

Edition: 2.2018

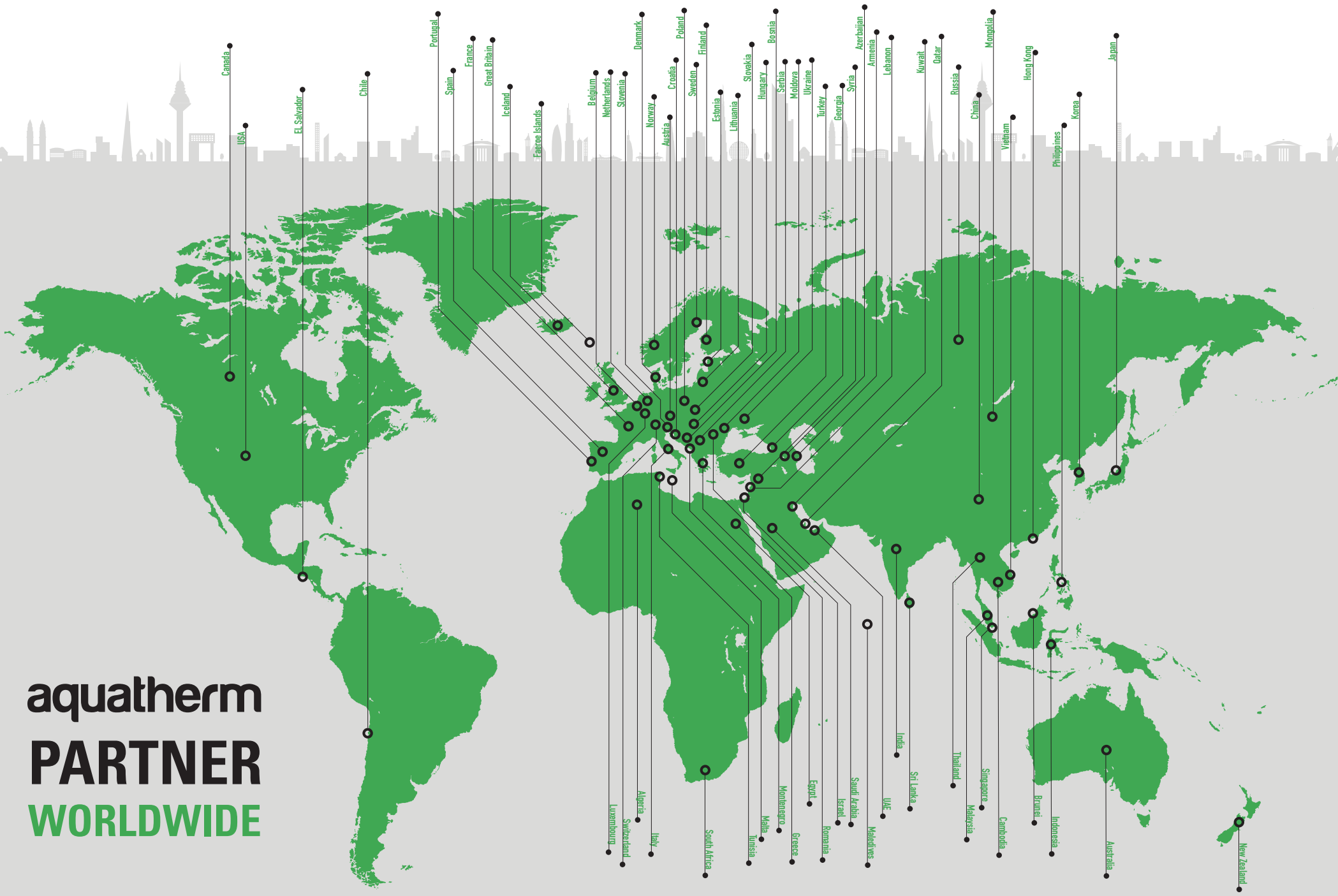


We are aquatherm
INDEPENDENT, DETERMINED, RELIABLE, LEADING



aquatherm
state of the pipe

aquatherm
PARTNER
WORLDWIDE



CONTENTS

Preface	Page 5	Comparison of the water content	Page 18	Manifold construction	Page 33
aquatherm in facts and figures	Page 7	Symbols and shortcuts	Page 19	aquatherm red pipe	Page 34
Vision with a difference	Page 9	aquatherm green pipe	Page 20	Fusion technique	Page 36
Highly valued individuals	Page 11	aquatherm blue pipe	Page 24	Examples	Page 38/46
Pioneering spirit	Page 13	aquatherm lilac pipe	Page 28	aquatherm black system	Page 40
The highest standards	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 readers,

We are always making decisions – in every minute of every hour of every day. At this moment, you have decided to open our “Company brochure” to consciously find out more about our company aquatherm.

Without knowing the reason behind your decision, we can promise you one thing, namely that the insight into our colourful, yet always slightly green tinged, aquatherm world is sure to impress you!

As a family business which is passionate about all it does we, together with our employees, confidently meet all challenges and, in doing so, are able to trustfully call upon values which have defined our company for already more than four successful decades.

We know where we want to go without forgetting where we came from. Hereby we like to live with the role of not being a “normal” business. The characteristics “being different” and “special” represent our motivation in all that we do to be the best.

We are “state of the pipe” because we act independently and decisively and are hereby always reliable which makes us the leading manufacturer of polypropylene pipes.

We were, are and will remain as this – promise!

But see for yourself and decide upon aquatherm not only in the next few moments but also in the long term.

Best wishes



Dirk Rosenberg

Managing Director



Maik Rosenberg

Managing Director



Christof Rosenberg

Managing Director



Gerhard Rosenberg

President of the Advisory Board



AQUATHERM IN FACTS AND FIGURES

aquatherm is the world's leading manufacturer of plastic pipe systems for sanitary and air conditioning technology and heating and plant engineering. The company was founded in 1973 by Gerhard Rosenberg for the development, production and installation of warm water underfloor heating. At that time, aquatherm was one of the first three companies on the European market to offer underfloor heating systems.

In 1980 we developed the plastic pipe system Fusiotherm® out of polypropylene PP-R for sanitary ware and heating installations. This innovation has been the basis of our continuous growth up to the present day.

In more than 40 years, aquatherm has developed into a globally operating company that is represented in 75 countries around the world. We are the market leader in many sectors and application fields.

At our three German sites we employ almost determined 500 employees. In 2016 we manufactured more than 40,000 kilometres of pipes and 50 million shaped components out of 18,000 tons raw materials.

In order to meet the continuously growing demand from within Germany and abroad and guarantee our worldwide customers also short notice deliveries, we produce our pipe systems 24 hours a day on seven days a week – in 2016 we worked in this way on approx. 345 days.

