



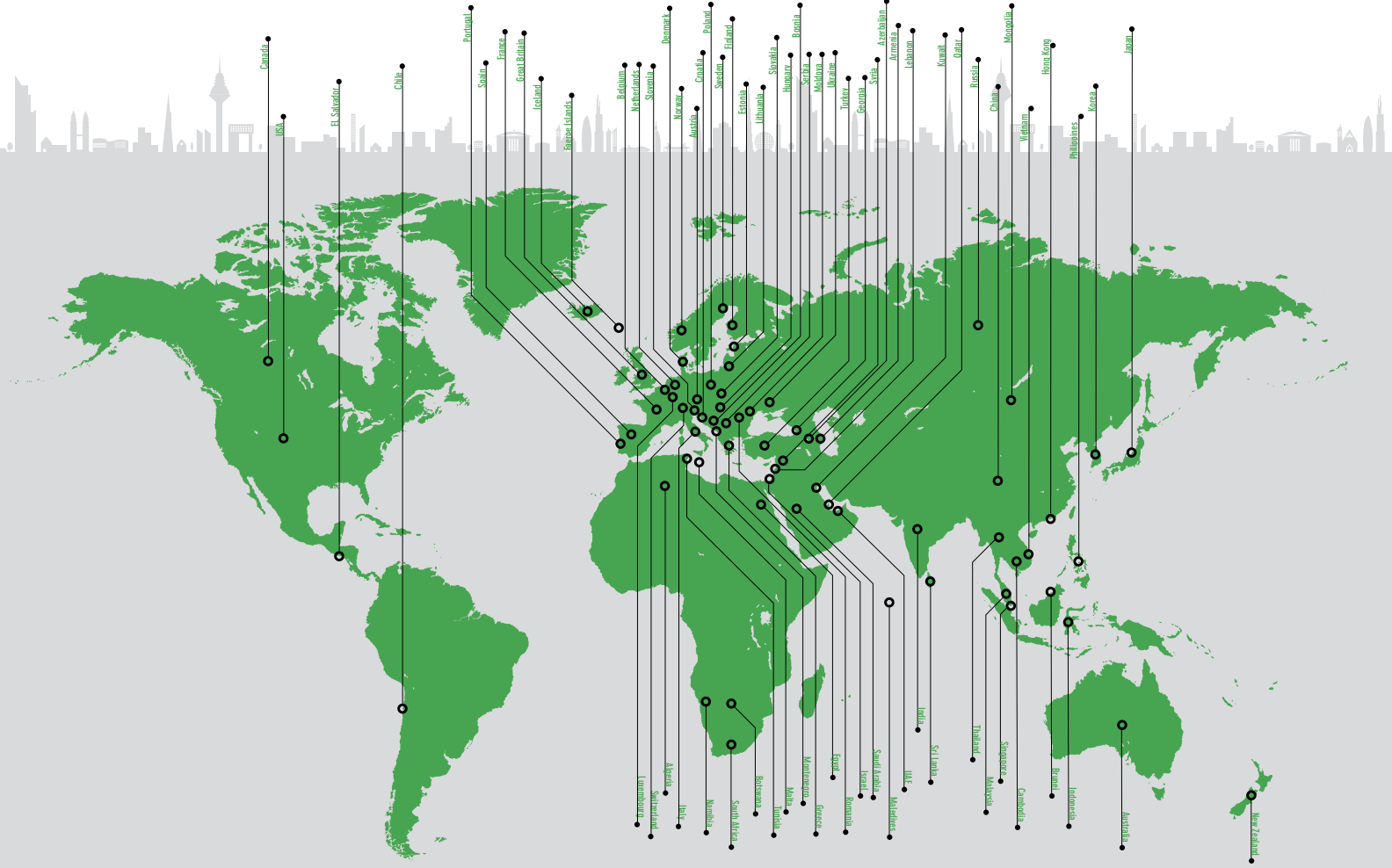
colours of innovation



aquatherm

state of the pipe

aquatherm & PARTNER WORLDWIDE



CONTENTS

Preface	Page 5	Comparison of the water content	Page 18	Manifold construction	Page 33
Colours of Innovation	Page 7	Symbols and shortcuts	Page 19	aquatherm red pipe	Page 34
New Logo & Claim	Page 9	aquatherm green pipe	Page 20	Fusion technique	Page 36
The company	Page 11	aquatherm blue pipe	Page 24	Examples	Page 38/46
Tested Quality	Page 13	aquatherm lilac pipe	Page 28	aquatherm black system	Page 40
Ecology	Page 15	composite technology	Page 30	aquatherm grey pipe	Page 42
Material: fusiolen® PP-R	Page 16	aquatherm ot	Page 31	aquatherm orange system	Page 44
Overview fields of application	Page 17	aquatherm ti	Page 32	References	Page 48



Dear customers and partners,

thank you for your interest in our family enterprise.

For a long time the classification of enterprises as a family has rather been hidden than actively marketed. Only in recent years family enterprises experience a comeback. From employee perspective, they are generally a flat hierarchy, provide independent and responsible work under a cooperative management style, but above all they are considered safe employers who commit permanently to their employees.

By definition, family enterprises are distinguished primarily by the unity of ownership and management in the hands of a family; this criterion the aquatherm group still meets after the transition from the first to the second generation (pictured above).

Our self-image of a family enterprise, however, clearly exceeds this description. Our claim describes a proactive organization that bases in the responsible contact in everyday life, that challenges encouraging, thereby accompanies developments in a promoting way and sets on a personal influenced by nearby corporate culture. If these business properties meet determined people that daily inspire through initiative, diligence and passion, until we speak of a living family enterprise, until we speak with pride of the aquatherm family.

We look forward to presenting you on the following pages some insight into our colorful, slightly green-tinted aquatherm world.



