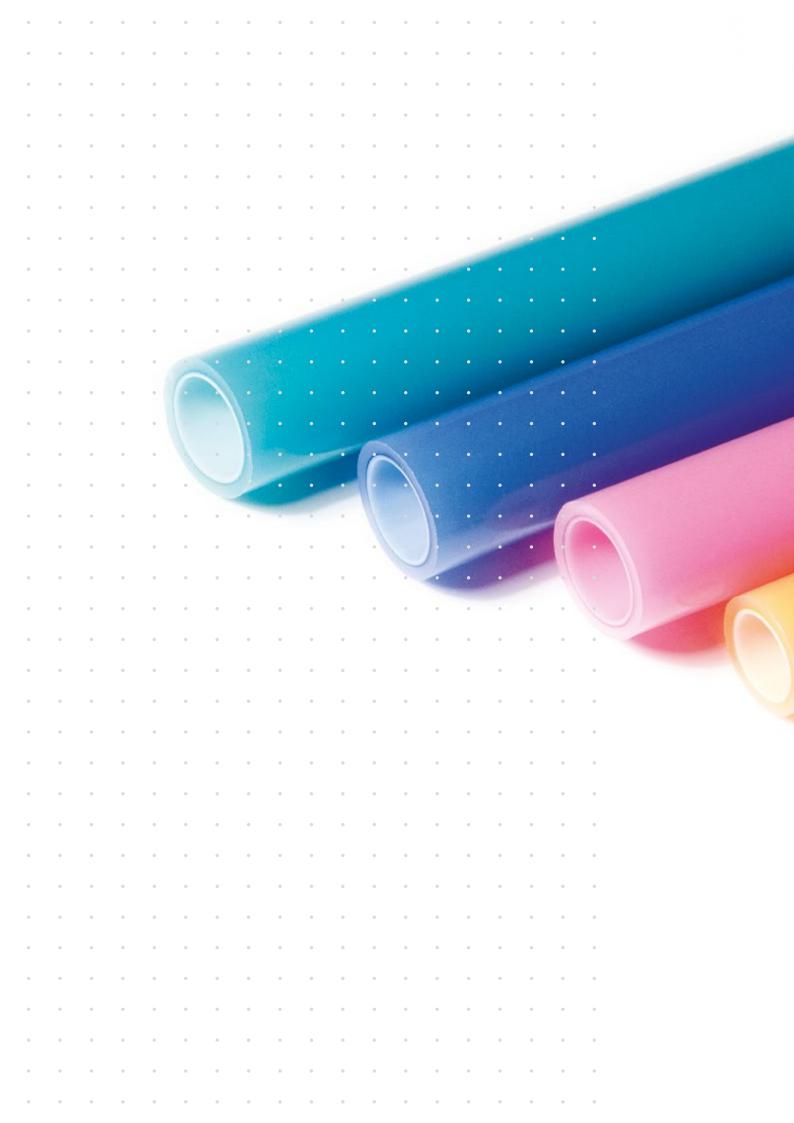


by Huliot Group



Some Huliot Group





Precision, Performance, Innovation hpg – the PE-RT Experts



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100% Made in Germany

50 years manufacturer's warranty

40 years of experience

Inventors of PE-RT

The only PE-RT type 0 pipes with a SKZ and KIWA KOMO certificate

We are hpg

We offer

100 different colours

22,000 m² production area

First to launch a 5-layer PE-RT pipe in 2004

85 % worldwide export

We ship to **40 countries** worldwide



Passion for pipes since 1984

As the inventors of PE-RT, hpg Plastics has been delivering cuttingedge products, outstanding quality and exceptional reliability since 1984. No one understands PE-RT better than we do.

With our extensive expertise in materials, development and production, we are one of the leading European PE-RT pipe manufacturers and OEM partners for underfloor heating, drinking water systems and sanitary installations.

In our German plant, located close to the international airport Düsseldorf, we produce a wide range of PE-RT pipes, from standardized to entirely individualized products on a total area of 22,000 m².

For over 40 years hpg Plastics' core competence has been the development and production of PE-RT pipe solutions. As a highly specialised company, we achieve a level of quality and innovation that is unmatched on the market to this day.

