

## aquatherm Prefabrication:

### Planning and fabrication of manifolds and special components

for building services engineering  
air-conditioning, heating and plant engineering  
and fire extinguishing systems



**aquatherm**

state of the pipe



# Advantages aquatherm Prefabrication: Planning, fabrication and service

## Investors

- Support from planning to commissioning
- Service technicians provide advice and support on site
- Development of customized solutions
- Time- and cost savings due to pre-fabrication
- Cost transparency
- Quick and easy installation into existing systems
- Reduce dead-time
- Over 40 years of proven quality and experience
- Insurance cover up to 20 million Euros per individual case

## Architects and planners

- Planning support from the aquatherm design team
- Support for the plausibility and completeness check
- Provision of CAD- and planning data
- Detailed planning data for testing and production release
- 3D drawings minimize design errors
- Early detailed planning means planning and cost reliability
- High precision of the components due to prefabrication
- Time saving through prefabrication
- Years of experience in manifold and plant construction

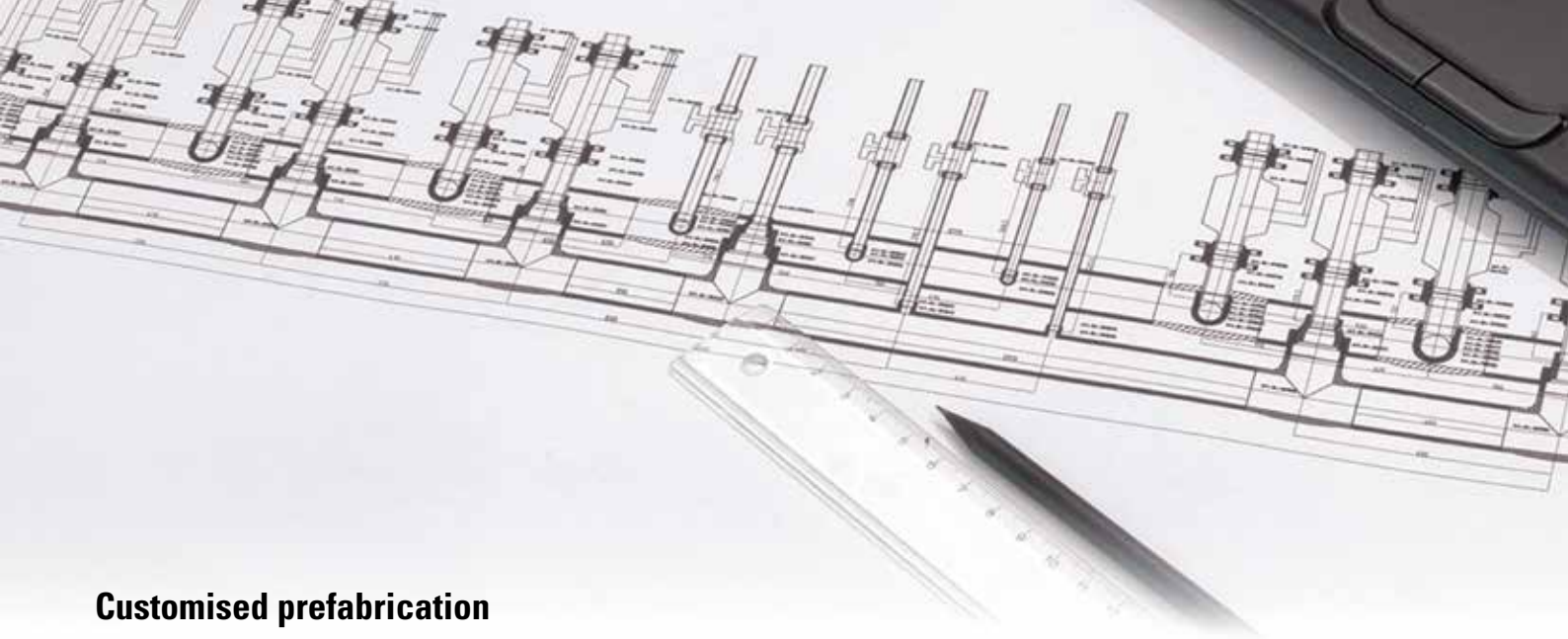
## Advantages of aquatherm manifolds and special components

- Consistent quality by industrial prefabrication „Made in Germany“
- Certified and inspected – ISO 9001/ISO 14001/ISO 50001
- Resistance to corrosion, chemicals and aggressive media
- Pre-insulated available
- Thinner insulation
- UV-resistance available
- Heat-/sound-insulating properties
- Oxygen-tight<sup>1</sup>
- Hygienic<sup>2</sup>
- Weight reduction due to the use of PP-R
- No silting by corrosion products
- Less pipe roughness and high abrasion resistance
- High impact strength
- Tight connection of pipe and fitting by fusion
- Three-layer pipe structure with glass fiber-reinforced middle-layer
- Flame resistant according to DIN 4102-1, building material class B 1<sup>3</sup>
- Recyclable
- Durable

## Plumbers/Plant engineers

- High, tested quality with a 10 years warranty
- Support and advice of service technicians on site
- Highest accuracy due to detailed planning
- Order monitoring and delivery by the specialized wholesale
- No delays due to missing parts
- Low tooling costs
- Rapid add-on by aquatherm saddle-technique
- Weight reduction due to the use of PP-R, thus easier handling during transport and on site
- No improvise on site
- Fast installation times
- Installation in confined spaces is possible
- Compensation of skills shortage

<sup>1</sup> aquatherm blue pipe OT  
<sup>2</sup> aquatherm green pipe  
<sup>3</sup> aquatherm red pipe



## Customised prefabrication

“Time is money” – a worldly wisdom that has proven true every day especially in the construction industry. The sanitary, heating and air-conditioning installations in every construction project are again and again a time and logistics challenge, and not only for the architects and planners. The implementation onsite subsequently often poses considerable problems for the executing site manager. Neither the external conditions nor the time specifications permit dealing in detail with the construction of a demanding manifold.

Added to that are the high labour costs for the time spent and diverse problems right onsite that can usually only be solved by dedicating a lot of time to them. Moreover, the lack of skilled professionals has become significantly worse in recent years. Prefabrication has an especially positive effect. The lack of skilled professionals is compensated. Work processes can be continued.

Due to the diversity of today’s application capabilities in the plant engineering sector, there is hardly any chance of being able to cover the distribution of fluid media using standardised or modular manifold design. Every construction project has its own individual requirements. It is not only the type of medium but also application areas, regulations and laws along with the architectural circumstances that influence the material and design of the pipeline system and its manifolds.

Whether new construction or reconstruction, heating, cooling, open or closed systems, aggressive media or drinking water and foodstuffs: We provide customised solutions

Nowadays, special components are playing an ever-greater role due to more demanding and unusual construction projects. We have already furnished ring-shaped installations in buildings with cylindrical construction designs or storage tanks along as well as pyramids with extreme angles with our special fittings. aquatherm nearly always finds a solution.

