aquatherm®

Piping system for potable water supply

aquatherm **green**

Part of the Solution
www.aquatherm.de

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Technical details are subject to change.
With the edition of this catalogue, all former ones become void.

Our sales and delivery conditions (January 2014) and the contacts of our technical sales and distribution see on our homepage **www.aquatherm.de**

History

1973 aquatherm founded by Gerhard Rosenberg

1981 development of the first pipe system made of polypropylene; the colour green becomes a characteristic feature of aquatherm

1991 subsidiary Radeberg was founded

1996 first certification of the quality management system in accordance with ISO 9001

1997 foundation of the sales company in Italy

1999 development of fusiotherm® fibre composite pipe

2001 aquatherm operates in more than 50 export markets

2002 market launch of the aquatherm blue pipe

2005 market launch of the aquatherm red pipe and aquatherm black system

2010 system expansion of the pipe size to max. ø 630 mm

2010 Christof, Dirk and Maik Rosenberg assume company management

2012 first certification of the environment management system in accordance with ISO 14001

2012 market launch of the material fusiolen® PP-RP

2013 first certification of the energy management system in accordance with ISO 50001

2015 foundation of the sales company in North America

2017 opening of the new pipe extrusion plant

2018 opening of the new injection moulding facility

2018 foundation of the sales company in England

2019 expansion of the industrial prefabrication operation

2021 participation in the distribution company aquatherm iberica s.l.

2022 opening of the aquatherm Campus

2023 aquatherm celebrates it's 50th anniversary

AQUATHERM GREEN

Revolution since 1973

It all began with a vision.

On 17 August 1973, Gerhard Rosenberg founded aquatherm GmbH - based in the garage and basement of his private home. The ambitious goal? To revolutionise the market as a pipe manufacturer. This vision gave rise to aquatherm, the world's leading manufacturer of plastic piping systems made of polypropylene for plant construction and building services.

The numerous product lines provide superior solutions in potable water applications, heating systems, fire sprinkler systems, air conditioning and refrigeration technology, as well as in surface heating and cooling systems.

Due to their special material properties, the aquatherm pipe systems convince by their diverse application possibilities.

The aquatherm pipe systems can be used in all areas of new installation, repair and renovation.

aquatherm employs around 550 people in Germany, Italy, England, and North America. Production takes place exclusively at the German sites in Attendorn (headquarters), Radeberg and Ennest. However, to guarantee the worldwide availability of our aquatherm pipes at any time and to offer local, personal service, aquatherm works closely together with long-term partners and suppliers in about 70 countries around the globe.

Today, the family business is run by the second generation by the brothers Christof, Dirk and Maik Rosenberg.

AQUATHERM GREEN

Future-proof in all fields of application **with individual solutions**

aquatherm has the solution for your challenge - benefit from the versatile application possibilities of aquatherm green systems. Here you get an exemplary overview of the fields of application where you can trust in aquatherm green. Yesterday. Today. Tomorrow.

Maritime applications

Swimming pool technology

Potable water

back to content

Abbreviations pipe structure:

S	single-layer
M	multi-layer
MF	multi-layer, fibre-reinforced
RP	raised pressure resistance
UV	UV-resistant
OT	oxygen-tight
TI	thermally insulated
HI	hardly inflammable

Abbreviations material:

PP	polypropylene
PP-R	polypropylene random copolymer
PP-RCT	polypropylene random copolymer with raised pressure resistance
PE-RT	polyethylene with raised temperature resistance

Fields of applications:

- fire protection sprinkler-systems
- heating and cooling networks
- refrigeration
- connection heating and cooling
- ceiling heating and cooling
- surface heating and cooling
- heating system construction
- industrial floor heating
- maritime applications
- swimming pool technology
- sports floor heating and cooling
- potable water application

Lengths	units in mm unless otherwise specified
Weight	weight data in kg/m
Radius	all data in inches
Volume	water content in litre/metre
SDR	standard dimension ratio
PU	packing unit

Pipe diameter

The diameter of the PP pipe determines its location and intended use. In order to be able to install a pipeline from the connection to the outlet, the pipe diameter of the individual pipes and fittings must be compatible with each other.

aquatherm green

Diameter in mm	16	17	20	25	32	40	50	63	75	90	110	125	160	200	250	315	355	400	450	500	630
SDR 6 S	·	·	○	○	○	○	○	○	○	○	○	·	·	·	·	·	·	·	·	·	·
SDR 7,4 S	·	·	○	○	○	○	○	○	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 7,4 MF	·	·	○	○	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 7,4 MF UV	·	·	○	○	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 9 MF RP	·	·	·	·	○	○	○	○	○	○	○	○	○	○	○	○	·	·	·	·	·
SDR 9 MF RP UV	·	·	·	·	○	○	○	○	○	○	○	○	○	○	○	○	·	·	·	·	·
SDR 11 S	·	·	○	○	○	○	○	○	○	○	○	○	○	○	○	○	·	·	·	·	·

aquatherm blue

Diameter in mm	16	17	20	25	32	40	50	63	75	90	110	125	160	200	250	315	355	400	450	500	630
SDR 7,4 MF	·	·	○	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 7,4 MF UV	·	·	○	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 7,4 MF OT	·	·	○	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 9 MF RP	·	·	·	·	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 9 MF RP UV	·	·	·	·	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 9 MF RP OT	·	·	·	·	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 11 S	·	·	○	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 11 MF RP	·	·	·	·	·	○	○	○	○	○	○	○	○	○	○	○	○	○	○	·	·
SDR 11 MF RP UV	·	·	·	·	·	○	○	○	○	○	○	○	○	○	○	○	○	○	○	·	·
SDR 11 MF RP OT	·	·	·	·	·	○	○	○	○	○	○	○	○	○	○	·	·	·	·	·	·
SDR 17,6 MF RP	·	·	·	·	·	·	·	·	·	·	·	○	○	○	○	○	○	○	○	○	○
SDR 17,6 MF RP UV	·	·	·	·	·	·	·	·	·	·	·	○	○	○	○	○	○	○	○	○	○