Flexibility is our strength

Our customers' success is our success. That is why we aim to turn individual requirements into perfect systems and products with enormous innovative capacity. You profit from the fact that we, as a well-established organisation with a long tradition, are consistently looking towards the future and the ever-evolving changes on the market.

In addition, we provide support through personal commitment at all levels of the company – from management, research and development to production and logistics.





Our History

It all started in 1984 in Germany, when the founders of hpg Plastics partnered with DOW Chemicals to develop a modern resin with improved properties compared to the industry-standard at the time.

Together they developed the very first PE-RT resin that would revolutionize the sanitary and heating market forever due to its advanced characteristics.

Read more about the advantages of our PE-RT pipes on page 18.

Milestones

1982

Company formation

1984

hpg Plastics develops the first PE-RT resin in cooperation with DOW Chemicals

1985

Production of the first PE-RT pipe on the market worldwide at hpg Plastics



2004

Development and market entry of the first 5-layer PE-RT pipe

2005

hpg Plastics receives the first CE conformity marking in the world for its underfloor heating systems with PE-RT resins

2006

Development and market entry of hpg FLEXOLEN® >MIDI<Soft, probably the most flexible pipe on the market

2011

Development of the >me8nder< dry installation system for renovation applications

2015

Market entry of the hpg <MIDI>inverse®, an innovative PE-RT pipe with an inverted layer structure

2023

Acquisition of hpg Plastics GmbH by the Huliot Group



Our team at your service

Our experts at the company headquarters are always there to support you.

Management



Peleg Zamir CEO



Christine HeimesAuthorized signatory



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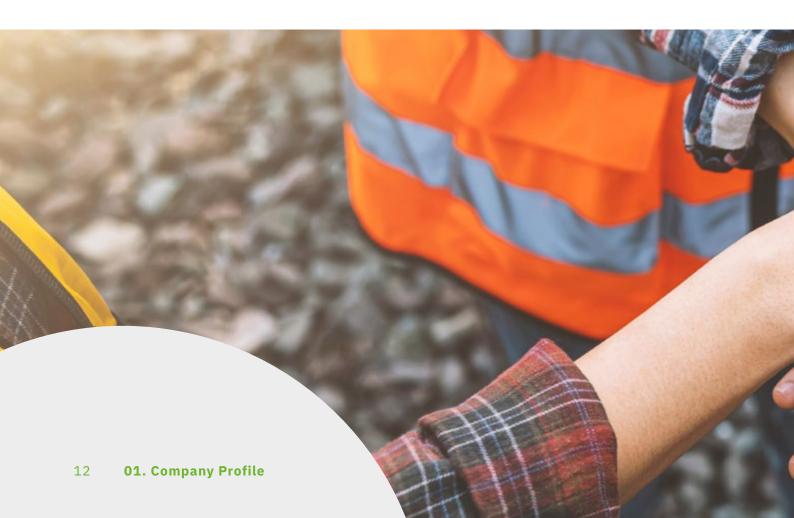
Our mission

Our goal is your success

For over 40 years, our team has been working every day to develop innovative products of outstanding quality. The basis for the trust our customers place in us are our many years of expertise and the passion for our products. This enables us to offer reliable and customized solutions for a wide range of applications with maximum flexibility.

As a company with a long and rich history, we know that team-work is essential for the durability, quality and reliability of our products. Our sense of responsibility is reflected not only in our quality management and international certifications, but also in our awareness of sustainability and environmental protection.

More on sustainability on p. 14.



Our values





Innovation



Quality



Responsibility



Trust







Sustainability and environmental protection

We prioritize resource efficiency

At hpg Plastics, we take our responsibility towards the environment and its resources very seriously and are constantly working to optimize our production, processes and products with regard to sustainability. Our commitment is supported by the "Going Green Program" by Huliot Group, our parent company, which consistently develops sustainable measures in all business areas.

In our production, we continuously strive to implement sustainable processes, such as: using silos to store our raw materials, maximum pallet utilization, closed-loop water cooling systems on our machines. We have already successfully reduced our waste and general ${\rm CO_2}$ emissions and saved valuable resources.