Christof Rosenberg
Managing Director



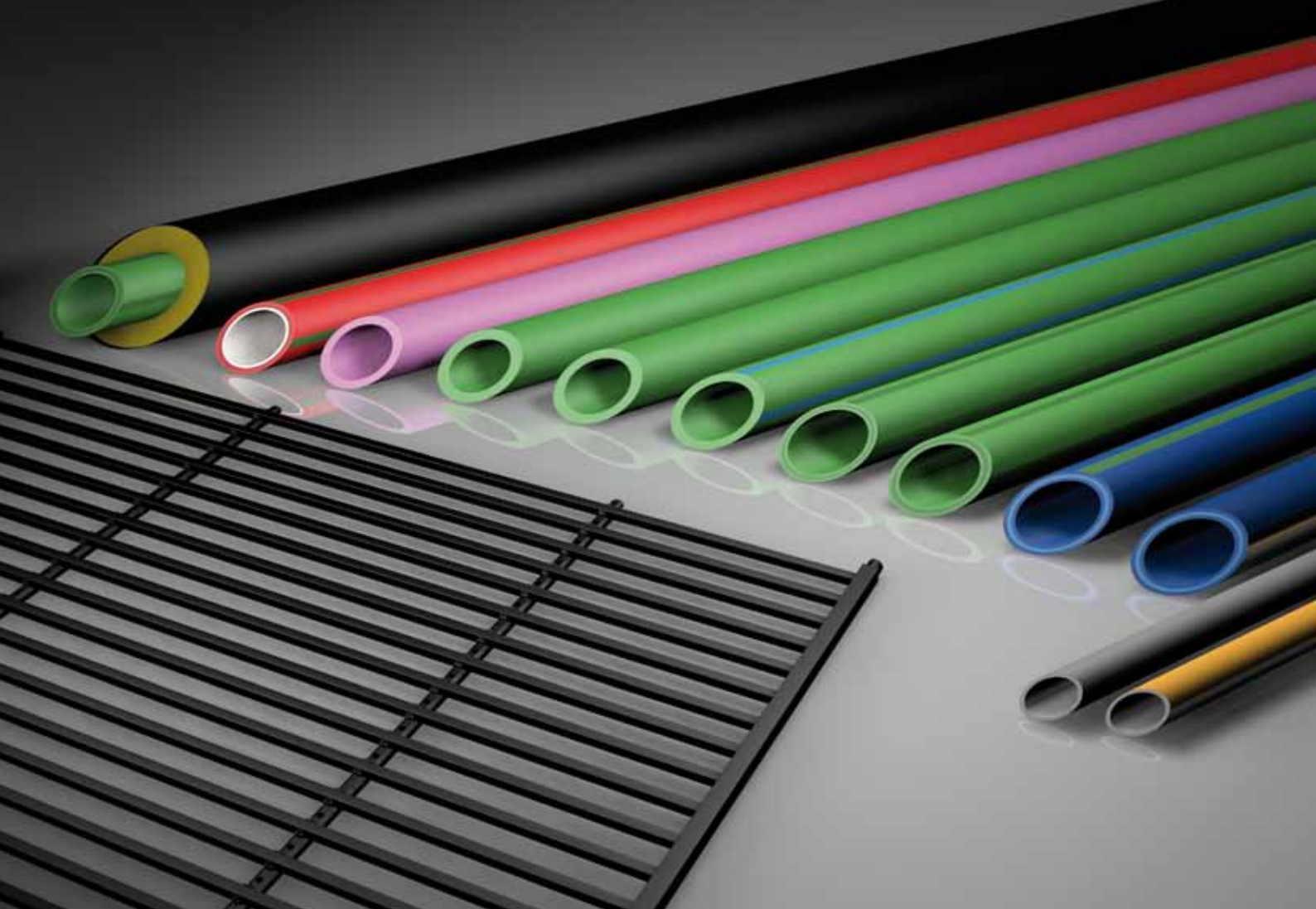
Maik Rosenberg
Managing Director



Dirk Rosenberg
Managing Director



Gerhard Rosenberg
President of the Advisory Board



EVERYTHING CHANGES, BUT THE GOOD REMAINS.

Being unique and having a distinct identity has always been part of our corporate philosophy. Our commitment to having the highest quality of products, proving exemplary customer service, consolidating industry-leading expertise, and developing innovative systems has given us a positive corporate image worldwide.

To make our corporate position, values, and offerings more visible to our audience, we are updating and harmonizing our corporate design. aquatherm is a modern, global, high-tech market leader and this should be reflected in our corporate presentation.

COLOURS OF INNOVATION

The desire to avoid stagnation and continuously improve our products, as well as to find new fields of application and create solutions quickly, has resulted in some of the well-known aquatherm product groups. This often led to systems being named as they emerged and has resulted in naming conventions that no longer accurately convey the suitable applications for the pipe.

An example of this is climatherm, which was developed as a pipe for air conditioning, but then qualified for many other areas because of its exceptional properties. The air conditioning sector is still important but it is only one of the main applications for climatherm. Sadly, its original name implies that it is limited to this area only.

Another issue is that many of our pipes and systems have names that do not relate to each other, and in turn do not relate those products to their parent company, aquatherm.

Furthermore, other companies from different industries around the globe use similar names, creating confusion between aquatherm products and their products. The desired uniqueness of our system identification is lost.

Thus, the next logical step for us is to introduce a naming system that matches and unifies our products. We will show the new names that we want to present in the following pages.

During the transition period, the products will have the old and the new system name. This will help to facilitate familiarization and orientation in the market.



aquatherm

state of the pipe

THE NEW LOGO

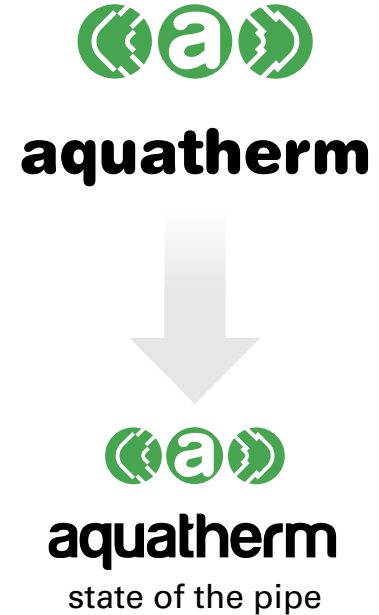
Our logo is the primary visual representation of the company. It is representative for us and provides a definitive identification and differentiation from competitors.

The aquatherm logo signifies our company to the rest of the world and distinguishes the products that leave our house. Thus, it is our trademark.

Again, we rely on a combination of old and new. The striking design and the well-known combination of text and image are preserved. But the font is given a modern, cleaner design that better represents aquatherm. We will inform you about the precise use and positioning possibilities in a separate corporate design manual

THE NEW CLAIM - OUR BRAND PROMISE

We are "**state of the pipe**" because we act independently and decisively, and are at the same time always reliable. This makes us the leading manufacturer of polypropylene pipes.





THE COMPANY

Certified according to DIN/ISO 9001 aquatherm is a world-wide successful manufacturer of plastic pipe systems for potable water application, climate technology and for the heating sector.

aquatherm was founded 1973 for the development, production and installation of hot-water underfloor heating. At that time aquatherm was one of the three first suppliers of underfloor heating on the European market.

In 1980 aquatherm developed the plastic pipe system fusiotherm® from polypropylene for sanitary and heating installations. Up to now this innovation is the foundation stone for a steady growth.

The total workforce at all sites numbers about 500. Each day well over 145 kilometres of pipe and 280,000 fittings are produced, stored and dispatched.

Presently aquatherm is located at 3 sites in Germany totally covering more than 80.000 square metres. For offices, production and warehouse:

- 1. aquatherm main site D-Attendorn (Biggen)**
- 2. aquatherm branch D-Radeberg near D-Dresden**
- 3. aquatherm-metall D-Attendorn (Ennest)**

The aquatherm-pipe systems are produced 24 hours everyday at 6 days a week to meet the constantly increasing demands at home and abroad and to guarantee impeccable and punctual delivery.

Today, aquatherm is a globally acting company, present in 75 countries of the world, undisputed market leader in many fields and last but not least a flexible middle-sized company, which is able to compete with big groups.

1973

Founding of aquatherm by Gerhard Rosenberg

1978

Transfer to the first factory in Biggen/D-Attendorn

1992

Founding of the branch in Radeberg near D-Dresden

1996

Founding of the metal processing company aquatherm metal, D-Attendorn

1998

Founding of a subsidiary in Carrara/Italy

1999

Completion of the main site in D-Attendorn as one complex (Factories 1+2, Production and Store, Laboratory and Training Centre)

2001

Completion of the extension Factory 2 in D-Attendorn

Opening of the new training centre in D-Radeberg

2002

Completion of the logistics centre in D-Attendorn

2003

Completion of rebuilding and finishing of the training centre in D-Attendorn

30 year celebration of the company aquatherm

2005

Adding of 2 storeys on the administration building

2005/06

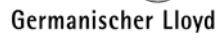
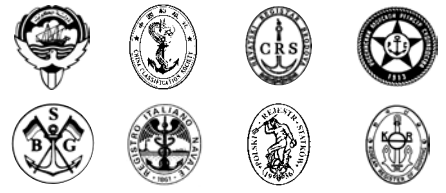
Completion of the 4-storey hall on the premises in Attendorn

2008/09

Aquisition of the former storehouse of the forwarding agent Kost, which also accomodates the room of the plant maintenance.

2009

Opening of the new expertise centre for technical application.



Compliance with the system standard

TESTED QUALITY - HIGHEST STANDARDS

CERTIFICATIONS IN ACCORDANCE WITH ISO 9001, 14001 & 50001

Since 1996 aquatherm has been meeting the requirements of the certifiable quality management system according to DIN ISO 9001. The 2012 TÜV certificate was extended by the environmental management system according to ISO 14001 and currently by the energy management system according to ISO 50001.

This success is a great contribution and represents a further step to strengthen our competitive position and to meet the high requirements and the responsibility for our customers, partners and the environment.

aquatherm prides itself on its environmental-friendly production, processing and the highest quality standard of all products:

The quality of the materials influences substantially the quality of a pipe system. Therefore, aquatherm tests - in addition to the external controls of the SKZ in Würzburg and HY in Gelsenkirchen - the hygienic qualities and the loading capacity of the materials independently continuously before, during and after the production.

For this purpose aquatherm has its own laboratory in the main site in Attendorn. This does not only guarantee constant quality controls, but also the further development of the basic material to be prepared for the most different product requirements as well as to develop innovative materials for new fields of application.

