

*Heating and cooling system
for surface, wall and floor*

aquatherm **black**

aquatherm black energy grids

aquatherm black is a multi-award winning surface heating and cooling system. Versatile, manufactured in compact register construction, and equipped with technology - these are some of the essential features of the product family **aquatherm black**. The special features: It can be in the ceiling as well as in the wall and floor and is suitable for both heating and cooling.

aquatherm black works very efficiently. The system can be connected to any heating source in combination with low-temperature systems such as heat pumps. Building owners and architects are delighted with the flexible areas of application and the freedom of design: whether as a cooling ceiling in an office, underfloor heating in a new build, wall or ceiling heating in renovated old buildings - the possibilities are almost unlimited. Finally, the panel heating and cooling elements can be installed in dry construction, in plastered ceilings, suspended coffered ceilings, stretch ceilings, or walls and are invisible afterwards.

The proven system is constantly being optimised. Both in terms of installation and energy efficiency,

aquatherm black sets new standards. With its simplified installation procedure, this innovative system is more user-friendly than ever before. In times of scarce personnel resources, the system offers clear advantages.

This innovative solution is the perfect choice for anyone looking for a sustainable, cost-effective and high-performance surface heating and cooling system. **aquatherm black** has been developed to provide unparalleled energy efficiency, a better indoor climate, and a higher level of comfort. Thanks to its unique polypropylene design, this system is more sustainable than traditional metal-based solutions.

aquatherm black is highly efficient and allows you to reduce your energy consumption and still have a comfortably tempered living or working area. Upgrade your premises with **aquatherm black** today and experience the difference in energy efficiency, comfort, and sustainability.



Comfort and vitality __

In the cold season

With the use of **aquatherm black** system for heating and cooling applications, reduction of energy can be achieved due to excellent thermal efficiency. It also allows heat source flexibly at the best possible time according to your personal needs.

In the warm season

Are you using a heat pump that can also cool? Thanks to the low flow temperatures, the aquatherm energy registers cool your rooms efficiently - without installation of additional and costly air conditioning systems. This means your building stays pleasantly cool even at high outside temperatures. The noiseless and uniform cooling of the rooms, without any draughts, leads to a pleasant indoor climate, which improves your well-being.



Advantages at a glance ___

Variable

aquatherm black is flexible due to its modular design. In ceilings, walls, or floors it is compatible with all common installation methods and installation variants. The dimensions of the energy registers cover a wide range and facilitate the design and planning of a building - a system for all requirements, from detached houses to commercial properties.

Simply

For the installation of **aquatherm black** energy grids, neither special tools nor complex components are required. Simple technology, proven for decades, nothing more is needed.

Quickly

The installation of **aquatherm black** energy grids is done completely without tools. There is no need for preparation for the installation. The time advantage for the implementation of projects is enormous.

Efficient

Low flow temperatures, optimum control technology, system components, and low pressure losses lead to a high energy efficiency of **aquatherm black**.

Sustainable

aquatherm black energy grids are made of polypropylene. Throughout the entire life cycle, from raw material extraction to recycling at the end of its useful life, **aquatherm black** produces significantly less CO₂ than comparable metal-based systems. This reduces the ecological footprint noticeably.

Independent energy source ___

Decarbonisation of the heat supply as well as the unclear regulatory outlook are increasingly unsettling consumers.

aquatherm black heating and cooling systems offer a solution which is independent of political decisions. With the use of **aquatherm black** system, it is possible to reduce the heat / cooling energy demand over conventional systems. Everyone can make a contribution to reducing energy independent of the future heat source.

aquatherm black and energy source

○ **aquatherm black** can be used with any existing heating source.

○ The renovation effort for future requirements can be stretched over a longer period of time.

○ The exchange of the heat source is achievable without time pressure at the best possible time.

aquatherm black in old buildings

The renovation of an old building including the removal of the radiators and installation of underfloor heating is hardly economical.

aquatherm black energy grids offer decisive advantages:

○ Easy installation of a ceiling or wall heating instead of costly installation of underfloor heating.