PE-RT: the plastic of today

hpg Plastics not only invented PE-RT, we still produce products exclusively from PE-RT – and we are proud of it. Our pipes are fully recyclable. That means, that at the end of their service life, our products can be processed at a recycling facility in order to be re-used instead of landfilling and burning.

Further environmental benefits of PE-RT

PE-RT and its production are characterized by a number of positive properties that support the conservation of the environment compared to other plastic materials:

- PE-RT has a very long service life and is therefore not only cost-effective but also resource-saving.
- No toxic chemicals are used or emitted during the processing or handling of PE-RT products. This makes PE-RT a particularly safe material – for production staff, installers and the people who live with it.
- The production of our PE-RT products generally requires less energy than conventional heating pipe material.
- PE-RT is 100% recyclable.

Huliot Going Green Program

In the past decade, Huliot Group has transformed into a green company, with the implementation of a rigorous Huliot Going Green program which focuses efforts on protecting the environment throughout our entire supply chain. Designed to minimize our carbon footprint across the group while creating economic value, the program has led us to transition to a more effective and less wasteful production strategy, and opened us up to new opportunities as resellers of residual materials.

Huliot Going Green principles

- Continuously evaluate production lines, replacing raw materials with newer and more environmentally friendly ones.
- Drastically reduce the creation of waste by amending production protocols.
- Implementing a reuse, resell, recycle policy which is monitored and measured across the board.





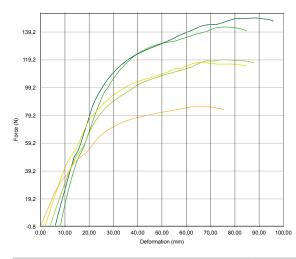
Quality management

At hpg Plastics, quality comes first. Our in-house lab ensures rigorous testing at every production stage, meeting high standards like KIWA.

hpg Plastics is more than just an extrusion company – we are a development partner and competence center for the world's largest plastics manufacturers, helping them advance new pipe materials with our expertise in processing and application technology. We continuously push boundaries to unlock new market potential and create fresh opportunities for our customers. Through our in-house R&D and laboratory, we offer tailored solutions, technical calculations, sample pipes, and pilot installations. The exceptional performance of PE-RT has led to its full standardization both in Germany (DIN 16833) and internationally (ISO 24033, ISO 22391, ISO 21003), making it the new standard in building projects.

Safety and trust are the foundation of our partnerships. That's why our products, processes, and quality management are regularly monitored by independent institutes.

With hpg Plastics, you get peace of mind, backed by a 10-year guarantee for damage compensation and a 40-year guarantee for pipe replacement.





Flexibility difference of our PE-RT pipe types for underfloor heating in comparison with PEXc pipes.

The chart shows the amount of force needed in order to produce the same deformation to 5-layer pipes of same dimension but made of a different material.

No.	Sample description	Dimension	Max. force	Bending force	Stiffness vs PEX
1	hpg FLEXOLEN® >MIDI <soft 0<="" pe-rt="" th="" type=""><th>16 x 2 mm</th><th>85N</th><th>83,8N</th><th>appx40%</th></soft>	16 x 2 mm	85N	83,8N	appx40%
2	hpg >MIDI <composite® i<="" pe-rt="" th="" type=""><th>16 x 2 mm</th><th>117N</th><th>114,6N</th><th>appx20%</th></composite®>	16 x 2 mm	117N	114,6N	appx20%
3	hpg <midi>inverse® PE-RT type I</midi>	16 x 2 mm	119N	116,8N	appx20%
4	hpg 10Plus PE-RT type II	16 x 2 mm	149N	146,4N	similar
5	PEXc	16 x 2 mm	142N	139,6N	



Research and development

In keeping with our slogan "passion for pipes since 1984", we create solutions that are among the most innovative on the market.

For many years, we have been working closely with various plastics manufacturers in particular with the market leader DOW, giving us a clear innovative edge. Thanks to our expertise in materials and production, we carry out processing tests and investigations for these manufacturers and therefore have a deep insight into the latest materials.

