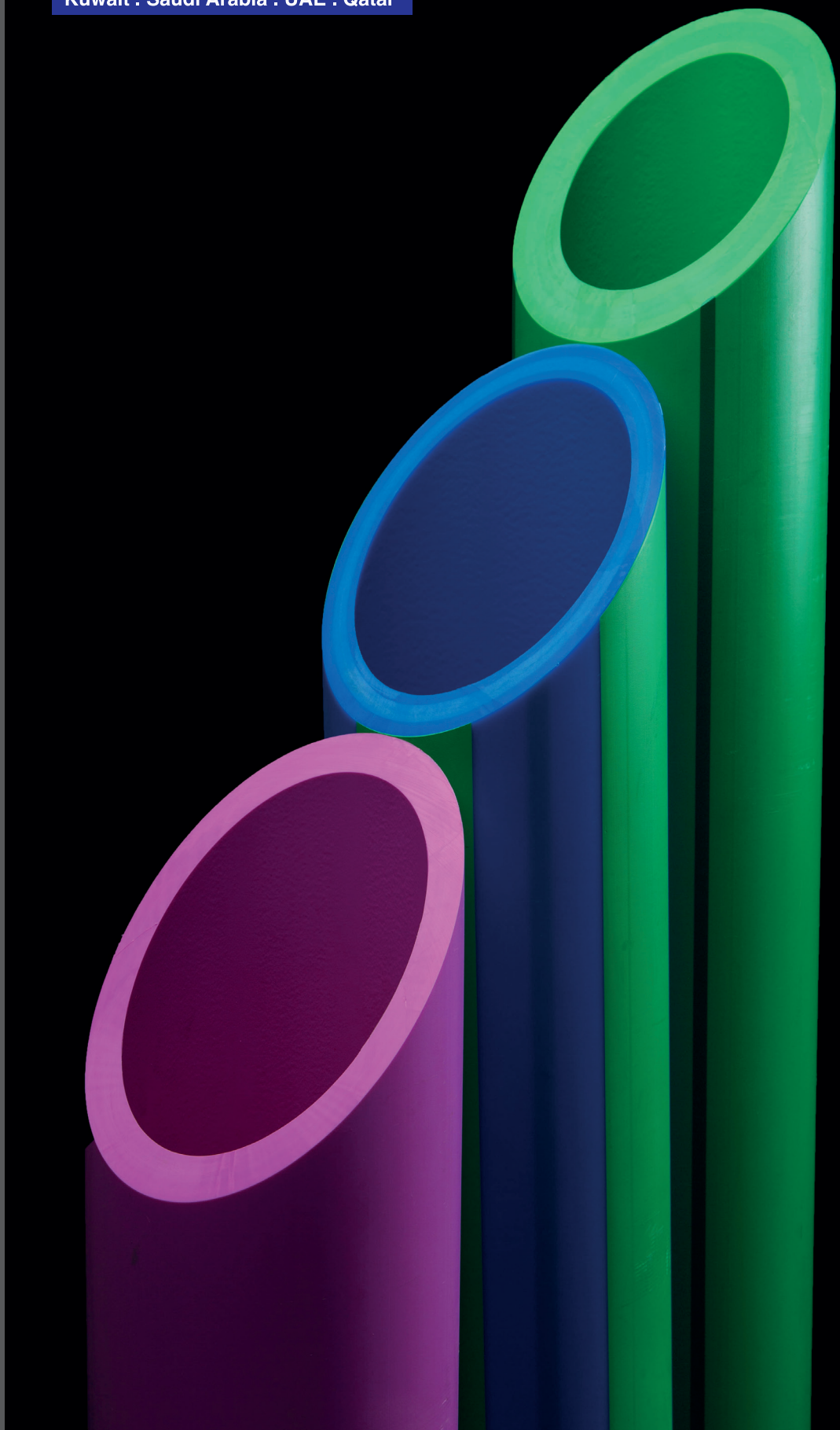
aquatherm

alsahoo Trading Co.

Kuwait . Saudi Arabia . UAE . Qatar

Product Catalog



ALSAHOO

2018
2019

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Our sales and delivery conditions (2016) and the contacts of our technical sales and distribution see on our homepage www.aquatherm.de.

Subject to technical alterations, errors and misprints excepted. With the edition of this catalogue, all former ones become void.

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

1973 aquatherm founded by Gerhard Rosenberg

1978 Move to the first building at the current site in Biggen

1977 First exports to Jordan and Belgium

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

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

SERVICE

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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 responsiblity for our customers, partners and the environment.

TÜVRheinland ZERTIFIZIERT
Management System
ISO 9001:2015
ISO 14001:2015
ISO 50001:2011
www.tuv.com
ID 0091005348

Field staff

In addition to the regular training service at Attendorn and Radeberg aquatherm field staff are available to assist customers, on site, throughout Germany.

Training service

In addition to training service through the merchant network aquatherm offers its customers training, free of charge, at its training centres at Attendorn and Radeberg.

Fair

aquatherm is represented on all important fairs relevant for the sanitary and heating sector in Germany or abroad with its own exhibition booth. For more information regarding fairs near to you, please visit internet page: www.aquatherm.de.

Laboratory

The aquatherm laboratory: from the testing of granulate through to the finished product the customer can be assured of only the highest quality products.

Software-Service

The aquatherm software service provides Datanorm-fi les, BIM-data and data sets for the liNear, Plancal/Rimble and ETU calculation programs, as well as on-site training.

Brochures etc.

No matter whether brochures, catalogues or product lists: Our in-house marketing department develops everything itself. You can download all documents as pdf from our website www.aquatherm.de
For printed copies, please send an e-mail to info@aquatherm.de.

SERVICE

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aquatherm Prefabrication
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REBRANDING

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.

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.

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.

LEGEND:			
S	single layer	**UV**	ultraviolett protected
M	multilayer	**TI**	isolated with PUR and external PE pipe
MF	multilayer faser	**RP**	raised pressure (resistance)
OT	oxygen tight	**HI**	hardly inflammable

			new branding structure						potable water	HVACR	swimming pool	chemical fluids	recycled & reclaimed water	fire protection	compressed air	district heating	geothermal	shipbuilding sector
			brand name		appendix													
no.:	old brand name	article-no.	company	system	Standard Dimension Ratio	structure of pipe	special feature of pipe	Material / Glas fibre content GF[%]/ fire class. Acc. ISO 11925										
1	fusiotherm SDR11	10208 . . . 10248	aquatherm	green pipe	SDR11	S		PP-R/GF0/E	●	❍	●	●	❍		❍	●	●	●
2	fusiotherm SDR7,4	10806 . . . 10826	aquatherm	green pipe	SDR7,4	S		PP-R/GF0/E	●	❍	●	●	❍		❍	●	●	●
3	fusiotherm SDR6	10006 . . . 10024	aquatherm	green pipe	SDR6	S		PP-R/GF0/E	●	❍	●	●	❍		❍	●	●	●
4	fusiotherm faser composite pipe	70708 . . . 70747	aquatherm	green pipe	SDR7,4	MF		PP-R/GF7/E	●	❍	●	●	❍		❍	●	●	●
5	fusiotherm faser composite pipe UV	70758 . . . 70788	aquatherm	green pipe	SDR7,4	MF	UV	inliner like 5 with black PE-coating	●	❍	●	●	❍		❍	●	●	●
6	fusiotherm faser composite pipe ISO	1270711 . . . 1270737	aquatherm	green pipe	SDR7,4	MF	TI	inliner like 5 with PU-Insulation and black PE-casing	●	❍	●	●	❍		❍	●	●	●
7	aquatherm green pipe faser composite pipe	0370708 . . . 0370744	aquatherm	green pipe	SDR9	MF	RP	PP-RP/GF7/E	●	❍	●	●	❍		❍	●	●	●
8	Climatherm SDR11	2010208 . . . 2010238	aquatherm	blue pipe	SDR11	S		PP-R/GF0/E		●	●	●	❍		●	●	●	●
9	Climatherm faser composite pipe SDR7,4/ SDR11	2070112 . . . 2070726	aquatherm	blue pipe	SDR7,4/ SDR11	MF		PP-R/GF7/E		●	●	●	❍		●	●	●	●
10	Climatherm faser composite pipe SDR7,4/ SDR11 UV	2070162 . . . 2070762	aquatherm	blue pipe	SDR7,4/ SDR11	MF	UV	inliner like 9 with black PE-coating		●	●	●	❍		●	●	●	●
11	Climatherm faser composite pipe SDR7,4/ SDR11 OT	2170114 . . . 2170712	aquatherm	blue pipe	SDR7,4/ SDR11	MF	OT	inliner like 9 with EVOH O2-barrier		●	●	●	❍		●	●	●	●
12	Climatherm faser composite pipe SDR7,4/ SDR11 UV OT	2170164 . . . 2170188	aquatherm	blue pipe	SDR7,4/ SDR11	MF	UV-OT	inliner like 12 with black PE-coating		●	●	●	❍		●	●	●	●
13	Climatherm faser composite pipe SDR17,6	2570134 . . . 2570154	aquatherm	blue pipe	SDR17,6	MF		PP-R/GF7/E		●	●	●	❍		●	●	●	●
14	Climatherm faser composite pipe SDR7,4/ SDR11 ISO	2270111 . . . 2270142	aquatherm	blue pipe	SDR7,4/ SDR11	MF	TI	inliner like 10 with PU-Insulation and black PE-casing		●	●	●	❍		●	●	●	●
15	Climatherm faser composite pipe SDR7,4/ SDR11 OT ISO	2470711 . . . 2470126	aquatherm	blue pipe	SDR7,4/ SDR11	MF	OT-TI	inliner like 12 with PU-insulation and black PE-casing		●	●	●	❍		●	●	●	●
16	aquatherm firestop	4170707 . . . 4170730	aquatherm	red pipe	SDR7,4	MF	HI	PP-R/GF7/B-s1,d0						●				
17	aquatherm lilac	9010212 . . . 9010238	aquatherm	lilac pipe	SDR7,4/ SDR11	S		PP-R/GF0/E					●					
18	climasystem		aquatherm	black system			OT			●								
19	aquatherm FBH		aquatherm	orange system		S	OT			●								
20	aquatherm SHT		aquatherm	grey pipe					●	❍	●	●	❍		❍	●	●	●

SHORT CUTS & SYMBOLS

short cuts structure of pipe	
S	single
M	multilayer
MF	multilayer faser
OT	oxygen tight
UV	UV resistant
TI	thermal insulation
HI	hardly inflammable

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

FIELDS OF APPLICATION

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

SYSTEMS

aquatherm pipe systems

Standard dimension ratio

aquatherm green pipe®

aquatherm blue pipe®

Multi-layer faser-composite technology

aquatherm green pipe ti / aquatherm blue pipe ti

aquatherm lilac pipe®

aquatherm red pipe

Permissible working pressure

Integration of other systems

System features

AQUATHERM PP-R PIPING SYSTEMS

Aquatherm piping systems are ideal for many pressurized applications due to their durability and versatility.

To accommodate projects of nearly any size, Aquatherm pipe is available from 20 mm to 630 mm in diameter.

All of Aquatherm's pipes and fittings are made from polypropylene-random (PP-R), a thermoplastic that provides many advantages in piping systems, including heat-fused connections and naturally corrosion-resistant properties.

To facilitate integration with other systems, a wide range of transitions are available such as flanges, PEX adapters, brass and steel threads, and copper stub outs.

SYSTEM SPECIALIZATION

Each of the PP-R systems developed by Aquatherm share the same material benefits, but are also engineered for specific applications.

aquatherm green pipe is our signature product, suitable for potable and hot & cold applications and much more.

aquatherm blue pipe is the best choice for chilled water closed pressure piping systems and for a wide range of non-potable applications.

aquatherm lilac pipe is ideal for water conservation and gray water systems, with coloring and markings to conform to local codes.

FIELDS OF APPLICATION FOR AQUATHERM PIPING SYSTEMS

System is ideal for this application: ✔
System is suitable for this application, but not ideal: ●

	aquatherm green pipe®	aquatherm blue pipe®	aquatherm lilac pipe®
Potable water	✔		
Hot water recirculation	✔		
Compressed air systems	✔	✔	
Swiming pools	●	✔	
Marine applications	✔	✔	✔
Chilled water distribution		✔	
Direct-buried applications	✔	✔	✔
Recycled, reclaimed, and rainwater			✔
Irrigation	●	●	✔
Industrial and chemical transport	●	✔	
In-floor heating systems	●	✔	

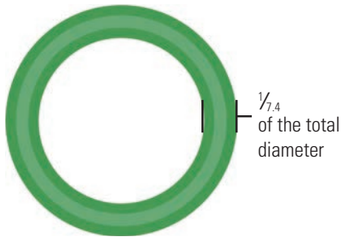
STANDARD DIMENSION RATIO

Aquatherm's pipes are manufactured using a standard dimension ratio (SDR), meaning the wall thickness is a ratio of the total diameter. This is different from schedules, which are now more commonly used world wide, but is typical of fusible plastics. As a result, all pipe sizes in a given SDR have the same pressure ratings. The ratings do not decrease with larger size SDR pipe as they do with schedule-based pipe.

SDR which describes the ratio between a pipe's outer diameter and its wall thickness

SDR = 2. S +1 SDR ~ da / s S=pipe series , s = wall thickness , da = outer diameter

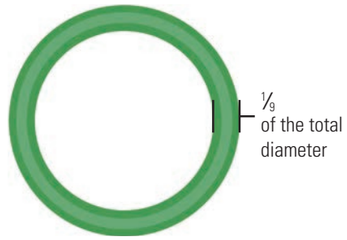
Each SDR provides its own advantages. The SDR is one of the major factors used in engineering an Aquatherm piping system for a specific application.



SDR 7,4

A heavy wall provides increased pressure and temperature ratings for high-stress applications such as transfer lines and pump.

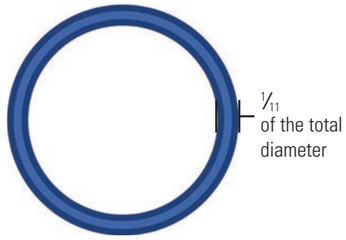
aquatherm green pipe MF
(all ½" and ¾" pipes are SDR 7.4 unless otherwise indicated)



SDR 9

An enhanced material combination provides higher temperature tolerance at high pressured applications such as central hot water circulation.

aquatherm green pipe MF RP
(available for sizes 32 mm and above)
aquatherm blue pipe MF
aquatherm lilac pipe S



SDR 11

A thinner wall provides maximum flow rate while minimizing material weight, cost, and fusion times. For chilled, cooling, and closed system application.

aquatherm blue pipe MF

RP : Raised Pressure (a PPR-CT classified Material)
MF: multi-layered faser-composite pipe
S: single-layered pipe (non-faser)

NOMINAL IMPERIAL SIZING

All Aquatherm piping systems are manufactured in metric sizes. In order to make the systems more intuitive to the market, Aquatherm has converted each of its standard pipe sizes into an imperial nominal diameter based on comparable size and flow rate.

The below tables give a standard nominal diameter for each metric size of pipe. Use the flow rate tables given in chapter 3 to verify proper selection for an application based on SDR and flow rate. The metric outside diameter (OD) is printed on the pipe and fitting bags in addition to the nominal diameter.

Actual metric OD	Nominal diameter
20 mm	½"
25 mm	¾"
32 mm	1"
40 mm	1 ¼"
50 mm	1 ½"
63 mm	2"
75 mm	2 ½"
90 mm	3"
110 mm	3 ½"
125 mm	4"

Actual metric OD	Nominal diameter
160 mm	6"
200 mm	8"
250 mm	10"
315 mm	12"
355 mm	14"
400 mm	16"
450 mm	18"
500 mm	20"
560 mm	22"
630 mm	24"

COMPARISON OF WATER CAPACITY PER METER

Nominal diameter	SDR 7.4	SDR 9	SDR 11
ø 16	0,106	-	-
ø 20	0,163	-	0,206
ø 25	0,254	-	0,327
ø 32	0,423	0,483	0,539
ø 40	0,660	0,754	0,834
ø 50	1,029	1,182	1,307
ø 63	1,647	1,869	2,074
ø 75	2,323	2,659	2,959
ø 90	3,358	3,825	4,252
ø 110	4,999	5,725	6,359
ø 125	6,472	7,386	8,199
ø 160	10,599	12,109	13,430
ø 200	16,558	18,908	21,010
ø 250	25,901	29,605	32,861
ø 315	-	46,966	52,172
ø 355	-	59,625	66,325
ø 400	-		84,290
ø 450	-		106,477
ø 500	-		-
ø 560	-		-
ø 630			-

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 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.

NEW

aquatherm green pipe SDR9 MF RP (PPR CT)

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 fibre-composite pipes with lower wall-thickness by keeping all the well-established advantages.

The aquatherm green pipe system is applied in all fields of

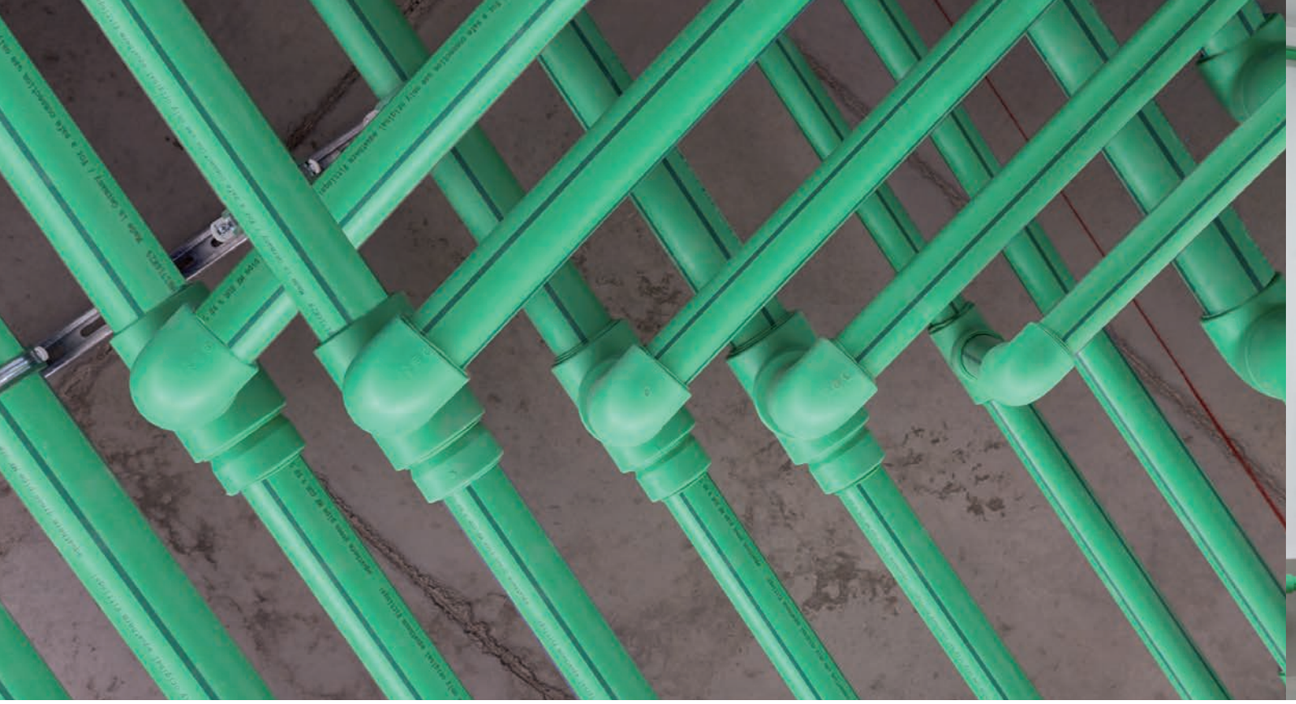
- **NEW INSTALLATION**
- **REPAIR** and
- **RENOVATION.**

- **Potable water 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

Fields of application



Distribution network for domestic water and heating in residential buildings

aquatherm green pipe

POTABLE WATER AND HEATING INSTALLATIONS

From the house connection station, cold water distribution, boiler connection and hot water distributor to risers, installed with aquatherm green pipe composite pipe, with conventional high rise or high rise carried out with the aquatherm green pipe manifold system up to the last tap, installed conventionally or with the manifold, concealed or surface installation - the aquatherm green pipe system offers all possibilities of a complete installation with only one non-polluting material.

Types of installation

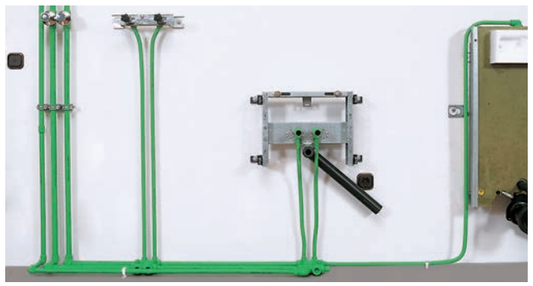
The aquatherm green pipe system is applicable for all common types of installation:

It is also possible to prefabricate pipe and fittings for risers and high rise.

aquatherm green pipe offers the perfect program for all types of installations.

With an extensive product range of pipe and fittings from Ø 16 - 450 mm external diameter and more than 450 fittings including fittings with brass threaded metal inserts, aquatherm green pipe offers ideal solutions for all fields of application.

House connection station



Surface installation

Concealed installation

Surface installation

All risers and distribution pipes are planned and assigned as usual.

1. Distribution piping with composite pipes

More dimensionally stable pipes are recommended for conventionally installed basement pipes, risers and multi story pipe- systems.

Multi- storey installation can be done with the distribution blocks for plumbing and heating: quick processing is guaranteed.

Due to the low demand in fittings, the number of connections is reduced and thus time for installation.

High degree of pre-fabrication:

the special construction allows floor or wall installation (e. g. behind skirting boards) as one compact fitting with all branches provided.

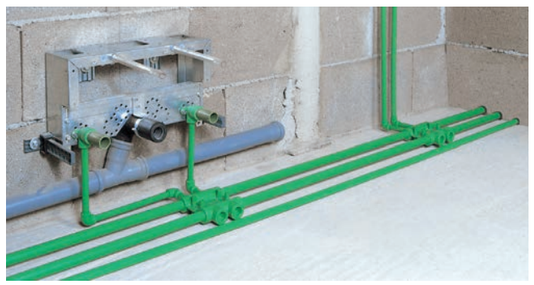
2. Floor distribution with distribution blocks

The distribution blocks also offer further installation options: A simple opening of a side branch by drilling (18 mm borer) enables the connection of an additional pipe. e.g. the circulationpipe.

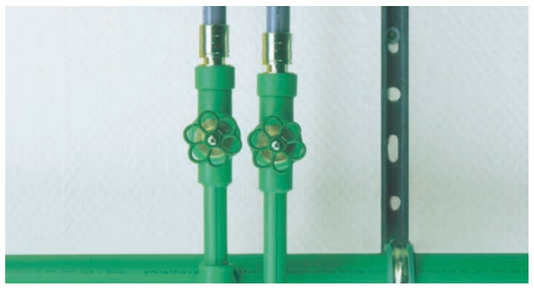
IMPORTANT:

The aquatherm grey pipe domestic water and radiator connection system is compatible with the aquatherm green pipe system.

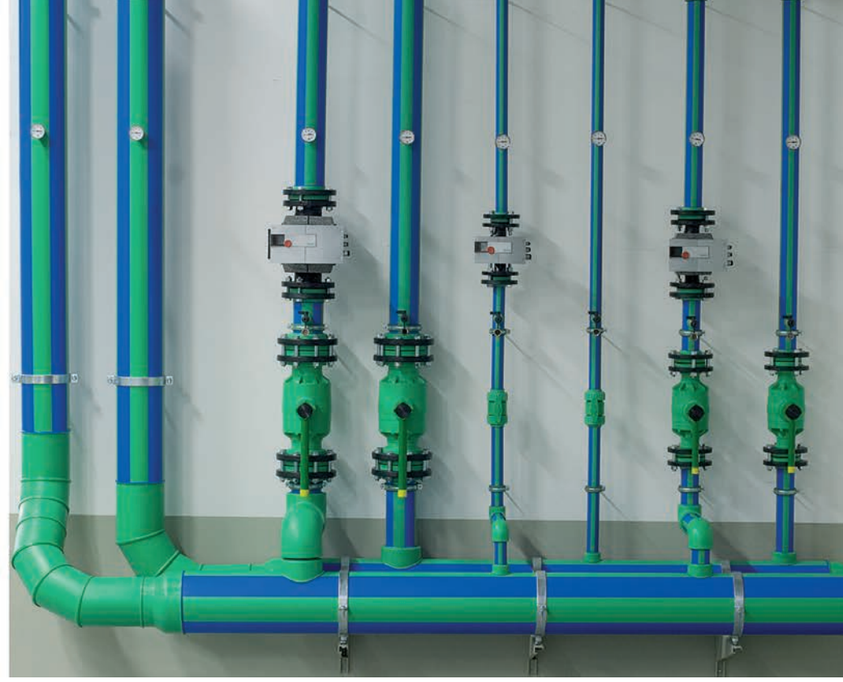
Distribution piping



Floor distribution with distribution blocks



aquatherm grey pipe connection



A BETTER CHOICE FOR HYDRONICS, COMPRESSED AIR, AND INDUSTRIAL APPLICATIONS

aquatherm blue pipe is specifically engineered for applications beyond potable water installations. It offers a tougher, longer lasting, more environmentally responsible solution to other non-potable pressure systems.

In addition to the general advantages of the PP-R pipe system, **aquatherm blue pipe** offers higher volumetric flow rates due to thinner walls and has temperatuers stabilization for exposures to temperatures beyond the intended design. PP-R piping is also extremely resistant to impact, corrosion, and seismic stresses.

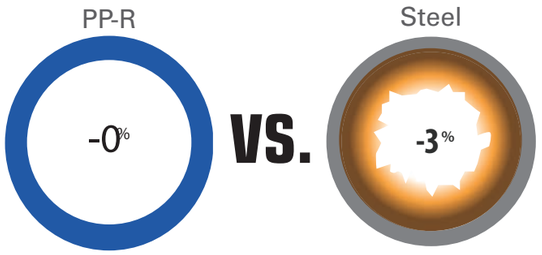
aquatherm blue pipe uses the same socket fittings and tools as **aquatherm green pipe**, making installation simple and easy. The dimensions range from ½" to 24" ND. **aquatherm blue pipe** is also available with UV protection for outdoor installations and faser-composite (MF) technology, which reduces linear expansion.

CORROSION AND SCALE RESISTANCE

While other piping materials lose performance over time to scaling and corrosion, Aquatherm's PP-R material resists any form of change to the material wall. Even after decades of use, the Aquatherm pipe will retain its original flow characteristics. This prevents the loss of efficiency that occurs when using a pipe that can scale or corrode and will save energy over the life of the system. No chemical treatments are needed to protect the **aquatherm blue pipe**, saving maintenance costs and reducing waste.

ADVANTAGES

- Resistant to most chemicals
- Excellent flow rate
- Fast, welded connections
- Light, impact-resistant material
- Corrosion-free pipe and fittings
- Natural sound and heat insulation
- Long lasting
- Fully recyclable



Corrosion and scaling can reduce the inside of steel pipes by an average of 3% per year, resulting in lost efficiency and up to 10% increased pumping energy annually. This can add up to thousands of dollars in hidden energy costs over the life of the system.

Aquatherm's PP-R pipes don't corrode or scale, so they continue delivering efficiency and performance year after year.

Sample specifications for **aquatherm blue pipe** can be provided on request

Fields of application

CHILLED WATER DISTRIBUTION

For residential, commercial, and industrial use, **aquatherm blue pipe** has a natural insulation value that helps reduce heat gain and often eliminates problems with condensation, making it an excellent choice for cooling towers and condenser water.

INDUSTRIAL APPLICATIONS

For the processing and transport of aggressive mediums and materials, **aquatherm blue pipe** resist many types of chemicals.

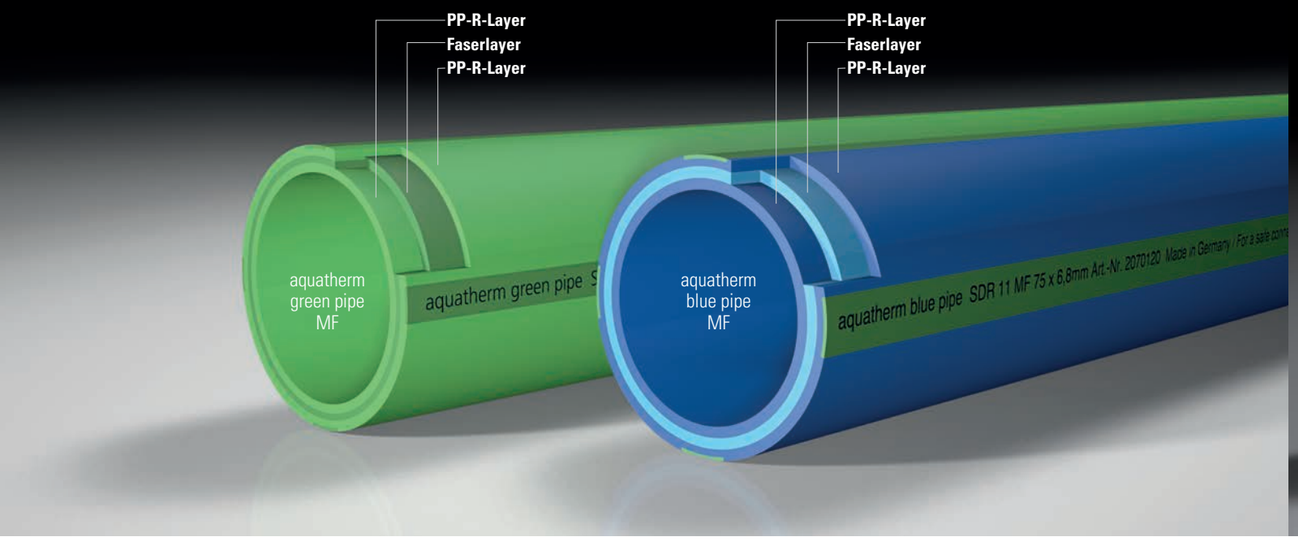
GEOTHERMAL

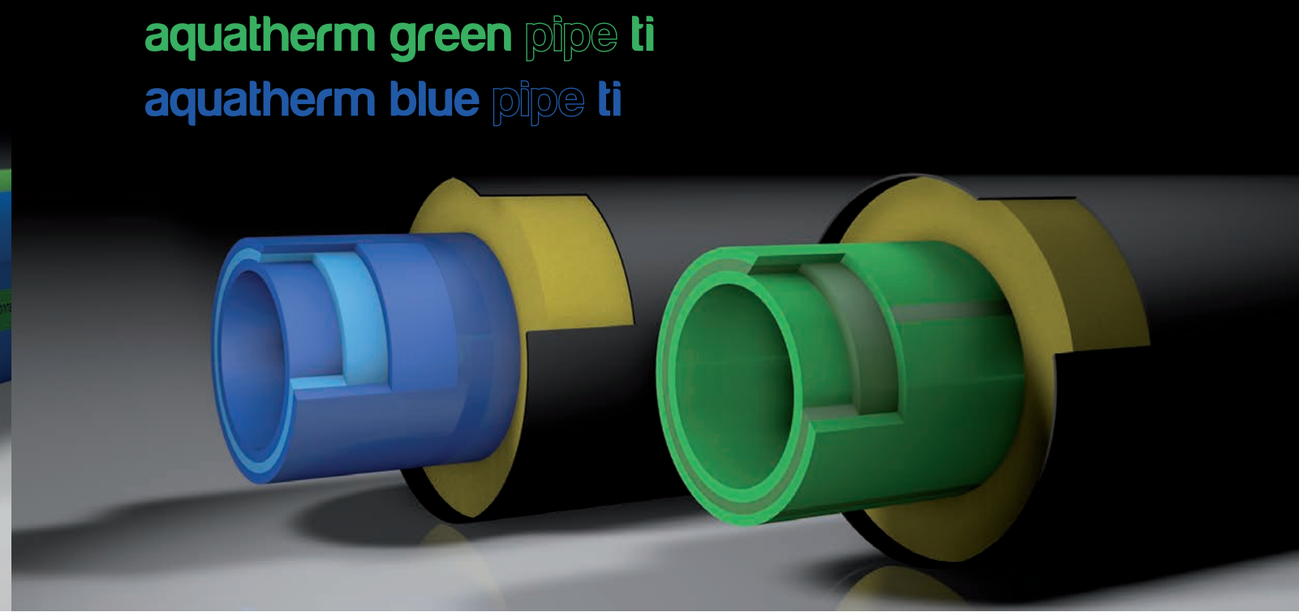
While all Aquatherm pipe can be safely buried in soil, sand or concrete, **aquatherm blue pipe** is available in larger diameters and has heat stabilization, making it a perfect match for geothermal applications. Aquatherm pipe is also suitable for directional boring.

ICE SURFACE COOLING

The ice surface cooling system is made of an ideal combination of **aquatherm blue pipe** and 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 pipe** and connected by reverse return (Tichelmann- principle). The weld-in saddle technique, developed by aquatherm, is applied for the production of manifold branches.

COMPOSITE TECHNOLOGY





MULTILAYER FASER (MF) TECHNOLOGY

To increase maximum operating temperatures and improve overall performance, Aquatherm has developed a multilayer faser-composite (MF) extrusion process.

The result is a middle layer in the pipe that is a mixture of glass fibers and Aquatherm's proprietary **fusiolen**. This layer allows the pipe to remain rigid at high temperatures and significantly reduce linear expansion.

Along with the benefit of reduced expansion, Aquatherm MF pipes are still flexible and require fewer and smaller expansion controls. They can also be buried without any expansion controls or thrust blocking, as the weight of the soil will restrict any movement. Anchors may be required where the pipe penetrates a wall or foundation.

The MF technology allows for improved systems without sacrificing any of the other advantages of the pipe.

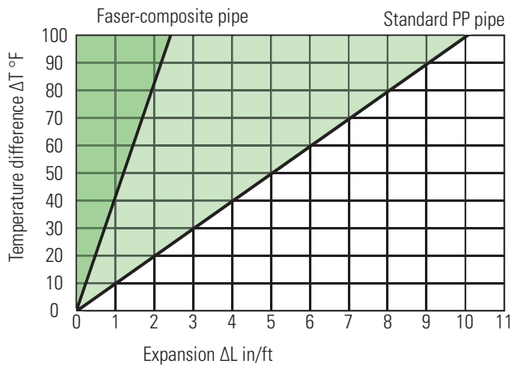
ADDITIONAL BENEFITS

In addition to reduced linear expansion, pipes made using the MF process also have the following advantages:

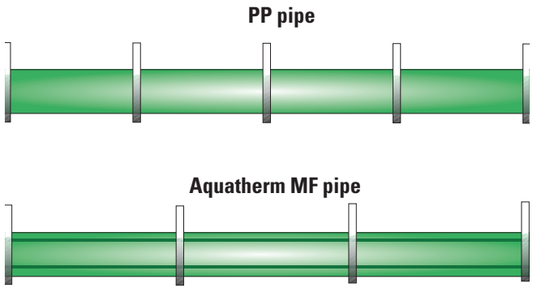
- Higher flow rate due to increased inner diameter
- Fewer supports needed
- Less weight

The low concentration of glass fibers in the pipe does not interfere with the fusion process or the recycling process, so all other aspects of installation and use remain the same as with non-MF Aquatherm pipes.

Linear expansion: PP pipe and Aquatherm MF pipe



Support spacing for PP pipe and Aquatherm MF pipe



aquatherm ti - PRE INSULATED PIPE SYSTEMS

for district cooling

One of the most energy-efficient methods of transporting cold potable water as well as chilled 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.

Medium 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 chilled, 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

Fields of application

System recommended due to its technical advantages: ●

Application of the system is suitable: ❍

	aquatherm green pipe ti	aquatherm blue pipe ti	aquatherm blue pipe ot ti
Potable water application	●		
Climate technology	❍	●	●
Chilled water technology	❍	●	●
Swimming pool technology	●	●	
Rainwater application	●	●	
Irrigation	●	●	
Application in the field of Shipbuilding	●	●	●
Industrial liquids considering the material resistance	●	●	●

aquatherm lilac pipe®

Lilac Pipe is the ideal solution for

WATER CONSERVATION AND GRAY WATER SYSTEMS

with specialized coloring and marking.

THE PERFECT SOLUTION FOR RECYCLED, RECLAIMED, & RAINWATER APPLICATIONS

Water conservation systems are being specified and installed much more frequently as building and plumbing codes are updated to encourage more responsible water use. Most codes require that these systems 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 is ideally suited for non-potable service water due to its resistance to corrosion, scaling, and microbiological growth and distinct purple coloring.

The water from reclaimed, recycled and rainwater sources can be used for flushing, irrigation, cleaning and other applications. **aquatherm lilac pipe** is available from ½" to 10" sizes and uses the same fittings as other Aquatherm systems.

aquatherm lilac pipe is designed exclusively for these applications. The piping uses the same durable, corrosion-resistant PP-R material that has been successfully used for hot and cold water distribution for over 35 years. This, combined with design modifications, coloring, marking, and independent third-party certification by NSF International, make **aquatherm lilac pipe** the ideal choice for water conservation.

IRRIGATION

For gray water applications where the system is exposed to varying water quality and the potential of freezing, **aquatherm lilac pipe** is corrosion resistant and can withstand isolated instances of freezing.

ADVANTAGES

- Uses **aquatherm green pipe** fittings
- Fast, welded connections
- Light, impact-resistant material
- Corrosion-free pipe and fittings
- Coloring prevents cross-contamination with potable lines
- Long lasting
- Fully recyclable

Fields of application

aquatherm red pipe®

Red Pipe is the ideal solution for

NON TOXIC AND MAINTENANCE FREE SPRINKLER SYSTEM

with specialized coloring and marking.

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 system is based on a fibre reinforced polypropylene pipe (faser composite pipe) produced in a multi-layer extrusion process.

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.

The production of pipes and fittings is controlled according to the highest quality standards on most modern injection moulding machines and extrusion lines. The high quality of our products is guaranteed by extensive controls of incoming goods and the production process.

The aquatherm quality management system is certified according to DIN EN ISO 14001:2004, 9001:2008 and 50001:2011.

Fields of application

FEATURES

PERMISSIBLE WORKING PRESSURE - POTABLE WATER

Fluid transported: water acc. to DIN 2000

Temperature	Years of service	aquatherm green pipe SDR 11 S / aquatherm lilac pipe SDR 11 S		aquatherm green pipe SDR 7,4 S		aquatherm green pipe SDR 6 S / aquatherm green pipe SDR 7,4 MS		aquatherm green pipe SDR 7,4 MF		aquatherm green pipe SDR 9 MF RP PPR CT	
		Permissible working pressure in bar and (psi)									
		bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)
20 °C 68 °F	1	15,0	(218)	23,8	(345)	30,0	(435)	28,6	(415)	25,0	(363)
	5	14,1	(205)	22,3	(323)	28,1	(408)	26,8	(389)	24,2	(351)
	10	13,7	(199)	21,7	(315)	27,3	(396)	26,1	(379)	23,9	(347)
	25	13,3	(193)	21,1	(306)	26,5	(384)	25,3	(367)	23,5	(341)
	50	12,9	(187)	20,4	(296)	25,7	(373)	24,5	(355)	23,1	(335)
30 °C 86 °F	1	12,8	(186)	20,2	(293)	25,5	(370)	24,3	(352)	21,7	(315)
	5	12,0	(174)	19,0	(276)	23,9	(347)	22,8	(331)	21,0	(305)
	10	11,6	(168)	18,3	(265)	23,1	(335)	22,0	(319)	20,6	(299)
	25	11,2	(162)	17,7	(257)	22,3	(323)	21,3	(309)	20,2	(293)
	50	10,9	(158)	17,3	(251)	21,8	(316)	20,7	(300)	20,0	(290)
Potable water (cold) / Potable water (warm)	40 °C 104 °F – 1			17,1	(248)	21,5	(312)	20,5	(297)	18,7	(271)
	40 °C 104 °F – 5			16,0	(232)	20,2	(293)	19,2	(278)	18,0	(261)
	40 °C 104 °F – 10			15,6	(226)	19,6	(284)	18,7	(271)	17,7	(257)
	40 °C 104 °F – 25			15,0	(218)	18,8	(273)	18,0	(261)	17,4	(252)
	40 °C 104 °F – 50			14,5	(210)	18,3	(265)	17,5	(254)	17,0	(247)
	50 °C 122 °F – 1			14,5	(210)	18,3	(265)	17,5	(254)	15,9	(231)
	50 °C 122 °F – 5			13,5	(196)	17,0	(247)	16,2	(235)	15,3	(222)
	50 °C 122 °F – 10			13,1	(190)	16,5	(239)	15,7	(228)	15,1	(219)
	50 °C 122 °F – 25			12,6	(183)	15,9	(231)	15,2	(220)	14,8	(215)
	50 °C 122 °F – 50			12,2	(177)	15,4	(223)	14,7	(213)	14,5	(210)
	60 °C 140 °F – 1			12,2	(177)	15,4	(223)	14,7	(213)	13,5	(196)
	60 °C 140 °F – 5			11,4	(165)	14,3	(207)	13,7	(199)	13,0	(189)
	60 °C 140 °F – 10			11,0	(160)	13,8	(200)	13,2	(191)	12,8	(186)
	60 °C 140 °F – 25			10,5	(152)	13,3	(193)	12,6	(183)	12,5	(181)
	60 °C 140 °F – 50			10,1	(146)	12,7	(184)	12,1	(175)	12,3	(178)
	65 °C 149 °F – 1			11,6	(168)	14,6	(212)	13,9	(202)	12,4	(180)
	65 °C 149 °F – 5			10,8	(157)	13,6	(197)	12,9	(187)	11,9	(173)
	65 °C 149 °F – 10			10,4	(151)	13,1	(190)	12,5	(181)	11,7	(170)
	65 °C 149 °F – 25			10,0	(145)	12,6	(183)	12,0	(174)	11,4	(165)
	65 °C 149 °F – 50			8,8	(128)	11,1	(161)	10,6	(154)	11,2	(162)
	70 °C 158 °F – 1			10,3	(149)	13,0	(189)	12,4	(180)	11,4	(165)
	70 °C 158 °F – 5			9,5	(138)	11,9	(173)	11,4	(165)	10,9	(158)
	70 °C 158 °F – 10			9,3	(135)	11,7	(170)	11,1	(161)	10,7	(155)
	70 °C 158 °F – 25			8,0	(116)	10,1	(146)	9,6	(139)	10,5	(152)
	70 °C 158 °F – 30			7,0	(102)	8,8	(128)	9,3	(135)	10,3	(149)
	70 °C 158 °F – 50			6,7	(97)	8,5	(123)	8,1	(117)	10,2	(148)
Faser composite pipe: high working stress at lower wall thickness and higher flow rate											

SDR = Standard Dimension Ratio (diameter/wall thickness ratio)
S = single layer
MF = multilayer faser
MF RP = multilayer faser - raised pressure (resistance)

The determination of the allowable pressures resulted from the specific conditions to which pipe system components in the drinking water domestic installation are exposed to. Limiting factors such as increased flow rates, the use of disinfectants, increased content of oxygen, etc. were considered by the use of the appropriate safety factors.
For fittings of butt-welded pipe segments a reduction factor of 0.75 (reduction of the table values by 25%) is effective.