Excellent results of this research program are the innovative pipe materials fusiolen® PP-R, fusiolen® PP-R C or fusiolen® PP-R FS as a basis for the worldwide successful pipe systems **aquatherm green pipe**, **aquatherm blue pipe**, **aquatherm lilac pipe** and **aquatherm red pipe**.

The most modern process controls provide optimum quality. Therefore only perfect products have the opportunity to leave aquatherm for the customer.

Satisfied customers in more than 80 countries as well as numerous seals of quality and authorization certificates confirm the high quality standard of the aquatherm products.





AQUATHERM & ECOLOGY

Environmental protection is taken very seriously by aquatherm!

Products such as the aquatherm PP-R pipe systems feature not only a long service life, but also excellent environmental and social compatibility.

From the origin of the company aquatherm placed emphasis on the fact that its products and manufacturing processes should not pollute our sensitive eco-systems, and ensured development of fully recyclable materials which can thus be added, problem-free, to new production.

Long before environmental protection was recognised as a global issue aquatherm fulfilled ecological standards which are demanded today.

For now 40 years aquatherm has underlined its philosophy that ecological and economic interests should not be contradictory, neither during production and sales, nor in the product application.

The environmentally friendly raw material fusiolen® is used for the manufacture of the aquatherm pipe systems. To ensure its environmental compatibility the basic material polypropylene, as well as all contained additives (colour pigments and stabilizers) were extensively tested, not only by aquatherm's own laboratory, but also by independent laboratories.

Their results show that the material fusiolen® and the pipe systems from which it is manufactured, comply with the highest ecological standards and are thus future-oriented.

MATERIAL ADVANTAGES

	fusiolen® PP-R/PP-RP	fusiolen® PP-R C	fusiolen® PP-R FS
Smell- and taste neutrality	•		
Physiological suitability	•		
100 % corrosion resistant	•	•	•
Very good welding properties	•	•	•
Connection by fusion	•	•	•
Heat- and sound insulating characteristics	•	•	•
Less pipe friction	•	•	•
High abrasion resistance	•	•	•
High impact rate	•	•	•
Resistant against chemicals	•	•	•
Equipped with metal deactivation	•	•	•
Recycleable	•	•	•
Heat stabilized	•		•
High heat stabilized		•	
Low flammability			•

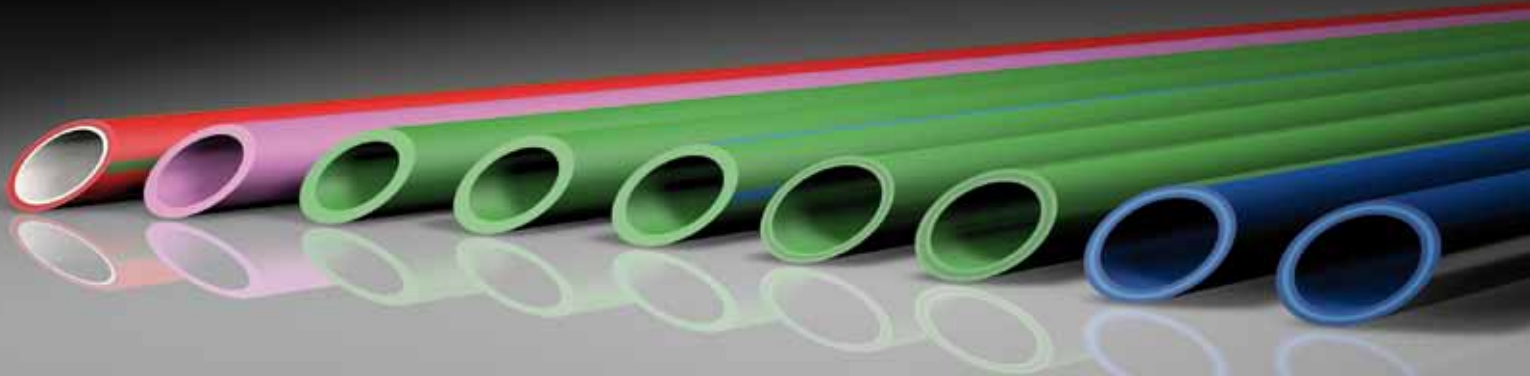
fusiolen® PP-R

Decades of experience in the production and the application of PP-R pipe systems and the current ambition of continuous development led to numerous improvements of the aquatherm-system technology.

Newly opened markets set a high standard of quality to make even larger demands against the pipe material. Various fields of application require the greatest possible independence of the material to be processed. Raw materials with new properties are required.

aquatherm has developed and produced their own, innovative PP-R materials which meet the requirement of a global market in the potable water and heating technology, in the airconditioning and chilling engineering, in the industrial and agriculture economy, in shipbuilding as well as in fire protection.

Successful results of this research are:
 fusiolen® PP-R,
 fusiolen® PP-RP,
 fusiolen® PP-R C and
 fusiolen® PP-R FS.



FIELDS OF APPLICATION

System recommended due to its technical advantages: ●

Application of the system is suitable: ○

**aquatherm
red pipe**

**aquatherm
lilac pipe**

**aquatherm
green pipe**




















**aquatherm
blue pipe**

	aquatherm red pipe	aquatherm lilac pipe	aquatherm green pipe	aquatherm blue pipe
Potable water application			●	
Heating system construction			○	●
Climate technology			○	●
Chilled water technology			○	●
Swimming-pool technology			●	●
Chemical transport due to high chemical resistance			●	●
Rainwater application		●	○	
Irrigation		●	○	●
Compressed air systems			○	●
Under-floor-heating-systems			○	●
Application in the field of ship building			●	●
District heating pipeline systems			●	●
Geothermal				●
Agriculture		●	●	●
Fire protection sprinkler-systems	●			

COMPARISON OF THE WATER CONTENT PER METER

ø Dimension mm	aquatherm green pipe SDR 6 S	aquatherm green pipe SDR 7,4 MF (faser composite pipe) aquatherm red pipe SDR 7,4 MF (faser composite pipe) aquatherm blue pipe SDR 7,4 & SDR OT 7,4 MF (faser composite pipe)	aquatherm green pipe SDR 9 MF (faser composite pipe) RP	aquatherm blue pipe SDR 11 & SDR 11 OT MF (faser composite pipe) aquatherm blue pipe SDR 11 S aquatherm green pipe SDR 11 S aquatherm lilac pipe SDR 11 S	aquatherm blue pipe SDR 17,6 MF (faser composite pipe)
ø 16	0,088	-	-	-	-
ø 20	0,137	0,163	-	0,206	-
ø 25	0,216	0,254	-	0,327	-
ø 32	0,353	0,423	0,483	0,539	-
ø 40	0,555	0,660	0,754	0,834	-
ø 50	0,876	1,029	1,182	1,307	-
ø 63	1,385	1,647	1,869	2,074	-
ø 75	1,963	2,323	2,659	2,959	-
ø 90	2,826	3,358	3,825	4,252	-
ø 110	4,229	4,999	5,725	6,359	-
ø 125	-	6,472	7,386	8,199	-
ø 160	-	10,599	12,109	13,430	15,792
ø 200	-	16,558	18,908	21,010	24,661
ø 250	-	25,901	29,605	32,861	38,568
ø 315	-	41,475	46,966	52,172	61,223
ø 355	-	52,685	59,625	66,325	77,832
ø 400	-	-	-	84,290	98,756
ø 450	-	-	-	106,477	125,036
ø 500	-	-	-	-	154,272
ø 560	-	-	-	-	193,688
ø 630	-	-	-	-	245,070