- 1973** aquatherm founded by Gerhard Rosenberg
- 1977** First exports to Jordan and Belgium
- 1978** Move to the first building at the current site in Biggen
- 1984** Opening up of further foreign markets including Italy and Greece
- 1990** Market launch of the fusiotherm stabi composite pipe
- 1991** Subsidiary plant opens in Radeberg
- 1995** The 200th employee joins the aquatherm family
- 1996** Takeover of turning shop
aquatherm Metall GmbH & Co. KG, Attendorn
- 1996** First certification of our quality management system in accordance with ISO 9001
- 1997** Independent sales in Italy
- 1999** Market launch of the fusiotherm fibre composite pipe
- 2001** aquatherm operates in more than 50 export markets
- 2004** Dirk and Maik Rosenberg join management
- 2005** Market launch of the aquatherm black system
- 2006** Market launch of the aquatherm blue pipe

FAMILIAR
AND CLOSE

100 %

GERMAN
QUALITY

DETERMINED

SAFE

PASSIONATE

PRODUCTS

COMPREHENSIVE TREND-SETTING

STATE OF THE PIPE

RESPONSIBLE

PERFORMANCE

CHALLENGING

AND STIMULATING

CONSCIENTIOUS

PEOPLE

INDEPENDENT
COMPANY

PROACTIVE

RELIABLE
ENVIRONMENTALLY
FRIENDLY

INNOVATIVE LEADING

VISION WITH A DIFFERENCE

Many say that we at aquatherm are “different” but what does this mean, “to be different”?

Questions about our own identity concern us all: Who are we? What do we live for? What makes us different to others? How does our environment characterise us? With regard to businesses, we talk of a corporate identity in this context. This describes all the clearly defined values and characteristics which distinguish us from others.

When we heard about our excellent position as the number one in the “most innovative companies of Germany’s small and mid-sized enterprises” ranking from the Munich Strategy Group at the end of 2011, we were prompted to consider the aforementioned questions regarding the corporate identity of aquatherm.

We were aware that “innovation” is a constant “companion” and important driver of our successful company development and still is this today, more than ever. But what else do we represent, beyond this? This is an exciting yet also challenging question.

Thinking about our own identity is an eye-opening yet also critical process at the end of which you have the intersection of the image you have of yourself and the way others see you and the task is then to unite this to form a clear core. Strengthened with the recognition of this core, the path to the vision – the guiding star with which we can orientate our actions at all times independently of the effect of time – is not far.

The result is something very special, something great, the result is status quo and permanent vision at the same time: we are “state of the pipe” because we act independently and decisively and are hereby always reliable which makes us a leading manufacturer of polypropylene pipes.

We work for no more and no less – no more or less, we promise you!

It’s that simple!

- 2006** aquatherm products permanently represented on all 5 continents
- 2008** Market launch of the aquatherm red pipe
- 2009** More than 20 young people employed as trainees
- 2010** System expansion of the pipe size to max. ø630 mm
- 2010** Dirk, Maik and Christof Rosenberg assume company management
- 2011** Market launch of aquatherm ti
- 2012** First time certification of our environment management system in accordance with ISO 14001
- 2012** Market launch of the material PP-RP
- 2013** First certification of our energy management system in accordance with ISO 50001
- 2013** Brand conversion “colours of innovation” and aquatherm 40th jubilee
- 2015** Independent sales in North America
- 2017** Opening of the new pipe extrusion – one of the latest of its sort worldwide
- 2017** Start of the reconstruction for the new injection moulding



THE AQUATHERM FAMILY – HIGHLY VALUED INDIVIDUALS

“Great vision without great people is irrelevant.”

James C. Collins (*1958) US American internationally recognised management expert

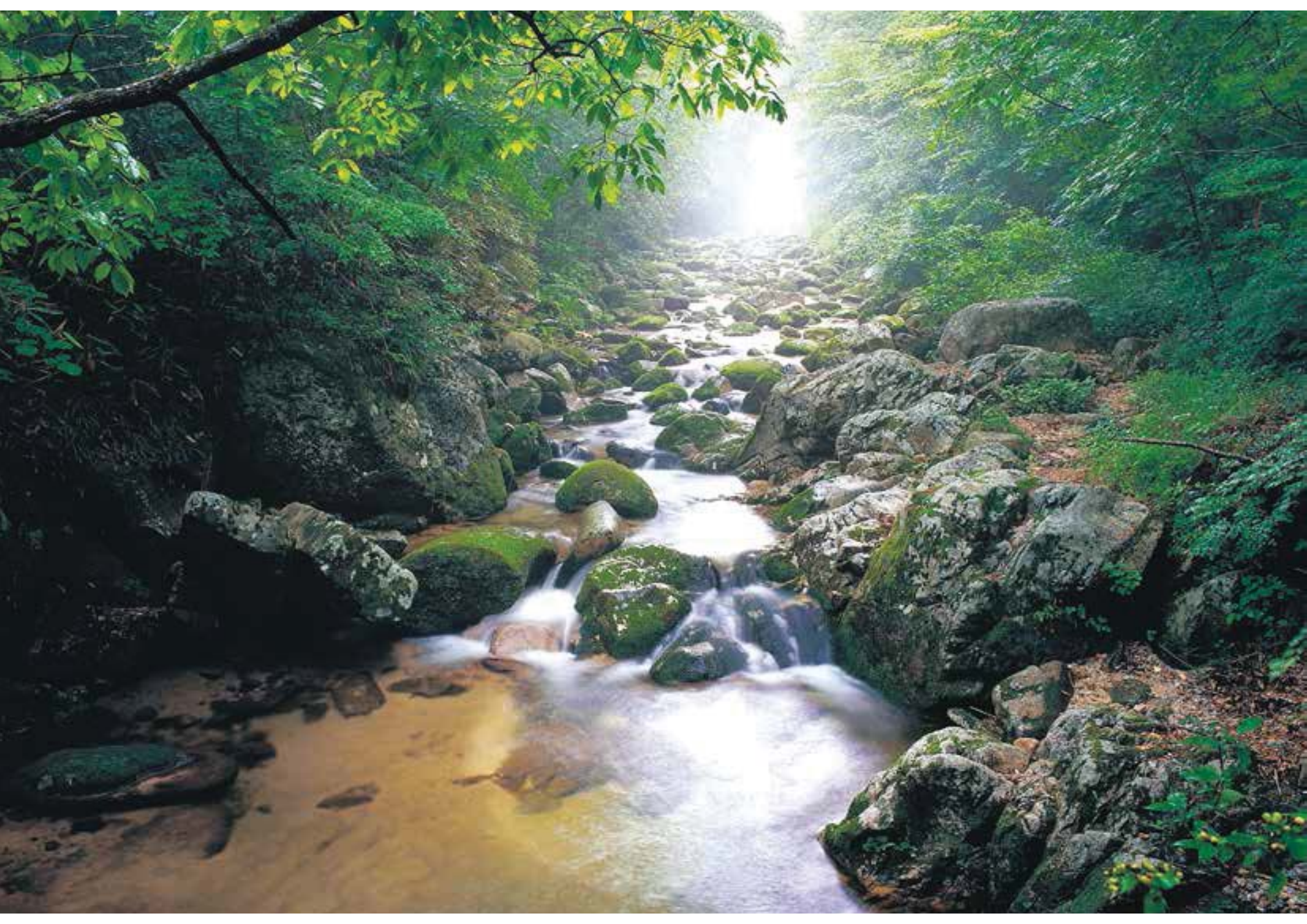
Family businesses are primarily recognised by being in independent ownership with management in family hands. The aquatherm group fulfils this criterion and continues to do so even after the transition from the first to the second generation: as managing directors, Dirk, Maik and Christof Rosenberg are also involved in the day to day business, embody personal and family closeness and are, of course, available for all employees at all times.

