

aquatherm black system

ECOLOGICAL AND ECONOMICAL  
THE MODERN WAY TO HEAT



aquatherm  
state of the pipe



Turn  
the page and  
learn more 





# aquatherm black system

ECOLOGICAL AND ECONOMICAL  
THE MODERN WAY TO HEAT



**aquatherm**  
state of the pipe



High heating costs, raisings of dust, allergies, unfavorable distribution of temperature, high flow temperatures, required space for radiators – all this can be resolved by the aquatherm black system!

The system is in a compact grid construction for heating, cooling as well as heating and cooling of rooms across ceiling, wall and floor areas.

At a large extent, an individual's satisfaction and productivity depends on the basic environmental conditions of the surroundings. Working efficiency and comfort is considerably determined by the personal sense of well-being, which as a matter of priority is influenced by the ambient temperature.

The ingenious aquatherm black system delivers pleasant room conditions without any draught. Depending on the water temperature chosen, heating or cooling is simply controlled with this technology. Automatic designed change-over of heated or chilled water completes the system, from the single room control to the perfect control engineering.

## ADVANTAGES:

- Energy saving in operation
- Noiseless
- No additional dust exposure
- No draught, thus highest climatic comfort
- Constant distribution of temperature
- Suitable for later installation
- Fast assembly
- To a large extent architectural freedom of designing
- Low construction height



## READY FOR USE - in all four walls

### aquatherm black system CEILING HEATING

.....

The system offers pipe grids in different lengths and widths so that the installation in suspended ceilings or concealed can be adjusted to the individual locations. The combination of various sizes of pipe grids is of course possible and ensures best heating and cooling results in old and new buildings.

### aquatherm black system WALL HEATING

.....

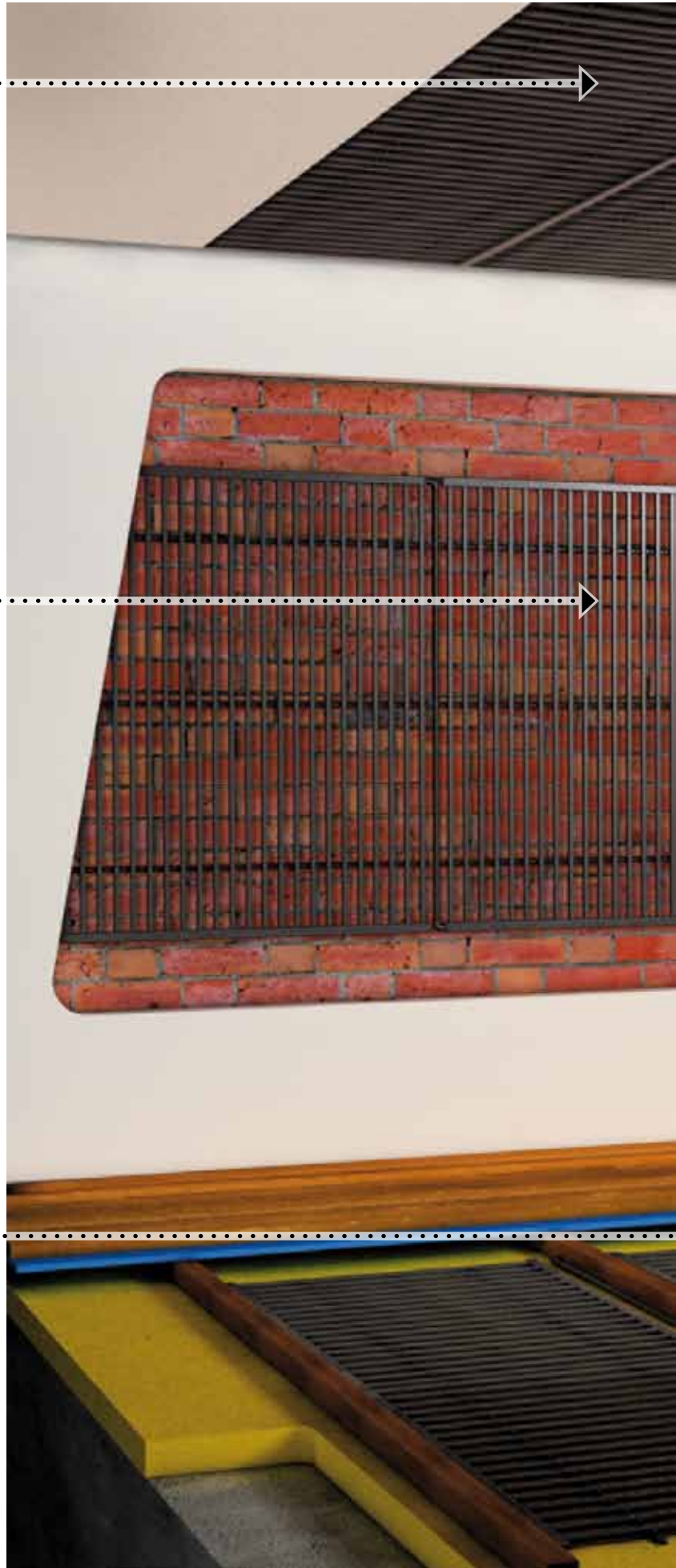
Basic idea of the wall heating is the occupant's well-being: A thermally balanced room is to be created.