The best proof of the successful partnership between DOW and hpg Plastics is the fact that the PE-RT raw materials that we have developed together, are now standardized and used internationally. With its high pressure- and temperature-resistance and flexibility, this material has set new standards for the pipe industry.

Customer orientation is the driving force behind the continuous improvement and expansion of our processes and products.





hpg Plastics: Our pipes are all-rounders

We rise to your challenges

In addition to our outstanding expertise in materials, hpg Plastics is able to implement the production of various pipes and hoses up to a diameter of 32 mm quickly and optimally, using an integrated production management system.

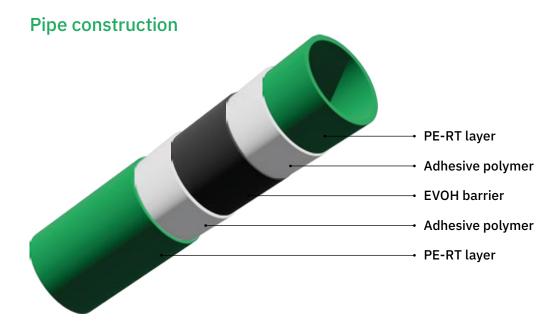
Overall, we are able to offer a comprehensive range of products – from sanitary and underfloor heating pipes to built-up-high-tech-products with different functions and properties. Our customer-specific production and service are rounded off by an efficient logistics system. Together with our vast storage capacities, we ensure fast and high availability. The advantage for our customers is top performance with maximum of flexibility.

PE-RT puts you ahead

Our PE-RT pipes are very flexible, which makes them easy to install, even in complex underfloor heating systems. This saves time and labor costs for installers and reduces installation costs for customers. Due to their excellent resistance to high temperatures and pressure, PE-RT pipes have a very long durability and service life. The advantage for our customers: long-term cost savings due to minimal maintenance requirements.

PE-RT does not release toxic chemicals during the production or the usage of our pipes, which protects the ecosystem and maintains a safe, healthy living environment.

What's more, our PE-RT products are 100% recyclable, which is a huge win for our environment.





Advantages of our PE-RT pipes



50 year manufacturer's warranty Guaranteed durability and performance for half a century



Made in Germany
Reliable, consistent and high
quality standards since 1984



Large range Dimensions from 8 – 32 mm



High level of customizability Entirely according to our customers' wishes



Certified quality
Surveilled by SKZ, KIWA
KOMO, CE, DIN CERTCO and
others



Excellent quality
management
Strict test procedures in
our own laboratory



Permanent oxygen diffusion barrier Prevents oxidation for at least 50 years



High flexibility
For quick and easy
installation



Excellent thermal

conductivity
Ensures consistent and efficient temperature distribution



Low ecological footprint Thanks to energy-saving production



Sustainability
PE-RT pipes are fully
recyclable



Outstanding durability
Due to high temperatureand pressure-resistance



Pipes for underfloor heating

At hpg Plastics you can choose and create your very own, individualized pipes with our wide variety of options. Fast, flexible, functional we offer the right choice for every requirement.

hpg <MIDI>inverse®

hpg >MIDI<COMPOSITE®

Read more on p. 24

Read more on p. 25

Flexibility and installation speed	***	Flexibility and installation speed	***
Oxygen barrier protection	****	Oxygen barrier protection	***
Customization	***	Customization	****





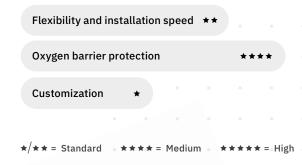
hpg FLEXOLEN® >MIDI<Soft

hpg Baseline

Read more on p. 26

Read more on p. 27

Flexibility and installation speed	****
Oxygen barrier protection	***
Customization	***





Pipes for sanitary applications

Convenient, crack-resistant, customizable. Our product solutions for the sanitary sector offer a modern alternative to PE-X or multilayer pipes.