To work for aquatherm means to be part of the family and this from the very first day. Individuals at aquatherm are invited to find – accompanied by a cooperative management style which is in a healthy balance of requirements which can be fulfilled and promotion which develops – individual personal satisfaction and meaningful fulfilment in their daily work. In this we are sympathetic and respectful towards each individual, assume responsibility and stand by our employees, in good as well as bad times.

Perhaps this is all matter of course today but it is often precisely that which is matter of course which is forgotten. Valuable and appreciated individuals are, for us, the foundation for a vibrant family business and a corporate culture which we can proudly describe as the aquatherm family.

For this we are thankful and know the value of these individuals who decide anew each day to work conscientiously in our business, to always go one step forwards with initiative and to always make the noticeable difference with their passion for their work.





A COMPANY WITH PIONEERING SPIRIT

“Success has a simple formula. Action!” However, the reality is a little more complex. When Gerhard Rosenberg founded the company in 1973 as a trade business in his garage and turned it into a world market leader in only a few years, there were always challenges for him and his team which at first appeared unsolvable. In retrospect, with our confidence based on experience, we are today hardly able to comprehend some of these problems which now appear as such small hurdles on the way to our success.

But what we have kept from this time is the unconditional will to be the best in all we do. This also means to tread as yet unknown ground, as a pioneer who leads the way, always in search of even more comprehensive and innovative solutions.

But, despite all the pioneer spirit, we never jeopardize the cornerstone of our reliable products: already many years before environment protection became a global topic, the **aquatherm green pipe** system fulfilled ecological standards which are required only today. For more than 40 years we have been embodying this – that ecological and economic interests need not contradict one another in the manufacture, distribution and use of a product. Our commitment has been tested and approved by the certifications ISO 9001, ISO 14001 and ISO 50001.

We also commit to 100% production sites in Germany and all our products are labelled with the internationally recognised quality seal “Made in Germany” which vouches for the quality promise we make to our customers worldwide.

Last, but not least, all our doing also focuses on the safety of our products in application. Here we set the highest standards for our customers. Our highly developed production with state of the art machinery and innovative processes, our ongoing quality controls and our employees’ safety awareness ensure premium products which deserve the label “state of the pipe”.

And our customers can rely on another thing: we love what we do and do not shy away from the efforts on the never-ending path!





STATE OF THE PIPE CONFIRMED BY APPROVED QUALITY ACCORDING TO THE HIGHEST STANDARDS

Reliability through 100 % German quality and our confidence based on many years experience are for us no coincidence but a lived promise to our customers. Since 1996 we have been reliably fulfilling quality management requirements in accordance with DIN ISO 9001.

Alongside the highly qualified employees and innovative manufacturing processes on state of the art machinery, the standard of the raw materials used also plays a decisive role in the quality of a pipe system. For this reason we also continuously test – alongside the external monitoring by SKZ Würzburg and HY Gelsenkirchen – the hygienic properties and resilience of the materials before, during and after production.

We, therefore, also have our own laboratories at both our sites. On site presence guarantees not only continuous quality controls but also permanent further development of the base material to be best prepared for the different product requirements and to be able to develop pioneering materials for new areas of application.

The excellent results of this research include the innovative pipe material fusiolen® PP-R, fusiolen® PP-R C and fusiolen® PP-R FS as the basis for the worldwide successful systems **aquatherm green pipe**, **aquatherm blue pipe**, **aquatherm red pipe** and **aquatherm lilac pipe**.

Continuous process monitoring ensures reliable quality. As a result only tested products are sent around the world to our customers. Numerous national as well as international quality seals and approval certificates as well as, of course, our satisfied customers hereby confirm the high quality standard of our products time and time again.



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

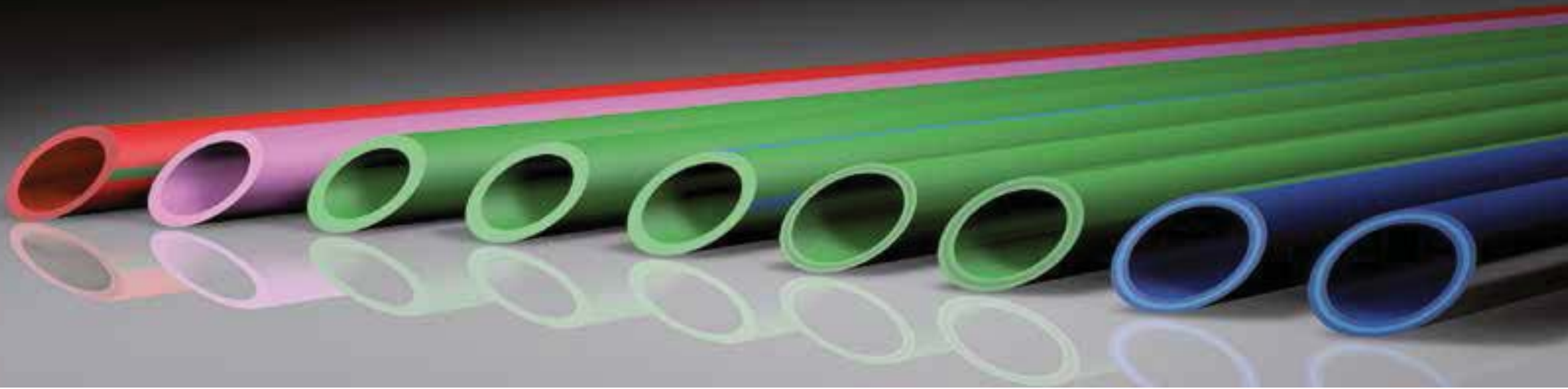
Decades of experience in the production and the application of PP-R pipe systems and the current ambition of continuous development led to numerous improvements of the aquatherm-system technology.