PERMISSIBLE WORKING PRESSURE

For heating systems or closed systems considering the seasonal periods of operation - non potable water application

Heating period	Temperatur	Service life	aquatherm blue pipe SDR 11 MF& SDR 11 OT, SDR 11 S		aquatherm blue pipe SDR 17,6 MF		aquatherm green pipe SDR 7,4 MF	aquatherm green pipe SDR 7,4 MS	aquatherm green pipe SDR 9 MF RP PPR CT	
			Permissible working pressure in bar and (psi)							
constant operating temperature 70 °C / 158 °F incl. 30 days per year at	75 °C	5	9,38	(136)	5,38	(78)	14,27	(207)	12,90	(187)
		10	9,08	(132)	5,21	(76)	13,79	(200)	12,60	(183)
		25	7,82	(113)	4,48	(65)	11,74	(170)	12,20	(177)
		45	6,77	(098)	3,89	(56)	10,18	(148)	12,00	(174)
	80 °C	5	8,88	(129)	5,09	(74)	13,50	(196)	11,70	(170)
		10	8,46	(123)	4,86	(70)	12,80	(186)	11,40	(165)
		25	7,38	(107)	4,24	(61)	11,14	(162)	11,10	(161)
		42,5	6,49	(094)	3,72	(54)	9,79	(142)	10,90	(158)
	85 °C	5	8,17	(118)	4,69	(68)	12,42	(180)	10,70	(155)
		10	7,82	(113)	4,49	(65)	11,87	(172)	10,40	(151)
		25	6,70	(097)	3,85	(56)	10,14	(147)	10,10	(146)
		37,5	6,07	(088)	3,49	(51)	9,18	(133)	10,00	(145)
	90 °C	5	7,50	(109)	4,30	(62)	11,39	(165)	9,80	(142)
		10	7,19	(104)	4,13	(60)	10,94	(159)	9,50	(138)
		25	5,85	(085)	3,36	(49)	8,86	(129)	9,20	(133)
		35	5,39	(078)	3,09	(45)	8,16	(118)	9,10	(132)
constant operating temperature 70 °C / 158 °F incl. 60 days per year at	75 °C	5	9,26	(134)	5,31	(77)	14,11	(205)	12,30	(178)
		10	8,90	(129)	5,11	(74)	13,57	(197)	12,10	(175)
		25	7,62	(111)	4,37	(63)	11,58	(168)	11,70	(170)
		45	6,60	(096)	3,79	(55)	10,05	(146)	11,50	(167)
	80 °C	5	8,61	(125)	4,94	(72)	13,12	(190)	11,40	(165)
		10	8,24	(120)	4,73	(69)	12,54	(182)	11,20	(162)
		25	6,93	(101)	3,98	(58)	10,56	(153)	10,80	(157)
		40	6,18	(090)	3,55	(51)	9,41	(136)	10,70	(155)
	85 °C	5	7,91	(115)	4,54	(66)	12,03	(174)	10,40	(151)
		10	7,56	(110)	4,34	(63)	11,52	(167)	10,20	(148)
		25	6,05	(088)	3,47	(50)	9,22	(134)	9,90	(144)
		35	5,57	(081)	3,20	(46)	8,48	(123)	9,80	(142)
	90 °C	5	7,25	(105)	4,16	(60)	11,04	(160)	9,50	(138)
		10	6,40	(093)	3,67	(53)	9,76	(142)	9,30	(135)
		25	5,12	(074)	2,94	(43)	7,81	(113)	9,10	(132)
		30	4,90	(071)	2,81	(41)	7,46	(108)	9,00	(131)
constant operating temperature 70 °C / 158 °F incl. 90 days per year at	75 °C	5	9,17	(133)	5,26	(76)	14,02	(203)	12,20	(177)
		10	8,79	(127)	5,04	(73)	13,38	(194)	12,00	(174)
		25	7,45	(108)	4,27	(62)	11,33	(164)	11,60	(168)
		45	6,45	(094)	3,70	(54)	9,82	(142)	11,40	(165)
	80 °C	5	8,46	(123)	4,85	(70)	12,90	(187)	11,30	(164)
		10	8,11	(118)	4,65	(67)	12,35	(179)	11,00	(160)
		25	6,60	(096)	3,78	(55)	10,05	(146)	10,70	(155)
		37,5	5,98	(087)	3,43	(50)	9,09	(132)	10,60	(154)
	85 °C	5	7,76	(113)	4,45	(65)	11,81	(171)	10,30	(149)
		10	7,03	(102)	4,04	(59)	10,72	(155)	10,10	(146)
		25	5,63	(082)	3,23	(47)	8,58	(124)	9,80	(142)
		32,5	5,28	(077)	3,03	(44)	8,03	(116)	9,70	(141)
	90 °C	5	6,96	(101)	3,99	(58)	10,59	(154)	9,40	(136)
		10	5,88	(085)	3,37	(49)	8,96	(130)	9,20	(133)
		25	4,70	(068)	2,70	(39)	7,17	(104)	8,90	(129)

*** SDR = Standard Dimension Ratio (diameter/wall thickness ratio)**
SDR = 2 x S + 1 ≈ d/s
(S = Pipe series index from ISO 4065)

PERMISSIBLE WORKING PRESSURE

for general pressure pipe applications in permanent operation
charted application ranges on page 25 and 26

Temperature	Years of service	aquatherm blue pipe SDR 17.6 MF		aquatherm blue pipe SDR 11 MF & MF OT aquatherm lilac pipe SDR 11 S		aquatherm green pipe SDR 7.4 MF		aquatherm green pipe SDR 9 MF RP PPR CT	
		Permissible working pressure in bar and (psi)							
		bar	(psi)	bar	(psi)	bar	(psi)	bar	(psi)
10 °C	1	12,8	(186)	27,8	(403)	30,2	(438)	28,8	(418)
	5	12,0	(174)	26,2	(380)	28,2	(409)	27,9	(405)
	10	11,7	(170)	25,6	(371)	27,7	(402)	27,5	(399)
	25	11,4	(165)	24,7	(358)	26,9	(390)	27,1	(393)
	50	11,1	(161)	24,1	(350)	26,1	(379)	26,7	(387)
	100	10,8	(157)	23,5	(341)	25,2	(366)	26,3	(381)
15 °C	1	11,8	(171)	25,7	(373)	29,4	(426)	26,9	(390)
	5	11,1	(161)	24,2	(351)	27.4	(397)	26,0	(377)
	10	10,8	(157)	23,6	(342)	26,9	(390)	25,7	(373)
	25	10,5	(152)	22,8	(331)	26,1	(379)	25,2	(366)
	50	10,2	(148)	22,2	(322)	25,3	(367)	24,9	(361)
	100	9,9	(144)	21,6	(313)	24,5	(355)	24,5	(355)
20 °C	1	10,9	(158)	23,8	(345)	28,6	(415)	25,0	(363)
	5	10,3	(149)	22,3	(323)	26,8	(389)	24,2	(351)
	10	10,0	(145)	21,7	(315)	26,1	(379)	23,9	(347)
	25	9,6	(139)	21,0	(305)	25,3	(367)	23,5	(341)
	50	9,4	(136)	20,4	(296)	24,5	(355)	23,1	(335)
	100	9,1	(132)	19,9	(289)	23,7	(344)	22,8	(331)
30 °C	1	9,3	(135)	20,2	(293)	24,3	(352)	21,7	(315)
	5	8,7	(126)	18,9	(274)	22,8	(331)	20,9	(303)
	10	8,5	(123)	18,4	(267)	22,0	(319)	20,6	(299)
	25	8,2	(119)	17,8	(258)	21,3	(309)	20,2	(293)
	50	7,9	(115)	17,3	(251)	20,7	(300)	19,9	(289)
	100	7,7	(112)	16,8	(244)	20,0	(290)	19,7	(286)
40 °C	1	7,9	(115)	17,1	(248)	20,5	(297)	18,6	(270)
	5	7.4	(107)	16,0	(232)	19,2	(278)	18,0	(261)
	10	7,2	(104)	15,6	(226)	18,7	(271)	17,7	(257)
	25	6,9	(100)	15,0	(218)	18,0	(261)	17,3	(251)
	50	6,7	(97)	14,6	(212)	17,5	(254)	17,1	(248)
	100	6,5	(94)	14,1	(205)	16,8	(244)	16,8	(244)
50 °C	1	6,7	(97)	14,5	(210)	17,5	(254)	15,9	(231)
	5	6,2	(90)	13,5	(196)	16,2	(235)	15,3	(222)
	10	6,0	(87)	13,1	(190)	15,7	(228)	15,1	(219)
	25	5,8	(84)	12,6	(183)	15,2	(220)	14,7	(213)
	50	5,6	(81)	12,2	(177)	14,7	(213)	14,5	(210)
	100	5,5	(80)	11,9	(173)	14,1	(205)	14,3	(207)
60 °C	1	5,6	(81)	12,2	(177)	14,7	(213)	13,5	(196)
	5	5,2	(75)	11,4	(165)	13,7	(199)	13,0	(189)
	10	5,1	(74)	11,0	(160)	13,2	(191)	12,7	(184)
	25	4,9	(71)	10,6	(154)	12,6	(183)	12,4	(180)
	50	4,7	(68)	10,3	(149)	12,1	(175)	12,2	(177)
70 °C	1	4,7	(68)	10,3	(149)	12,4	(180)	11,3	(164)
	5	4,4	(64)	9,6	(139)	11,4	(165)	10,9	(158)
	10	4,2	(61)	9,2	(133)	11,1	(161)	10,7	(155)
	25	3,7	(54)	8,0	(116)	9,6	(139)	10,4	(151)
	50	3,1	(45)	6,8	(99)	8,1	(117)	10,2	(148)
75 °C	1	4,3	(62)	9,4	(136)	11,7	(170)	10,4	(151)
	5	4,0	(58)	8,7	(126)	10,8	(157)	9,9	(144)
	10	3,7	(54)	8,0	(116)	10,0	(145)	9,7	(141)
	25	3,0	(44)	6,4	(93)	8,0	(116)	9,5	(138)
	50	2,5	(36)	5,4	(78)	6,7	(97)	9,3	(135)
80 °C	1	4,0	(58)	8,6	(125)	10,4	(151)	9,5	(138)
	5	3,5	(51)	7,7	(112)	9,2	(133)	9,0	(131)
	10	3,0	(44)	6,5	(94)	7,8	(113)	8,9	(129)
	25	2,4	(35)	5,2	(75)	6,2	(90)	8,6	(125)
90 °C	1	3,3	(48)	7,2	(104)	8,7	(126)	7,8	(113)
	5	2,3	(33)	5,1	(74)	6,0	(87)	7.4	(107)
	10	2,0	(29)	4,3	(62)	5,1	(74)	7,3	(106)

SDR = Standard Dimension Ratio (diameter/wall thickness ratio)
S = single layer
MF = multilayer faser
MF RP = multilayer faser - raised pressure (resistance)

For fittings of butt-welded pipe segments a reduction factor of 0.75 (reduction of the table values by 25%) is effective.

CHEMICAL AND THERMAL DISINFECTION OF AQUATHERM DRINKING WATER SYSTEMS MADE OF POLYPROPYLENE

a) Chemical disinfection of the system

Contrary to the disinfection of drinking water, the disinfection of a system is a discontinuous measure, comprising a drinking water system from the area of contamination to the tapping point of the consumer. In general, a disinfection is to be applied temporarily only in case of a proven contamination.

In case of **discontinuous** disinfections, it is allowed to load aquatherm pipes and the corresponding fittings twice a year with a content of free chlorine of 50 mg/l for not more than 12 hours.

Alternatively, 150 mg/l hydrogen peroxide (H2O2) can be used for 24 hours. A temperature of 30 °C must not be exceeded during the disinfection process. The use of a disinfection process, especially with chlorinated waters can have a direct influence on the lifetime of the drinking water system. Under no circumstances should chlorine dioxide be used.

b) Chemical disinfection of drinking water

In case of **continuous** disinfection with chlorinated drinking water, it can be used with a content of free chlorine of up to 0.3 mg/l (limit according to 2001 drinking water ordinance). The maximum temperature of 70 °C should not be exceeded.

Unless required by local regulations, residual disinfection is not necessary where there is no evidence of bacterial water contamination.

Under no circumstances should chlorine dioxide be used.

Recommendation of the World Health Organization – Guidelines for Drinking-water Quality, Fourth Edition
For effective disinfection, there should be a residual concentration of free chlorine of ≥ 0.5 mg/l after at least 30 min contact time at pH < 8.0. A chlorine residual should be maintained throughout the distribution system. At the point of delivery, the minimum residual concentration of free chlorine should be 0.2 mg/l.

c) Thermal disinfection of the system

In general, a thermal disinfection according to DVGW W551 is possible. In case of the thermal disinfection for the prevention of legionella bacteria according to DVGW worksheet W 551, the water temperature will be adjusted in such a way that it amounts to 70 °C for at least 3 minutes at all points of the drinking water system. The maximum admissible limits of use regarding the service temperature and pressure are to be observed.

INTEGRATION OF OTHER SYSTEMS OR COMPONENTS WITH AQUATHERM PIPING FOR PRESSURE PIPE APPLICATIONS

When integrating Aquatherm piping systems with other systems or components not made of PP-R and PP-RP (RCT) (e.g. components not made of PP-R and PP-RP (RCT), like valves, pumps, other piping, check valves, strainers, etc), care must be taken to ensure the operating parameters for PP-R and PP-RP (RCT) won't damage the other materials or vice versa.

Be aware that even if the Aquatherm pipe is compatible with the fluid being transported, other materials in the system may not be. All parts of the system must be verified as compatible with the medium being carried before installing them. And, while Aquatherm pipe does not require treatment to protect it from corrosion, metals (ferrous and non-ferrous) in the system may be susceptible to corrosion.

Do not mix Aquatherm pipe with other piping systems in conditions that will cause the other system or components to fail.

DOMESTIC HOT WATER RECIRCULATION (DHWR)

The Domestic Hot Water Recirculating System includes all portions of the DHW system where the water is being circulated, including supply and return piping and any components other than end-of-the-line fixtures. When there is copper piping used in conjunction with PP-R and PP-RP (RCT) in a DHWR system, care should be taken to ensure the operating conditions will not cause degradation or erosion/corrosion of the copper. Aquatherm recommends following the Copper Development Association guidelines (CDA Publication A4015-14/16: The Copper Tube handbook – www.copper.org) for sizing, temperature and flow velocity in copper tubing. This will also help ensure that the copper levels in the water do not approach the regulatory action levels recommended by independent institutions (e.g. U.S. Environmental Protection Agency (EPA), World Health Organization (WHO), Federal Ministry of Justice and Consumer Protection of Germany). Sustained high levels of copper in DHWR piping can damage components within the system, even PP-R and PP-RP (RCT). **Damage caused by copper in the water resulting from erosion/corrosion or other degradation of copper components in the DHWR system will void the Aquatherm warranty.**

Accordingly, and as mandated by various regulations and codes in DHWR systems, it is considered good design and operational practice to ensure that the maximum HW-temperature within any part of the system/loop does not exceed 60°C (140°F). Some regulations and codes further restrict the temperature at any fixture to a maximum of 50°C (120°F). There are some exceptions to this, such as the process of thermal disinfection in health care facilities where temperatures of 70°C (160°F) or higher can be applied for short periods of time throughout the pipe system.

Importantly, the maximum temperature used must not exceed the rating of the pipe for the operating pressure. (See Aquatherm green pipe catalog – table: permissible working pressure potable/drinking water)

According to some regulations and codes, flow rates in a DHWR system should not exceed 0.5 m/s (1.5 ft/sec) anywhere in the system, except in some special cases where velocities up to 1 m/s (3 ft/sec) are needed to achieve proper flow temperature. The CDA Publication A4015-14/16 – The Copper Tube handbook – limits the velocity in DHWR system to similar rates.

When re-piping an existing DHWR-system originally installed in copper tubing, ensure all possible copper is replaced. If some copper remains as part of the system, strictly follow the rules and guidelines of the Copper Development Association (CDA Publication A4015-14/16: The Copper Tube Handbook) regarding flow rates and water conditions. Small amounts of copper or brass in valves and other equipment will generally not cause an issue. If the copper fails, it may degrade o-rings, gaskets, PP-R and PP-RP (RCT) and other components, shortening their service life.

When adding PP-R and PP-RP (RCT) to an existing copper system in a DHWR-application, the level of copper in the water should be tested. These levels should not exceed 0.1 mg/L (ppm). Higher levels of total copper indicate that the copper pipe is corroding/eroding due to system and/or water conditions.

To hydraulically balance a DHWR-system and ensure the required flow rate for each area of the building, it is necessary to install hydraulic-balancing-valves in every circulating loop throughout the complete system. This also maintains the flow velocity in the smaller return piping at or below the manufacturer's or CDA's recommendations. In addition to sizing the piping and pumps to the correct flow velocity, care must also be taken to avoid water hammer and excessive surge pressures. Pump systems operating with on/off cycling, or pumps over-sized for the piping, can create high pressure and fatigue the piping material. The pump total dynamic head (TDH) must also be matched to the flow requirements, piping layout and operating conditions to avoid cavitation for all components throughout the system. Cavitation can lead to excessive system noise and more importantly, can result in the erosion and degradation of the pipe surface and other components. Properly sized variable-speed (VFD) constant pressure pumping systems and pressure-sustaining valves can alleviate these issues. The pumps should be sized to operate at maximum efficiency with the lowest energy usage for the required flow rate.

The issues described here are only of concern in DHWR-systems. For domestic cold water (DCW) and mechanical (heating-cooling) systems no additional requirements or actions are necessary. In some situations, the DHWR system is also used to provide hot water to the mechanical heating system. Additional consideration and care must be given for this type of combined system, as the mechanical components may not be compatible with the more aggressive water conditions and flow velocity limitations of DHWR systems, and these components may be not suitable for potable water contact.

SYSTEM OVERVIEW

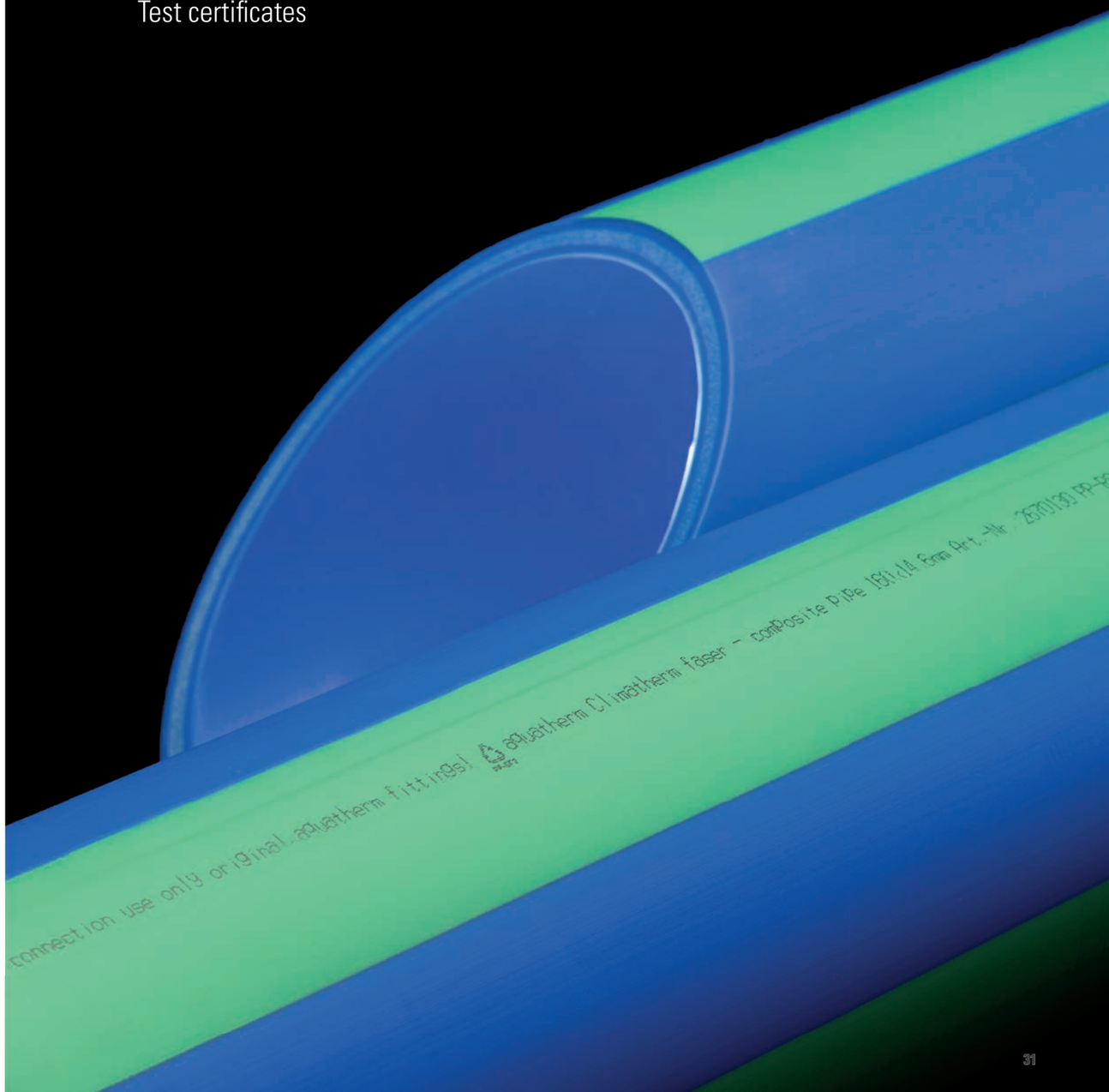
Ecological advantages

System features

Standards, regulations, and listings

Quality assurance

Test certificates



The advantages

of aquatherm pipes and fusiolen® PP-R

- **absolutely corrosion resistant**
- **resistant against chemicals**
- **high environmental compatibility**
- **high impact rate**
- **less pipe roughness**
- **heat and soundinsulating characteristics**
- **very good welding properties**
- **high heat-stabilized**
- **noticeable less insulation - recommended are 10 mm of insulation for all pipe dimensions**
- **high stability**
- **lighter in weight**
- **easy processing**
- **well-priced**
- **installation aids and fixings**

Certificates

Numerous international certificates testify to the high quality standard of the green pipes.

DVGW, SKZ, HIG (Germany)
AENOR (Spain)
ÖVGW (Austria)
WRAS (UK)
KIWA (Netherlands)
SAI-Global (Australia)
CSTB, CARSO (France)
SII (Israel)
TIN (Poland)
SITAC, KIWA, SWEDCERT (Sweden)
NSF, ICC (USA)
IIP (Italy)
BNQ (Canada)
BRANZ (New Zealand)
CERTIF (Portugal)
EMI (Hungary)
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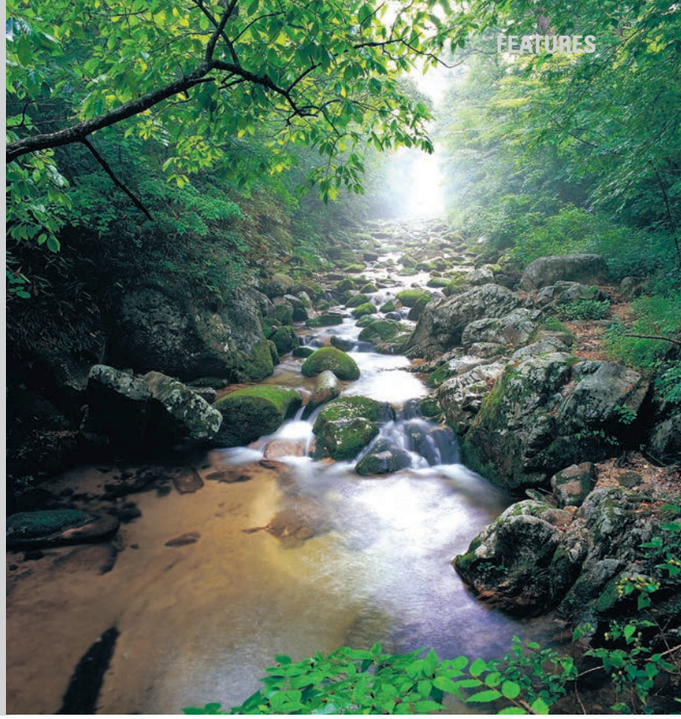


fusiolen®

OUR MATERIAL 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.

fusiolen® PP-R

All Aquatherm pipes and fittings are made with a specialized polypropylene-random (PP-R) resin, **fusiolen** PP-R.

fusiolen PP-R is both physically and chemically resistant to the abuse that can damage other materials. It is also a low friction material, protecting it from abrasion and reducing pressure loss.

The superior fusion properties of **fusiolen** PP-R result in a permanent, homogeneous connection that is chemically indistinguishable from the rest of the material.

MATERIAL BENEFITS

Polypropylene is a thermoplastic polymer that is made up of chains of carbon and hydrogen.

Polypropylene-random (PP-R) is a blend of long and short hydrocarbon chains, resulting in a material that is both tough and flexible. This allows it to resist physical impact and stress.

As a hydrophobic material, PP-R does not interact with water. It does not corrode or erode and will not leach into the water supply.

PP-R has natural insulation properties that allow it to absorb the force from pressure surges and dampen the noise created by water flow and hydraulic shock.

USE OF METAL DEACTIVATORS

By adding suitable food-approved additives the risk of amaterial damage caused by metal under extreme conditions of application is substantially reduced.

Higher long-term heat stabilization

The long-term heat stabilization has been increased to resist to the potential effects of peak temperatures within higher safety parameters.

MATERIAL PROPERTIES

Potable water is one of the most controlled commodity goods.

The environmentally friendly and hygienically enhanced potable water pipe system made from fusiolen® is physiologically and microbiologically harmless. The technical suitability of the aquatherm pipe systems has been evident worldwide for more than 30 years.

The extrapolated service life of aquatherm PP-R- pipes is more than 50 years. Peak temperatures of 100° C arising from short disruptions are unproblematic.

Permanent temperatures from 70°C up to 90° C reduce the service life of the pipe (see table “Permissible Working Pressure”, page 25-27).

Using aquatherm PP-R pipes for heating or air conditioningapplications the pressure- and temperature conditions according to table “Permissible Working Pressure” are valid.

The following table shows the operating conditions related to pressure and temperature as a basis for pipe and pipe connections.

These figures refer to potable water installations based on a theoretical service life of 50 years.

	Working pressure bar (psi)	Temperature °C	Annual working hours h/a
Cold water	0 up to 10 (145) transient	to 25 (77) *	8760
Hot water	0 up to 10 (145) transient	to 60 (140) to 85 (185)	8710 50

* Reference temperature for the creep rupture strength: 20°C (68°F)

* Reference temperature for the creep rupture strength: 20 °C (68 °F)

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® its 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.

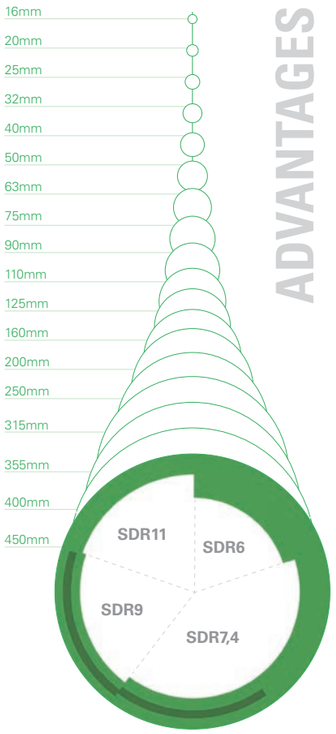
TECHNICHAL DATA SHEET

Technical properties	fusiolen PP-R (80)	fusiolen PP-R (80) faserpipe
Melt-flow index 190°C/5 kg	0.5 g/10 min	0.5 g/10 min.
Melt-flow index 230°C/2.16 kg	0.3 g/10 min	0.3 g/10 min.
Modulus of elasticity	800 N/mm²	1200 N/mm²
Yield stress	25 N/mm²	30 N/mm²
Density	0.9 g/cm³	1.0 g/cm³
Tensile strength	25 MPa	35 MPa
Inflammation temperature	430°C - 450°C	490° - 500°C
Thermal expansion coefficient	1.5 *10⁻⁴ K⁻¹	0.35 *10⁻⁴ K⁻¹
Coefficient of thermal conduction	0,15 W/mK (measured at pipe)	0,15 W/mK (measured at pipe)
Coefficient of friction in pipes	0.007	0.007
Bending radius	6 x d	
Water absorption	< 0.02%	< 0.02%
Electrical properties	**fusiolen PP-R (80)**	**fusiolen PP-R (80) Faser**
Relative permittivity	2,3 (in case of 1 MHz)	2,3 (in case of 1 MHz)
Puncture voltage	500 kV/cm	500 kV/cm
Specific resistance	> 10¹⁷ Ω cm	> 10¹⁷ Ω cm
Surface resistance	10¹⁴ Ω	10¹⁴ Ω
Dissipation coefficient	0.0002 (in case of 50 Hertz)	0.0002 (in case of 50 Hertz)

aquatherm green pipe

Pipe system made of polypropylene
for potable water supply

SDR:	6	**SDR:**	7.4	**SDR:**	11	**SDR:**	7.4 / 9	**SDR:**	7.4 / 9	**SDR:**	9
ø:	16–110 mm	**ø:**	16–63 mm	**ø:**	20–450 mm	**ø:**	20–355 mm	**ø:**	20–355 mm	**ø:**	32–315 mm
Type of pipe:		**Type of pipe:**		**Type of pipe:**		**Type of pipe:**		**Type of pipe:**		**Type of pipe:**	
Old:	Fusiotherm®	**Old:**	Fusiotherm®	**Old:**	Fusiotherm® SDR 11	**Old:**	Fusiotherm® faser composite pipe	**Old:**	Fusiotherm® faser composite pipe UV	**Old:**	Fusiotherm® ISO faser composite pipe
New:	aquatherm green pipe S	**New:**	aquatherm green pipe S	**New:**	aquatherm green pipe S SDR 11	**New:**	aquatherm green pipe MF	**New:**	aquatherm green pipe MF UV	**New:**	aquatherm green pipe MF TI



ADVANTAGES

Characteristic

aquatherm PP-R pipe systems stopping corrosion damages. All materials are corrosion resistant and - compared to metallic pipes - have less noise flow rate. aquatherm PP-R pipes are opaque - no danger of algae development.

Installation

aquatherm offers an unique and unrivalled connection process: material union by fusion. Shortest connection times are convincing:

e.g. outside diameter 20 mm = 8 sec.

aquatherm pipe connections can be hydraulic pressure tested or put into operation directly after their fusion. There are no extended waiting times.

Quality

This is reflected in national and international certificates, but above all in the satisfaction of aquatherm clients, installers and planners. For more details regarding quality and certificates see page 33-39.

Composite Technology

aquatherm developed a manufacturing method, realizing the integration of aluminium resp. a special faser mixture within the material polypropylene.

The result of this innovative technology is the singular compound of the different materials.

- The linear expansion is reduced by at least 75 % compared with standard PP- pipes
- The flow rate is increased by 20 % due to smaller wall thickness.
- High stability
- The coefficient of linear expansion is nearly identical to that of metal pipes, so that compared with usual plastic pipes the support intervals can be enlarged and the number of clamps can be reduced.
- Optimum cost-performance ratio
- Lower weight
- High impact rate
- Simply cut and weld

Important:
No peeling on using faser composite pipe.

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

Guarantee

As a statement to aquatherm quality standards the aquatherm PP-R pipe systems carries a 10 year guarantee for pipe and fittings with a product liability of 20 Mio. EUR per damage event.

Price

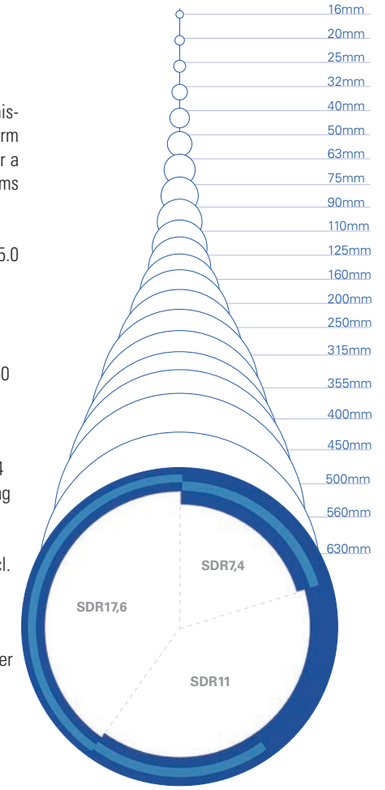
aquatherm PP-R pipe systems are perfected pipe systems of high quality material with an optimum cost-performance ratio.

Planning and software

A great number of planning documents and submission sheets facilitate the planning of the aquatherm systems. These documents give planner and installer a complete survey about the features of our pipe systems and make their work easier.

They can plan graphically with the liNear SHK trade 5.0 CAD software package for domestic technology:

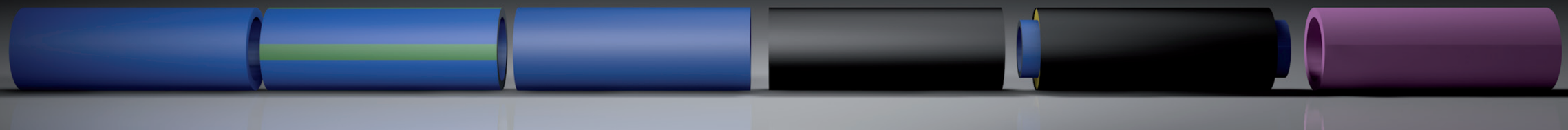
- U-value calculation incl. material list EnEV 10/2009
- Heat requirement acc. to DIN EN 12831 up to 60 rooms
- Radiator calculation for 5 products up to 60 radiators
- Under- floor heating calculation acc. to EN 1264
- Graphical supply network calculation for heating (maximum 60 radiators) and for potable water acc. to DIN 1988 (maximum 60 water points).
- Program for offer (3 titles with 50 positions) incl. UGS- and ASD- cut
- AutoCAD OEM with drawing assistant for easy construction of supply networks
- Detailed manual and program protection adapter



aquatherm blue pipe

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

SDR:	11	**SDR:**	7,4 / 11 / 17,6	**SDR:**	7,4 / 11	**SDR:**	7,4 / 11	**SDR:**	7,4 / 11 / 17,6	**SDR:**	11
ø:	20-32mm	**ø:**	20-630mm	**ø:**	20-250mm	**ø:**	20-250mm	**ø:**	32-315mm	**ø:**	20-125mm
Type of pipe:		**Type of pipe:**		**Type of pipe:**		**Type of pipe:**		**Type of pipe:**		**Type of pipe:**	
Old:	climatherm pipe	**Old:**	climatherm faser composite pipe	**Old:**	climatherm faser composite pipe OT	**Old:**	climatherm faser composite pipe UV	**Old:**	climatherm ISO faser composite pipe	**Old:**	aquatherm lilac
New:	aquatherm blue pipe S	**New:**	aquatherm blue pipe MF	**New:**	aquatherm blue pipe MF OT	**New:**	aquatherm blue pipe MF UV	**New:**	aquatherm blue pipe MF TI	**New:**	aquatherm lilac pipe S



aquatherm lilac pipe

Pipe system made of polypropylene
for reclaimed water

QUALITY ASSURANCE

The following laws, decrees, guidelines and standards have to be considered on planning and designing aquatherm PP-R pipes for potable water and heating installations:*

Planning:

TrinkwV-2000 Regulation for Potable Water

DIN 2000 Central drinking water supply - Guidelines regarding requirements for drinking water, planning, construction,operation and maintenance of plants

EnEV Decree for Energy Saving

DIN 1988 Standard for Potable Water Installations

ISO 10508Plastic pipe systems for hot and cold water installation – Guideline for classification and dimensioning

All provided pipe-systems correspond to the technical conditions of the application classes acc. to ISO 10508 for the field of potabel water and heating.

aquatherm green pipe for the classes 1, 2 (potable water), aquatherm blue pipe for the classes 4 and 5 (heating). For the application of the classification system (acc. to ISO 10508) the national regulations and the manufacturer´s instructions must be considered.

DIN 4109 Standard for the Elimination of Noise in the Field of Structural Engineering

DIN 18381 Installation of Gas, Water and VOB Part C Sewage Pipes inside Buildings

DIN 16928 Pipe Connections, Fittings, Installation

DVS 2207 Welding of Thermoplastics

DVS 2208 Welding Machines and Devices for Thermoplastics

aquatherm Technical Information

Systemspecific standards:
General quality requirements, dimensions

DIN 8077 Polypropylene (PP) Pipes, Dimensions

DIN 8078 Polypropylene (PP) Pipes, General Quality Requirements

DIN 16962ff Pipe Joint Assemblies and Fittings for Polypropylene Pressure Pipes

DIN EN ISO 15874ff Plastic pipe systems for hot and cold water installation; polypropylene

DVGW- Working sheets

SKZ- Guidelines

DIN EN ISO 9000 ff.

Systemspecific standards: Hygiene

BfR Federal Institute for risk assignment

Health assessment of plastics and non-metallic materials within the framework of the law for foods and commodity goods for potable water applications

DVGW-working sheet W 270

Increase of Microorganism on Materials. Used for Potable Water Applications – Test and Evaluation

BS 6920

“Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of water.”

Local regulations and codes of practice must be observed. The same goes for regulations regarding the use of chemicals.

*(Additional regional decrees and recommendations are disregarded.)

AQUATHERM PE-RT

Working Conditions Application
Classes accordeing to ISO 10508

The European standart CEN/ISO 10508 is an abbreviated edition of the European standard ISO 10508.
In contrast ISO 10508, CEN no longer contains regulations for class 3. A service life of 50 years is assumed for each class from CEN / ISO 10508 table 1

Class	Toper °C	Time at Toper including 1,5 SF years	Toper °C	Time at Toper including 1,3 SF years	Toper °C	Time at Toper Hours	Typical application
1	60	49	80	1	95	100	Sanitary (60°C) (all countrys)
2	70	49	80	1	95	100	Sanitary (70°C) (all countrys) Germany Netherlands
3	40 + 50	20 + 25	70	2,5	100	100	low temperature
4	60 + 95	25 + 10	90	1	100	100	high temperature

Connection Technique
aquatherm grey pipe sliding Technique, clamping ring screwing

Standards and guidelines / in-house inspection / quality assurance

The dimensioning, fabrication and quality control of pipes is effected according to the following standards:

• DIN “4721” Plastic pipe system for hot water underfloor heating and radiator connection; polyethylene of increased temperature stability

• DIN”4726” Hot water underfloor heating and radiator connections pipe Systems made of plastic materials

• “DIN 16833” Pipe made of increased temperature stability, general quality requirements of tests

Suitability for drinking Water: the material corresponds to the following guidelines:

• “DVGW worksheet W 27” propagation of microbes on materials for the field of drinking Water-test and evaluation

• SKZ Würzburg
• BRL 5602 Kiwa
• BRL 5607 Kiwa

• KTW recommendations of BGV V

• British standart BS6920 Sutability of non metallic products for use in contact with Water intended for human consumption with regard to their effect on the quality of water

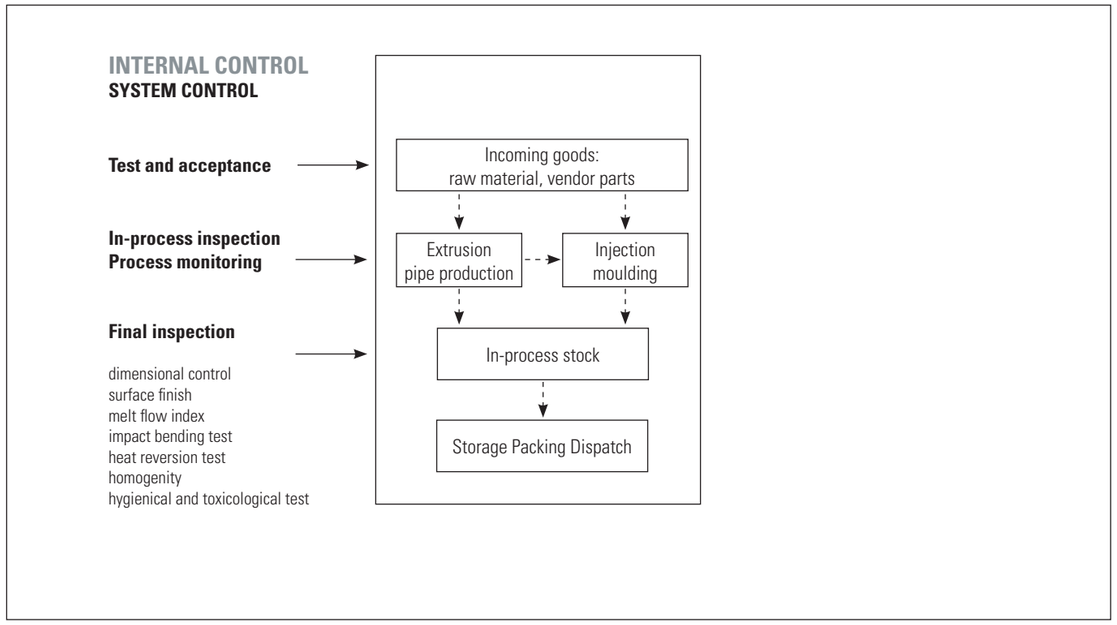
• ANSI/NSF - Standart 61 (drinking water system components health effects) Comprises a test of the products regarding the release of noxious substances (such as heavy metals) to the drinking water

COMPLIANCE WITH THE SYSTEM STANDARD

Various national and international independent authorities and institutions confirm aquatherm's quality standard

B 5174

AQUATHERM QUALITY MANAGEMENT SYSTEM



In addition to the permanent internal quality control, an external control is made by i.e. SKZ, SAI, TGM, Hygieneinstitut.

SYSTEM CONTROL

The production of a quality controlled pipe system demands the supervision, regulation and control of all work operations. All results and processes have to be documented.

This requires

- test and acceptance of incoming goods
- process control
- in-process inspection and test
- final inspection and test

Relevant regulations for the quality control of potable water pipe systems are:

- DIN-guidelines
- DVGW-working sheets
- Supervisory Regulations of the SKZ (Süddeutsches Kunststoff-Zentrum)

These standards and guidelines detail the minimum requirements for internal control.

Conformance to the standards is verified by independent institutes in form of internal audits and laboratory tests.

aquatherm has many years of experience in extrusion and injection moulding and is the market leader and pioneer in the manufacture of polypropylene pipe systems.

This experience is reflected in internal quality standards and laid down procedures, which are taken strongest note of and are documented by the constant quality of our products.

Internal control

Trained and qualified employees and a modern equipped laboratory ensure that all tests are carried out and regulations are complied with in accordance with the quality control policy, which includes

- control of inspection, measuring and test equipment process and production control
- receiving inspection test
- in-process inspection
- final inspection

All internal quality controls are documented and recorded in acc. with the quality control policy.

QUALITY ASSURANCE

Test and acceptance of incoming goods

All incoming goods are subject to a test. This ensures that incoming products conform to specified requirements. Goods, which have not been tested are not released for production.

In-process inspection and test

The quality plan requires that tests and inspections are carried out before and during production. At the start of production all quality relevant data are checked by the quality assurance department. Preproduction samples are tested by the laboratory technicians for

- surface finish
- dimensional accuracy of the test samples
- data from extrusion and injection moulding machines

Due to the many international standards & Approvals awarded for Aquatherm systems, certain procedures must be followed in maintaining these standards & Approvals. However these standards to do not indicate the maximum operating conditions of the system and are sometimes specific to a certain region or country. The actual system classification is found in our pressure chart on pages 25 – 27.

The PN - classification isn't used anymore in the relevant German and International standards for plastic pipes. The PN – classification has already been taken out of the 1999 issue of DIN 8077 / 8078.

Pipes are designated by their SDR; Standard Dimension Ratio (as given in later issues of DIN 8077/78; see attachment), is the outside diameter divided by the wall thickness.

The international standard ISO 15874 also uses the SDR-classification and not the PN designation.

The goods will be released for production only if optimal test results are achieved. These tests are carried out at the beginning of each production series to ensure perfect system quality.

Process control

Ultrasonic measurement and process data recording in the field of extrusion are only one example of the extensive quality control process.

This equipment enables constant observation and control of production.

Ultrasonics automatically measure and report any deviations in tolerance to the cutting device on the extrusion machine so that the sizing plant automatically isolates a substandard product. This ensures that only perfect quality products are packed and stored.

All data received during production is analyzed in detail.

Final inspection and test

The quality plan requires that inspections and tests are carried out on all finished products. The results are documented in test reports. Finished products are only released to stock when all tests and inspections conform to the prescribed procedures and specifications.

The final inspection and test includes time lapse test procedures. This enables statements regarding the usability of the products in their later field of application.

These tests are the method for quality assurance during production and for design tests. This is to discover and remove production weaknesses. The results document the system quality and optimize the manufacturing processes. The final inspection and test covers the following test procedures:

- Dimensional control
- Surface finish
- Measurement of the melt flow index
- Impact bending test
- Heat reversion test
- Homogeneity of the material
- Internal pressure test

In addition to the tests mentioned above, daily hygiene tests in accordance with KTW / DVGW Guidelines arecarried out regularly in the company's own sensoryanalysis laboratory.


DVGW-Baumusterprüfzertifikat
DVGW type examination certificate
DAT-ZE-009/96-02
DVGW-Baumusterprüfzertifikat
DVGW type examination certificate
DW-8501AU2224
DAT-ZE-009/96-02
NSF International
RECOGNIZES
AQUATHERM GMBH
GERMANY
AS COMPLYING WITH NSF/ANSI 14.
PRODUCTS APPEARING IN THE NSF OFFICIAL LISTING ARE AUTHORIZED TO BEAR THE NSF MARK.
NSF International
RECOGNIZES
AQUATHERM KUNSTSTOFF EXTRUSIONS- UND SPRITZGIEßTECHNIK
GERMANY
AS COMPLYING WITH NSF/ANSI 51.
PRODUCTS APPEARING IN THE NSF OFFICIAL LISTING ARE AUTHORIZED TO BEAR THE NSF MARK.
WRAS
Water Regulations Advisory Scheme
WATER REGULATIONS ADVISORY SCHEME (WRAS) MATERIAL APPROVAL
POLYPROPYLENE - COMPONENTS 5260
APPROVAL NUMBER: 0811530
APPROVAL HOLDER: AQUATHERM GMBH
WRAS MATERIAL APPROVAL – MATERIALS WHICH HAVE PASSED FULL TESTS OF EFFECT ON WATER QUALITY

EXTERNAL CONTROL

External supervision consists of tests of a defined scope and in defined intervals. The respective supervising institutions appoint authorized test organizations to carry out these tests.

The external supervision includes external tests of the products and

a) internal audit of aquatherm's quality assurance system and test procedures,

b) calibration of the test equipment and

c) hygienic and toxicity tests.

The results of the supervisory visits as well as external tests made on pipe and fitting samples are confirmed to aquatherm in test certificates.

In Germany, the external supervision of the aquatherm green-pipe system is carried out by the

- SKZ (Süddeutsches Kunststoffzentrum Würzburg)
- Institute for Hygiene, Gelsenkirchen (Hygieneinstitut Gelsenkirchen)

who are authorized by the DVGW (German Institute for Gas and Water) as controlling organization. The external supervision for certificates from abroad is carried out in a similar way.

Storage / packing / dispatch

Upon successful release the products are stored in suitable warehouses.

Internal instructions control the method of packing, storage and dispatch of the products. The warehouse staff is responsible for control of the stored product.

INSTALLATION PRINCIPLES

Heat fusion

Weld in saddle technology

Electro Fusion

Butt Welding

Flange Connections

Linear expansion

Expansion controls

Supporting the pipe

Fusion outlets

PART A: ASSEMBLY OF WELDING TOOLS

The professional processing of aquatherm PP-R - medium pipes is made by the following tools for the connection of insulated pipes and fittings by socket welding or by butt-welding.

IMPORTANT!

Only use the original aquatherm welding devices and aquatherm welding tools, except devices and tools which are especially approved by aquatherm.

1. **aquatherm** - manual welding device (800 W) without welding tools (Art.-No. 50337) for medium pipes of dimension 16 – 63 mm

2. **aquatherm** - manual welding device (1400W) without welding tools (Art.-No. 50341) for medium pipes of dimension 50 – 125 mm

3. **aquatherm** - welding tools for manual welding devices

Art.-No. 50206	16 mm
Art.-No. 50208	20 mm
Art.-No. 50210	25 mm
Art.-No. 50212	32 mm
Art.-No. 50214	40 mm
Art.-No. 50216	50 mm
Art.-No. 50218	63 mm
Art.-No. 50220	75 mm
Art.-No. 50222	90 mm
Art.-No. 50224	110 mm
Art.-No. 50226	125 mm

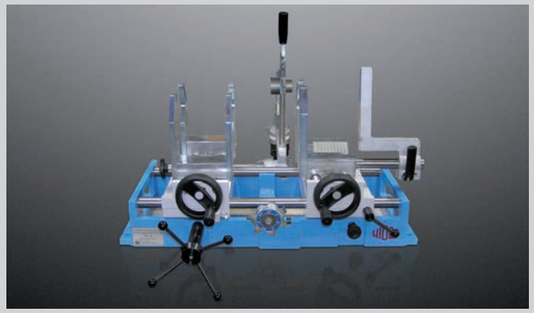
4. **aquatherm** welding machine (1400W) incl. welding tools 50 – 125 mm (Art.-No. 50148) for medium pipes of dimension 50 – 125 mm

5. **aquatherm** - butt-welding-machines for medium pipes of dimension 160 – 630 mm

6. **aquatherm** - electrical welding jig Art.-No. 50159 for medium pipes of dimension 63 -125 mm

Manual welding device 800W with welding tools 16 – 63 mm

Manual welding device 1400W with welding tools 50 – 125 mm



Welding machine

Butt-welding machine type Light and accessories

Electrical welding jig

CHECKING OF DEVICES AND TOOLS

Heating up phase

1. During the heating up phase tighten the welding tools carefully with the Allan key. Take care that the tools completely contact the heating plate. Never use pliers or any other unsuitable tools, as this will damage the coating of the welding tools.

