

Energy systems

Pipe installation systems



**System-based drinking
water installation and
heating installation**



Living full of energy

Drinking water plays a vital role in our day-to-day lives. Whether you are using it for preparing meals and drinks, keeping yourself clean, washing items that have been in contact with food or doing laundry – drinking water is a precious commodity and we need it supplied in perfect quality.





Drinking water is one of life's essentials and we want to ensure it's always of the best quality

■ Roth pipe installation systems for consumer protection

Conventional materials, connectors and connection methods cannot be used for drinking water installations in many areas and regions due to the continuously changing quality of the water. Various factors, for example excessively high or low pH values, free carbon dioxide and chlorides in the water etc., can lead to problems with corrosion in conventional drinking water systems, causing additional contamination.

Conventional installation systems and materials are no longer able to cope. The Roth drinking water system prevents incrustations, deposits and corrosion.

Designed as a universal complete solution compatible with all types of installation in modern building infrastructure systems, it combines numerous advantages. All system components are developed based on practical application and coordinated with each other. Premium materials, quality-controlled production and system approval according to DVGW (Deutsche Vereinigung des Gas- und Wasserfaches e.V. = German Technical and Scientific Association for Gas and Water) are all key features of the Roth drinking water system.

All components of the Roth drinking water system meet the requirements of the revised German drinking water regulation (Trinkwasserverordnung) and DIN 50930-6.

The Roth drinking water system can be used without restriction for all grades of drinking water.

Complies with the
current German
drinking water
regulation and the
German Federal
Environment Agency's
white list

Roth pipe installation systems

one solution for sanitary and heating applications

- > universally compatible
- > easy, convenient installation
- > secure connections
- > variety of options available
- > comprehensive range



■ Ease of installation and safety combined in one system

The Roth range of pipe installation products with PressCheck function offers system solutions for sizes up to 63 mm. The systems consist of Roth Alu-Laserplus® multi-layer pipes and Roth plastic fittings. Roth metal fittings for threaded connecting points and connectors round off the Roth pipe installation range. The fittings are attached to the pipe using Roth radial press fitting technology.

In this way, the Roth pipe installation range ensures secure, non-detachable, form and force fitting connections in drinking water and heating installations. The innovative system components provide enhanced ease of installation and safety.

In addition Roth provides comprehensive warranty for the coordinated system. System tests according to DVGW Worksheet W534 and DIN EN ISO 21003 testify to the system's efficiency.

■ Everything from the house service connection to the point of use

The Roth drinking water installation system can be used without reservation for all grades of drinking water according to the German drinking water regulation. The comprehensive product range covers everything you need for your installation project, starting from the house service connection and continuing to the ascending pipes to the point of use.

■ Heating installations from the heat source to the radiator or manifold

Integrated heating installations can be realised quickly and without problem using the comprehensive product range of the Roth pipe installation system.

The coordinated system components cover:

- > various control stations for temperature precontrols
- > diverse combinations of connections for radiators
- > hydraulic components for radiant heating manifolds

■ Wide variety of Roth T-connectors

The Roth Werke range of fittings offers unparalleled depth. No matter what installation situation you are faced with, T-connectors in various graded sizes are available for fast, cost-effective, and space-saving installation without having to resort to additional reducing elements or other shaped parts.



Go to technical information



■ **Approved to international standards**





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 advice, 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. Comprehensive **after-sales services**, warranties and guarantees complete the service package.

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

In addition, all components of the overall system are finely tuned to each other, working together perfectly and ensuring maximum energy efficiency with the maximum comfort for users. The specialist company can use the documents prepared by Roth for applications that need to be submitted and as documentation for its customers.

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

■ 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 pipe installation systems and your advantages for the respective areas of application.

■ System-based drinking water installation and heating installation

Those who would like to enjoy all the advantages of Roth pipe installation know they can put their trust in the comprehensive Roth system range. Whether a drinking water installation or a heating installation, our field service operations can provide you with advice and assistance.

■ Planning

When it comes to planning and project development for Roth pipe installation systems, we are happy to give you our support.

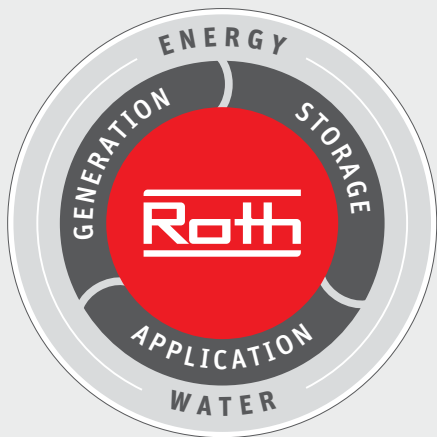


After-sales service

■ Quality for the safety of our customers

High-quality products and services form the basis of our 10-year product warranty for the Roth pipe installation systems. Our worldwide insurance protection also covers long-term damage and removal and installation costs for a new product in the event of possible defects.