Therefore, the principle of technology is not air heating and circulation, but the output of heat radiation from tempered walls directly to the room and the person respectively. A comfortable warmth, since the temperature of heating surfaces can be low chosen because of the relatively large heating surfaces. This is an advantage compared to small hot surfaces, such as radiators.

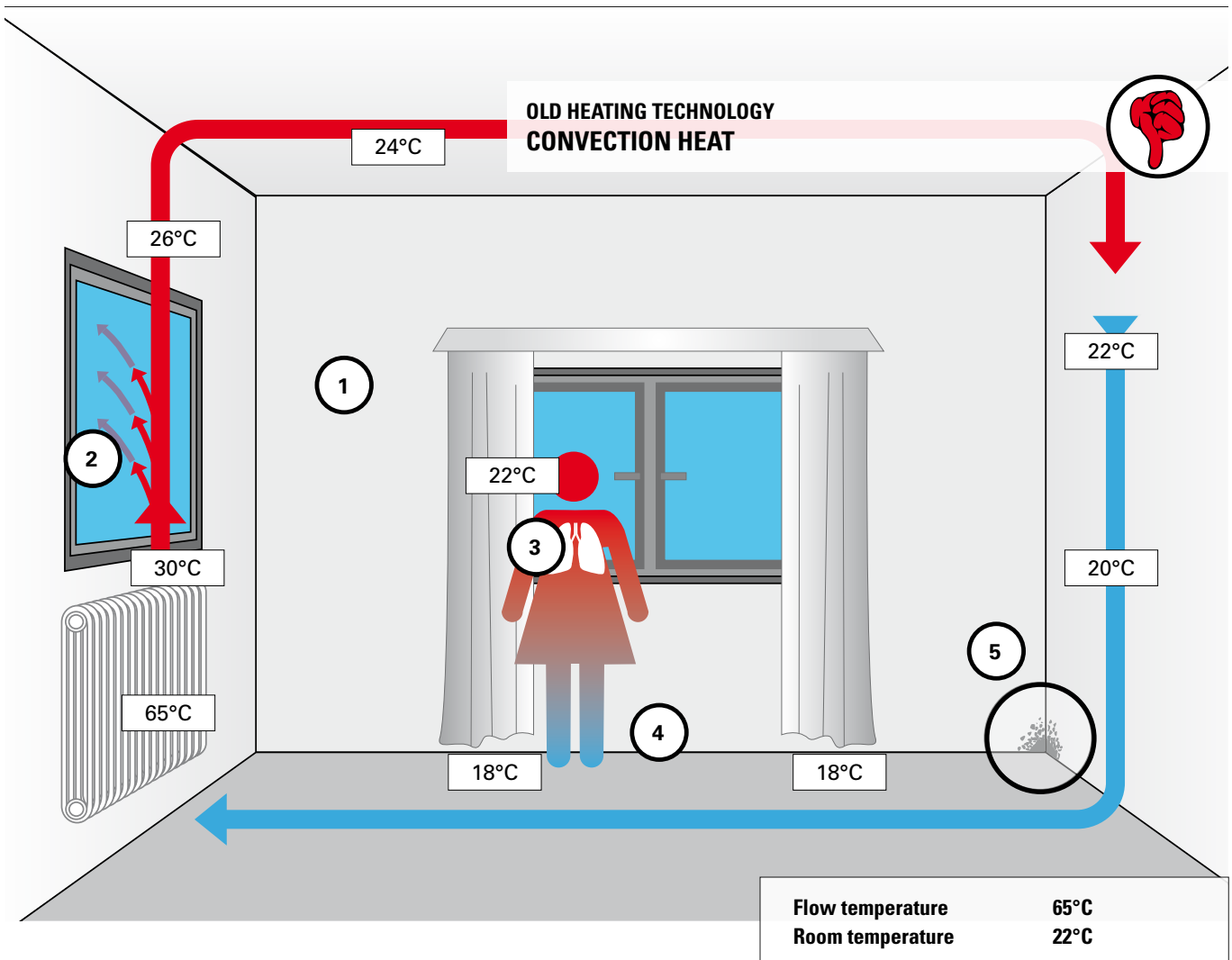
### aquatherm black system UNDERFLOOR HEATING

