C and a short-term thermal stress of 100 °C.

  The X-PERT S5®+ System Pipe is continuously pressure-resistant with multiple safety reserves up to 6 bar.

- **DUOPEX S5® and X-PERT S5®+ – even safer thanks to a high-performance surface**

  The surface layer means that the Roth DUOPEX S5® and X-PERT S5®+ System Pipes are now even stronger.

  The yellow colour of these two system pipes indicates that they feature a robust surface. High resistance to wear and integrated UV stability provide additional protection, particularly for use in harsh site conditions.

- **System compatibility**

  Roth DUOPEX S5® and X-PERT S5®+ System Pipes can all be used with the Roth Original Tacker® System, the Roth Knob System and the Roth Pipe Fixing System for heating and cooling purposes.
Roth Original Tacker® System
proven reliability time and again in new buildings

- Perfectly coordinated system solution
- Tried and tested time and again
- Patented laying technique
- Easy to install
- Pipes positioned to the centimetre
- Optimum heat distribution and cooling

**Roth Original Tacker® System – for solutions that retain their value**

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 DUOPEX S5® and X-PERT S5® System Pipes provides the ideal foundation for creating a heating supply system that will retain its value in the long term. The friction-free interlocking connection of pipe and patented pipe laying technique is therefore always the first choice for the entire array of sophisticated applications. Perfection in the result, whether it is for residential, office or industrial construction projects.

**Three system steps to perfection**

The high-quality ex-works prefabrication of all system components – pipe, composite panel and accessories – makes it possible: the complete Roth floor heating and cooling system is laid in only three work steps using the patented Tacker technique. Of course, everything is in accordance with a precise computer calculation and taking into account all valid regulations.

**Roth floor heating and cooling – comfort can be so simple**

Ease of assembly with a high degree of flexibility, paired with operational and building site safety and superior efficiency – this is what characterises Roth floor 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 optimum heat distribution and cooling, even in the most difficult installation situations. The underfloor constructions of Roth floor heating and cooling systems conform to DIN EN 1264 (“Water based surface embedded heating and cooling systems”), taking into account DIN 18560 (“Floor screeds in building construction”), DIN 4109 (“Sound insulation in buildings”) and the Energieeinsparverordnung (Energy Savings Regulation [EnEV]). 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.
**System composite panels for floor heating and cooling systems**

Simple, fast, in compliance with standards: system composite panels made of polystyrene particle 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 it possible to produce a unique, two-sided, self-adhesive overlap that is 30 mm wide. A secure closure against damp and screed (in accordance with DIN 18560) prevents sound and thermal bridges from forming. In addition, an imprinted grid makes it easier to put the system pipes exactly in place in accordance with precisely calculated installation distances.

**A strong solution for high levels of stress**

The Roth EPS DEO WLG 035 26 mm system composite panel comes into play wherever traffic loads are high (in car showrooms, for example). This composite panel can be utilised under an appropriately coordinated screed construction with maximum traffic loads of up to 35 kN/m². The Roth range of products also includes additional insulation panels made of EPS or PU, which may be needed depending on the thermal insulation requirements and traffic load of the application in question.

**Roth E⁺ system composite panel – highly effective insulation with a flat construction**

The new E⁺ system composite panel EPS DE 25-2 WLG 032 has the "X" factor when it comes to energy efficiency and reduces the construction height of the floor by up to 10 mm compared to standard insulation panels with impact sound insulation. The Neopor insulating material (thermal conductivity category WLG 032) makes it possible to reduce the insulation thickness while still absorbing the sound of impact. A 25 mm panel height is therefore sufficient to insulate floors and ceilings between living spaces in accordance with regulations.

Roth floor heating and cooling system, Auto Velte KG car dealership, Biedenkopf, Germany
Roth Original Tacker® Ex Clips
for extra efficiency, comfort and safety

- Pipe raising function
  - Pipes completely surrounded by screed
  - Optimum transfer and distribution of heat and cooling
- Double barb
  - Maximum protection against pipes being ripped out
  - Exceptional holding power

Roth Original Tacker® Ex Clips for comprehensive energy transmission

Roth, the inventor of the Tacker system, has further improved its Roth Original Tacker® Clips. The new Roth Original Tacker® Ex Clips now come with a pipe raising function. This ensures better transfer and distribution of heat and cooling energy, as the pipe is always completely enclosed in screed, even if the screed is viscous. Combined with the new double barb, the clips offer the "X" factor when it comes to energy performance, in terms of efficiency, comfort and safety.

Double barbs with a new design for easier installation, maximum tear-out protection and unparalleled holding power

The lower barb in a Roth Original Tacker® Ex Clip is highly stable and equipped with a sharp cutting edge, while the barb on top of this is exceptionally flexible. This special technology makes it safe and easy to permeate the insulating film in the insulation, thus facilitating and speeding up the installation process. The stability of the lower barb provides the perfect support for the upper barb.

The double 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.
The pipe raising function allows the screed to flow underneath the pipe so that it surrounds it completely. This ensures optimum transfer and distribution of heat and cooling, thus creating extra efficiency and comfort too.

40 clips per magazine for efficient working

Roth Original Tacker® E® Clips are available for Roth System Pipes in sizes of 14, 16, 17 and 20 mm. With 40 clips grouped together to form a magazine, users benefit as they do not need to refill the Tacker over and over. Two strips of 40 clips each can be inlaid in the Tacker and handled with no extra effort. A weight ensures that, once a clip has been used, each subsequent clip slides into position easily. Roth Original Tacker® are height adjustable, so they can be used by any operator, be they short or tall. The new Roth Original Tacker® E® Clips can be used with the existing Roth Original Tacker® models 16 to 20.
Roth Original Tacker® 2.0
tried and tested time and again

> lighter
> easier to use
> more ergonomic
> better guidance of the E® Clips
> increased capacity
> height-adjustable
> with parking position for the Tacker weight

NEW

Roth Original Tacker® 2.0
in a new design

Roth, the inventor of the Original Tacker System that has proven its worth a million times over, has now developed the Tacker further. The new Roth Original Tacker® 2.0 can be used for assembling Roth system pipes with Roth Original Tacker® E® Clips on insulating panels during the installation of floor heating and cooling systems.