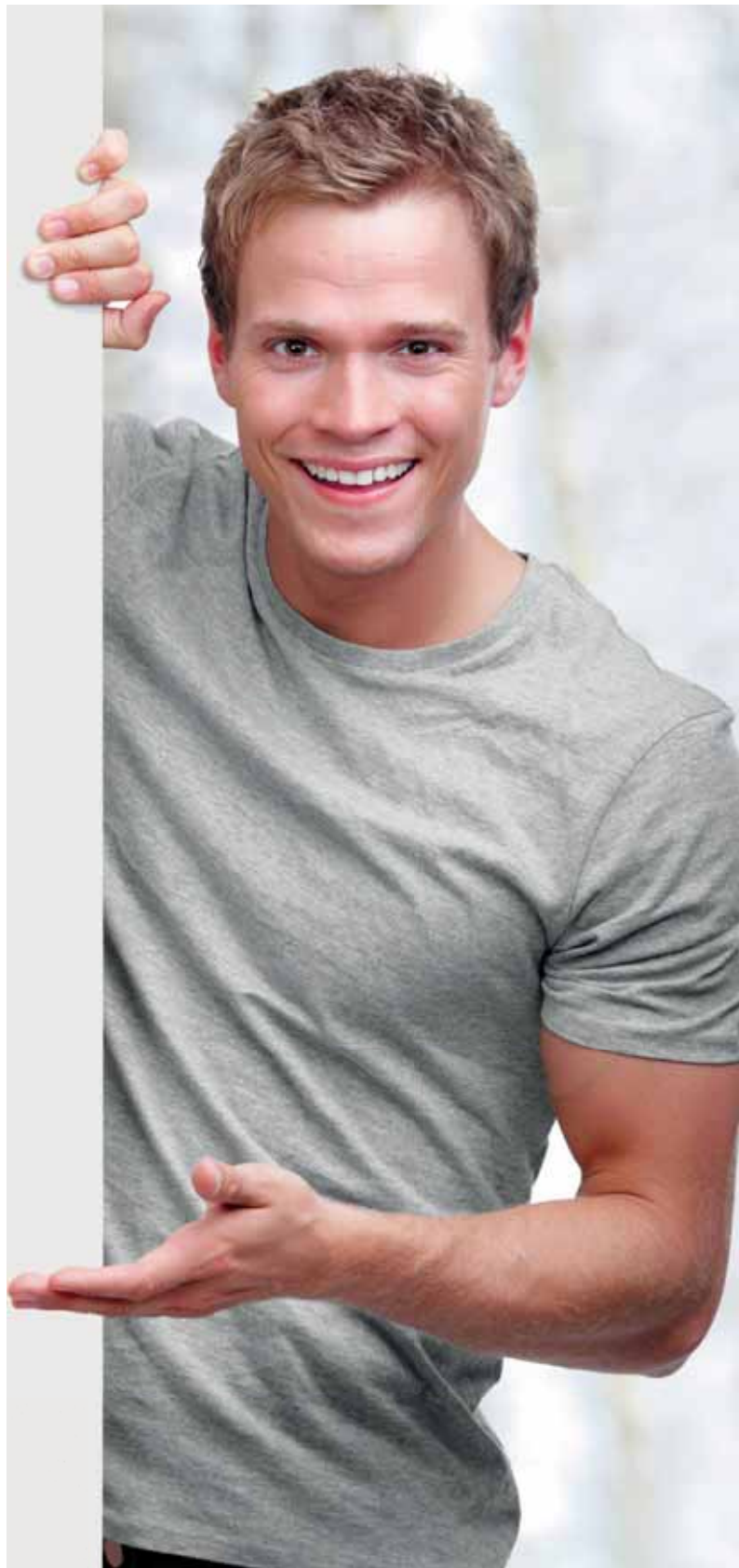
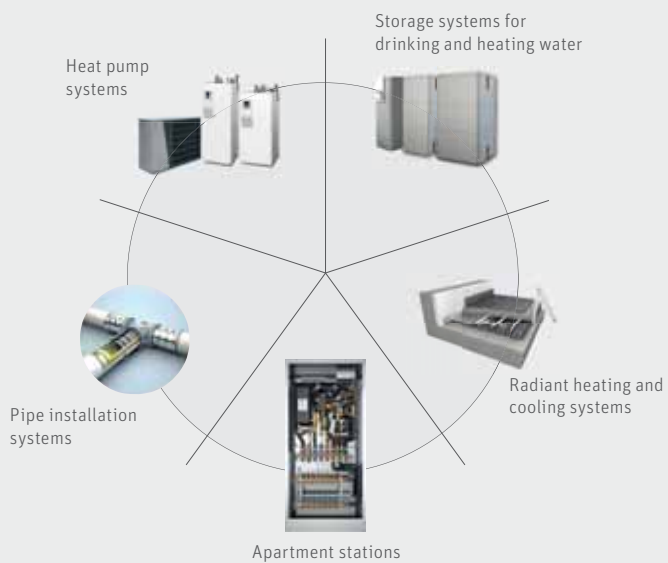
The assumption of liability agreement 2.0 with the ZVSHK (German Central Association of Plumbing, Heating and Air Conditioning) rounds out our after-sales service.



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 HygieneXtra

for perfect drinking water



■ Play it safe with Roth HygieneXtra

Drinking water installations must meet the high requirements of drinking water hygiene. The Roth pipe installation system with its components offers solutions that meet the requirements of Roth HygieneXtra. All the products in our system are DVGW-approved and coordinated with each other.

They represent the ideal mix of components to cover all possible requirements in drinking water and heating installations.

■ The selection of suitable materials plays a vital role in maintaining optimal drinking water quality

In order to protect consumers, the material must not create a health hazard. High-performance PPSU plastic and the copper alloys which Roth uses on the metal fitting are ideal for drinking water installations. High-quality brass is used, complying with all current standards and in accordance with the generally recognised state-of-the-art technology.

■ We are hygienic

The German drinking water regulation sets down strict limit values – a plus for your health. Well prepared with the Roth pipe installation system – yesterday, today and tomorrow.