aquatherm energy green & blue

Diameter in mm	16	17	20	25	32	40	50	63	75	90	110	125	160	200	250	315	355	400	450	500	630
SDR 9 MF RP	·	·	·	·	○	○	○	○	○	○	○	○	○	○	○	○	·	·	·	·	·
SDR 9 MF RP	·	·	·	·	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 9 MF RP OT	·	·	·	·	○	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·
SDR 11 MF RP	·	·	·	·	·	○	○	○	○	○	○	○	○	○	○	○	○	·	·	·	·
SDR 11 MF RP OT	·	·	·	·	·	○	○	○	○	○	○	○	○	○	○	·	·	·	·	·	·
SDR 17,6 MF RP	·	·	·	·	·	·	·	·	·	·	·	○	○	○	○	○	○	·	·	·	·

Fields of applications

Areas of application include heating system construction as well as refrigeration and air conditioning technology - you can find all areas of application here:

	refrigeration	connection heating and cooling	heating system construction	maritime applications	swimming pool technology	sports floor heating and cooling	potable water
aquatherm green				○	○		○
aquatherm blue	○	○	○	○	○	○	

aquatherm green
Product types

AQUATHERM PRODUCT TYPES

Polypropylene pipe systems __

The history of the aquatherm pipe systems began in 1973 when Gerhard Rosenberg founded a company for hot water underfloor heating systems. Initially, the owner´s garage and basement served as the company´s headquarters and production facility. A lot has happened since then.

In the past 50 years, aquatherm has proven to be the world´s leading manufacturer of plastic pipe systems made of polypropylene for plant engineering and building services. The numerous product lines provide superior solutions in potable water applications, heating systems, fire sprinkler systems, air conditioning and refrigeration technology, as well as in surface heating and cooling systems. The product range comprises almost 17,000 articles in six product lines.

Due to their special material properties, the aquatherm pipe systems convince by their diverse application possibilities.

The aquatherm pipe systems can be used in all areas of new installation, repair and renovation.

Characteristics __

aquatherm polypropylene pipe systems stop corrosion damages. All materials are corrosion-resistant and have reduced flow noise compared to metallic pipes. aquatherm pipes are opaque, therefore there is no risk of algae formation.

Installation __

aquatherm pipes and fittings are connected by heat fusion, which creates a homogeneous, cohesive unit with no leak paths. Heat fusion connections are stronger than the pipe itself, providing lasting safety at these critical points of a piping system. A properly executed aquatherm fusion creates a permanent leakproof connection. An aquatherm pipe with an outside diameter of 20 mm can be heat fused in only 5 seconds.

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

Quality __

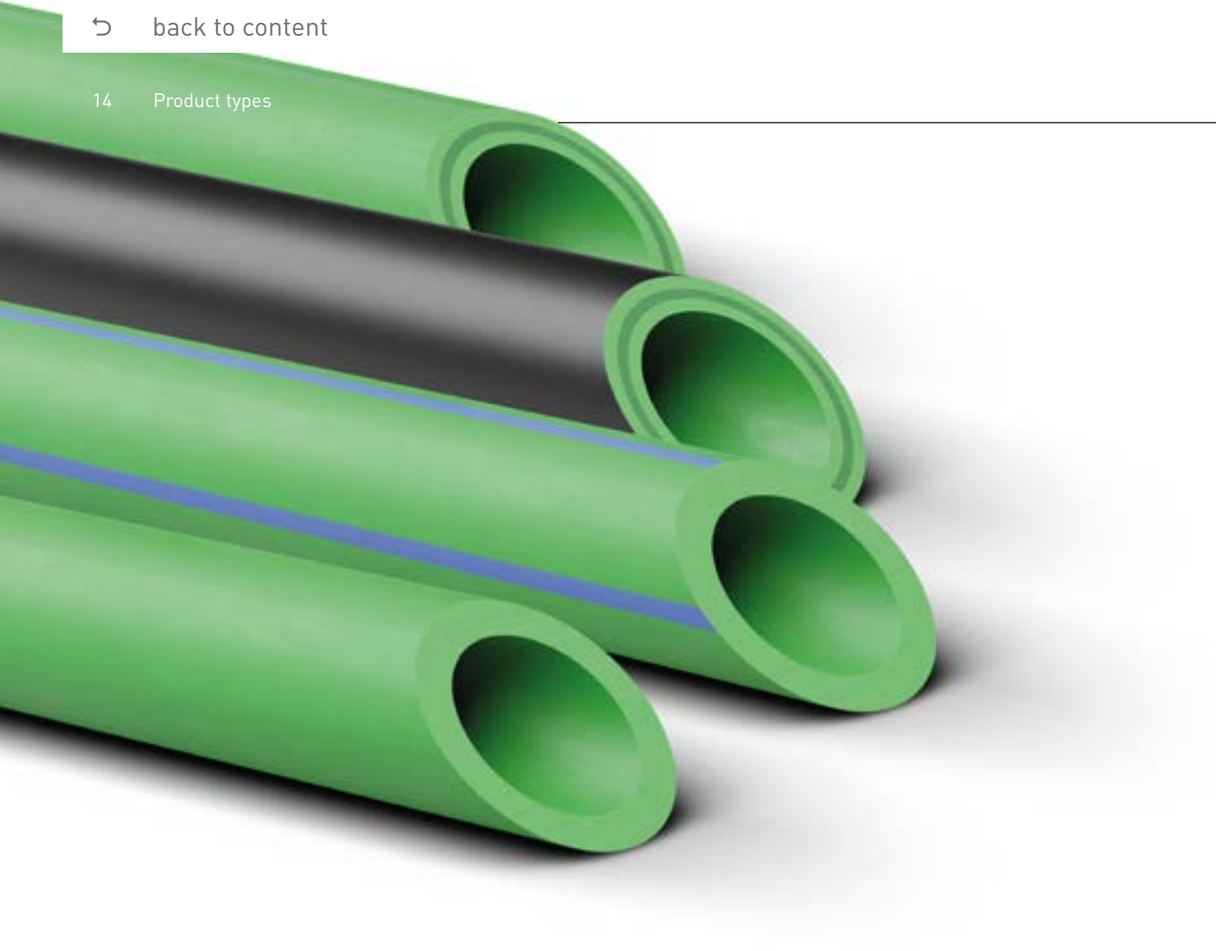
Quality is very important to aquatherm. This is not only reflected in the national and international certification marks, but also in the high satisfaction level of aquatherm customers, installers and engineers. You can find our international certificates here: Certificates