1. ergonomic handle that is comfortable to hold
2. fixed weight to push clips into position (parking position on the magazine)
3. quick and easy to fill, improved sliding properties
4. increased magazine capacity
5. short distance for the E® Clip to travel
**Roth Original Tacker® – now even lighter**

Despite its new modern design, the Tacker still weighs only two kilograms. It features a slimline housing and has an increased capacity of 135 pipe holders (Roth Original Tacker® E® Clips). This significantly reduces the number of times the magazine has to be reloaded during pipe installation.

The Roth engineers have also improved the way the clips are guided out of the magazine. In addition, a parking position has been developed on the magazine for the Tacker weight, which prevents loss of Tacker weight during operation under harsh site conditions.

The magazine is filled quickly and simply by pushing the welded clip magazine in from above. The Roth Original Tacker® 2.0 is suitable for Roth Original Tacker® 14 to 20 millimetre E® Clips.

The Roth Original Tacker® is height adjustable and can be adjusted for any operator, be they short or tall. The new magazine is compatible with the existing Roth Original Tacker® and can be replaced.
Roth Quick-Energy® Tacker System with Casea QE-screed
fast response with minimal installation height

- convenient fast response system
- minimal installation height, quickest energy supply
- reduced mass per unit area
- improved impact sound insulation
- Casea QE-screed
- for new-builds and renovation
- housing construction and property solutions
- certified system

Convenient fast response system with minimal installation height

The new Roth Quick-Energy® Tacker System for floor heating and cooling is ideally suited for housing construction and property solutions in both renovation and new-build projects.

It combines the quickest energy supply with the greatest convenience with regard to comfort and impact sound insulation. The slimline floor heating and cooling system with Casea QE-screed and using the wet construction method requires pipe coverage of just two centimetres. Thanks to its minimal installation height, rapid response is guaranteed.

High-performance components for strong solutions

It is the optimum combination of Roth Product Components that creates a high-performance system solution. The tacker system is used with the innovative Roth E® EPS DES 25-2 System Composite Panel, the Roth X-PERT S5® 14-millimetre System Pipe, Roth 14-millimetre Tacker clips and the new Casea QE-screed to create a floor heating and cooling system with an installation height of just 60 millimetres.

It 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 sound insulation. The tested system configuration is approved for single loads of up to two kilonewtons per square metre.

Effective insulation with maximum improvement of the impact sound insulation in flat installations

The Roth E® EPS DES 25-2 System Composite Panel, which provides a combination of heat and sound insulation, reduces the installation height of the floor by up to ten millimetres compared to standard panels with impact sound insulation. The special insulating material (thermal conductivity category O32) makes it possible to reduce the insulation thickness while still absorbing the sound of impact. Consequently, panel heights of just 25 mm are sufficient to insulate ceilings between living quarters in accordance with the regulations.

Thanks to its combination of technical properties, the Quick-Energy® Tacker System offers diverse application options for both new build and renovation applications.
### Roth Quick-Energy® Tacker System with Casea QE-screed

<table>
<thead>
<tr>
<th>$\lambda$ (m² K/W)</th>
<th>System composite panel or roll (mm)</th>
<th>Height Casea QE-screed</th>
<th>$H_{min}$ (mm) with 20 mm pipe coverage</th>
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<tr>
<td>0.78</td>
<td>25-2 EPS DES WLG 032</td>
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</table>

1. Wall
2. Plaster
3. Skirting board
4. Elastic grouting
5. Roth edge insulating strips
6. Casea QE-screed
7. Roth System Pipe ø 14
8. Roth Tacker Clip 14 mm
9. Roth E² system composite panel 25-2
10. Load-bearing subsurface
11. Surface covering
Roth Flipfix® Tacker System
on the insulation, get set, go!

> for existing insulation
> proven Roth Original Tacker® installation technique
> adjustable installation shapes and distances
> only one system component
> no-waste installation process
> no special tools required
> compact dimensions for storage and transportation

For new applications – just unfold it and you’re done

For new applications in floor heating and cooling systems, Roth provides the new Flipfix® Tacker System. It is suitable for use where insulation made of conventional EPS and PU materials, as well as mineral insulation materials, is installed on site.

The system solution for floor heating and cooling is the new Roth Flipfix® panel, Roth Original Tacker® E’ Clips and Roth System Pipes. The easy-to-install system is fitted using the tried-and-tested Roth Original Tacker® laying technique.

Installation made easy – by Roth

The new, two millimetre thick Roth Flipfix® panel is available in prefabricated five-metre strips. It is folded down to a square metre in a practical zig-zag pattern, giving compact packaging unit dimensions that are advantageous for transport and storage. On the construction site the Flipfix® panels are simply unfolded and are quickly laid without producing any waste. The zig-zag fold also ensures that the individual plates can be effectively aligned in relation to one another.

The butt joints are connected using adhesive tape – this quickly produces a closed insulating layer. The elements can be cut using a commercially available cutter or scissors. Markings are provided in a five- and ten-centimetre grid for variable installation.

A separate film layer to serve as a cover for the insulation layer is unnecessary, as is protection against floating.
The Roth Flipfix® panel up close

- 2 mm hollow-chamber component made from polypropylene
- building material class B2 (normal flammability)
- 5 x 1 m (5 m²)
- folds 1 m apart (concertina principle)
- colour: black with white print
- installation grid 10 x 10 cm (dots) and 5 x 5 cm (crosses)

At a glance

- for existing insulation made of EPS or PU materials or mineral wool
- easy to assemble, time-saving and simple to install due to prefabricated 5 m² components with a concertina principle
- aligning the panels in relation to one another is made easy by the zig-zag fold
- connecting the butt joints with adhesive is simple and only needs to be done on the long sides
- no film layer is needed to serve as a cover for the insulation layer
- no protection against floating is required
- Roth E² Clip with a defined penetration depth and optimum energy efficiency
Roth Knob System
flexible, easy, perfect

An extremely flexible system

The Roth Knob System is characterised by a high degree of flexibility and straightforward assembly. The undercut and ideal shape of the knobs enable Roth DUOPEX S5® and X-PERT S5®+ System Pipes in sizes of 14 to 17 mm to be attached to Roth Knob Panels (which also come in sizes of 14 to 17 mm).