Professional connections

risk-free installation with Roth system components



■ An ideal assortment of system components

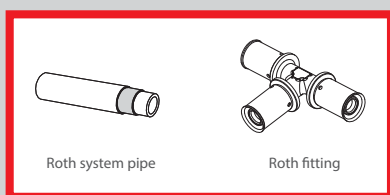
For dependable connections, never combine the Roth pipe installation system with components from other manufacturers. All the products in our system are DVGW-approved and coordinated with each other. They represent the ideal mix for all possible requirements in drinking water and heating installations.

It is important to use only original Roth connection technology (Roth press tools and Roth press jaws) to connect these components, as the press contour has been specially adapted to suit our fittings.

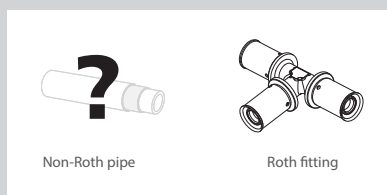
■ Coordinated for safety

A measure of our faith in our products is the comprehensive 10-year Roth warranty issued for the Roth pipe installation system (subject to our warranty terms).

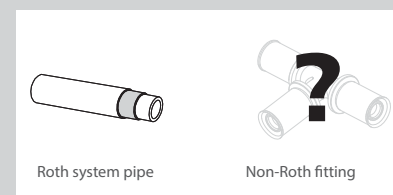
This warranty applies only if Roth Werke system components are used together with Roth connection technology. The mixing of Roth technology with components from other manufacturers will render the warranty null and void. In this case the risk is borne solely by the installer. It therefore pays to rely on the advantages of the optimally coordinated system of Roth components.



Roth system warranty*



No system warranty



No system warranty

* when using Roth connection technology



Roth plastic fittings with PressCheck

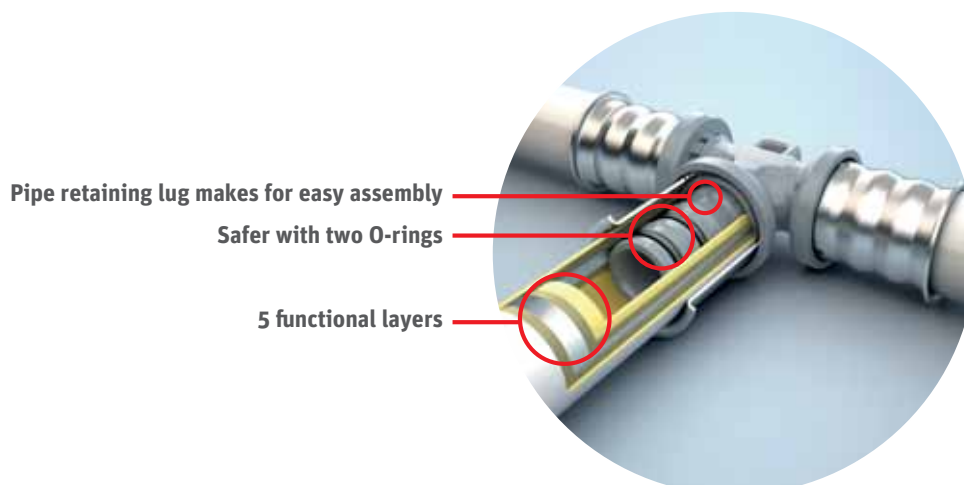
for connections you can depend on



■ Innovative in form and function

To ensure reliable pipe installations within a building's technical infrastructure, Roth developed its PressCheck plastic fittings made of high-performance PPSU (polyphenylsulphone) plastic, which have since proven their worth a million times over. Roth is a specialist plastics converter and it has channelled its extensive expertise in high-tech plastics into developing the new plastic fittings.

The plastic fittings are innovative in form and function. The fittings have a compact design, to make installation easier, and the integrated Roth PressCheck feature provides an extra margin of safety.



Roth plastic fittings with PressCheck

compact with added safety

- > compact design
- > easy to install in tight spaces and vertical pipe installations
- > opening for an all-round visual check of the pipe positioning
- > precise press jaw positioning
- > non-detachable and permanent connections
- > resistant to corrosion and incrustation
- > high pressure and temperature resistance
- > high-performance PPSU plastic
- > high chemical resistance



■ Compact design makes installation even easier

The slim-line, compact design gives the fittings maximum mechanical stability and makes installation easier, especially in tight spaces and when pipes are installed at an angle. The pipe mounted on the basic body of the fitting is effectively prevented from slipping off by its special contour. The installer does not have to hold on to the pipe/fitting unit, which makes press fitting a lot easier during installation of vertical pipes, offering considerable advantages in terms of convenience and speed of installation.

The installer can perform a visual check by looking through an opening in the stainless steel press-fit sleeve to ensure that the pipe is seated properly. A rotation mechanism allows the installer to check the connection from all sides.

If the stainless steel press-fit sleeve is damaged, the installer on site can easily replace the captive stainless steel press-fit sleeve, which is mounted on the body of the fitting at the factory. The special shape of the stainless steel press-fit sleeve facilitates exact positioning of the press tool jaws, ensuring a secure press fit. The Roth plastic fittings are installed using the tried-and-tested Roth press tool.





■ **Roth PressCheck
for greater safety**

The tried-and-tested press pattern on Roth fittings can easily be seen and felt, giving the installer the opportunity to perform a quick visual and tactile check of the press fitting with Roth PressCheck, which also provides extra security.