Warranty __

Due to the high product quality, aquatherm offers a 10-year warranty on all pipes and fittings instead of the 2 years applicable under German law. The extended warranty period is covered by a comprehensive insurance policy from a leading insurance company in our industry. For details, see the Warranty section of this catalogue.

Price advantage __

aquatherm offers you high quality, durable piping systems at an optimal price/ performance ratio.



PRODUCT TYPES

AQUATHERM GREEN __

aquatherm green has revolutionized the plastic piping sector and has proven its technical suitability worldwide for decades. The innovative product family from aquatherm is made of corrosion-resistant, chemically inert polypropylene.

It is completely free of heavy metals and toxic chemicals and thus ideally suited for potable water applications. aquatherm green can also be used for swimming pools, agriculture or shipbuilding. It is joined by using reliable heat fusion, which eliminates the hazards of welding and creates virtually leak-free connections.

The system includes the different types of pipes SDR 6, SDR 7.4, SDR 9 and SDR 11. More than 450 joining and connection elements as well as valves and ball valves complete the system.

The products are available from 20 mm to 450 mm external diameter.

Fields of Applications __

- Potable water
- Swimming pool technology
- Maritime Applications

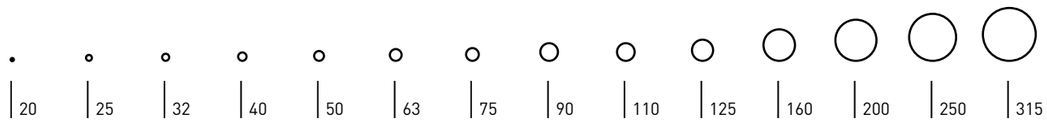
System components __

The systems include all elements for the pipe system installation for chilled, hot fluid and various industrial applications.

Pipes in straight lengths and / or coils
- Fittings
- Flanged joints
- Water point connections and accessories
- Welding devices and machines
- Weld-in saddles
- Manifolds
- Shut-off devices
- Cutting and peeling tools
- Installation guide and fastenings
- Transition joints from PP to metal or from metal to PP

Diameter __

The diameter of the PP pipe determines its location and intended use. In order to be able to lay a pipeline from the connection to the outlet, the pipe diameter of the individual pipes and fittings must be compatible with each other. aquatherm green is available in the following diameters: 20, 25, 32, 40, 50, 63, 75, 90, 110, 125, 160, 200, 250, 315 mm



Standard dimention ratio (SDR) __

The SDR (Standard Dimension Ratio) is a ratio indicating the resistance to pressure. In order to guarantee a certain pressure resistance, a certain maximum SDR number is necessary, depending on the type of material. The following applies: the greater the wall thickness, the smaller the SDR number and the more pressure-resistant the plastic pipe. The unit indicates the ratio between outer diameter and wall thickness of a pipe. aquatherm green is available in the following SDR sizes:

SDR 6 SDR 7,4 SDR 9 SDR 11

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PRODUCT TYPES

AQUATHERM GREEN – Overview

We offer aquatherm green in different pipe constructions.

	SDR 6	SDR 7,4	SDR 9	SDR 11
aquatherm green S S = single / single layer	ø: 20–110 mm	ø: 20–63 mm		ø: 20–315 mm
aquatherm green MF MF = multi-layer and fibre-reinforced composite pipe		ø: 20–32 mm		
aquatherm green MF UV MF UV = multi-layer and fibre-reinforced composite pipe, UV-resistant		ø: 20–32 mm		
aquatherm green MF RP MF RP = multi-layer and fibre-reinforced composite pipe, raised pressure resistance			ø: 32–315 mm	
aquatherm green MF RP UV MF RP UV = multi-layer and fibre-reinforced composite pipe, raised pressure resistance, UV-resistant			ø: 32–315 mm	

AQUATHERM GREEN S

Single-layer pipes are particularly suitable for use in cold water installations (medium temperature up to 25°C).

AQUATHERM GREEN MF RP

aquatherm green MF RP is a multilayer and fibre-reinforced composite pipe and has an increased compressive strength.

AQUATHERM GREEN UV

Pipes made of fusiolen® are normally not exposed to the effects of UV rays when installed. To bridge the transport and installation time, aquatherm polypropylene pipes and fittings are packed UV-protected. The maximum storage time outdoors is 6 months. For outdoor pipe installation, aquatherm offers polypropylene multilayer pipes with a UV-layer of polyethylene. This prevents the occurrence of damaging influences by sun rays.