The pipes can be laid either orthogonally or – with the aid of an additional film – diagonally. Fixing strips mean that leftover pieces can easily be reused, enabling you to create environmentally friendly installations with very little waste. Filler knob panels are available too.

The Roth Knob System is suitable for laying in residential, office and commercial buildings.
Roth Knob System
installation-friendly laying

Flexible
Easy to install
Optimum knob shape
Orthogonal and diagonal laying
Environmentally friendly installation with very little waste

Roth Knob Panel 14 – 17 DEO 10

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 on the entire Roth Knob Panel offers the perfect base for laying the Roth System Pipes – even with low outside temperatures.
- The Roth knobs interlock with one another in double rows by means of a two-sided film protrusion. The best conditions for using flow screed.
- Without the use of additional tools, the Roth system Pipe is pressed with the foot into the knobs, where it engages audibly and securely.
- Suitable for all Roth System Pipes of Ø 14 mm to Ø 17 mm.
- The two-layer polystyrene construction ensures the knobs can be walked on, whilst also providing thermal insulation.

- The Roth manifold connection panel makes it easy to adjust the installation distances in the area of the manifold in accordance with distributor connections.
- The door area between two rooms can simply be bridged with the Roth alignment knob in connection with the Roth alignment knob film.
- The film of the Roth edge insulating strip is pressed into the Roth knob with the Roth PE profile. An ideal solution, even when using flow screed.
- When every millimetre of installation height counts: the Roth knob panel 14 – 17 DEO 10 can even be used when renovating residential buildings.

Thought through in detail

With the diagonal laying arrangement of the Roth System Pipes, even unusual floor plans do not pose a problem.
Roth Knob Film 14-16 mm – innovative and high-quality

The Roth Knob Film 14-16 mm 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 high load requirements up to 75 kN/m² – for industrial floor heating applications, for example.

The Roth Knob System at a glance

- Suitable for all Roth System Pipes of ø 14 mm to ø 17 mm
- Available in two EPS qualities: EPS DES 30-2 (1450 x 950 x 50 mm) and EPS DEO 10 (1450 x 950 x 30 mm)
- Support plate and cover film made of polystyrene, building material class B2
- Knob grid of 50 mm: all installation distances and shapes possible within the 50 mm 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
- The 4 mm undercut and the geometry of the individual knobs make it easy to install and secure 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 in this way
Roth ClimaComfort® dry construction system
flexible installation with a low installation height

- Perfect for renovation
- Simple and flexible installation
- Low weight per unit of area
- Heat-conducting lamellas made from high-performance aluminium
- Flexible pipe installation
- Flexible direction of installation

NEW

Universal components for flexible solutions

As a leading manufacturer of floor heating and cooling systems, Roth has developed a new dry construction system that is ideally suited to the installation requirements involved in renovation work. The new Roth ClimaComfort® dry construction system features a low installation height of just 43 millimetres including covering. The structure of the insulation panel permits flexibility in the choice of direction of installation – it can even be laid diagonally.

One size fits all

For easy installation, only one type of system panel is used. This ensures that installation is straightforward, secure and quick and allows for flexibility in its application. The Roth ClimaComfort® TBS System Panels can be combined in all directions on the 30 cm grid and can be cut to size depending upon the geometry of the room. Thanks to a special groove/notch system, precise positioning and alignment of the system panels is guaranteed. This prevents the panels from slipping on the subsurface.

The panel structure permits the heat-conducting lamellas to be affixed simply and securely in various directions. The Roth Alu-Laserflex 14 and 16 millimetre system pipes can thus be laid horizontally, vertically and 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

To improve heat output, the leading manufacturer of floor heating and cooling systems has developed heat-conducting plates made from high-performance aluminium. The material guarantees particularly 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 the Roth Alu-Laserflex System Pipe is 15 centimetres.

Roth Alu-Laserflex System Pipe – diffusion-proof and dimensionally stable

The five-layer Roth Alu-Laserflex System Pipe is precisely matched to the complete system and is flexible to install with minimal waste. It can be bent with the bending spring and remains dimensionally stable after being bent within its bending radius and during operation. The integrated aluminium layer serves as an oxygen barrier. The Alu-Laserflex System Pipe is pressure- and temperature-resistant with minimum linear expansion and therefore reduces impact sound. The DIN CERTCO approval and regular monitoring of the manufacturing process as well as the properties of the pipe guarantee quality and safety for installers and users.
Lightweight with a low installation height – the ideal combination

The Roth ClimaComfort® dry construction system with its low installation height and lightweight design is suitable for numerous applications in renovation and new-build projects. 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.

At a glance

› 25 mm high Roth ClimaComfort® TBS System Panel – ideal for renovation
› simple, time-saving and flexible installation
› low weight per unit of area
› heat-conducting lamellas made from high-performance aluminium for optimum heat output
› panels interlock by means of a groove/notch system
› heat-conducting lamellas are held securely on the ClimaComfort TBS System Panel
› heat-conducting lamellas with predetermined breaking points so that they can be separated into the desired lengths
› simple and flexible pipe installation with an installation spacing of 15 cm
› direction of installation either horizontal, vertical or diagonal
› suited to both wet and dry construction
› decades of manufacturing expertise
Roth ClimaComfort® Panel System
all-round comfort guaranteed

Unrestricted pipe installation and surface lining – the perfect fit for every application

The ClimaComfort panel’s design makes for optimum pipe installation. The X-PERT S5®+ System Pipe is simply snapped on to floors, walls or ceilings. To change the direction of the pipe, Roth offers an end piece that is inserted into the system panel. This makes wall and ceiling installations much easier to manage, since the components are held in the correct positions.

The ClimaComfort panel consists of an EPS support plate, which is permanently bonded to an aluminium heat-conducting plate. The panel ensures that heating or cooling energy is 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.