SYMBOLS & SHORT CUTS

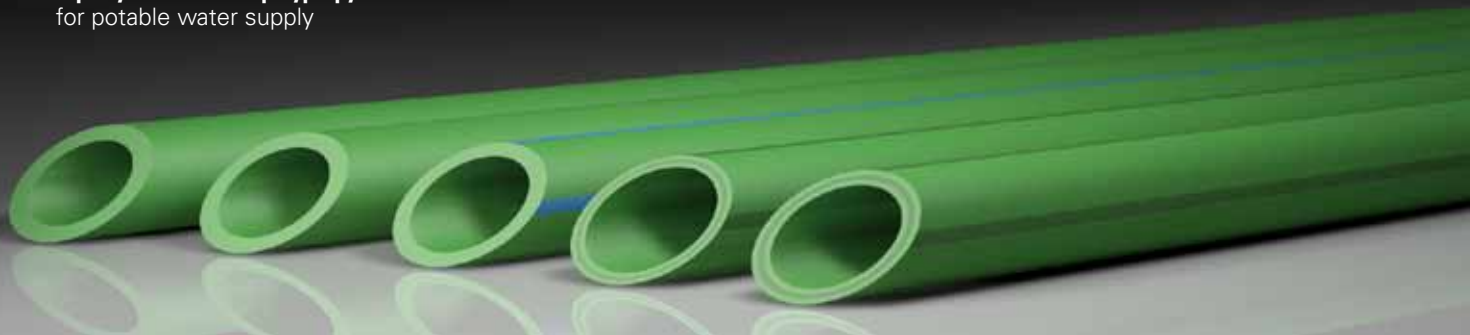
- | | | |
|---|--|---|
|  potable water application |  industrial floor cooling |  agriculture |
|  heating system construction |  industrial floor heating |  rainwater application |
|  connection heating and cooling |  chilled water technology |  irrigation |
|  underfloor heating |  sports floor heating and cooling |  fire protection sprinkler-systems |
|  wall heating |  swimming-pool technology |  application in the field of ship building |
|  ceiling heating and cooling |  chemical transport |  district heating pipeline systems |
|  geothermal | | |

short cuts material	
PP	polypropylene
PP-R	polypropylene random
PP-RP	polypropylen with raised pressure
PB	polybutene
PE-RT	polyethylene with raised temperature resistance
PEX	cross-linked polyethylene
AL	aluminium

short cuts structure of pipe	

aquatherm green pipe

Pipe system made of polypropylene
for potable water supply



article-no.	old brand name	new branding structure					
		new brand name		Standard Dimension Ratio	structure of pipe	special feature of pipe	material
		company	system				
10208 ... 10248	fusiotherm SDR11	aquatherm	green pipe	SDR 11	S		PP-R
10806 ... 10818	fusiotherm SDR7,4	aquatherm	green pipe	SDR 7,4	S		PP-R
10006 ... 10024	fusiotherm SDR6	aquatherm	green pipe	SDR 6	S		PP-R
70806 ... 70824	fusiotherm stabi composite pipe	aquatherm	green pipe	SDR 7,4	MS		PP-R
70708 ... 70744	fusiotherm faser composite pipe	aquatherm	green pipe	SDR 7,4	MF		PP-R
70758 ... 70794	fusiotherm faser composite pipe UV	aquatherm	green pipe	SDR 7,4	MF	UV	PP-R
1270711 ... 1270737	fusiotherm faser composite pipe ISO	aquatherm	green pipe	SDR 7,4	MF	TI	PP-R
370712 ... 370744	aquatherm green pipe	aquatherm	green pipe	SDR 9	MF	RP	PP-RP
370762 ... 370794	aquatherm green pipe UV	aquatherm	green pipe	SDR 9	MF	RP UV	PP-RP

Fields of application



Fusiotherm®- the innovative multi-purpose pipe that was a revolution for the plastic pipe industry and has evolved over decades will be called

aquatherm green pipe

The pipe launched under this new name in several international markets three years ago and quickly came to be recognized for the highest quality and environmental responsibility. Its environmental benefits as well as the world-famous and often copied colour of the pipe system are the basis for the new name.

The pipe system has proved its excellent technical suitability in worldwide applications for more than 30 years and is highly recognized by experts as one of the most extensive and at the same time best plastic pipe systems.

The system includes the different types of pipes SDR 6, SDR 7,4, SDR 9 and SDR 11. They are complemented by especially reinforced products: faser composite pipe SDR 7,4, aquatherm green pipe SDR 9 and stabi composite pipe SDR 7,4. More than 450 joining and connection elements as well as valves and ball valves complete the system. The products are available from 16 mm to 450 mm external diameter.

The aquatherm green pipe system is applied in all fields of

- **NEW INSTALLATION**
- **REPAIR** and
- **RENOVATION.**



aquatherm green pipe

Pipe system made of polypropylene
for potable water supply

SDR: 6 / 7,4
ø: 16-125mm
Type of pipe:
Old: Fusiotherm®
New: aquatherm green pipe S

SDR: 11
ø: 20-450mm
Type of pipe:
Old: Fusiotherm® SDR 11
New: aquatherm green pipe S SDR 11

SDR: 7,4
ø: 16-110mm
Type of pipe:
Old: Fusiotherm® stabi composite pipe
New: aquatherm green pipe MS



FIELDS OF APPLICATION

Potable water and heating pipe networks

for cold and hot water installations e.g. in residential buildings, hospitals, hotels, office and school buildings, shipbuilding, sports facilities etc.
house connection
boiler connection
water distribution
rise
high rise (conventional or specially connected)
water point connection

- **Heating pipes for residential houses**
heat generator connections
heating manifolds
risers
high rise
manifold connections
radiator connections
- **Pipe networks in agriculture and horticulture**
- **Pipe networks for geothermal recovery**
- **Pipe networks for industry,**
e.g. for the transport of aggressive fluids
(acids, leys, etc.) considering the chemical resistance

SDR: 7,4 / 9
ø: 20-355mm
Type of pipe:
Old: Fusiotherm® faser composite pipe
New: aquatherm green pipe MF

SDR: 7,4 / 9
ø: 20-250mm
Type of pipe:
Old: Fusiotherm® faser composite pipe UV
New: aquatherm green pipe MF UV

SDR: 7,4 / 9
ø: 32-250mm
Type of pipe:
Old: Fusiotherm® ISO faser composite pipe
New: aquatherm green pipe MFT I



NEW

aquatherm green pipe SDR9 RP

aquatherm sets the innovation standards in the production of PP-pipes and fittings worldwide. We continually strive to push developments for product improvement. The current level of evolution is called „fusiolen PP-RP“.

With „fusiolen PP-RP“ we can produce fibre-composite pipes with lower wall-thickness by keeping all the well-established advantages.

Advantages PP-RP

- lower wall-thickness
- 14% higher flow rate at same velocity compared to faser composite pipe SDR 7.4
- allowable operation pressures are higher than those of faser composite pipes PP-R SDR7.4 and fibre reinforced pipes made of PP-RCT SDR9
- identical expansion as faser pipe SDR7.4
- 16 % lower weight than faser composite pipe PP-R SDR7.4
- lower weight than stainless steel, steel and copper pipes, thereby easier handling for transport and at site
- quicker processing by shorter butt-welding times
- trouble-free welding with all aquatherm pp-r fittings

aquatherm blue pipe

Pipe system made of polypropylene
for chilled, hot fluid and various industrial applications



article-no.	old brand name	new branding structure					
		new brand name		Standard Dimension Ratio	structure of pipe	special feature of pipe	material
		company	system				
2010208 . . . 2010212	climatherm SDR11	aquatherm	blue pipe	SDR 11	S		PP-R
2070112 . . . 2070712	climatherm faser composite pipe SDR7,4/SDR11	aquatherm	blue pipe	SDR 7,4/SDR 11	MF		PP-R
2070162 . . . 2070762	climatherm faser composite pipe SDR7,4/SDR11/SDR17,6 UV	aquatherm	blue pipe	SDR 7,4/SDR 11/SDR 17,6	MF	UV	PP-R
2170114 . . . 2170712	climatherm faser composite pipe SDR7,4/SDR11 OT	aquatherm	blue pipe	SDR 7,4/SDR 11	MF	OT	PP-R
2570130 . . . 2570154	climatherm faser composite pipe SDR17,6	aquatherm	blue pipe	SDR 17,6	MF		PP-R
2270111 . . . 2270142	climatherm faser composite pipe SDR7,4/SDR11 ISO	aquatherm	blue pipe	SDR 7,4/SDR 11	MF	TI	PP-R
2470711 . . . 2470126	climatherm faser composite pipe SDR7,4/SDR11 OT ISO	aquatherm	blue pipe	SDR 7,4/SDR 11	MF	OT-TI	PP-R

Fields of application



climatherm our specialty for distributing cooling and heating in closed systems as well as in several industrial applications, will become

aquatherm blue pipe

This system was developed 10 years ago in order to prevent corrosion in air conditioning pipes and quickly expanded its range of application, with many positive features for other fields of piping installation. It has gone on to find success around the world in hotels, stadiums, schools, offices, and industrial applications.