In compliance with DVGW Worksheet W534, the fittings with Roth PressCheck are designed to leak if they have not been pressed on, adding an extra margin of safety in pipe installations. A defined volume of water will escape from an unpressed connection during testing, enabling a leak anywhere in the system to be identified immediately. It is easy to forget to press a fitting when the stress level mounts on the building site, and pressure testing can prevent costly damage later on.

Once Roth plastic fittings with PressCheck are pressed on, two sealing elements on the basic body of the fitting will ensure a secure and permanent connection.

■ **PPSU – for connections
you can depend on**

The high-performance plastic PPSU (polyphenylsulphone) scores top marks in terms of tensile strength, elongation, rigidity, notched bar impact strength and heat deformation resistance. It is ideal therefore for use in drinking water and heating installations. The material is completely hygienically safe and ideal for all grades of drinking water. Roth fittings are certified in accordance with DVGW Worksheet W534 and DIN EN ISO 21003.

Safety guaranteed with Roth PressCheck

- > defined water leakage from unpressed fittings
- > visual and tactile check of the press fitting using the clearly visible Roth press pattern

Roth metal fittings with PressCheck

the ideal complement to PPSU

- > the perfect choice for threaded connections
- > ideal for system combinations with Roth plastic fittings
- > resistant to corrosion and deplating
- > outstanding properties when subjected to tensile and pressure loads
- > made from recyclable materials, making them environmentally friendly



■ Material with a proven track record

The selection of suitable materials plays a vital role in maintaining optimal drinking water quality. Corrosion or substances that are released by the materials used can significantly degrade water quality. In order to protect consumers, the material must not create a health hazard. High-performance PPSU plastic and the copper alloys which Roth uses on the metal fitting are ideal for drinking water installations. The standardised materials have a proven track record covering many years of practical application, and they conform to the current state of technology.

■ Suitable for all grades of drinking water

Roth metal fittings are characterised by their exceptional robustness and their copper material is one of the most resistant to corrosion. Even when water conditions are extreme, the material can safely be used on drinking water systems. Roth metal fittings are suitable for all grades of drinking water and can be combined with all known installation materials.



Roth mounting rail type I/SE (100/153), Roth brass wall plates with stainless steel casing and, for sound insulation, with a soundproofing kit



Roth mounting rail type I/SE (100/153), Roth brass U-shaped wall plates with stainless steel casing and for sound insulation with a soundproofing kit



■ **Roth metal fittings – just the job**

Roth metal fittings are the solution of choice. They are resistant to corrosion and deplating. They comply with the most stringent international standards and are ideally suited to meeting specific application requirements for drinking water and heating installations.

Roth metal components comply with the latest health and ecological requirements. In conformance with DIN 50930-6 and related regulations, which regulate the effects of dissolved metallic materials on drinking water quality, all Roth alloys can be used without restriction on the full range of drinking water installations. The alloys have outstanding properties when they are subjected to tensile and pressure loads. Roth metal fittings also have the innovative PressCheck feature.



Complies with the current German drinking water regulation and the German Federal Environment Agency's white list

Roth thermal decoupler

Roth HygieneXtra for perfect drinking water

Thermal insulation and pipe routing create the ideal conditions



■ The Roth drinking water system for hygienically safe installations

Different types of connections can be used in a construction project to meet the engineering, commercial and user requirements involved.

Roth U-shaped wall plates can be used for series and circular configurations. This involves looping in the individual points of use, allowing water to flow through the entire piping system and the pipe contents to be exchanged. This is how installing Roth U-shaped wall plates can prevent stagnation and create the optimal conditions for maintaining drinking water quality.

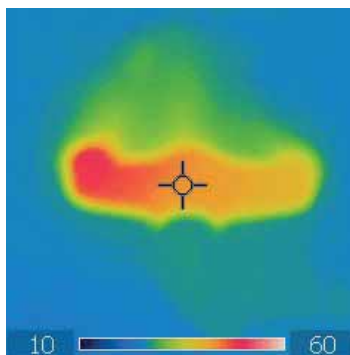
■ Heat transfer to mixer fitting – No, thank you!

As part of the Roth drinking water system, the Roth thermal decoupler is another important component of complying with standardisation requirements and hygienic safety.

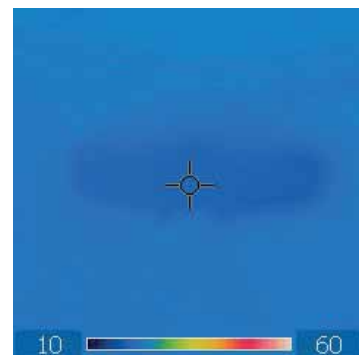
The Roth thermal decoupler prevents heat transferring from the hot drinking water to the outlet fitting and the subsequent transmission of heat to the cold drinking water. Thermal separation is important in surface-mounted outlet fittings in drinking water installations that are connected to the hot water connection (PWH, potable water hot) in the circulation.

The Roth thermal decoupler complies with DIN 1988-200 requirements. This standard says that the maximum temperature of the cold drinking water cannot exceed 25 °C.

■ Thermography of a surface-mounted outlet fitting when connected to the circulation



Heat map 1
Hot water connection with U-shaped wall plates



Heat map 2
Hot water connection when using the Roth thermal decoupler



■ The components

The pre-assembled component for connecting to the hot drinking water consists of the following individual components: Roth wall plate, Roth Alu-Laserplus system pipe and Roth heat and noise insulation box thermal decoupler. The Roth plastic fitting is selected for the T-piece as a separate component up to 20 mm according to the required dimensions. The Roth heat and noise

insulation box thermal decoupler made of expanded polypropylene (EPP) provides the necessary heat and noise insulation.