The ClimaComfort panel is suitable for laying floor surfaces according to individual room layouts, even on slopes. The panel dimensions correspond to the dry construction standard size (625 x 1200 mm); the panels can be cut to meet the requirements of any room.

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 innovative adhesives. The subsurface must be clean, even and capable of bearing loads.

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.

EPS decoupling layer
Highly efficient heat-conducting elements
Locking mechanism for holding pipes in place
EPP end piece for redirecting pipes
Optional additional insulation

"Room by room renovation"

The 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. Unlike external insulation, this renovation method enables the process to be performed gradually, room by room.

Roth has designed the system for use with the Roth X-PERT S5®+ pipe in dimensions of 14 mm and 16 mm.

Roth also offers the ClimaComfort Panel System in a 16 mm version for floor installation, together with the Roth Alu-Laserflex System Pipe.

> Unrestricted pipe installation and surface lining – the perfect fit for every application

Irrespective of its size. The system meets the structural requirements associated with renovation projects in existing buildings and can be retrofitted as part of ad hoc minor refurbishment work.
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 with no circulation of air. Practically the entire surface area of a room's walls, floor and ceilings can be used for heating/cooling purposes. For example, 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. The ClimaComfort Panel System can be retrofitted as part of minor refurbishment work and, at long last, it is enabling people to experience that wonderful feeling of "all-round comfort".

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 in conjunction with the Roth heat pump, a producer of renewable energy. The materials and the process and product technology chosen for the system enable energy requirements (for heating and cooling) to be reduced dramatically, thus facilitating the integration of regenerative heaters (even in existing buildings). 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. The system offers huge advantages from both an ecological and an economical point of view.
The Fraunhofer Institute agrees that the ClimaComfort Panel System offers excellent comfort, particularly when external walls are lined.

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). The study is based on DIN EN ISO 7730. It also reveals that the temperature control skirting 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. The use of the ClimaComfort Panel System on the ceiling is particularly recommended for cooling purposes.

Optimisation thanks to highly efficient ClimaComfort heat conduction film

In old buildings, draughts can be felt and mould can form on external walls, on window reveals, in areas where ceilings meet walls and in corners where external walls meet internal ones. This is down to thermal bridges, which reduce the surface temperature of the wall in a localised area. With Roth’s high-performance temperature control skirting, even these parts of a building can be made cosy and comfortable by increasing the surface temperature. The heat conduction film consists of a high-performance heat-conducting composite film (with a thermal conductivity of around 350 W/mK) and a flexible, high-performance insulating layer (thermal conductivity 0.013) that is 5 mm thick.
Unique performance profile: Comfort, energy efficiency, fast responsiveness

The ClimaComfort panel and its high-performance temperature control skirting prevent the walls, ceiling and floor of a room cooling down from inside. So, by observing the IBP guidelines and making careful plans, even old buildings can have cosy living spaces. This way of lining external walls is particularly well suited to buildings with listed facades.

Thermal measurements taken in accordance with EN 1264 clearly demonstrate what the system is capable of. Its most impressive feature is its fast reaction time. Furthermore, with an inlet temperature of 35 °C, the system can achieve a thermal output at the wall of up to 88 W/m². When used in conjunction with Rigips Climafit plasterboard, which offers a high thermal conductivity, the system can achieve heating and cooling outputs that would have been simply unimaginable with the conventional linings used in surface-embedded temperature control systems.
Roth ClimaComfort® Compact System
Renovation made easy

- Minimum installation height
- Quick reaction
- High stability
- Flexibility
- Safety monitoring for backfilling
- Installation on existing screeds
- Quick, easy and universal assembly

Heating and cooling for renovation projects and new buildings

The Roth ClimaComfort® Compact System is a heating and cooling system which is particularly well suited to renovation projects. The extremely low, flat installation set-up and the resulting high system reaction speed open up new opportunities for planning and installation. This makes things easier and more convenient for the building contractor.

The 14 mm high ClimaComfort Compact system panel is made of a partially crystalline material. The new material and the unique panel structure are responsible for the great stability and toughness combined with flexibility. 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 panel structure with undercutting makes reliable installation of the system pipe possible in a spiralling or meandering form in a 75 mm grid. A diagonal arrangement at intervals of 105 mm is also possible.

Basic building blocks of the Roth ClimaComfort Compact System

- Roth ClimaComfort® S5 System Pipe (material composition and processing method as for the tried-and-tested X-PERT S5®+ CoEx Technology)
- Roth ClimaComfort® Compact System Panel (transparent, vacuum-formed synthetic panel)
For installation on the floor, the installation set-up consisting of system panels and a system pipe is filled with a quick-setting filling and sealing 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 transparency of the system panel means that you can check that the compound has been filled to the maximum level. This is a decisive factor in ensuring the safety of the entire floor structure. The installation height of the ClimaComfort Compact System amounts to only 17 mm.
Renovating bathrooms with the Roth ClimaComfort® Compact System

Having a floor heating and cooling system for your own four walls is no longer a privilege which can only be enjoyed by those who are building their own homes from scratch. Homeowners often want to retrofit underfloor heating into their houses or flats when renovating existing rooms such as bathrooms, where people will sometimes walk around barefoot. Depending on the location and conditions of the room in question, this can be achieved using the Roth ClimaComfort® Compact System, without the need to create a step up into the bathroom to accommodate a raised floor. The system is retrofitted without having to prise up the floor (a time-intensive procedure that generates a lot of dirt).

When renovating a bathroom by integrating the ClimaComfort Compact System into 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.

With its extremely low installation height of just 17 mm, the Roth ClimaComfort® Compact System for heating and cooling is perfectly suited for use in bathroom renovation work. As a specialist in floor heating and cooling systems, Roth has developed this renovation solution for installation on existing screeds.

A one-stop supplier of energy and sanitary systems for modern building technology, Roth also 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, awards Roth’s ClimaComfort® Compact System Panel a prize for innovative environmental protection in the field of plastics processing. The panel is made of 100% recycled PET. The plastic is primarily obtained from transparent drinks bottles.