2. All used devices and tools must have reached the necessary operating temperature of 260 °C. This requires acc. to "Fusion Part A, item 8" a separate test, which is indispensable (DVS - Welding Guidelines):

Suitable measuring instruments have to measure a temperature of up to 350° C with a high accuracy.

ATTENTION:

First welding - soonest 5 minutes after reaching of the welding temperature. DVS 2207, Part 11.

Handling

1. A tool change on a heated device requires another check of the welding temperature at the new tool (after its heating up).

2. If the device has been unplugged, e.g. during longer breaks, the heating up process, has to be restarted.

3. After use unplug the welding device and let it cool down. Water must never be used to cool the welding device, as this would destroy the heating resistances.

4. Protect aquatherm welding devices and tools against impurities. Burnt particles may lead to an incorrect fusion. The tools may be cleaned with aquatherm cleaning cloths, Art.-No.50193.

Always keep the welding tools dry.

5. After welding, do not lay the device on the Teflon coated tool, but put it down in the provided supporting stand.

6. For a perfect fusion, damaged or dirty welding tools must be replaced, as only impeccable tools guarantee a perfect connection.

7. Never attempt to open or repair a defective device. Return the defective device for repair.

NOTE:
aquatherm recommends the original aquatherm temperature measuring device art.-no. 50188

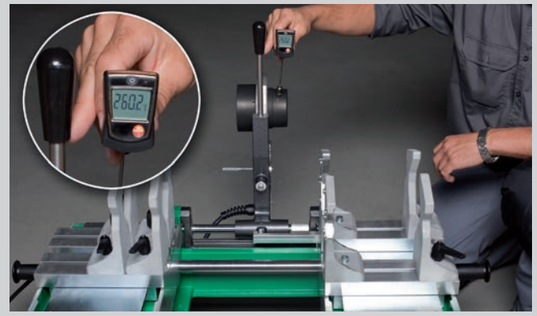
PREPARATION FOR THE FUSION

1. Cut the pipe at right angles to the pipe axis. Only use aquatherm pipe cutters or other suitable cutting pliers. Take care that the pipe axis is free from burrs or cutting debris and remove where necessary.

2. Mark the welding depth at the end of the pipe with the enclosed pencil and template.

3. Mark the desired position of the fitting on the pipe and/or fitting. The markings on the fitting and the uninterrupted line on the pipe may be used as a guide.

Measurement of temperature at the aquatherm manual welding device (800W)



Measurement of temperature at the aquatherm welding machine

Measurement of temperature at the aquatherm butt-welding machine

Cutting of the pipe

Marking of the welding depth

HEATING OF PIPE AND FITTING

Heating of pipe and fitting

4. Push the end of the pipe, without turning, up to the marked welding depth into the welding tool.

   It is essential to observe the above mentioned heating times.

   Pipes and fittings of the dimensions Ø 75 to 125 mm can only be welded with welding device Art.-No. 50341 (or with machine Art.-No. 50148). On using the aquatherm welding machine Art.-No. 50148 a separate operating instruction has to be observed.

ATTENTION:

The heating time starts, when pipe and fitting have been pushed to the correct welding depth on the welding tool. Not before!

SETTING AND ALIGNMENT

5. After the required heating time quickly remove pipe and fitting from the welding tools. Joint them immediately, and without turning, until the marked welding depth is covered by the PP-bead from the fitting.

ATTENTION:

Do not push the pipe too far into the fitting, as this would reduce the bore and in an extreme case will close the pipe.

6. The joint elements have to be fixed during the specified assembly time. Use this time to correct the connection. Correction is restricted to the alignment of pipe and fitting. Never turn the elements or align the connection after the processing time.

7. After the required cooling time the fused joint is ready for use.

   The result of the fusion of pipe and fitting is a permanent material joining of the system elements. Connection technique with security for a life-time.

The fusion is subject to the following data

Pipe external-Ø	Welding depth	Heating time		Welding time	Cooling time
mm	mm	sec. DVS	sec. AQE*	sec.	min.
16	13,0	5	8	4	2
20	14,0	5	8	4	2
25	15,0	7	11	4	2
32	16,5	8	12	6	4
40	18,0	12	18	6	4
50	20,0	18	27	6	4
63	24,0	24	36	8	6
75	26,0	30	45	8	8
90	29,0	40	60	8	8
110	32,5	50	75	10	8
125	40,0	60	90	10	8

Heating-up of pipe and fitting

Joining, fixing and…

…aligning

The result: a permanent connection!

*heating times recommended by aquatherm at ambient temperatures below + 5 °C

Dimension 160 - 630 mm:

The dimension 160 - 630 mm are joined by butt-welding.

Detailed information page 49 + 50.

The General Guidelines for Heated Tool Socket Welding acc. to DVS 2207 Part 11 are applied hereupon.

WELD-IN SADDLES

aquatherm weld-in saddles are available for pipe outer diameter of 40 - 630 mm.

Weld in saddles are used for

- branch connections in existing installations
- the substitution of a reduction-tee
- branch connections in risers
- sensor wells, etc.

The maximum sensor well diameter is specified in the table on page 57.

1. Before starting the welding process, check whether the aquatherm welding devices and tools comply with the requirements of “Fusion Part A”.

2. The first step is to drill through the pipe wall at the intended outlet point by using the aquatherm drill (Art.-No. 50940-50956).

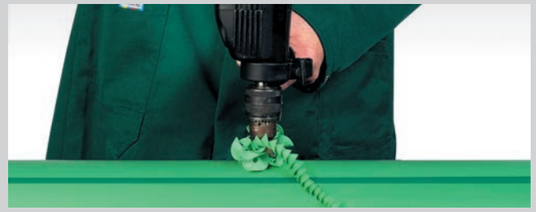
3. The welding device/saddle welding tool must have reached the required operating temperature of 260 °C (check with reference to “Fusion Part B, item 2”).

4. The welding surfaces have to be clean and dry.

5. Insert the heating tool on the concave side of the weld in saddle tool into the hole drilled in the pipe wall until the tool is completely in contact with the outer wall of the pipe. Next the weld-in saddle tool is inserted into the heating sleeve until the saddle surface is up against the convex side of the welding tool. The heating time of the elements is generally 30 seconds.

6. After the welding tool has been removed, the weld-in saddle tool is immediately inserted into the heated, drilled hole. Then the weld-in saddle should be pressed on the pipe for about 15 seconds. After being allowed to cool for 10 minutes the connection can be exposed to its full loading. The appropriate branch pipe is fitted into the sleeve on the aquatherm weld-in saddle using conventional fusion technology.

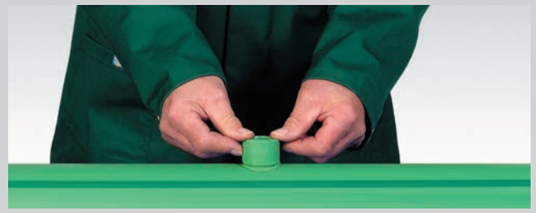
By fusing the weld-in saddle with the pipe outer surface and the pipe inner wall the connection reaches highest stability.



Drilling through the pipe wall

The welding tool is inserted into the pipe wall …

…heating-up of the elements



Joining

Ready!

ELECTROFUSION DEVICE

Fusion

The aquatherm electrofusion device was specially developed for electrofusion sockets from Ø 20 - 250 mm.

The fusion of 160-250 mm aquatherm green and aquatherm blue -faser composite pipes UV- resistant with the electrofusion socket Art.-No. 17230 is not possible.

Technical information:

supply voltage: 230 V (nominal voltage)
nominal capacity: 2.800 VA, 80 % ED
rated frequency: 50 Hz - 60 Hz
protection class: IP 54

1. General and inspection

Cleanliness is - besides correct workmanship - the most important precondition for a correct fusion. For keeping the sockets clean do not unwrap them before processing.

The pipe surface must also be clean and undamaged. Deformed pipe ends must be cut off.

All parts of the system to be fused as well the temperature sensors shall have the same temperature (e.g. sun radiation or unadapted storing may cause differences in temperature!) within the acceptable range of temperature (e.g. +5 °C to 40 °C according to DVS 2207).

2. Preparation

Follow carefully the order of working steps!

Preparation is one of the most important steps of the electrofusion process!

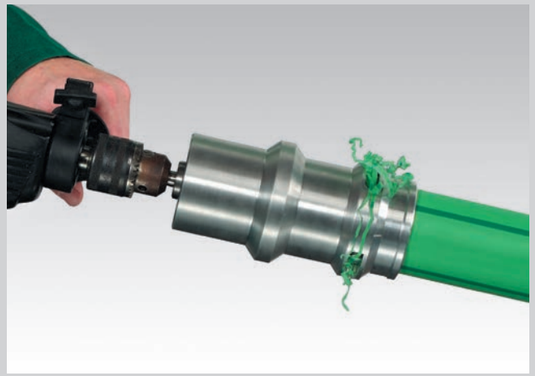
a. Cut the ends of the pipes rectangularly and deburr them thoroughly

b. Clean and dry the ends of the pipes at the necessary length

c. Mark the depth of aquatherm electro- fusion- socket on the end of the pipe

aquatherm electrofusion device Ø 20-250 mm


aquatherm electrofusion socket


aquatherm peeling tool (Art.-No. 50558-70, up to 75 mm)
(from 90-160 mm: Art.-No. 50572-50592 (without picture))

Welding depth up to 250 mm													
ø	20	25	32	40	50	63	75	90	110	125	160	200	250
ET	35,0	39,0	40,0	46,0	51,0	59,0	65,0	72,5	80,0	86,0	93,0	105,0	125,0

BUTT-WELDING OF PIPE DIMENSION
160 - 630 mm

The following aquatherm - pipes series are available:

aquatherm green pipe SDR 11 S for cold water

aquatherm green pipe SDR 7.4 MF faser- composite pipe

aquatherm green pipe SDR 9 MF faser- composite pipe

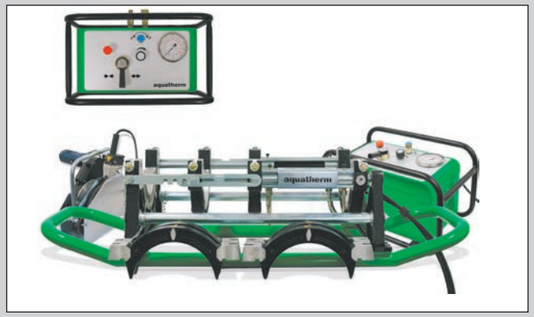
aquatherm blue pipe SDR 11 MF faser-composite pipe

aquatherm blue pipe SDR 17,6 MF faser- composite pipe

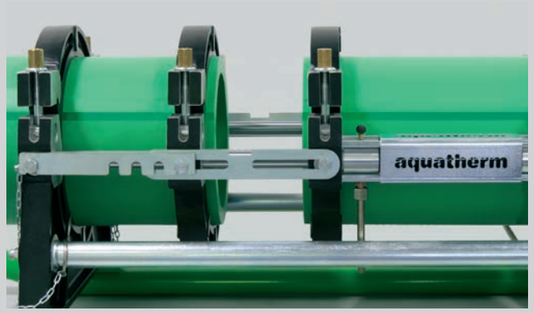
Pipes and fittings are fused, as explained below, by butt welding:

1. Protect your place of work from weather influences
2. Check, if welding machine works properly and heat it up
3. Cut pipes into required length
4. Plastic pipes are aligned and fixed by means of the clamping elements
5. Use the milling machine for planing the pipe end to be plane-parallel
6. Remove the debris and clean the pipe ends with methylated spirit
7. Check if pipes match (tolerance: max. 0.1 x wall thickness)
8. Check width of gap between the two pipes to be welded (tolerance: max. 0.5 mm)
9. Check the temperature of the heating element (210° C +/- 10° C)
10. Clean the heating element

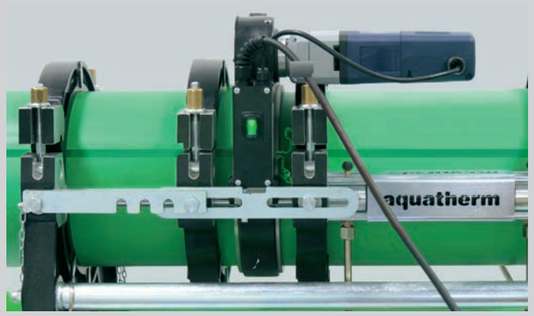
Before welding, pipes are cut into the required lengths



Check performance of the welding machine and heat it up



The parts to be welded are fixed and aligned respectively, the milling machine is used



BUTT-WELDING OF PIPE DIMENSION

160 - 630 mm

11. After the heating element has been positioned, the pipes are pushed onto the heating plate with a defined adjusting pressure.

12. After reaching the specified bead height (see tablet) the pressure is reduced. This process marks the beginning of the heating time. This time is for heating up the pipe ends up to the right welding temperature.

Specified bead height in mm:

	SDR 7,4	SDR 11	SDR 9	SDR 17,6
160 mm	1,5	1,0	1,0	1,0
200 mm	2,0	1,0	1,5	1,0
250 mm	2,0	1,5	2,0	1,0
315 mm	-	2,0	2,0	1,0
355 mm	-	2,0	2,5	1,5
400 mm	-	2,0	-	1,5
450 mm	-	2,5	-	1,5
500 mm	-		-	2,0
560 mm	-		-	2,0
630 mm	-		-	2,0

13. When heating time has expired, divide the machine slide, remove heating element quickly and join the pipes (by putting both parts of the slide together).

14. The pipes are fused with the required welding pressure and cooled down under pressure.

15. The welded connection can be unclamped - the welding process is finished.

Additionally please follow the instructions given in the operating manual of the welding machine and observe guideline DVS 2207, part 11.

Important Note

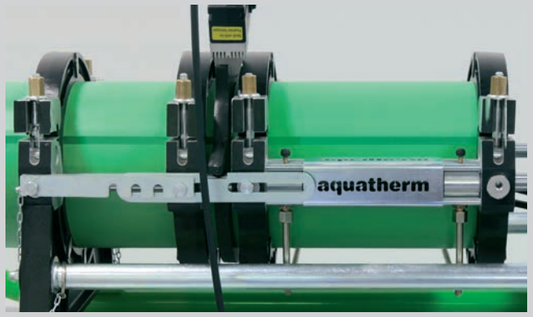
1. The welding machines have to be suitable for the welding of pipes with a diameter/wall thickness ratio of up to SDR 7.4

aquatherm recommends the following manufacturers of welding machines for butt welding:

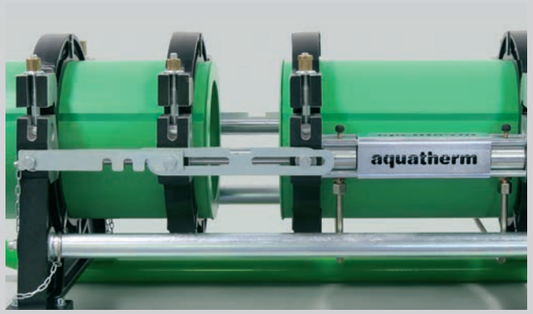
Company Ritmo
Company Rothenberger
Company Widos

2. For hydraulically operated welding machines, the real manometer pressure has to be calculated in consideration of the hydraulic piston area.

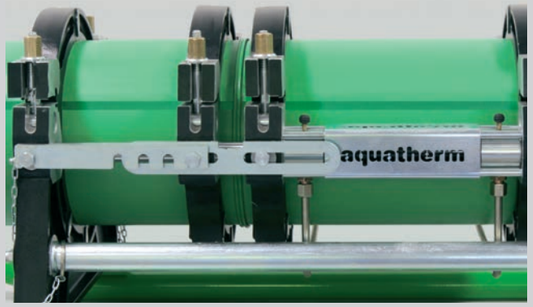
This value can be taken from the respective operating manuals.



Positioning of heating element



Divide the machine slide, remove heating element



Join the pipes, cool down under pressure

Unclamp and work on...

FLANGE CONNECTIONS

THE FOLLOWING MUST BE OBSERVED IN THE USE OF FLANGE CONNECTIONS:

Flange adapter respectively the sealing surfaces must always be aligned parallel to each other. A subsequent tightening of the flange connection after the welding process must be avoided. It is important to ensure that the flange faces are clean and undamaged.

The screw length should be selected so that the screw thread is as flush as possible, maximum two threads from the nut. To distribute the force of the screw head and the nut over a larger area, washers are used. Screws, nuts and washers must be clean and undamaged.

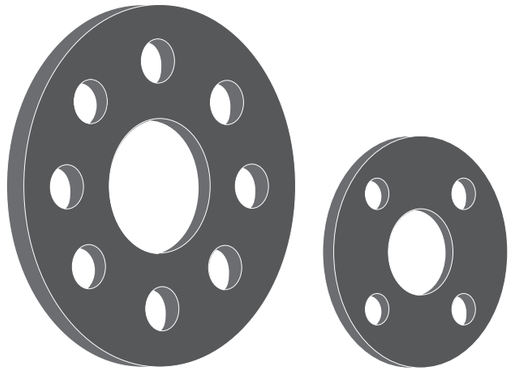
In order to achieve proper force distribution (surface pressure) acting on the seal, note the following:

- Screw joints must be tightened diagonally and evenly
- Torque information on the individual flanges must be observed (see table)

For flange connections, exposed to a mutual load, take care that they are checked as part of the maintenance and retightened, if necessary.

TORQUE FLANGE according to manufacturere´s instructions

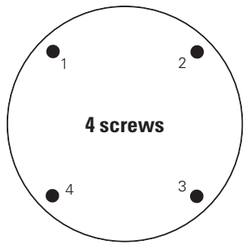
Art.-No.	Dimension	DN specification	Nm
15712	32mm	25	15
15714	40mm	32	20
15716	50mm	40	30
15718	63mm	50	35
15720	75mm	65	40
15722	90mm	80	40
15724	110mm	ohne	50
15726	125mm	100	50
15730	160mm	125	60
15734	200mm	150	75
15738	250mm	200	95
15742	315mm	250	100
15744	355mm	300	100
15746	400mm	350	244-366
15748	450mm	400	271-407
15750	500mm	450	271-407
15752	560mm	500	353-529
15754	630mm	500	393-590

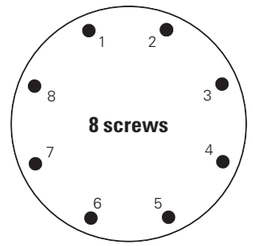


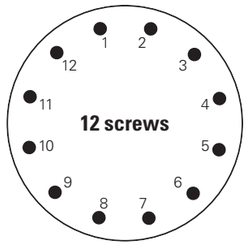
TIGHTENING SEQUENCE

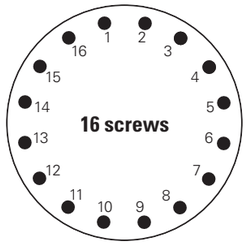
Number of screws	Criss-Cross Pattern Tightening Sequence
4	1 - 3 - 2 - 4
8	1 - 5 - 3 - 7 - 2 - 6 - 4 - 8
12	1 - 7 - 4 - 10 - 2 - 8 - 5 - 11 - 3 - 9 - 6 - 12
16	1 - 9 - 5 - 13 - 3 - 11 - 7 - 15 - 2 - 10 - 6 - 14 - 4 - 12 - 8 - 16
20	1 - 11 - 6 - 16 - 3 - 13 - 8 - 18 - 5 - 15 - 10 - 20 - 4 - 14 - 9 - 19 - 7 - 17 - 2 - 12

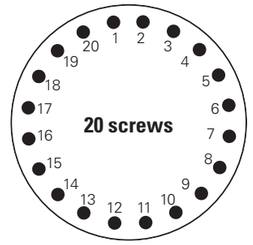
Following the table, tighten the given screw number to the desired torque value for the given round of tightening.











OPEN INSTALLATION / CALCULATION OF THE LINEAR EXPANSION

Open installation

In case of open installed pipes (e.g. in the basement), excellent optical characteristics and form stability are important. aquatherm pipes for cold and hot water and heating plants make this possible. The coefficient (a) of linear expansion of aquatherm composite pipes is only

$\alpha_{\text{green pipe MS}}$ = 0,030 mm / mK
$\alpha_{\text{green pipe MF}}$ = 0,035 mm / mK

and therefore nearly identical with the linear expansion of metal pipes.

The coefficient of linear expansion of aquatherm pipes without stabilizing components is

$\alpha_{\text{green pipe}}$ = 0,150 mm/mK

aquatherm faser composite pipes must have enough space to expand (see page 52 - 54). An expansion control must is required for long and straight faser composite pipes (over 40 m).

aquatherm pipes without the stabilizing compound should have the expansion control after 10 m straight pipelines. Risers of composite pipes may be installed rigidly without expansion compensation. The following formula, calculation examples, data-tables and diagrams help to determine the linear expansion. The difference between working temperature and maximum or minimum installation temperature is essential for the calculation of linear expansion.

Given and required values

Symbol	Meaning	Value	Measuring unit
ΔL	Linear expansion	?	[mm]
α 2	Coefficient of linear expansion aquatherm faser composite pipe	0,035	mm/mK
α 3	Linear expansion coefficient	0,15	mm/mK
L	Pipe length	25,0	[m]
T_B	Working temperature	60	°C
T_M	Installation temperature	20	°C
ΔT	Temperature difference between working and installation temperature ($DT = T_W - T_M$)	40	K

The linear expansion ΔL is calculated according to the following formula:

DL = a x L x DT

Material:
aquatherm green pipe MF- faser composite pipe (a = 0.035 mm/mK)

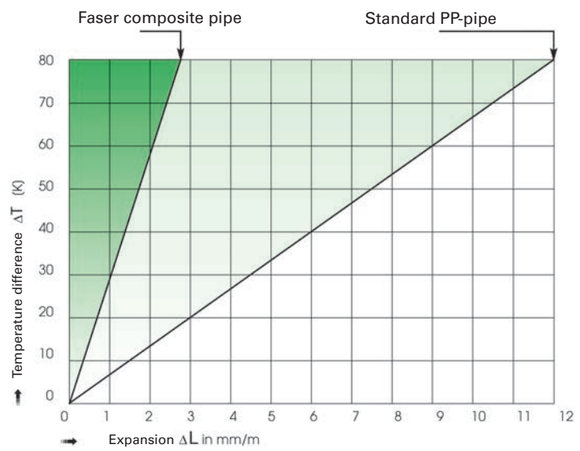
ΔL = 0,035 mm/mK x 25,0 m x 40 K

ΔL = 35,0 mm

Calculation of the linear expansion

Linear expansion comparison:

faser composite-
to standard PP- pipe

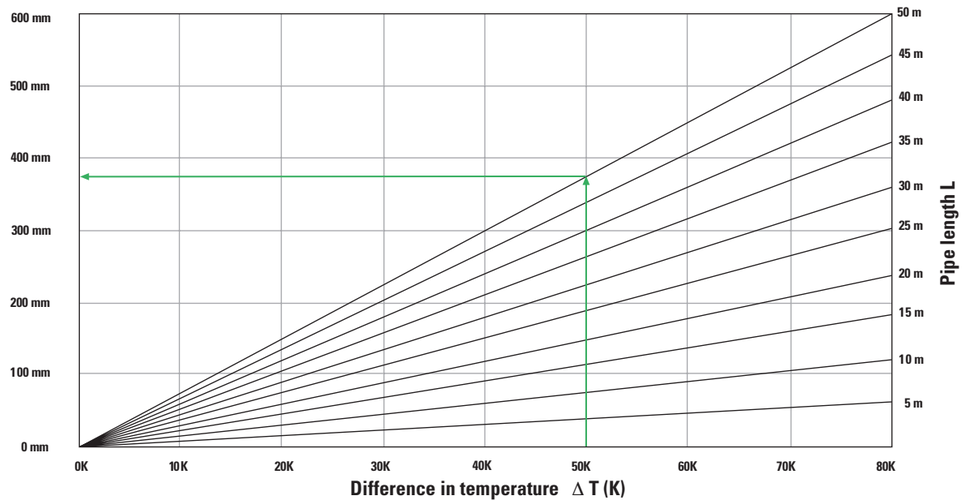


aquatherm green pipe & aquatherm blue pipe
(without faser)

The linear expansion, described on the preceding pages, can be taken from the following tables and graphs.

Linear expansion ΔL in [mm]: green- and blue pipe - α = 0,150 mm/mK

Pipe length	Difference in temperature $\Delta T = T_{\text{operating temperature}} - T_{\text{installation temperature}}$							
	10 K	20 K	30 K	40 K	50 K	60 K	70 K	80 K
	Linear expansion ΔL (mm)							
5 m	8	15	23	30	38	45	53	60
10 m	15	30	45	60	75	90	105	120
15 m	23	45	68	90	113	135	158	180
20 m	30	60	90	120	150	180	210	240
25 m	38	75	113	150	188	225	263	300
30 m	45	90	135	180	225	270	315	360
35 m	53	105	158	210	263	315	368	420
40 m	60	120	180	240	300	360	420	480
45 m	68	135	203	270	338	405	473	540
50 m	75	150	225	300	375	450	525	600

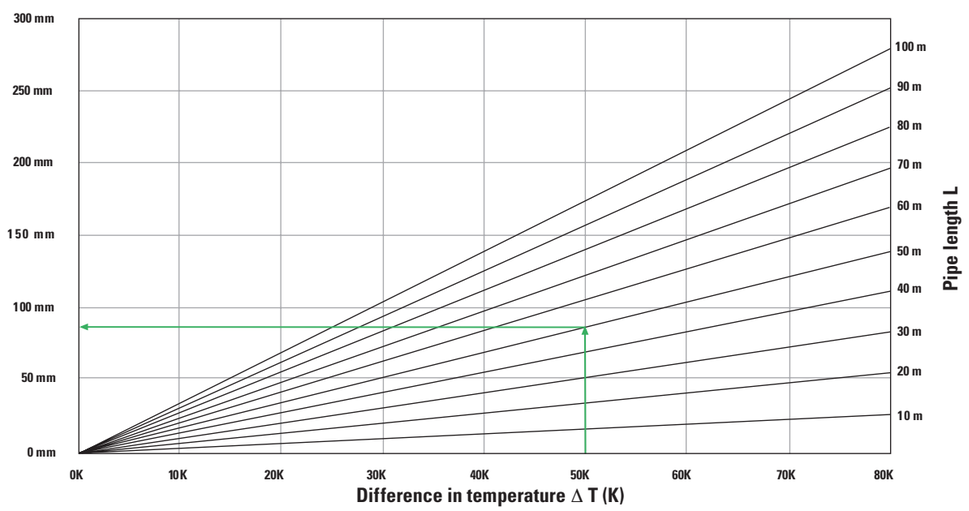


aquatherm green pipe MF (faser composite pipe)
aquatherm blue pipe MF (faser composite pipe)

Due to the integration and positive bond of the different materials, the aquatherm faser composite pipes offers much higher stability. The linear expansion reduces its value to $^1/_5$ of the mere PP-pipes.

Linear expansion ΔL in [mm]: aquatherm faser composite pipes - a = 0.035 mm / mK

Pipe length	Difference in temperature $\Delta T = T_{operating\ temperature} - T_{installation\ temperature}$							
	10 K	20 K	30 K	40 K	50 K	60 K	70 K	80 K
	Linear expansion DL (mm)							
10 m	4	7	11	14	18	21	25	28
20 m	7	14	21	28	35	42	49	56
30 m	11	21	32	42	53	63	74	84
40 m	14	28	42	56	70	84	98	112
50 m	18	35	53	70	88	105	123	140
60 m	21	42	63	84	105	126	147	168
70 m	25	49	74	98	123	147	172	196
80 m	28	56	84	112	140	168	196	224
90 m	32	63	95	126	158	189	221	252
100 m	35	70	105	140	175	210	245	280



BENDING SIDE

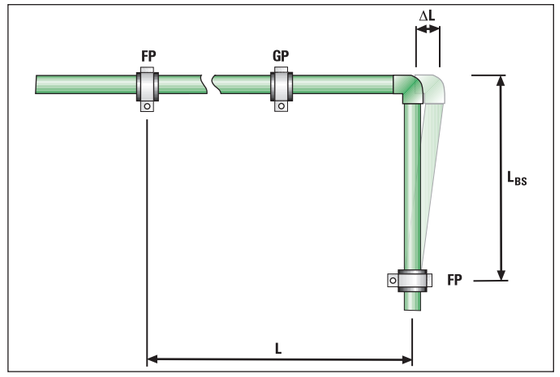
Linear expansion due to temperature difference between operating temperature and installation temperature can be compensated by different installation techniques.

Bending side

In most cases direction changes can be used to compensate for linear expansion in pipes.

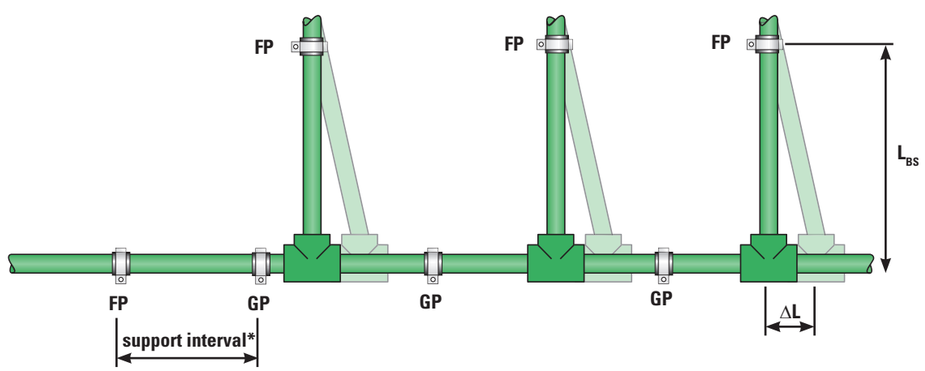
The values of the bending side can be taken directly from the tables and graphs on the following pages.

Symbol	Meaning	
L_{BS}	Length of the bending side	[mm]
K	Material specific constant	15,0
d	Outside diameter	[mm]
ΔL	Linear expansion	[mm]
L	Pipe Length	[m]
FP	Fixed point	
GP	Sliding point	



Calculational determination of the bending side length

$$L_{BS} = K \times \sqrt{d \times \Delta L}$$



* support intervals on page 57-58

PRE-STRESS / BELLOW EXPANSION JOINT

Expansion loop

If the linear expansion cannot be compensated by a change in direction, it will be necessary to install an expansion loop with long and straight pipelines.

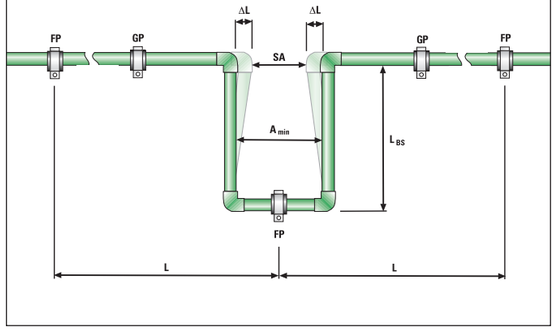
In addition to the length of the bending side L_{BS} the width of the pipe bend A_{min} must be considered.

Symbol	Meaning	
A_{min}	Width of the expansion loop	[mm]
SA	Safety distance	150 mm

The pipe bend Amin is calculated acc. to the following formula:

$$A_{min} = 2 \times \Delta L + SA$$

The width of the expansion loop A_{min} should be at least 210 mm.



Pre-stress

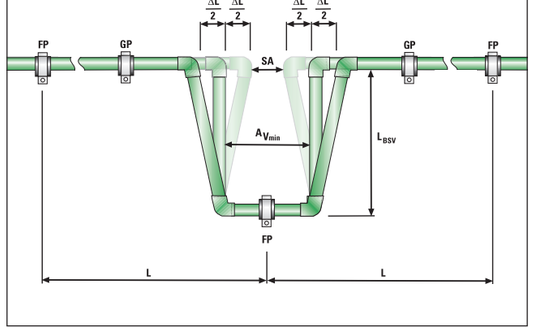
Where space is limited, it is possible to shorten the total width A_{min} as well as the length of the bending side L_{BSV} by pre-stressing.

Pre-stress installations, if planned and carried out carefully, offer an optically perfect installation, as the linear expansion is hardly visible.

Symbol	Meaning	
L_{BSV}	Length of pre-stress	[mm]

The side length of expansion loops wih pre-stress is calculated acc. to the following example:

$$L_{BSV} = K \times \sqrt{d \times \frac{\Delta L}{2}}$$



Below expansion joint

All bellow expansion joints for corrugated pipes designed for metal materials are unsuitable for aquatherm PP-R- pipes.

When using axial expansion joints observe the manufacturers instructions.

SUPPORT INTERVALS

aquatherm green pipe SDR 6 S & aquatherm lilac pipe SDR 7,4 S

Table to determine support intervals in conjunction with temperature and outside diameter.

Difference in temperature DT [K]	Pipe diameter d (mm)									
	16	20	25	32	40	50	63	75	90	110
	Support intervals in cm									
0	70	85	105	125	140	165	190	205	220	250
20	50	60	75	90	100	120	140	150	160	180
30	50	60	75	90	100	120	140	150	160	180
40	50	60	70	80	90	110	130	140	150	170
50	50	60	70	80	90	110	130	140	150	170
60	50	55	65	75	85	100	115	125	140	160
70	50	50	60	75	80	95	105	115	125	140

aquatherm green pipe, blue pipe & lilac pipe SDR 11 S

Table to determine support intervals in conjunction with temperature and outside diameter.

Pipe diameter d (mm)														
20	25	32	40	50	63	75	90	110	125	160	200	250	315	355
Support intervals in cm														
60	75	90	100	120	140	150	160	180	200	260	265	275	280	285

aquatherm blue pipe SDR 17,6 MF

Table to determine support intervals in conjunction with temperature and outside diameter.

Difference in temperature DT [K]	Pipe diameter d (mm)									
	160	200	250	315	355	400	450	500	560	630
	Support intervals in cm									
0	260	265	275	280	285	295	305	315	325	330
20	190	200	205	210	215	230	240	255	270	280
30	180	190	195	200	205	220	230	245	260	275
40	175	180	190	190	195	210	225	235	250	265
50	165	175	180	185	190	200	215	230	240	255
60	155	165	170	175	180	185	200	215	230	240
70	145	155	160	170	175	180	190	205	220	230

SUPPORT INTERVALS

aquatherm green pipe SDR 7,4 MF & blue pipe SDR 7,4 MF (faser composite pipe)
Table to determine support intervals in conjunction with temperature and outside diameter.

Difference in temperature DT [K]	Pipe diameter d (mm)														
	20	25	32	40	50	63	75	90	110	125	160	200	250	315	355
	Support intervals in cm														
0	120	140	160	180	205	230	245	260	290	320	330	335	345	355	360
20	90	105	120	135	155	175	185	195	215	240	240	2755	260	265	270
30	90	105	120	135	155	175	185	195	210	225	230	240	245	255	260
40	85	95	110	125	145	165	175	185	200	215	220	230	240	240	245
50	85	95	110	125	145	165	175	185	190	195	205	220	230	235	235
60	80	90	105	120	135	155	165	175	180	185	195	205	215	220	225
70	70	80	95	110	130	145	165	165	170	175	185	195	200	215	220

Pipe clamp distances of vertically installed pipes can be increased by 20 % of the tabular values, e.g. to multiply the tabular value by 1.2.

aquatherm green pip SDR 9 MF (faser composite pipe)
Table to determine support intervals in conjunction with temperature and outside diameter.

Difference in temperature DT [K]	Pipe diameter d (mm)												
	32	40	50	63	75	90	110	125	160	200	250	315	355
	Support intervals in cm												
0	155	175	200	225	240	255	285	300	310	315	325	335	340
20	115	130	150	170	180	190	210	225	225	240	245	250	255
30	115	130	150	170	180	190	200	210	215	225	230	240	245
40	105	120	140	160	170	180	190	200	205	215	225	225	230
50	105	120	140	160	170	180	180	185	195	205	215	220	220
60	100	115	130	150	160	170	170	175	185	195	200	205	210
70	90	105	125	140	155	155	160	165	175	185	190	200	205

Rohrschellenabstände senkrecht verlaufender Leitungen können gegenüber den Tabellenwerten um 20 % erhöht werden, d.h. Tabellenwerte mit 1,2 multiplizieren.

aquatherm blue pipe SDR 11 MF (faser composite pipe)
Table to determine support intervals in conjunction with temperature and outside diameter.

Difference in temperature DT [K]	Pipe diameter d (mm)																
	20	25	32	40	50	63	75	90	110	125	160	200	250	315	355	400	450
	Support intervals in cm																
0	110	130	150	170	195	220	235	250	275	280	285	290	300	310	315	325	325
20	80	95	110	125	145	165	175	185	200	205	210	220	225	230	235	250	265
30	80	95	110	125	145	165	175	185	190	195	200	210	215	220	225	240	255
40	75	85	100	115	135	155	165	175	180	185	190	200	210	210	215	230	245
50	75	85	100	115	135	155	160	170	170	175	180	190	200	205	205	220	235
60	70	80	95	110	125	145	150	160	160	165	170	180	185	190	195	205	220
70	60	70	85	100	120	135	140	145	150	155	160	170	175	185	190	195	210

Pipe clamp distances of vertically installed pipes can be increased by 20 % of the tabular values, e.g. to multiply the tabular value by 1.2.

PRODUCT LIST

aquatherm green pipe®

aquatherm blue pipe®

aquatherm lilac pipe®

Accessories

Fittings

Flanges

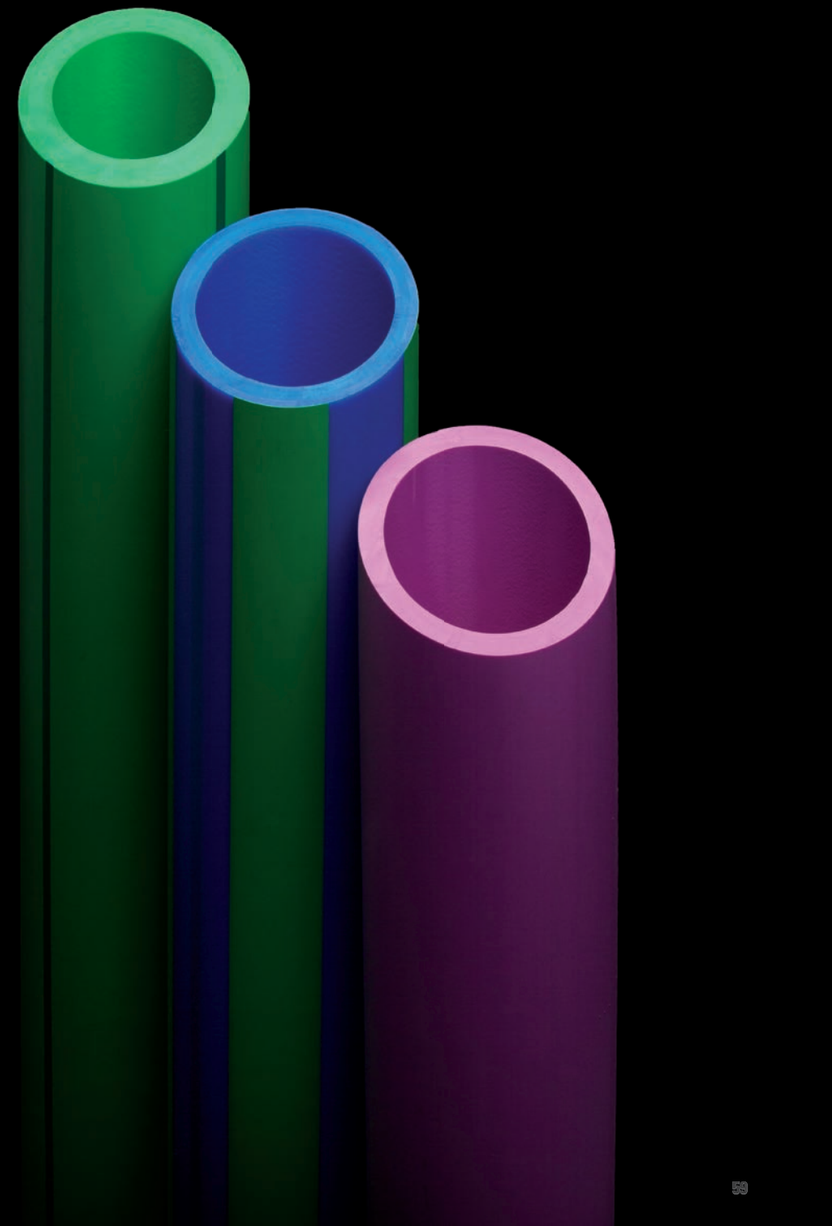
Couplings

PP-R to metal

Distributors

Valves

Tools



aquatherm green pipe

Pipe system made of polypropylene
for potable water supply

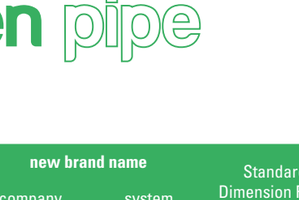
article-no.	old brand name	new brand name		Standard Dimension Ratio	structure of pipe	special feature of pipe	material
		company	system				
10208 . . . 10248	fusiotherm SDR11	aquatherm	green pipe	SDR 11	S		PP-R
10806 . . . 10818	fusiotherm SDR7.4	aquatherm	green pipe	SDR 7.4	S		PP-R
10006 . . . 10024	fusiotherm SDR6	aquatherm	green pipe	SDR 6	S		PP-R
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 CT
370762 . . . 370794	aquatherm green pipe	aquatherm	green pipe	SDR 9	MF	RP UV	PP-RP CT

Due to international standards, Application class according to ISO 10508 and EN ISO 15874 must be indicated on the pipes as below:
SDR 11 (S): class 1/6 bar, class 2/4 bar
SDR 7.4 (S), SDR 6 (S), SDR 7.4 (MF), SDR 9 (MF RP): class 1/10 bar, class 2/8 bar

Class (1): Hot water supply at 60 C
Class (2): Hot water supply at 70 C

aquatherm green pipe SDR 9 MF RP / PPR CT CLASSIFIED MATERIAL ACC. ISO 15874

Structure of pipe: MF = multilayer, with fibre reinforced
Special feature of pipe: RP (raised pressure)
Material: fusiolen PP-R (PPR CT classified material)
Pipe series: SDR 9/S 4
Standards: SKZ HR 3.28, ASTM F 2389, ISO 21003
SKZ A632/A644, WRAS, ANEOR
Colour: green with 4 dark green stripes
Form supplied: ø 32 – 125 mm straight lengths 4 m
ø 160 – 355 mm straight lengths 5.8 m
Packing Unit: PU in meter
Application:



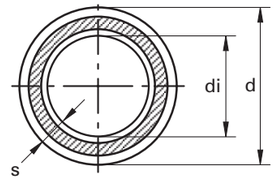
Mechanically stabilized through a fibre mix integrated in the middle layer of the fusiolen® PP-R.

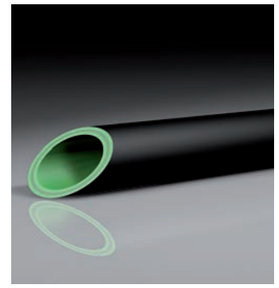
SDR	Art. no.	Dimension d [mm]	Wall thickness s [mm]	Internal diameter di [mm]	Water content [l/m]	Weight [kg]	DN	PU [m]	Price € m/pc
				Socket welding					
9	**370712**	**32**	3,6	24,8	0,483	0,328	25	40	
	370714	**40**	4,5	31,0	0,754	0,511	32	40	
	370716	**50**	5,6	38,8	1,182	0,791	40	20	
	370718	**63**	7,1	48,8	1,869	1,261	50	20	
	370720	**75**	8,4	58,2	2,659	1,771	-	20	
	370722	**90**	10,1	69,8	3,825	2,553	65	12	
	370724	**110**	12,3	85,4	5,725	3,789	80	8	
	370726	**125**	14,0	97,0	7,386	4,886	100	4	
				Butt welding					
	370730	**160**	17,9	124,2	12,109	7,987	125	5.8	
	370734	**200**	22,4	155,2	18,908	12,488	150	5.8	
	370738	**250**	27,9	194,2	29,605	19,422	200	5.8	
	370742	**315**	35,2	244,6	46,966	30,876	250	5.8	
	370744	**355**	39,7	275,6	59,625	39,202	-	5.8	

* 20 & 25 mm SDR 7.4 are available on request

aquatherm green pipe SDR 9 MF RP UV / PPR CT CLASSIFIED MATERIAL ACC. ISO 15874

Structure of pipe: MF = multilayer, with fibre reinforced
Special feature of pipe: RP (raised pressure), UV resistant
Material: fusiolen PP-RP (PPR CT classified material)
Pipe series: SDR 9/S 4
Standards: SKZ HR 3.28, ASTM F 2389, ISO 21003,
SKZ A632/A644, WRAS, ANEOR
Colour: inner layer: green with 4 dark green stripes
outer layer: black
Form supplied: ø 32 – 125 mm straight lengths 4 m
ø 160 – 355 mm straight lengths 5.8 m
Packing Unit: PU in meter
Application:



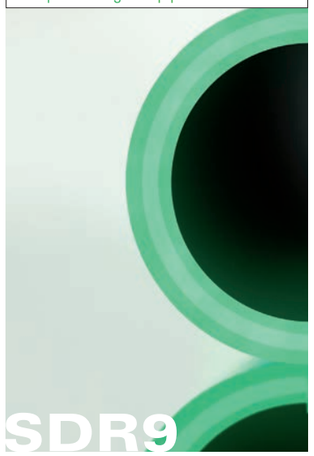


Resistant against UV-rays. Mechanically stabilized through a faser mix integrated in the middle layer of the fusiolen® PP-R.