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
green pipe

aquatherm
blue pipe

aquatherm
red pipe

aquatherm
lilac pipe

	aquatherm green pipe	aquatherm blue pipe	aquatherm red pipe	aquatherm lilac 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 aquatherm blue pipe SDR 7.4 MF SDR 7.4 MF OT aquatherm red pipe SDR 7.4 MF aquatherm lilac pipe SDR 7.4 S	aquatherm green pipe SDR 9 MF RP	aquatherm green pipe SDR 11 S aquatherm blue pipe SDR 11 S / MF / MF OT aquatherm lilac pipe SDR 11 S	aquatherm blue pipe SDR 17.6 MF
Ø 16	0,088	0,106	-	-	-
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	9,637
Ø 160	-	-	12,109	13,430	15,792
Ø 200	-	-	18,908	21,010	24,661
Ø 250	-	-	29,605	32,861	38,568
Ø 315	-	-	46,966	52,172	61,223
Ø 355	-	-	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


















SDR = Standard Dimension Ratio (diameter/wall thickness ratio)
S = single layer

MF = multilayer faser

MF RP = multilayer faser - raised pressure (resistance)

OT = oxygen barrier

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	
S	single
M	multilayer
MF	multilayer faser
OT	oxygen tight
UV	UV-resistant
TI	thermal insulation
HI	hardly inflammable

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				
10006 . . . 10908	fusiotherm SDR 6 / 7,4 / 11	aquatherm	green pipe	SDR 6 / 7.4 / 11	S		PP-R
70708 . . . 70738	fusiotherm faser composite pipe	aquatherm	green pipe	SDR 7.4	MF		PP-R
70758 . . . 70788	fusiotherm faser composite pipe UV	aquatherm	green pipe	SDR 7.4	MF	UV	PP-R
1370711 . . . 1370738	fusiotherm faser composite pipe ISO	aquatherm	green pipe	SDR 9	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



aquatherm green pipe

The innovative all-rounder, which revolutionized the plastic pipe sector, made a name for itself within a very short time that stands for highest quality and outstanding ecological properties. The system of aquatherm has proven its excellent technical suitability in more than 30 years of application worldwide, and among experts has long been 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. These are supplemented by the especially reinforced fiber composite pipe. 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
ø: 16–110 mm
Type of pipe:
Old: Fusiotherm®
New: aquatherm green pipe S

SDR: 7.4
ø: 16–63 mm
Type of pipe:
Old: Fusiotherm®
New: aquatherm green pipe S

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



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: 20-355 mm
Type of pipe:
Old: Fusiotherm® faser composite pipe
New: aquatherm green pipe MF

SDR: 7.4 / 9
ø: 20-355 mm
Type of pipe:
Old: Fusiotherm® faser composite pipe UV
New: aquatherm green pipe MF UV

SDR: 9
ø: 32-315 mm
Type of pipe:
Old: Fusiotherm® ISO faser composite pipe
New: aquatherm green pipe MF TI



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“.

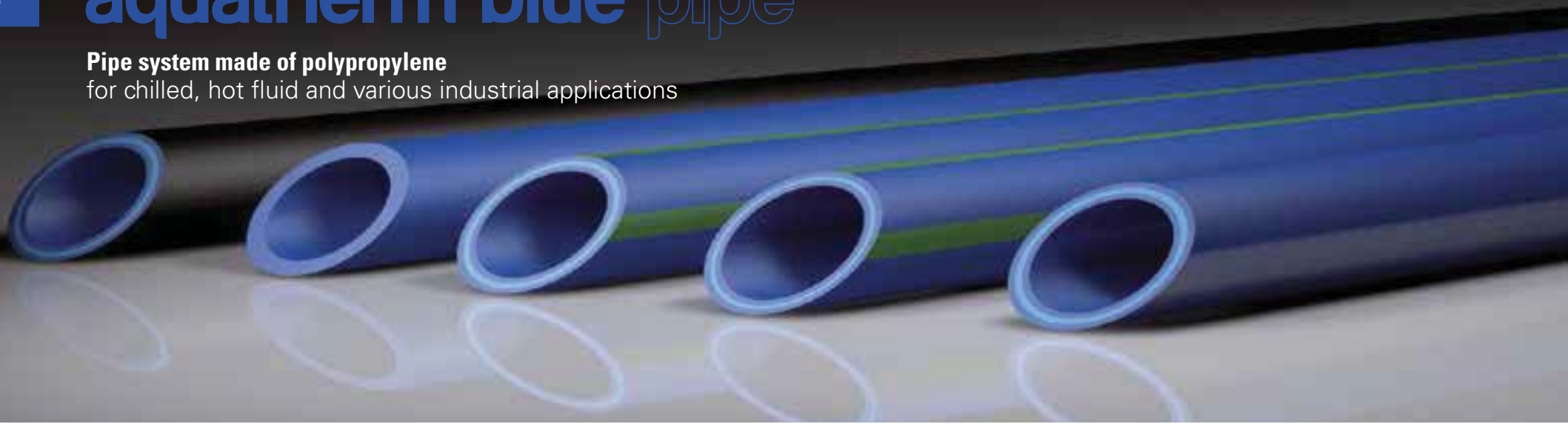
With „fusiolen PP-RP“ we can produce fibre-composite pipes with lower wall-thickness by keeping all the well-established advantages.

Advantages PP-RP

- Lower wall-thickness
- 14% higher flow rate at same velocity compared to faser composite pipe SDR 7.4
- The permissible working pressures are on the same level like those of PP-R faser composite pipes SDR 7,4 or are even exceeding them in the higher temperature range
- 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 . . . 2010312	climatherm SDR11	aquatherm	blue pipe	SDR 11	S		PP-R
2070112 . . . 2570154	climatherm faser composite pipe SDR7,4/SDR11/SDR 17.6	aquatherm	blue pipe	SDR 7.4 / SDR 11 / SDR 17.6	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
2270111 . . . 2770142	climatherm faser composite pipe SDR7,4/SDR11 ISO	aquatherm	blue pipe	SDR 11 / SDR 17.6	MF	TI	PP-R
2470711 . . . 2470138	climatherm faser composite pipe SDR7,4/SDR11 OT ISO	aquatherm	blue pipe	SDR 11	MF	OT TI	PP-R

Fields of application



aquatherm blue pipe

aquatherm blue pipe, our specialty for distributing cooling and heating in closed systems as well as in several industrial applications. It was developed in order to prevent corrosion in heating system 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. In addition to the general advantages of the PP-R-pipesystem aquatherm blue pipe in comparison with the aquatherm green pipe system it 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: 20-32 mm
Type of pipe:
Old: climatherm pipe
New: aquatherm blue pipe S

SDR: 7.4 / 11 / 17.6
ø: 20-630 mm
Type of pipe:
Old: climatherm faser composite pipe
New: aquatherm blue pipe MF

SDR: 7.4 / 11
ø: 20-250 mm
Type of pipe:
Old: climatherm faser composite pipe OT
New: aquatherm blue pipe MF OT

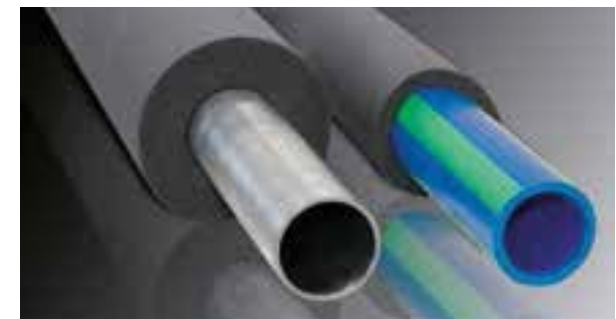


aquatherm blue pipe stops corrosion damages!