Award for “Plastic Recycling Product of the Year”
Roth ClimaComfort® Compact System at a glance

- Minimum installation height of just 17 mm
- Rapid reaction when heating and cooling (ideal when used in conjunction with Roth E+ heat pumps)
- ClimaComfort S5 11 mm System Pipe in tried-and-tested X-PERT S5+ quality
- ClimaComfort Compact system panel offers great stability combined with flexibility for easy handling
- Safety monitoring for backfilling by means of transparency of the system panel
- Installation on existing screeds (ideal for renovating kitchens and bathrooms, for example)
- Low heating water temperatures lead to energy savings
- Quick, simple and universal assembly, even in unusually shaped rooms that present difficulties
- Compatible module in the Roth floor heating and cooling systems product line
Roth large-scale applications – high-performance heating and cooling systems

Roth offers special large-scale solutions for surface temperature control in buildings with unusual load requirements or constructions. This is where Roth Pipe Fixing Systems come into play, for example, in industrial premises and open spaces. In addition to the Pipe Fixing System, the Roth ClimaComfort® 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 Pipe Fixing System – a match for any challenge

Demanding structural and static requirements, such as those associated with industrial and open spaces, as well as with sport floors, call for Roth floor heating and cooling systems based on our Pipe Fixing System. When laying pipes with dimensions of 20 to 25 mm, the system also offers flexibility in terms of installation arrangements and distances.

In addition, it is ideally suited to heating and cooling via walls and ceilings. 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 Pipe Fixing System can be used wherever there are any building-specific requirements with regard to installing pipes for floor 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 underfloor heating, and stadium construction.
**Roth industrial floor heating – to withstand even high static requirements**

For high load requirements in large halls where, for example, heavy machinery, forklift trucks or lorries are used, aircraft are stored or high-bay warehouses and logistics centres are run, high-performance floor structures are essential. Roth industrial floor heating also saves energy thanks to the low inlet temperatures of the heating water, while low transmission and ventilation heat losses have a favourable effect in the upper ceiling area. 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 floor heating units, thus minimising operating costs and enabling investment costs to be paid off quickly.

Roth industrial floor heating can be integrated into all static ceiling and floor constructions and is suited for all types of concrete used for these applications (reinforced concrete, steel fibre concrete, rolled concrete). In accordance with the building’s specific requirements, the pipes for the heating and cooling system are integrated into the concrete construction and connected hydraulically to the energy source.

**Roth outdoor area 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. It offers installation options which can be varied to suit the specific construction requirements of each building, such as system solutions based on the Roth Pipe Fixing System and high-performance solutions for high structural and static requirements.

Harley Davidson office and sales building, West Michigan, USA

Roth outdoor area heating, SMA Solar Technology, Niestetal, Germany
Roth offers a specially developed Pipe Fixing System solution for flexible-surface sprung floors. The support elements for incorporating and securely fixing the system pipes at the measured installation distances consist of a prefabricated plastic profile with integrated pipe holders. Using coordinated fixing brackets, the support elements in the Roth Pipe Fixing System can be optimally integrated into any sprung floor construction, no matter what type of insulation layer is used. 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 used in conjunction with sprung floor constructions from different sport floor manufacturers. Architects, planners and structural engineers will have all the flexibility they need to transform all kinds of usage possibilities into reality.
Roth ClimaComfort® TBS 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 TBS or the Roth ClimaComfort® Panel System.

The Roth Dry Construction System for underfloor heating using hot water is the perfect match for flexible-surface sport floors conforming to DIN 18032. We recommend that the entire Roth Dry Construction System is covered with a zinc-plated covering sheet. The flexible-surface layer made of polyurethane composite foam is then arranged on top of this sheet.

The sport and multi-purpose linoleum coating is applied on site to a layer made of plywood panels.

Even mixed elastic sport floors of construction type A and B according to DIN V 18032-2 can be implemented practically and in line with standards using the various Roth system solutions for floor heating and cooling systems.

The heating circuit for the Roth ClimaComfort® TBS floor heating system in the Hinterlandhalle in Dautphetal is connected using a Tichelmann distribution network.
Roth Isocore® concrete core temperature control
forward-looking system technology

- Individual advice
- Building-specific system solutions
- Variable installation techniques
- Comprehensive service

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

Roth Isocore® concrete core temperature control enables a building’s temperature to be heated and cooled through the integration of the water bearing pipe system in solid concrete ceilings and wall modules, making use of their capacity for storing energy. Roth Isocore® is ideally suited for use in the construction of new office and administrative buildings with a high thermal mass. Thanks to the low system temperatures when heating and the relatively high system temperatures during cooling, the Roth Isocore® can be combined with renewable energy sources, such as solar and heat pump systems, to excellent effect. The Roth Isocore® is an energy-efficient, environmentally friendly and forward-looking system designed for all-year-round building temperature control with ecological concerns very much in mind.

Skygarden Arnulfpark, Munich, Germany

Kleines Festspielhaus theatre in Salzburg, Austria

Roth concrete core temperature control in the Skygarden, Munich:
- 16,500 m² active surface area with Roth Isocore®
- 116,500 m DUPEX S5® - 20 mm System Pipe
Roth Isocore® concrete core temperature control at a glance

- Individual building-specific system solutions adapted to suit on-site construction specifications for solid ceiling and wall modules
- System components that work in harmony with one another
- 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

Büro Campus Deutz, Cologne, Germany

Central bus station, Munich, Germany
Photo: HOCHTIEF Projektentwicklung GmbH

Roth concrete core temperature control in Munich central bus station
- 7,000 m² active surface area with Roth Isocore®
- 47,000 m DUOPEX S5 ¢ 20 mm System Pipe
Floor heating and cooling systems should guarantee an operational mode which is optimally suited to atmospheric conditions as well as to user requirements, while at the same time offering the highest degree of economic efficiency and the best possible energy utilisation. The mandatory requirements contained in the EnEV (Energieeinsparverordnung) include provisions for devices for controlling and regulating floor heating and cooling systems in relation to such things as outside temperature and time, in addition to temperature regulation in individual rooms. Roth control technology components meet these requirements and are perfectly matched to the mode of operation employed by Roth floor heating and cooling systems.