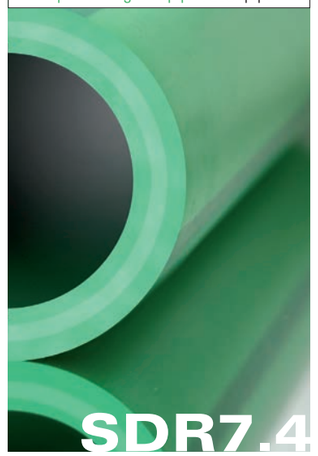
SDR	Art. no.	Dimension d [mm]	Wall thickness s [mm]	Internal diameter di [mm]	Water content [l/m]	Weight [kg]	DN	PU [m]	Price € m/pc
				Socket welding					
9	**370762**	**32**	3,6	24,8	0,483	0,422	25	40	
	370764	**40**	4,5	31,0	0,754	0,630	32	40	
	370766	**50**	5,6	38,8	1,182	0,944	40	20	
	370768	**63**	7,1	48,8	1,869	1,457	50	20	
	370770	**75**	8,4	58,2	2,659	1,998	-	20	
	370772	**90**	10,1	69,8	3,825	2,894	65	12	
	370774	**110**	12,3	85,4	5,725	4,397	80	8	
	370776	**125**	14,0	97,0	7,386	5,530	100	4	
				Butt welding					
	370780	**160**	17,9	124,2	12,109	8,287	125	5.8	
	370784	**200**	22,4	155,2	18,908	12,818	150	5.8	
	370788	**250**	27,9	194,2	29,605	19,741	200	5.8	
	370792	**315**	35,2	244,6	46,966	31,135	250	5.8	
	370794	**355**	39,7	275,6	59,625	39,415	-	5.8	

* 20 & 25 mm SDR 7.4 are available on request

aquatherm green pipe MF SDR9 RP



aquatherm green pipe Faser pipe



Fields of application

Main field

- Potable water application

aquatherm green **pipe** MF SDR9 RP

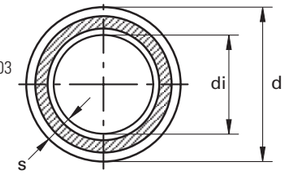
aquatherm sets the innovation standards in the production of PP-pipes and fittings worldwide. We continually bother to push developments for product improvement. The current level of evolution is called „fusiolen PP-RP".

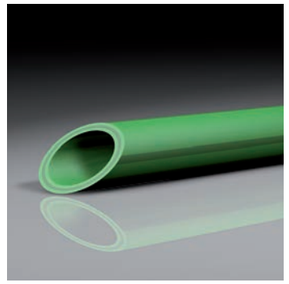
With „fusiolen PP-RP" we can produce fibre-composite pipes with lower wall-thickness by keeping all the well-established advantages.

- lower wall-thickness
- 14% higher flow rate at same velocity compared to fusiotherm faser composite pipe SDR 7.4
- allowable operation pressures are higher than those of faser composite pipes PP-R SDR7.4
- identical expansion as fusiotherm-faser SDR7.4
- 16 % lower weight than fusiotherm-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 of XXL pipes by shorter butt-welding times
- trouble-free welding with all aquatherm fusiotherm fittings
- established system of long-term heat stabilizers
- environmentally friendly by less material input

aquatherm green pipe **SDR 7.4 MF**

Structure of pipe: MF = multilayer, with fibre reinforced
Material: fusiolen PP-R
Pipe series: SDR 7.4 / S 3.2
Standards: SKZ HR 3.28, ASTM F 2389, CSA B 137.11, ISO 21003 SKZ A314/616, WRAS
Colour: green with 4 dark green stripes
Packing Unit: straight legths 4 m
Packing Unit: PU in meter
Application:





Mechanically stabilized through a fibre mix integrated in the middle layer of the fusiolen® PP-R.

SDR	Art. no.	Dimension d [mm]	Wall thickness s [mm]	Internal diameter di [mm]	Water content [l/m]	Weight [kg]	DN	PU [m]	Price € m/pc
7.4				*Socket welding*					
	70708	**20**	2,8	14,4	0,163	0,157	15	100	
	70710	**25**	3,5	18,0	0,254	0,244	20	100	
	70712	**32**	4,4	23,2	0,423	0,391	25	40	
	70714	**40**	5,5	29,0	0,660	0,608	32	40	
	70716	**50**	6,9	36,2	1,029	0,948	40	20	
	70718	**63**	8,6	45,8	1,647	1,490	50	20	
	70720	**75**	10,3	54,4	2,323	2,120	-	20	
	70722	**90**	12,3	65,4	3,358	3,037	65	12	
	70724	**110**	15,1	79,8	4,999	4,546	80	8	
	70726	**125**	17,1	90,8	6,472	5,850	-	4	
				Butt welding					
	70730	**160**	21,9	116,2	10,599	9,559	125	5.8	
	70734	**200**	27.4	145,2	16,558	14,944	150	5.8	
	70738	**250**	34,2	181,6	25,901	23,312	175	5.8	
		315 – 355		*Dimensions 315 and 355 mm see aquatherm green pipe SDR 9 MF RP on page 60*					

The advantages:

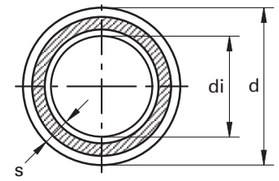
- The linear expansion has been reduced by 75%.
- The flow has been increased by 20% at same loading capacity due to bigger inner diameter.
- High stability and carrying capacity
- High impact strength
- Easy processing: simply cut and weld

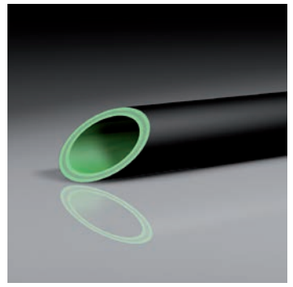
Various applications to:

- Cold and hot water in potable water application
- Heating pipes
- Rainwater utilization systems
- Compressed air plants
- Water supply in swimming pool installations
- Pipelines for industrial use

aquatherm green pipe **SDR 7.4 MF UV**

Structure of pipe: MF = multilayer, with fibre reinforced
Special feature of pipe: UV resistant
Material: fusiolen PP-R
Pipe series: SDR 7.4 / S 3.2
Standards: SKZ HR 3.28, ASTM F 2389, CSA B 137.11, ISO 21003 SKZ A314/616, WRAS
Colour: outer layer: black
inner layer: green
Form supplied: straight legths 4 m
ø 160 – 250 mm straight lengths 5.8 m
Packing Unit: PU in meter
Application:



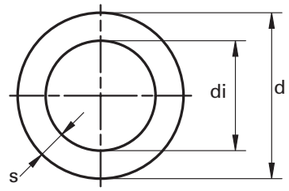


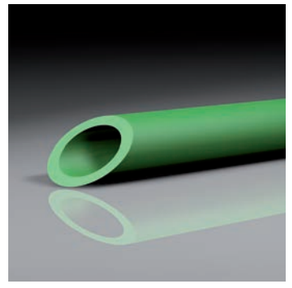
Resistant against UV-rays. Mechanically stabilized through a faser mix integrated in the middle layer of the fusiolen® PP-R.

SDR	Art. no.	Dimension d [mm]	Wall thickness s [mm]	Internal diameter di [mm]	Water content [l/m]	Weight [kg]	DN	PU [m]	Price € m/pc
7.4					*Socket welding*				
	70758	**20**	2,8	14,4	0,163	0,210	15	100	
	70760	**25**	3,5	18,0	0,254	0,314	20	100	
	70762	**32**	4,4	23,2	0,423	0,485	25	40	
	70764	**40**	5,5	29,0	0,660	0,728	32	40	
	70766	**50**	6,9	36,2	1,029	1,101	40	20	
	70768	**63**	8,6	45,8	1,647	1,686	50	20	
	70770	**75**	10,3	54,4	2,323	2,347	-	20	
	70772	**90**	12,3	65,4	3,358	3,378	65	12	
	70774	**110**	15,1	79,8	4,999	5,054	80	8	
	70776	**125**	17,1	90,8	6,472	6,494	-	4	
					Butt welding				
	70780	**160**	21,9	116,2	10,599	9,859	100	5.8	
	70784	**200**	27.4	145,2	16,550	15,273	150	5.8	
	70788	**250**	34,2	181,6	25,888	23,630	175	5.8	
		315 – 355			*Dimensions 315 and 355 mm see aquatherm green pipe SDR 9 MF RP UV on page 61*				

aquatherm green pipe **SDR 6 S**

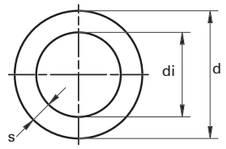
Structure of pipe: s (single)
Material: fusiolen PP-R
Pipe series: SDR 6 / S 2.5
Standards: DIN 8077. DIN 8078, DIN EN ISO 15874, ASTM F 2389, CSA B 137.11
Colour: green
Form supplied: 4 m straight lengths, also* in coils
Packing Unit: PU in meter
Application:

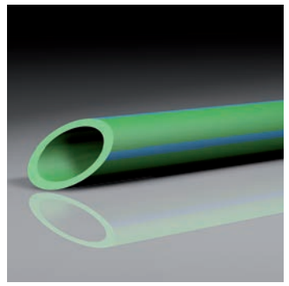




SDR	Art. no.	Dimension d [mm]	Wall thickness s [mm]	Internal diameter di [mm]	Water content [l/m]	Weight [kg]	DN	PU [m]	Price € m/pc
6	**10006**	**16**	2,7	10,6	0,088	0,111	10	100	
	10008	**20**	3,4	13,2	0,137	0,174	12	100	
	10010	**25**	4,2	16,6	0,216	0,268	15	100	
	10012	**32**	5,4	21,2	0,353	0,437	20	40	
	10014	**40**	6,7	26,6	0,555	0,675	25	40	
	10016	**50**	8,3	33,4	0,876	1,047	32	20	
	10018	**63**	10,5	42,0	1,385	1,662	40	20	
	10020	**75**	12,5	50,0	1,963	2,351	50	20	
	10022	**90**	15,0	60,0	2,826	3,379	60	12	
	10024	**110**	18,3	73,4	4,229	5,040	65	8	
	10106*	**16**	2,7	10,6	0,088	0,111	10	100	
	10108*	**20**	3,4	13,2	0,137	0,174	12	100	
	10110*	**25**	4,2	16,6	0,216	0,268	15	100	

aquatherm green pipe SDR 11 S / MF



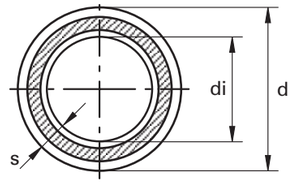


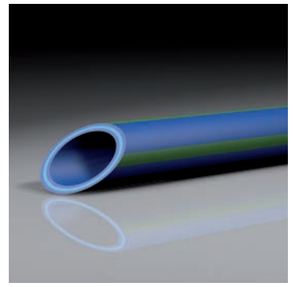
Structure of pipe: 20 – 355 mm = s (single)
400&450 mm = MF (multilayer faser)
Material: fusiolen PP-R
Pipe series: SDR 11/ S5
Standards: DIN 8077 / 78, DIN EN ISO 15874, ASTM F 2389, CSA B 137.11
Colour: green with 4 blue stripes
Form supplied: ø 20 – 125 mm 4 m straight lengths, also* in coils
ø 160 – 450 mm straight lengths 5,8 m
Packing Unit: PU in meter
Application:

SDR	Art. no.	Dimension d [mm]	Wall thickness s [mm]	Internal diameter di [mm]	Water content [l/m]	Weight [kg]	DN	PU [m]	Price € m/pc
11	*Socket welding*								
	10208	**20**	1,9	16,2	0,206	0,108	15	100	
	10210	**25**	2,3	20,4	0,327	0,165	20	100	
	10212	**32**	2,9	26,2	0,539	0,261	25	40	
	10214	**40**	3,7	32,6	0,834	0,414	32	40	
	10216	**50**	4,6	40,8	1,307	0,641	40	20	
	10218	**63**	5,8	51,4	2,074	1,012	50	20	
	10220	**75**	6,8	61,4	2,959	1,411	65	20	
	10222	**90**	8,2	73,6	4,252	2,043	80	12	
	10224	**110**	10,0	90,0	6,359	3,026	-	8	
	10226	**125**	11,4	102,2	8,199	3,924	100	4	
	10308*	**20**	1,9	16,2	0,206	0,108	15	100	
	10310*	**25**	2,3	20,4	0,327	0,165	20	100	
	10312*	**32**	2,9	26,2	0,539	0,261	25	50	
	Butt welding								
	10230	**160**	14,6	130,8	13,430	6,415	125	5.8	
	10234	**200**	18,2	163,6	21,010	9,992	150	5.8	
	10238	**250**	22,7	204,6	32,861	15,548	200	5.8	
	10242	**315**	28,6	257,8	52,172	24,664	250	5.8	
	10244	**355**	32,2	290,6	66,325	31,300	300	5.8	
	10246[1)]	**400**	36,3	327,6	84,290	39,734	300	5.8	
	10248[1)]	**450**	40,9	368,2	106,477	50,292	400	5.8	

[1)] *mechanically stabilized through a fibre mix integrated in the middle layer of the fusiolen® PP-R*

aquatherm blue pipe SDR 7.4 / 11 / 17.6 MF





Structure of pipe: MF = multilayer, with fibre reinforced
Material: fusiolen PP-R
Pipe series: SDR 7.4 / S 3.2 & SDR11 / S 5 & SDR 17.6 / S 8.3
Standards: SKZ HR 3.28, ASTM F 2389, CSA B 137.11, ISO 21003
Colour: blue with 4 wider green stripes
Form supplied: ø 20 – 125 mm straight lengths 4 m
ø 160 – 630 mm straight lengths 5.8 m
Packing Unit: PU in meter
Application:

Mechanically stabilized through a fibre mix integrated in the middle layer of the fusiolen® PP-R.

SDR	Art. no.	Dimension d [mm]	Wall thickness s [mm]	Internal diameter di [mm]	Water content [l/m]	Weight [kg]	DN	PU [m]	Price € m/pc
7,4	*Socket welding*								
	2070708	**20**	2,8	14,4	0,163	0,157	15	100	
	2070710	**25**	3,5	18,0	0,254	0,244	20	100	
	2070712	**32**	4,4	23,2	0,423	0,391	25	40	
11	**2070112**	**32**	2,9	26,2	0,539	0,275	25	40	
	2070114	**40**	3,7	32,6	0,834	0,435	32	40	
	2070116	**50**	4,6	40,8	1,307	0,674	40	20	
	2070118	**63**	5,8	51,4	2,074	1,065	50	20	
	2070120	**75**	6,8	61,4	2,959	1,485	65	20	
	2070122	**90**	8,2	73,6	4,252	2,150	80	12	
	2070124	**110**	10,0	90,0	6,359	3,185	-	8	
	2070126	**125**	11,4	102,2	8,199	4,130	100	4	
	Butt welding								
	2070130	**160**	14,6	130,8	13,430	6,751	125	5.8	
	2070134	**200**	18,2	163,6	21,010	10,515	150	5.8	
	2070138	**250**	22,7	204,6	32,861	16,363	200	5.8	
	2070142	**315**	28,6	257,8	52,172	25,958	250	5.8	
	2070144	**355**	32,2	290,6	66,29	32,941	300	5.8	
	2070146	**400**	36,3	327,6	84,290	41,818	300	5.8	
	2070148	**450**	40,9	368,2	106,477	52,930	400	5.8	
17,6	*Socket welding*								
	2570126	**125**	7,1	110,8	9,637	2,697	100	4	
	Butt welding								
	2570130	**160**	9,1	141,8	15,792	4,574	150	5.8	
	2570134	**200**	11,4	177,2	24,661	7,081	200	5.8	
	2570138	**250**	14,2	221,6	38,568	10,949	250	5.8	
	2570142	**315**	17,9	279,2	61,223	17,245	300	5.8	
	2570144	**355**	20,1	314,8	77,832	21,806	350	5.8	
	2570146	**400**	22,7	354,6	98,756	27,638	350	5.8	
	2570148	**450**	25,5	399,0	125,036	34,858	400	5.8	
	2570150	**500**	28,4	443,2	154,272	43,048	450	5.8	
	2570152	**560**	31,7	496,6	193,688	53,706	500	5.8	
	2570154	**630**	35,7	558,6	245,070	67,917	500	5.8	

aquatherm lilac pipe

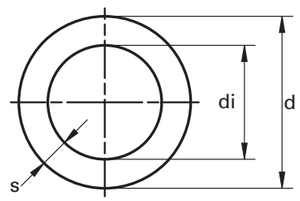
aquatherm lilac pipe was developed exclusively for the field of water recycling. In countries that are highly committed to the environment, like Australia and California, it is already standard to reduce daily water consumption by using recycled water when possible. Now lilac is also regarded in other 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).

Pipe system made of polypropylene
for reclaimed

article-no.	old brand name	new brand name		Standard Dimension Ratio	struc-ture of pipe	material
		company	system			
9010808 . . . 9010226	aquatherm lilac	aquatherm	lilac pipe	SDR 7,4/ SDR 11	S	PP-R

aquatherm lilac pipe SDR 7,4/11 S

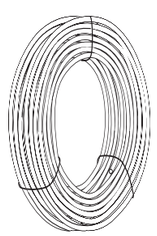
Structure of pipe: S (single)
Material: fusiolen PP-R
Pipe series: SDR 7.4 / S3.5 & SDR 11 / S 5
Standards: DIN 8077 / 78, DIN EN ISO 15874, ASTM F 2389, CSA B 137.11, NSF 14
Colour: lilac
Form supplied: 4 m straight lengths
Packing Unit: PU in meter
Application:



SDR	Art. no.	Dimension d [mm]	Wall thickness s [mm]	Internal diameter di [mm]	Water content [l/m]	Weight [kg]	DN	PU [m]	Price € m/pc
7,4	**9010808**	**20**	2,8	14,4	0,163	0,149	15	100	
	9010810	**25**	3,5	18,0	0,254	0,232	20	100	
11	**9010212**	**32**	2,9	26,2	0,539	0,261	25	40	
	9010214	**40**	3,7	32,6	0,834	0,414	32	40	
	9010216	**50**	4,6	40,8	1,307	0,641	40	20	
	9010218	**63**	5,8	51,4	2,074	1,012	50	20	
	9010220	**75**	6,8	61,4	2,959	1,411	65	20	
	9010222	**90**	8,2	73,6	4,252	2,042	80	12	
	9010224	**110**	10,0	90,0	6,359	3,026	-	8	
	9010226	**125**	11,4	102,2	8,199	3,924	100	4	

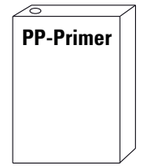
aquatherm - Polyethylene (PE-RT)

Art.-No.	Dimension	Price	Packing unit m/pc	Box unit m/pc	Piece
477121	16 x 2,2 mm		100		
477122	20 x 2,2 mm		100		



AQUATHERM PP-PRIMER
for aquatherm PP pipes

Art. no.	Dimension	PU	Box unit	Price € m/pc
50230		1l		
50231		10l		

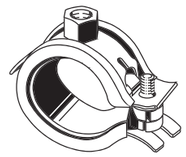


AQUATHERM SPECIAL TOP COAT
for aquatherm PP-pipes

Art. no.	Colour	PU	Box unit	Price € m/pc
50232	black	2,5l		
50233	white	2,5l		

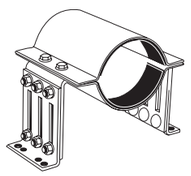
PIPE CLAMPS
suitable for sliding and fixed point installation
Thread connection: M8 & M10 for 16–125 mm | M10 for 160 mm | M16 for 200–355 mm

Art. no.	for pipe dimension [mm]	PU	Box unit	Price € m/pc
60516	**16**	50		
60520	**20**	50		
60525	**25**	50		
60532	**32**	50		
60540	**40**	50		
60550	**50**	50		
60563	**63**	25		
60575	**75**	25		
60590	**90**	25		
60594	**110**	25		
60595	**125**	25		
60597	**160**	25		
60650	**200**	1		
60654	**250**	1		
60658	**315**	1		
60660	**355**	1		



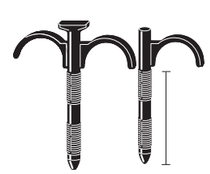
PIPE CLAMPS
suitable for fixed point installation

Art. no.	for pipe dimension [mm]	PU	Box unit	Price € m/pc
60768	**160**	1		
60770	**200**	1		
60774	**250**	1		
60778	**315**	1		
60780	**355**	1		
60782	**400**	1		
60784	**450**	1		
60786	**500**	1		
60788	**560**	1		
60790	**630**	1		



PIPE FASTENING BOW
suitable for ø 16–32 mm pipes

Art. no.	for pipe dimension	PU	Box unit	Price € m/pc
60604	**1-fold - length = 45mm**	50		
60606	**1-fold - length = 75mm**	50		
60608	**2-fold - length = 45mm**	50		
60610	**2-fold - length = 75 mm**	50		

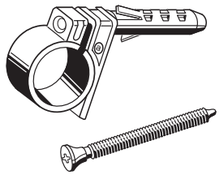


All aquatherm green pipe PP-R fittings are produced according to ASTM F 2389 & DIN 16962, made from the fusiolen® PP-R material and can be used in combination with all the above aquatherm green pipe, aquatherm blue pipe and aquatherm lilac pipes. The aquatherm green pipe PP-R fittings meet the required pipe temperature / pressure ratings. Colour: green. The transition fittings are made of high quality brass or stainless steel.

PLASTIC PIPE CLAMPS

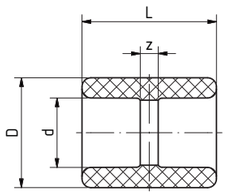
suitable for ø 16–40 mm pipes

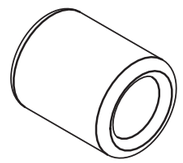
Art. no.	for pipe dimension [mm]	PU	Box unit	Price € m/pc
60616	**16**	50		
60620	**20**	50		
60625	**25**	30		
60632	**32**	30		
60640	**40**	30		



SOCKET

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

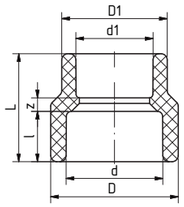


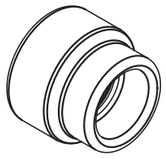


SDR	Art. no.	Dimension d [mm]	l [mm]	z [mm]	D [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
	11006	**16**	30,0	4,0	24,5	0,008	•	10		
	11008	**20**	32,0	3,0	29,5	0,011	• • •	10	1500	
	11010	**25**	35,0	3,0	34,0	0,013	• • •	10	1000	
6	**11012**	**32**	40,5	4,5	43,0	0,026	• • •	5	600	
7.4	**11014**	**40**	47,5	6,5	52,0	0,044	• • •	5	400	
9	**11016**	**50**	53,0	6,0	68,0	0,084	• • •	5	200	
11	**11018**	**63**	60,5	5,5	84,0	0,139	• • •	1	100	
17.6	**11020**	**75**	66,5	6,5	100,0	0,226	• • •	1	70	
	11022	**90**	72,5	6,5	120,0	0,343	• • •	1	50	
	11024	**110**	82,0	8,0	147,0	0,581	• • •	1	30	
	11026	**125**	92,0	12,0	167,0	0,845	• • •	1	25	

REDUCING SOCKET FEMALE/FEMALE

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

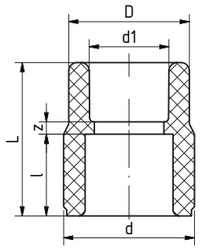


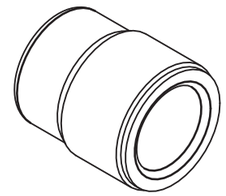


SDR	Art. no.	Dimension d [mm]	Dimension d1 [mm]	L [mm]	l [mm]	z [mm]	D [mm]	D1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
	double-sided socket welding												
	11222	**40**	**32**	44,0	20,5	5,5	52,0	43,0	0,035	• • •	1		
	11228	**50**	**32**	53,0	23,5	11,5	68,0	43,0	0,066	• • •	1		
	11230	**50**	**40**	50,5	23,5	6,3	68,0	52,0	0,069	• • •	1		
	11236	**63**	**40**	61,0	27,5	13,0	84,0	52,0	0,115	• • •	1		
6	**11238**	**63**	**50**	56,0	27,5	5,0	84,0	68,0	0,120	• • •	1		
7.4	**11240**	**75**	**50**	68,0	30,0	14,5	100,0	68,0	0,178	• • •	1		
9	**11242**	**75**	**63**	62,5	30,0	5,0	100,0	84,0	0,185	• • •	1		
11	**11252**	**90**	**63**	74,0	33,0	13,5	120,0	84,0	0,276	• • •	1		
17.6	**11253**	**90**	**75**	69,0	33,0	6,0	120,0	100,0	0,297	• • •	1		
	11257	**110**	**75**	85,0	37,0	18,0	147,0	100,0	0,516	• • •	1		
	11259	**110**	**90**	77,3	37,0	7,3	147,0	120,0	0,520	• • •	1		
	11263	**125**	**90**	91,0	40,0	18,0	167,0	120,0	0,749	• • •	1		
	11265	**125**	**110**	87,0	40,0	10,0	167,0	147,0	0,726	• • •	1		

REDUCING SOCKET, SOCKET WELDING

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

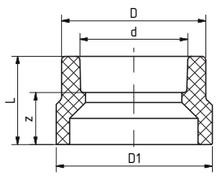


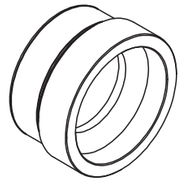


SDR	Art. no.	Dimension d [mm]	Dimension d1 [mm]	l [mm]	L [mm]	z [mm]	D [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
	double-sided socket welding											
	11109	**20**	**16**	14,5	39,0	11,5	24,5	0,009	•	10	2000	
	11110	**25**	**16**	16,0	38,0	9,0	26,0	0,012	•	10	2000	
	11112	**25**	**20**	16,0	38,5	8,0	29,5	0,012	• • •	10	1500	
	11114	**32**	**20**	18,0	37,5	5,0	29,5	0,015	• • •	5	1000	
	11116	**32**	**25**	18,0	38,0	4,0	34,0	0,016	• • •	5	1000	
	11118	**40**	**20**	20,5	45,0	10,0	29,5	0,025	• • •	5	750	
	11120	**40**	**25**	20,5	50,0	13,5	34,0	0,028	• • •	5	600	
	11122	**40**	**32**	20,5	50,0	11,5	43,0	0,032	• • •	5	500	
	11124	**50**	**20**	23,5	55,0	17,0	29,5	0,045	• • •	5	500	
	11126	**50**	**25**	23,5	55,0	15,5	34,0	0,044	• • •	5	500	
	11128	**50**	**32**	23,5	54,0	12,5	43,0	0,048	• • •	5	350	
	11130	**50**	**40**	23,5	53,0	9,0	52,0	0,053	• • •	5	300	
	11131	**63**	**20**	27,5	65,0	23,0	29,5	0,073	• • •	1	200	
	11132	**63**	**25**	27,5	65,0	21,5	34,0	0,071	• • •	1	200	
6	**11134**	**63**	**32**	27,5	62,0	16,5	43,0	0,080	• • •	1	200	
7,4	**11136**	**63**	**40**	27,5	64,5	16,5	52,0	0,089	• • •	1	200	
9	**11138**	**63**	**50**	27,5	63,5	12,5	68,0	0,107	• • •	1	150	
11	**11139**	**75**	**40**	30,0	69,5	19,0	52,0	0,131	• • •	1		
17,6	**11140**	**75**	**50**	30,0	63,0	9,5	68,0	0,141	• • •	1		
	11142	**75**	**63**	30,0	71,0	13,5	84,0	0,170	• • •	1		
	11143	**75**	**20**	30,0	65,5	21,0	34,5	0,113	• • •	1		
	11144	**75**	**25**	30,0	65,5	19,5	34,5	0,111	• • •	1		
	11145	**75**	**32**	30,0	69,5	21,5	52,0	0,140	• • •	1		
	11151	**90**	**50**	33,0	75,0	18,5	68,0	0,193	• • •	1		
	11152	**90**	**63**	33,0	78,0	17,5	84,0	0,224	• • •	1		
	11153	**90**	**75**	33,0	81,5	18,5	100,0	0,273	• • •	1		
	11155	**110**	**63**	37,0	86,0	21,5	84,0	0,356	• • •	1		
	11157	**110**	**75**	37,0	89,0	22,0	100,0	0,383	• • •	1		
	11159	**110**	**90**	37,0	99,0	29,0	120,0	0,500	• • •	1		
	11161	**125**	**75**	40,0	101,0	31,0	100,0	0,518	• • •	1		
	11163	**125**	**90**	40,0	99,0	26,0	120,0	0,588	• • •	1		
	11165	**125**	**110**	40,0	112,0	35,0	147,0	0,832	• • •	1		

REDUCING SOCKET, SOCKET & BUTT WELDING

Systems: aquatherm green pipe, aquatherm blue pipe
Material: Fusiolen® PP-R & PP-RP
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

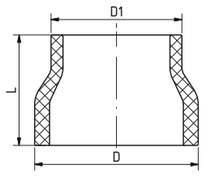


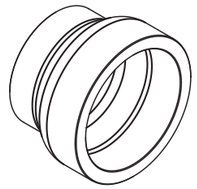


SDR	Art. no.	D1 [mm]	Dimension d [mm]	L [mm]	z [mm]	D [mm]	Weight [kg]	System		PU	Box unit	Price € m/pc
					onesided socket welding, other side butt welding							
	11174	**160**	**110**	90,0	53,0	147,0	0,730	•		1		
7,4	**11176**	**160**	**125**	90,0	50,0	167,0	0,837	•		1		
	11182	**200**	**125**	135,0	95,0	167,0	1,644	•		1		
	311174	**160**	**110**	90,0	53,0	147,0	0,730	•		1		
9	**311176**	**160**	**125**	90,0	50,0	167,0	0,868	•		1		
	311182	**200**	**125**	135,0	95,0	167,0	1,599	•		1		
	11175	**160**	**110**	90,0	53,0	147,0	0,655	•	•	1		
11	**11177**	**160**	**125**	90,0	50,0	167,0	0,636	•	•	1		
	11183	**200**	**125**	135,0	95,0	167,0	1,341	•	•	1		
	2511174	**160**	**110**	90,0	53,0	147,0	0,618		•	1		
17,6	**2511176**	**160**	**125**	90,0	50,0	167,0	0,628		•	1		
	2511182	**200**	**125**	135,0	95,0	167,0	1,055		•	1		

REDUCING SOCKET, BUTT WELDING

Systems: aquatherm green pipe, aquatherm blue pipe
Material: Fusiolen® PP-R & PP-RP
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

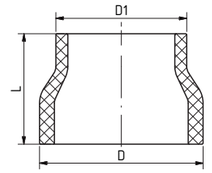


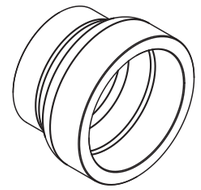


SDR	Art. no.	D [mm]	D1 [mm]	L [mm]	Weight [kg]	System		PU	Box unit	Price € m/pc
				double-sided butt welding						
	11184	**200**	**160**	135,0	1,638	•		1		
7,4	**11188**	**250**	**160**	172,5	2,881	•		1		
	11190	**250**	**200**	172,5	3,250	•		1		
	311184	**200**	**160**	135,0	1,588	•		1		
	311188	**250**	**160**	172,5	2,900	•		1		
	311190	**250**	**200**	172,5	3,206	•		1		
9	**311192**	**315**	**200**	225,0	6,350	•		1		
	311194	**315**	**250**	225,0	7,050	•		1		
	311196	**355**	**250**	170,0	5,640	•		1		
	311198	**355**	**315**	160,0	4,940	•		1		
	11185	**200**	**160**	135,0	1,206	•	•	1		
	11189	**250**	**160**	172,5	2,313	•	•	1		
	11191	**250**	**200**	172,5	2,389	•	•	1		
	11193	**315**	**200**	225,0	4,389	•	•	1		
	11195	**315**	**250**	225,0	4,786	•	•	1		
	11197	**355**	**250**	170,0	4,431	•	•	1		
11	**11199**	**355**	**315**	160,0	4,532	•	•	1		
	11201	**400**	**250**	152,0	7,475	•	•	1		
	11203	**400**	**315**	122,0	6,095	•	•	1		
	11204	**400**	**355**	110,0	5,520	•	•	1		
	11206	**450**	**315**	142,0	9,200	•	•	1		
	11207	**450**	**355**	132,0	7,590	•	•	1		
	11208	**450**	**400**	122,0	7,590	•	•	1		

REDUCING SOCKET, BUTT WELDING

Systems: aquatherm blue pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

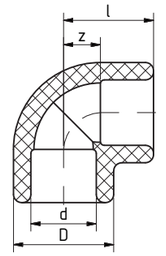


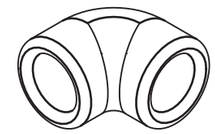


SDR	Art. no.	D [mm]	D1 [mm]	L [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
					double-sided butt welding				
	2511184	**200**	**160**	135,0	1,012	•	1		
	2511188	**250**	**160**	172,5	1,500	•	1		
	2511190	**250**	**200**	172,5	1,338	•	1		
	2511193	**315**	**200**	225,0	4,141	•	1		
	2511195	**315**	**250**	225,0	3,420	•	1		
	2511197	**355**	**250**	245,0	3,099	•	1		
	2511199	**355**	**315**	160,0	3,108	•	1		
	2511201	**400**	**250**	152,0	4,482	•	1		
	2511203	**400**	**315**	122,0	3,366	•	1		
	2511204	**400**	**355**	112,0	3,049	•	1		
	2511206	**450**	**315**	142,0	4,891	•	1		
17,6	**2511207**	**450**	**355**	132,0	4,688	•	1		
	2511208	**450**	**400**	122,0	4,287	•	1		
	2511209	**500**	**315**	172,0	8,100	•	1		
	2511210	**500**	**355**	152,0	6,500	•	1		
	2511211	**500**	**400**	142,0	6,700	•	1		
	2511212	**500**	**450**	122,0	5,500	•	1		
	2511213	**560**	**400**	162,0	9,000	•	1		
	2511214	**560**	**450**	142,0	8,600	•	1		
	2511215	**560**	**500**	132,0	7,600	•	1		
	2511216	**630**	**400**	192,0	15,100	•	1		
	2511217	**630**	**450**	172,0	13,700	•	1		
	2511218	**630**	**500**	152,0	11,000	•	1		
	2511219	**630**	**560**	132,0	9,000	•	1		

ELBOW 90°

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green





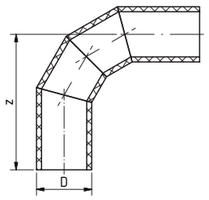
SDR	Art. no.	Dimension d [mm]	z [mm]	l [mm]	D [mm]	Weight [kg]	System			PU	Box unit	Price € m/pc
					socket welding							
	12106	**16**	9,0	22,0	24,5	0,010	•			10	2000	
	12108	**20**	11,0	25,5	27,0	0,013	•	•	•	10	1400	
	12110	**25**	13,5	29,5	34,0	0,023	•	•	•	10	800	
6	**12112**	**32**	17,0	35,0	43,0	0,043	•	•	•	5	400	
7,4	**12114**	**40**	21,0	41,5	52,0	0,077	•	•	•	5	250	
9	**12116**	**50**	26,0	49,5	68,0	0,162	•	•	•	5	125	
11	**12118**	**63**	32,5	60,0	84,0	0,293	•	•	•	1	75	
17,6	**12120**	**75**	38,5	68,5	100,0	0,445	•	•	•	1	40	
	12122	**90**	46,0	79,0	120,0	0,729	•	•	•	1	25	
	12124	**110**	56,0	93,0	147,0	1,292	•	•	•	1		
	12126	**125**	76,5	116,5	167,0	2,004	•	•	•	1		

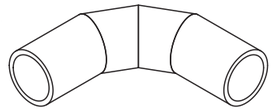
ELBOW 90° BUTT WELDING

Systems: aquatherm green pipe, aquatherm blue pipe
Material: Fusiolen® PP-R & PP-RP
Standard: DIN 16962, DIN EN ISO 15874
Notice There is a gradual conversion of the XXL-fittings made of pipe segments to an injection molded design. The table shows which articles are already available in new design at the time of printing this catalogue. In the aquatherm technews we will inform you of further changes, but first the current stock of the elbows made of pipe segments has to be sold.

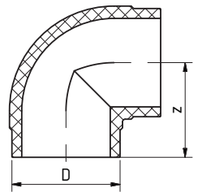
All fittings, which are converted to the injection molding production, are still available on inquiry as special fittings made of pipe segments. No article numbers are defined for special fittings of any type.

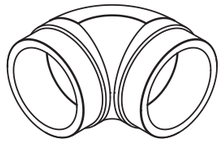
Please note! Electrofusion sockets can not be processed directly with injection molded fittings. When using electrofusion sockets either segment welded special fittings must be used or pipe pieces must be welded to the injection molded fittings.





Fitting made of pipe segments





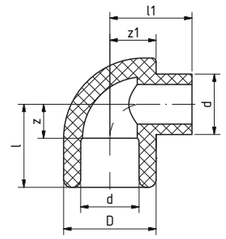
Injection molded fitting
Colour: green

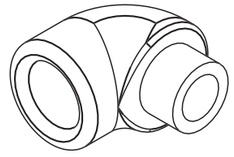
SDR	Art. no.	D [mm]	z [mm]	Weight [kg]	System		pipe segments	NEW injection molded* (green)	PU	Box unit	Price € m/pc
					butt welding						
	12130	**160**	145,0	2,561	•			•	1		
7,4	**12134**	**200**	450,0	11,685	•		•		1		
	12138	**250**	625,0	26,000	•		•		1		
	312130	**160**	145,0	2,371	•			•	1		
	312134	**200**	175,0	4,311	•			•	1		
9	**312138**	**250**	220,0	8,400	•			•	1		
	312142	**315**	773,0	42,300	•		•		1		
	312144	**355**	833,0	57,628	•		•		1		
	12131	**160**	145,0	2,145	•	•		•	1		
	12135	**200**	175,0	4,056	•	•		•	1		
	12139	**250**	220,0	7,325	•	•		•	1		
11	**12143**	**315**	773,0	37,850	•		•		1		
	12145	**355**	833,0	49,000	•		•		1		
	12147	**400**	900,0	62,800	•		•		1		
	12149	**450**	975,0	89,500	•		•		1		
1) mechanically stabilized through a fibre mix integrated in the middle layer of the fusiolen® PP-R											
	2012143	**315**	773,0	37,300		•	•		1		
11	**2012145**	**355**	833,0	57,074		•	•		1		
	2012147	**400**	900,0	74,500		•	•		1		
	2012149	**450**	975,0	89,080		•	•		1		
	2512130	**160**	145,0	1,642		•		•	1		
	2512134	**200**	175,0	3,244		•		•	1		
	2512138	**250**	220,0	5,500		•		•	1		
	2512142	**315**	773,0	24,000		•	•		1		
17,6	**2512144**	**355**	833,0	32,000		•	•		1		
	2512146	**400**	900,0	42,549		•	•		1		
	2512148	**450**	975,0	62,200		•	•		1		
	2512150	**500**	1100,0	91,000		•	•		1		
	2512152	**560**	1190,0	108,779		•	•		1		
	2512154	**630**	1295,0	164,600		•	•		1		

* status quo at the time of printing, further injection molded parts follow

ELBOW 90° FEMALE/MALE

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

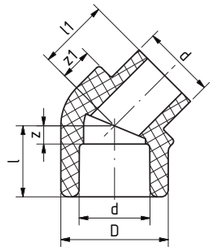


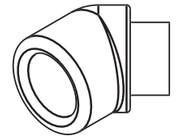


SDR	Art. no.	Dimension d [mm]	z [mm]	l [mm]	D [mm]	l1 [mm]	z1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
							socket welding					
	12306	**16**	9,0	22,0	24,5	21,8	12,3	0,010	•	10	2000	
6	**12308**	**20**	11,0	25,5	27,0	25,5	13,5	0,017	• • •	10	1200	
7.4	**12310**	**25**	13,5	29,5	34,0	29,5	17,0	0,023	• • •	10	800	
9	**12312**	**32**	17,0	35,0	43,0	39,0	21,5	0,048	• • •	5	400	
11	**12314**	**40**	21,0	41,5	52,0	45,5	26,0	0,080	• • •	5	300	

ELBOW 45° FEMALE/MALE

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

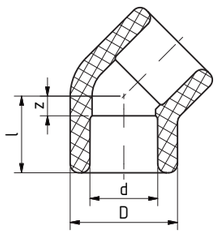


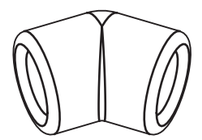


SDR	Art. no.	Dimension d [mm]	z [mm]	l [mm]	D [mm]	l1 [mm]	z1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
							socket welding					
6	**12708**	**20**	5,0	19,5	29,5	19,5	9,0	0,013	• • •	10	1500	
7.4	**12710**	**25**	6,0	22,0	34,0	22,0	8,5	0,017	• • •	10	1000	
9	**12712**	**32**	7,5	25,5	43,0	29,0	11,5	0,036	• • •	5	500	
11	**12714**	**40**	9,5	30,0	52,0	33,0	13,5	0,057	• • •	5	300	

ELBOW 45° SOCKET WELDING

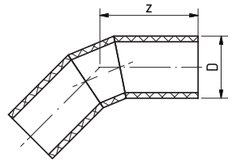
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

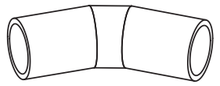




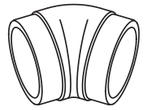
SDR	Art. no.	Dimension d [mm]	z [mm]	l [mm]	D [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
						socket welding				
	12506	**16**	4,5	17,5	24,5	0,009	•	10	2000	
	12508	**20**	5,0	19,5	29,5	0,014	• • •	10	1500	
	12510	**25**	6,0	22,0	34,0	0,018	• • •	10	1000	
6	**12512**	**32**	7,5	25,5	43,0	0,035	• • •	5	500	
7.4	**12514**	**40**	9,5	30,0	52,0	0,053	• • •	5	300	
9	**12516**	**50**	11,5	35,0	68,0	0,112	• • •	5	150	
11	**12518**	**63**	14,0	41,5	84,0	0,227	• • •	1	75	
17.6	**12520**	**75**	16,5	46,5	100,0	0,350	• • •	1	60	
	12522	**90**	19,5	52,5	120,0	0,568	• • •	1	30	
	12524	**110**	23,5	60,5	147,0	1,025	• • •	1	20	
	12526	**125**	27,0	67,0	167,0	1,329	• • •	1		

ELBOW 45° BUTT WELDING





Fitting made of pipe segments



Injection molded fitting
Colour: green

Systems: aquatherm green pipe, aquatherm blue pipe
Material: Fusiolen® PP-R & PP-RP
Standard: DIN 16962, DIN EN ISO 15874

Notice

There is a gradual conversion of the XXL-fittings made of pipe segments to an injection molded design. The table shows which articles are already available in new design at the time of printing this catalogue. In the aquatherm technews we will inform you of further changes, but first the current stock of the elbows made of pipe segments has to be sold. All fittings, which are converted to the injection molding production, are still available on inquiry as special fittings made of pipe segments. No article numbers are defined for special fittings of any type.
Please note! Electrofusion sockets can not be processed directly with injection molded fittings. When using electrofusion sockets either segment welded special fittings must be used or pipe pieces must be welded to the injection molded fittings.