We plan and build your manifolds and special components right in the factory, entirely in accordance with your specifications and ship them ready-to-fit anywhere you want in this world.

Our customers can rely on more than 40 years of experience in the plant engineering sector. From luxury liners to football stadiums, from hotel complexes and hospitals to breweries and server centres, aquatherm pipeline systems are proving their reliability on a worldwide scale.

To accomplish that you merely need to supply us with your planning data, 3D drawings and/or sketches with the dimensions. You will receive an offer from us that includes the material data and drawing. A competent team of experienced technicians is ready to advise and assist you with that.

You can find detailed information on the topic of “Prefabrication” on the following pages of our leaflet.

A video for prefabrication is also available on our website. In addition to the planning with the architect also the investor talk, the production in the prefabrication department as well as the delivery to the construction site are presented.

### You can find the video at the following link:

[www.aquatherm-pipesystems.com/aqt-prefab.mp4](http://www.aquatherm-pipesystems.com/aqt-prefab.mp4)

Our technical hotline would be glad to consult with you:  
+ 49 (0) 2722 950-200



# 1. Inquiry and review

At the beginning we need as much information as possible. A CAD drawing would be ideal but even just a dimensioned hand-drawn sketch would suffice. aquatherm manifold questionnaire forms help in quickly acquiring the main information in detail. The aquatherm design team checks the submitted information for plausibility and completeness. The principle here is: the more information, the better. We are also glad to provide our customers with our stocklist in conventional CAD formats for their planning software. You can download the forms directly and fill in in digital under the following links:

[http://www.aquatherm-pipesystems.com/Manifold\\_inquiry\\_sanitary.pdf](http://www.aquatherm-pipesystems.com/Manifold_inquiry_sanitary.pdf)

[http://www.aquatherm-pipesystems.com/Manifold\\_inquiry\\_Heating\\_Cold.pdf](http://www.aquatherm-pipesystems.com/Manifold_inquiry_Heating_Cold.pdf)

Manifold inquiry Sanitary Dia. 20–630 mm:

The offer and respective drawing, as well as one revision are free of charge. As of the second revision, incurred expenses will be invoiced acc. to time and effort involved.

Client: ..... Date: .....  
 Project: ..... Building owner: .....  
 Type of pipe/system: ..... Total length of manifold,mm: ..... Max. service overpressure: .....  
 Max. service temperature: ..... Shut-off valves(type/brand): ..... Remarks:.....

Legend:  Manifold without dead storage zones     pre-insulated     without insulation

Manifold inquiry Heating/Cold Dia. 20–630 mm:

The offer and respective drawing, as well as one revision are free of charge. As of the second revision, incurred expenses will be invoiced acc. to time and effort involved.

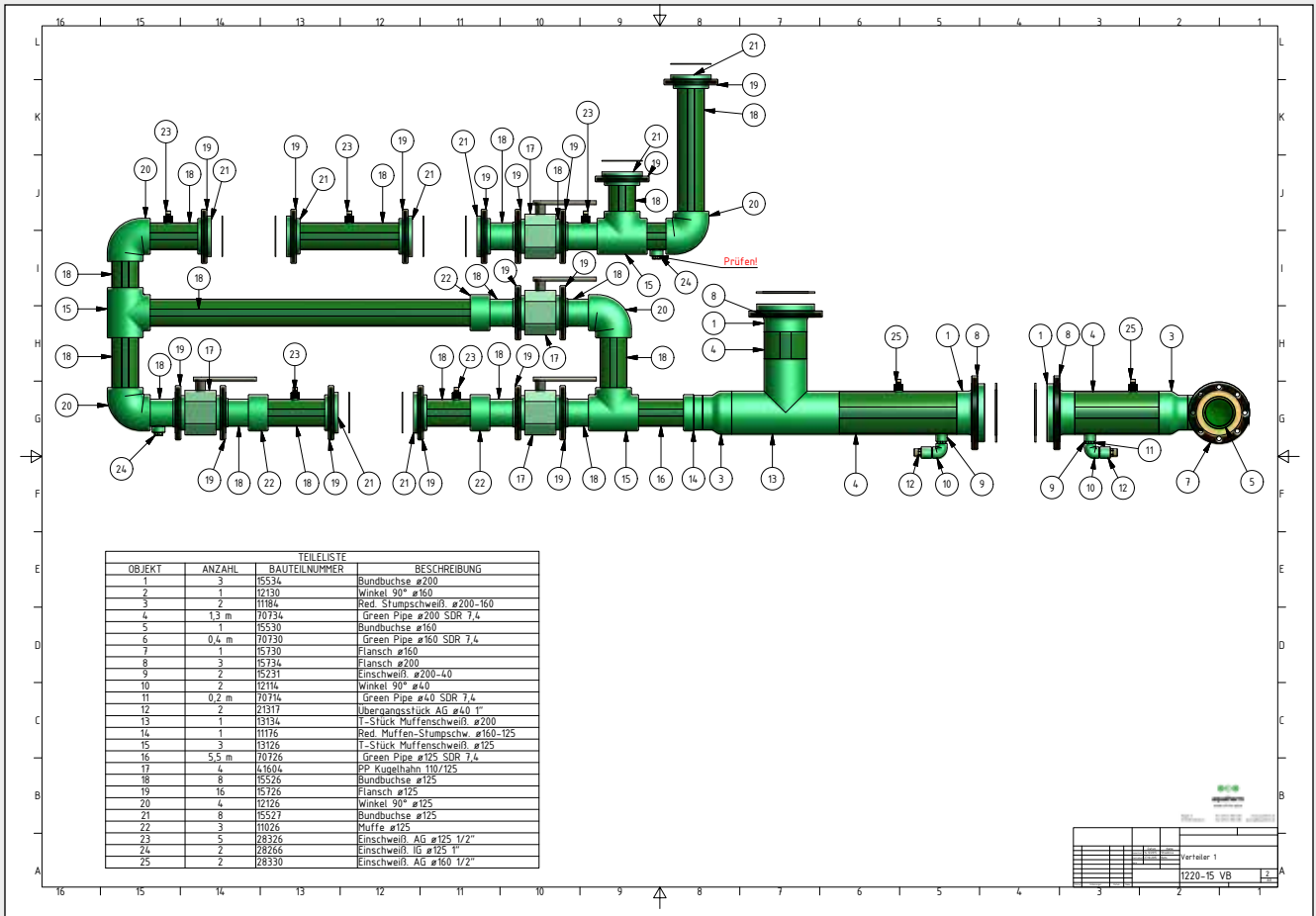
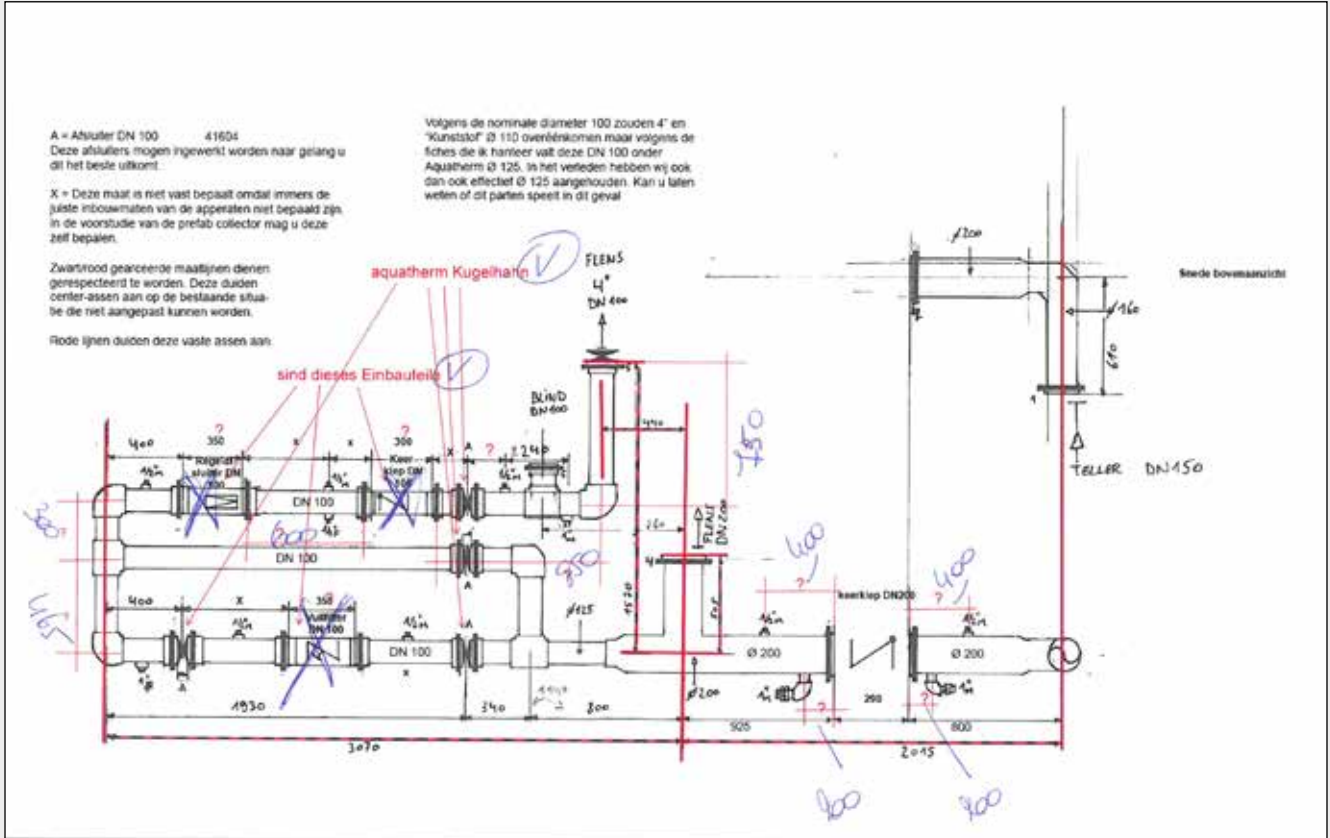
Client: ..... Date: .....  
 Project: ..... Building owner: .....  
 Type of pipe/system: ..... Total length of manifold,mm: ..... Max. service overpressure: .....  
 Max. service temperature: ..... Shut-off valves(type/brand): ..... Remarks:.....