Roth controls for individual rooms are specially adapted to the needs of the application in question (heating/heating and cooling) and are characterised by their extremely straightforward method of operation. Due to the reduced amount of wiring work required, wireless control is suitable for new buildings and particularly for renovation projects.

Naturally, the Roth control technology components are also covered, like the other system components of the Roth floor heating and cooling systems, by the extensive guarantee service provisions listed in the Roth warranty certificate.
Roth EnergyLogic Touchline
maximum comfort at minimum cost

> Efficient and saves energy
> Offers comfort and convenience
> Modern and always up to date

Roth EnergyLogic Touchline – state-of-the-art wireless control system for optimum living comfort

The Roth EnergyLogic Touchline wireless control system enables the temperature in every room to be monitored precisely to determine heating requirements. This data is collected and continuously analysed by the control distributor to ensure that the associated heating circuit or actuators are optimally controlled. Each room is thus provided with the right amount of energy at the right time, preventing any overheating and enabling the temperature to be controlled quickly and precisely. This can save up to 20 percent of heating costs. The Roth EnergyLogic Touchline controls heating and cooling conveniently and efficiently. The LAN connection and other communication interfaces make it possible to extend the system and integrate heat generators quickly.

The future starts now

The Touchline room control unit forms part of the overall system. All Touchline room control units feature a high-gloss surface with an easily readable display and five sensor buttons. The innovative sensor buttons are highly responsive and resistant to dirt and wear. With a PC or laptop, it is possible to set up a direct connection to the Roth wireless control system via the integrated LAN interface. This means, for example, that system values such as room temperatures can be read out easily and setpoint values can be changed. System parameters can also be monitored easily and conveniently via a PC, especially in large residential buildings. In future, the LAN interface on the control unit will enable connections to the Internet or to a WLAN network, so communication with smartphones will be possible. An integrated SD memory card with boot loader software makes it easy to upgrade the system without replacing the control unit.

Extremely flat design

The Touchline connection module with 4, 8 or 12 channels provides the link for a perfect, accurate exchange of information between the Touchline room control units and the actuators.
More than just a room thermostat

With each Touchline in-room radio control unit, the room temperature can be set directly – but that’s not all. The unit also provides additional information and access to all system parameters as required.

The Touchline in-room radio control units are part of the complete Touchline radio control system. The current room temperature is permanently shown on the large display panel. The temperature can be adjusted easily and directly at any time using the two upper sensor buttons. During operation, the units also provide additional information about the battery status, radio connection and operating mode. The menu button can be used to select various operating modes (heating, reduced, timer programmes etc.). An efficiency display supplies information about the current energy consumption.

Every in-room control unit has two menu levels:
- Timer programmes and battery saving modes are user menu items. There is also a password-protected service menu which allows the installer to read off and adjust the system parameters. A simple menu structure and appropriate factory settings enable the installer to get the system up and running in no time at all.

The bi-directional radio connection (868 MHz) between the in-room control unit and the connection module guarantees highly reliable transmission.

Since each in-room control unit is capable of both sending and receiving signals, the user is provided with all the necessary information and feedback from the connection module, which makes the system much easier to install, set up and operate. The energy-optimised signal strength adjustment also offers the benefit of a long battery life.

Energy savings: The energy consumption of each in-room control unit, including the 230 V model, is less than 0.2 Watts. Consequently, five in-room control units in an average-sized apartment together use less than 1 Watt.
Roth Touchline app
Full temperature control via your iPhone

Thanks to the Touchline app, you can operate your Roth EnergyLogic Touchline radio control system via WLAN at home or via the Roth portal server on the Internet when you are out and about. Simply connect the Touchline connection module to the existing home network via RJ45. You need to use a WLAN router when setting it up for the first time.

The Touchline app is available for the Apple iPhone (Version 4 and above), iPad and iPod touch (WLAN access only).

Once the app has been installed, you can view the individual room temperatures and check and alter the set-point values. The function mode (daytime, reduced, frost protection operation) of the individual in-room radio control units can be changed – or the function mode of the entire system can be changed with just one touch of a button.

To make it even easier to use, names can be given to the individual in-room radio control units in the app under "Settings".

At a glance
Easy operation, whether you’re at home or out and about
› Read off room temperatures
› Adjust set-point values
› Select the function mode of the individual in-room radio control units (daytime, reduced, frost protection operation)
› Function mode of the entire system can be adjusted with just one touch of a button
› Names can be individually chosen for each in-room radio control unit
The Roth heating circuit manifold with Touchline connection module distributes heat evenly and maintains room temperatures at a constant level, thus keeping the building’s inhabitants cosy and comfortable.

Infrared measurement of the surface temperature establishes the optimum temperature to keep feet comfortable.

- **Roth EnergyLogic Touchline – convenient and efficient heating and cooling**

  > Energy savings
  extremely precise and intelligent control system, saving up to 20% in heating costs
  > Communication
  future operation via an iPhone App
  > Comfort and convenience
  simple commissioning and operation (easy to use, easy to control)
  > Up-to-date
  always state-of-the-art thanks to update functionality via integrated SD card
  > Effectiveness
  latest generation control system with optimal use of energy and hydraulics – for perfect comfort at home
  > Extra visual appeal
  modern, timeless design with innovative sensor buttons, winner of the Plus X award
  > Cutting-edge comfort
  additional infrared measurement of the underfloor heating surface temperature helps generate a comfortable, well-balanced room temperature, as well as protecting floor coverings.
  > More than just a room thermostat
  each Touchline room control unit not only controls room temperatures, but also offers complete access to all the functions and settings of the overall system
  > Operational safety and environmental benefits
  room control device with an optional 230 V power connection guarantees a constant power supply – with no need for batteries

- **Award-winning product**

  The Roth Touchline in-room control unit has won the Plus X Award in recognition of its design, user-friendly operation and range of functions. The jury for the Plus X Award also awarded the Touchline the distinction of the “Best product of the year” accolade. The accolade is the world’s biggest innovation prize for high-quality technology, sport and lifestyle products.
Roth EnergyLogic Basicline
Compact, flat design

- High-gloss finish
- Smooth front with flush-mounted control knob
- Pure white enclosure (RAL9016)
- LED operation or status display glows gently through the enclosure
- Extremely compact and flat design, with a depth of just 16 mm

Efficient control, stylish design

Designed for room-by-room control of floor heating and cooling systems, the EnergyLogic Basicline wired room thermostats are a new addition to Roth’s product range. With their innovative, modern styling they have been modelled on the EnergyLogic Touchline in-room radio control units. This means that all Roth components in this product family have a consistent look.