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.



aquatherm lilac pipe

Pipe system made of polypropylene
for reclaimed water

SDR: 7.4 / 11 / 17.6

ø: 20-630 mm

Type of pipe:

Old: climatherm faser composite pipe UV

New: aquatherm blue pipe MF UV

SDR: 11 / 17.6

ø: 32-355 mm

Type of pipe:

Old: climatherm ISO faser composite pipe

New: aquatherm blue pipe MF TI

SDR: 7.4 / 11

ø: 20-125 mm

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.

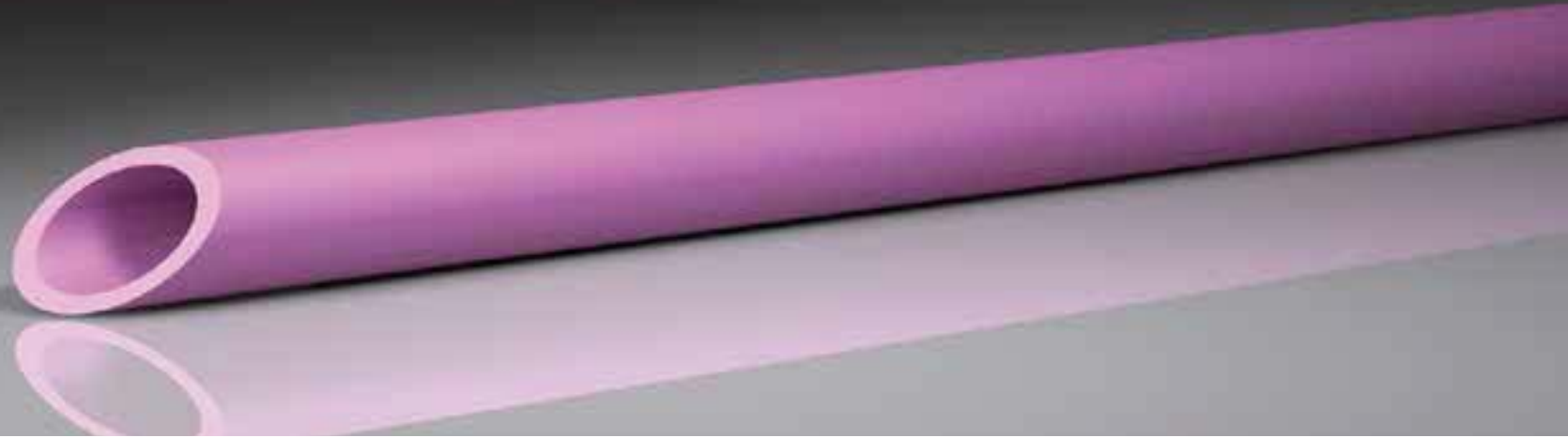
Under soil heating

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 . . . 9010810	aquatherm lilac	aquatherm	lilac pipe	SDR 7.4 / SDR 11	S	PP-R

Fields of application



aquatherm lilac pipe

aquatherm lilac pipe was developed exclusively for the field of water recycling. 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.

For technical, commercial, agricultural or domestic applications, cost-effective process water is often required. In the private sector, water recycling-systems are increasingly used. Thanks to the long-lasting and corrosion-resistant material Polypropylene, the aquatherm lilac pipe is ideally suited for process water (grey/rainwater).

System components

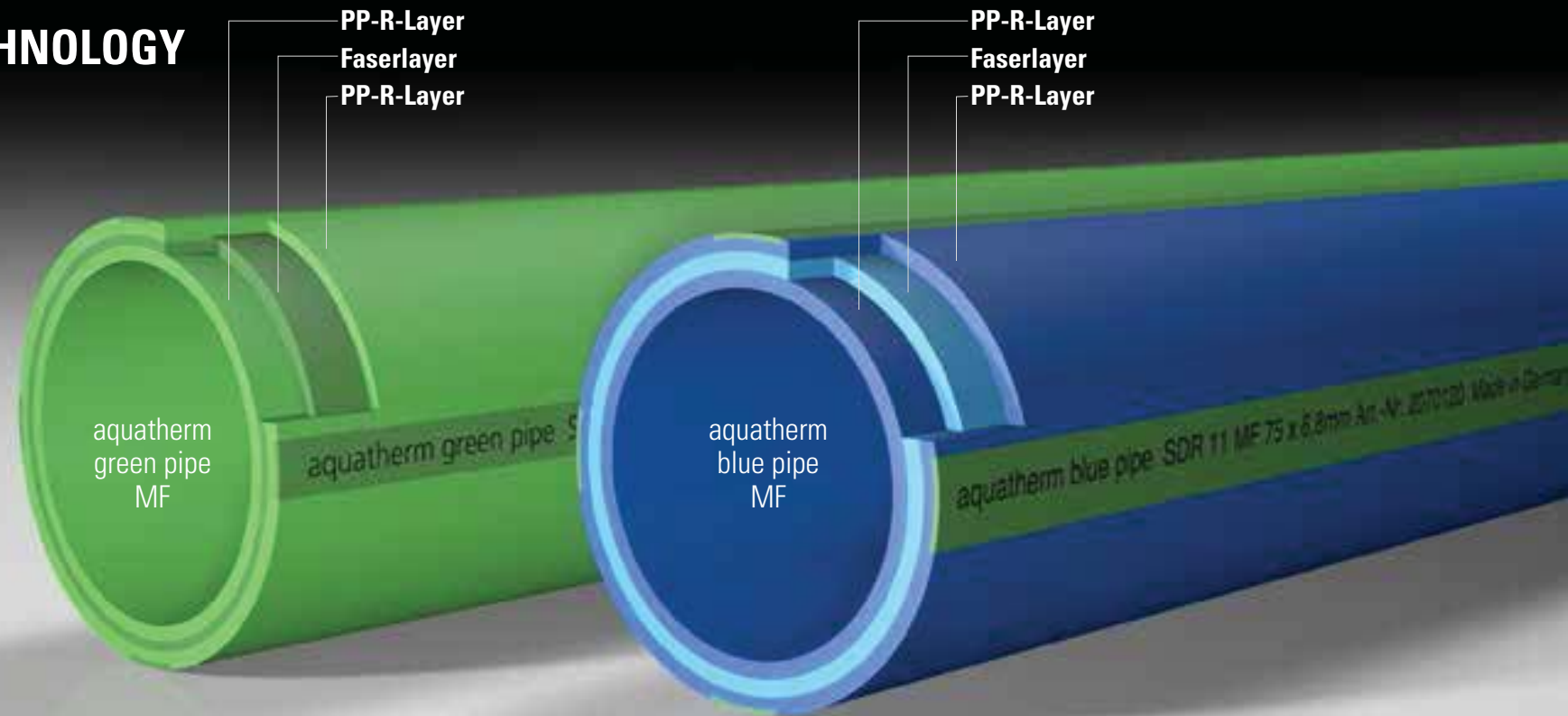
The system has to be installed in combination with the aquatherm green pipe-fittings - and includes all elements for the pipe system installation for rainwater application and irrigation.