Legend:  pre-insulated     without insulation



## 2. Planning and coordination

The aquatherm design team will plan the manifold after the review has been completed. This is where the decades of technical knowledge and expertise of the system manufacturer is incorporated. The customer subsequently receives a detailed CAD drawing for review and manufacturing release. The drawing includes a CAD parts list with item numbers for every fitting part. On top of that, if desired you will receive our CAD data for application in your existing planning data.





### 3. Manufacturing

After release we manufacture the desired products in the department for prefabrication, which is equipped with the latest, in part self-developed processing machines.

The 25-person, highly-qualified team manufactures manifolds and special components for customers around the world on an area of approx. 1000 sq m. Assembly is performed here in an absolutely clean environment. Dirty, dusty and cold installation conditions as are generally found at construction sites then no longer have any influence on the final result.

Another great advantage is the time savings through professional prefabrication. Even just the direct access to products in inventory facilitates fast reactions to any particularity or contingency and the ability to implement without delay. Although at the construction site missing products or defects that arise during assembly lead to delays, here it's simply a matter of one grasp in the shelves of the warehouse.

### 4. Delivery

After the individual assemblies passed the tests and checks, aquatherm delivers the finished manifolds or special components right to the construction site through wholesalers. The low weight as compared to stainless steel, steel and copper pipes facilitates simple handling during the transport and on the construction site.

The costs for the assembly tools at the construction site, which can be quite high for large manifolds, are omitted. The lack of skilled professionals is compensated. No manifold or special component leaves aquatherm manufacturing without having passed a leakproofness and functional test. That allows us to grant a warranty of 10 years with an overall coverage of 20 million euros per case of damage.

Even here, aquatherm supports its customers and provides them and the executing workshops competent advice and support in all questions and problems. Our service technicians naturally also support you onsite.







Flange connection



Welded connection PP-R



Threaded connection

## LINK TO NEW OR EXISTING PIPING SYSTEMS

aquatherm manifolds can, if desired, be connected to existing or new piping systems with the following connection facilities:

- **Flange connection**
- **Connecting branch as pipe sockets** (smooth ends for welding to aquatherm PP-R-pipes)
- **Threaded connections/fittings on aquatherm PP-R-pipelines or other materials**

## FLANGE CONNECTIONS

### THE FOLLOWING MUST BE OBSERVED WHEN USING FLANGE CONNECTIONS:

Flange adapter or sealing surfaces must always be aligned parallel to each other. Subsequent tightening of the flange connections after the welding process is to be avoided. It is important to ensure that the flange sealing surfaces are clean and undamaged.

The screw length must be selected that the screw thread is as flush as possible. Maximum two threads should project out of the nut. In order to distribute the force of the screw head and the nut over a large area, washers must be used. Screws, nuts and washers must be clean and undamaged.

In order to achieve a proper power distribution (surface pressure) acting on the seal, note the following:

- Screw connections must be tightened diagonally and evenly.
- Torque specifications on the individual flanges are to be observed (see table)

For flange connections, which are subject to mutual load, it must be ensured that these are controlled and tightened, if necessary, within the prescribed maintenance.