hpg 10Plus

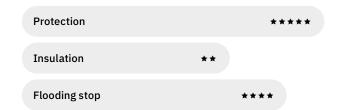
Read more on p. 28



Pipe-in-Pipe solutions

Read more on p. 29

Pipe in corrugated protection







Pre-insulation with PE-foam

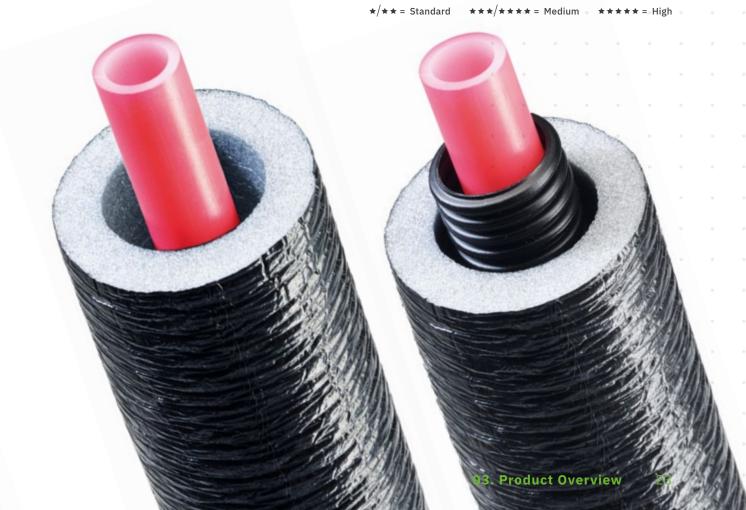
Protection *** Insulation **** Flooding stop **

Pre-insulation and corrugated protection

Protection ****

Insulation ****

Flooding stop ****



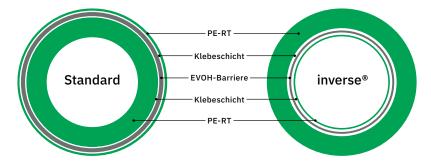




hpg <MIDI>inverse®

Robust and safe

If safety and flexibility are key in your project, hpg <MIDI>inverse® is your ideal choice. The "inverted" design and the wall thickness of the individual layers result in unprecedented protection of the oxygen barrier layer. This also improves flexibility. At the same time, the pressure- and temperature stability increase, making these pipes the highest-performing, highly flexible heating pipes on the market.



5-layer composite pipes made of PE-RT type 0, I, II

Areas of application: heating / cooling

Certifications: SKZ, DIN CERTCO and KIWA KOMO

Oxygen-tight in accordance with DIN 4726

Available dimensions: 8-20 mm

Made in Germany - CE marked

ISO 10508 Classes: 4-6 bar, 5-6 bar

Customizable

Special feature: compatible with every popular connector



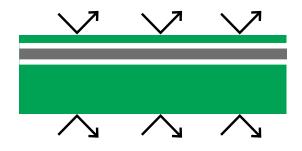


hpg >MIDI<COMPOSITE®

Individual and powerful

Your pipe, your brand, your marketing: With us, you can create your own underfloor heating pipe with our hpg >MIDI<COMPOSITE® line. Almost everything is customizable, from colour, printing, dimension, coil size to packaging. These pipes offer our proven quality: the oxygen permeability of hpg >MIDI<COMPOSITE® pipes is far below the requirements of DIN 4726 [\leq 3,60 mg/(m²d) bei 80 °C]. Thanks to the 5-layer structure, the barrier layer is protected against moisture and damage. External sealing fittings can also be used without hesitation.

The 5-layer design of the pipes permanently prevents the damaging effects of ambient moisture on the diffusion barrier layer. In addition, the outer PE-RT layer provides protection against possible damage to the EVOH layer during transportation and installation.



5-layer composite pipes made of PE-RT type I, II

Areas of application: heating / cooling

Certifications: SKZ, DIN CERTCO and KIWA KOMO

Oxygen-tight in accordance with DIN 4726

Available dimensions: 8-32 mm

Made in Germany - CE marked

ISO 10508 Classes: 4-6 bar, 5-6 bar

Customizable

Special feature: Excellent flexiblity and kink

resistance







hpg FLEXOLEN® >MIDI<Soft

Versatile and flexible

With up to 25% more flexibility than standard pipes, hpg FLEXOLEN® >MIDI<Soft allows for an exceptionally effortless usage. It's not just powerful and reliable – it's quicker and easier to install, making even the most challenging and hard-to-reach areas like ceiling-, and wall-applications, much more manageable.