The Roth U-shaped wall plates are ideal for the cold drinking water connection, which are also available with EPP heat and noise insulation boxes. The insulation thickness of the heat and noise insulation boxes meets the requirements of the GEG and DIN 1988-200.

At a glance

- > flexible component concept
- > easy to install
- > safe thermal isolation
- > absolutely hygienic
- > combined heat and noise insulation box
- > heat insulation in accordance with current standards



Roth Alu-Laserplus system pipe

tried-and-tested multi-layer pipe technology with extra aluminium



■ **The ideal supply conduit
for your building**

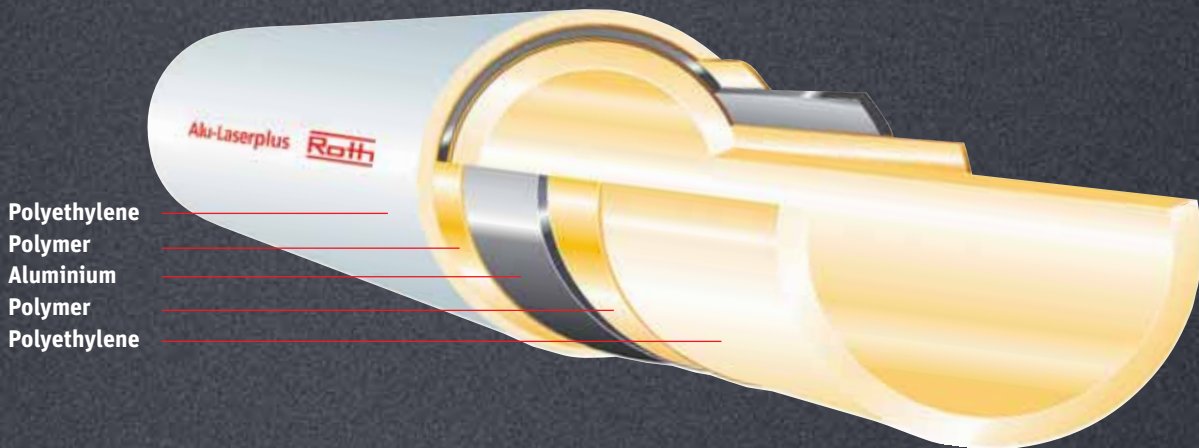
Roth engineers have made further improvements to the company's tried-and-tested five-layer pipe used in the Roth Pipe installation system. The aluminium layer of the Roth Alu-Laserplus system pipes is made of a new extra high-strength alloy, which offers added safety and increased ease of installation. Furthermore, butt laser welding has been used to form a homogeneous aluminium layer.

At the heart of the Alu-Laserplus system pipe is a thick-walled polyethylene basic pipe, which is tested for compliance with rigorous quality requirements. This greatly increases the stability of the overall pipe construction. The two high-quality polymer layers ensure a secure bond between the thick-walled basic pipe, the homogenous aluminium layer and the polyethylene protective coating on the outside.



Roth Alu-Laserplus system pipe

suitable for all grades of drinking water



■ Key features of Roth Alu-Laserplus system pipe with five functional layers

With each layer assigned a defined function, Roth Alu-Laserplus system pipes offer the following features:

- > thick-walled basic pipe for ensuring good stability
- > extra aluminium for added strength
- > butt laser-welded to form a homogeneous aluminium layer
- > high-grade polymers, ensuring that the five layers are permanently bonded
- > suitable for drinking water and heating installations (low storage costs, no risk of mix-ups)
- > corrosion-resistant
- > incrustation-free
- > oxygen barrier
- > suitable for all grades of drinking water
- > minimal thermal elongation
- > good pressure and temperature stability
- > good noise suppression
- > good dimensional stability during ongoing operation and e.g. after bending operations
- > no welding, thread cutting, soldering or gluing
- > flexible for ease of installation with minimal waste
- > constant flow rates over long periods
- > long service life
- > DVGW-certified



Special protection for demanding applications

Roth Alu-Laserplus system pipes are available with a PE protective pipe or thermal insulation in order to minimise heat loss and protect ceilings, floors and walls against overheating.

Depending on the application, you can use 9-mm symmetrical insulation for sizes 17, 20 and 25 mm, in accordance with GEG or DIN 1988-200 requirements. For sizes 17 and 20 mm, there is a 13- and 26-mm thick symmetrical 100% insulation solution as well as an asymmetric 100% insulation solution. The polyethylene pipe insulation complies with WLG 040.



Area of application: Drinking water and heating installation									
Pipe designation	Dimension								
	14 x 2.0	16 x 2.0	17 x 2.0	20 x 2.0	25 x 3.0	32 x 3.0	40 x 3.5	50 x 4.0	63 x 4.5
Pipe diameter, outer	14 mm	16 mm	17 mm	20 mm	26 mm	32 mm	40 mm	50 mm	63 mm
Pipe diameter, inner	10 mm	12 mm	13 mm	16 mm	20 mm	26 mm	33 mm	42 mm	54 mm
Water content	0.08 l/m		0.13 l/m	0.20 l/m	0.32 l/m	0.53 l/m	0.87 l/m	1.41 l/m	2.28 l/m
Building material class	B2 in accordance with DIN 4102; E in accordance with DIN EN 13501								
minimum bending radius (without bending spring)	$5 \times d_o$								
max. operating temperature over long term	70 °C (at 10 bar)								
max. short-term operating temperature*	95 °C (at 6 bar)								
max. operating pressure	10 bar								
Testing and certification basis	DVGW W542; UBA KTW; UBA Metals; DVGW W270; DVGW W534, DIN EN ISO 21003								
Installation temperature	-20 to +40 °C								
Lengths delivered: Pipe coil	100 m 200 m	100 m 200 m	100 m 200 m 600 m	50 m 100 m	25 m				
Lengths delivered: Protective pipe	75 m	75 m	75 m	50 m	25 m	25 m			
Lengths delivered: Rods		5 m	5 m	5 m	5 m	5 m	5 m	5 m	5 m