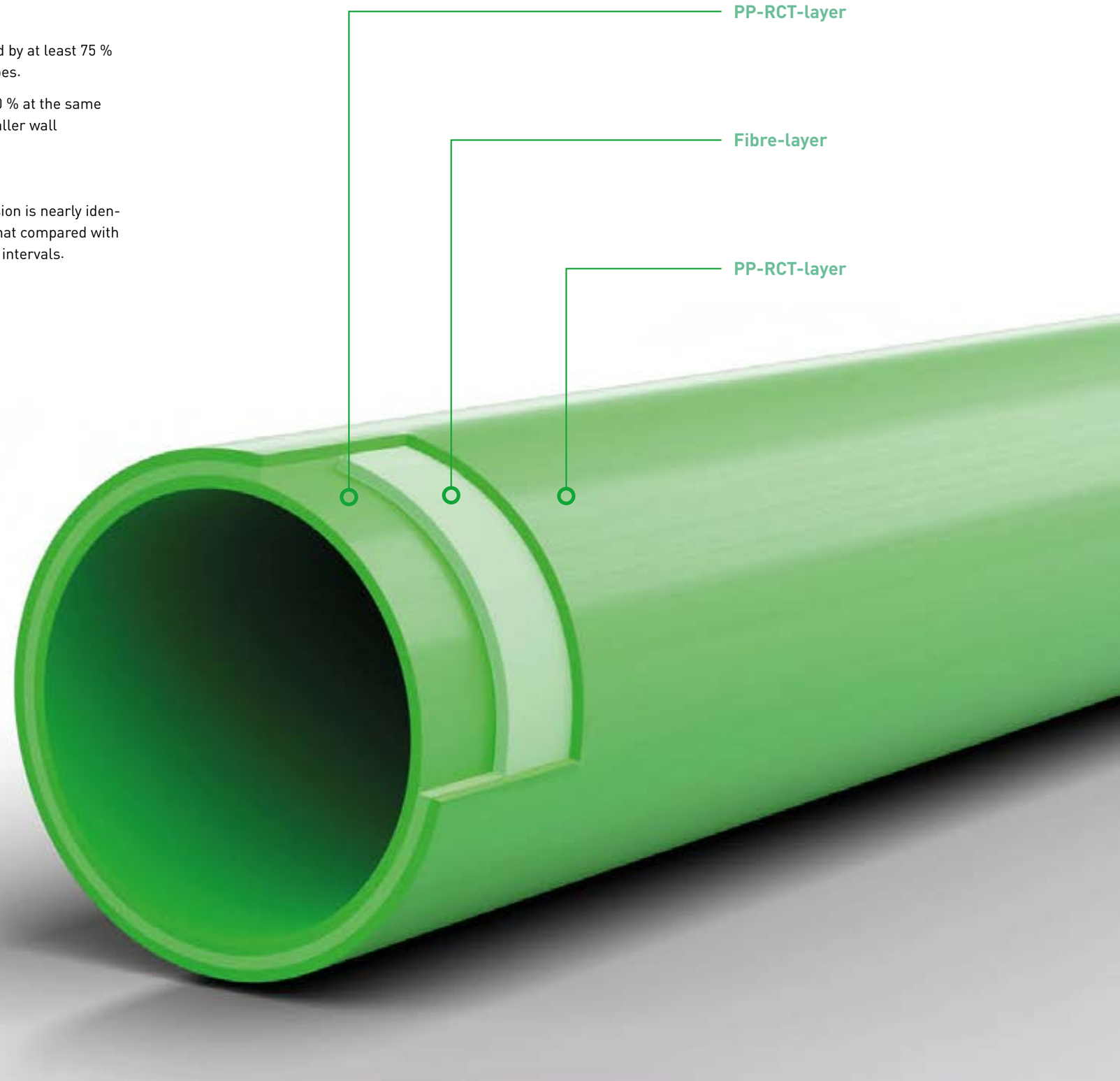
UV-ADHESIVE TAPE

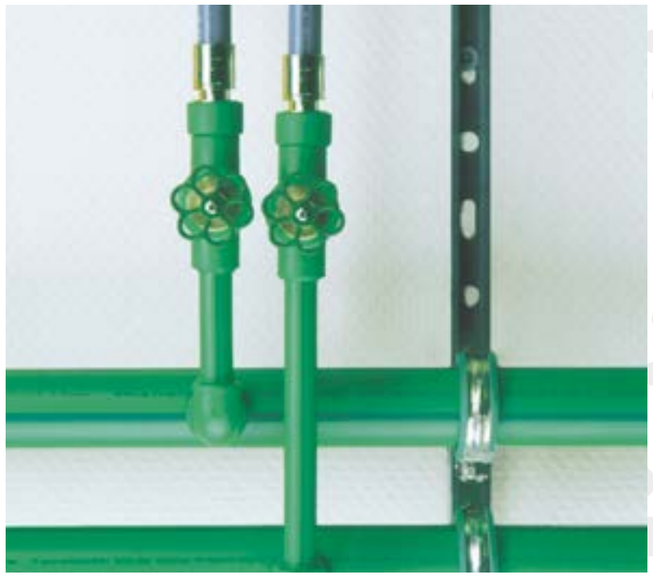
As an alternative to our polyproplylene pipes with UV protection layer, wrapping with UV-resistant adhesive tape is possible, if moulded parts or short pipe sections are to be protected. For this purpose, the adhesive tape recommended by aquatherm (art. no. 9700010871) should be selected, which shows good resistance to abrasion, moisture, oils, light acids and alkalis as well as weather influences outdoors. The tape should always be applied to a dry, clean and grease-free surface. The winding should be done with a slight pull and at least 50% overlap.

AQUATHERM GREEN MF

aquatherm green MF is a multi-layer fibre-composite pipe. The pipe is made in a multi-layer extrusion process. The manufacturing process developed by aquatherm enables the integration of glass fibres within the material polypropylene in the middle layer of the pipe. This reinforces the pipe and restricts expansion and contraction.