○ Refurbishment possible during operation.

○ Reduced renovation effort due to modular structure and simple & quick installation.

Energy efficient ___

Surface heating and cooling systems are more energy efficient than conventional heating systems. This is because these systems use radiant heat to heat or cool rooms, as opposed to convective heat, which is generated by conventional radiators.

Lower flow temperatures

- **aquatherm black** energy grids work with lower flow temperatures than conventional heating systems
- While conventional radiators usually require water temperatures of 40-60 °C, **aquatherm black** only requires temperatures between 25-30 °C.
- The low flow temperatures have a direct effect on the energy demand, which therefore also results in the energy costs.

Even heat distribution

- **aquatherm black** energy grids distribute evenly over the entire room, so that there are no hot or cold spots.
- The well-known temperature differences when using conventional radiators and the associated unnecessary energy losses are a thing of the past.

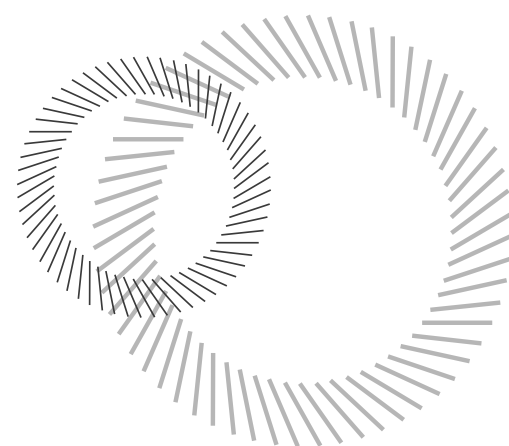
Efficient use of heat pumps and renewable energies

- **aquatherm black** energy grids can be combined well with heat pumps and renewable energy sources such as solar energy. Heat pumps work more efficiently when they are operated with low flow temperatures.
- Surface heating and cooling systems enable the heat pump to operate at low temperatures, which improves the COP (Coefficient of Performance) of the heat pump.
- Through the combination of surface heating and cooling systems with renewable energies, the ecological footprint can be improved.

Cooling options

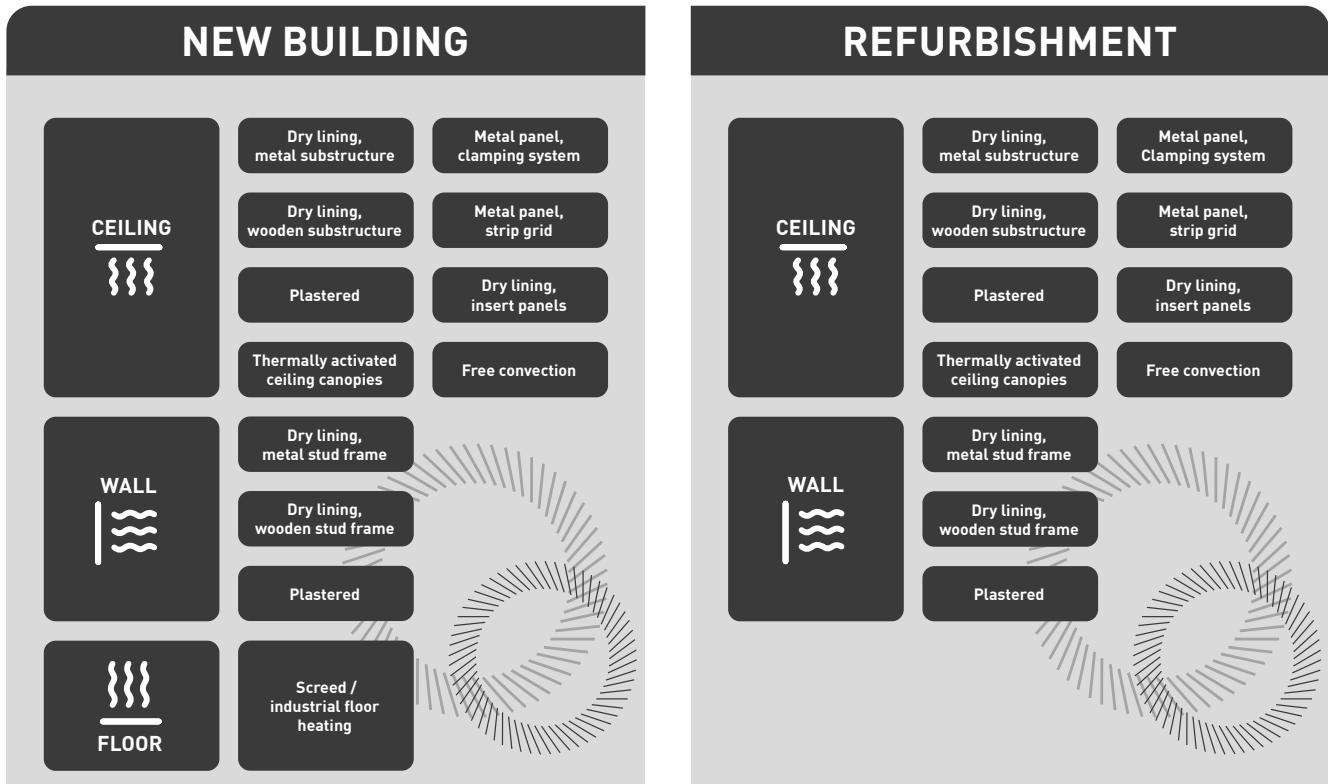
- aquatherm surface heating and cooling systems not only offer heating possibilities but can also be used for cooling.
- Analogous to heating, **aquatherm black** also shows its advantages when it comes to cooling.
- Uniform cooling without unpleasant air movement or noise makes the classic air conditioning system look old.
- The increase in comfort paired with efficient cooling performance is unparalleled.