.....

aquatherm black system, a plus for comfort. Used as underfloor heating system, the aquatherm black system allows walking barefoot in the house even in winter. Another advantage is the architectural freedom of designing the rooms. In addition to this, there are the hygienic aspects of an underfloor heating system. There are no raisings of dust. By the constant surface heat, the growth of house dust mites and formation of mould will be prevented.

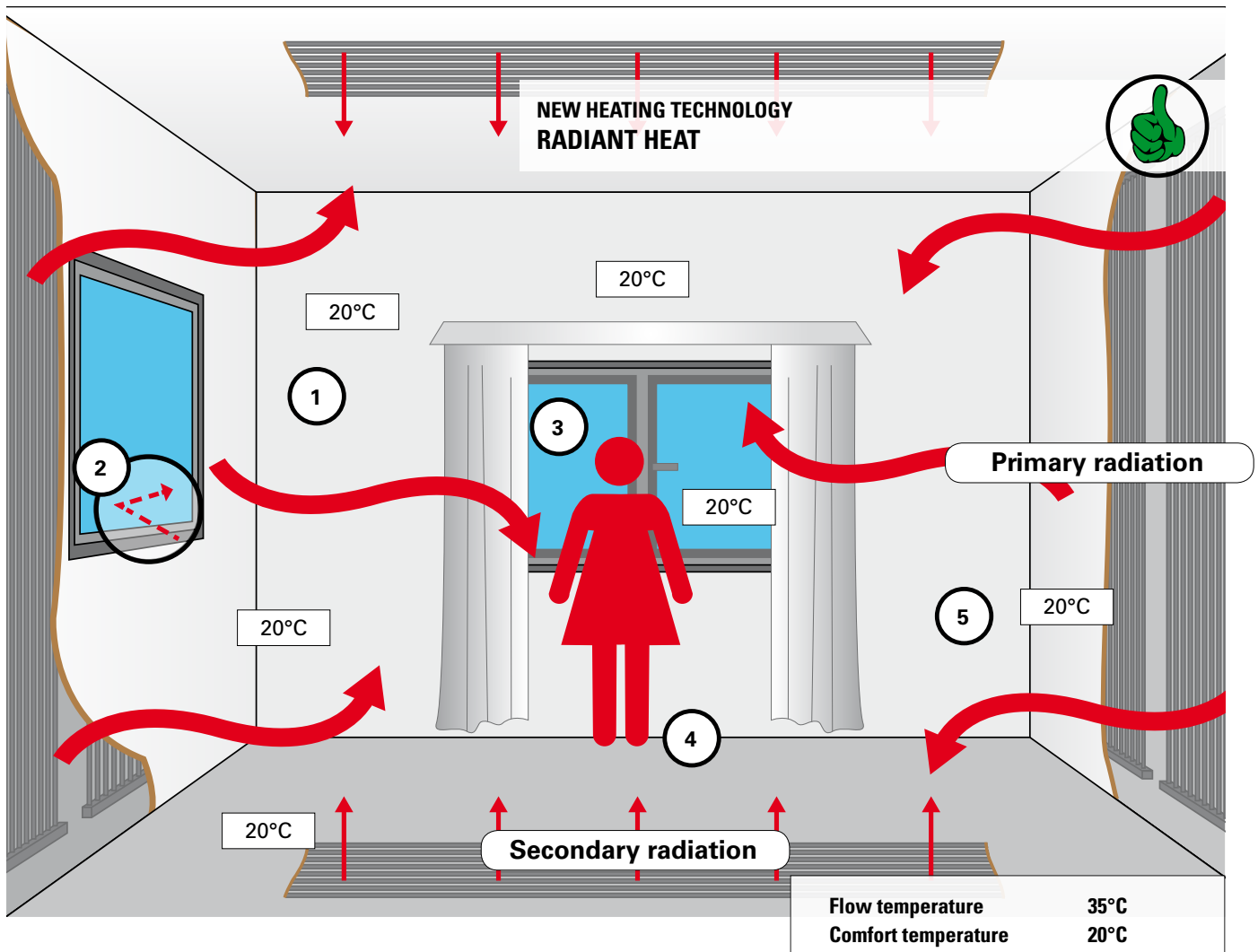






## THE CONVECTION HEATING WITH THE OLD RADIATOR

- ① Energy loss 1:**  
A high air temperature of at least 22°C is required to heat a room with air. Air is a bad heat carrier; therefore the energy costs are high.
- ② Energy loss 2:**  
Air heats the window. But the highest energy loss results from weak point of the insulation in the house - the window. Very high-quality windows are necessary. When airing the most energy-rich air escapes through the window.
- ③ Health at risk:**  
The air movement (warm air rises) kills the sense of well-being, too, since asthmatic and allergic persons have a primary problem with raising dust. This dust mixes with our breathing air and can lead to enormous burdens of the organism. An increase of the room temperature requires a reduction of the air humidity. Mucous membranes will dry out. The natural filtration system (nose) will be affected.
- ④ Discomfort:**  
Feet remain cold, as warm air rises up and is mainly in the upper area of a room. By that a feeling of discomfort is developed. The heating is adjusted to a higher level. The above effects will be increased.
- ⑤ Formation of mould:**  
Cold air strokes the wall, water condenses and creates the culture medium for the formation of mould.



## THE RADIANT HEATING WITH THE NEW AQUATHERM BLACK SYSTEM

- ① **Energy saving 1:**  
Comparable to the sun, the radiant heating first of all heats the solid and liquid materials in a room. Walls, ceilings and floors are constantly heated and the room temperature only in the second step. However, a high air temperature is not required for radiant heatings. An air temperature of 20°C is completely sufficient and provides a comfortable sense of well-being.
- ② **Energy saving 2:**  
There are no losses through the window. Heat radiation is reflected by glass and given back to the room.
- ③ **Energy saving 3:**  
The room temperature is low. Thus you will not have any big energy losses, even when airing. The low air temperature creates a natural and pleasant climate.
- ④ **Comfort:**  
In case of radiant heat, there are no differences in temperature of the room air, like with convection heatings. The head remains cool and the feet warm.
- ⑤ **Dry walls:**  
Since the walls are directly heated, there is no condensation and consequently no formation of mould.