- The linear expansion is reduced by at least 75 % compared with standard PP pipes.
- The flow rate is increased by 20 % at the same pressure conditions due to smaller wall thicknesses.
- 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.
- Lower weight
- High impact rate
- Simply cut and weld





Permissible working pressure - potable water

(Fluid transported: water according to DIN 2000)

cold potable water ↑

warm potable water ↓

Years of service	aquatherm green SDR 11 S	aquatherm green SDR 7.4 S	aquatherm green SDR 6 S	aquatherm green SDR 7.4 MF	aquatherm green SDR 9 MF RP
at temperature up to 20 °C (68 °F)					
1	15.0 bar	23.8 bar	30.0 bar	28.6 bar	25.0 bar
5	14.1 bar	22.3 bar	28.1 bar	26.8 bar	24.2 bar
10	13.7 bar	21.7 bar	27.3 bar	26.1 bar	23.9 bar
25	13.3 bar	21.1 bar	26.5 bar	25.3 bar	23.5 bar
50	12.9 bar	20.4 bar	25.7 bar	24.5 bar	23.1 bar
at temperature up to 30 °C (86 °F)					
1	12.8 bar	20.2 bar	25.5 bar	24.3 bar	21.7 bar
5	12.0 bar	19.0 bar	23.9 bar	22.8 bar	21.0 bar
10	11.6 bar	18.3 bar	23.1 bar	22.0 bar	20.6 bar
25	11.2 bar	17.7 bar	22.3 bar	21.3 bar	20.2 bar
50	10.9 bar	17.3 bar	21.8 bar	20.7 bar	19.9 bar
at temperature up to 40 °C (104 °F)					
1	-	17.1 bar	21.5 bar	20.5 bar	18.7 bar
5	-	16.0 bar	20.2 bar	19.2 bar	18.0 bar
10	-	15.6 bar	19.6 bar	18.7 bar	17.7 bar
25	-	15.0 bar	18.8 bar	18.0 bar	17.3 bar
50	-	14.5 bar	18.3 bar	17.5 bar	17.1 bar
at temperature up to 50 °C (122 °F)					
1	-	14.5 bar	18.3 bar	17.5 bar	15.9 bar
5	-	13.5 bar	17.0 bar	16.2 bar	15.3 bar
10	-	13.1 bar	16.5 bar	15.7 bar	15.1 bar
25	-	12.6 bar	15.9 bar	15.2 bar	14.7 bar
50	-	12.2 bar	15.4 bar	14.7 bar	14.5 bar
at temperature up to 60 °C (140 °F)					
1	-	12.2 bar	15.4 bar	14.7 bar	13.5 bar
5	-	11.4 bar	14.3 bar	13.7 bar	13.0 bar
10	-	11.0 bar	13.8 bar	13.2 bar	12.7 bar
25	-	10.5 bar	13.3 bar	12.6 bar	12.4 bar
50	-	10.1 bar	12.7 bar	12.1 bar	12.2 bar
at temperature up to 65 °C (149 °F)					
1	-	11.6 bar	14.6 bar	13.9 bar	12.4 bar
5	-	10.8 bar	13.6 bar	12.9 bar	11.9 bar
10	-	10.4 bar	13.1 bar	12.5 bar	11.7 bar
25	-	10.0 bar	12.6 bar	12.0 bar	11.4 bar
50	-	8.8 bar	11.1 bar	10.6 bar	11.2 bar
at temperature up to 70 °C (158 °F)					
1	-	10.3 bar	13.0 bar	12.4 bar	11.4 bar
5	-	9.5 bar	11.9 bar	11.4 bar	10.9 bar
10	-	9.3 bar	11.7 bar	11.1 bar	10.7 bar
25	-	8.0 bar	10.1 bar	9.6 bar	10.4 bar
30	-	7.0 bar	8.8 bar	9.3 bar	10.3 bar
50	-	6.7 bar	8.5 bar	8.1 bar	10.2 bar

The determination of the allowable pressures resulted from the specific conditions to which pipe system components in the potable 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.

aquatherm green
Characteristics and special features

AQUATHERM CHARACTERISTICS AND SPECIAL FEATURES

Material **fusiolen®** __

aquatherm green is made of corrosion-resistant material. material. This extends the service life of the hysical and chemical properties are the special requirements of the drinking water and heating heating sector. Due to the exceptionally welding properties, the pipe and fitting pipe and fitting merge into a homogeneous, cohesive unit.

This is what has made the material fusiolen® famous worldwide. known worldwide.

The advantages of aquatherm pipes and fusiolen® **polypropylene** __

- corrosion resistant
- resistant against many chemicals
- high environmental compatibility
- less pipe roughness
- heat and sound insulating characteristics
- very good welding properties
- high heat-stabilised
- high mechanical stability
- lighter in weight than steel and copper
- easy processing
- well-priced
- installation aids and fixings

Our material **fusiolen® Polypropylene** __

Decades of experience in the manufacture and use of PP-R/PP-RCT piping systems and the simultaneous striving for continuous further development have led to numerous improvements in aquatherm system technology.

Newly opened markets place ever increasing demands on the pipe material. Versatile applications require the greatest possible independence of the processed materials. Raw materials with novel properties that could not be achieved until then are required. For this reason, aquatherm has been developing and producing its own innovative polypropylene materials for several years, which meet the global challenges in sanitary and heating technology, in air-conditioning and refrigeration technology, in industrial applications and agriculture, in shipbuilding and in fire protection.

Successful results of this research are fusiolenR PP-R, fusiolenR PP-RCT and fusiolenR PP-R FS.