In summary, panel heating and cooling systems are more energy efficient than conventional heating systems due to their lower supply temperatures, uniform heat distribution, reduced heat losses, efficient use of renewable energy and cooling options. The use of these systems can reduce energy consumption, increase comfort, and reduce environmental impact.



Fields of application

aquatherm black is versatile. In the overview you will find the most common installation types:



Which **planning services** does aquatherm offer? ___

Whoever decides in favour of aquatherm wants a complete solution, and not just a standard product. Therefore, aquatherm services includes all services, from the planning and design, to the prefabrication and to the extensive training. With us you get everything from one single source.

„Time is money“ - a maxim that proves true every day in the construction industry. The heating and air conditioning installations of any building project are not only a challenge for architects and planners. Time and time again, the implementation on site often presents the site managers and installers with considerable problems. With aquatherm, you have a strong partner at your side, who supports you before, during and after the completion of your project.

Optimise the **efficiency** of your **project flow** ___

Our team has many years of experience in the field of building technology and is very familiar with the aquatherm product portfolio. Regular training courses ensure that our project planning is always up to date and that all legal regulations are implemented. This saves you the planning work, resulting in significantly more time to concentrate on your core business.



Advantages for architects & planners

- Planning support by the aquatherm design team
- Support with plausibility and completeness check
- System design based on verified performance data
- Provision of BIM data for your planning
- Early detailed planning leads to planning and cost certainty
- Many years of experience in planning and system design

Advantages for installers

- High, tested quality with 10-year guarantee
- Highest accuracy due to detailed pre-planning
- No special tools are required for installation
- Information and training programme
- Weight savings through the use of PP-R, therefore easier handling during transport and on-site construction site
- Faster installation times, resulting in less personnel deployment possible
- Assembly possible in confined spaces