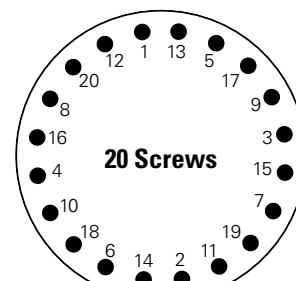
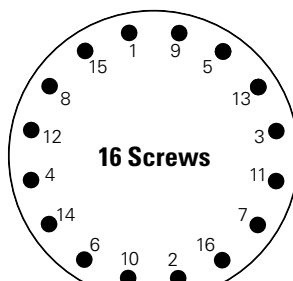
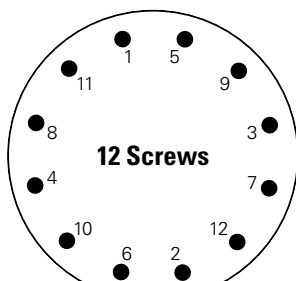
### TORQUE FLANGE according to manufacturer's specification

Art. no.	Dimension	DN indication	Nm
15730	160 mm	125	60
15734	200 mm	150	75
15738	250 mm	200	95
15742	315 mm	250	100
15744	355 mm	300	100
15746	400 mm	350	100
15748	450 mm	400	100
15750	500 mm	450	100
15752	560 mm	500	100
15754	630 mm	500	100

### TIGHTENING SEQUENCE

Number of holes	Tightening sequence
4	1 - 3 - 2 - 4
8	1 - 5 - 3 - 7 >> 2 - 6 - 4 - 8
12	1 - 7 - 4 - 10 >> 2 - 8 - 5 - 11 >> 3 - 9 - 6 - 12
16	1 - 9 - 5 - 13 >> 3 - 11 - 7 - 15 >> 2 - 10 - 6 - 14 >> 4 - 12 - 8 - 16
20	1 - 11 - 6 - 16 >> 3 - 13 - 8 - 18 >> 5 - 10 - 15 - 20 >> 2 - 12 - 7 - 17 >> 4 - 14 - 9 - 19

Follow the right tightening sequence for flange connections as described in the table. The tightening of the screws is done crosswise.



# 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



## aquatherm green pipe

The innovative multi-purpose pipe that was a revolution for the plastic pipe industry and has evolved over decades. The pipe launched in several international markets 35 years ago and quickly came to be recognized for the highest quality and environmental responsibility. Its environmental benefits as well as the worldfamous and often copied colour of the pipe system are the basis for the name.

The pipe system has proved its excellent technical suitability in worldwide applications for more than 40 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 the especially reinforced faser composite pipe SDR 7.4 (only for export) and aquatherm green pipe SDR 9. 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 SDR 9 RP

aquatherm sets the innovation standards in the production of PP-pipes and fittings worldwide. We continually bother to push developments for product improvement. The current level of evolution is called „fusiolen PP-RP“. With „fusiolen PP-RP“ we can produce faser composite pipes with lower wall-thickness by keeping all the well-established advantages.

#### Advantages PP-RP SDR 9

## 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
- 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 SDR 7.4
- 16 % lower weight than faser composite pipe PP-R SDR 7.4
- Lower weight than metallic 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



**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:** 32–250 mm  
**Type of pipe:**  
**Old:** Fusiotherm® ISO faser composite pipe  
**New:** aquatherm green pipe MF TI



### Advantages of aquatherm green pipe in manifold manufacture

Manifolds from the aquatherm green pipe system are ideal for the distribution of hygienically safe media such as drinking water and foodstuffs. The special composition of the pipe material fusiotherm® guarantees the purity of the transported medium without contamination by foreign substances that are dissolved out of the pipe material such as harmful heavy metals. Metal deactivators and the homogeneous, positive connection technique enable a long and interference-free operational life.

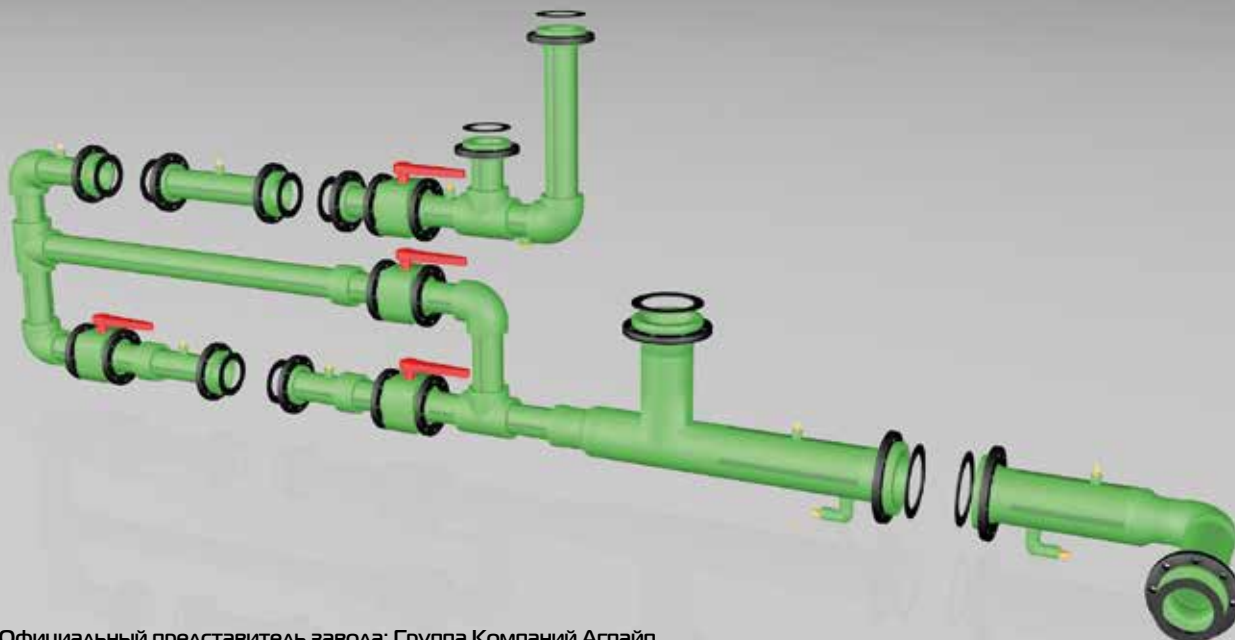
With aquatherm green pipe manifolds, corrosion is generally a thing of the past. External influences at the installation location such as saliferous ocean air or aggressive cleaning agents damage the system just as little as the transport of aggressive media or general corrosion due to moisture and air.

To protect against solar radiation in manifold lines that are installed outdoors, aquatherm fabricates manifolds made of pipes that have a special UV protective coating.

In the area of fire protection we offer a facility for painting or varnishing with a special intumescent protective coating.