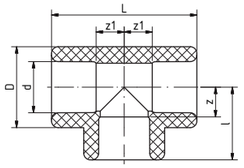
SDR	Art. no.	D [mm]	z [mm]	Weight [kg]	System		pipe segments	injection molded*	PU	Box unit	Price € m/pc
				butt welding							
7,4	**12530**	**160**	95,0	1,903	•			•	1		
	12534	**200**	274,0	8,175	•		•		1		
	12538	**250**	412,0	20,500	•		•		1		
9	**312530**	**160**	95,0	4,230	•			•	1		
	312534	**200**	274,0	6,745	•		•		1		
	312538	**250**	412,0	15,928	•		•		1		
	312542	**315**	498,0	30,567	•		•		1		
	312544	**355**	520,0	40,771	•		•		1		
11	**12531**	**160**	95,0	1,393	•	•		•	1		
	12535	**200**	274,0	5,735	•		•		1		
	12539	**250**	412,0	13,000	•		•		1		
	12543	**315**	498,0	27,300	•		•		1		
	12545	**355**	520,0	26,650	•		•		1		
	12547[1)]	**400**	548,0	44,900	•		•		1		
	12549[1)]	**450**	580,0	60,500	•		•		1		
11	**2012535**	**200**	274,0	6,285		•	•		1		
	2012539	**250**	412,0	14,181		•	•		1		
	2012543	**315**	498,0	27,100		•	•		1		
	2012545	**355**	520,0	38,158		•	•		1		
	2012547	**400**	548,0	44,712		•	•		1		
	2012549	**450**	580,0	60,260		•	•		1		
17,6	**2512530**	**160**	95,0	1,080		•		•	1		
	2512534	**200**	274,0	3,672		•	•		1		
	2512538	**250**	412,0	9,400		•	•		1		
	2512542	**315**	498,0	18,000		•	•		1		
	2512544	**355**	520,0	22,058		•	•		1		
	2512546	**400**	548,0	30,800		•	•		1		
	2512548	**450**	580,0	39,123		•	•		1		
	2512550	**500**	665,0	55,112		•	•		1		
	2512552	**560**	698,0	72,519		•	•		1		
	2512554	**630**	741,0	97,148		•	•		1		

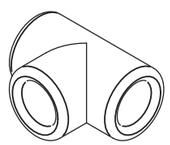
[1)] *mechanically stabilized through a fibre mix integrated in the middle layer of the fusiolen® PP-R*

* status quo at the time of printing, further injection molded parts follow

T-PIECE SOCKET WELDING

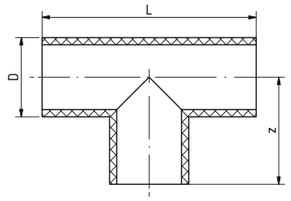
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green
Form: injection moulded fittings

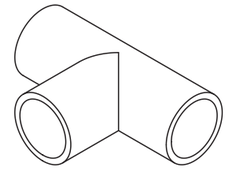




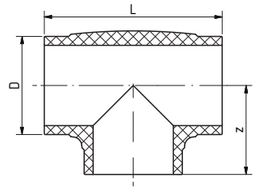
SDR	Art. no.	Dimension d [mm]	z [mm]	z1 [mm]	l [mm]	L [mm]	D [mm]	Weight [kg]	System			PU	Box unit	Price € m/pc
						socket welding								
	13106	**16**	9,0	9,0	22,0	44,0	24,5	0,015	•			10	1500	
	13108	**20**	11,0	11,0	25,5	51,0	27,0	0,017	•	•	•	10	1000	
	13110	**25**	14,5	15,0	30,5	62,0	34,0	0,033	•	•	•	10	500	
6	**13112**	**32**	15,5	17,0	33,5	70,0	43,0	0,054	•	•	•	5	300	
7,4	**13114**	**40**	20,0	20,0	40,5	81,0	52,0	0,099	•	•	•	5	200	
9	**13116**	**50**	26,0	26,0	49,5	99,0	68,0	0,177	•	•	•	5	100	
11	**13118**	**63**	32,5	32,5	60,0	120,0	84,0	0,368	•	•	•	1	50	
17,6	**13120**	**75**	38,5	38,5	68,5	137,0	100,0	0,541	•	•	•	1	30	
	13122	**90**	47,0	46,0	80,0	158,0	120,0	0,920	•	•	•	1	25	
	13124	**110**	56,0	56,0	93,0	186,0	147,0	1,598	•	•	•	1	14	
	13126	**125**	76,5	76,5	116,5	233,0	167,0	2,673	•	•	•	1		

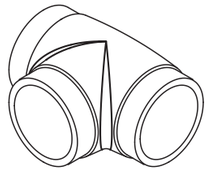
T-PIECE BUTT WELDING





Fitting made of pipe segments





Injection molded fitting
Colour: green

Systems: aquatherm green pipe, aquatherm blue pipe
Material: Fusiolen® PP-R & PP-RP
Standard: DIN 16962, DIN EN ISO 15874

Notice

There is a gradual conversion of the XXL-fittings made of pipe segments to an injection molded design. The table shows which articles are already available in new design at the time of printing this catalogue. In the aquatherm technews we will inform you of further changes, but first the current stock of the t-pieces made of pipe segments has to be sold.

All fittings, which are converted to the injection molding production, are still available on inquiry as special fittings made of pipe segments. No article numbers are defined for special fittings of any type.

Please note! Electrofusion sockets can not be processed directly with injection molded fittings. When using electrofusion sockets either segment welded special fittings must be used or pipe pieces must be welded to the injection molded fittings.

SDR	Art. no.	D [mm]	L [mm]	z [mm]	Weight [kg]	System		pipe segments	NEW injection molded* (green)	PU	Box unit	Price € m/pc
					butt welding							
7,4	**13130**	**160**	290,0	145,0	3,600	•			•	1		
	13134	**200**	500,0	250,0	9,825	•		•		1		
	13138	**250**	750,0	375,0	24,000	•		•		1		
9	**313130**	**160**	290,0	145,0	3,290	•			•	1		
	313134	**200**	500,0	250,0	9,367	•		•		1		
	313138	**250**	750,0	375,0	21,949	•		•		1		
	313142	**315**	920,0	460,0	42,609	•		•		1		
	313144	**355**	960,0	480,0	56,452	•		•		1		
11	**13131**	**160**	290,0	145,0	3,005	•	•		•	1		
	13135	**200**	500,0	250,0	6,865	•		•		1		
	13139	**250**	750,0	375,0	16,000	•		•		1		
	13143	**315**	920,0	460,0	20,450	•		•		1		
	13145	**355**	960,0	480,0	45,072	•		•		1		
	13147[1)]	**400**	1000,0	500,0	63,100	•		•		1		
	13149[1)]	**450**	1050,0	525,0	83,300	•		•		1		
11	**2013135**	**200**	500,0	250,0	8,171		•	•		1		
	2013139	**250**	750,0	375,0	18,827		•	•		1		
	2013143	**315**	920,0	460,0	36,674		•	•		1		
	2013145	**355**	960,0	480,0	40,000		•	•		1		
	2013147	**400**	1000,0	500,0	62,100		•	•		1		
	2013149	**450**	1050,0	525,0	82,792		•	•		1		
17,6	**2513130**	**160**	290,0	145,0	2,348		•		•	1		
	2513134	**200**	500,0	250,0	4,660		•	•		1		
	2513138	**250**	750,0	375,0	11,500		•	•		1		
	2513142	**315**	920,0	460,0	19,800		•	•		1		
	2513144	**355**	960,0	480,0	27,500		•	•		1		
	2513146	**400**	1000,0	500,0	40,395		•	•		1		
	2513148	**450**	1050,0	525,0	45,400		•	•		1		
	2513150	**500**	1200,0	600,0	75,726		•	•		1		
	2513152	**560**	1260,0	630,0	99,320		•	•		1		
	2513154	**630**	1330,0	665,0	122,500		•	•		1		

[1)] *mechanically stabilized through a fibre mix integrated in the middle layer of the fusiolen® PP-R*

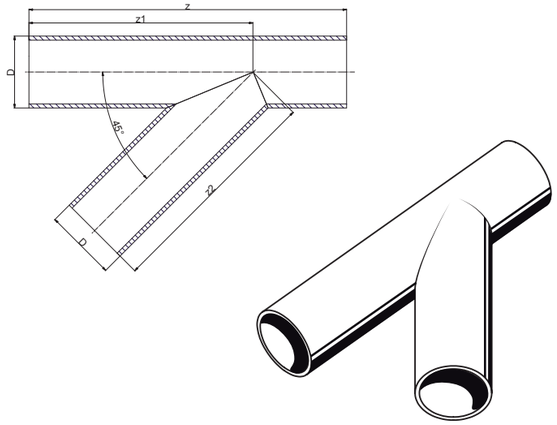
* status quo at the time of printing, further injection molded parts follow

aquatherm blue pipe Y-PIECES

Special fittings on demand

ATTENTION – PLEASE NOTE!

These branches are for special applications in the **unpressurized** areas, e.g. in vacuum dewatering in the ship building. **In no case** they may be exposed to the pressures, given in the working pressure tables on page 25-27.

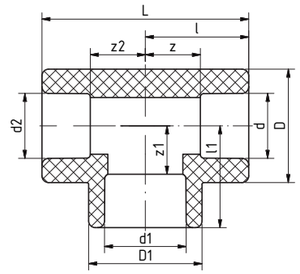


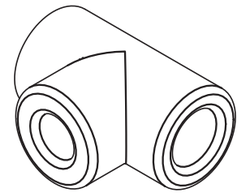
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN16962-2
Color: blue/green

SDR	Art. no.	Dimension D [mm]	z [mm]	z1 [mm]	z2 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
					Socket welding					
	2013018	**63**	560,0	380,0	380,0	0,001	• • •	1		
	2013020	**75**	570,0	405,0	405,0	1,210	• • •	1		
	2013022	**90**	577,0	412,0	412,0	1,750	• • •	1		
	2013024	**110**	610,0	435,0	435,0	2,730	• • •	1		
11	**2013026**	**125**	665,0	475,0	475,0	3,840	• • •	1		
					Butt welding					
	2013031	**160**	782,0	551,0	551,0	7,300	• •	1		
	2013035	**200**	925,0	650,0	650,0	13,360	• •	1		
	2013039	**250**	1105,0	780,0	780,0	24,780	• •	1		
					Socket welding					
	2513026	**125**	665,0	475,0	475,0	2,470	• •	1		
					Butt welding					
17.6	**2513030**	**160**	782,0	551,0	551,0	4,700	• •	1		
	2513034	**200**	925,0	650,0	650,0	8,640	• •	1		
	2513038	**250**	1105,0	780,0	780,0	16,010	• •	1		

RED.-T-PIECE, SOCKET WELDING

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green
Form: injection moulded fittings

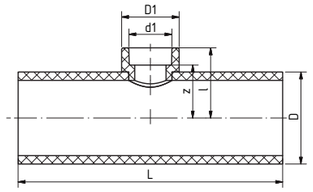


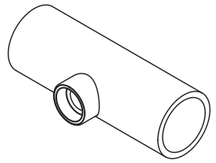


SDR	Art. no.	d [mm]	d1 [mm]	d2 [mm]	L [mm]	l [mm]	l1 [mm]	z [mm]	z1 [mm]	z2 [mm]	D [mm]	D1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
									socket welding								
	13506	**20**	**16**	**16**	51,0	25,5	25,3	11,0	12,3	12,5	29,5	29,5	0,025	•	10		
	13508	**20**	**16**	**20**	51,0	25,5	25,3	11,0	12,3	11,0	29,5	29,5	0,024	•	10		
	13510	**20**	**20**	**16**	51,0	25,5	25,3	11,0	10,8	12,5	29,5	29,5	0,023	•	10		
	13511	**20**	**25**	**20**	62,0	31,0	30,5	16,5	14,5	16,5	34,0	34,0	0,040	• • •	10		
	13512	**25**	**16**	**16**	62,0	31,0	30,5	15,0	17,5	18,0	34,0	34,0	0,043	•	10		
	13514	**25**	**16**	**20**	62,0	31,0	30,5	15,0	17,5	16,5	34,0	34,0	0,041	•	10		
	13516	**25**	**16**	**25**	62,0	31,0	30,5	15,0	17,5	15,0	34,0	34,0	0,038	•	10		
	13520	**25**	**20**	**20**	62,0	31,0	30,5	15,0	16,0	16,5	34,0	34,0	0,039	• • •	10	500	
	13522	**25**	**20**	**25**	62,0	31,0	30,5	15,0	16,0	15,0	34,0	34,0	0,036	• • •	10	500	
	13528	**32**	**16**	**32**	70,0	35,0	31,0	17,0	18,0	17,0	43,0	29,5	0,053	• • •	5	300	
	13532	**32**	**20**	**20**	73,5	36,8	37,0	18,8	22,5	22,3	43,0	43,0	0,076	• • •	5	300	
	13534	**32**	**20**	**32**	70,0	35,0	31,0	17,0	16,5	17,0	43,0	29,5	0,053	• • •	5	300	
	13538	**32**	**25**	**25**	70,0	35,0	34,5	17,0	18,5	19,0	43,0	43,0	0,069	• • •	5		
	13540	**32**	**25**	**32**	70,0	35,0	32,0	17,0	16,0	17,0	43,0	34,0	0,050	• • •	5	300	
	13542	**40**	**20**	**40**	83,0	41,5	36,0	21,0	21,5	21,0	52,0	34,0	0,091	• • •	5	200	
	13544	**40**	**25**	**40**	83,0	41,5	36,0	21,0	20,0	21,0	52,0	34,0	0,089	• • •	5	200	
	13546	**40**	**32**	**40**	84,0	42,0	40,5	21,5	22,5	21,5	52,0	52,0	0,092	• • •	5	200	
	13547	**50**	**20**	**50**	99,0	49,5	40,5	26,0	26,0	26,0	68,0	29,5	0,162	• • •	5	100	
	13548	**50**	**25**	**50**	99,0	49,5	44,5	26,0	28,5	26,0	68,0	34,0	0,157	• • •	5	100	
6	**13550**	**50**	**32**	**50**	99,0	49,5	44,5	26,0	26,5	26,0	68,0	43,0	0,160	• • •	5	100	
7,4	**13551**	**50**	**40**	**50**	99,0	49,5	49,5	26,0	29,0	26,0	68,0	68,0	0,161	• • •	5	100	
9	**13552**	**63**	**20**	**63**	120,0	60,0	48,5	32,5	34,0	32,5	84,0	34,0	0,335	• • •	1	50	
11	**13554**	**63**	**25**	**63**	120,0	60,0	48,5	32,5	32,5	32,5	84,0	34,0	0,331	• • •	1	50	
17,6	**13556**	**63**	**32**	**63**	120,0	60,0	53,5	32,5	35,5	32,5	84,0	52,0	0,340	• • •	1	50	
	13558	**63**	**40**	**63**	120,0	60,0	53,5	32,5	33,0	32,5	84,0	52,0	0,332	• • •	1	50	
	13560	**63**	**50**	**63**	120,0	60,0	60,0	32,5	36,5	32,5	84,0	68,0	0,398	• • •	1		
	13561	**75**	**20**	**75**	137,0	68,5	54,5	38,5	40,0	38,5	100,0	34,0	0,501	• • •	1		
	13562	**75**	**25**	**75**	137,0	68,5	54,5	38,5	38,5	38,5	100,0	34,0	0,497	• • •	1		
	13564	**75**	**32**	**75**	137,0	68,5	59,0	38,5	41,0	38,5	100,0	52,0	0,505	• • •	1		
	13566	**75**	**40**	**75**	137,0	68,5	59,0	38,5	38,5	38,5	100,0	52,0	0,497	• • •	1		
	13568	**75**	**50**	**75**	137,0	68,5	66,0	38,5	42,5	38,5	100,0	84,0	0,550	• • •	1		
	13570	**75**	**63**	**75**	137,0	68,5	66,0	38,5	38,5	38,5	100,0	84,0	0,515	• • •	1		
	13576	**90**	**32**	**90**	158,0	79,0	65,0	46,0	47,0	46,0	120,0	52,0	0,880	• • •	1		
	13578	**90**	**40**	**90**	158,0	79,0	65,0	46,0	44,5	46,0	120,0	52,0	0,862	• • •	1		
	13580	**90**	**50**	**90**	158,0	79,0	75,0	46,0	51,5	46,0	120,0	84,0	0,905	• • •	1		
	13582	**90**	**63**	**90**	158,0	79,0	75,0	46,0	47,5	46,0	120,0	84,0	0,876	• • •	1		
	13584	**90**	**75**	**90**	158,0	79,0	81,0	46,0	51,0	46,0	120,0	120,0	0,991	• • •	1		
	13586	**110**	**63**	**110**	186,0	93,0	87,5	56,0	60,0	56,0	147,0	110,0	1,562	• • •	1		
	13588	**110**	**75**	**110**	186,0	93,0	87,5	56,0	57,5	56,0	147,0	110,0	1,511	• • •	1		
	13590	**110**	**90**	**110**	186,0	93,0	89,0	56,0	56,0	56,0	147,0	120,0	1,548	• • •	1		
	13592	**125**	**75**	**125**	233,0	116,5	106,5	76,5	76,5	76,5	167,0	100,0	2,427	• • •	1		
	13594	**125**	**90**	**125**	233,0	116,5	109,5	76,5	76,5	76,5	167,0	120,0	2,509	• • •	1		
	13596	**125**	**110**	**125**	233,0	116,5	113,5	76,5	76,5	76,5	167,0	147,0	2,563	• • •	1		

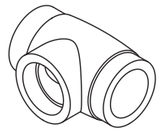
RED.-T-PIECE, SOCKET- & BUTT WELDING

Systems: aquatherm green pipe, aquatherm blue pipe
Standard: DIN 16962, DIN EN ISO 15874
Colour: green
Form: *see table*





Fitting made of pipe segments



Injection molded fitting

Note: There is a gradual conversion of the XXL-fittings made of pipe segments to an injection molded design. The table shows which articles are already available in new design at the time of printing this catalogue. In the aquatherm technews we will inform you of further changes, but first the current stock of the red.-t-pieces made of pipe segments has to be sold.

All fittings, which are converted to the injection molding production, are still available on inquiry as special fittings made of pipe segments. No article numbers are defined for special fittings of any type.

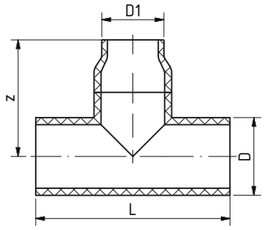
Please note! Electrofusion sockets can not be processed directly with injection molded fittings. When using electrofusion sockets either segment welded special fittings must be used or pipe pieces must be welded to the injection molded fittings.

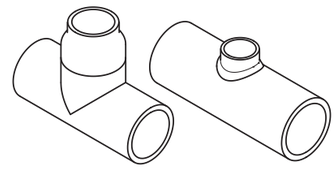
SDR	Art. no.	D [mm]	d1 [mm]	D1 [mm]	L [mm]	l [mm]	z [mm]	Weight [kg]	System		pipe segments	injection molded*	PU	Box unit	Price € m/pc
branch: socket welding															
7,4	**13600**	**160**	**75**	100,0	460,0	122,0	92,0	4,414	•		•		1		
	13602	**160**	**90**	120,0	460,0	125,0	92,0	4,515	•		•		1		
	13606	**160**	**125**	167,0	290,0	120,0	80,0	3,441	•			•	1		
	13608	**200**	**75**	100,0	500,0	142,0	112,0	7,110	•		•		1		
	13610	**200**	**90**	120,0	500,0	145,0	112,0	7,540	•		•		1		
	13612	**200**	**110**	147,0	500,0	149,0	112,0	7,325	•		•		1		
	13614	**200**	**125**	167,0	500,0	155,0	115,0	7,645	•		•		1		
	13624	**250**	**75**	100,0	750,0	167,0	137,0	16,600	•		•		1		
	13626	**250**	**90**	120,0	750,0	170,0	137,0	16,800	•		•		1		
	13628	**250**	**110**	147,0	750,0	174,0	137,0	16,800	•		•		1		
	13630	**250**	**125**	167,0	750,0	180,0	140,0	17,000	•		•		1		
9	**313600**	**160**	**75**	100,0	460,0	122,0	92,0	3,903	•		•		1		
	313602	**160**	**90**	120,0	460,0	125,0	92,0	4,039	•		•		1		
	313608	**200**	**75**	100,0	500,0	142,0	112,0	6,476	•		•		1		
	313610	**200**	**90**	120,0	500,0	145,0	112,0	6,581	•		•		1		
	313612	**200**	**110**	147,0	500,0	149,0	112,0	6,863	•		•		1		
	313614	**200**	**125**	167,0	500,0	155,0	115,0	7,114	•		•		1		
	313624	**250**	**75**	100,0	750,0	167,0	137,0	14,802	•		•		1		
	313626	**250**	**90**	120,0	750,0	170,0	137,0	14,932	•		•		1		
	313628	**250**	**110**	147,0	750,0	174,0	137,0	15,178	•		•		1		
	313630	**250**	**125**	167,0	750,0	180,0	140,0	15,398	•		•		1		
	313904	**315**	**125**	167,0	920,0	212,5	172,5	29,196	•		•		1		
	313916	**355**	**125**	167,0	960,0	232,5	192,5	38,466	•		•		1		
11	**13601**	**160**	**75**	100,0	460,0	122,0	92,0	3,140	•	•	•		1		
	13603	**160**	**90**	120,0	460,0	125,0	92,0	3,176	•	•	•		1		
	13607	**160**	**125**	167,0	290,0	120,0	80,0	2,842	•	•		•	1		
	13609	**200**	**75**	100,0	500,0	142,0	112,0	5,284	•		•		1		
	13611	**200**	**90**	120,0	500,0	145,0	112,0	5,168	•		•		1		
	13613	**200**	**110**	147,0	500,0	149,0	112,0	5,648	•		•		1		
	13615	**200**	**125**	167,0	500,0	155,0	115,0	5,786	•		•		1		
	13625	**250**	**75**	100,0	750,0	167,0	137,0	12,000	•		•		1		
	13627	**250**	**90**	120,0	750,0	170,0	137,0	12,000	•		•		1		
	13629	**250**	**110**	147,0	750,0	174,0	137,0	13,000	•		•		1		
	13631	**250**	**125**	167,0	750,0	180,0	140,0	12,000	•		•		1		
	13651	**315**	**125**	167,0	920,0	213,0	173,0	25,150	•		•		1		
	13663	**355**	**125**	167,0	960,0	233,0	193,0	30,851	•		•		1		
	13676	**400**	**125**	167,0	1000,0	255,0	215,0	42,169	•		•		1		
	13690	**450**	**125**	167,0	1050,0	280,0	240,0	55,794	•		•		1		

* status quo at the time of printing, further injection molded parts follow

RED.-T-PIECE, BUTT WELDING

Systems: aquatherm green pipe
Standard: DIN 16962, DIN EN ISO 15874
Branch: butt welding
Form: *see table*

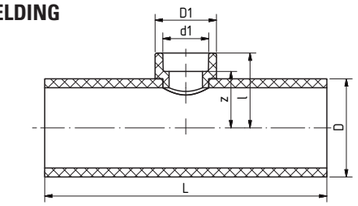


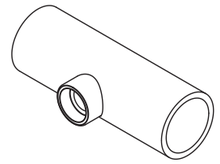


SDR	Art. no.	D [mm]	D1 [mm]	L [mm]	z [mm]	Weight [kg]	System	Pipe with reducer	Pipe with weld-in saddle	PU	Box unit	Price € m/pc
branch: butt welding												
7,4	**13618**	**200**	**160**	500,0	300,0	10,891	•	•		1		
	13634	**250**	**160**	750,0	375,0	28,000	•	•		1		
	13640	**250**	**200**	750,0	375,0	27,000	•	•		1		
9	**313618**	**200**	**160**	500,0	300,0	9,332	•	•		1		
	313634	**250**	**160**	750,0	375,0	21,547	•	•		1		
	313640	**250**	**200**	750,0	376,0	21,853	•	•		1		
	313906	**315**	**160**	920,0	238,0	29,237	•		•	1		
	313908	**315**	**200**	920,0	460,0	42,166	•	•		1		
	313910	**315**	**250**	920,0	460,0	42,557	•	•		1		
	313918	**355**	**160**	960,0	258,0	38,479	•		•	1		
	313920	**355**	**200**	960,0	268,0	39,237	•		•	1		
	313922	**355**	**250**	960,0	480,0	52,683	•	•		1		
	313924	**355**	**315**	960,0	480,0	55,511	•	•		1		
11	**13619**	**200**	**160**	500,0	300,0	7,445	•	•		1		
	13635	**250**	**160**	750,0	375,0	19,500	•	•		1		
	13641	**250**	**200**	750,0	375,0	18,500	•	•		1		
	13653	**315**	**160**	920,0	237,5	24,850	•		•	1		
	13655	**315**	**200**	920,0	460,0	29,400	•	•		1		
	13657	**315**	**250**	920,0	460,0	30,250	•	•		1		
	13665	**355**	**160**	960,0	257,5	30,893	•		•	1		
	13667	**355**	**200**	960,0	267,5	31,651	•		•	1		
	13669	**355**	**250**	960,0	480,0	41,635	•	•		1		
	13671	**355**	**315**	960,0	480,0	44,721	•	•		1		
	13678	**400**	**160**	1000,0	354,0	44,111	•		•	1		
	13680	**400**	**200**	1000,0	318,0	44,111	•		•	1		
	13682	**400**	**250**	1000,0	280,0	44,111	•		•	1		
	13684	**400**	**315**	1000,0	500,0	46,162	•	•		1		
	13685	**400**	**355**	1000,0	500,0	54,361	•	•		1		
	13692	**450**	**160**	1050,0	379,0	57,962	•		•	1		
	13694	**450**	**200**	1050,0	343,0	57,962	•		•	1		
	13696	**450**	**250**	1050,0	305,0	57,962	•		•	1		
	13698	**450**	**315**	1050,0	315,0	58,818	•		•	1		
	13699	**450**	**355**	1050,0	525,0	78,330	•	•		1		
	13700	**450**	**400**	1050,0	525,0	78,330	•	•		1		

aquatherm blue pipe RED.-T-PIECE, SOCKET- & BUTT WELDING

Systems: aquatherm blue pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: blue/green
Branch: socket welding
Form: pipes with weld-in saddle

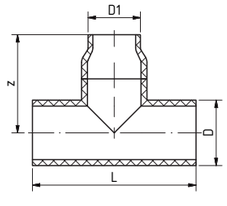


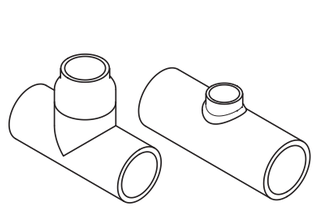


SDR	Art. no.	D [mm]	d1 [mm]	D1 [mm]	L [mm]	l [mm]	z [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
						branch: socket welding						
	2013609	**200**	**75**	100,0	500,0	142,0	112,0	5,460	•	1		
	2013611	**200**	**90**	120,0	500,0	145,0	112,0	5,580	•	1		
	2013613	**200**	**110**	147,0	500,0	149,0	112,0	5,810	•	1		
	2013615	**200**	**125**	167,0	500,0	155,0	115,0	6,100	•	1		
	2013625	**250**	**75**	100,0	750,0	167,0	137,0	12,440	•	1		
11	**2013627**	**250**	**90**	120,0	750,0	170,0	137,0	12,420	•	1		
	2013629	**250**	**110**	147,0	750,0	174,0	137,0	12,760	•	1		
	2013631	**250**	**125**	167,0	750,0	180,0	140,0	13,030	•	1		
	2013651	**315**	**125**	167,0	920,0	213,0	173,0	25,000	•	1		
	2013663	**355**	**125**	167,0	960,0	233,0	193,0	32,500	•	1		
	2013676	**400**	**125**	167,0	1000,0	255,0	215,0	42,100	•	1		
	2013690	**450**	**125**	167,0	1050,0	280,0	240,0	55,700	•	1		

aquatherm blue pipe RED.-T-PIECE, BUTT WELDING

Systems: aquatherm blue pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: blue/green
Branch: butt welding

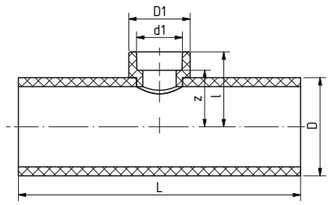


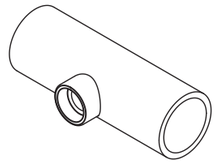


SDR	Art. no.	D [mm]	D1 [mm]	L [mm]	z [mm]	Weight [kg]	System	Pipe with reducer	Pipe with weld-in saddle	PU	Box unit	Price € m/pc
						branch: butt welding						
	2013619	**200**	**160**	500,0	300,0	7,650	•	•		1		
	2013635	**250**	**160**	750,0	375,0	19,030	•	•		1		
	2013641	**250**	**200**	750,0	375,0	21,100	•	•		1		
	2013653	**315**	**160**	920,0	237,5	25,000	•		•	1		
	2013655	**315**	**200**	920,0	460,0	33,200	•	•		1		
	2013657	**315**	**250**	920,0	460,0	34,200	•	•		1		
	2013665	**355**	**160**	960,0	257,5	32,500	•		•	1		
	2013667	**355**	**200**	960,0	267,5	30,200	•		•	1		
	2013669	**355**	**250**	960,0	480,0	40,000	•	•		1		
	2013671	**355**	**315**	960,0	480,0	40,000	•	•		1		
11	**2013678**	**400**	**160**	1000,0	354,0	44,100	•		•	1		
	2013680	**400**	**200**	1000,0	318,0	44,100	•		•	1		
	2013682	**400**	**250**	1000,0	280,0	46,000	•		•	1		
	2013684	**400**	**315**	1000,0	500,0	56,000	•	•		1		
	2013685	**400**	**355**	1000,0	500,0	54,300	•	•		1		
	2013692	**450**	**160**	1050,0	379,0	57,900	•		•	1		
	2013694	**450**	**200**	1050,0	343,0	57,900	•		•	1		
	2013696	**450**	**250**	1050,0	305,0	57,900	•		•	1		
	2013698	**450**	**315**	1050,0	315,0	58,400	•		•	1		
	2013699	**450**	**355**	1050,0	525,0	75,000	•	•		1		
	2013700	**450**	**400**	1050,0	525,0	76,000	•	•		1		

aquatherm blue pipe RED.-T-PIECE SOCKET- & BUTT WELDING

Systems: aquatherm blue pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: blue/green
Branch: socket welding
Form: pipes with weld-in saddle



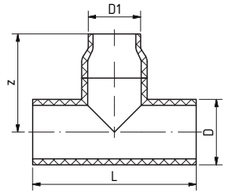


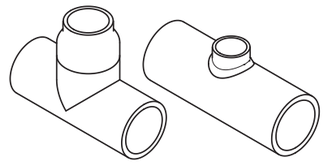
SDR	Art. no.	D [mm]	d1 [mm]	D1 [mm]	L [mm]	l [mm]	z [mm]	Weight [kg]	System	pipe segments	injection molded*	PU	Box unit	Price € m/pc
							branch: socket welding							
	2513600	**160**	**75**	100,0	460,0	122,0	92,0	2,227	•	•		1		
	2513602	**160**	**90**	120,0	460,0	125,0	92,0	2,364	•	•		1		
	2513606	**160**	**125**	167,0	290,0	120,0	80,0	2,309			•	1		
	2513608	**200**	**75**	100,0	500,0	142,0	112,0	3,620	•	•		1		
	2513610	**200**	**90**	120,0	500,0	145,0	112,0	3,742	•	•		1		
	2513612	**200**	**110**	147,0	500,0	149,0	112,0	3,976	•	•		1		
	2513614	**200**	**125**	167,0	500,0	155,0	115,0	4,269	•	•		1		
	2513624	**250**	**75**	100,0	750,0	167,0	137,0	8,149	•	•		1		
	2513626	**250**	**90**	120,0	750,0	170,0	137,0	8,274	•	•		1		
17,6	**2513628**	**250**	**110**	147,0	750,0	174,0	137,0	8,504	•	•		1		
	2513630	**250**	**125**	167,0	750,0	180,0	140,0	9,000	•	•		1		
	2513651	**315**	**125**	167,0	920,0	213,0	173,0	17,570	•	•		1		
	2513663	**355**	**125**	167,0	960,0	233,0	193,0	21,500	•	•		1		
	2513676	**400**	**125**	167,0	1000,0	255,0	215,0	27,690	•	•		1		
	2513690	**450**	**125**	167,0	1050,0	280,0	240,0	36,470	•	•		1		
	2513804	**500**	**125**	167,0	1200,0	305,0	265,0	51,250	•	•		1		
	2513821	**560**	**125**	167,0	1260,0	335,0	295,0	66,900	•	•		1		
	2513839	**630**	**125**	167,0	1330,0	370,0	330,0	89,170	•	•		1		

* status quo at the time of printing, further injection molded parts follow

aquatherm blue pipe RED.-T-PIECE, BUTT WELDING

Systems: aquatherm blue pipe
Standard: DIN 16962, DIN EN ISO 15874
Colour: blue/green
Branch: butt welding
Form: *see table*

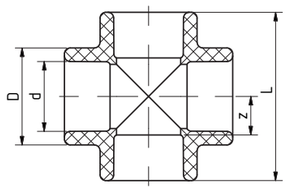


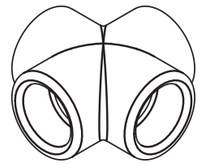


SDR	Art. no.	D [mm]	D1 [mm]	L [mm]	z [mm]	Weight [kg]	System	Pipe with reducer	Pipe with weld-in saddle	PU	Box unit	Price € m/pc
						butt welding						
	2513618	**200**	**160**	500,0	250,0	5,000	•	•		1		
	2513634	**250**	**160**	750,0	375,0	11,600	•	•		1		
	2513640	**250**	**200**	750,0	375,0	11,500	•	•		1		
	2513653	**315**	**160**	920,0	237,5	16,500	•		•	1		
	2513655	**315**	**200**	920,0	460,0	23,600	•	•		1		
	2513657	**315**	**250**	920,0	460,0	22,600	•	•		1		
	2513665	**355**	**160**	960,0	257,5	21,500	•		•	1		
	2513667	**355**	**200**	960,0	267,5	21,900	•		•	1		
	2513669	**355**	**250**	960,0	480,0	28,300	•	•		1		
	2513671	**355**	**315**	960,0	480,0	30,500	•	•		1		
	2513678	**400**	**160**	1000,0	354,0	29,700	•		•	1		
	2513680	**400**	**200**	1000,0	318,0	29,700	•		•	1		
	2513682	**400**	**250**	1000,0	280,0	29,000	•		•	1		
	2513684	**400**	**315**	1000,0	500,0	35,800	•	•		1		
	2513685	**400**	**355**	1000,0	500,0	39,700	•	•		1		
	2513692	**450**	**160**	1050,0	379,0	37,000	•		•	1		
	2513694	**450**	**200**	1050,0	343,0	37,000	•		•	1		
	2513696	**450**	**250**	1050,0	305,0	37,000	•		•	1		
	2513698	**450**	**315**	1050,0	315,0	37,000	•		•	1		
	2513699	**450**	**355**	1050,0	525,0	50,500	•	•		1		
	2513700	**450**	**400**	1050,0	525,0	50,100	•	•		1		
17,6	**2513806**	**500**	**160**	1200,0	404,0	53,400	•		•	1		
	2513808	**500**	**200**	1200,0	368,0	53,500	•		•	1		
	2513810	**500**	**250**	1200,0	330,0	53,500	•		•	1		
	2513812	**500**	**315**	1200,0	340,0	54,000	•		•	1		
	2513813	**500**	**355**	1200,0	600,0	72,500	•	•		1		
	2513814	**500**	**400**	1200,0	600,0	72,700	•	•		1		
	2513815	**500**	**450**	1200,0	600,0	71,500	•	•		1		
	2513823	**560**	**160**	1260,0	434,0	69,000	•		•	1		
	2513825	**560**	**200**	1260,0	398,0	69,000	•		•	1		
	2513827	**560**	**250**	1260,0	360,0	69,000	•		•	1		
	2513829	**560**	**315**	1260,0	370,0	66,700	•		•	1		
	2513831	**560**	**400**	1260,0	630,0	96,200	•	•		1		
	2513832	**560**	**450**	1260,0	630,0	97,400	•	•		1		
	2513833	**560**	**500**	1260,0	630,0	96,400	•	•		1		
	2513841	**630**	**160**	1330,0	474,0	91,530	•		•	1		
	2513843	**630**	**200**	1330,0	438,0	91,500	•		•	1		
	2513845	**630**	**250**	1330,0	400,0	91,500	•		•	1		
	2513847	**630**	**315**	1330,0	405,0	92,350	•		•	1		
	2513849	**630**	**400**	1330,0	665,0	133,800	•	•		1		
	2513850	**630**	**450**	1330,0	665,0	133,400	•	•		1		
	2513851	**630**	**500**	1330,0	665,0	130,700	•	•		1		
	2513852	**630**	**560**	1330,0	665,0	128,700	•	•		1		

CROSS

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

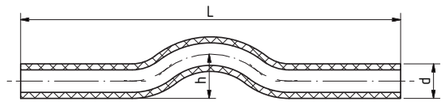


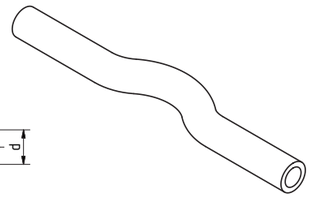


SDR	Art. no.	Dimension d [mm]	D [mm]	L [mm]	z [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
						socket welding				
6 7,4 9 11	**13708**	**20**	29,5	51,5	11,3	0,025	• • •	10		
	13710	**25**	34,0	59,0	13,5	0,035	• • •	10		
	13712	**32**	43,0	70,0	17,0	0,062	• • •	5		
	13714	**40**	52,0	83,0	21,0	0,099	• • •	5		

CROSS OVER FITTING

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

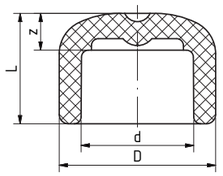


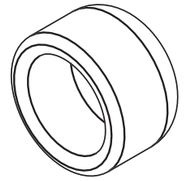


SDR	Art. no.	Dimension d [mm]	h [mm]	L [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
					socket welding				
6 7,4 9 11	**16106**	**16**	17,0	352,0	0,038	•	10		
	16108	**20**	22,0	352,0	0,060	• • •	10		
	16110	**25**	25,0	352,0	0,091	• • •	10		
	16112	**32**	32,0	352,0	0,154	• • •	5		

END CAP

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R & PP-RP
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

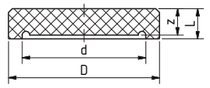


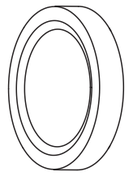


SDR	Art. no.	Dimension d [mm]	D [mm]	z [mm]	L [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
					socket welding					
6 7,4 9 11	**14106**	**16**	26,0	13,5	26,5	0,008	•	10	2000	
	14108	**20**	29,5	9,5	24,0	0,009	• • •	10	2000	
	14110	**25**	34,0	8,0	24,0	0,011	• • •	10	1500	
	14112	**32**	43,0	11,0	29,0	0,023	• • •	5	1000	
	14114	**40**	52,0	17,5	38,0	0,042	• • •	5	500	
	14116	**50**	68,0	21,0	44,5	0,082	• • •	5	300	
	14118	**63**	84,0	24,5	52,0	0,146	• • •	1	150	
	14120	**75**	100,0	28,5	58,5	0,243	• • •	1	90	
	14122	**90**	120,0	34,5	67,5	0,365	• • •	1	60	
	14124	**110**	147,0	28,0	65,0	0,635	• • •	1	40	
	14126	**125**	167,0	42,0	82,0	0,872	• • •	1		

END CAP BUTT-WELDING

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R & PP-RP
Standard: DIN 16962, DIN EN ISO 15874
Colour: green



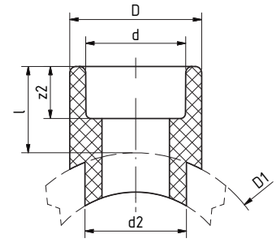


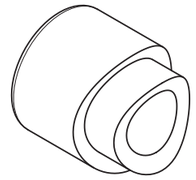
SDR	Art. no.	Dimension D [mm]	L [mm]	z [mm]	d [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
7,4	**14130**	**160**	70,0	21,9	116,2	0,876	•	1		
	14134	**200**	80,0	27,4	145,2	1,398	•	1		
	14138	**250**	90,0	34,2	181,6	2,530	•	1		
9	**314130**	**160**	70,0	17,9	124,2	0,847	•	1		
	314134	**200**	80,0	22,4	155,2	1,373	•	1		
	314138	**250**	90,0	27,9	194,2	2,856	•	1		
	314142	**315**	70,0	52,5	244,6	5,080	•	1		
	314144	**355**	80,0	66,5	275,6	7,050	•	1		
11	**14131**	**160**	70,0	14,6	130,8	0,759	• •	1		
	14135	**200**	80,0	18,2	163,6	1,070	• •	1		
	14139	**250**	90,0	22,7	204,6	1,989	• •	1		
	14143	**315**	70,0	52,5	257,8	6,200	• •	1		
	14145	**355**	80,0	67,5	290,6	9,500	• •	1		
	14147	**400**	70,0	60,0	327,4	8,500	• •	1		
	14149	**450**	80,0	70,0	368,2	12,200	• •	1		
17,6	**2514130**	**160**	70,0	9,1	141,8	0,679	•	1		
	2514134	**200**	80,0	11,4	177,2	0,925	•	1		
	2514138	**250**	90,0	14,2	221,6	2,109	•	1		
	2514142	**315**	70,0	60,0	279,2	2,961	•	1		
	2514144	**355**	70,0	60,0	314,8	3,930	•	1		
	2514146	**400**	75,0	65,0	354,6	5,821	•	1		
	2514148	**450**	70,0	56,0	399,0	8,520	•	1		
	2514150	**500**	75,0	62,0	443,2	12,500	•	1		
	2514152	**560**	80,0	69,5	496,6	16,000	•	1		
	2514154	**630**	90,0	78,0	558,6	23,500	•	1		

WELD-IN SADDLE

for pressureless installation

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green
Notice *do not use with aquatherm blue pipe OT





SDR	Art. no.	D1 [mm]	d [mm]	d2 [mm]	l [mm]	z2 [mm]	D [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
						socket welding						
6 7,4 9 11 17,6	**15156***	**40**	**20**	**25**	27,0	14,5	29,5	0,016	• • •	5		
	15158*	**40**	**25**	**25**	28,5	16,0	34,0	0,017	• • •	5		
	15160	**50**	**20**	**25**	27,5	14,5	29,5	0,018	• • •	5		
	15162	**50**	**25**	**25**	28,5	16,0	34,0	0,019	• • •	5		
	15164	**63**	**20**	**25**	27,5	14,5	29,5	0,017	• • •	5		
	15166	**63**	**25**	**25**	28,5	16,0	34,0	0,019	• • •	5		
	15168	**63**	**32**	**32**	30,0	18,0	43,0	0,028	• • •	5		
	15170	**75**	**20**	**25**	27,5	14,5	29,5	0,018	• • •	5		
	15172	**75**	**25**	**25**	28,5	16,0	34,0	0,019	• • •	5		
	15174	**75**	**32**	**32**	30,0	18,0	43,0	0,028	• • •	5		
	15175	**75**	**40**	**40**	34,0	20,5	52,0	0,049	• • •	5		
	15176	**90**	**20**	**25**	27,5	14,5	29,5	0,018	• • •	5		
	15178	**90**	**25**	**25**	28,5	16,0	34,0	0,019	• • •	5		
	15180	**90**	**32**	**32**	30,0	18,0	43,0	0,029	• • •	5		
	15181	**90**	**40**	**40**	34,0	20,5	52,0	0,048	• • •	5		
	15182	**110**	**20**	**25**	27,5	14,5	29,5	0,019	• • •	5		
	15184	**110**	**25**	**25**	28,5	16,0	34,0	0,020	• • •	5		
	15186	**110**	**32**	**32**	30,0	18,0	43,0	0,030	• • •	5		
	15188	**110**	**40**	**40**	34,0	20,5	52,0	0,050	• • •	5		
	15189	**110**	**50**	**50**	34,0	23,5	68,0	0,091	• • •	5		
	15190	**125**	**20**	**25**	27,5	14,5	29,5	0,019	• • •	5		
	15192	**125**	**25**	**25**	28,5	16,0	34,0	0,020	• • •	5		
	15194	**125**	**32**	**32**	30,0	18,0	43,0	0,029	• • •	5		
	15196	**125**	**40**	**40**	34,0	20,5	52,0	0,050	• • •	5		
	15197	**125**	**50**	**50**	34,0	23,5	68,0	0,090	• • •	5		
	15198	**125**	**63**	**63**	38,0	27,5	84,0	0,149	• • •	5		
	15206	**160**	**20**	**25**	27,5	14,5	29,5	0,021	• •	5		
	15208	**160**	**25**	**25**	28,5	16,0	34,0	0,023	• •	5		
	15210	**160**	**32**	**32**	30,0	18,0	43,0	0,034	• •	5		
	15212	**160**	**40**	**40**	34,0	20,5	52,0	0,054	• •	5		
	15214	**160**	**50**	**50**	34,0	23,5	68,0	0,094	• •	5		
	15216	**160**	**63**	**63**	38,0	27,5	84,0	0,157	• •	5		
	15218	**160**	**75**	**75**	42,0	30,0	100,0	0,238	• •	5		
	15220	**160**	**90**	**90**	45,0	33,0	120,0	0,360	• •	5		
	15228	**200-250**	**20**	**25**	27,5	14,5	29,5	0,020	• •	5		
	15229	**200-250**	**25**	**25**	28,5	16,0	34,0	0,021	• •	5		
	15230	**200-250**	**32**	**32**	30,0	18,0	43,0	0,031	• •	5		
	15231	**200**	**40**	**40**	34,0	20,5	52,0	0,049	• •	5		
	15232	**200**	**50**	**50**	34,0	23,5	68,0	0,087	• •	5		
	15233	**200**	**63**	**63**	37,5	27,5	84,0	0,146	• •	5		
	15234	**200**	**75**	**75**	42,0	30,0	100,0	0,225	• •	5		
	15235	**200**	**90**	**90**	45,0	33,0	120,0	0,356	• •	5		
	15236	**200**	**110**	**110**	49,0	37,0	147,0	0,638	• •	5		
	15237	**200**	**125**	**125**	55,0	40,0	167,0	0,862	• •	5		
	15251	**250**	**40**	**40**	34,0	20,5	52,0	0,053	• •	5		
	15252	**250**	**50**	**50**	34,0	23,5	68,0	0,090	• •	5		
	15253	**250**	**63**	**63**	37,5	27,5	84,0	0,152	• •	5		
	15254	**250**	**75**	**75**	42,0	30,0	100,0	0,222	• •	5		
	15255	**250**	**90**	**90**	45,0	33,0	120,0	0,348	• •	5		
	15256	**250**	**110**	**110**	49,0	37,0	147,0	0,602	• •	5		
	15257	**250**	**125**	**125**	55,0	40,0	167,0	0,820	• •	5		

WELD-IN SADDLE

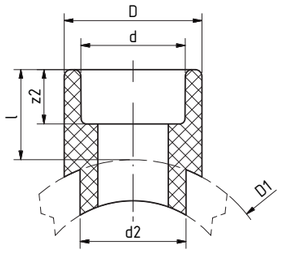
for pressureless installation

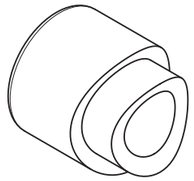
Systems: aquatherm green pipe, aquatherm blue pipe

Material: Fusiolen® PP-R

Standard: DIN 16962, DIN EN ISO 15874

Colour: green





SDR	Art. no.	D1 [mm]	d [mm]	d2 [mm]	l [mm]	z2 [mm]	D [mm]	Weight [kg]	System		PU	Box unit	Price € m/pc
socket welding													
6 7,4 9 11 17,6	**15260**	**315-355**	**63**	**63**	37,5	27,5	84,0	0,153	•	•	1		
	15261	**315-355**	**75**	**75**	42,0	30,0	100,0	0,230	•	•	1		
	15262	**315**	**90**	**90**	45,0	33,0	120,0	0,363	•	•	1		
	15263	**315**	**110**	**110**	49,0	37,0	147,0	0,592	•	•	1		
	15264	**315**	**125**	**125**	55,0	40,0	167,0	0,830	•	•	1		
	15268	**355**	**90**	**90**	45,0	33,0	120,0	0,355	•	•	1		
	15269	**355**	**110**	**110**	49,0	37,0	147,0	0,586	•	•	1		
	15270	**355**	**125**	**125**	55,0	40,0	167,0	0,813	•	•	1		
	15275	**400-500**	**75**	**75**	42,0	30,0	100,0	0,216	•	•	1		
	15277	**400-450**	**110**	**110**	49,0	37,0	147,0	0,535	•	•	1		
	15278	**400**	**125**	**125**	55,0	40,0	167,0	0,693	•	•	1		
	15288	**400-500**	**90**	**90**	45,0	33,0	120,0	0,330	•	•	1		
	15290	**450-500**	**125**	**125**	55,0	40,0	167,0	0,671	•	•	1		
	15300	**400-630**	**63**	**63**	37,5	27,5	84,0	0,498	•	•	1		
	15303	**500-560**	**110**	**110**	49,0	37,5	147,0	0,533	•	•	1		
	15315	**560-630**	**75**	**75**	42,0	30,0	100,0	0,260	•	•	1		
	15316	**560-630**	**90**	**90**	45,0	33,0	120,0	0,350	•	•	1		
	15318	**560-630**	**125**	**125**	55,0	40,0	167,0	0,689	•	•	1		
	15331	**630**	**110**	**110**	49,0	37,0	147,0	0,567	•	•	1		

With weld-on surface and additional weld-in socket for the fusion with the inner pipe wall.
The necessary tools for the fusion of aquatherm green pipe weld-in saddles are listed from page 118 onwards.