Installation

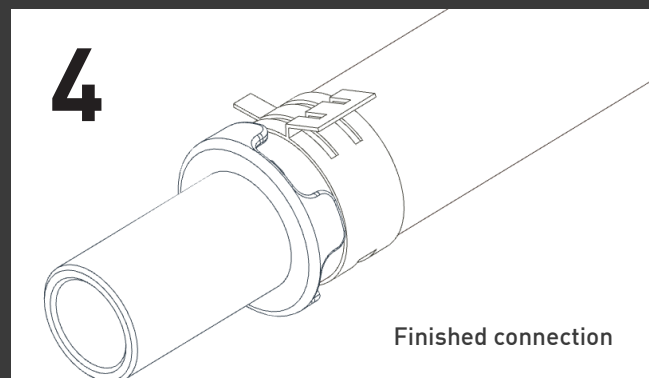
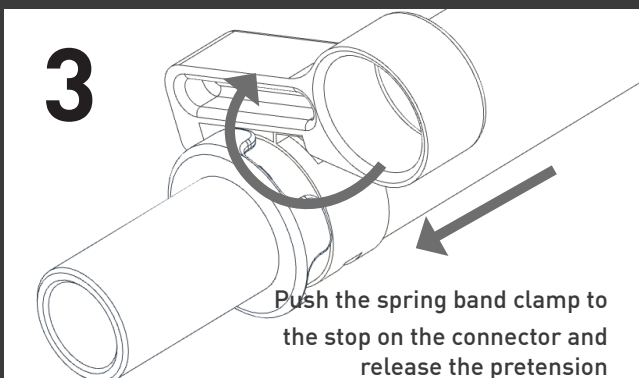
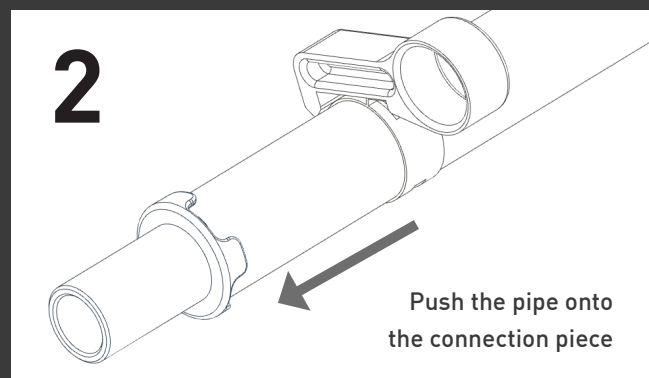
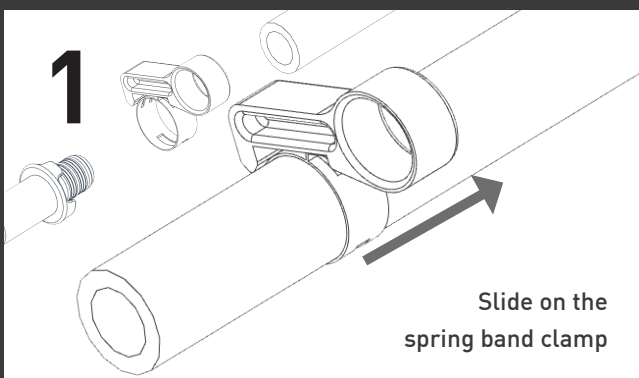
Discover the optimised technology of **aquatherm black** with plug-in/clamp connection. Our innovative system uses a smart „plug-in/clamp connection“, to connect the energy grids quickly and reliably with each other.

Thanks to a flexible and bendable connection tube, with spring band clamps, installation is simple. Attach the end of the pipe to the connection piece and push it with light pressure until it stops. Then push the spring

band clamp to the second stop of the connector and release the pre-tension.

Our system offers not only the highest functionality but also easy handling. The plug-in clamp connection is mechanically detachable. You can use commercially available hand pliers for spring band clamps to remove the connection effortlessly.

Simplicity of installation



Summary:

Here's how easy it is to assemble the new system:

1. Cut the pipe to the desired length
2. Push on the spring band clamp(s) and push the pipe all the way to the stop on the connection piece
3. Push the spring band clamp as far as it will go on the connector and release the pretension

In addition to the above, all installation methods must comply with the recognised rules of technology.

Sustainability and energy efficiency ___

The use of plastics instead of metals in construction offers many advantages in terms of sustainability and helps to reduce the carbon footprint of a building.