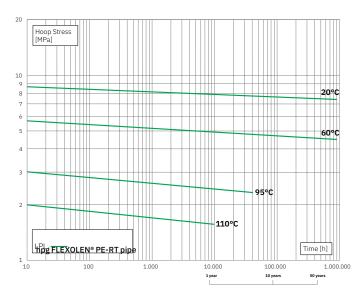


Diagram:

Long-term hydrostatic strength test curves for hpg FLEXOLEN® > MIDI<Soft pipes determined according to ISO 9080.

Proof of the compliance of the plastic pressure pipe to a performance under the required stress conditions.

5-layer composite pipes made of PE-RT type 0

Areas of application: heating / concrete core activation

Certifications: SKZ, KIWA KOMO

Oxygen-tight in accordance with DIN 4726

Available dimensions: 10-20 mm

Made in Germany - CE marked

ISO 10508 Classes: 4-6 bar

Customizable

Special feature: Very easy and fast to install





hpg Baseline

Our standard

A 5-layer certified PE-RT pipe with an oxygen barrier, and probably the best price-performance ratio: that is our Baseline. With a limited range of sizes and coils lengths and no customization, this pipe can be delivered fast. Fully certified, made in Germany and stripped-off any customization in order to fit in to every emergency.

5-layer composite pipes made of PE-RT type II

Areas of application: floor and radiator heating

Certifications: SKZ, KIWA KOMO, DIN CERTCO

Oxygen-tight in accordance with DIN 4726

Available dimensions: 14-20 mm

Made in Germany – CE marked

ISO 10508 Classes: 4-6 bar, 5-6 bar

Special feature: Quick availability







hpg 10Plus

The ideal choice for sanitary applications

Our 10Plus pipes demonstrate exceptional stability against stress corrosion cracking and outstanding creep rupture behavior. This is why the strength of these pipes lies in applications with high temperatures and operating pressure, such as drinking water systems. At the same time, they offer high flexibility compared to PE-X pipes thanks to their PE-RT base material.

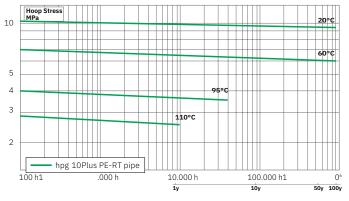


Diagram:

Long-term hydrostatic strengthtest curves for hpg 10Plus pipes determined according to ISO 9080.

Proof of the compliance of the plastic pressure pipe to a performance under the required stress conditions.

5-layer composite pipes made of PE-RT type II

Areas of application: hot / cold water applications, drinking water systems, high pressure requirements

Certifications: SKZ, DVGW and KIWA

Oxygen-tight in accordance with DIN 4726

Available dimensions:

15x2,5 mm 16x2,2 mm 20x2,8 mm 25x3,5 mm 32x4,4 mm

Made in Germany – CE marked

ISO 10508 Classes: 1 & 2 - 10 bar

Customizable

Special feature: Extreme stability, suitable for our slide sleeve fittings



28 **04. Product Lines** 28



hpg Pipe-in-pipe solutions

The extra layer of safety

In addition to our range of PE-RT pipes, we also offer various pipe-in-pipe solutions. A pipe-in-pipe system is used when extra protection and safety for pipes are essential. This type of system is mainly applied in situations where pipes are installed through walls, floors, basements or even outdoors and where risks of damage, leakage, or exposure to external factors exist.