WELD-IN SADDLE BUTT WELDING

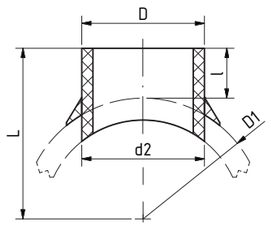
for pressureless installation

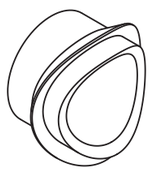
Systems: aquatherm green pipe, aquatherm blue pipe

Material: Fusiolen® PP-R & PP-RP

Standard: DIN 16962, DIN EN ISO 15874

Colour: green





SDR	Art. no.	D1 [mm]	D [mm]	d2 [mm]	l [mm]	L [mm]	Weight [kg]	System		PU	Box unit	Price € m/pc
butt welding												
9	**315265**	**315**	**160**	**160**	80,0	237,5	0,831	•	•	1		
	315271	**355**	**160**	**160**	80,0	257,5	0,845	•	•	1		
11	**15265**	**315**	**160**	**160**	80,0	237,5	0,868	•	•	1		
	15271	**355**	**160**	**160**	80,0	257,5	0,867	•	•	1		

With weld-on surface and additional weld-in socket for the fusion with the inner pipe wall.
The necessary tools for the fusion of aquatherm green pipe weld-in saddles are listed from page 118 onwards.

WELD-IN SADDLE WITH FEMALE THREAD

for pressureless installation

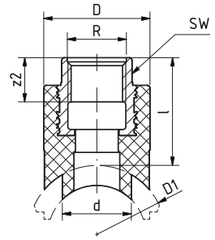
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

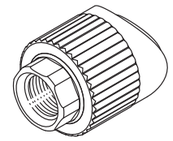
Material: Fusiolen® PP-R

Standard: DIN 16962, DIN EN ISO 15874
Fusiolen® PP-R, brass
Fusiolen® PP-R, stainless steel

Colour: green

Notice *do not use with aquatherm blue pipe OT



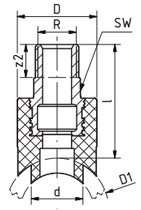


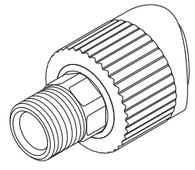
SDR	Art. no.	D1 [mm]	d [mm]	l [mm]	z2 [mm]	D [mm]	R	SW [mm]	Weight [kg]	System			PU	Box unit	Price € m/pc
socket welding															
	brass														
6 7,4 9 11 17,6	**28214***	**40**	**25**	39,0	16,0	38,5	1/2“	24	0,088	•	•	•	5		
	28216	**50**	**25**	39,0	16,0	38,5	1/2“	24	0,090	•	•	•	5		
	28218	**63**	**25**	39,0	16,0	38,5	1/2“	24	0,089	•	•	•	5		
	28220	**75**	**25**	39,0	16,0	38,5	1/2“	24	0,083	•	•	•	5		
	28222	**90**	**25**	39,0	16,0	38,5	1/2“	24	0,090	•	•	•	5		
	28224	**110**	**25**	39,0	16,0	38,5	1/2“	24	0,089	•	•	•	5		
	28226	**125**	**25**	39,0	16,0	38,0	1/2“	24	0,092	•	•	•	5		
	28230	**160**	**25**	39,0	16,0	38,5	1/2“	24	0,092	•	•		5		
	28232	**200-250**	**25**	39,0	16,0	38,5	1/2“	24	0,092	•	•		5		
	28234	**40**	**25**	39,0	21,0	43,5	3/4“	31	0,107	•	•	•	5		
	28236	**50**	**25**	39,0	21,0	43,5	3/4“	31	0,110	•	•	•	5		
	28238	**63**	**25**	39,0	21,0	43,5	3/4“	31	0,109	•	•	•	5		
	28240	**75**	**25**	39,0	21,0	43,5	3/4“	31	0,109	•	•	•	5		
	28242	**90**	**25**	39,0	21,0	43,5	3/4“	31	0,110	•	•	•	5		
	28244	**110**	**25**	39,0	21,0	43,5	3/4“	31	0,110	•	•	•	5		
	28246	**125**	**25**	39,0	21,0	43,5	3/4“	31	0,112	•	•	•	5		
	28250	**160**	**25**	39,0	21,0	43,5	3/4“	31	0,112	•	•		5		
	28254	**200-250**	**25**	39,0	21,0	43,5	3/4“	31	0,112	•	•		5		
	28260	**75**	**32**	43,0	22,0	60,0	1“	39	0,223	•	•	•	5		
	28262	**90**	**32**	43,0	22,0	60,0	1“	39	0,223	•	•	•	5		
	28264	**110**	**32**	43,0	22,0	60,0	1“	39	0,223	•	•	•	5		
	28266	**125**	**32**	43,0	22,0	60,0	1“	39	0,224	•	•	•	5		
	28270	**160**	**32**	43,0	22,0	60,0	1“	39	0,226	•	•		5		
	28274	**200-250**	**32**	43,0	22,0	60,0	1“	39	0,244	•	•		5		
	stainless steel														
	928214*	**40**	**25**	39,0	16,0	38,5	1/2“	24	0,088	•	•	•	5		
	928216	**50**	**25**	39,0	16,0	38,5	1/2“	24	0,090	•	•	•	5		
	928218	**63**	**25**	39,0	16,0	38,5	1/2“	24	0,067	•	•	•	5		
	928220	**75**	**25**	39,0	16,0	38,5	1/2“	24	0,067	•	•	•	5		
	928222	**90**	**25**	39,0	16,0	38,5	1/2“	24	0,069	•	•	•	5		
	928224	**110**	**25**	39,0	16,0	38,5	1/2“	24	0,089	•	•	•	5		
	928226	**125**	**25**	39,0	16,0	38,5	1/2“	24	0,069	•	•	•	5		
	928230	**160**	**25**	39,0	16,0	38,5	1/2“	24	0,071	•	•		5		
	928232	**200-250**	**25**	39,0	16,0	38,5	1/2“	24	0,066	•	•		5		
	928234	**40**	**25**	39,0	21,0	43,5	3/4“	31	0,080	•	•	•	5		
	928236	**50**	**25**	39,0	21,0	43,5	3/4“	31	0,083	•	•	•	5		
	928238	**63**	**25**	39,0	21,0	43,5	3/4“	31	0,109	•	•	•	5		
	928240	**75**	**25**	39,0	21,0	43,5	3/4“	31	0,109	•	•	•	5		
	928242	**90**	**25**	39,0	21,0	43,5	3/4“	31	0,084	•	•	•	5		
	928244	**110**	**25**	39,0	21,0	43,5	3/4“	31	0,082	•	•	•	5		
	928246	**125**	**25**	39,0	21,0	43,5	3/4“	31	0,084	•	•	•	5		
	928250	**160**	**25**	39,0	21,0	43,5	3/4“	31	0,085	•	•		5		
	928254	**200-250**	**25**	39,0	21,0	43,5	3/4“	31	0,083	•	•		5		
	928260	**75**	**32**	43,0	22,0	60,0	1“	39	0,217	•	•	•	5		
	928262	**90**	**32**	43,0	22,0	60,0	1“	39	0,088	•	•	•	5		
	928264	**110**	**32**	43,0	22,0	60,0	1“	39	0,088	•	•	•	5		
	928266	**125**	**32**	43,0	22,0	60,0	1“	39	0,056	•	•	•	5		
	928270	**160**	**32**	43,0	22,0	60,0	1“	39	0,057	•	•		5		
	928274	**200-250**	**32**	43,0	22,0	60,0	1“	39	0,057	•	•		5		

WELD-IN SADDLE WITH MALE THREAD

for pressureless installation

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green
Notice *do not use with aquatherm blue pipe OT





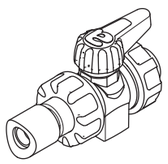
SDR	Art. no.	D1 [mm]	d [mm]	l [mm]	z2 [mm]	D [mm]	R	SW [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
						socket welding							
6 7.4 9 11 17.6	**28314***	**40**	**25**	55,0	16,0	38,5	1/2“	21	0,088	• • •	5		
	28316	**50**	**25**	55,0	16,0	38,5	1/2“	21	0,090	• • •	5		
	28318	**63**	**25**	55,0	16,0	38,5	1/2“	21	0,089	• • •	5		
	28320	**75**	**25**	55,0	16,0	38,5	1/2“	21	0,097	• • •	5		
	28322	**90**	**25**	55,0	16,0	38,5	1/2“	21	0,090	• • •	5		
	28324	**110**	**25**	55,0	16,0	38,5	1/2“	21	0,089	• • •	5		
	28326	**125**	**25**	55,0	16,0	38,5	1/2“	21	0,092	• • •	5		
	28330	**160**	**25**	55,0	16,0	38,5	1/2“	21	0,092	• • •	5		
	28334*	**40**	**25**	56,0	17,0	43,5	3/4“	24	0,107	• • •	5		
	28336	**50**	**25**	56,0	17,0	43,5	3/4“	24	0,110	• • •	5		
	28338	**63**	**25**	56,0	17,0	43,5	3/4“	24	0,109	• • •	5		
	28340	**75**	**25**	56,0	17,0	43,5	3/4“	24	0,109	• • •	5		
	28342	**90**	**25**	56,0	17,0	43,5	3/4“	24	0,110	• • •	5		
	28344	**110**	**25**	56,0	17,0	43,5	3/4“	24	0,110	• • •	5		
	28346	**125**	**25**	56,0	17,0	43,5	3/4“	24	0,112	• • •	5		
	28350	**160**	**25**	56,0	17,0	43,5	3/4“	24	0,112	• •	5		

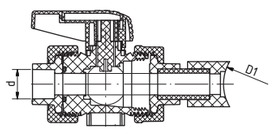
With hex shaped male thread, weld-in surface and weld-in socket for fusion with the inner wall of the pipe. The necessary tools for the fusion of aquatherm green pipe weld-in saddles are listed from page 118 onwards.

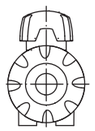
NEW aquatherm WELD-ON SADDLE SET WITH BALL VALVE

for installation under pressure
in use with tapping tool page 123

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green
Notice do not use with aquatherm blue pipe OT







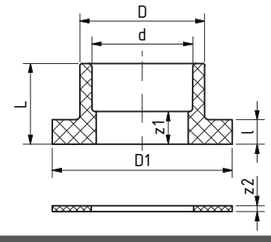
SDR	Art. no.	d [mm]	D1 [mm]	System	PU	Box unit	Price € m/pc
6 7,4 9 11 17,6	**16175**	**40**	**75**	• • •	1		
	16181	**40**	**90**	• • •	1		
	16188	**40**	**110**	• • •	1		
	16196	**40**	**125**	• • •	1		
	16198	**63**	**125**	• • •	1		
	16212	**40**	**160**	• •	1		
	16216	**63**	**160**	• •	1		
	16231	**40**	**200**	• •	1		
	16233	**63**	**200**	• •	1		
	16251	**40**	**250**	• •	1		
	16253	**63**	**250**	• •	1		
	16260	**63**	**315-355**	• •	1		
	16300	**63**	**400-630**	• •	1		

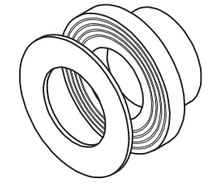
The required tools for the fusion of aquatherm green pipe weld-on saddles are listed from page 118 onwards.

FLANGE ADAPTER SOCKET WELDING

with gasket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green



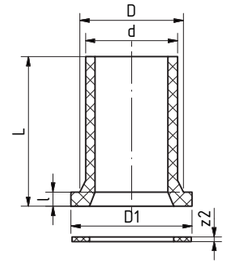


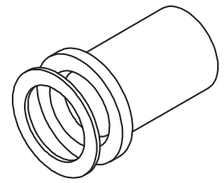
SDR	Art. no.	Dimension d [mm]	L [mm]	l [mm]	D [mm]	D1 [mm]	z1 [mm]	z2 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
						socket welding							
6 7,4 9 11	**15512**	**32**	34,0	10,0	41,0	68,0	16,0	3	0,053	• • •	1		
	15514	**40**	35,5	11,0	50,0	78,0	15,0	3	0,071	• • •	1		
	15516	**50**	39,5	12,0	61,0	88,0	16,0	3	0,071	• • •	1		
	15518	**63**	43,5	14,0	76,0	102,0	16,0	3	0,112	• • •	1		
	15520	**75**	46,0	16,0	90,0	122,0	16,0	3	0,169	• • •	1		
	15522	**90**	50,0	17,0	108,0	138,0	17,0	3	0,261	• • •	1		
	15524	**110**	55,5	18,5	131,0	158,0	18,5	3	0,329	• • •	1		
	15527	**125**	63,0	20,0	165,0	188,0	23,0	3	0,724	• • •	1		

FLANGE ADAPTER SOCKET WELDING

with gasket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green





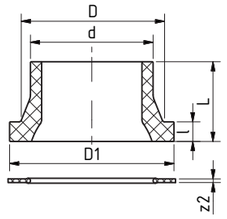
SDR	Art. no.	Dimension d [mm]	L [mm]	l [mm]	D [mm]	D1 [mm]	z2 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**15526**	**125**	195,0	18,5	131,0	158,0	3	1,180	• • •	1		

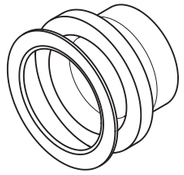
*Only use with fitting 125 mm; with 110 mm flange adapter suitable for Art. no. 15724

Suitable flange adapter for shut-off valves are available on request.

FLANGE ADAPTER BUTT WELDING

with gasket





Systems: aquatherm green pipe, aquatherm blue pipe
Material: Fusiolen® PP-R & PP-RP
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

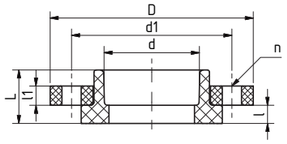
SDR	Art. no.	Dimension d [mm]	L [mm]	l [mm]	D [mm]	D1 [mm]	z2 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
						butt welding						
	15530	**160**	93,0	25,0	175,0	212,0	3,00	1,163	•	1		
	15534	**200**	130,0	32,0	232,0	268,0	6,00	2,292	•	1		
	15538	**250**	130,0	35,0	285,0	320,0	6,00	3,298	•	1		
	315530	**160**	93,0	25,0	175,0	212,0	3	1,150	•	1		
	315534	**200**	130,0	32,0	232,0	268,0	6	2,292	•	1		
9	**315538**	**250**	130,0	35,0	285,0	320,0	6	3,313	•	1		
	315542	**315**	172,5	52,0	337,0	370,0	6	5,640	•	1		
	315544	**355**	185,0	42,0	372,0	432,0	6	14,318	•	1		
	15531	**160**	93,0	25,0	175,0	212,0	3	0,955	• •	1		
	15535	**200**	130,0	32,0	232,0	268,0	6	1,957	• •	1		
	15539	**250**	130,0	35,0	285,0	320,0	6	2,717	• •	1		
11	**15543**	**315**	168,0	35,0	335,0	370,0	6	5,650	• •	1		
	15545	**355**	180,0	42,0	372,0	432,0	6	9,000	• •	1		
	15547	**400**	195,0	50,0	425,0	484,0	6	12,000	• •	1		
	15549	**450**	139,0	33,0	512,0	586,0	7	16,500	• •	1		
	2515530	**160**	93,0	25,0	175,0	212,0	3	0,821	•	1		
	2515534	**200**	130,0	32,0	232,0	268,0	6	1,849	•	1		
	2515538	**250**	130,0	35,0	285,0	320,0	6	2,736	•	1		
	2515542	**315**	168,0	35,0	335,0	370,0	6	4,500	•	1		
	2515544	**355**	180,0	42,0	372,0	432,0	6	6,500	•	1		
17,6	**2515546**	**400**	195,0	44,0	425,0	484,0	6	8,500	•	1		
	2515548	**450**	139,0	46,0	512,0	586,0	7	12,000	•	1		
	2515550	**500**	138,0	58,0	525,0	585,0	7	9,800	•	1		
	2515552	**560**	139,0	50,0	612,0	685,0	7	13,800	•	1		
	2515554	**630**	140,0	52,0	640,0	688,0	7	12,600	•	1		

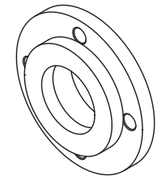
FLANGE ADAPTER INCL. FLANGE PN6

without gasket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Flange: Steel galvanized
Flange adapter: Fusiolen® PP-R
Colour: Flange: black
Flange adapter: green

d = Connection dimension, d1 = hole-circle,
PN 6 = Flange according to DIN 2641





SDR	Art. no.	Diameter d [mm]	D [mm]	d1 [mm]	L [mm]	l1 [mm]	l [mm]	n	Weight [kg]	System	PU	Box unit	Price € m/pc
						socket welding							
	15012	**32**	100,0	75,0	34,0	10,0	10,0	4	1,090	• • •	1		
	15014	**40**	120,0	90,0	35,5	10,0	11,0	4	1,170	• • •	1		
6	**15016**	**50**	130,0	100,0	39,5	10,0	12,0	4	1,360	• • •	1		
7,4	**15018**	**63**	140,0	110,0	43,5	10,0	14,0	4	1,530	• • •	1		
9	**15020**	**75**	160,0	130,0	46,0	10,0	16,0	4	1,930	• • •	1		
11	**15022**	**90**	190,0	150,0	50,0	10,0	17,0	4	3,080	• • •	1		
17,6	**15024**	**110**	210,0	170,0	55,5	10,0	18,5	4	3,430	• • •	1		
	15027	**125**	240,0	200,0	63,0	12,0	20,0	8	3,945	• • •	1		

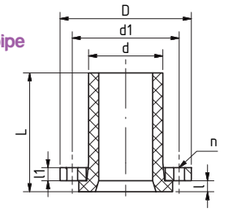
Delivery time: on request

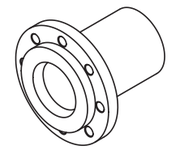
FLANGE ADAPTER INCL. FLANGE PN6

without gasket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Flange: Steel galvanized
Flange adapter: Fusiolen® PP-R
Colour: Flange: black
Flange adapter: green

d = Connection dimension, d1 = hole-circle,
PN 6 = Flange according to DIN 2641





SDR	Art. no.	Diameter d [mm]	D [mm]	d1 [mm]	L [mm]	l1 [mm]	l [mm]	n	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11 17,6	**15026**	**125**	210,0	170,0	195,0	10,0	18,5	4	3,760	• • •	1		

Delivery time: on request

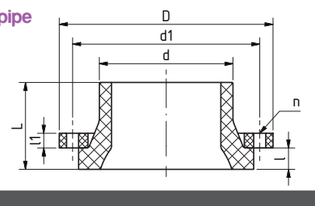
125mm Fitting with 110mm Flange adapter incl. flange PN6
Use only in combination with a fitting

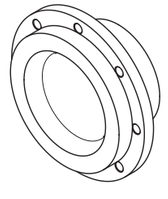
FLANGE ADAPTER INCL. FLANGE PN6

without gasket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Flange: Steel galvanized
Flange adapter: Fusiolen® PP-R
Colour: Flange: black
Flange adapter: green

d = Connection dimension, d1 = hole-circle,
PN 6 = Flange according to DIN 2641





SDR	Art. no.	Diameter d [mm]	D [mm]	d1 [mm]	L [mm]	l1 [mm]	l [mm]	n	Weight [kg]	System	PU	Box unit	Price € m/pc
						Butt welding							
	15031	160	265,0	225,0	93,0	12,0	25,0	8	4,136	• •	1		
11	**15035**	200	320,0	280,0	130,0	12,0	32,0	8	6,694	• •	1		
	15039	250	375,0	335,0	130,0	12,0	35,0	8	9,500	• •	1		

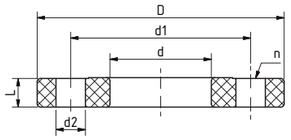
Delivery time: on request

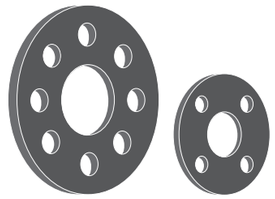
PLASTIC COATED STEEL FLANGE

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Material: PP/steel

Colour: grey





d = Connection dimension, d1 = hole-circle,
PN10/16= Flange according to DIN EN1092, DIN2501

SDR	Art. no.	fits to Art. no.	Dimension flange adapter [mm]	DN	d [mm]	d1 [mm]	D [mm]	d2 [mm]	L [mm]	n	Weight [kg]	System	PU	Box unit	Price € m/pc
							socket welding								
	15712	15512	**32**	25	42,0	85,0	116,0	14,0	15,5	4	0,469	• • •	1		
	15714	15514	**40**	32	51,0	100,0	141,0	18,0	17,5	4	0,722	• • •	1		
	15716	15516	**50**	40	62,0	110,0	151,0	18,0	17,5	4	0,770	• • •	1		
	15718	15518	**63**	50	78,0	125,0	166,0	18,0	19,0	4	0,911	• • •	1		
	15720	15520	**75**	65	92,0	145,0	186,0	18,0	19,0	4	1,132	• • •	1		
	15722	15522	**90**	80	110,0	160,0	201,0	18,0	21,0	8	1,356	• • •	1		
	15724	15524/26	**110**	100	133,0	180,0	221,0	18,0	22,0	8	1,475	• • •	1		
	15726	15527	**125**	125	167,0	210,0	251,0	18,0	26,0	8	2,082	• • •	1		
	15730	15531 315530 2515530	**160**	150	178,0	240,0	286,0	22,0	27,0	8	3,671	• •	1		
6 7,4 9 11 17,6	***15734**	15535 315534 2515534	**200**	200	235,0	295,0	341,0	22,0	28,0	8	4,709	• •	1		
	***15738**	15539 315538 2515538	**250**	250	288,0	350,0	406,0	22,0	31,0	12	7,094	• •	1		
	***15742**	15543 315542 2515542	**315**	300	340,0	400,0	460,0	22,0	33,5	12	9,500	• •	1		
	***15744**	15545 315544 2515544	**355**	350	380,0	460,0	520,0	22,0	39,0	16	15,300	• •	1		
	***15746**	15547 2515546	**400**	400	430,0	515,0	565,0	26,0	34,0	16	19,680	• •	1		
	****15748**	15549 2515548	**450**	500	517,0	620,0	670,0	26,0	42,0	20	22,880	• •	1		
	****15750**	2515550	**500**	500	533,0	620,0	670,0	26,0	38,0	20	19,000	• •	1		
	****15752**	2515552	**560**	600	618,0	725,0	785,0	30,0	50,0	20	37,200	• •	1		
	****15754**	2515554	**630**	600	645,0	725,0	785,0	30,0	40,0	20	25,800	• •	1		

*Flange PN10 ø 200–630 mm (Art. no. 15934–15954) also available on request in PN16.

**Material: steel/epoxyd

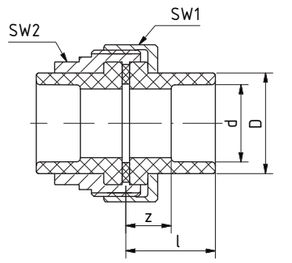
COUPLING SCREW JOINT

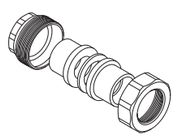
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

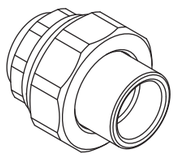
Material: Fusiolen® PP-R, brass

Standard: DIN 16962, DIN EN ISO 15874

Colour: green, brassy







SDR	Art. no.	Dimension d [mm]	l [mm]	z [mm]	D [mm]	SW1 [mm]	SW2 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
					socket welding							
	15812	**32**	36,5	18,5	41,0	64	50	0,479	• • •	1		
6 7.4 9 11	**15814**	**40**	38,0	17,5	50,0	80	60	0,841	• • •	1		
	15816	**50**	41,0	17,5	61,0	86	70	0,821	• • •	1		
	15818	**63**	45,0	17,5	76,0	108	90	1,498	• • •	1		
	15820	**75**	31,0	17,5	90,0	128	104	1,998	• • •	1		

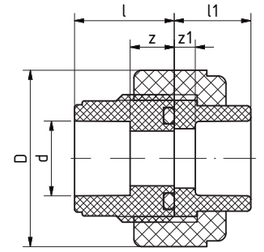
COUPLING SCREW JOINT

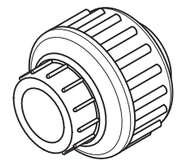
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Material: Fusiolen® PP-R

Standard: DIN 16962, DIN EN ISO 15874

Colour: green





SDR	Art. no.	Dimension d [mm]	l [mm]	z [mm]	l1 [mm]	z1 [mm]	D [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
						socket welding						
	15838	**20**	26,0	12,0	20,0	5,5	46,0	0,036	• • •	10		
	15840	**25**	28,0	12,0	21,0	5,0	56,0	0,058	• • •	10		
6 7.4 9 11	**15842**	**32**	30,0	12,0	23,0	5,0	66,0	0,089	• • •	5		
	15844	**40**	34,0	13,5	25,5	5,0	79,0	0,136	• • •	5		
	15846	**50**	39,0	15,5	28,8	5,0	87,0	0,170	• • •	5		
	15848	**63**	47,5	20,0	32,5	5,0	107,0	0,240	• • •	1		
	15850	**75**	50,0	20,0	36,0	6,0	128,0	0,546	• • •	1		

ELECTROFUSION SOCKET

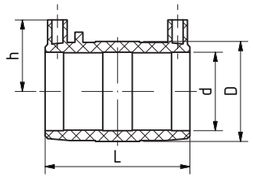
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

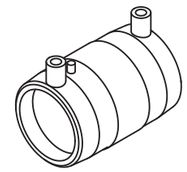
Material: Fusiolen® PP-R

Standard: DIN 16962, DIN EN ISO 15874

Colour: green

Notice do not use with 160–250 mm fittings
*do not use with aquatherm blue pipe MF OT

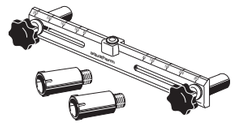




SDR	Art. no.	Dimension d [mm]	L [mm]	h [mm]	D [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
					Electro-socket welding					
	17208	**20**	70,0	36,0	31,5	0,049	• • •	1		
	17210	**25**	78,0	38,5	36,5	0,057	• • •	1		
	17212	**32**	80,0	42,5	45,0	0,077	• • •	1		
	17214	**40**	92,0	47,0	54,0	0,103	• • •	1		
	17216	**50**	103,0	52,0	65,0	0,142	• • •	1		
6 7,4 9 11 17,6	**17218**	**63**	118,0	58,0	81,5	0,239	• • •	1		
	17220	**75**	130,0	64,5	96,0	0,347	• • •	1		
	17222	**90**	145,0	72,0	113,5	0,501	• • •	1		
	17224	**110**	160,0	82,5	139,0	0,821	• • •	1		
	17226	**125**	172,0	90,0	156,0	1,097	• • •	1		
	17230*	**160**	186,0	109,5	197,0	1,754	• •	1		
	17234*	**200**	210,0	134,0	243,0	3,625	• •	1		
	17238*	**250**	250,0	170,0	315,0	7,142	• •	1		

ASSEMBLING JIG

as water level with 2 plugs 1/2"

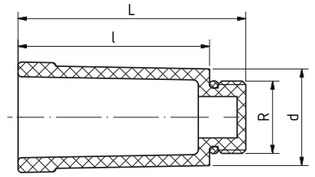


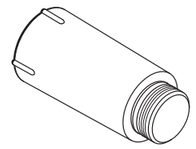
Systems: aquatherm green pipe aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Colour: green

Art. no.	Weight [kg]	System	PU	Box unit	Price € m/pc
50700	0,252	• • •	1		

PLUG FOR PRESSURE TESTS

with gasket





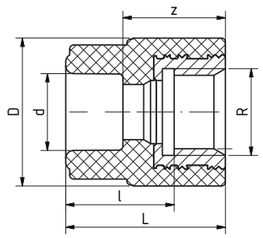
Systems: aquatherm green pipe aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

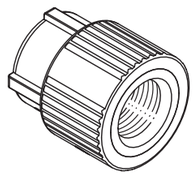
Art. no.	d [mm]	R	l [mm]	L [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
50708	**28**	**1/2"**	55,5	66,0	0,022	• • •	10		
50710	**34**	**3/4"**	55,5	66,0	0,027	• • •	10		

TRANSITION PIECE WITH FEMALE THREAD

round

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Fusiolen® PP-R, stainless steel
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

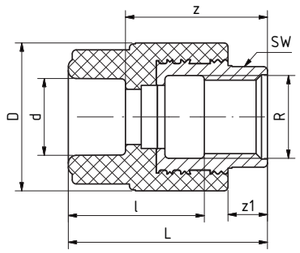


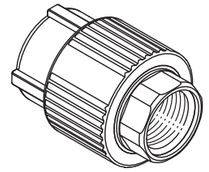


SDR	Art. no.	d [mm]	R	l [mm]	z [mm]	D [mm]	L [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
						brass						
6 7,4 9 11	**21006**	**16**	**1/2"**	28,0	28,0	38,5	41,0	0,066	•	10		
	21008	**20**	**1/2"**	27,5	26,0	37,5	40,5	0,064	• • •	10	400	
	21010	**20**	**3/4"**	27,5	26,0	43,5	40,5	0,089	• • •	10	300	
	21011	**25**	**1/2"**	29,5	26,5	38,5	42,5	0,065	• • •	10	400	
	21012	**25**	**3/4"**	27,5	24,5	43,5	40,5	0,087	• • •	10	300	
	21013	**32**	**3/4"**	30,5	25,5	43,5	43,5	0,092	• • •	5	250	
						stainless steel						
	921008	**20**	**1/2"**	27,5	26,0	37,5	40,5	0,069	• • •	10		
	921010	**20**	**3/4"**	27,5	26,0	43,5	40,5	0,090	• • •	10		
	921011	**25**	**1/2"**	29,5	26,5	38,5	42,5	0,069	• • •	10		
	921012	**25**	**3/4"**	27,5	24,5	43,5	40,5	0,086	• • •	10		
	921013	**32**	**3/4"**	30,5	25,5	43,5	43,5	0,092	• • •	5		
	921014	**32**	**1/2"**	28,0	23,0	37,0	41,0	0,078	• • •	5		

TRANSITION PIECE WITH FEMALE THREAD

hex shaped threaded transition



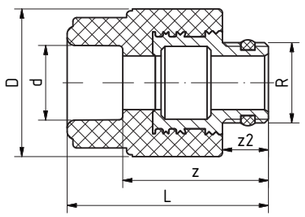


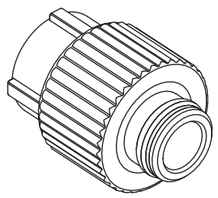
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Fusiolen® PP-R, stainless steel
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

SDR	Art. no.	d [mm]	R	l [mm]	z [mm]	z1 [mm]	D [mm]	L [mm]	SW [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
							brass							
6 7,4 9 11	**21106**	**16**	**1/2"**	34,5	37,5	10,0	38,5	50,5	24	0,089	•	10		
	21108	**20**	**1/2"**	34,5	36,0	10,0	38,5	50,5	24	0,078	• • •	10	400	
	21110	**20**	**3/4"**	29,0	35,5	10,0	43,5	50,0	31	0,112	• • •	10	300	
	21111	**25**	**1/2"**	36,0	36,0	10,0	38,5	52,0	24	0,081	• • •	10	300	
	21112	**25**	**3/4"**	29,0	34,0	10,0	43,5	50,0	31	0,109	• • •	10	300	
	21113	**32**	**3/4"**	32,0	35,0	10,0	43,5	53,0	31	0,114	• • •	5	250	
	21114	**32**	**1"**	37,5	41,5	14,0	60,0	59,5	39	0,239	• • •	5	125	
	21115	**40**	**1"**	40,0	41,5	14,0	60,0	62,0	39	0,227	• • •	5		
	21116	**40**	**1 1/4"**	40,0	42,5	15,0	74,0	63,0	50	0,385	• • •	5		
	21117	**50**	**1 1/4"**	43,0	42,5	15,0	74,0	66,0	50	0,404	• • •	5		
	21118	**50**	**1 1/2"**	45,0	43,5	15,0	85,5	67,0	55	0,418	• • •	5		
	21119	**63**	**1 1/2"**	51,5	46,0	15,0	84,0	73,5	55	0,442	• • •	1		
	21120	**63**	**2"**	51,0	49,5	19,0	101,0	77,0	67	0,600	• • •	1		
	21122	**75**	**2"**	51,0	47,0	19,0	100,0	77,0	67	0,608	• • •	1		
							stainless steel							
	921114	**32**	**1"**	37,5	41,5	14,0	60,0	59,5	39	0,232	• • •	5		
	921115	**40**	**1"**	40,0	41,5	14,0	60,0	62,0	39	0,219	• • •	5		
	921116	**40**	**1 1/4"**	40,0	42,5	15,0	74,0	63,0	50	0,331	• • •	5		
	921117	**50**	**1 1/4"**	43,0	42,5	15,0	74,0	66,0	50	0,351	• • •	5		
	921118	**50**	**1 1/2"**	45,0	43,5	15,0	84,0	67,0	55	0,445	• • •	5		
	921119	**63**	**1 1/2"**	51,5	46,0	15,0	84,0	73,5	55	0,425	• • •	1		
	921120	**63**	**2"**	51,0	49,5	19,0	101,0	77,0	67	0,196	• • •	1		
	921122	**75**	**2"**	51,0	47,0	19,0	100,0	77,0	67	0,676	• • •	1		

TRANSITION PIECE WITH MALE THREAD

round, self sealing





Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

SDR	Art. no.	d [mm]	R	L [mm]	z [mm]	z2 [mm]	D [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 11	**21258**	**20**	**1/2"**	52,5	38,0	12,0	38,5	0,090	• • •	10		
	21261	**25**	**1/2"**	54,0	38,0	12,0	38,5	0,078	• • •	10		
	21262	**25**	**3/4"**	53,5	37,5	13,0	38,5	0,085	• • •	10		

TRANSITION PIECE WITH MALE THREAD

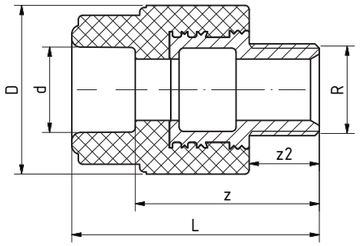
round

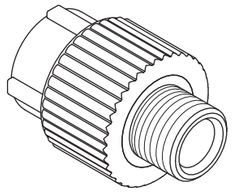
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Material: Fusiolen® PP-R, brass
Fusiolen® PP-R, stainless steel

Standard: DIN 16962, DIN EN ISO 15874

Colour: green





SDR	Art. no.	d [mm]	R	L [mm]	z [mm]	z2 [mm]	D [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
					brass							
6 7,4 9 11	**21206**	**16**	**1/2“**	56,5	43,5	16,0	38,5	0,097	•	10		
	21208	**20**	**1/2“**	56,5	42,0	16,0	38,5	0,084	• • •	10	350	
	21210	**20**	**3/4“**	57,5	43,0	17,0	38,5	0,109	• • •	10	300	
	21211	**25**	**1/2“**	58,0	42,0	16,0	38,5	0,085	• • •	10	300	
	21212	**25**	**3/4“**	57,5	41,5	17,0	38,5	0,090	• • •	10	350	
	21213	**32**	**3/4“**	59,5	41,5	17,0	38,5	0,095	• • •	5	250	
					stainless steel							
	921208	**20**	**1/2“**	56,5	42,0	16,0	38,5	0,096	• • •	10		
	921210	**20**	**3/4“**	57,5	43,0	17,0	38,5	0,108	• • •	10		
	921211	**25**	**1/2“**	58,0	42,0	16,0	38,5	0,098	• • •	10		
	921212	**25**	**3/4“**	57,5	41,5	17,0	38,5	0,108	• • •	10		
	921213	**32**	**3/4“**	59,5	41,5	17,0	38,5	0,115	• • •	5		

TRANSITION PIECE WITH MALE THREAD

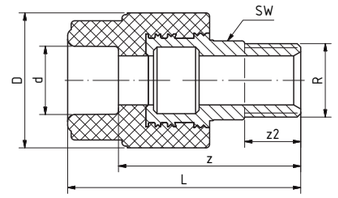
*with hexagon or *octagon*

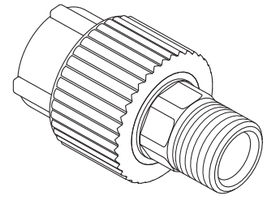
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Material: Fusiolen® PP-R, brass
Fusiolen® PP-R, stainless steel

Standard: DIN 16962, DIN EN ISO 15874

Colour: green



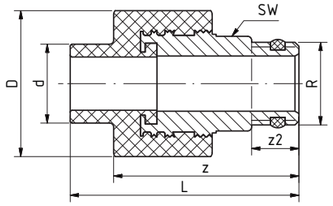


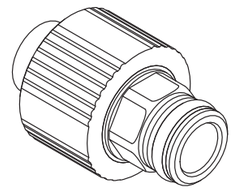
SDR	Art. no.	d [mm]	R	SW [mm]	L [mm]	z [mm]	z2 [mm]	D [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
							brass						
	21306	**16**	**1/2“**	22	66,5	53,5	16,0	38,5	0,119	•	10		
	21308	**20**	**1/2“**	22	66,5	52,0	16,0	38,5	0,104	• • •	10		
	21310	**20**	**3/4“**	24	67,5	53,0	17,0	38,5	0,129	• • •	10		
NEW	**21311**	**25**	**1/2“**	21	68,0	52,0	16,0	38,5	0,107	• • •	10		
	21312	**25**	**3/4“**	24	67,5	51,5	17,0	38,5	0,103	• • •	10	300	
	21314	**32**	**1“**	32	78,5	60,5	20,0	53,0	0,216	• • •	5	125	
	21316	**32**	**1 1/4“**	42	81,0	63,0	21,0	68,0	0,318	• • •	5	100	
	21317	**40**	**1“**	32	81,0	60,5	20,0	52,0	0,222	• • •	5	100	
	21318	**40**	**1 1/4“**	42	84,5	64,0	21,0	68,0	0,324	• • •	5	80	
	21319	**50**	**1 1/4“**	42	85,5	62,0	21,0	68,0	0,351	• • •	5		
	21320	**50**	**1 1/2“**	46	88,5	65,0	22,0	74,0	0,425	• • •	5		
	21321	**63**	**1 1/2“**	46	94,5	67,0	22,0	72,5	0,467	• • •	1		
6 7,4 9 11	**21322**	**63**	**2“**	50	102,5	75,0	23,5	84,0	0,685	• • •	1		
	21323	**75**	**2“**	50	102,0	72,0	23,5	84,0	0,733	• • •	1		
	21324	**75**	**2 1/2“**	65	105,0	75,0	26,7	100,0	0,970	• • •	1		
	21325*	**90**	**3“**	85	121,0	88,0	30,0	120,0	1,326	• • •	1		
	21327*	**110**	**4“**	105	148,0	111,0	39,0	147,0	2,730	• • •	1		
							stainless steel						
	921314	**32**	**1“**	32	78,5	60,5	20,0	53,0	0,204	• • •	5		
	921316	**32**	**1 1/4“**	41	81,0	63,0	21,0	68,0	0,360	• • •	5		
	921317	**40**	**1“**	32	81,0	60,5	20,0	52,0	0,251	• • •	5		
	921318	**40**	**1 1/4“**	41	84,5	64,0	21,0	68,0	0,362	• • •	5		
	921319	**50**	**1 1/4“**	41	85,5	62,0	21,0	68,0	0,389	• • •	5		
	921320	**50**	**1 1/2“**	46	88,5	65,0	22,0	74,0	0,480	• • •	5		
	921321	**63**	**1 1/2“**	46	94,5	67,0	22,0	72,5	0,523	• • •	1		
	921322	**63**	**2“**	50	102,5	75,0	23,5	84,0	0,708	• • •	1		
	921323	**75**	**2“**	50	102,0	72,0	23,5	84,0	0,699	• • •	1		

TRANSITION PIECE WITH MALE THREAD

self-sealing, with hex shaped threaded transition male/male

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green



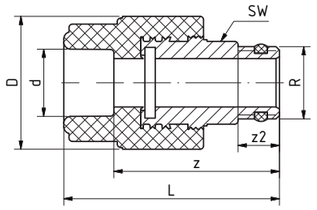


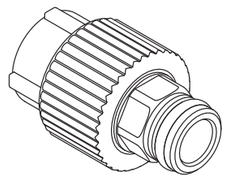
SDR	Art. no.	d [mm]	R	L [mm]	z [mm]	z2 [mm]	D [mm]	SW [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 11	**21355**	**20**	**1/2"**	59,0	48,0	13,0	38,5	22	0,107	• • •	10		

TRANSITION PIECE WITH MALE THREAD

self-sealing, with hex shaped threaded transition female/male

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

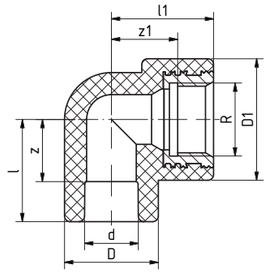


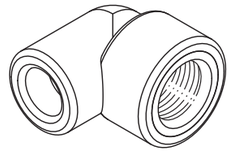


SDR	Art. no.	d [mm]	R	L [mm]	z [mm]	z2 [mm]	D [mm]	SW [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 11	**21356**	**16**	**1/2"**	63,5	50,5	13,0	38,5	22	0,112	•	10		
	21358	**20**	**1/2"**	63,5	49,0	13,0	38,5	22	0,111	• • •	10		

TRANSITION ELBOW WITH FEMALE THREAD

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Fusiolen® PP-R, stainless steel
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

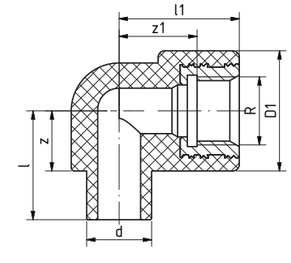


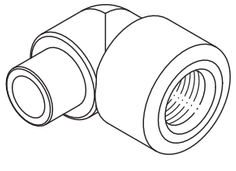


SDR	Art. no.	d [mm]	R	l [mm]	z [mm]	D [mm]	l1 [mm]	z1 [mm]	D1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
							brass							
	23006	**16**	**1/2"**	31,5	18,5	29,5	37,0	24,0	37,0	0,072	•	10		
	23008	**20**	**3/4"**	37,0	22,5	34,0	37,0	24,0	44,0	0,102	• • •	10		
	23010	**20**	**1/2"**	31,0	16,5	29,5	31,5	18,5	37,0	0,076	• • •	10	300	
	23012	**25**	**3/4"**	37,0	21,0	34,0	37,0	24,0	44,0	0,100	• • •	10	200	
	23014	**25**	**1/2"**	33,5	17,5	34,0	31,5	18,5	37,0	0,075	• • •	10	250	
	23016	**32**	**3/4"**	27,5	9,5	43,0	51,0	38,0	44,0	0,104	• • •	5		
6 7,4 9 11	**23018**	**32**	**1"**	34,0	16,0	43,0	66,5	44,5	60,5	0,249	• • •	5		
							stainless steel							
	923008	**20**	**3/4"**	37,0	22,5	29,5	37,0	24,0	37,0	0,095	• • •	10		
	923010	**20**	**1/2"**	31,0	16,5	29,5	31,5	18,5	37,0	0,081	• • •	10		
	923012	**25**	**3/4"**	37,0	21,0	34,0	37,0	24,0	44,0	0,101	• • •	10		
	923014	**25**	**1/2"**	33,5	17,5	34,0	31,5	18,5	37,0	0,082	• • •	10		
	923015	**32**	**1/2"**	35,0	17,0	43,0	37,0	24,0	37,0	0,112	• • •	5		
	923016	**32**	**3/4"**	27,5	9,5	43,0	51,0	38,0	44,0	0,097	• • •	5		
	923018	**32**	**1"**	34,0	16,0	43,0	66,5	44,5	60,5	0,240	• • •	5		

TRANSITION ELBOW WITH FEMALE THREAD

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

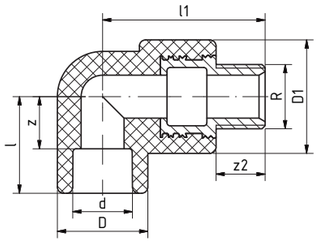


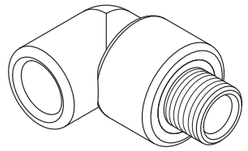


SDR	Art. no.	d [mm]	R	l [mm]	z [mm]	l1 [mm]	z1 [mm]	D1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 11	**23208**	**20**	**1/2"**	33,5	18,5	37,0	24,0	37,0	0,076	• • •	10		

TRANSITION ELBOW WITH MALE THREAD

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Fusiolen® PP-R, stainless steel
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