Energy efficient production

The production of plastics requires less energy than for the production of metals. Building materials/products made of plastic have a more positive CO₂ balance than building materials made from metal materials.

Lower weight

Plastic building materials are much lighter than metal building materials. During transport to the construction site, less fuel is consumed. This reduces costs and exhaust emissions. In addition, plastic products contribute to a lower overall weight of a building.

Longevity

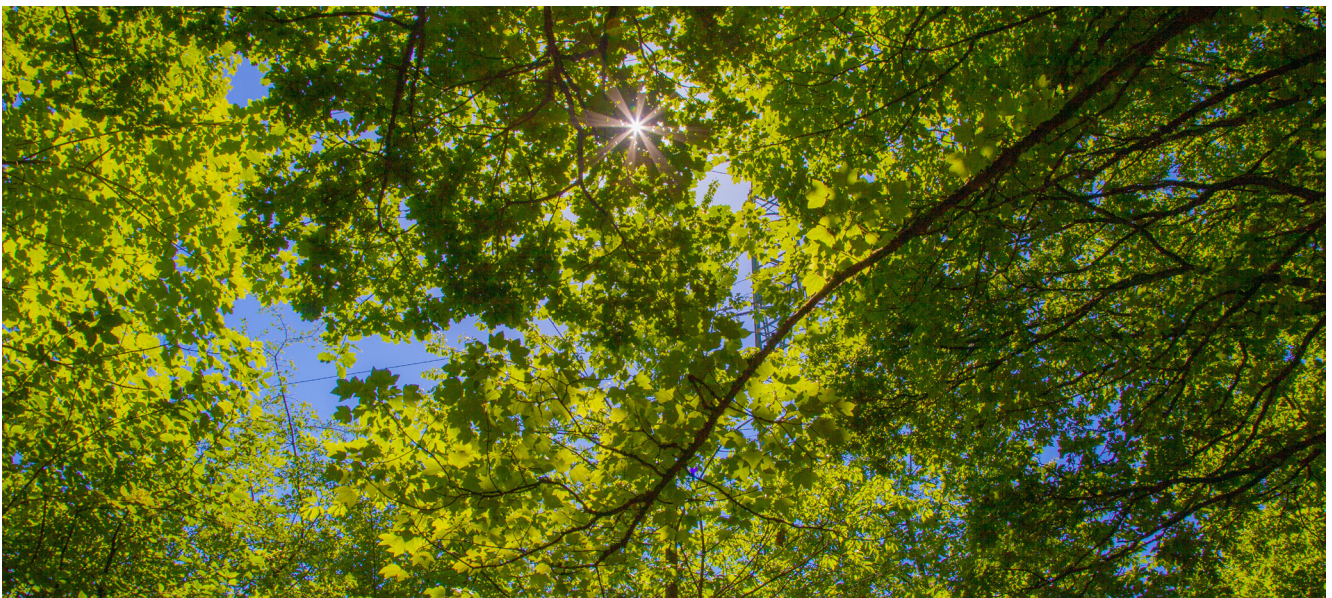
The life cycle of a product made of plastic is longer than that of certain metal products. Consequently, repairs or other maintenance measures in the building are less necessary. This reduces environmental pollution.