A series of off-line productions, offering our customers the option to receive our PE-RT pipes, as well as Multilayer Aluminium pipes (Alu/PE-RT), with:

- · Protection in corrugated HDPE pipe
- · Pre-insulation with PE foam
- Protection in corrugated pipe and an overall pre-insulation

Pull-off / slide-in pipe exhange

Protection against accidental damages

In combination either with **hpg 10Plus** or **multilayer pipes**

Insulation: 6 or 9 mm

Protection in corrugated pipe suitable for Sintef approval

Safety in case of cabinet leakage

Thermal insulation for pipes exposed to ambient conditions





Application

Our PE-RT underfloor heating pipes combine flexibility, durability, and high thermal performance, making them ideal for both new builds and renovations. Available in various dimensions, they are perfect for underfloor, wall, and ceiling heating/cooling, concrete core activation, and snow melting.

Type of heating

Underfloor heating can be used both as main and additional heating. Floors that are best combined with underfloor heating are joisted parquet floorings, laminated floors, tiled floors or cast floorings. These floors allow a lot of heat to pass through and ensure that the space is gradually divided.

Optimal heat conductivity

Thanks to the smooth inner wall of the pipes, optimal water flow is guaranteed, resulting in efficient heat transfer. This contributes to consistent heat distribution of the room and increases the comfort level.

Ease of installation

Our PE-RT pipes are compatible with the most common mounting systems, such as tacker plates, knob plates, nets or clip rails. The light weight of the pipes makes laying extra easy, while the high dimensional stability ensures that the pipes stay in place.



Application advantages of our pipes



High flexibility

Easy to bend and install, even for complex patterns and under low ambient temperatures. Ideal for quick installation and reduced labour costs.



Excellent thermal performance

Optimal heat transfer for uniform temperature distribution. Energy-efficient due to low thermal resistance.



Durability and reliability

Resistant to high temperatures and pressure due to the PE-RT material's special properties. Long lifespan with minimal risk of leaks or cracks. Durable oxygen barrier reduces rusting issues.



Compatibility

Suitable for all common fixing systems, such as tacker boards, knob plates, nets and clip rails. Easily integrates into both new-build and renovation projects.



Lightweight and stable design

Easy to handle due to its lightweight construction. Remains securely in place thanks to high dimensional stability.



Safe and environmentally friendly

Recyclable and free from harmful substances. Complies with European quality and safety standards.



Smooth inner surface.

Minimizes pressure loss and ensures optimal water flow.



Cost-Effective

Quick processing and low maintenance requirements reduce overall installation and operational costs.



Installation examples and instructions

Snail pattern

Advantages

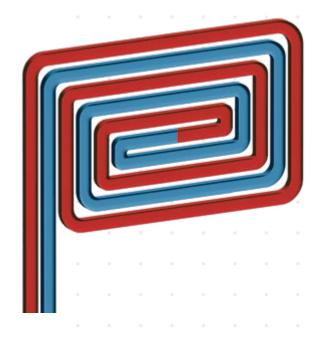
Installation takes place in 90° pipe bends

Quick and easy installation

Particularly suitable for narrow distances

Even heat distribution

Suitable for all building types





Meander or snake pattern

Advantages

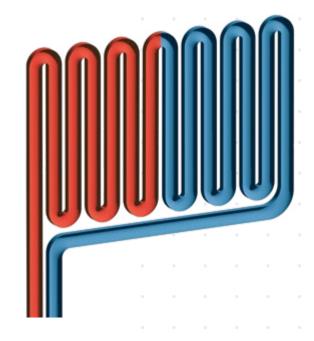
Quick and easy installation

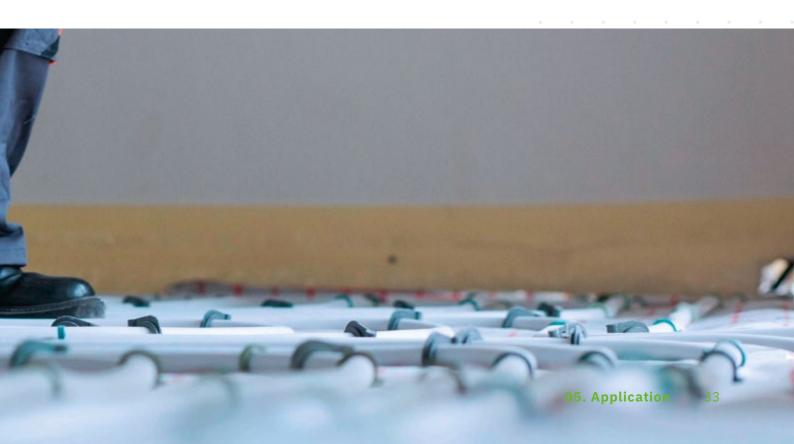
Slight temperature difference between inlet loop part and return loop part