The aquatherm blue pipe system has been developed especially for applications outside the potable water installation.

In addition to the general advantages of the PP-R pipesystem aquatherm blue pipe in comparison with the aquatherm green pipe system offers higher volumetric current values due to smaller wall thickness.

System components

The system has to be installed in combination with the aquatherm green pipe-fittings - and includes all elements for the pipe system installation for chilled, hot fluid and various industrial applications.

The aquatherm blue pipe system is applied in all fields of

- **new installation**
- **repair and**
- **renovation.**

- **Heating pipes for residential houses**
 heat generator connections
 heating manifolds
 risers
 high rise
 manifold connections
 radiator connections

- **Pipe networks**
 for climate technology
 for chilled water technology
 for swimming-pool technology
 for chemical transport
 for rainwater application
 for compressed air systems
 for underfloor-heating-systems
 in ship building
 for district heating
 for geothermal

aquatherm blue pipe

Pipe system made of polypropylene

for chilled, hot fluid and various industrial applications

SDR: 11
ø: 20-32mm
Type of pipe:
Old: climatherm pipe
New: aquatherm blue pipe S

SDR: 7,4 / 11 / 17,6
ø: 20-630mm
Type of pipe:
Old: climatherm faser composite pipe
New: aquatherm blue pipe MF

SDR: 7,4 / 11
ø: 20-250mm
Type of pipe:
Old: climatherm faser composite pipe OT
New: aquatherm blue pipe MF OT

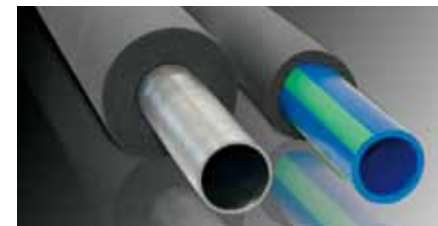


aquatherm blue pipe stopps corrosion damages!

Air conditioning systems (problems with dew-point) installed with steel pipes especially are affected by corrosion at the outer surface of the pipes. aquatherm blue pipe is manufactured from 100% corrosion resistant materials which increase the life-time of air-conditioning pipe systems considerably.

Insulation against energy loss

Compared to metal pipes aquatherm blue pipes require a considerable thinner insulation.



SDR: 7,4 / 11
ø: 20-250mm

Type of pipe:

Old: climatherm faser composite pipe UV

New: aquatherm blue pipe MF UV

SDR: 7,4 / 11 / 17,6
ø: 32-315mm

Type of pipe:

Old: climatherm ISO faser composite pipe

New: aquatherm blue pipe MF TI

aquatherm lilac pipe

Pipe system made of polypropylene
for reclaimed water

SDR: 11
ø: 20-125mm

Type of pipe:

Old: aquatherm lilac

New: aquatherm lilac pipe S

Heating and air-conditioning

aquatherm blue pipe includes all pipe installation components for chilled water, hot and various industrial applications. Reduced wall thickness offers higher flow rates and the products are stabilised under heat.

Ice surface cooling

The ice surface cooling system is made of an ideal combination of aquatherm blue pipe and aquatherm green pipe-components. For the construction of mobile ice rink surfaces the pipework is completed with aquatherm blue pipe components.

The distribution pipes as well as the manifold connecting pipes are made from aquatherm blue pipes and connected by reverse return (Tichelmann-principle). The weld-in saddle technique, developed by aquatherm, is applied for the production of manifold branches.

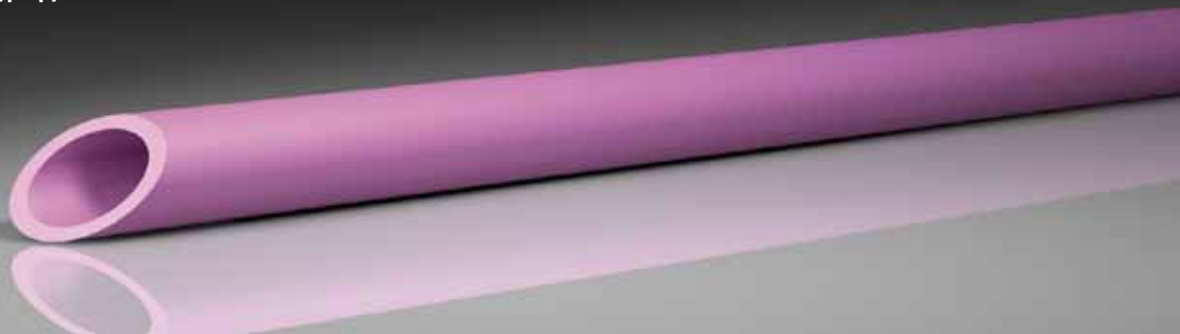
Under soil heating

To keep a pitch with natural or artificial turf free from ice and snow aquatherm offers a system to provide an under soil heating efficiently and in consideration of environmental aspects.

The ideal combination of aquatherm blue pipe and aquatherm green pipe compounds creates this condition.

aquatherm lilac pipe

Pipe system made of polypropylene
for reclaimed water



article-no.	old brand name	new branding structure				
		new brand name		Standard Dimension Ratio	structure of pipe	material
		company	system			
9010212 . . . 9010238	aquatherm lilac	aquatherm	lilac pipe	SDR 7,4/ SDR 11	S	PP-R

Fields of application



lilac was developed exclusively for the field of water recycling and is officially called

aquatherm lilac pipe

In countries that are highly committed to the environment, like Australia and California, it is already standard to reduce daily water consumption by using recycled water when possible. Now lilac is also regarded in other countries as a standard colour for greywater pipes, giving us both the colour and name for our reclaimed water service lines.

Reclaimed and recycled water sources, and rainwater catchment systems are being specified and installed much more frequently as building and plumbing codes are updated to allow this as a means for improving water conservation. The codes will require that the system be kept entirely separate from the potable water supply, and that the piping be color-coded and labeled to identify it as non-potable.

The new aquatherm lilac pipe has been developed exclusively for these applications. The piping uses the same durable, corrosion-resistant polypropylene material that has been successfully used for hot-and-cold water distribution for over 30 years. This, combined with design modifications, coloring, marking, and independent third-party certification by NSF International, make lilac the ideal choice for water conservation.

System components

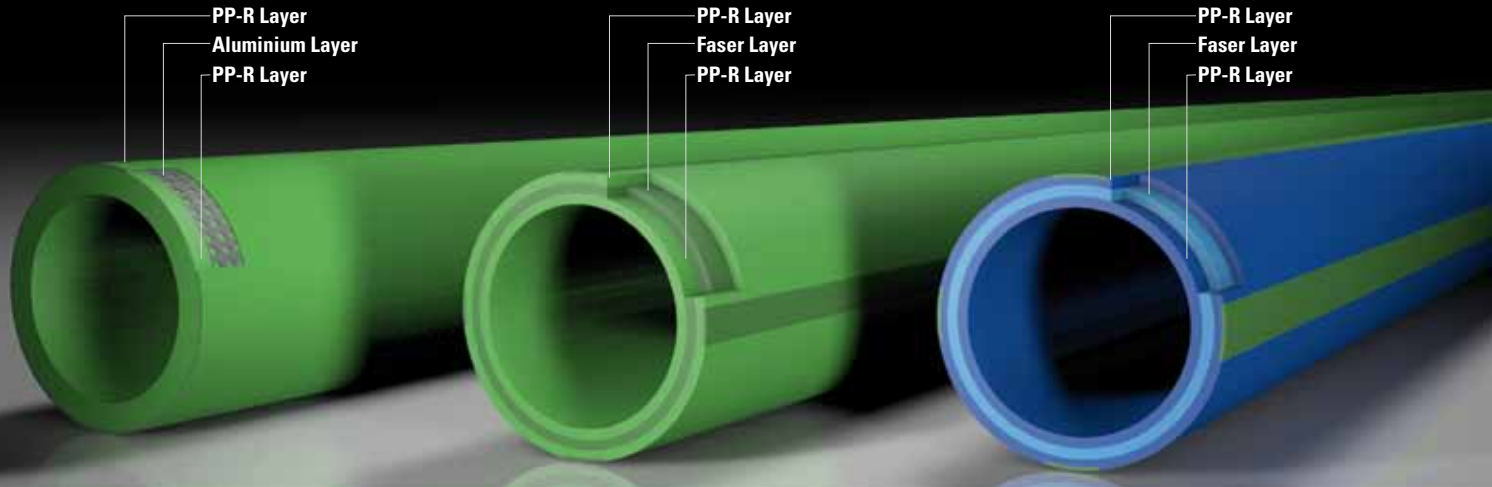
The system has to be installed in combination with the aquatherm green pipe-fittings - and includes all elements for the pipe system installation for rainwater application and irrigation.