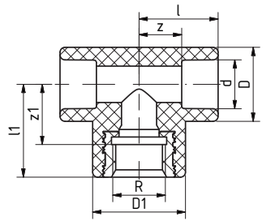


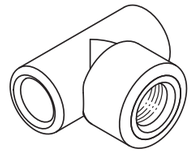


SDR	Art. no.	d [mm]	R	l [mm]	l1 [mm]	z [mm]	z2 [mm]	D [mm]	D1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
							brass							
6 7,4 9 11	**23504**	**16**	**1/2"**	31,5	53,0	18,5	16,0	29,5	37,0	0,109	•	10		
	23506	**20**	**1/2"**	31,5	53,0	17,0	16,0	29,5	37,0	0,108	• • •	10		
	23508	**20**	**3/4"**	31,5	54,0	17,0	17,0	34,0	38,0	0,128	• • •	10		
	23510	**25**	**3/4"**	31,5	54,0	15,5	17,0	34,0	38,0	0,104	• • •	10		
	23512	**32**	**3/4"**	27,5	68,0	9,5	17,0	43,0	38,0	0,112	• • •	5		
	23514	**32**	**1"**	31,0	85,5	13,0	20,0	43,0	52,0	0,231	• • •	5		
							stainless steel							
	923506	**20**	**1/2"**	31,5	53,0	17,0	16,0	29,5	37,0	0,035	• • •	10		
	923508	**20**	**3/4"**	31,5	54,0	17,0	17,0	34,0	38,0	0,123	• • •	10		
	923510	**25**	**3/4"**	31,5	54,0	15,5	17,0	34,0	38,0	0,121	• • •	10		
	923512	**32**	**3/4"**	27,5	68,0	9,5	17,0	43,0	38,0	0,128	• • •	5		

THREADED BRANCH TEE WITH FEMALE THREAD

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Fusiolen® PP-R, stainless steel
Standard: DIN 16962, DIN EN ISO 15874
Colour: green

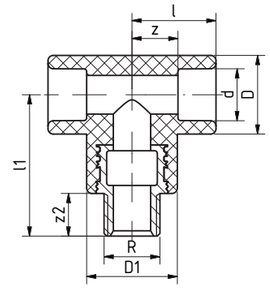


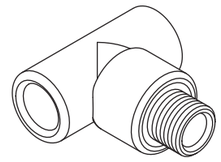


SDR	Art. no.	d [mm]	R	l [mm]	z [mm]	D [mm]	l1 [mm]	z1 [mm]	D1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
							brass							
6 7,4 9 11	**25004**	**16**	**1/2"**	31,5	18,5	29,5	37,0	24,0	37,0	0,089	•	10		
	25006	**20**	**1/2"**	31,5	17,0	29,5	37,0	24,0	37,0	0,086	• • •	10	250	
	25008	**20**	**3/4"**	37,0	22,5	34,0	37,0	24,0	44,0	0,121	• • •	10	170	
	25010	**25**	**1/2"**	34,5	18,5	34,0	38,0	25,0	37,0	0,090	• • •	10	200	
	25012	**25**	**3/4"**	37,0	21,0	34,0	37,0	24,0	44,0	0,109	• • •	10	150	
	25013	**32**	**1/2"**	35,0	17,0	43,0	37,0	24,0	37,0	0,103	• • •	5		
	25014	**32**	**3/4"**	27,5	9,5	43,0	51,0	38,0	44,0	0,111	• • •	5		
	25016	**32**	**1"**	31,5	13,5	43,0	67,0	45,0	60,0	0,255	• • •	5		
	25018	**40**	**1/2"**	41,5	21,0	52,0	40,0	27,0	37,0	0,142	• • •	5		
	25019	**40**	**3/4"**	40,5	20,0	52,0	40,5	27,5	52,0	0,147	• • •	5		
	25020	**40**	**1"**	41,5	21,0	52,0	56,0	34,0	60,0	0,276	• • •	5		
	25022	**50**	**1"**	49,5	26,0	68,0	63,5	41,5	68,3	0,385	• • •	5		
	25030	**50**	**1/2"**	49,5	26,0	68,0	44,5	31,5	43,0	0,237	• • •	5		
	25031	**50**	**3/4"**	49,5	26,0	68,0	44,5	31,5	43,0	0,243	• • •	5		
							stainless steel							
	925006	**20**	**1/2"**	31,5	17,0	29,5	37,0	24,0	37,0	0,087	• • •	10		
	925008	**20**	**3/4"**	37,0	22,5	34,0	37,0	24,0	44,0	0,108	• • •	10		
	925010	**25**	**1/2"**	34,5	18,5	34,0	38,0	25,0	37,0	0,093	• • •	10		
	925012	**25**	**3/4"**	37,0	21,0	34,0	37,0	24,0	44,0	0,111	• • •	10		
	925013	**32**	**1/2"**	35,0	17,0	43,0	37,0	24,0	37,0	0,113	• • •	5		
	925014	**32**	**3/4"**	27,5	9,5	43,0	51,0	38,0	44,0	0,111	• • •	5		
	925016	**32**	**1"**	31,5	13,5	43,0	67,0	45,0	60,0	0,082	• • •	5		

THREADED BRANCH TEE WITH MALE THREAD

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green



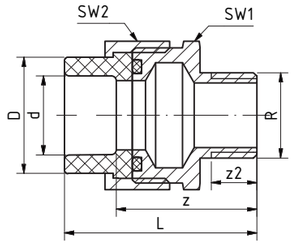


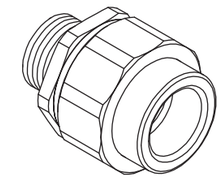
SDR	Art. no.	d [mm]	R	l [mm]	z [mm]	D [mm]	z2 [mm]	D1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 11	**25506**	**20**	**1/2"**	31,5	17,0	29,5	16,0	37,0	0,102	• • •	10		

TRANSITION COUPLING WITH MALE THREAD

with union nut and welding socket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green



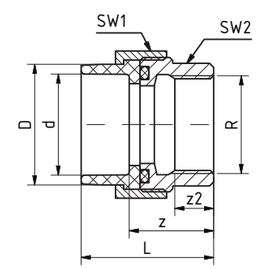


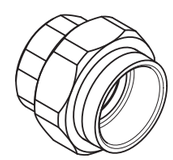
SDR	Art. no.	d [mm]	R	L [mm]	z [mm]	z2 [mm]	D [mm]	SW1 [mm]	SW2 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**26608**	**20**	**1/2"**	52,5	38,0	13,5	27,5	34	36	0,145	• • •	1		
	26610	**25**	**3/4"**	59,5	43,5	14,5	36,0	42	46	0,243	• • •	1		
	26612	**32**	**1"**	64,5	46,5	16,8	41,5	48	52	0,336	• • •	1		
	26614	**40**	**1 1/4"**	70,0	49,5	19,1	53,0	60	64	0,632	• • •	1		
	26616	**50**	**1 1/2"**	84,8	61,3	22,0	59,0	48	72	0,624	• • •	1		
	26618	**63**	**2"**	95,5	68,0	25,0	74,0	62	89	1,045	• • •	1		

TRANSITION COUPLING WITH FEMALE THREAD

with union nut and welding socket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green





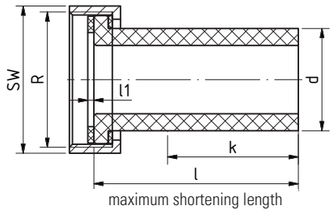
SDR	Art. no.	d [mm]	R	z [mm]	z2 [mm]	D [mm]	L [mm]	SW1 [mm]	SW2 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**26638**	**20**	**1/2"**	30,5	15,0	27,5	45,0	36	24	0,112	• • •	1		
	26640	**25**	**3/4"**	33,0	15,5	36,0	49,0	46	32	0,193	• • •	1		
	26642	**32**	**1"**	36,0	15,0	41,5	54,0	52	40	0,291	• • •	1		
	26644	**40**	**1 1/4"**	36,0	20,0	53,0	56,5	64	47	0,423	• • •	1		
	26646	**50**	**1 1/2"**	41,3	19,0	59,0	64,8	72	57	0,610	• • •	1		
	26648	**63**	**2"**	47,0	18,0	74,0	74,5	89	68	0,924	• • •	1		

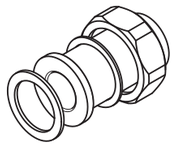
Notice: aquatherm green pipe metal compound fittings are manufactured from fusiolen PP-R and brass. Metal inserts, without hex shaped spanner flat, with 1/2" and 3/4" f are also available in stainless steel.

LOOSE NUT ADAPTER

length: 100 mm, with gasket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green



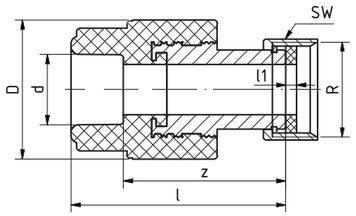


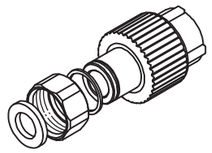
SDR	Art. no.	d [mm]	Nut R	l [mm]	l1 [mm]	k [mm]	SW [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**26708**	**20**	**1"**	100,0	3,0	65,0	36	0,079	• • •	1		
	26710	**25**	**1 1/4"**	100,0	3,0	62,0	46	0,104	• • •	1		
	26712	**32**	**1 1/2"**	100,0	3,0	58,0	52	0,175	• • •	1		
	26714	**40**	**2"**	100,0	3,0	53,0	64	0,258	• • •	1		
	26716	**50**	**2 1/4"**	100,0	3,0	49,0	72	0,344	• • •	1		
	26718	**63**	**2 3/4"**	100,0	3,0	43,0	89	0,583	• • •	1		
	26720	**75**	**3 1/2"**	100,0	3,0	34,0	110	0,918	• • •	1		
	26722	**90**	**4"**	100,0	3,0	26,0	120	1,238	• • •	1		

WATER METER NUT ADAPTER

with gasket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green



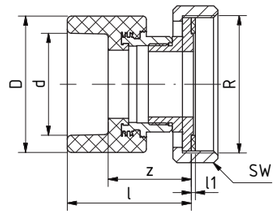


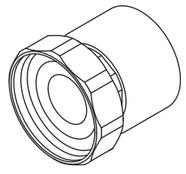
SDR	Art. no.	d [mm]	l [mm]	l1 [mm]	z [mm]	D [mm]	R	SW [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**26808**	**20**	59,5	3,0	45,0	38,5	3/4"	30	0,136	• • •	1		
	26810	**25**	61,0	3,0	45,0	38,5	3/4"	30	0,155	• • •	1		
	26812	**32**	62,0	3,0	44,0	43,5	3/4"	30	0,162	• • •	1		

NUT ADAPTER

ISO-standard

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green



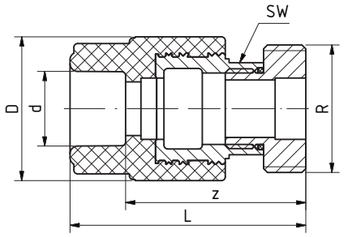


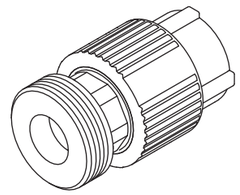
SDR	Art. no.	d [mm]	Nut R	l [mm]	l1 [mm]	z [mm]	D [mm]	SW [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**27010**	**20**	**1"**	58,5	3,0	34,0	38,5	36	0,182	• • •	10		
	27011	**25**	**1"**	60,0	3,0	44,0	38,5	36	0,186	• • •	10		
	27012	**25**	**1 1/4"**	60,0	3,0	44,0	43,5	46	0,274	• • •	10		
	27013	**32**	**1 1/4"**	63,0	3,0	45,0	43,5	46	0,279	• • •	5		
	27014	**32**	**1 1/2"**	69,5	3,0	51,5	60,0	52	0,446	• • •	5		
	27015	**40**	**1 1/2"**	72,0	3,0	51,5	60,0	52	0,421	• • •	5		
	27016	**40**	**2"**	72,0	3,0	51,5	74,0	64	0,719	• • •	5		
	27017	**50**	**2"**	77,0	3,0	53,5	74,0	64	0,736	• • •	5		
	27018	**50**	**2 1/4"**	77,0	3,0	53,5	84,0	72	0,831	• • •	5		
	27019	**63**	**2 1/4"**	83,5	3,0	56,0	84,0	72	0,889	• • •	1		
	27020	**63**	**2 3/4"**	82,5	3,0	55,0	101,0	89	1,306	• • •	1		
	27021	**75**	**2 3/4"**	85,0	3,0	55,0	100,0	89	1,275	• • •	1		
	27022	**75**	**3 1/2"**	91,0	3,0	61,0	100,0	110	1,818	• • •	1		

COUNTERPART

with welding socket and male thread for ISO-standard adapter

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Standard: DIN 16962, DIN EN ISO 15874
Colour: green





SDR	Art. no.	d [mm]	Thread R	L [mm]	z [mm]	D [mm]	SW [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**27310**	**20**	**1"**	61,5	47,0	37,5	24	0,151	• • •	10		
	27311	**25**	**1"**	63,0	47,0	37,5	24	0,153	• • •	10		
	27312	**25**	**1 1/4"**	63,0	47,0	43,5	31	0,221	• • •	10		
	27313	**32**	**1 1/4"**	66,0	48,0	43,5	31	0,226	• • •	5		
	27314	**32**	**1 1/2"**	76,5	58,5	60,0	39	0,408	• • •	5		
	27315	**40**	**1 1/2"**	79,0	58,5	60,0	39	0,414	• • •	5		
	27316	**40**	**2"**	79,0	58,5	74,0	50	0,650	• • •	5		
	27317	**50**	**2"**	82,0	58,5	74,0	50	0,634	• • •	5		
	27318	**50**	**2 1/4"**	83,0	59,5	84,0	55	0,750	• • •	5		
	27319	**63**	**2 1/4"**	89,5	62,0	84,0	55	0,728	• • •	1		
	27320	**63**	**2 3/4"**	95,0	65,5	101,0	67	1,093	• • •	1		
	27321	**75**	**2 3/4"**	95,0	65,0	100,0	67	1,117	• • •	1		
	27322	**75**	**3 1/2"**	100,0	70,0	100,0	67	1,436	• • •	1		

BRASS COUNTERPART

with female thread, for ISO-standard adapter/loose nut adapter

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: brass

SDR	Art. no.	Male thread R1	Female thread R2	L [mm]	l1 [mm]	z2 [mm]	SW [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**27510**	**1"**	**1/2"**	25,0	14,0	15,0	25	0,063	• • •	10		
	27512	**1 1/4"**	**3/4"**	26,0	12,5	14,0	32	0,119	• • •	10		
	27514	**1 1/2"**	**1"**	31,0	15,0	17,0	40	0,175	• • •	5		
	27516	**2"**	**1 1/4"**	33,0	17,0	22,0	47	0,263	• • •	5		
	27518	**2 1/4"**	**1 1/2"**	36,0	20,0	19,0	57	0,333	• • •	5		
	27520	**2 3/4"**	**2"**	42,0	24,0	24,0	68	0,517	• • •	1		
	27522	**3 1/2"**	**2 1/2"**	46,0	24,0	27,0	84	0,801	• • •	1		
	27524	**4"**	**3"**	46,0	27,0	27,0	97	0,943	• • •	1		

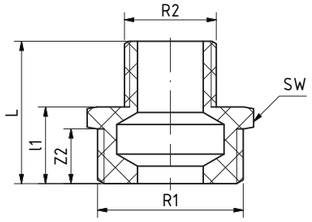
Notice: aquatherm green pipe metal compound fittings are manufactured from fusiolen PP-R and brass. Metal inserts, without hex shaped spanner flat, with 1/2" and 3/4" f are also available in stainless steel.

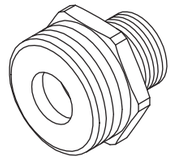
BRASS COUNTERPART

with male thread, for ISO-standard adapter/loose nut adapter

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Material: brass





SDR	Art. no.	Thread R1	Thread R2	L [mm]	l1 [mm]	z2 [mm]	SW [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**27710**	**1“**	**1/2“**	32,5	17,5	10,5	34	0,109	• • •	10		
	27712	**1 1/4“**	**3/4“**	38,5	21,0	12,5	42	0,188	• • •	10		
	27714	**1 1/2“**	**1“**	41,5	22,5	13,5	48	0,211	• • •	5		
	27716	**2“**	**1 1/4“**	44,5	22,5	13,0	60	0,363	• • •	5		
	27718	**2 1/4“**	**1 1/2“**	56,0	34,0	16,0	48	0,472	• • •	5		
	27720	**2 3/4“**	**2“**	63,0	38,0	16,0	62	0,803	• • •	1		
	27722	**3 1/2“**	**2 1/2“**	70,0	42,0	22,0	82	1,189	• • •	1		
	27724	**4“**	**3“**	74,0	42,0	22,0	97	1,398	• • •	1		

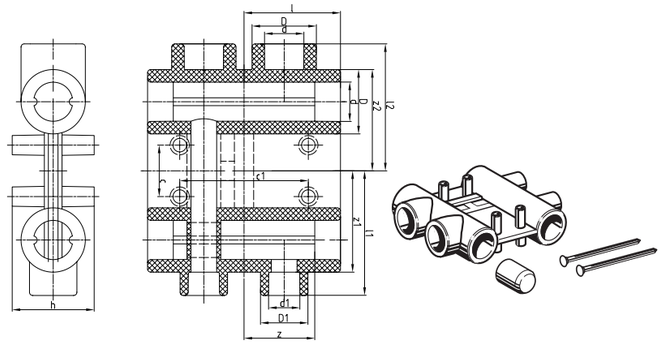
DISTRIBUTION BLOCK PLUMBING

including 1 plug and 2 fastenings

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Material: Fusiolen® PP-R

Colour: green



SDR	Art. no.	d [mm]	l [mm]	z [mm]	D [mm]	d1 [mm]	l1 [mm]	z1 [mm]	D1 [mm]	l2 [mm]	z2 [mm]	c [mm]	c1 [mm]	cl [mm]	l3 [mm]	h [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7.4 9 11	**30115**	**25**	60	44	40	20	77,5	63	29,5	79	63	32	80	100	36	51	0,273	• • •	1		

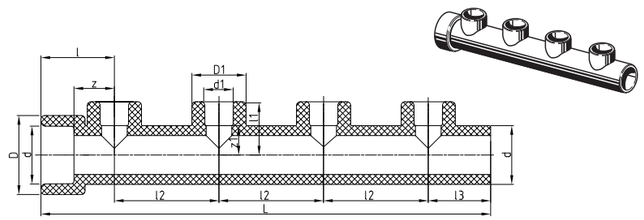
FOUR-PORT MANIFOLD

length: 246 mm, with 4 branches

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Material: Fusiolen® PP-R

Colour: green



SDR	Art. no.	d [mm]	d1 [mm]	l [mm]	z [mm]	D [mm]	l1 [mm]	z1 [mm]	D1 [mm]	l2 [mm]	l3 [mm]	L [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7.4	**30602**	**32**	**16**	40	22	43	29	16	29,5	57	36	245	0,148	•	1		
9 11	**30604**	**32**	**20**	40	22	43	29	14,5	29,5	57	36	245	0,134	• • •	1		

The four-port manifold can be shortened or extended by fusion with further four-port manifolds, if required.

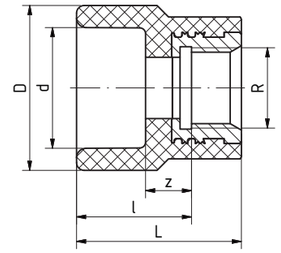
MANIFOLD END PIECE WITH FEMALE THREAD*

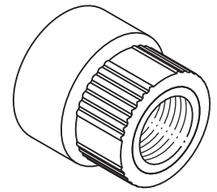
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Material: Fusiolen® PP-R, brass

Standard: DIN 16962, DIN EN ISO 15874

Colour: green





SDR	Art. no.	d [mm]	R	l [mm]	z [mm]	D [mm]	L [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7.4 9 11	**30804**	**32**	**1/2“**	30,0	12,0	43,0	43,0	0,073	• • •	1		

* transition piece as manifold endpiece with female thread

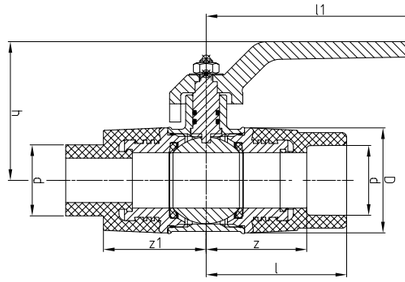
BALL VALVE FOR MANIFOLD

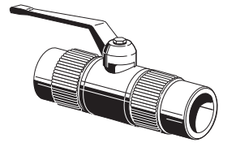
female/male

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Material: Fusiolen® PP-R, brass

Colour: green



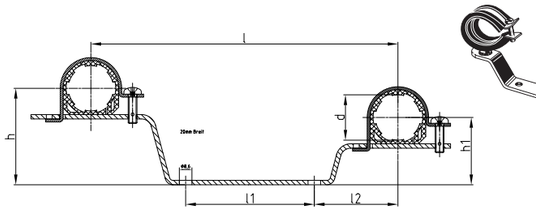


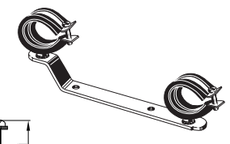
SDR	Art. no.	d [mm]	l [mm]	z [mm]	D [mm]	z1 [mm]	h [mm]	l1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7.4 9 11	**78000**	**32**	63,0	45,0	47,5	46,5	78,0	108,0	0,575	• • •	2		

SUPPORTING STRAP FOR FOUR-PORT MANIFOLD

with clamps, galvanized, double

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe



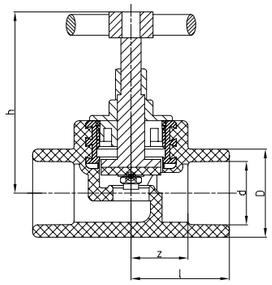


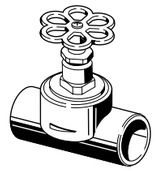
Art. no.	d [mm]	l [mm]	l1 [mm]	l2 [mm]	h [mm]	h1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
60210	**32**	210,0	80,0	57,0	66,0	46,0	0,226	• • •	2		

GLOBE VALVE

for surface installation

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Colour: green



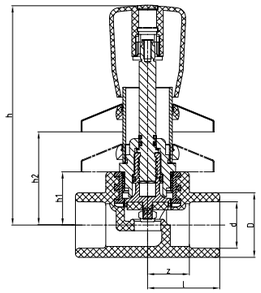


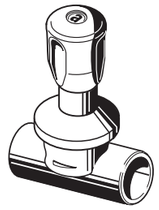
SDR	Art. no.	d [mm]	l [mm]	z [mm]	D [mm]	h [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7.4 9 11	**40808**	**20**	35,0	20,5	29,5	75,3	0,165	• • •	1	100	
	40810	**25**	38,0	22,0	34,0	75,0	0,172	• • •	1	100	
	40812	**32**	49,0	31,0	43,0	97,0	0,314	• • •	1	60	
	40814	**40**	60,0	39,5	52,0	111,5	0,585	• • •	1		

CONCEALED VALVE

chromium plated

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Colour: green



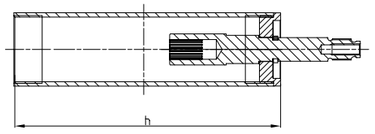


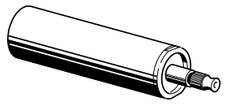
SDR	Art. no.	d [mm]	l [mm]	z [mm]	D [mm]	h [mm]	h1 [mm]	h2 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6	**40858**	**20**	35,0	20,5	29,5	116,0	28,0	59,0	0,319	• • •	1		
7.4 9	**40860**	**25**	38,0	22,0	34,0	116,0	28,0	59,0	0,330	• • •	1		
11	**40862**	**32**	49,0	31,0	43,0	121,0	34,0	59,0	0,416	• • •	1		

EXTENSION FOR CONCEALED VALVE

chromium-plated for Art. no. 40858–40862

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: brass
Colour: chrom



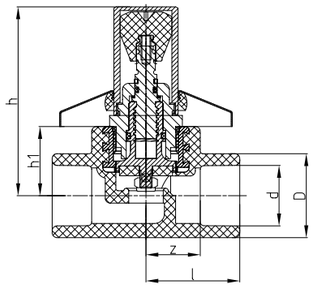


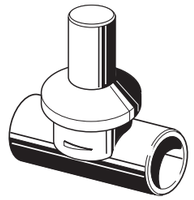
Art. no.	h [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
40900	92,0	0,148	• • •	1		
40902	132,0	0,209	• • •	1		

CONCEALED VALVE

tamper proof/chromium-plated/short design

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Colour: green, chrom



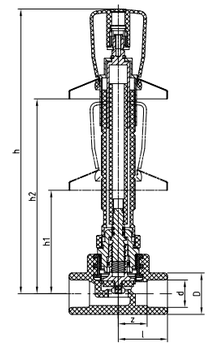


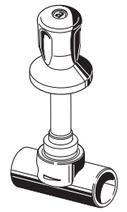
SDR	Art. no.	d [mm]	l [mm]	z [mm]	D [mm]	h [mm]	h1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6	**40868**	**20**	35,0	20,5	29,5	71,5	28,0	0,258	• • •	1		
7.4 9	**40870**	**25**	38,0	22,0	34,0	72,0	28,0	0,288	• • •	1		
11	**40872**	**32**	49,0	31,0	43,0	82,5	34,0	0,376	• • •	1		

CONCEALED VALVE

suitable for construction depth of 55 mm to 100 mm

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Colour: green, chrom



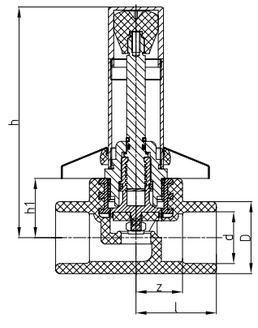


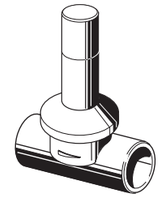
SDR	Art. no.	d [mm]	l [mm]	z [mm]	D [mm]	h [mm]	h1 [mm]	h2 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6	**40878**	**20**	35,0	20,5	29,5	213,0	59,0	147,0	0,357	• • •	1		
7.4 9	**40880**	**25**	38,0	22,0	34,0	213,0	59,0	147,0	0,369	• • •	1		
11	**40882**	**32**	49,0	31,0	43,0	219,0	65,0	153,0	0,455	• • •	1		

CONCEALED VALVE

tamper proof, chromium-plated

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Colour: green, chrom

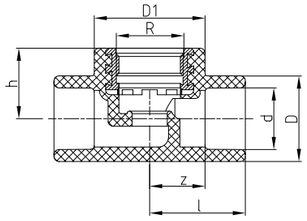


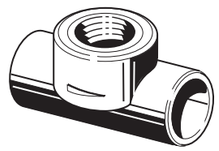


SDR	Art. no.	d [mm]	l [mm]	z [mm]	D [mm]	h [mm]	h1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6	**40888**	**20**	35,0	20,5	29,5	109,0	28,0	0,342	• • •	1		
7.4 9	**40890**	**25**	38,0	22,0	34,0	109,0	28,0	0,350	• • •	1		
11	**40892**	**32**	49,0	31,0	43,0	115,0	34,0	0,432	• • •	1		

STOP VALVE BODY

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Colour: green



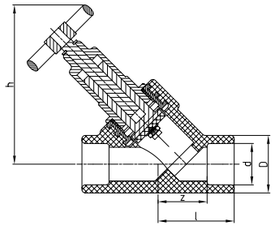


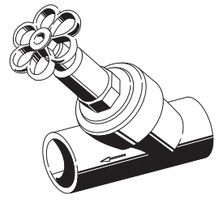
SDR	Art. no.	d [mm]	R	l [mm]	z [mm]	D [mm]	h [mm]	D1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7.4 9 11	**40908**	**20**	**3/4"**	35,0	20,0	29,5	28,0	44,0	0,093	• • •	1		
	40910	**25**	**3/4"**	38,0	22,0	34,0	28,0	44,0	0,101	• • •	1		
	40912	**32**	**1"**	49,0	31,0	43,0	34,0	52,0	0,146	• • •	1		
	40914	**40**	**1 1/4"**	60,0	39,5	52,0	41,0	69,0	0,313	• • •	1		

INCLINED VALVE

without drain

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Colour: green



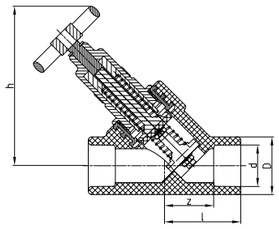


SDR	Art. no.	d [mm]	l [mm]	z [mm]	D [mm]	h [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7.4 9 11	**41108**	**20**	45,0	30,5	34,0	95,5	0,294	• • •	1		
	41110	**25**	45,0	29,0	34,0	95,5	0,283	• • •	1		
	41112	**32**	56,0	38,0	43,0	111,5	0,421	• • •	1		
	41114	**40**	65,0	44,5	52,0	135,0	0,834	• • •	1		

NON-RETURN VALVE

without drain

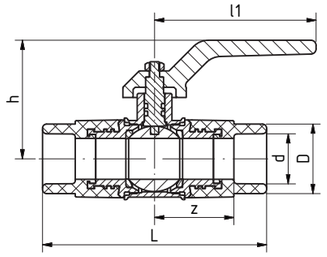
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Colour: green

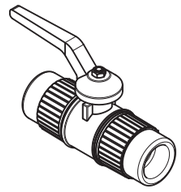


SDR	Art. no.	d [mm]	l [mm]	z [mm]	D [mm]	h [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7.4 9 11	**41208**	**20**	45,0	30,5	34,0	95,5	0,297	• • •	1		
	41210	**25**	45,0	29,0	34,0	95,5	0,292	• • •	1		
	41212	**32**	56,0	38,0	43,0	111,5	0,432	• • •	1		
	41214	**40**	65,0	44,5	52,0	135,0	0,840	• • •	1		

BALL VALVE PP/BRASS

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R, brass
Colour: green



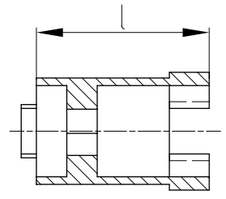


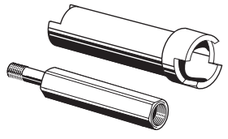
SDR	Art. no.	d [mm]	L [mm]	z [mm]	D [mm]	h [mm]	l1 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**41308**	**20**	110,00	40,50	29,50	56,00	79,00	0,280	• • •	1		
	41310	**25**	110,00	39,00	34,00	58,00	79,00	0,375	• • •	1		
	41312	**32**	127,00	45,50	43,00	66,00	103,00	0,592	• • •	1		
	41314	**40**	145,00	52,00	52,00	71,00	104,00	1,015	• • •	1		
	41316	**50**	167,00	60,00	68,00	79,00	140,00	1,689	• • •	1		
	41318	**63**	205,00	75,00	84,00	88,00	140,00	2,874	• • •	1		

EXTENSION FOR AQUATHERM GREEN PIPE BALL VALVE

chromium-plated for Art. no. 41308–41318

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: brass
Colour: chrom



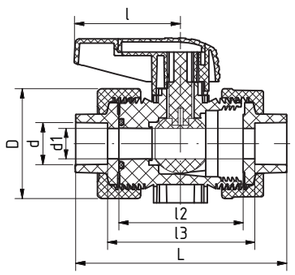


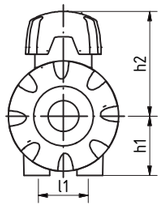
Art. no.	l [mm]	for Art. no.	Weight [kg]	System	PU	Box unit	Price € m/pc
41378	35,0	41308-41310	0,120	• • •	1		
41382	35,0	41312-41314	0,120	• • •	1		
41386	46,0	41316-41318	0,273	• • •	1		

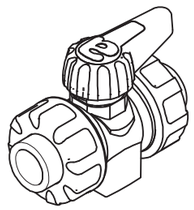
PP-BALL VALVE

with union nut and welding socket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Colour: green



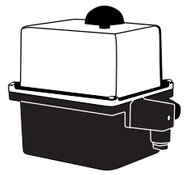




SDR	Art. no.	d [mm]	d1 [mm]	D [mm]	h1 [mm]	h2 [mm]	l1 [mm]	l2 [mm]	l3 [mm]	L [mm]	l [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7,4 9 11	**41488**	**20**	13,5	50,3	27,0	48,0	25,0	56,5	68,0	97,0	48,0	0,118	• • •	1		
	41490	**25**	18,5	59,0	30,0	56,5	25,0	65,5	78,0	110,0	59,0	0,184	• • •	1		
	41492	**32**	23,9	70,3	40,0	64,5	26,0	72,0	84,5	120,5	59,0	0,274	• • •	1		
	41494	**40**	31,0	85,9	46,0	83,3	45,0	85,0	100,0	141,0	63,5	0,483	• • •	1		
	41496	**50**	38,5	99,5	55,0	89,4	45,0	89,0	107,0	154,0	63,5	0,648	• • •	1		
	41498	**63**	50,0	125,5	70,0	115,0	45,0	101,0	118,0	173,0	108,0	1,206	• • •	1		

ELECTRICAL DRIVE FOR BALL VALVE

incl. fixtures
For Art. no. 41488–41498



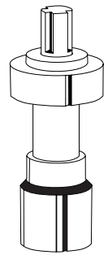
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Art. no.	Dimension [mm]	for Art. no.	Weight [kg]	System	PU	Box unit	Price € m/pc
			230 Volt				
41489	**20**	incl. fixtures for 41488	1,500	• • •	1		
41491	**25**	incl. fixtures for 41490	1,600	• • •	1		
41493	**32**	incl. fixtures for 41492	1,600	• • •	1		
41495	**40**	incl. fixtures for 41494	1,600	• • •	1		
41497	**50**	incl. fixtures for 41496	1,700	• • •	1		
41499	**63**	incl. fixtures for 41498	1,700	• • •	1		
			24 Volt				
41589	**20**	incl. fixtures for 41488	1,500	• • •	1		
41591	**25**	incl. fixtures for 41490	1,600	• • •	1		
41593	**32**	incl. fixtures for 41492	1,600	• • •	1		
41595	**40**	incl. fixtures for 41494	1,600	• • •	1		
41597	**50**	incl. fixtures for 41496	1,700	• • •	1		
41599	**63**	incl. fixtures for 41498	1,700	• • •	1		

Delivery time: on request

EXTENSION FOR BALL VALVE

For Art. no. 41488–41498



Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: PVC
Colour: grey

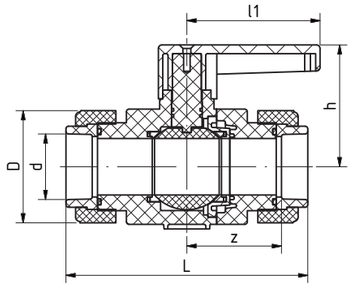
Art. no.	l [mm]	for Art. no.	Weight [kg]	System	PU	Box unit	Price € m/pc
98900	100	41488	0,020	• • •	1		
98901	100	41490/41492	0,025	• • •	1		
98902	100	41494/41496	0,030	• • •	1		
98903	100	41498	0,040	• • •	1		

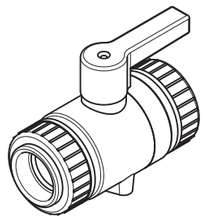
Delivery time: on request

PP-BALL VALVE

with union nut and welding socket

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Colour: green



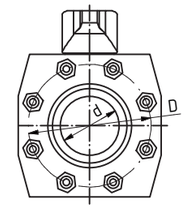


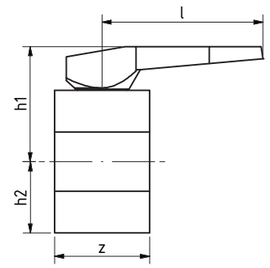
SDR	Art. no.	d [mm]	L [mm]	z [mm]	D [mm]	h [mm]	l1 [mm]	Inch R	DN	Weight [kg]	System	PU	Box unit	Price € m/pc
6 7.4 9 11	**41400**	**75**	276,0	108,0	129,0	139,0	152,0	0,00	65	2,441	• • •	1		

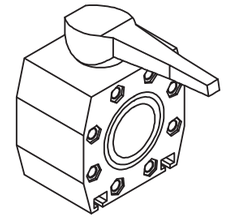
PP-BALL VALVE

with flange connection on both sides

Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe
Material: Fusiolen® PP-R
Colour: green







SDR	Art. no.	for ø [mm]	d [mm]	l [mm]	z [mm]	D [mm]	h1 [mm]	h2 [mm]	Weight [kg]	System	PU	Box unit	Price € m/pc
6	**41602**	**90**	77,0	210,0	124,0	160,0	150,0	93,0	4,196	• • •	1		
7.4 9	**41604**	**110**	94,0	260,0	145,0	180,0	165,0	103,0	5,612	• • •	1		
11	**41607**	**160**	135,0	310,0	205,0	240,0	210,0	136,5	13,420	• • •	1		

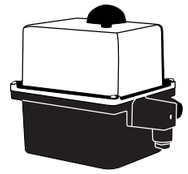
For dimension 125 mm the PP-ball valve Art. no. 41604 with flange adapter Art. no. 15526 and flange Art. no. 15724 is used.
For connection with aquatherm green pipe weldable flange adapter (Art. no. 15520–15531) and aquatherm green pipe plastic coated steel flange (Art. no. 15720–15730)

Hexagon screw M 16x60 mm for Art. no. 41602/41604
Hexagon screw M 20x80 mm for Art. no. 41607
corresponding flat washer M 16

NOTICE: These are not included in delivery.

ELECTRICAL DRIVE FOR BALL VALVE

incl. fixtures
For Art. no. 41602–41607



Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Art. no.	Dimension [mm]	for Art. no.	Weight [kg]	System	PU	Box unit	Price € m/pc
			230 Volt				
41603	**90**	incl. fixtures for 41602	3,300	• • •	1		
41605	**110**	incl. fixtures for 41604	3,400	• • •	1		
41608	**160**	incl. fixtures for 41607	3,700	• • •	1		
			24 Volt				
41703	**90**	incl. fixtures for 41602	3,300	• • •	1		
41705	**110**	incl. fixtures for 41604	3,400	• • •	1		
41708	**160**	incl. fixtures for 41607	3,700	• • •	1		

Delivery time: on request

EXTENSION FOR BALL VALVE

For Art. no. 41602–41607

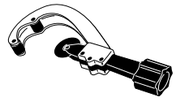
Systems: aquatherm green pipe, aquatherm blue pipe, aquatherm lilac pipe

Art. no.	l [mm]	for Art. no.	Weight [kg]	System	PU	Box unit	Price € m/pc
98904	150	41602	0,788	• • •	1		
98905	150	41604	1,120	• • •	1		
98906	150	41607	1,391	• • •	1		

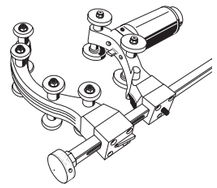
Delivery time: on request

Important: Do not cut the aquatherm pipes with customary hack saws.
aquatherm pipes can be cut with customary saws equipped with saw blades suitable for plastic.

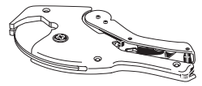
PIPE CUTTER



Art. no.	for pipe dimensions	PU	Box unit	Price € m/pc
50102	16-40mm	1		
50105	50-125mm	1		
50106	63-200mm	1		

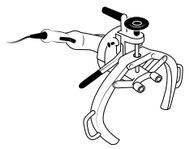


PIPE CUTTER



Art. no.	for pipe dimensions	PU	Box unit	Price € m/pc
50104	16-40mm	1		

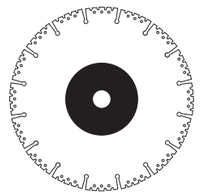
ORBITAL CIRCULAR SAW



Art. no.	for pipe dimensions	PU	Box unit	Price € m/pc
50108	160-355mm	1		

This orbital circular saw can be ordered directly from Rothenberger with Art. no. 55620 (www.rothenberger.com).
High-performance orbital circular saw for fast, precise, perfectly aligned and right-angled cutting of plastic pipes 160–355 mm at the building site or in the workshop.

CUTTING DISC FOR PLASTIC



Art. no.	Dimension	borehole	PU	Box unit	Price € m/pc
50107	ø 125mm	22,2 mm	1		
50109	ø 230mm	22,2 mm	1		

Application: for each angle grinder
Design: diamant galvanized cutting disc

MANUAL WELDING DEVICE (500 W)

Art. no.	for pipe dimensions	PU	Box unit	Price € m/pc
50336	ø 16-32mm	1		

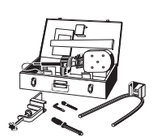
for one tool, with base and case for tools
Also available: 110 V (Art. no. 450336)

MANUAL WELDING DEVICE (800 W)

Art. no.	for pipe dimensions	PU	Box unit	Price € m/pc
50337	ø 16-63mm	1		

Also available: 110 V (Art. no. 450337)

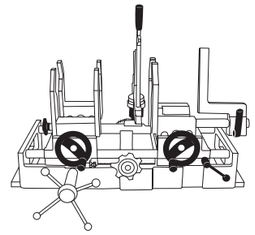
MANUAL WELDING DEVICE (1400 W)



Art. no.	for pipe dimensions	PU	Box unit	Price € m/pc
50341	ø 50-125mm	1		

Also available: 110 V (Art. no. 450341)

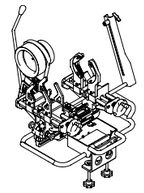
WELDING MACHINE (1400 W)



Art. no.	for pipe dimensions	PU	Box unit	Price € m/pc
50148	ø 50-125 mm - 230 V	1		

including welding tools 50–125 mm, roll stand and wooden transport case
Also available: 110 V (Art. no. 450148)

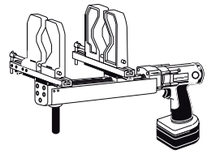
WELDING MACHINE (1400 W) LIGHT



Art. no.	for pipe dimensions	PU	Box unit	Price € m/pc
50145	ø 63-125mm	1		

including manual welding device (1400 W) and wooden transport case
Also available: 110 V (Art. no. 450145)

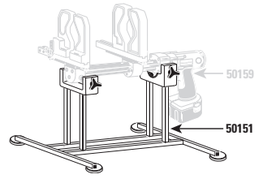
ELECTRIC WELDING JIG



Art. no.	for pipe dimensions	Weight [kg]	PU	Box unit	Price € m/pc
50159	ø 63-125mm	24,000	1		

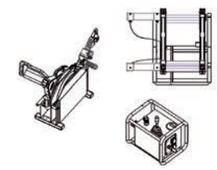
including standby accumulator, charging station and metal case
Also available: 110 V (Art. no. 450159)

BASE FOR ART. NO. 50159



Art. no.	Dimension	PU	Box unit	Price € m/pc
50151		1		

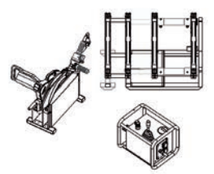
BUTT-WELDING MACHINE-TWO-RING-MACHINE WIDOS



Art. no.	Dimension [mm]	Weight [kg]	PU	Box unit	Price € m/pc
50350*	ø 160 - 250	154,000	1		
50351*	ø 160 - 315	178,000	1		

The butt-welding-two-ring machine can be purchased directly from Widos (www.widos.de)
* Also available in design with 110 volt (Art. no. **4**50350 = ø 160–250 mm / **4**50351 = ø 160–315 mm)

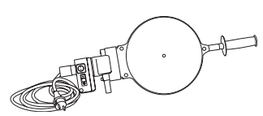
BUTT WELDING MACHINE WIDOS



Art. no.	Dimension	Weight [kg]	PU	Box unit	Price € m/pc
50352*	ø 160-250mm	195,000	1		
50353*	ø 160-315mm	250,000	1		
50354*	ø 160-355mm	425,000	1		
50355*	ø 200-450mm	430,000	1		
50356**	ø 200-500mm	500,000	1		
50357**	ø 315-630mm	885,000	1		

The butt-welding-machine can be purchased directly from Widos (www.widos.de)
* Also available in design with 110 volt (Art. no. **4**50352 = ø 160–250 mm / **4**50353 = ø 160–315 mm / **4**50354 = ø 160–355 mm / **4**50355 = ø 200–450 mm)
** special voltage on demand

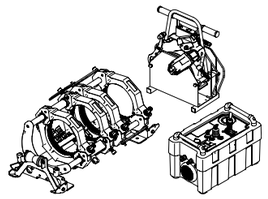
MANUAL WELDING DEVICE (1500 W) FOR SADDLE WELDING Ø 50–160 MM



Art. no.	for pipe dimensions	PU	Box unit	Price € m/pc
50330	ø 50-160mm	1		

BUTT WELDING MACHINE RITMO

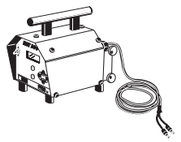
Art. no.	for pipe dimensions	Weight [kg]	PU	Box unit	Price € m/pc
50165*	ø 160-250mm	176,500	1		
50166*	ø 160-315mm	160,000	1		
50177	ø 160-355mm	336,500	1		
50169	ø 400-630mm	710,000	1		



including wooden transport box. The butt welding machine can be obtained directly from Ritmo (www.ritmo.it)
* Also available: 110 V (Art. no. 450165 for ø 160–250 mm / Art. no. 450166 for ø 160–315 mm)

ELECTROFUSION DEVICE

Art. no.	for pipe dimensions	PU	Box unit	Price € m/pc
50175	ø 20-250mm	1		



For processing with electro-fusion-sockets Art. no. 17208–17238.
Special calibration-tools – optainable on request – are required

TEMPERATURE PENCIL

Art. no.	Dimension	PU	Box unit	Price € m/pc
50190		1		

to check the correct welding temperature

SURFACE THERMOMETER

Art. no.	Dimension	PU	Box unit	Price € m/pc
50188		1		

to check the correct welding temperature

TEMPERATURE PREDECTIVE GLOVE

for tool change

Art. no.	Dimension	PU	Box unit	Price € m/pc
50195		2		

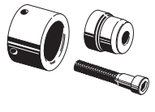
CLEANING WIPES

Art. no.	Dimension	PU	Box unit	Price € m/pc
50193	Box/100 towels	1		

for electrofusion sockets

WELDING TOOLS

Art. no.	Dimension [mm]	PU	Box unit	Price € m/pc
50206	16	1		
50208	20	1		
50210	25	1		
50212	32	1		
50214	40	1		
50216	50	1		
50218	63	1		
50220	75	1		
50222	90	1		
50224	110	1		
50226	125	1		



REPAIR SET

Art. no.	Dimension	PU	Box unit	Price € m/pc
50307	7mm	1		
50311	11mm	1		

to close holes of up to 10 mm in the pipe (pipe repair stick Art. no. 60600)

PIPE REPAIR STICK

for pipe repairs

Art. no.	Dimension	PU	Box unit	Price € m/pc
60600	7/11mm	10		

aquatherm UNIVERSAL PEELING TOOLS

for aquatherm green pipe MF UV, aquatherm green pipe MF RP UV, aquatherm blue pipe MF UV and aquatherm blue pipe MF OT

Required for the socket welding
(in combination with socket welding fittings from page 67 onwards, e.g. sockets, elbows , T-pieces, transition pieces with thread)

Also suitable for manual peeling (bolts included)

Art. no.	Dimension [mm]	PU	Box unit	Price € m/pc
50479	20	1		
50480	25	1		
50481	32	1		
50482	40	1		
50483	50	1		
50484	63	1		
50485	75	1		
50486	90	1		
50487	110	1		
50488	125	1		
50501	Spare blade with screw	1		

incl. bolts
for manual peeling

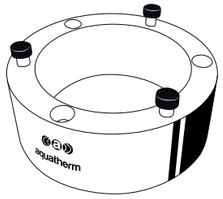
not suitable for aquatherm green pipe S, aquatherm blue pipe S, aquatherm green pipe MF, aquatherm blue pipe MF, aquatherm green pipe MF RP, aquatherm green pipe TI, aquatherm blue pipe TI

S = single, **MF** = multilayer fibre, **OT** = oxygen tight, **UV** = ultraviolet protected, **TI** = thermal insulation, **RP** = raised pressure

aquatherm EXTENSION FOR UNIVERSAL PEELING TOOL

Required for the electrofusion socket welding
(aquatherm electrofusion sockets on page 93)

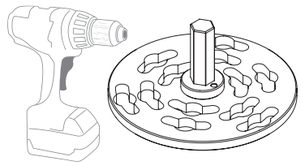
When electrofusion welding a longer welding depth is required, which is achieved by the combination of the universal peeling tool and the extension for the universal peeling tool (e.g. Art. no. 50479+50489)



Art. no.	Dimension	PU	Box unit	Price € m/pc
50489	for peeling tool 20 mm Art. no. 50479	1		
50490	for peeling tool 25 mm Art. no. 50480	1		
50491	for peeling tool 32 mm Art. no. 50481	1		
50492	for peeling tool 40 mm Art. no. 50482	1		
50493	for peeling tool 50 mm Art. no. 50483	1		
50494	for peeling tool 63 mm Art. no. 50484	1		
50495	for peeling tool 75 mm Art. no. 50485	1		
50496	for peeling tool 90 mm Art. no. 50486	1		
50497	for peeling tool 110 mm Art. no. 50487	1		
50498	for peeling tool 125 mm Art. no. 50488	1		

ATTACHMENT PLATE FOR UNIVERSAL PEELING TOOL

In combination with or without extension for universal peeling tools for drilling machine



Art. no.	Dimension	PU	Box unit	Price € m/pc
50499	for universal peeling tool 50479 – 50484	1		
50500	for universal peeling tool 50485 – 50488	1		

Delivery without drilling machine!