Stylish highlights 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, the LED display glows gently through the high-gloss, pure white enclosure, providing attractive highlights in the home. Operation is simple thanks to the flush-mounted control knob on the enclosure.

Product family rounded off with Basicline thermostats for individual room control

Depending on the function and features, the Basicline series includes six types of thermostat. Roth offers the Basicline H, Basicline H/E room thermostat for controlling the temperature of floor heating systems and the Basicline H/C 230 V and the Basicline H/C 24 V for fully automatic temperature control in heating and cooling mode. Where public buildings are concerned, the Roth Basicline H, I with internal concealed temperature settings is a suitable option. Depending on the mode selected, the LED display of the room thermostats lights up red when heating and blue with the Basicline H/C when cooling.

In addition, there is also the digital Basicline T clock thermostat with a built-in week timer. The clock thermostat allows the required temperature profile to be individually adjusted throughout the day in line with the occupants’ habits. This guarantees the greatest possible comfort with maximum energy savings.

Depending on the model, high-quality clamp-type or plug-in terminals are used for electrical connection of the room thermostats. Roth connection modules, which are installed in the manifold cabinet, also ensure clear wiring with Roth actuating drives.
**Basicline H room thermostat**

The Basicline H wired, electronic room thermostat is used for the standard function “H” (heating) and offers the following benefits:

- Extremely simple to use
- Integral red LED display
- Reduced input for energy savings
- Completely silent
- Easy to connect with high-quality plug-in terminals

**Basicline H, i room thermostat**

Roth’s Basicline H, i electronic room thermostat is comparable with the Basicline H. With its internal concealed temperature settings, it is ideal for use in public buildings. It is available as both a 24 V and a 230 V model.

**Basicline H/E room thermostat**

The Basicline H/E is nearly equal with the Basicline H. Additionally it has a connection for the external floor or wall temperature sensor.

**Basicline T clock thermostat**

Roth’s newly developed electronic, digital Basicline T room thermostat for heating and cooling modes comes with a built-in week timer, a large, illuminated, two-line display and five modern sensor buttons. It is suitable for pilot control in combination with all 230 V Basicline thermostats.

A large selection of operating modes means that there are many options to choose from: automatic, convenient, reduced operation and frost-protection temperature, as well as a party and holiday function.

- Freely programmable temperature profile for each room
- Large, modern display, wear-resistant sensor buttons
- High-quality, extremely flat enclosure
- Easy to clean finish throughout
- Heating and cooling operation
- Holiday and party function
- Night setback output
- Tamper-proof design for public buildings
- Optimal energy savings
- With external sensor for additional monitoring and control of floor temperature

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

Roth’s Basicline H/C 230 V 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 room thermostat.

- Heating and cooling operation
- Simple to use
- Built-in red/blue LED display
- Reduced input for energy savings
- Completely silent

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

Roth’s Basicline H/C 24 V room thermostat is comparable with the Roth Basicline H/C 230 V room thermostat, but it also comes with a connection for the Roth 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.

**External temperature sensors for the Basicline range**

For installation in screed or as a remote sensor on the wall. Compatible with room thermostat Basicline H/E, Basicline H/C 230 V and Basicline T.
The small-area control station is used for connecting floor heating systems to existing radiator heating systems. Two underfloor heating circuits can be connected with the dual coupling. The room temperature is controlled via a Roth room thermostat and the integrated actuator (fixed-value temperature control).

Roth fixed-value control set HE horizontal

A pre-fitted control station for constant inlet temperature control in floor heating systems with a side connection of the heat generator and a thermal output of up to 14 KW. The control set is for use in manifold cabinets and requires a depth of at least 150 mm. The delivery includes a control set with high-efficiency pump, thermostatic head, capillary tube temperature sensor and safety temperature limiter.

Roth fixed-value control set with high-efficiency pump

A pre-fitted compact control station with bottom ports for constant inlet temperature control in floor heating systems and a thermal output up to 14 KW. The control set is designed for use in manifold cabinets at a depth of 120 mm and is installed directly on the manifold. The delivery includes a state-of-the-art high-efficiency pump and additionally ball valves and a thermometer.

The benefits of Roth control stations

- The Roth control stations are categorised in energy efficiency class A and comply with the ERP Directive for 2013 and 2015
- Suitable for renovations and new buildings
- Quick and simple commissioning
- Easy to operate
- Ideal for renovations and retrofitting
Compact weather compensation control station for floor heating and cooling systems (weather-compensated temperature control) 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 control station RKR 3 H/K**

A control station including an integrated CC-HC climate controller for central, weather-dependent inlet temperature control (weather-compensated temperature control) for floor heating and optional radiant cooling. The compact, preassembled unit is completely enclosed in EPP housing with fully insulated hydraulics in accordance with the EnEV. The Roth control station RKR 3 H/K is designed with an enhanced thermal output of up to 18 KW for detached or semi-detached homes.

**Roth CC-HC climate controller**

The CC-HC climate controller is a fully electronic controlling device. It forms part of Roth’s weather compensation control stations and the control station RKR 3 H/K. The climate controller is easy to operate, with two configurable heating programmes and ten different weekly programmes. It features a large display that constantly shows the inlet and outside temperature, as well as the status of the mixer, circulation pump and operating mode. It also offers the possibility of activating additional components such as heat generators or switching valves.