The aquatherm lilac pipe system is applied in all fields of

- **new installation**
- **repair and renovation.**

- **Rainwater application**
- **Irrigation**
- **Agriculture**

COMPOSITE TECHNOLOGY



FASER COMPOSITE TECHNOLOGY

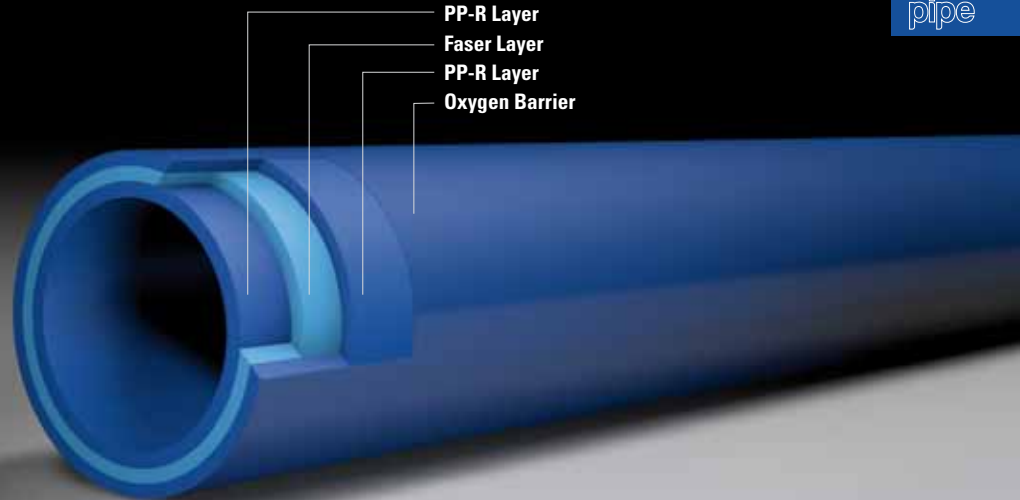
The composite pipes made in the multi-layer extrusion process produce a higher stability due to the aluminium or fibre filling in the middle layer. Compared to customary PP-pipes there are further advantages:

- Reduced expansion
- Higher flow rate due to increased inner diameter
- Greater support spacings
- Less weight

The following types of pipe are produced according to this technology:

- aquatherm green pipe MF (faser composite pipe)
- aquatherm blue pipe MF (faser composite pipe)
- aquatherm red pipe MF (faser composite pipe)

aquatherm blue pipe ot WITH OXYGEN BARRIER!



OXYGEN TIGHT

With the redeveloped aquatherm blue pipe faser composite pipe OT, aquatherm launches an oxygen tight pipe, which is equipped with an oxygen barrier and thus corresponds to the requirements of DIN 4726.

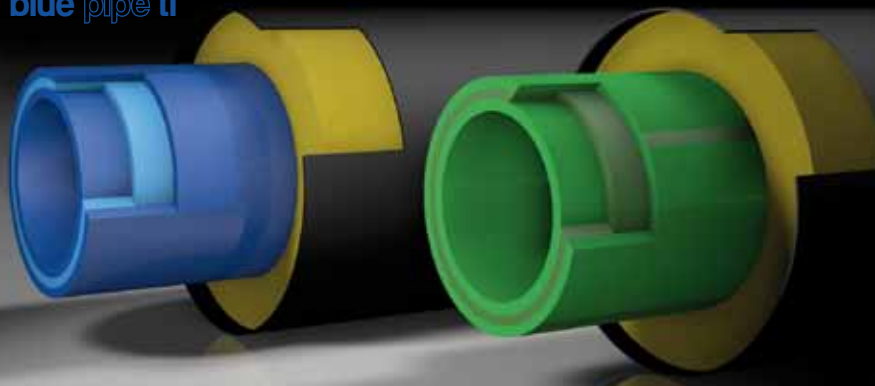
The aquatherm blue pipe faser composite pipe OT in combination with the aquatherm blue pipe system includes all elements for the pipe installation of chilled, hot fluid and various industrial applications.

The advantages of aquatherm blue pipe ot:

- oxygen tight by diffusion barrier certified according to DIN 4726
- absolutely corrosion resistant
- less pipe friction
- high stability
- high heat-stability
- high environmental compatibility
- high impact rate
- resistant against chemicals
- heat- and sound insulating characteristics
- very good welding properties
- considerably thinner insulation

aquatherm green pipe ti

aquatherm blue pipe ti



PRE INSULATED PIPE SYSTEMS for district heating

One of the most energy-efficient methods of transporting hot potable water as well as heating or cooling water covering long distances is the application of underground piping. To achieve the necessary insulating characteristics for this type of application, aquatherm offers the factory-made pre-insulated aquatherm ti pipe system with different medium pipes.

These systems are insulated with closed cell PUR rigid foam and coated with a casing pipe made of HDPE.

All medium pipes are plastic-fibre composite pipes.

- ➔ **aquatherm green pipe ti**
faser composite pipe system SDR 7,4/9/11
pipe system for potable water
in dimensions DN25 – DN200
- ➔ **aquatherm blue pipe ti** -
faser composite pipe system SDR 7,4/11/17,6
pipe system for heating, cooling and waste water
in dimensions DN25 – DN300
- ➔ **aquatherm blue pipe ot ti** -
faser composite pipe system SDR 7,4/11
oxygen-tight pipe system for heating-
and industrial in dimensions DN25 – DN100

COMPONENTS

The following components are available for all insulated fasercocomposite pipe systems:

- 4 pipes (6 m and 12 m straight lengths)
- 4 elbows 45 °
- 4 elbows 90 ° (short and long design)
- 4 branches
- 4 reducing branches
- 4 cross over branches
- 4 accessories for field-insulating of joints
- 4 special fittings on requeste



MANIFOLD CONSTRUCTION - CUSTOM-MADE – A SPECIAL AQUATHERM SERVICE

Time is money – a worldly wisdom coming true every day especially in the building industry. The plumbing and heating installation of each construction project is always a temporal and logistical challenge - not only for the architect and planner.

The realization at site is often a problem for the site managers. Neither the external circumstances nor the temporal requirements allow them to concern detailed with the construction of a complicated manifold. In addition there are high costs for the temporary expenses and diverse problems at site, which in most cases can only be solved by higher expenses. Now, aquatherm offers an alternative to its customers:

We design and construct your complete manifolds in our company according to your specifications and dispatch them pre-finished to any place of the world.