* Fault in accordance with DIN EN ISO 21003 Tab. 1

Roth radial press connection technology

one system for all applications

- > permanent press connections in a matter of seconds
- > handy, user-friendly Roth tools
- > installations from the heat generator through to the manifold or radiator
- > installations from the water meter through to the extraction point



■ Non-detachable and permanent connections

With Roth radial press connection technology you can create permanent, secure connections between Roth Alu-Laserplus system pipes and Roth fittings in a matter of seconds. To attach the Roth fittings, simply swap the press jaws or loops on the Roth rechargeable press tool or the Roth electronic press tool to accommodate the different Roth Alu-Laserplus system pipe diameters.

Roth connection technology is based on uniform circumferential radial pressing, ensuring a secure shape and force fit connection between the fitting and the Roth system pipes. This technology is designed for Roth pipe installation systems and Roth radiant heating and cooling systems.

■ Shaped to ensure a secure connection

The shape of the press sleeve and the combination ring on the Roth fittings help guide the tool when it is placed onto the fitting to ensure that the press jaws are securely positioned in exactly the right place (and cannot slip off), thus creating a secure press connection. The installer simply positions the press jaws between the combination ring on the fitting and the sleeve lip, presses the handles and the connection is finished.





■ **Universally applicable**

Any installations involving Roth pipe installation systems or radiant heating and cooling systems can be carried out thanks to Roth connection technology. This creates secure force fitting connections that can withstand rotational and tensile stress, as well as temperature variations and pressure surges. Roth connection technology is standard-compliant and offers an optimum solution for all connections that are no longer accessible after installation (e.g. connection components embedded into walls, ceilings or floors).

Roth press connection technology is perfectly suited to use with Roth Alu-Laserplus system pipes – creating a radial, uniform circumferential press profile. Only one set of press jaws is needed to press Roth Alu-Laserplus system pipes. The connections are produced cold, i.e. without any welding, soldering or heating, which reliably eliminates the risk of fire.

■ **Good quality guaranteed**

Roth offers a comprehensive warranty for using Roth connection technology, on its own or combined in a system with Roth components (Roth system pipes and fittings).

■ **The new ACO 203 Bluetooth press generation**

For the first time, an efficient electric drive with an 18-volt lithium-ion rechargeable battery has been used in the latest generation of the Roth ACO 203 Bluetooth press tool. For greater comfort the handy and compact housing is equipped with an LED for illuminating the pressing point and has an ergonomic design for practically single-handed operation. This 180° rotatable head can be used in tight spaces where access to the fittings is restricted. Roth PressCheck® fittings up to 63 mm are pressed precisely and quickly. A high number of presses and a short charging time are enabled by the lithium ion rechargeable battery used. The amount of maintenance required for the tool as a whole has been greatly reduced.

■ **Roth ACO 103 Bluetooth press tool – setting a new standard in press technology**

The Roth ACO 103 Bluetooth is a compact, lightweight, user-friendly press tool for installing permanent press fittings. This handy tool and the 180° rotatable head can be used in even tight spaces where access to the fittings is restricted. The small press tool features an ergonomic design

and is suitable for single-handed operation for press connections up to 32 mm. The retaining pin ensures that the press jaws are properly seated, The 12-volt lithium-ion battery combines a large pressing capacity with simultaneous short charging times. The battery charge level can be read off the integrated LED indicator.

■ **Secure connection with Bluetooth**

With the implemented Bluetooth wireless module of the ACO 203 and ACO 103 press tools, data is transferred to the NovoCheck app on your smartphone. The app allows the device status to be checked and the press device performance to be evaluated. An integrated report function can create site documentation of the pressings of the installation.

Roth drinking water installation

tailored connection options and configurations



■ The Roth drinking water system for hygienically safe, efficient installation

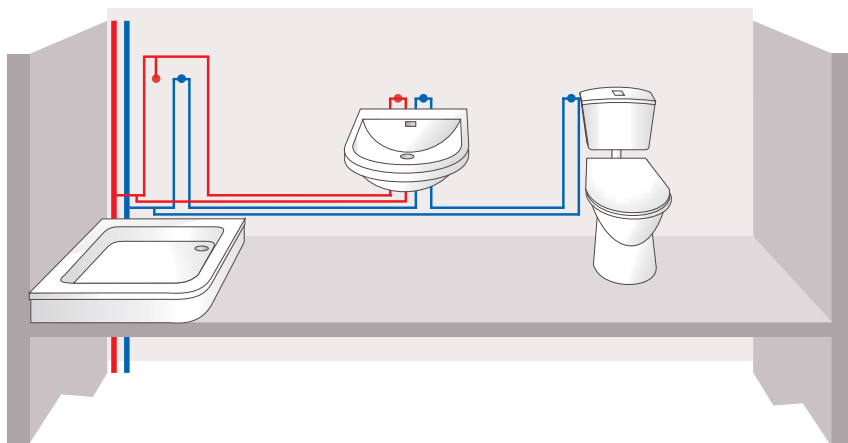
Different types of connections can be used in a construction project to meet the various engineering and commercial requirements involved.