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### Technical data for Roth control stations

<table>
<thead>
<tr>
<th>Type</th>
<th>Small-area control station</th>
<th>Fixed-value control set HE horizontal</th>
<th>Fixed-value control set with high-efficiency pump</th>
<th>Weather compensation control station with high-efficiency pump</th>
<th>Control station RKR 3 H/K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional principle</td>
<td>Fixed-value temperature control</td>
<td>Weather-compensated temperature control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixing valve</td>
<td>2-way injection valve</td>
<td>3-way mixing valve</td>
<td>3-way mixer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controller</td>
<td>Actuator and thermostatic valve</td>
<td>Thermostatic head with capillary temperature sensor in inlet</td>
<td>Electronic controller with inlet, return and outside temperature sensors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting range</td>
<td>10 - 45 °C</td>
<td>20 - 50 °C</td>
<td>10 - 45 °C (individually adjustable)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area of application</td>
<td>Underfloor heating e.g. in renovation projects</td>
<td>Floor heating systems in flats/floors, for manifold cabinet from 150 mm deep</td>
<td>Floor heating systems in flats/floors of a building, installation in manifold cabinet</td>
<td>As a central control station</td>
<td></td>
</tr>
<tr>
<td>Energy efficiency class</td>
<td>Energy efficiency class A, compliant with the ERP Directive for 2013 and 2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermometer</td>
<td>–</td>
<td>1 unit</td>
<td>2 units</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ball valves</td>
<td>–</td>
<td>–</td>
<td>2 units (inlet and return)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal output</td>
<td>max. 2 KW</td>
<td>max. 14 KW (take planning parameters into account)</td>
<td>max. 18 KW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Unit supplied ready for connection, completely preassembled and wired</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (mm) L x H x D</td>
<td>215 x 175 x 97</td>
<td>240 x 380 x 140</td>
<td>276 x 360 x 110</td>
<td>256 x 360 x 110</td>
<td>300 x 370 x 240</td>
</tr>
</tbody>
</table>

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Roth heating circuit manifolds keep you cosy and comfortable

The heating circuit manifold distributes heat evenly and maintains room temperatures at a constant level, thus keeping the building’s inhabitants cosy and comfortable. Used in conjunction with the room thermostat, the manifold ensures that flow volumes can be precisely controlled.

The flow distributor and return flow collector, made from brass circular profiles, can be connected from the left or right via the 1” flat-sealing external thread. There is no misalignment at the ends of the pipes, so no compensating pieces are required and there are fewer seal contact areas.

The flow and return pipes are staggered, which makes assembly easier.

The heating circuits are connected with a 3/4” Euro cone. The manifold is pre-mounted on insulated consoles.

The valve cores are suitable for Roth actuators, making the heating circuit manifold an integral part of the system solutions offered by Roth.

The heating circuit manifold is available with between 2 and 12 connections and with or without a flow volume indicator. It can be used for all Roth system pipes in sizes of 11 to 20 mm.

Roth Control Technology excellence all round

Roth actuator now uses just 1 Watt of electricity
> Compact and high-quality
> Simple plug-in installation
> Completely watertight (IP54)
From manufacture through project planning, all the way on to assembly – and, of course, beyond!

Those who want to enjoy all the advantages of floor heating and cooling know they can put their trust in the comprehensive Roth system range, since Roth not only offers the perfect solution for any requirement, but also promises customers a high standard of quality and service on which they can rely.

A high degree of prefabrication ex-works, universal utilisation possibilities, system components that are designed to work optimally with one another, long service life and stable value – these are the benefits offered by the Roth System. They bring together all of the advantages of floor heating and cooling to their fullest extent. Why be satisfied with less?

Roth floor heating and cooling systems are always the perfect fit

All Roth floor heating and cooling systems are very well suited for use in combination with one another.

Depending on requirements for quality of living, Roth offers individualised temperature equalisation via floors, walls and ceilings for new buildings and renovations.
References
actual examples that speak for themselves

1 Roth underfloor heating
   Hotel Loisium, Langenlois, Austria

2 Roth Pipe Fixing System
   Kulturkirche St. Jakobi cultural centre, Stralsund, Germany

3 Roth Original Tacker® System
   Cineplex and arts centre, Marburg, Germany
4 Roth ClimaComfort® TBS
Frauenkirche church, Dresden, Germany

5 Roth industrial floor heating
Kleiner commercial premises, Kempten, Germany

6 Roth Original Tacker® System and
Roth AuraCompact® E+ 12 kW E heat pump
Office facility and training centre, Arnsdorf, Germany
References
actual examples that speak for themselves

1  **Roth Original Tacker® System**  
   Spa, Linsberg, Austria

2  **Roth underfloor heating**  
   Town hall, Sulzbach-Rosenberg, Germany

3  **Roth Isocore®**  
   Media Tower, Düsseldorf, Germany
4 Roth ClimaComfort® Compact System
Luggesmühle housing complex, Bottrop, Germany

5 Roth Original Tacker® System
Luxury apartments on Goethegasse, Vienna, Austria

6 Roth Isocore®
Rheinisches Landesmuseum (Rhineland regional museum), Bonn, Germany
References
actual examples that speak for themselves

1. Roth underfloor heating,
   Roth Original Tacker® System
   Central station, Marburg

2. Roth ClimaComfort® Panel System
   Roth Original-Tacker® System
   „Rauchkuchlhaus“, Schliersee

3. Roth Quick-Energy® Tacker System
   Roth Original Tacker® System
   Residential house, Dautphetal
Our strengths

Your benefits

Innovation

› Early identification of market requirements
› In-house materials research and development
› In-house engineering
› The company is certified according to DIN EN ISO 9001:2008

Service

› 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 and extended liability agreements

Products

› Complete range of easy-to-install product systems
› Manufacturing expertise for the complete product range within the Roth Industries group of companies
Roth Energy and Sanitary Systems

**Generation**
- Solar systems
- Heat pump systems
- Solar heat pump systems

**Storage**
- Storage systems for
  - Domestic and heating water
  - Combustibles and biofuels
  - Rainwater and waste water

**Application**
- Floor heating and cooling systems
- Pipe installation systems
- Shower systems

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