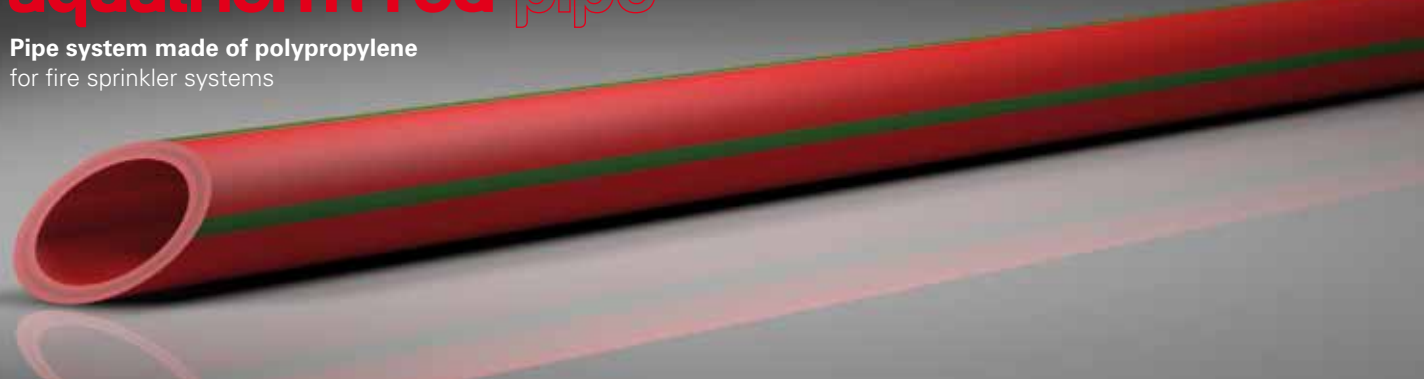
You only have to send us the respective drawings and / or sketches with specifications. We return the offer including material list and drawing. A qualified team of experienced technicians likes to assist you.

For detailed information referring “manifold construction” please contact our technical department!

Technical hotline: +49 (0)2722 950-200

aquatherm red pipe

Pipe system made of polypropylene
for fire sprinkler systems



article-no.	old brand name	new branding structure					
		new brand name		Standard Dimension Ratio	structure of pipe	special feature of pipe	material
		company	system				
4170707 . . . 4170730	aquatherm faser composite pipe firestop	aquatherm	red pipe	SDR 7,4	MF	HI	PP-R



Fields of application



Firestop the first plastic pipe system in Germany certified by the VdS will change its name to

aquatherm red pipe

Corrosion in fire extinguishing systems brings the risk that the sprinkler system may fail when it is needed most. Leaks at the joints increases installation and maintenance costs. The red pipe system developed by aquatherm prevents both and offers a high level of security due to its flame-resistant properties.

ADVANTAGES

- certified and quality inspected
- connection by fusion welding
- resistant against corrosion and chemicals
- no accumulation of corrosion products
- low pipe roughness factor and high abrasion resistance
- heat and sound-insulating characteristics
- high impact strength
- leak-proof connection of pipe and fitting by fusion technique
- not easily flammable acc. to DIN 4102-1, building material class B1
- low weight compared to metal pipes
- short processing time
- no gaskets - sealing elements are not required
- 3-layer pipe with fibre glass reinforced inner layer
- concealed fire protection
- reduction of structural works costs by laying in concrete
- weld-in saddle

aquatherm red pipe offers an extensive range of pipes and fittings for the installation of fire sprinkler systems.

The material fusiole® PP-R FS, used for the pipe production, is a plastic whose properties are designed for the special demands of the fields of application. Both, the installer's request for easier processing and the demand for maximum safety in later application was regarded during the development.

aquatherm red pipe is:

- **connection by fusion welding**
No sealants or adhesives are required for this permanent connection
- **corrosion-proof**
Prevents the clogging of the sprinkler with corrosive material. This ensures a long, low-maintenance service life as well as failure-free functioning of the system.





FUSION TECHNIQUE I

SOCKET WELDING

By the fusion of pipe and fitting the plastic melts to a homogeneous material unit. Pipe and fitting are heated by means of specific welding tools and subsequently just joined; finished!

Double material thickness at the joint – that means double safety at the otherwise critical point of a pipe system.

By the fusion technique of aquatherm you will easily get a permanent, leakproof connection.





FUSION TECHNIQUE II

WELD-IN SADDLE TECHNIQUE

Branches can easily be made by weld-in saddles, even at a later stage of installation. By using weld-in saddles you save material and time.

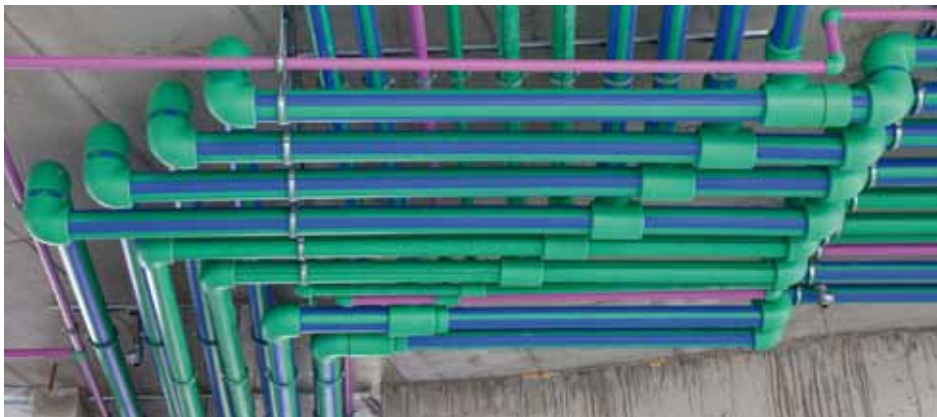
Whereas in case of tees three joints have to be welded, installation of saddle is restricted to mounting the saddle and branch pipe only.

Simply drill the pipe; warm up the saddle, pipe wall and outside pipe; connect the elements.
Finished!

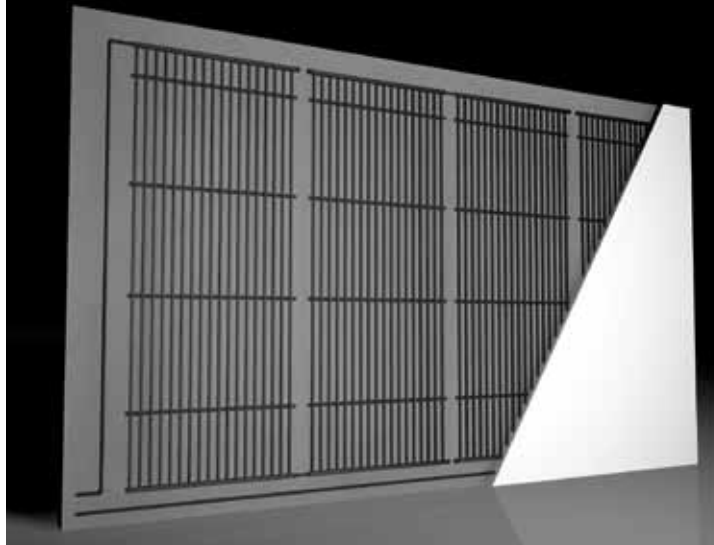


EXAMPLES





black
system



aquatherm black system

System for room climatisation made of polypropylene
for ceiling and wall

article-no.	old brand name	new branding structure				
		new brand name		colour	special feature of pipe	material
		company	system			
5000050 ... 5080500	climasystem	aquatherm	black system	anthrazit	OT	PP

Fields of application



climasystem one of the newer, trend-setting developments now bears the name

aquatherm black system

After 8 years as system for room climatisation on the market, it has received many awards and found international acceptance as the next phase of room comfort. From ceiling cooling in open plan offices to wall heating in family homes, and special applications such as mobile heating and cooling elements, the possibilities are nearly unlimited.

ADVANTAGES:

- For wet and dry construction
- No draughts
- Noiseless
- Dust reduction
- Simple control technique
- Thermal properties of the building are enhanced
- System extendable
- Quick installation thanks to high degree of prefabrication
- Even temperature distribution
- Safe connection techniques by thermal fusion
- Push-fit connection for ceiling elements
- Oxygen barrier
- Minimal construction thickness
- Greater architectural design freedom
- Energy saving

aquatherm black system is exclusively made from fusiolen® PP-R. The exceptional good welding properties and fusion, result in an homogeneous unit, offering a maximum in security and life span. aquatherm black system is connected by fusion welding. The pipe grids can be welded directly in parallel as well as with series connection.

Dry Wall Heating Element

With the new dry wall heating element aquatherm offers a product, which provides a quick and efficient installation. That means reduced construction time and cost savings.

Whether in new buildings or in refurbishing the aquatherm dry wall heating elements release high heat, which means a convenient environment without dust dispersing. Energy savings are possible due to a subjective feeling of warmth though the objective room temperature is lower.