The weight advantage of aquatherm makes it possible to also bring large manifolds to the installation location without any problems. In extreme cases when local circumstances have not been taken into consideration or have changed it is also possible to split the manifolds on site and reconnect them true-to-size with sleeve or butt welding. Subsequent branches and connections can be made simply and cost-effectively in the shortest time with the aquatherm saddle technology. You can find out more about saddle welding in our aquatherm greenpipe general catalogue (Order no. 10100).

aquatherm green pipe, in contrast to manifolds made of metal, has an insulating characteristic that the material fusiotherm® innately provides. If the degree of insulation is not sufficient, we can also supply our manifolds in an insulated form.



## aquatherm blue pipe

### Pipe system made of polypropylene

for chilled, hot fluid and various industrial applications

**SDR:** 7,4 / 11 / 17,6

**ø:** 20–630 mm

**Type of pipe:**

aquatherm blue pipe MF

**SDR:** 7,4 / 11

**ø:** 20–250 mm

**Type of pipe:**

aquatherm blue pipe MF OT

**SDR:** 7,4 / 11 / 17,6

**ø:** 20–630 mm

**Type of pipe:**

aquatherm blue pipe MF UV



## aquatherm blue pipe

Manifolds and special components made of aquatherm blue pipe have the same advantageous characteristics as our aquatherm green pipe system.

aquatherm blue pipe is our specialist for the transport of cooling and heating media in closed systems as well as for various industrial applications. The system has been developed especially for applications outside the potable water installation.

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.

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 products are available from 20 mm to 630 mm external diameter.

## FIELDS OF APPLICATION

- **Heating pipes for residential houses**

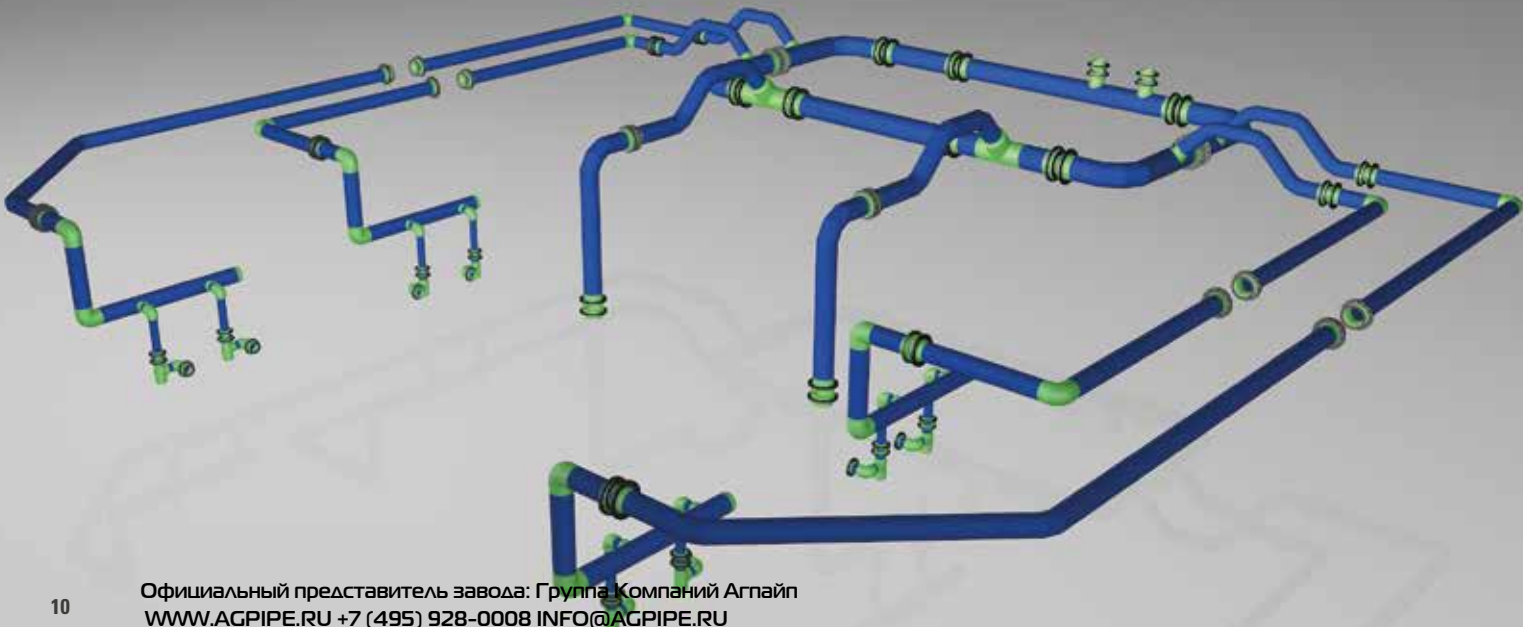
- heat generator connections
- heating manifolds
- risers
- high rise
- manifold connections
- radiator connections
- heat pump

- **Pipe networks**

- for heatings
- for climate technology
- for chilled water technology
- for swimming-pool technology
- for chemical transport
- for rainwater application
- for compressed air systems
- for under-floor-heating-systems
- in ship building
- for district heating
- for geothermal
- Server cooling

The aquatherm blue pipe system is applied in all fields of

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



**SDR:** 11 / 17,6  
**ø:** 32–355 mm  
**Type of pipe:**  
 aquatherm blue pipe MF TI

## aquatherm red pipe

Pipe system made of polypropylene  
 for fire sprinkler systems

**SDR:** 7,4  
**ø:** 20–160 mm  
**Type of pipe:**  
 aquatherm red pipe MF

## aquatherm lilac pipe

Pipe system made of polypropylene  
 for reclaimed water

**SDR:** 7,4 / 11  
**ø:** 20–125 mm  
**Type of pipe:**  
**Old:** aquatherm lilac  
**New:** aquatherm lilac pipe S



## 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 flameresistant 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 fiber glass reinforced inner layer
- Concealed fire protection
- Reduction of structural works costs by laying in concrete

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**  
The clogging of the sprinkler with corrosive material is prevented and thus ensures a long, low-maintenance service life as well as failure-free functioning of the system.

## aquatherm lilac pipe

aquatherm lilac 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, 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.

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.

### System components

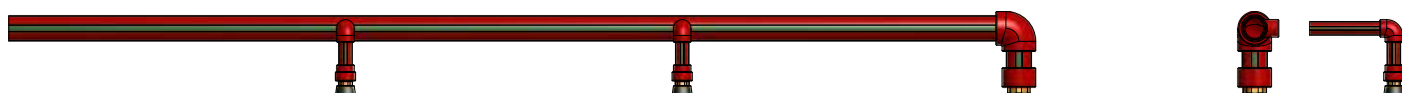
The system has to be installed in combination with the aquatherm green pipe fittings – and includes all elements for the pipe system installation for rainwater application and irrigation. The products are available from 20 mm to 125 mm external diameter.