Environment __

The environmentally friendly material polypropylen fusiolenR PP-R/PP-RCT is recyclable and can be ground, melted and reutilised for various applications e.g. motor-protections, wheel linings, laundry baskets and other kinds of transport boxes. There are no polluting substances with PP-R/PP-RCT either in its processing or in its disposal.

Use of **metal deactivators** __

By adding suitable food-approved additives the risk of material damage caused by metal ions under extreme operating conditions is reduced.

Higher **long-term heat stabilization** __

The long-term heat stabilization was increased in order to be able to counteract possible influences of the peak temperatures occurring during operation.

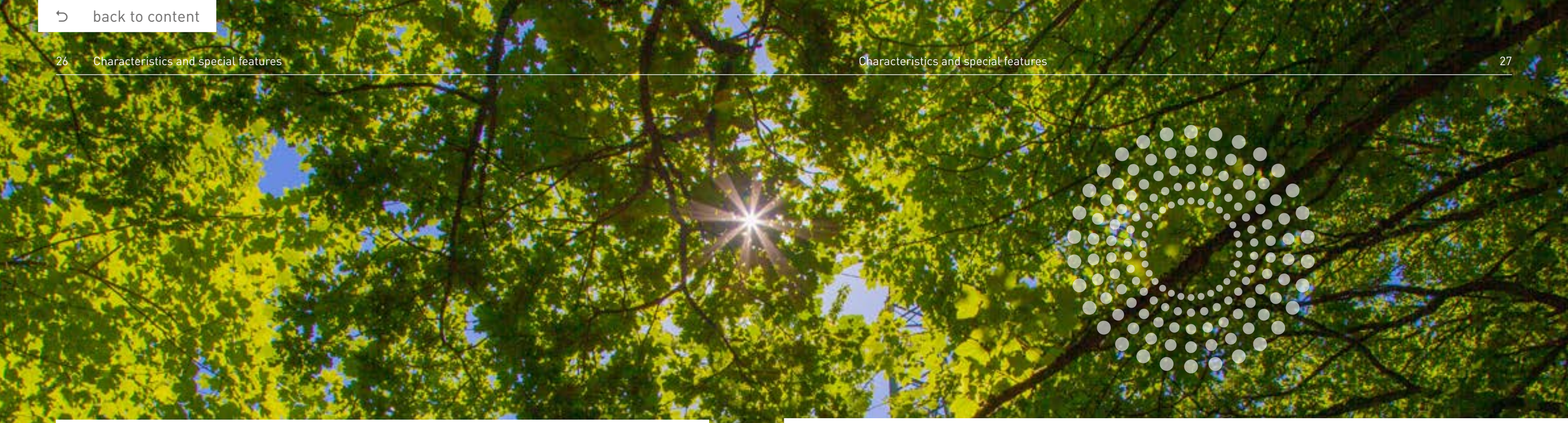
Material properties __

Potable water is one of the most controlled commodity goods. The supply system should influence the water on its way up to the taps as less as possible. The choice of the right potable water pipe system and its material is of decisive importance. aquatherm green pipe systems are suitable for all different qualities of potable water.

The environmentally friendly and hygienically enhanced potable water pipe system made from fusiolenR is physiologically and microbiologically harmless. The technical suitability of the aquatherm pipe systems has been evident worldwide for decades. The extrapolated service life of aquatherm polypropylene 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 20–21). Permissible Working Pressure

When using aquatherm PP-R/PP-RCT pipes, the pressure and temperature conditions according to the table "Permissible workig pressure" apply. With regard to pressure and temperature, the operating conditions in the following table are to be used for pipes and pipe connections. These figures refer to potable water installations based on a theoretical service life of 50 years.



AQUATHERM CHARACTERISTICS AND SPECIAL FEATURES

This is how aquatherm is **committed** __

17 goals to change the world: In 2015, the global community developed the „Agenda 2030", a roadmap for the future.

This is intended to enable a dignified life worldwide and to preserve the natural foundations of life in the long term. We at aquatherm would like to contribute to the achievement of these goals with all our actions. Our sustainable products, our comprehensive service and our leading expert knowledge are part of the solution on the way to a climate-neutral life.

We are also a member of the German Sustainable Building Council (DGNB e.V.) and work with the non-profit organisation to find ways and solutions to build for tomorrow today.

Climate change __

Climate change is one of the greatest challenges of our time. Released CO_2 is the main problem: it enters the atmosphere and intensifies the greenhouse effect - the earth continues to heat up.

We are convinced that we humans will find solutions to meet this challenge and thus also significantly reduce CO_2 emissions in all sectors.

Construction industry __

The construction industry is responsible for 36% of global energy consumption and 39% of energy- and process-related CO_2 emissions.*

The construction industry has already begun to face up to this responsibility. In order to achieve the final goal of a "net zero building" over the entire life cycle, the but the steps are still too small.

More courageous and visionary pioneers are needed, who will show the right way and set an example for the entire industry.

Exceptionally **environmentally friendly** __

The European Plastic Pipe Association TEPPFA analysed the environmental impact of plastic pipe systems as part of its EPD project. The result: plastic pipe systems have excellent environmental performance in various areas of application, leaving a smaller ecological footprint than pipe systems made of other materials.

A pipe system made of polypropylene (25 mm, SDR 7.4), for example, has approximately seven times lower CO_2 emissions than a comparable steel pipe.

Success through consistent **environmental protection** __

We live environmental protection – and do so consistently. All corporate processes are geared to conserving valuable resources, minimising energy use, and avoiding or recycling waste.

We developed the first fibre composite pipe as early as 1999. This required significantly less energy in the production process than the conventional aluminium composite pipe.