The aquatherm lilac pipe system is applied in all fields of

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

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

COMPOSITE TECHNOLOGY



COMPOSITE TECHNOLOGY

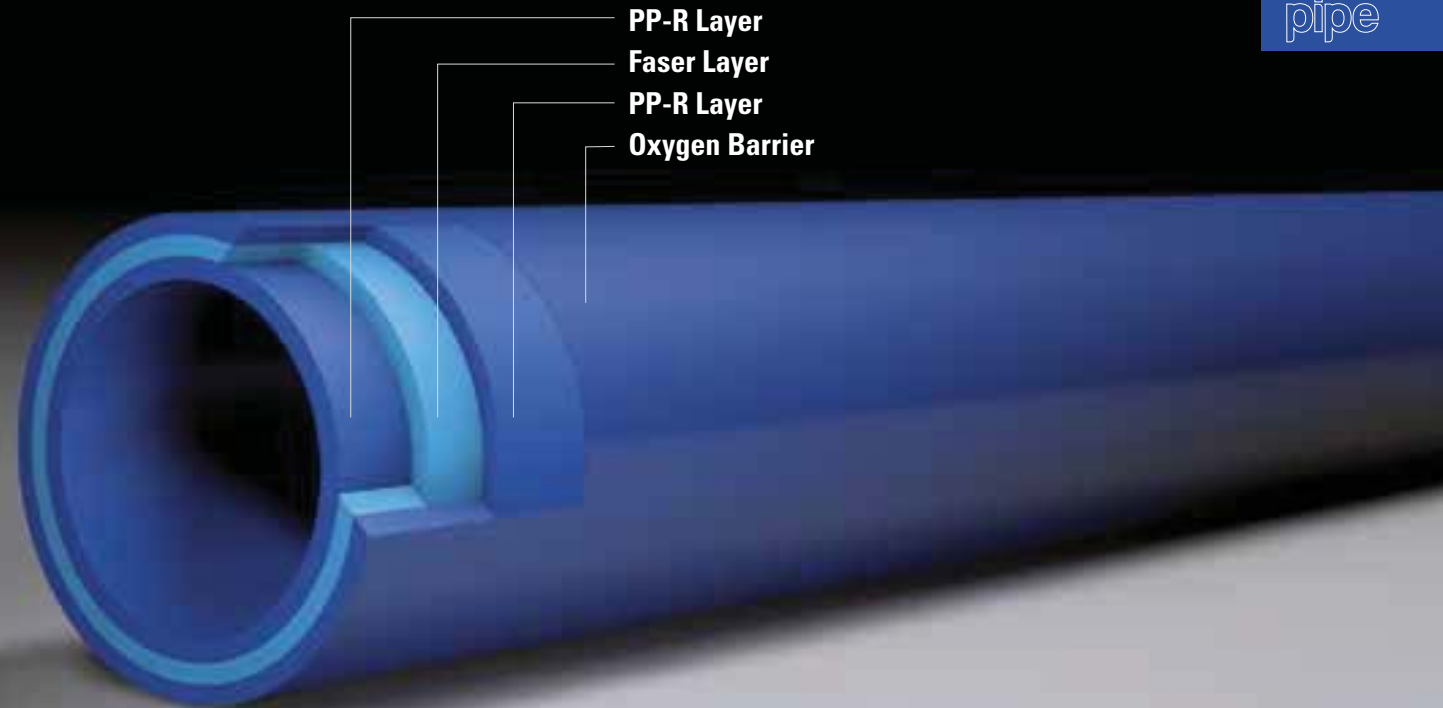
The composite pipes made in the multi-layer extrusion process produce a higher stability due to the aluminium or fibre filling in the middle layer. Compared to customary PP-pipes there are further advantages:

- 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.

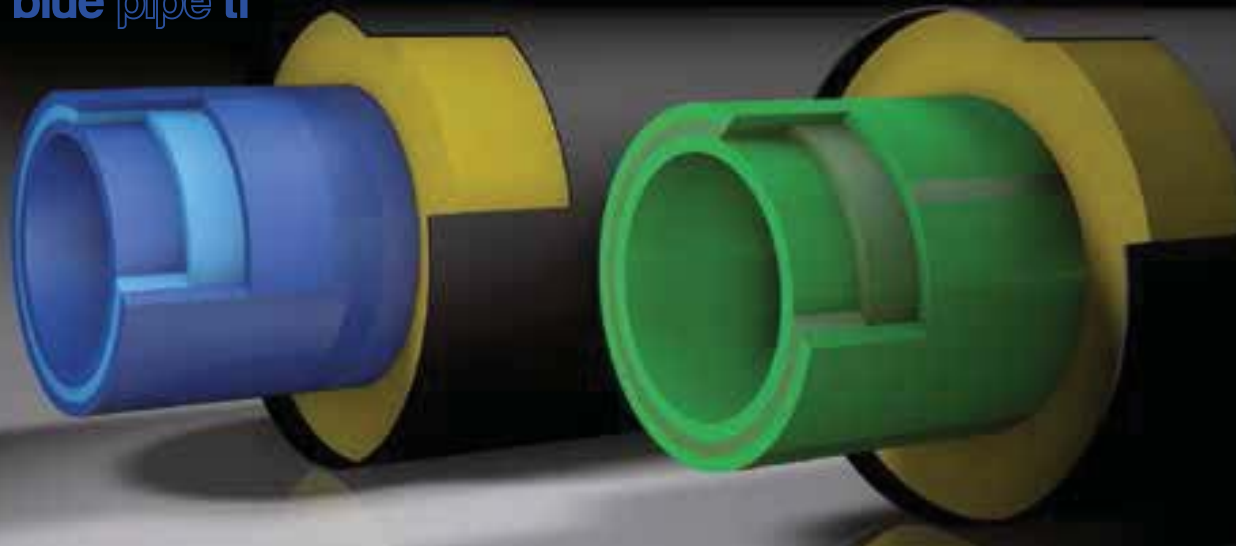
The aquatherm blue pipe faser composite pipe OT in combination with the aquatherm blue pipe system includes all elements for the pipe installation of chilled, hot fluid and various industrial applications.