Suitable for installation at window areas

Starts at the window / external wall

Suitable for concrete core activation, wall surface and sprung floor heating systems







Finding the right fitting

Connections that hold

In addition to PE-RT products, our selected pipe connectors are the ideal complement for a wide range of requirements in combination with our pipes. Our assortment includes compression Eurocone fittings, press fittings and slide sleeve fittings, which are certified with our hpg pipes as a system (DIN CERTCO, CE-ETA, KOMO).

We offer reliable, flexible and durable connections that cover all needs and create solutions for a quick and safe installation.

When choosing fittings...

By selecting the appropriate fittings, you ensure the efficiency, reliability and longevity of your underfloor heating system. Always consult the pipe and fitting manufacturer's guidelines for optimal compatibility.

- Pipe material: Ensure compatibility with your pipe type (PE-RT, PEX, or multilayer pipes).
- System pressure: Use fittings rated for the operating pressure of your system.
- Benefits: Speed, weight, remove-repair-refit, tools needed, fixing space availability.
- Durability: For long-lasting installations, choose high-quality materials.
- System design: Consider the number of loops, manifold type, and pipe connections needed.



Overview of our fittings

The perfect fitting for every need

Type of fitting	Features	Advantages
Compression Eurocone fittings	Eurocone brass compression fitting for plastic and multilayer pipes, cap-nut nickel-plated	High tightness to manifold due to the Eurocone that allows higher screwing force
	Threaded nut and insert with a conical shape for connection to the manifold	Easily removable connection and re-connection
	Clamping ring	Superior tightness due to clamping ring
4	Often includes plastic O-ring(s)	Strongly suggested for multilayer ALU pipes
4	Use of a wrench or a spanner is required	Simple concept connection, suitable for both heating and plumbing
	Certifications: DIN CERTCO, KOMO, CE-ETA	_
Press fittings	Body made of dezincification resistant brass	Quick and easy installation
	Pressing sleeve is made of stainless steel with visual inspection for proper insertion	Highly durable, suitable for high-pressure and high-temperature systems
100	Supporting body is provided with double O-ring seal	Strongly suggested for multilayer pipes
. 1	Requires a pressing tool (manual or electrical) for installation	Quick and safe solution for pipe repairs
	Certifications: DIN CERTCO, KOMO, CE-ETA	
Slide sleeve fittings	Lightweight plastic fittings made of PPSU	Bring minimal weight on systems with increased number of connections (e.g. ceiling cooling)
	Pipe is expanded in order to fit insert, then slide sleeve tightens connection	Maximize water flow as they have small impact to the pipe's ID reduction
The same of the sa	Uses expansion and sliding tools for the fixture	No thermal bridging with full plastic pipe
Day Branch		Strongly suggested for ceiling cooling connections and plumbing connections
		Provides a long-lasting and highly durable connection
		Suitable for pipe repairs in UFH





Transport and storage

To ensure a smooth installation process, we recommend the following checklist for the correct transportation, storage and preparation of our PE-RT pipes.

Inspect before useInspect pipes for visible damage or irregularities before

installation.

Protect from UV light (sunlight) Store PE-RT pipes protected from exposure to sunlight

to prevent degradation by UV radiation.

Pressure TestConduct a leak test shortly before covering the pipes to

detect any leaks or potential weak points.

Avoid physical damage Transport and store pipes coils on a flat surface

to avoid crushing or scratching.

Avoid excessive stretching Do not pull the pipe too forcefully during installation

to prevent distortion and weakening.

Minimum bending Please comply with the suggested minimum bending radius

and do not overbend the pipes in order to avoid pipe kinking. In case of kinking of a pipe, please cut and dispose

the kinked part.

Welding of pipe Avoid welding of the pipes to prevent oxygen barrier layer

damage.

Certificates











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