### RULE OF THUMB:

**REDUCTION OF ROOM TEMPERATURE BY 1°C = 6 % ENERGY SAVING**

**SURFACE TO BE OCCUPIED = 60-100 % OF THE BUILDING AREA, DEPENDING ON THE BUILDING STRUCTURE**



## **aquatherm black system HEATING ELEMENT FOR DRY CONSTRUCTION**

**Field of application:** Lightweight partition walls in aluminium frames

**Heating capacity:** 60W/m<sup>2</sup> at room temperature of 20°C  
Flow temperature 35°C  
Return temperature 31°C  
Delta T 13 K

**Type of wall:** Dry-lined walls

**Covering:** Fermacell board 12.5mm (can be painted, tiled or papered at once)

**Field of application:** Renovation and new construction

**Possible dimensions for inner frame distance of 625mm:**

Width: 625mm length: 2,000mm # 5662200

Width: 625mm length: 1,000mm # 5662100

**Pipe connection:** aquatherm black system plug-in system / to be welded-fused





## **aquatherm black system HEATING ELEMENT FOR DRY CONSTRUCTION**

**Field of application:** Roof slope with dry construction

**Heating capacity:** 60 W/m<sup>2</sup> at room temperature of 20°C  
Flow temperature 35°C  
Return temperature 31°C  
Delta T 13K

**Type of wall:** Roof slopes

**Type of ceiling:** Drywall ceiling

**Covering:** Drywall 12.5mm, to be provided by the client

**Field of application:** Renovation

**Possible dimensions for inner principal rafter of 360mm:**

Width: 360mm    Length: 2,000/2,500 and 3,000mm

**Pipe connection:** aquatherm black system plug-in system / to be welded-fused with 90° elbows



## **aquatherm black system HEATING ELEMENT FOR PLASTER WORK (WALLS AND CEILINGS)**

**Field of application:** heating element for the installation for plastered walls

**Heating capacity:** 76 W/m<sup>2</sup> at room temperature of 20°C  
Flow temperature 35°C  
Return temperature 31°C  
Delta T 13 K

**Type of wall:** Wall with plaster work  
**Type of plaster work:** gypsum clay or lime cement plaster 10mm covering  
**Field of application:** renovation and new construction  
**Example dimension:** width: 600mm length: 2,000mm  
**Pipe connection:** to be welded-fused



## **aquatherm black system HEATING ELEMENT FOR SUSPENDED PANELED CEILINGS**

**Field of application:** Heating element for thermal activation of paneled ceilings

Heating capacity in drywall panels:	78 W/m <sup>2</sup> at dT = 13 K (T medium – T room) (drywall-climafit)
Cooling capacity in drywall panels:	67 W/m <sup>2</sup> at dT = 9 K (T medium – T room) (drywall-climafit)
Heating capacity in metal panels:	79 W/m <sup>2</sup> at dT = 13 K (T medium – T room)
Cooling capacity in metal panels :	78 W/m <sup>2</sup> at dT = 10 K (T medium – T room)

- Type of ceiling:** for suspended paneled ceilings
- Covering:** panels made of metal or drywall to be provided by the client and as requested by the architect/building owner
- Field of application:** New construction and renovation
- Dimensions:** Width: individually according to specifications



## aquatherm black system

### USE IN SHOWER

- › Comfortable warmth in the shower area
- › No cold emitting tiles
- › Simple assembly
- › Independently adjustable to size of shower and shower fitting
- › Applicable in combination with existing radiator system via single room control
- › Suitable for connection to all standard underfloor heating systems
- › Residual heat demand can be covered by it
- › Installation possible in new and old buildings