### The aquatherm lilac pipe system is applied in all fields of

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

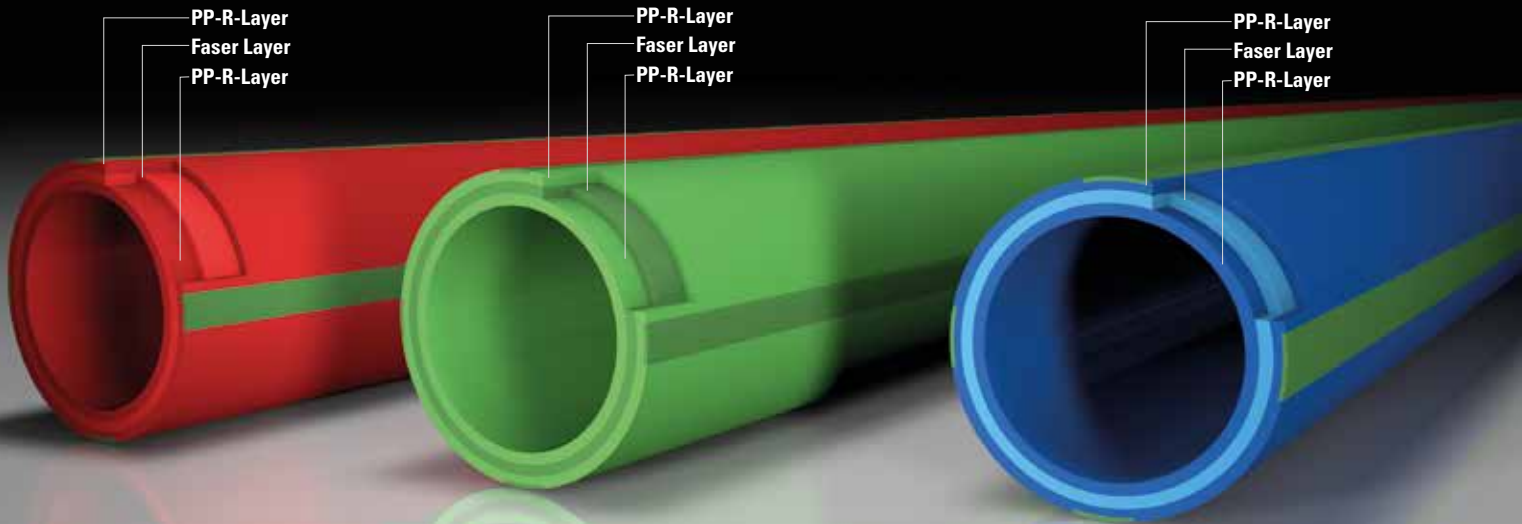
### FIELDS OF APPLICATION

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





## COMPOSITE TECHNOLOGY



## COMPOSITE TECHNOLOGY

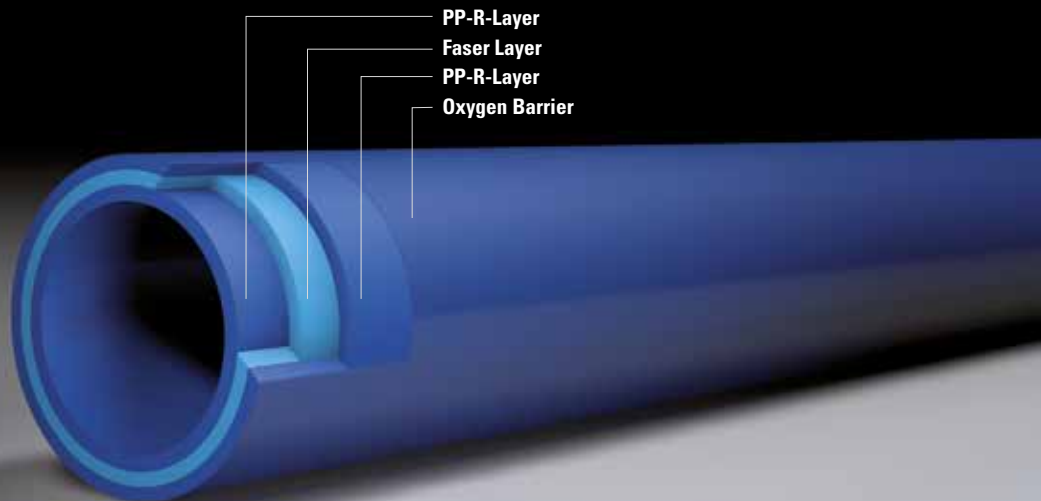
The composite pipes made in the multi-layer extrusion process produce a higher stability due to the faser filling in the middle layer. Compared to customary PP-pipes there are further advantages:

- 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



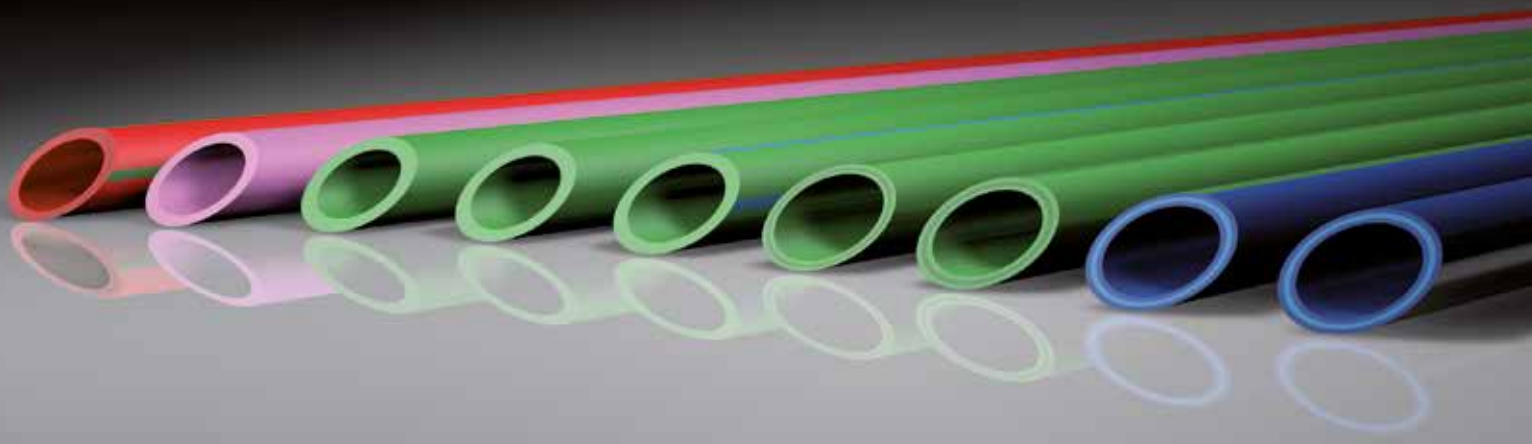
## WITH OXYGEN BARRIER

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



## FIELDS OF APPLICATION

System recommended due to its technical advantages: ●

Application of the system is suitable: ○

aquatherm  
blue pipe

aquatherm  
green pipe

aquatherm  
red pipe

aquatherm  
lilac pipe

	aquatherm blue pipe	aquatherm green 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			●	
Server cooling	●			