UNIVERSAL PEELING TOOL-SET

20–63 mm

Art. no.	Dimension	PU	Box unit	Price € m/pc
50477	for ø 20–63 mm	1		

consisting of:

1x case
Each 1x 50479–50484 peeling tool 20–63 mm
1x 50499 attachment plate for universal peeling tool 50479–50484
1x 50503 1 toggle-set
1x 50504 torx wrench
1x 50505 hexagon Allen key size 4
6x 99793 6 fixing screws for Art. no. 50489–50494 M5x25

UNIVERSAL PEELING TOOL-SET

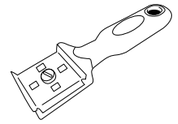
75–125 mm

Art. no.	Dimension	PU	Box unit	Price € m/pc
50478	for ø 75 - 125 mm	1		

consisting of:

1 x case
Each 1x 50485–50488 peeling tool 75–125 mm
1x 50500 attachment plate for universal peeling tool 50485–50488
1x 50503 1 toggle-set
1x 50504 torx wrench
1x 50505 hexagon Allen key size 4
6x 99794 6 fixing screws for Art. no. 50495–50498 M5x35

MANUAL SCRAPER FOR aquatherm blue pipe OT PIPES



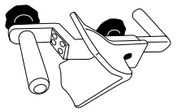
Art. no.	Dimension	PU	Box unit	Price € m/pc
50509	with 4-fold blade, 35 mm wide	1		

For removal of OT-coat before butt-welding.
In addition the manual scraper can be used for removal of oxid coating for the E-socket welding.

SPARE BLADE SET FOR ART. NO. 50509

Art. no.	Dimension	PU	Box unit	Price € m/pc
99909	2 pieces = 1 set	1		

CHAMFERING TOOL FOR aquatherm blue pipe OT PIPES



Art. no.	Dimension	PU	Box unit	Price € m/pc
50510	32-250mm	1		

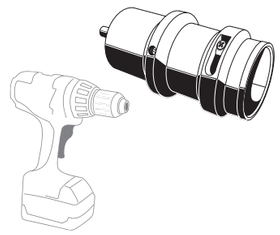
For removal of oxid coating before butt-welding.

aquatherm PEELING TOOLS FOR ELECTROFUSION SOCKET WELDING (ART. NO.17208–17238)

for aquatherm green pipe S, aquatherm green pipe MF, aquatherm green pipe MF RP, aquatherm green pipe MF TI, aquatherm blue pipe S, aquatherm blue pipe MF and aquatherm blue pipe MF TI

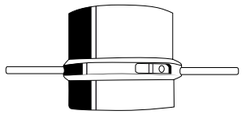
Required to remove the **oxid coating**
(aquatherm electrofusion sockets on page 93)

Art. no.	Dimension [mm]	PU	Box unit	Price € m/pc
	In combination with a drilling machine			
50558	20	1		
50560	25	1		
50562	32	1		
50564	40	1		
50566	50	1		
50568	63	1		
50570	75	1		
50572	90	1		
50440	spare blade	1		
	For manual peeling			
50574	110	1		
50576	125	1		
50580	160	1		
50441	spare blade	1		
	For manual peeling			
50592	200 + 250	1		
99739	spare blade	1		

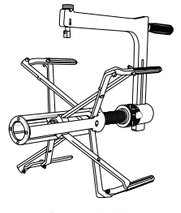


Art. no. 50558–50572

In combination with a drilling machine (not included!)



Art. no. 50574–50580



Art. no. 50592

Not suitable for aquatherm green pipe UV, aquatherm blue pipe UV and aquatherm blue pipe OT

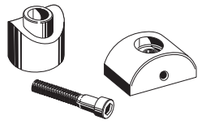
S = single, **MF** = multilayer fibre, **OT** = oxygen tight, **UV** = ultraviolet protected, **TI** = thermal insulation, **RP** = raised pressure

Spare parts such as blades can be requested under service@aquatherm.de!

SADDLE WELDING TOOLS

for welding saddles

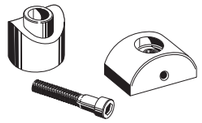
Art. no.	Dimension	PU	Box unit	Price € m/pc
50614	40x20/25mm	1		
50616	50x20/25mm	1		
50619	63x20/25mm	1		
50620	63x32mm	1		
50623	75x20/25mm	1		
50624	75x32mm	1		
50625	75x40mm	1		
50627	90x20/25mm	1		
50628	90x32mm	1		
50629	90x40mm	1		
50631	110x20/25mm	1		
50632	110x32mm	1		
50634	110x40mm	1		
50635	110x50mm	1		
50636	125x20/25mm	1		
50638	125x32mm	1		
50640	125x40mm	1		
50642	125x50mm	1		
50644	125x63mm	1		
50648	160x20/25mm	1		
50650	160x32mm	1		
50652	160x40mm	1		
50654	160x50mm	1		
50656	160x63mm	1		
50657	160x75mm	1		
50658	160x90mm	1		
50660	200x20/25mm	1		
50662	200x32mm	1		
50664	200x40mm	1		
50666	200x50mm	1		
50667	200x75mm	1		
50668	200x63mm	1		
50669	200x90mm	1		
50670	200x110mm	1		
50671	200x125mm	1		
50672	250x20/25mm	1		
50674	250x32mm	1		
50676	250x40mm	1		
50678	250x50mm	1		
50680	250x63mm	1		
50682	250x75mm	1		



SADDLE WELDING TOOLS

for welding saddles

Art. no.	Dimension	PU	Box unit	Price € m/pc
50684	250x90mm	1		
50686	250x110mm	1		
50688	250x125mm	1		
50690	315x63mm	1		
50692	315x75mm	1		
50694	315x90mm	1		
50696	315x110mm	1		
50698	315x125mm	1		
50699	315x160mm	1		
50712	355x63mm	1		
50714	355x75mm	1		
50716	355x90mm	1		
50718	355x110mm	1		
50720	355x125mm	1		
50722	355x160mm	1		
50726	400-630x63mm	1		
50728	400-500x75mm	1		
50730	560-630x75mm	1		
50732	400-500x90mm	1		
50734	560-630x90mm	1		
50736	400-450x110mm	1		
50738	500-560x110mm	1		
50740	630x110mm	1		
50742	400x125mm	1		
50744	450-500x125mm	1		
50746	560-630x125mm	1		

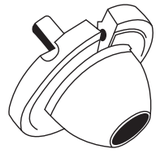


SADDLE PEELING TOOLS FOR OT UND UV PIPES Ø 50–125 mm

Art. no.	Dimension	PU	Box unit	Price € m/pc
50921	for welding saddles 20 & 25 mm	1		
50922	for ø 32 mm	1		
50924	for ø 40 mm	1		
50926	for ø 50 mm	1		
50928	for ø 63 mm	1		

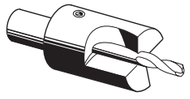
SADDLE PEELING TOOLS FOR OT UND UV PIPES Ø 160–250 mm

Art. no.	Dimension	PU	Box unit	Price € m/pc
50421	for welding saddles ø 20 & 25 mm	1		
50422	for welding saddles ø 32 mm	1		
50424	for welding saddles ø 40 mm	1		
50426	for welding saddles ø 50 mm	1		
50428	for welding saddles ø 63 mm	1		



DRILLS *for installation of weld-in saddles*

Art. no.	Dimension	PU	Box unit	Price € m/pc
50940	20&25mm (40-160mm)	1		
50941	20&25mm (63-250mm)	1		
50942	32mm	1		
50944	40mm	1		
50946*	50mm	1		
50948*	63mm	1		
50952*/**	90mm	1		
50954*/**	110mm	1		
50956*/**	125mm	1		
50958*/**	160mm	1		



** may only be used in fixed drilling machines! ** tool holder MK4*
Please note: *Art. no. 50950–50958* are discontinued articles who are no longer available after sale of stocks.

DRILL DUSS DIA303

Art. no.	Dimension	PU	Box unit	Price € m/pc
50978		1		

CHUCK ADAPTER FOR ART. NO. 50971

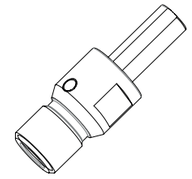
Art. no.	Dimension	PU	Box unit	Price € m/pc
50969		1		

KEYLESS CHUCK clamping range 1,5–13mm

Art. no.	Dimension	PU	Box unit	Price € m/pc
50971		1		

HOLE SAW HOLDER LSA3

Art. no.	Dimension	PU	Box unit	Price € m/pc
50976	1/2“ for drill chuck	1		



HOLE SAW HOLDER LSA2

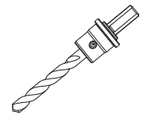
Art. no.	Dimension	PU	Box unit	Price € m/pc
50974	1/2“ for DUSS-machines	1		

SADDLE-HOLE SAW FOR BRANCH *for assembly of weld-in saddles*

Art. no.	Dimension	PU	Box unit	Price € m/pc
50987	75mm	1		
50988	90mm	1		
50989	110mm	1		
50990	125mm	1		
50991	160mm	1		

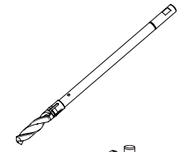
QUICK CHANGE ADAPTER 75–90MM

Art. no.	Dimension	PU	Box unit	Price € m/pc
50973	for Art. no. 50987–50988	1		



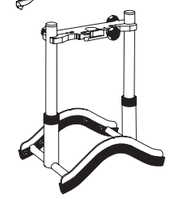
CENTER DRILL LSZ 1

Art. no.	Dimension	PU	Box unit	Price € m/pc
50975	with capture sleeve	1		



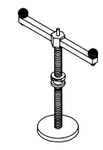
DRILL RIG FOR DUSS-DRILL

Art. no.	Dimension	PU	Box unit	Price € m/pc
50977		1		

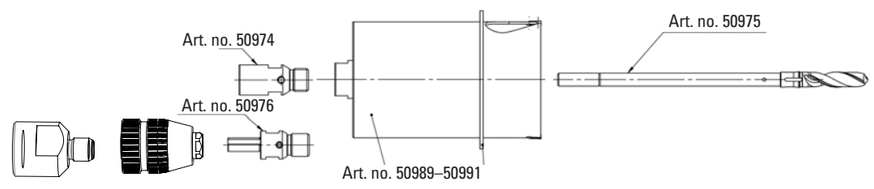


WELDING FIXTURE FOR DRILL RIG 50977

Art. no.	Dimension	PU	Box unit	Price € m/pc
50979		1		



HOLE SAW SYSTEM



HOT TAPPING TOOL
for drilling of pipes under pressure

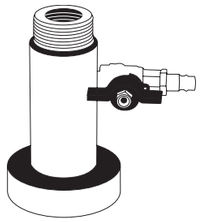
The hot tapping tool (Art. no. 50890) is used for drilling pipes for branche connections in the dimensions 40 and 63 mm.
The PP-main pipes aquatherm green pipe, blue pipe and lilac pipe with the **pipe structure S and MF UV** from 75 mm to 630 mm can be drilled under **medium pressure (water) of maximum 6 bar** and a **medium temperature of 10–60 °C.**

HOT TAPPING TOOL
for weld-on saddle set with ball valve

Art. no.	Dimension	PU	Box unit	Price € m/pc
50890	for dimension 40 + 63mm	1		

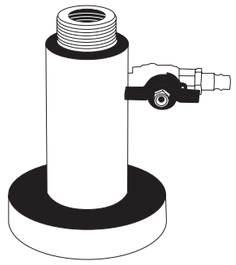
ADAPTER FOR WELD-ON SADDLE SET WITH BALL VALVE 40 MM
for installation under pressure

Art. no.	Dimension [mm]	PU	Box unit	Price € m/pc
50891	40	1		



ADAPTER FOR WELD-ON SADDLE SET WITH BALL VALVE 63 MM
for installation under pressure

Art. no.	Dimension [mm]	PU	Box unit	Price € m/pc
50892	63	1		

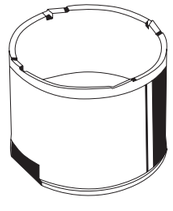


PP-MILLING CUTTER FOR WELD-ON SADDLE SET WITH BALL VALVE 40 MM
for installation under pressure
for Art. no. 50891

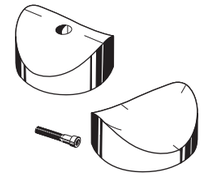
Art. no.	Dimension [mm]	PU	Box unit	Price € m/pc
50893	40	1		

PP-MILLING CUTTER FOR WELD-ON SADDLE SET WITH BALL VALVE 63 MM
for installation under pressure
for Art. no. 50892

Art. no.	Dimension [mm]	PU	Box unit	Price € m/pc
50894	63	1		



aquatherm WELD-ON SADDLE TOOL
for weld-on saddle set with ball valve for installation under pressure
for hot tapping tool Art. no. 50890



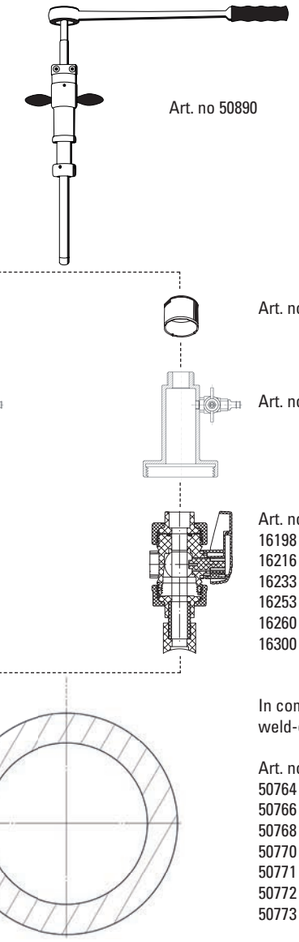
Art. no.	Dimension	PU	Box unit	Price € m/pc
50760	75x40mm	1		
50761	90x40mm	1		
50762	110x40mm	1		
50763	125x40mm	1		
50764	125x63mm	1		
50765	160x40mm	1		
50766	160x63mm	1		
50767	200x40mm	1		
50768	200x63mm	1		
50769	250x40mm	1		
50770	250x63mm	1		
50771	315x63mm	1		
50772	355x63mm	1		
50773	400-630x63mm	1		

HOT TAPPING TOOL
for drilling pipes under pressure

The hot tapping tool (Art. no. 50890) is for drilling of pipelines. PP-main pipes from 75 mm to 630 mm can be drilled under pressure.

The following accessories are required for processing:

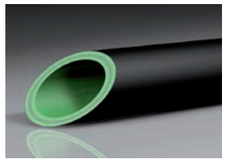
adapter for ball valve 40 mm	Art. no. 50891
adapter for ball valve 63 mm	Art. no. 50892
PP-milling cutter 40 mm	Art. no. 50893
PP-milling cutter 63 mm	Art. no. 50894
aquatherm weld-on saddle tool	Art. no. 50760–50773
aquatherm weld-on saddle set with ball valve (p. 88)	Art. no. 16175–16300



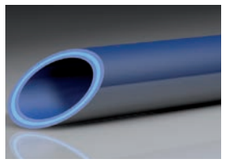
WELDING PROCESS TOOLS AND EQUIPMENT

for pipes with additional outer layer/protection layer

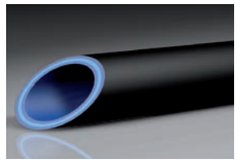
aquatherm green pipe SDR 7,4/9 MF UV
aquatherm blue pipe SDR 7,4/11/17,6 MF UV & SDR 7,4/11 MF OT



aquatherm green pipe
SDR 7.4/9 MF UV



aquatherm blue pipe
SDR 7.4/11 MF OT

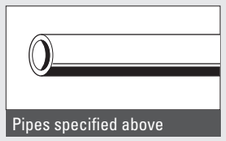


aquatherm blue pipe
SDR 7.4/11/17.6 MF UV

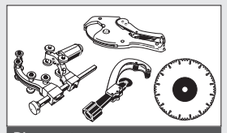
PIPES & FITTINGS	CUTTING	PEELING	DRILLING	SADDLE PEELING / CHAMFERING	CLEANING	MEASUREMENT OF TEMPERATURE	WELDING TOOLS	MANUAL WELDING DEVICES	OR	WELDING MACHINES

1. SOCKET WELDING 16–125 mm

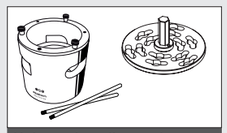
Pipes specified above



Socket welding fittings

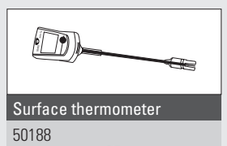


Pipe cutter
50104 ø 16–40 mm
Pipe cutter
50102/50105/50106 ø 16–200 mm
Cutting disc
50107 ø 125 mm/50109 ø 230 mm

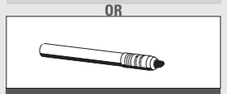


Universal peeling tool
50479–50488
20–125 mm (16 mm on request)
+ (opt.) Attachment plate*
50499/50500

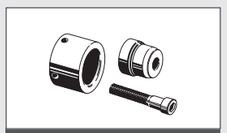
Cleaning wipes
50193



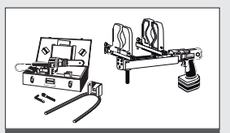
Surface thermometer
50188
OR



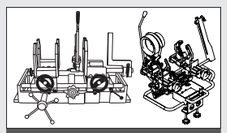
Temperature pencil
50190



Welding tools
50206–50226



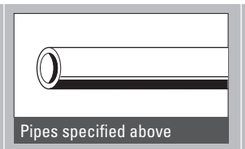
Manual welding device
50336 ø 16–32 mm
50337 ø 16–63 mm
50341 ø 50–125 mm
(opt.) Electric welding jig
50159 for ø 63–125 mm



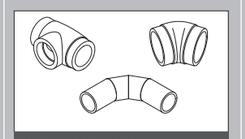
Welding machine
50148 for ø 50–125 mm
Welding machine Light
50145 for ø 63–125 mm

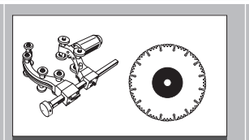
2. BUTT WELDING 160–630 mm

Pipes specified above

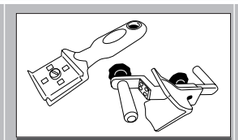


Butt welding fittings



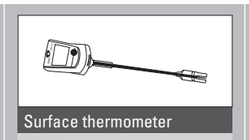


Pipe cutter
50106 ø 110–200 mm
Orbital circular saw
50108 ø 160–355 mm
Cutting disc
50107 ø 125 mm/50109 ø 230 mm

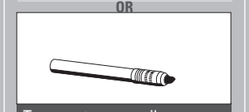


Scraper/Chamfering tool for OT pipes
50509
99909
Cutter for UV-pipes
not available with aquatherm!

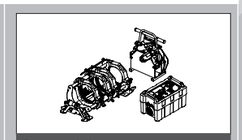
Cleaning wipes
50193



Surface thermometer
50188
OR

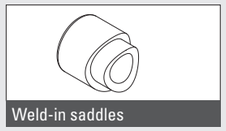


Temperature pencil
50190

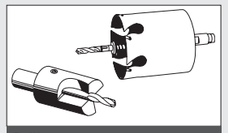


Butt-welding two-ring machine
50350–50351 ø 160–315 mm
Butt welding machine
50352–50357 ø 160–630 mm
50165–50177 ø 160–630 mm

3. SADDLE WELDING 20–160 mm



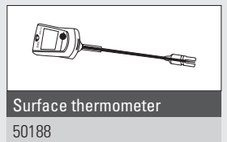
Weld-in saddles



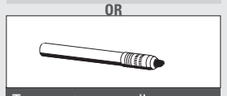
Drill
50940–50958 (20–160mm) 50987–50991 (75–315mm)
From 50 mm we recommend the application of drill presses.

for OT pipes
Saddle welding tools *
50921–50928 for ø 50–125 mm
50421–50428 for ø 160–250 mm

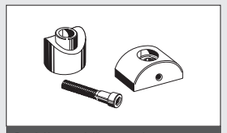
Cleaning wipes
50193



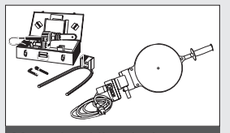
Surface thermometer
50188
OR



Temperature pencil
50190



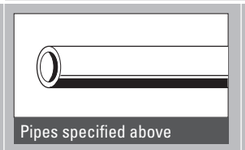
Saddle welding tools
50614–50746



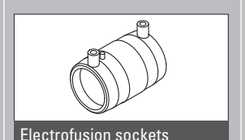
Manual welding device
50336 ø 16–32 mm
50337 ø 16–63 mm
50341 ø 50–125 mm
50330 ø 50–160 mm

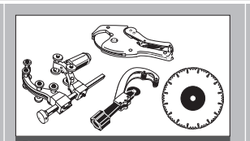
4. ELECTROFUSION SOCKET WELDING 20–125 mm

Pipes specified above



Electrofusion sockets

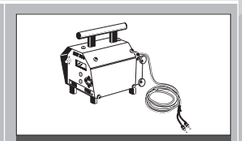




Pipe cutter
50104 ø 16–40 mm
Pipe cutter
50102/50105/50106 ø 16–200 mm
Cutting disc
50107 ø 125mm/50109 ø 230mm

Universal peeling tool
50479–50488 for ø 20–125 mm
+ Extension
50489–50498
+ (opt.) Attachment plate*
50499/50500

Cleaning wipes
50193



Electrofusion device
50175 ø 20–250 mm

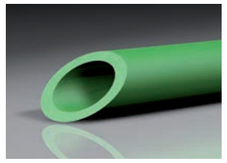
PIPES & FITTINGS	CUTTING	PEELING	DRILLING	SADDLE PEELING / CHAMFERING	CLEANING	MEASUREMENT OF TEMPERATURE	WELDING TOOLS	MANUAL WELDING DEVICES	OR	WELDING MACHINES

* in combination with a drilling machine (not included!)

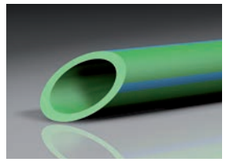
WELDING PROCESS TOOLS AND EQUIPMENT

for pipes without additional outer layer/protection layer

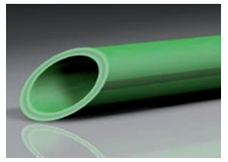
aquatherm green pipe SDR 6/7,4/11 S & SDR 7,4 MF & SDR 9 MF RP
aquatherm blue pipe SDR 11 S & SDR 7,4/11/17,6 MF



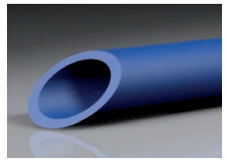
aquatherm green pipe
SDR 6/7.4 S



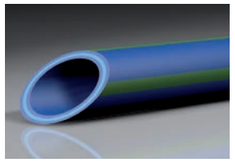
aquatherm green pipe
SDR 11 S



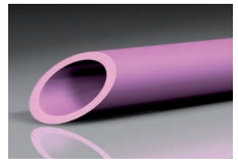
aquatherm green pipe
SDR 7.4 MF / SDR 9 MF RP



aquatherm blue pipe
SDR 11 S



aquatherm blue pipe
SDR 7.4/11/17.6 MF

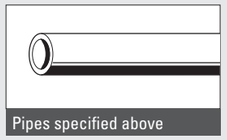


aquatherm lilac pipe
SDR 7.4/11 S

PIPES & FITTINGS	CUTTING	PEELING	DRILLING	SADDLE PEELING / CHAMFERING	CLEANING	MEASUREMENT OF TEMPERATURE	WELDING TOOLS	MANUAL WELDING DEVICES	OR	WELDING MACHINES

1. SOCKET WELDING 16–125 mm

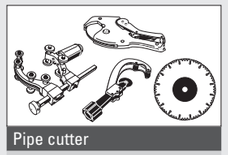
Pipes & fittings



Pipes specified above

Socket welding fittings

Cutting



Pipe cutter
50104 ø 16–40 mm

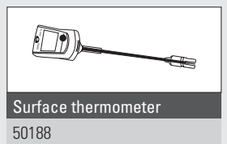
Pipe cutter
50102/50105/50106 ø 16–200 mm

Cutting disc
50107 ø 125 mm/50109 ø 230 mm

Cleaning

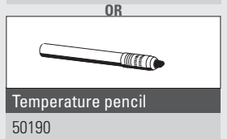
Cleaning wipes
50193

Measurement of temperature



Surface thermometer
50188

OR

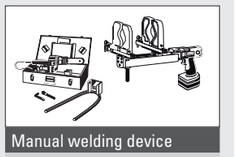


Temperature pencil
50190

Welding tools

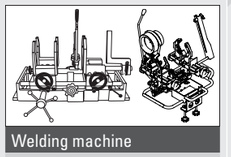
Welding tools
50206–50226

Manual welding devices



Manual welding device
50336 ø 16–32 mm
50337 ø 16–63 mm
50341 ø 50–125 mm
(opt.) Electric welding jig
50159 for ø 63–125 mm

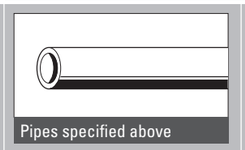
Welding machines



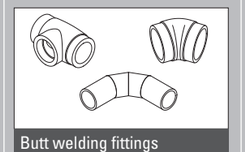
Welding machine
50148 for ø 50–125 mm
Welding machine Light
50145 for ø 63–125 mm

2. BUTT WELDING 160–630 mm

Pipes & fittings

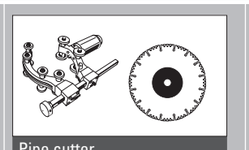


Pipes specified above



Butt welding fittings

Cutting



Pipe cutter
50106 ø 110–200 mm

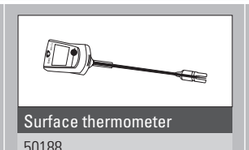
Orbital circular saw
50108 ø 160–355 mm

Cutting disc
50107 ø 125 mm/50109 ø 230 mm

Cleaning

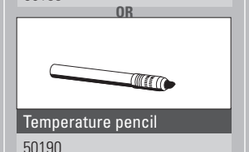
Cleaning wipes
50193

Measurement of temperature



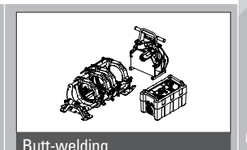
Surface thermometer
50188

OR



Temperature pencil
50190

Welding machines

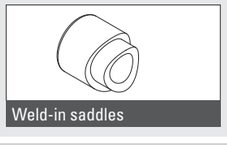


Butt-welding
two-ring machine
50350–50351 ø 160–315 mm
Butt-welding machine
50352–50357 ø 160–630 mm
50165–50177 ø 160–630 mm

3. SADDLE WELDING 20–160 mm

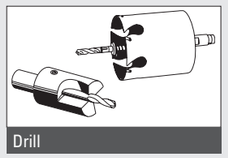
Pipes & fittings

Pipes specified above



Weld-in saddles

Drilling



Drill

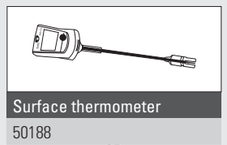
50940–50958	50987–50991
20–160mm	75–315mm

From 50 mm we recommend the application of drill presses.

Cleaning

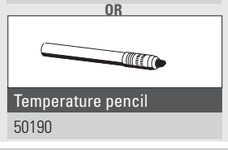
Cleaning wipes
50193

Measurement of temperature



Surface thermometer
50188

OR

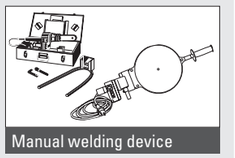


Temperature pencil
50190

Welding tools

Saddle welding tools
50614–50746

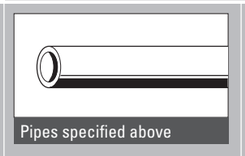
Manual welding devices



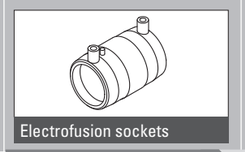
Manual welding device
50336 ø 16–32 mm
50337 ø 16–63 mm
50341 ø 50–125 mm
50330 ø 50–160 mm

4. ELECTROFUSION SOCKET WELDING 20–250 mm

Pipes & fittings

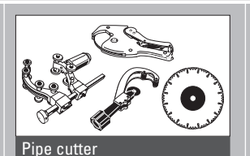


Pipes specified above



Electrofusion sockets

Cutting

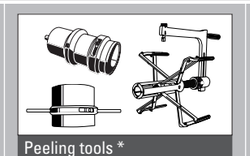


Pipe cutter
50104 ø 16–40 mm

Pipe cutter
50102/50105/50106 ø 16–200 mm

Cutting disc
50107 ø 125 mm/50109 ø 230 mm

Peeling



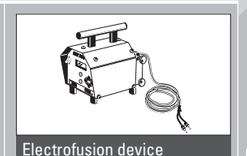
Peeling tools *
50558–50572
20–90 mm

Manual peeling tools
50574–50592
110–250 mm

Cleaning

Cleaning wipes
50193

Welding machines

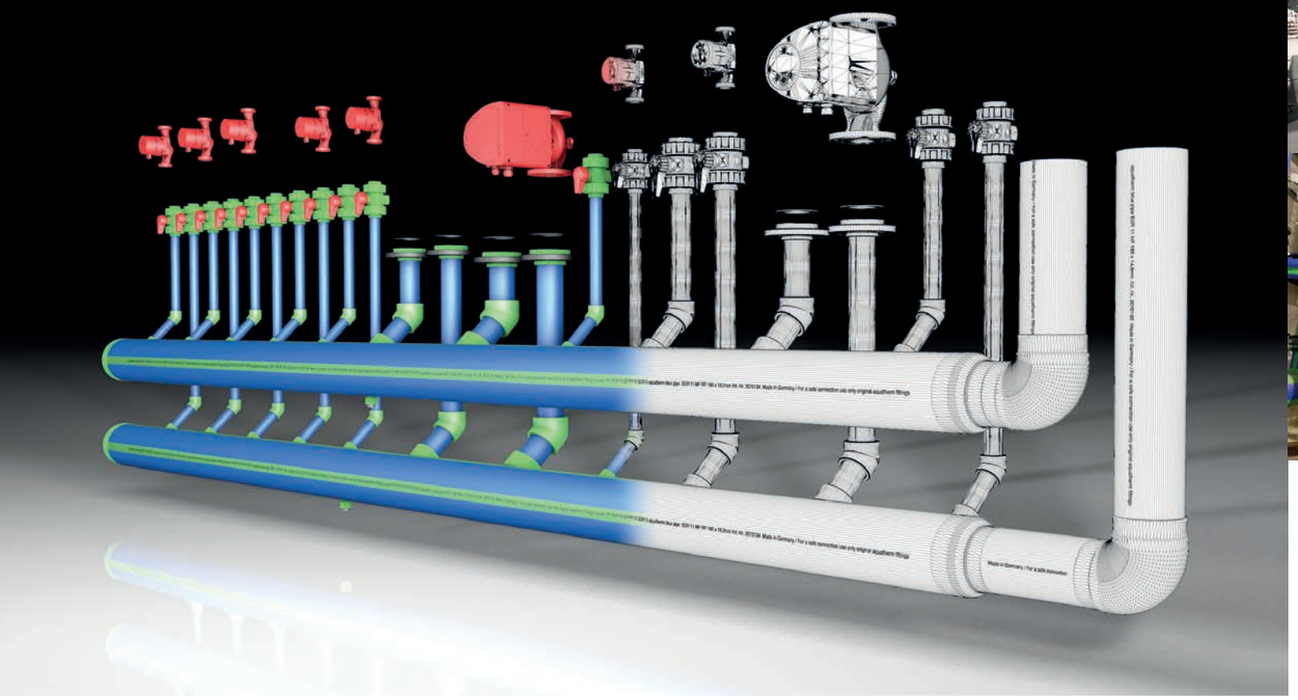


Electrofusion device
50175 ø 20–250 mm

PIPES & FITTINGS	CUTTING	PEELING	DRILLING	SADDLE PEELING / CHAMFERING	CLEANING	MEASUREMENT OF TEMPERATURE	WELDING TOOLS	MANUAL WELDING DEVICES	OR	WELDING MACHINES

* in combination with a drilling machine (not included!)

aquatherm Prefabrication



AQUATHERM PREFABRICATION - CUSTOM MADE

Time is money – a maxim 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.

Save time and money

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 “prefabrication” please contact our technical hotline: **+49 (0) 2722 950-200,** ask for our catalogue, **order no. E18198** or visit our website **www.aquatherm.de**

Assembly in the …

… aquatherm manifold construction.

Loading and …

… delivery direct to the construction site.

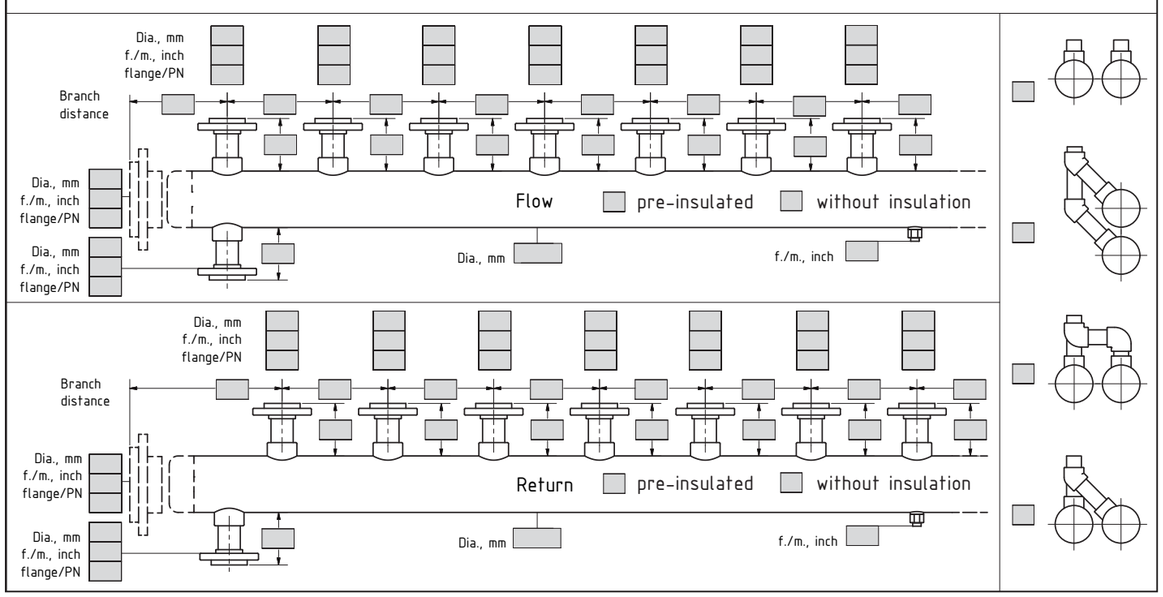
Form: special manifold

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.

aquatherm
state of the pipe

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

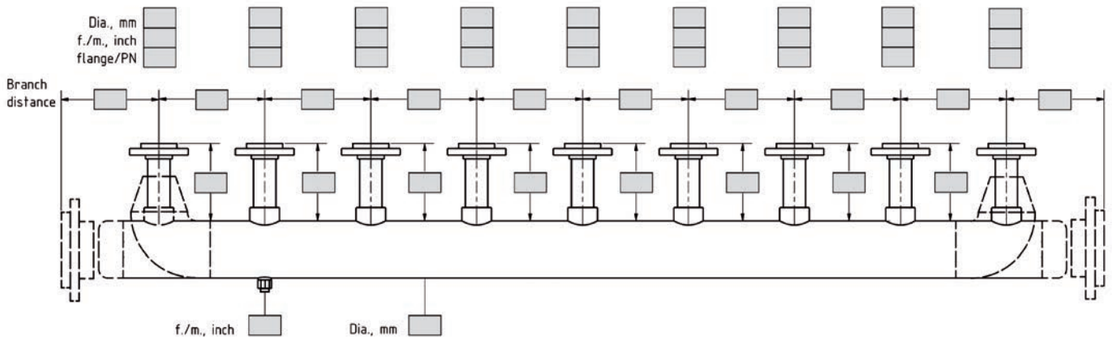


Manifold inquiry Sanitary Dia. 20–630 mm:

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.

aquatherm
state of the pipe

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



Manifold without dead storage zones

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 pre-fabrication
- Time saving through pre-fabrication
- Years of experience in manifold and plant construction

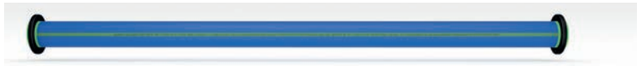
Advantages of aquatherm manifolds and special components

- 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[1]
- Hygienic[2]
- 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[3]
- 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

[1] aquatherm blue pipe OT
[2] aquatherm green pipe
[3] aquatherm red pipe

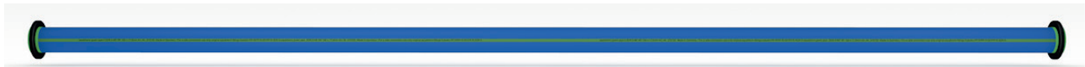


aquatherm green / blue pipe MF **TWO-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE **5.8 M**

MF = multilayer fibre / 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.	Art. no.	Art. no.	Art. no.	Art. no.	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

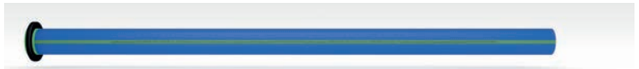


aquatherm green / blue pipe MF **TWO-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE **11.6 M**

MF = multilayer fibre / 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.	Art. no.	Art. no.	Art. no.	Art. no.	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

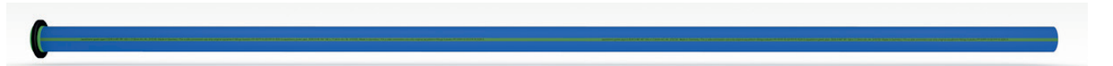


aquatherm green / blue pipe MF **ONE-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE **5.8 M**

MF = multilayer fibre / 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.	Art. no.	Art. no.	Art. no.	Art. no.	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

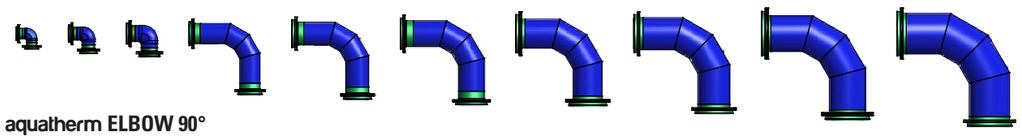


aquatherm green / blue pipe MF **ONE-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE **11.6 M**

MF = multilayer fibre / 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.	Art. no.	Art. no.	Art. no.	Art. no.	m/pc
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
Medium pipe	Art. no.	Art. no.	Art. no.	Art. no.	Art. no.	pc
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 FIBER COMPOSITE PIPE **TWO-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE **5.8 M**

Fiber 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.	Art. no.	Art. no.	Art. no.	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 FIBER COMPOSITE PIPE **TWO-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE **11.6 M**

Fiber 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.	Art. no.	Art. no.	Art. no.	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 FIBER COMPOSITE PIPE **ONE-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE **5.8 M**

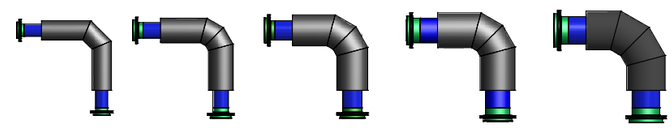
Fiber composite pipe as single pipe in 5.8 m length with PUR-rigid foam insulation and PE-casing pipe.

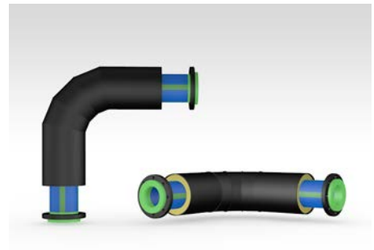
Outside diameter		aquatherm green pipe ti SDR 9 MF RP	aquatherm blue pipe ti SDR 11 MF	aquatherm blue pipe ot ti SDR 11 MF	aquatherm blue pipe ti SDR 17,6 MF	PU
Medium pipe	Casing pipe	Art. no.	Art. no.	Art. no.	Art. no.	m/pc
160 mm	250 mm	**7470829**	**8770329**	**8970329**	**8870329**	5.8
200 mm	315 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

aquatherm TI FIBER COMPOSITE PIPE **ONE-SIDED** WITH FLANGE ADAPTER AND LOOSE FLANGE **11.6 M**

Fiber 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.	Art. no.	Art. no.	Art. no.	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





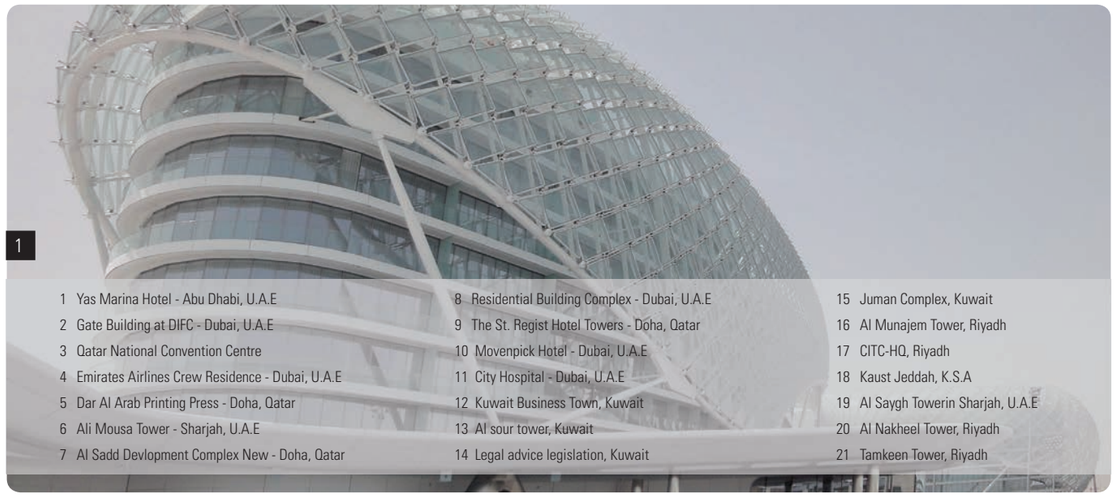
aquatherm ti ELBOW 90°

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.	Art. no.	Art. no.	Art. no.	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°.

REFERENCES



1 Yas Marina Hotel - Abu Dhabi, U.A.E
2 Gate Building at DIFC - Dubai, U.A.E
3 Qatar National Convention Centre
4 Emirates Airlines Crew Residence - Dubai, U.A.E
5 Dar Al Arab Printing Press - Doha, Qatar
6 Ali Mousa Tower - Sharjah, U.A.E
7 Al Sadd Devlopment Complex New - Doha, Qatar
8 Residential Building Complex - Dubai, U.A.E
9 The St. Regist Hotel Towers - Doha, Qatar
10 Movenpick Hotel - Dubai, U.A.E
11 City Hospital - Dubai, U.A.E
12 Kuwait Business Town, Kuwait
13 Al sour tower, Kuwait
14 Legal advice legislation, Kuwait
15 Juman Complex, Kuwait
16 Al Munajem Tower, Riyadh
17 CITC-HQ, Riyadh
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