Roth U-shaped wall plates can be used for series and circular configurations. This involves looping in the individual points of use, allowing water to flow through the entire piping system and the pipe contents to be exchanged. In public buildings and facilities in particular, such as hospitals or retirement homes, installing Roth U-shaped wall plates can prevent stagnation and create the optimum conditions for maintaining drinking water quality. The Roth drinking water system provides everything you need for your installation project, starting from the house service connection and continuing with the ascending pipes to the points of use.

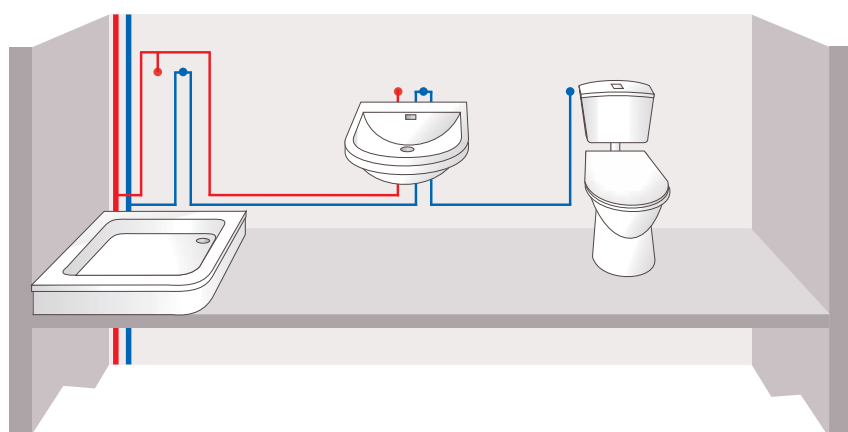
Whatever the nature of your installation (dry construction or mounted on the wall surface or in channels), the Roth drinking water system has everything you need for connections at the point of use.

Roth system solutions support T-configurations and series or circular configurations - refer to the accompanying diagrams.

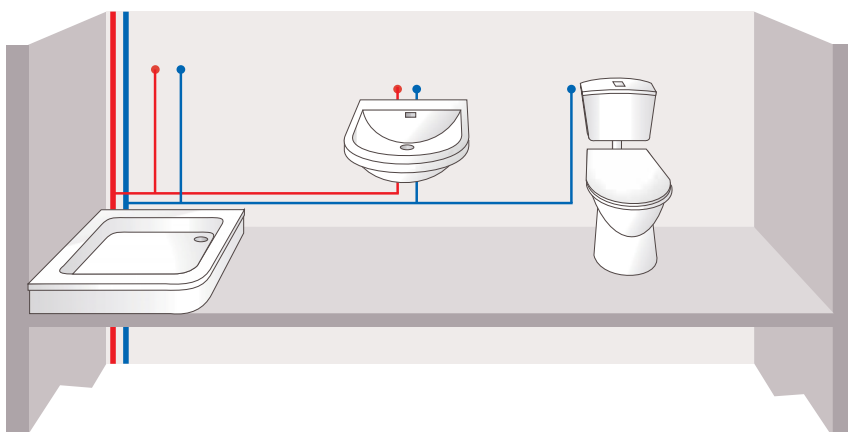




■ **Circular configurations**



■ **Series configurations (looping)**



■ **T-configurations**

Schematic diagrams. In practice you need a protective pipe or pipe insulation which meets the application-specific requirements according to DIN 1988 and the energy conservation legislation in your country.

Roth heating installation

individual connection options and configurations



■ Versatility of use

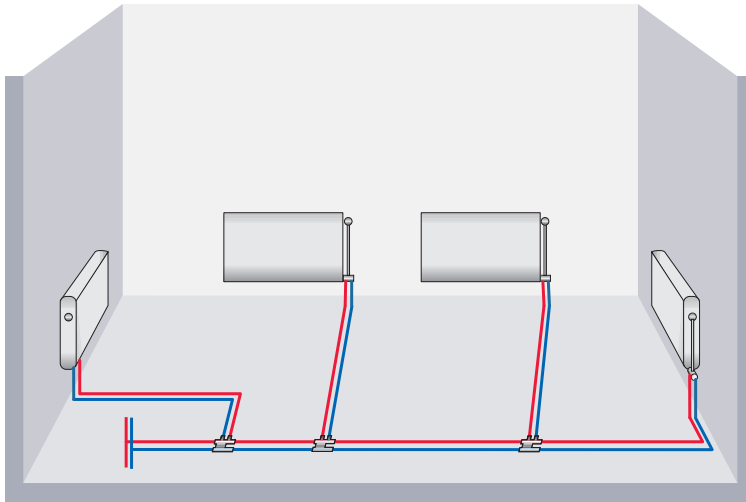
- 1 **Roth radiator T-connector**
for connecting radiators above the unfinished floor.
- 2 **Roth radiator direct connector**
for directly connecting radiators above the unfinished floor with the Alu-Laserplus® system pipe.
- 3 **Roth connection block**
for ready-to-fit pressurised radiator connections out of the wall prior to completion of plastering, wallpapering or tiling.
- 4 **Roth skirting board connection unit**
for connecting radiators to the supply and return pipes out of the skirting board.

■ A complete system for all connection options

The Roth heating installation is designed for universal use as a complete solution that is compatible with all types of connections. The simple, time-efficient and cost-effective installation offers maximum reliability thanks to the Roth Alu-Laserplus® system pipe. The practical system technology relies on just a few, perfectly matched components.