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 9
pipe system for potable water
in dimensions 32-315 mm
- **aquatherm blue pipe ti** -
faser composite pipe system SDR 11/17.6
pipe system for heating, cooling and waste water
in dimensions 32-315 mm (SDR 11) /
160-315 mm (SDR 17.6)
- **aquatherm blue pipe ot ti** -
faser composite pipe system SDR 11
oxygen-tight pipe system for heating-
and industrial in dimensions 32-250 mm

COMPONENTS

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

- Pipes
- Elbows 45 °
- Elbows 90 ° (short and long design)
- Branches
- Reducing branches
- Cross over branches
- Accessories for field-insulating of joints
- 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				
4170130, 4170708 . . . 4170726	aquatherm faser composite pipe firestop	aquatherm	red pipe	SDR 7.4 / 11	MF	HI	PP-R

Fields of application



aquatherm red pipe

aquatherm red pipe is the first plastic pipe system in Germany certified by the VdS. 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 fusiolen® 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.

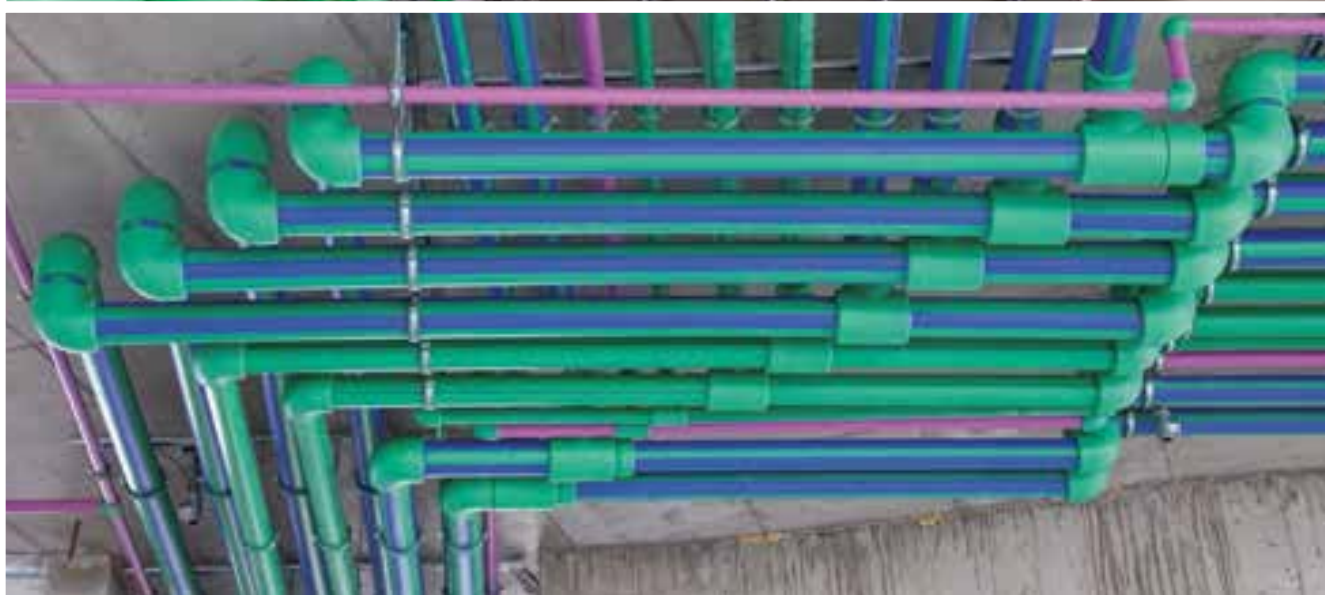
Simply drill the pipe; warm up the saddle, pipe wall and outside pipe; connect the elements. Finished!



EXAMPLES



EXAMPLES





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			
5200040 ... 5280500 6200040 ... 6280500 6400040 ... 6480500	climasystem	aquatherm	black system	anthrazit	OT	PP

Fields of application



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.

The aquatherm black system can be installed on metal panels of suspended ceilings and on plaster boards. Even the embedding in plaster layer or the installation in C-studs with plaster boards is not a problem. The low weight of only 4.2 kg/m² (incl. water filling) does not affect the design of the ceiling element construction. The ceiling elements should include minimum 30 mm fibre glass insulation. Depending on their design, the pipe grids are connected by means of thermal welding or by pushfit couplings, respectively connected to the cooling- and heating water circuits.

The effect of the aquatherm black system is to heat or cool the surface of wall or ceiling where it is installed behind by a few degrees below or above the ambient temperature. By radiation exchange with the surfaces, temperatures of the room and furnishings change. The total power is achieved by 2/3 radiation and 1/3 convection. The heat transfer rate is determined by the difference between ambient temperature and average surface temperature – high difference – high heat transfer.

As the size of the aquatherm black system matches exactly the size of the metal panels, any inactive ceiling surfaces can be combined. This is especially interesting as in most cases not all ceiling surfaces must be covered with grids. Active and inactive surfaces can be combined without visible differences. The re-fitting or future installation with the aquatherm black system is feasible.

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	PB
777070 ... 777058	aquatherm SHT	aquatherm	grey pipe	white	M OT	PE-X

Fields of application



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 DIN 4726
- 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