## MATERIAL ADVANTAGES

	fusiolen® PP-R/PP-PP	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			•

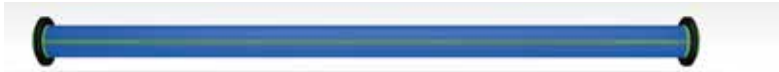
## fusiolen® PP-R

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
- fusiolen® PP-R FS



### aquatherm green / blue pipe MF TWO-SIDED WITH FLANGE ADAPTER AND LOOSE FLANGE 5.8 M

MF = multilayer faser / S = single layer pipe as single pipe in 5.8 m length

Outside diameter	aquatherm green pipe SDR 9 MF RP		aquatherm green pipe SDR 11 S / MF		aquatherm blue pipe SDR 11 MF		aquatherm blue pipe ot SDR 11 MF		aquatherm blue pipe SDR 17,6 MF		PU	
	Medium pipe	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	m/pc
160 mm		7270729		7310229*		8370129		8570129		8470129		5.8
200 mm		7270733		7310233*		8370133		8570133		8470133		5.8
250 mm		7270737		7310237*		8370137		8570137		8470137		5.8
315 mm		7270741		7310241*		8370141				8470141		5.8
355 mm		7270743		7310243*		8370143				8470143		5.8
400 mm				7310245		8370145				8470145		5.8
450 mm				7310247		8370147				8470147		5.8
500 mm										8470149		5.8
560 mm										8470151		5.8
630 mm										8470153		5.8

\* single layer



### aquatherm green / blue pipe MF TWO-SIDED WITH FLANGE ADAPTER AND LOOSE FLANGE 11.6 M

MF = multilayer faser / S = single layer pipe as single pipe in 11.6 m length

Outside diameter	aquatherm green pipe SDR 9 MF RP		aquatherm green pipe SDR 11 S / MF		aquatherm blue pipe SDR 11 MF		aquatherm blue pipe ot SDR 11 MF		aquatherm blue pipe SDR 17,6 MF		PU	
	Medium pipe	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	m/pc
160 mm		7270730		7310230*		8370130		8570130		8470130		11.6
200 mm		7270734		7310234*		8370134		8570134		8470134		11.6
250 mm		7270738		7310238*		8370138		8570138		8470138		11.6
315 mm		7270742		7310242*		8370142				8470142		11.6
355 mm		7270744		7310244*		8370144				8470144		11.6
400 mm				7310246		8370146				8470146		11.6
450 mm				7310248		8370148				8470148		11.6
500 mm										8470150		11.6
560 mm										8470152		11.6
630 mm										8470154		11.6

\* single layer



### aquatherm green / blue pipe MF ONE-SIDED WITH FLANGE ADAPTER AND LOOSE FLANGE 5.8 M

MF = multilayer faser / S = single layer pipe as single pipe in 5.8 m length

Outside diameter	aquatherm green pipe SDR 9 MF RP		aquatherm green pipe SDR 11 S / MF		aquatherm blue pipe SDR 11 MF		aquatherm blue pipe ot SDR 11 MF		aquatherm blue pipe SDR 17,6 MF		PU	
	Medium pipe	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	m/pc
160 mm		7270829		7310329*		8370329		8570329		8470329		5.8
200 mm		7270833		7310333*		8370333		8570333		8470333		5.8
250 mm		7270837		7310337*		8370337		8570337		8470337		5.8
315 mm		7270841		7310341*		8370341				8470341		5.8
355 mm		7270843		7310343*		8370343				8470343		5.8
400 mm				7310345		8370345				8470345		5.8
450 mm				7310347		8370347				8470347		5.8
500 mm										8470349		5.8
560 mm										8470351		5.8
630 mm										8470353		5.8

\* single layer



## PIPE MODULE

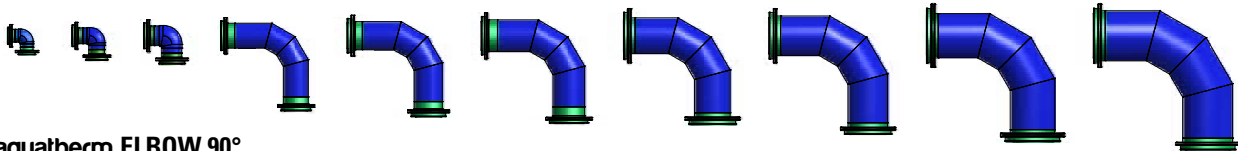


### aquatherm green / blue pipe MF ONE-SIDED WITH FLANGE ADAPTER AND LOOSE FLANGE 11.6 M

MF = multilayer faser / S = single layer pipe as single pipe in 11.6 m length

Outside diameter	aquatherm green pipe SDR 9 MF RP		aquatherm green pipe SDR 11 S / MF		aquatherm blue pipe SDR 11 MF		aquatherm blue pipe ot SDR 11 MF		aquatherm blue pipe SDR 17,6 MF		PU m/pc
	Medium pipe	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	
160 mm		7270830		7310330*		8370330		8570330		8470330	11.6
200 mm		7270834		7310334*		8370334		8570334		8470334	11.6
250 mm		7270838		7310338*		8370338		8570338		8470338	11.6
315 mm		7270842		7310342*		8370342				8470342	11.6
355 mm		7270844		7310344*		8370344				8470344	11.6
400 mm				7310346		8370346				8470346	11.6
450 mm				7310348		8370348				8470348	11.6
500 mm										8470350	11.6
560 mm										8470352	11.6
630 mm										8470354	11.6

\* single layer



### aquatherm ELBOW 90°

Outside diameter	aquatherm green pipe SDR 9 MF RP		aquatherm green pipe SDR 11 S / MF		aquatherm blue pipe SDR 11 MF		aquatherm blue pipe ot SDR 11 MF		aquatherm blue pipe SDR 17,6 MF		PU pc
	Medium pipe	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	
160 mm		7212130		7312131		8312131		8512131		8412130	1
200 mm		7212134		7312135		8312135		8512135		8412134	1
250 mm		7212138		7312139		8312139		8512139		8412138	1
315 mm		7212142		7312143		8312143				8412142	1
355 mm		7212144		7312145		8312145				8412144	1
400 mm				7312147		8312147				8412146	1
450 mm				7312149		8312149				8412148	1
500 mm										8412150	1
560 mm										8412152	1
630 mm										8412154	1

On demand also available in design 60° und 75°.