Technical data sheet __

Technical properties	fusiolen® PP-R	fusiolen® PP-R/ PP-RCT fibrepipe
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	430–450 °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	fusiolen® PP-R/ PP-RCT fibrepipe
Relative perwithtivity	2,3 (in case of 1 MHz)	2,3 (in case of 1 MHz)
Puncture voltage	500 kV/cm	500 kV/cm
Specific resistance	> 10^{17} Ω cm	> 10^{17} Ω cm
Surface resistance	10^{14} Ω	10^{14} Ω
Dissipation coefficient	0.0002 (in case of 50 Hertz)	0.0002 (in case of 50 Hertz)

* Source: Forging global and regional pathways | www.globalabc.org

AQUATHERM CHARACTERISTICS AND SPECIAL FEATURES

aquatherm Environmental Product Declaration __

What is an **Environmental Product Declaration?** __

An Environmental Product Declaration (EPD) describes the environmental impact of a product or service on the environment. It records the consumption of resources and emissions over the entire life cycle of the product - from the extraction of raw materials to disposal - and quantifies and evaluates them. Therefore, an Environmental Product Declaration offers the possibility to compare different products with each other.

In the Environmental Product Declaration, the characteristics of a product are identified neutrally using internationally recognised standards. A precise methodology according to ISO 14025 and EN 15804 is followed, and all values are checked by independent third parties regarding their completeness, plausibility, and conforwithy with standards.

However, the EPD is not a certificate, i.e. there are requirements placed on the quality and format of the data, but not on the quality of the product. For the building sector, it forms an important basis for the ecological assessment of buildings.

What are **product category rules?** __

To be able to evaluate functionally similar products in the same way and in the context of an Environmental Product Declaration, Product Category Rules (PCRs) are used. These are a set of specific rules, requirements or guidelines according to which products are classified into groups. Product Category Rules exist, for example, for thermal insulation materials, windows and doors, or building piping systems.

What is a **Life Cycle Assessment?** __

The aim of a Life Cycle Assessment (LCA) is not only to provide environmentally relevant data on specific products, but also to estimate potential environmental issues which then can assist in making a decision for or against a particular product. The basis of the Life Cycle Assessment is the life cycle of a product. It consists of different phases: Raw material extraction, material production, use, waste treatment and final disposal. All environmental inputs and outputs are listed. In other words, everything that flows into and out of the product is measured. These can be raw materials or resources, different types of energy, water or emissions into the air, soil or water.

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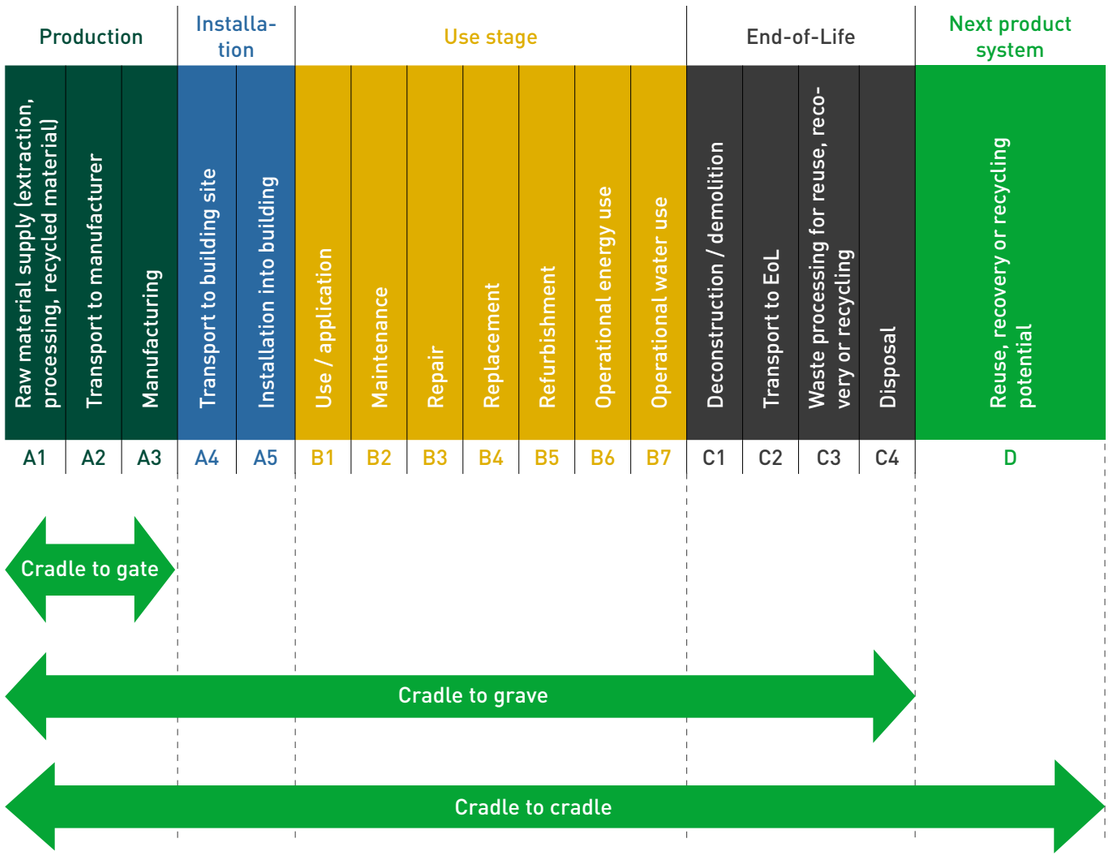
What does the **Product life cycle include?** __

A life cycle assessment considers either the entire life cycle of a product or parts of it. Therefore, there are three different approaches to assessing the product life cycle:



What are the **environmental impact indicators**?__

Life Cycle Assessments provide information on the potential impact of a product (or service) on the environment. EN 15804+A2 describes 13 core Environmental Impact Indicators to be reported for an Environmental Product Declaration and 6 additional optional Environmental Impact Indicators.