### Example of installation

Shower 1 m x 1 m with concealed fitting

- ① Article number: 5060160 (width 0.60 m / length 1.60 m)  
Quantity: 1  
Use in the wall without fitting
- ② Article number: 5036160 (width 0.36 m / length 1.60 m)  
Quantity: 2  
Concealed fitting is placed between pipe grids,  
plus connection pipes and if necessary single room control



## aquatherm black system

### USE IN MIRROR

#### Non-fogging mirror

- › Thanks to the use of aquatherm black system grids behind the mirror, the warmed mirror cannot be fogged up
- › Simple assembly
- › Independently adjustable to any size of mirror
- › Applicable in combination with existing radiator system through single room control
- › Suitable for connection to all standard underfloor heating systems
- › Perfect addition to the wall heating in showers



## **aquatherm black system** **COMPATIBLE WITH ANY HEATING SYSTEM**

By the possibilities of combination with various types of heating, such as

- ① Oil heating
- ② Pellet heating
- ③ Gas heating
- ④ Heat pump

aquatherm black system offers the best solution for the renovation of old buildings or the designing of new buildings – whatever heating system you decide for, the highest compatibility will be given and compromises in designing your new heating system will be avoided.



**aquatherm black system  
BECOMES THE DESIGN AIR-CONDITIONING SYSTEM H2C**

Perfect room climate looks as good as this.

Together with aquatherm, HJE Systembau Eickhoff GmbH & Co. KG developed the individually designable air-conditioning system h2c ALUFRAME. H2C "hot to cool" stands for an intelligent surface heating and cooling system.

h2c is an air-conditioning and heating system rolled into one. Developed on the basis of the aquatherm black system, the design air-conditioning system is integrated in a textile stretcher and can subsequently be provided on walls or under ceilings. Besides, h2c is also available as detached stand element, for example as partition. The system is connected to the normal heating supply. On the occasion of the EuroShop fair, the h2c ALUFRAME has already been honored with the innovation award for architecture and presentation in the category of "products of high architectural quality".

For further information on this system, please visit [www.hje-gruppe.de](http://www.hje-gruppe.de)



## INFORMATION MATERIAL

<b>aquatherm green pipe &amp; aquatherm blue pipe &amp; aquatherm lilac pipe</b> pipe systems for potable water, hydronic and industrial applications and recycled water	<b>Order No.</b> E10101
<b>aquatherm blue pipe</b> pipe system for hydronic and industrial applications	<b>Order No.</b> E10050
<b>aquatherm red pipe</b> sprinkler pipe system	<b>Order No.</b> E40000
<b>aquatherm orange system</b> surface heating systems	<b>Order No.</b> E90001
<b>aquatherm black system</b> surface heating and cooling system for ceiling & wall	<b>Order No.</b> E97060
<b>aquatherm grey pipe</b> potable water and radiator connection system	<b>Order No.</b> E70001
<b>aquatherm</b> - product catalogue	<b>Order No.</b> E54152
<b>aquatherm</b> - references	<b>Order No.</b> E57002
<b>aquatherm ti</b> - for underground pipe systems	<b>Order No.</b> E30000

For detailed information, please get in touch with our info service calling **00492722 950-0**  
or visit the download area of our website  
[www.aquatherm.de](http://www.aquatherm.de)

### STAMP OF DEALER



Management  
System  
ISO 9001:2008  
ISO 14001:2004  
ISO 50001:2011  
[www.tuv.com](http://www.tuv.com)  
ID 0091005348

## aquatherm GmbH

Biggen 5 | D-57439 Attendorn | Phone: +49 (0) 2722 950-0 | Fax: +49 (0) 2722 950-100

Wilhelm-Rönsch-Str. 4 | D-01454 Radeberg | Phone: +49 (0) 3528 4362-0 | Fax: +49 (0) 3528 4362-30

[info@aquatherm.de](mailto:info@aquatherm.de) [www.aquatherm.de](http://www.aquatherm.de)