### aquatherm TI FASER COMPOSITE PIPE **TWO-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE 5.8 M

Faser composite pipe as single pipe in 5.8 m length with PUR-rigid foam insulation and PE-casing pipe.

Outside diameter		aquatherm green pipe ti SDR 9 MF RP		aquatherm blue pipe ti SDR 11 MF		aquatherm blue pipe ot ti SDR 11 MF		aquatherm blue pipe ti SDR 17,6 MF		PU
Medium pipe	Casing pipe	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	m/pc
160 mm	250 mm	7470729		8770129		8970129		8870129		5.8
200 mm	315 mm	7470733		8770133		8970133		8870133		5.8
250 mm	400 mm	7470737		8770137		8970137		8870137		5.8
315 mm	450 mm	7470741		8770141				8870141		5.8
355 mm	500 mm	7470743		8770143				8870143		5.8



### aquatherm TI FASER COMPOSITE PIPE **TWO-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE 11.6 M

Faser composite pipe as single pipe in 11.6 m length with PUR-rigid foam insulation and PE-casing pipe.

Outside diameter		aquatherm green pipe ti SDR 9 MF RP		aquatherm blue pipe ti SDR 11 MF		aquatherm blue pipe ot ti SDR 11 MF		aquatherm blue pipe ti SDR 17,6 MF		PU
Medium pipe	Casing pipe	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	m/pc
160 mm	250 mm	7470730		8770130		8970130		8870130		11.6
200 mm	315 mm	7470734		8770134		8970134		8870134		11.6
250 mm	400 mm	7470738		8770138		8970138		8870138		11.6
315 mm	450 mm	7470742		8770142				8870142		11.6
355 mm	500 mm	7470744		8770144				8870144		11.6



### aquatherm TI FASER COMPOSITE PIPE **ONE-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE 5.8 M

Faser composite pipe as single pipe in 5.8 m length with PUR-rigid foam insulation and PE-casing pipe.

Outside diameter		aquatherm green pipe ti SDR 9 MF RP		aquatherm blue pipe ti SDR 11 MF		aquatherm blue pipe ot ti SDR 11 MF		aquatherm blue pipe ti SDR 17,6 MF		PU
Medium pipe	Casing pipe	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	m/pc
160 mm	250 mm	7470829		8770329		8970329		8870329		5.8
200 mm	315 mm	7470833		8770333		8970333		8870333		5.8
250 mm	400 mm	7470837		8770337		8970337		8870337		5.8
315 mm	450 mm	7470841		8770341				8870341		5.8
355 mm	500 mm	7470843		8770343				8870343		5.8

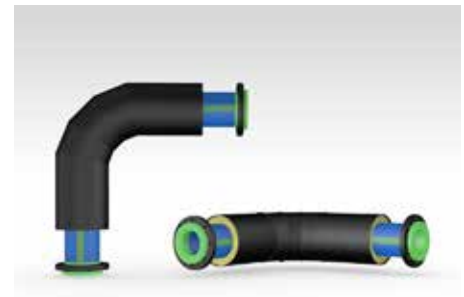
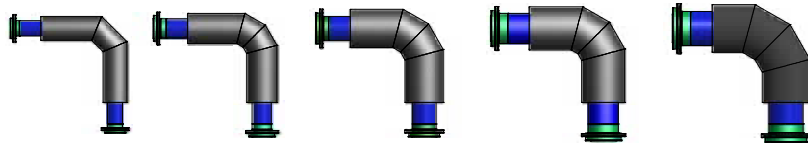
## PIPE MODULE



### aquatherm TI FASER COMPOSITE PIPE ONE-SIDED WITH FLANGE ADAPTER AND LOOSE FLANGE 11.6 M

Faser composite pipe as single pipe in 11.6 m length with PUR-rigid foam insulation and PE-casing pipe.

Outside diameter		aquatherm green pipe ti SDR 9 MF RP		aquatherm blue pipe ti SDR 11 MF		aquatherm blue pipe ot ti SDR 11 MF		aquatherm blue pipe ti SDR 17,6 MF		PU
Medium pipe	Casing pipe	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	m/pc
160 mm	250 mm	7470830		8770330		8970330		8870330		11.6
200 mm	315 mm	7470834		8770334		8970334		8870334		11.6
250 mm	400 mm	7470838		8770338		8970338		8870338		11.6
315 mm	450 mm	7470842		8770342				8870342		11.6
355 mm	500 mm	7470844		8770344				8870344		11.6



### aquatherm ti ELBOW 90°

with PUR-rigid foam insulation and PE-casing pipe

Outside diameter		aquatherm green pipe ti SDR 9 MF RP		aquatherm blue pipe ti SDR 11 MF		aquatherm blue pipe ot ti SDR 11 MF		aquatherm blue pipe ti SDR 17,6 MF		PU
Medium pipe	Casing pipe	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	Art. no.	Price € m/pc	pc
160 mm	250 mm	7412130		8712131		8912131		8812130		1
200 mm	315 mm	7412134		8712135		8912135		8812134		1
250 mm	400 mm	7412138		8712139		8912139		8812138		1
315 mm	450 mm	7412142		8712143				8812142		1
355 mm	500 mm	7412144		8712145				8812144		1

On demand also available in design 60° und 75°.





Server cooling



Cooling lines



Drinking water pressure increase



Heating manifold



Heating manifold under-soil heating



Process cooling



Supply process cooling



Supply process cooling



## APPLICATION EXAMPLES



Mixing plant for industrial fluids



Supply to electroplating



Engine and barrel cooling



Server cooling



Heating manifold



**aquatherm red pipe** Installation in concrete, Kö-Bogen, Düsseldorf

Официальный представитель завода: Группа Компаний Агпайп  
WWW.AGPIPE.RU +7 (495) 928-0008 INFO@AGPIPE.RU

## FURTHER INFORMATION

<b>aquatherm green pipe, aquatherm blue pipe &amp; aquatherm lilac pipe</b> pipe systems for the application in potable water and heating and for reclaimed and recycled water	Ord.-No.: E10101
<b>aquatherm blue pipe</b> for chilled, hot fluid and various industrial applications	Ord.-No.: E10050
<b>aquatherm red pipe</b> sprinkler pipe system	Ord.-No.: E40000
<b>aquatherm orange system</b> underfloor heating systems	Ord.-No.: E90001
<b>aquatherm black system</b> surface heating and cooling system for ceiling, wall and floor	Ord.-No.: E97060
<b>aquatherm grey pipe</b> potable water and radiator connection system	Ord.-No.: E70001
<b>aquatherm</b> - article list	Ord.-No.: E54152
<b>aquatherm</b> - reference catalogue	Ord.-No.: E57002
<b>aquatherm TI</b> - 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**.



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