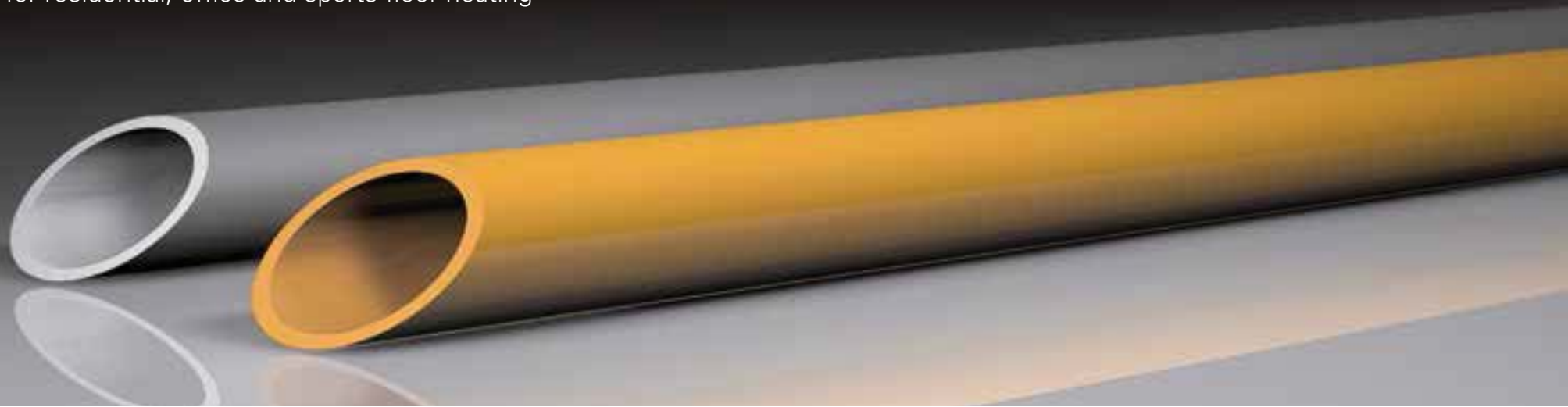
The aquatherm grey pipe system can be combined easily with the aquatherm green pipe system.



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:

- Open space heating
- Industrial floor heating
- Sports floor heating
- Under-soil heating



EXAMPLES





REFERENCES



Pandion Vista, Cologne (Germany)



DAVINCI HAUS (Germany)



HUF House, Montabaur (Germany)



Depot 3, Oldtimer and Services, Mülheim-Kärlich (Germany)



RESIDENTIAL & BUSINESS

AGBAR TOWER, Madrid (Spain)

SHIPBUILDING



Club ship „AIDA AURA“ (Germany)



Cruise ship „COSTA VICTORIA“ (Italy)



Cruise ship „CARNIVAL VALOR“ (Italy)



DESH VIRAAAT (Korea)

STADIUM



Veltins-Arena Gelsenkirchen (Germany)



Leipzig's Central Stadium (Germany)



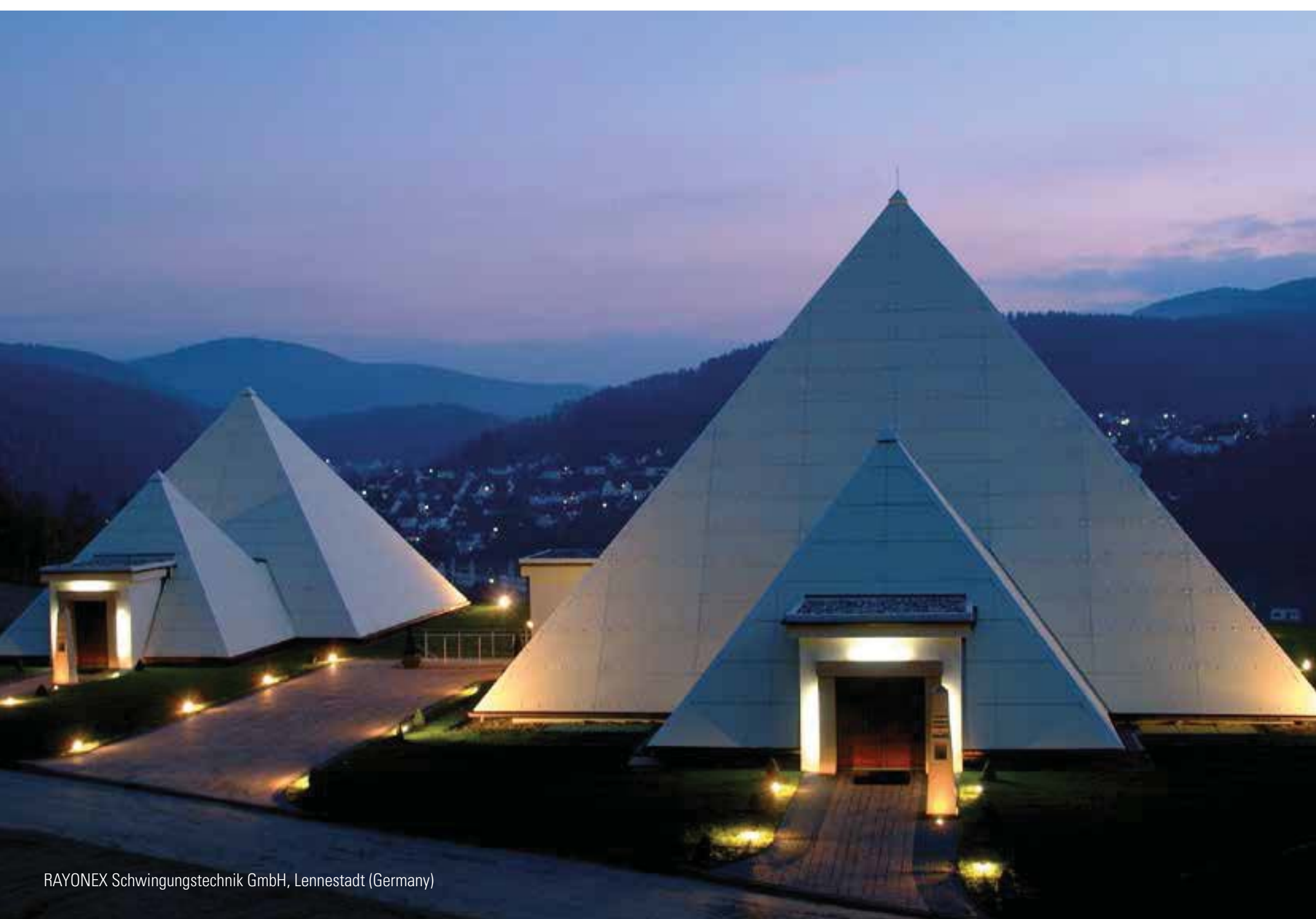
Millerntor Stadium, FC St. Pauli 1910 e.V (Germany)



Training centre „REAL MADRID“ (Spain)



Brita Arena Wiesbaden (Germany)



RAYONEX Schwingungstechnik GmbH, Lennestadt (Germany)



HOTELS

Hanse Hotel, Attendorn (Germany)



Hotel Meliton in Porto Carrai (Greece)



Hotel Ankara (Turkey)



Hotel "The Regent Esplanade", Zagreb (Croatia)

CATALOGUES



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 blue pipe for chilled, hot fluid and various industrial applications	Ord.-No.: E10050
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

**INNOVATIVE
PIPE
SYSTEMS
MADE OF PLASTIC**

aquatherm GmbH

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

info@aquatherm.de www.aquatherm.de

Order No.: E57055
Edition: 2.2018