The dry lining system consists of 12,5 mm thick system elements made of gypsum fibre with oxygen tight aquatherm black system grids. Assembly occurs with the smooth surface towards the room. After gluing the joints the elements can be painted, wallpapered, flagged or plastered. For simple assembly at the wall or window parapet various sizes of elements are available.

- **Large heating surfaces controllable by heating circuits**
- **Energy saving by low mean heating temperature**
- **Quick and safe installation**

aquatherm grey pipe

Potable water and heating installations

for potable water, heating and underfloor heating connections



article-no.	old brand name	new branding structure				
		new brand name		colour	structure of pipe	material
		company	system			
77000 ... 77002	aquatherm SHT	aquatherm	grey pipe	green/grey	M OT	PE-RT/PB
77020 ... 77040	aquatherm SHT	aquatherm	grey pipe	grey	MS OT	P
777070 ... 777058	aquatherm SHT	aquatherm	grey pipe	white	M OT	PE-X

Fields of application



aquatherm SHT with over 2 decades of worldwide success, the sliding sleeve technology changes to

aquatherm grey pipe

The aquatherm grey pipe system is suitable for systems in the field of potable water, heating and underfloor heating connection.

The material PB (polybutene) - due to its high heat stability and the excellent hygienic qualities - is suitable for the application in the field of potable water.

The profile of PE-RT (polyethylene raised temperature resistance) qualifies this material for the connection of radiators and underfloor heating systems. Applying both materials for small dimensioned connection supplies, they are ideal through high flexibility.

aquatherm grey pipe is connected by sliding sleeve technique. This type of connection technique is easy and neat in appearance.

If in the field of radiator connection as well as for potable water installations - without costs for large tools and without great difficulty of assembly - permanent connections of small dimensions with brass- and plastic fittings are made.

The aquatherm grey pipe system offers three types of connection pipes:

- aquatherm grey pipe PB connection pipe (grey) in coils, Ø 16-25 mm, made from the highly flexible material polybutene (PB).
- aquatherm grey pipe PE-RT underfloor heating and radiator connection pipe (green/grey) in coils 16-20 mm, oxygen-tight acc. to DIN4726
- aquatherm grey pipe multi layer metal composite pipe (white) Ø 16-40 mm in straight lengths (16 + 20 mm also available in coils) made from the material PE-X

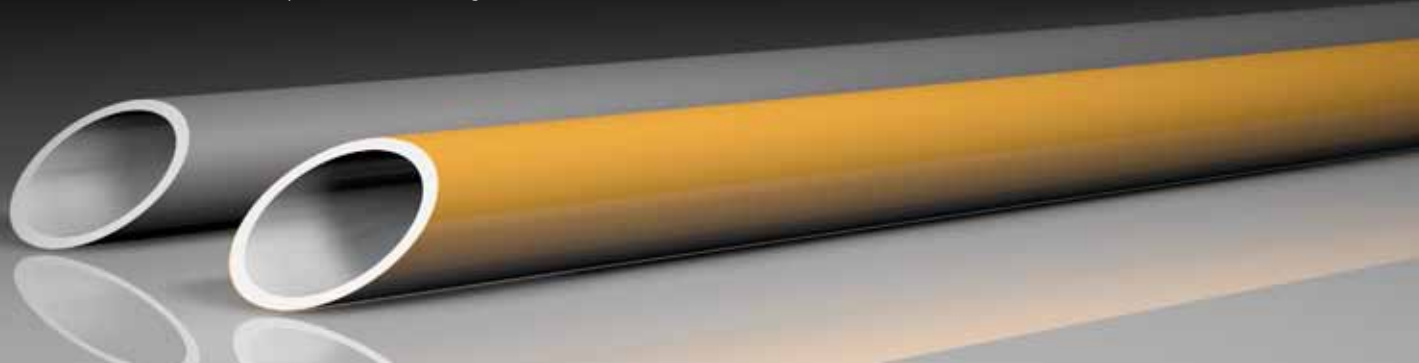
The aquatherm grey pipe system can be combined easily with the aquatherm green pipe system.



aquatherm orange system

Surface heating system

for residential, office and sports floor heating



article-no.	old brand name	new branding structure				
		new brand name		colour	struc- ture of pipe	material
		company	system			
90020 ... 90030	aquatherm FBH	aquatherm	orange system	orange	M OT	PE-RT
90306 ... 90317	aquatherm FBH	aquatherm	orange system	grey	M OT	PB

Fields of application



aquatherm the surface heating system that started it all is now

aquatherm orange system

Developed 40 years ago as one of the first surface heating systems, it formed the basis for the company aquatherm. The most traditional system in our lineup changes not only the name but also the colour. In the future, the PE-RT pipes will be produced in this orange colour.

aquatherm has reached a very successful market position in the field of underfloor heating just after its foundation.

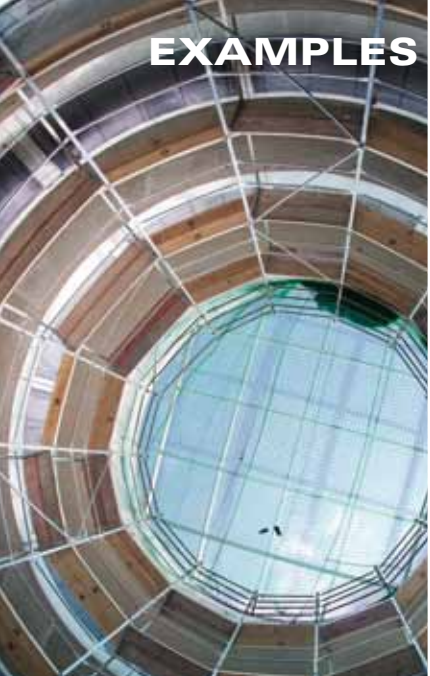
Constant development on the technical know-how and the great experience gained in the field of underfloor heating installations in different projects over years, have led to the fact, that aquatherm is always one step ahead, also in special applications.

Combining aquatherm orange system Surface heating systems with aquatherm green pipe, aquatherm blue pipe or aquatherm grey pipe complete solutions are available for:

- underfloor heating systems
- wall heating systems / chilled applications
- heating systems for renovations and new buildings
- open space heating
- industrial floor heating
- sports floor heating
- under-soil heating



EXAMPLES



EXAMPLES



REFERENCES



Pandion Vista, Cologne, Germany



DAVINCI HAUS , Germany



Residential building, Unterlindenbach, Germany



Residential building, Madrid, Spain

RESIDENTIAL & BUSINESS



SHIPBUILDING



Club ship „AIDA AURA“, Germany



Cruise ship „COSTA VICTORIA“, Italy



Cruise ship „CARNIVAL VALOR“, Italy



DESH VIRAAAT

STADIUM



Veltins Arena Gelsenkirchen, Germany



Leipzig's Central Stadium



Millerntor Stadium, FC St. Pauli 1910 e.V



Training centre „REAL MADRID“



Brita Arena Wiesbaden, Germany





Hanse Hotel, Attendorf Germany



Hotel Meliton in Porto Carrai, Greece.



Hotel Ankara, Turkey



Hotel "The Regent Esplanade", Zagreb, Croatia

HOTELS

CATALOGUES



ARTIKELLISTE 2013

2013

Further Information

aquatherm green pipe , aquatherm blue pipe & aquatherm lilac pipe pipe systems for the application in potable water and heating and for reclaimed and recycled water	Ord.-No.: E10101
aquatherm red pipe sprinkler pipe system	Ord.-No.: E40000
aquatherm orange system underfloor heating systems	Ord.-No.: E90001
aquatherm black system heating and cooling system	Ord.-No.: E97060
aquatherm grey pipe potable water and radiator connection system	Ord.-No.: E70001
aquatherm - article list	Ord.-No.: E54152
aquatherm - reference catalogue	Ord.-No.: E57002
aquatherm TI - district heating pipeline systems	Ord.-No.: E30000

For more detailed information, please contact our Info-Service at **+49 (0) 2722 950-0**
or simply visit our download area at our website
www.aquatherm.de



Management
System
ISO 9001:2008
ISO 14001:2004
ISO 50001:2011

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 www.aquatherm.de

Order No.: E57055
Edition: 06.2013