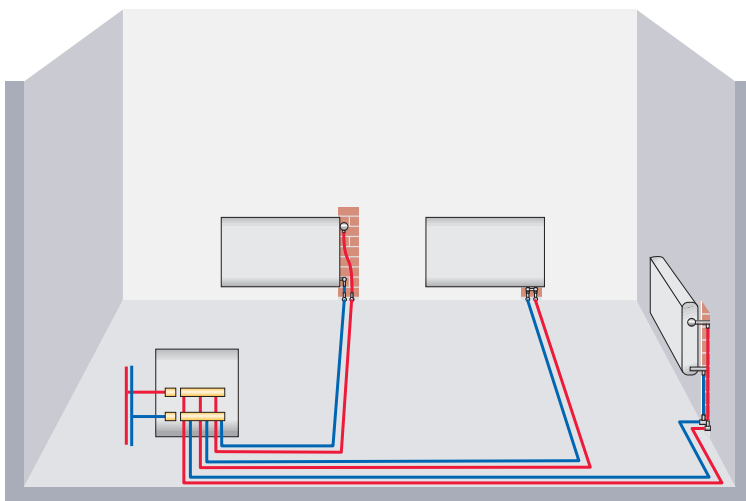
■ Complete heating installation from the heat generator to all the radiators

With its universal portfolio of fittings, the Roth heating installation enables a range of connection options from the heat source to every radiator in a building. The system components can easily be combined in a variety of ways to create connections above the floor, out of the wall or out of the skirting boards. The system can be used in combination with standard radiators and heat sources.



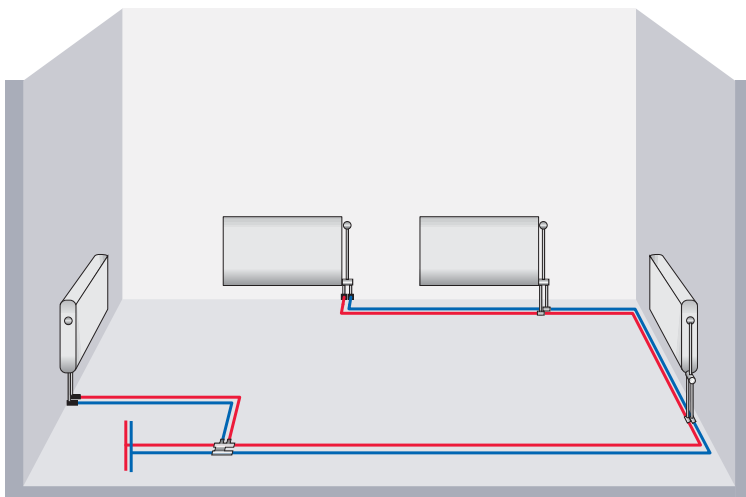
■ **Two-pipe system as the classical distribution system with T connectors**

user-friendly routing with practically all installation combinations is possible in addition with Roth cross T-connectors enable.



■ **Two-pipe system**

with a central manifold and a separate connection pipe for each radiator. Radiator connections come out of the wall (concealed). An additional Roth heat meter set can take exact measurements at the manifold.



■ **Two-pipe system as a circular configuration**

for direct connection of the radiators to the ascending pipe. The Roth radiator connection concept can optimise the installation of the circular configuration inside the floor or – in the case of renovation projects – in the skirting board.

Note: When connecting a large number of radiators we recommend arranging the circular configuration as a Tichelmann splitter configuration.

References

actual examples that speak for themselves



- 1 **Roth drinking water installation and radiant heating system**
Fire station, Ernsgaden, Germany
- 2 **Roth drinking water installation and rainwater system**
Studios, Darmstadt, Germany
- 3 **Roth pipe installation systems**
Retirement and nursing home, Cölbe, Germany
- 4 **Roth drinking water installation, radiant heating system and heat pump systems**
Detached house, Moers, Germany



- 1 **Roth pipe installation systems and Roth heat pump systems**
Apartment building, GroBostheim, Germany
- 2 **Roth pipe installation systems**
Apartment building, Latvia
- 3 **Roth pipe installation systems**
Residential complex, Russia
- 4 **Roth pipe installation systems, radiant heating and rainwater system**
Erich Kastner children's village, Oberschwarzach, 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/

■ Roth supports ZVSHK campaign „Time to start“

In addition to actively participating in the ZVSHK quality seal, Roth supports the ZVSHK campaign „Time to start“. The German Central Association of Plumbing, Heating and Air Conditioning has started the nationwide initiative to recruit new talent for the HVAC trades.

The website as part of the marketing campaign includes a wealth of information and opportunities for young people such as HVAC career finder, guidebooks, practical support, help with applications and finding suitable training companies.

For more information please visit www.zeitzustrarten.de



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

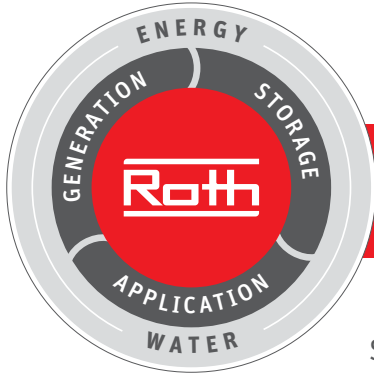
- > Extensive field network of qualified sales professionals
- > Hotline and project planning service
- > Factory training courses, planning and product seminars
- > Fast availability of all Roth brand product ranges throughout Europe
- > Comprehensive guarantee and extended liability agreements

Products

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



Roth



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
Technical support: +49 (0)6466/922-266
Email: service@roth-werke.de
www.roth-werke.de