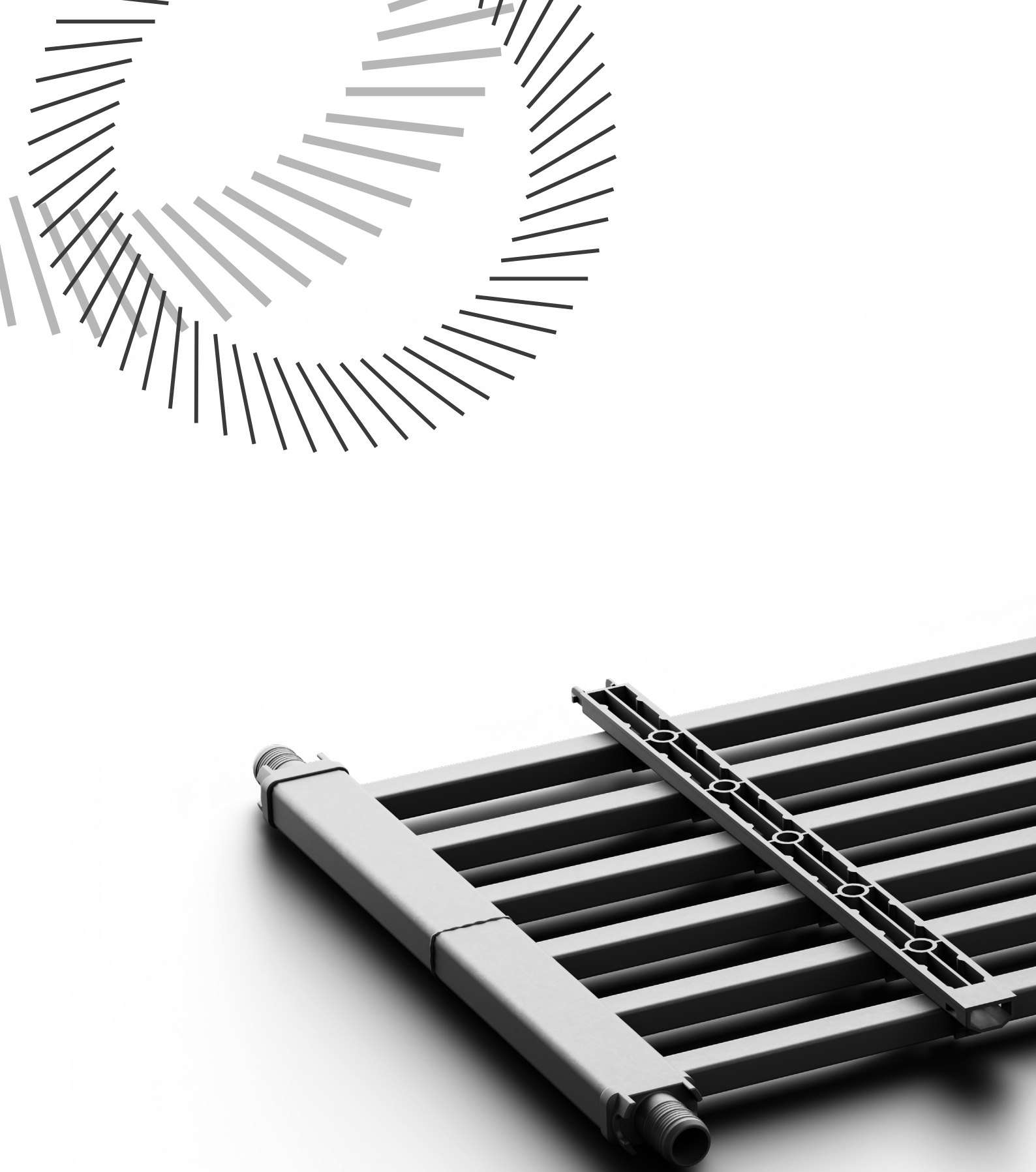
Recycling

Like all aquatherm products, the **aquatherm black** energy grids are made of recyclable polypropylene. Therefore, they contribute to wasting avoidance and protecting valuable resources.

The CO₂ footprint advantages of **aquatherm black**, as well as all other aquatherm product families, can be found at <https://aquatherm.de/sustainability> in detail. EPDs are available for all aquatherm product families. Our products have been evaluated according to the „Cradle to gate“ concept.

An EPD is a document in which the environmentally relevant properties of a specific product in the form of neutral and objective data. This data covers all the effects that the product may have on its environment. In the process, the entire life cycle of the product is taken into account. In the building industry, EPDs form an essential basis for professionals such as architects and planners for planning and evaluating buildings in a holistic way.





Detailed technical information about **aquatherm black** can be found on our website:
<https://www.aquatherm.de/en/solutions-products/products/aquatherm-black/>



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Edition **02.2024**

Order No. **990 000 017 1**

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www.aquatherm.de

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