Core indicators according to EN 15804+A2:

Core indicator	Unit
GWP-total	kg CO_2-Äq.
GWP-fossil	kg CO_2-Äq.
GWP-biogenic	kg CO_2-Äq.
GWP-luluc	kg CO_2-Äq.
ODP	kg CFC11- Äq.
AP	mol H^+-Äq.
EP-freshwater	kg PO_4-Äq.
EP-marine	kg N-Äq.
EP-terrestrial	mol N-Äq.
POCP	kg NMVOC-Äq.
ADPE	kg Sb-Äq.
ADPF	MJ
WDP	m3 World-Äq. withdrawn

Legend
GWP = Global warming potential
ODP = Stratospheric ozone depletion potential
AP = Acidification potential of soil and water
EP = Eutrophication potential
POCP = Potential for formation of tropospheric ozone
ADPE = Potential for depletion of abiotic resources - non-fossil resources (ADP - substances)
ADPF = Potential for depletion of abiotic resources - fossil fuels (ADP - fossil fuels)
WDP = Water depletion potential (users)

Additional impact categories according to EN 15804+A2-optional:

Indicator	Unit
PM	Illness cases
IR	kBq U235-Äq.
ETP-fw	CTUe
HTP-c	CTUh
HTP-nc	CTUh
SQP	-

Legend
PM = Potential incidence of disease due to particulate matter emissions.
IR = Potential effect from human exposure to U235
ETP-fw = Potential toxicity comparison unit for ecosystems
HTP-c = Potential toxicity comparison unit for humans (carcinogenic effect)
HTP-nc = Potential toxicity comparison unit for humans (non-carcinogenic effect)
SQP = Potential soil quality index

How reliable is an **Environmental Product Declaration?** __

Neutral and in accordance with internationally recognised standards: This is how the characteristics of a product are recorded in an Environmental Product Declaration. The exact methodology follows ISO 14025 and EN 15804, and all values are verified by independent third parties. The Environmental Product Declaration is valid for a period of five years. If there are changes in the manufacture of the product during this period, leading to major deviations from the previous values, a review must be carried out.

What advantages does the **Environmental Product Declaration offer me?** __

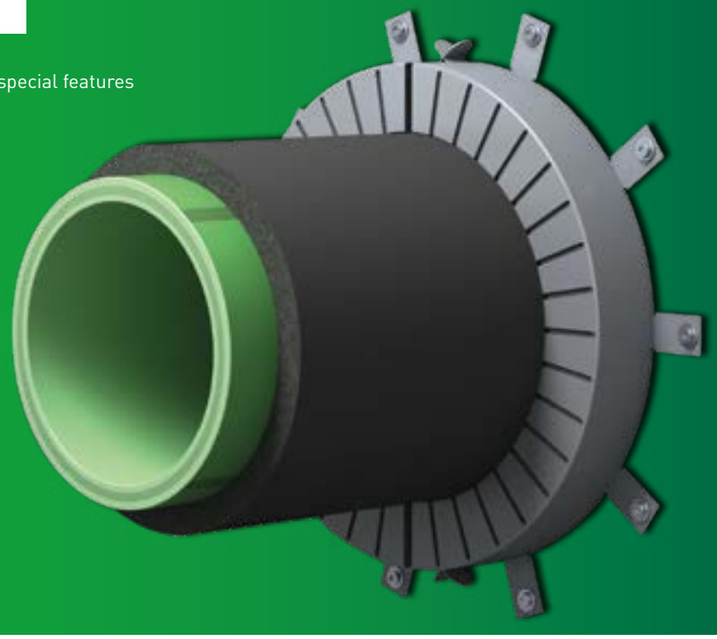
Environmental Product Declarations enable companies, for example, to participate in public tenders or investors to have their building's sustainability systems, such as BREEAM, LEED or DGNB, in place. In addition, an Environmental Product Declaration forms the basis for the development and optimisation of sustainable products.

aquatherm **Environmental Product Declaration** __

Environmental Product Declarations are important - for the construction industry, for us, and our customers. That is why we have had our products evaluated according to the „cradle to gate" concept.

Our Environmental Product Declarations
Sustainability
are available for the following product group:

- aquatherm green/blue S/MF pipe
- aquatherm red pipe S/MF
- aquatherm black system
- aquatherm green/blue S/MF pipe (OT)
- aquatherm green/blue S/MF pipe (UV)
- aquatherm green/blue S/MF pipe (ENERGY)



AQUATHERM CHARACTERISTICS AND SPECIAL FEATURES

Fire protection __

The aquatherm polypropylene pipe systems comply with the requirements of the fire classification B2 DIN 4102 (normal inflammable). Compared to natural products like wood, cork or wool, aquatherm PP-R pipes do not produce any gas toxicity. In case of fire, there is no risk of dioxin emissions.

To avoid fire and smoke transmission, aquatherm advises the use of fire retardant seals. The fire resistance period is the minimum period in minutes.

The extent of the preventive measures depends on the type of installation. The determination of fire areas and fire classification has to be made in accordance with the law of the country. Information is given by the Planning Department and Building Control Office or the Fire Protection Representative.

Basically, fire walls and ceilings with pipe passages have to be installed to the same fire resistance classification. All fire protection systems with a corresponding classification are suitable for aquatherm polypropylene pipes.

The following companies offer **suitable fire protection solutions:** __

Fire protection pipe shell Conlit 150 U:
DEUTSCHE ROCKWOOL
GmbH & Co. KG
Rockwool Straße 37-41
45966 Gladbeck
Tel: +49 2043 408 0
www.rockwool.de

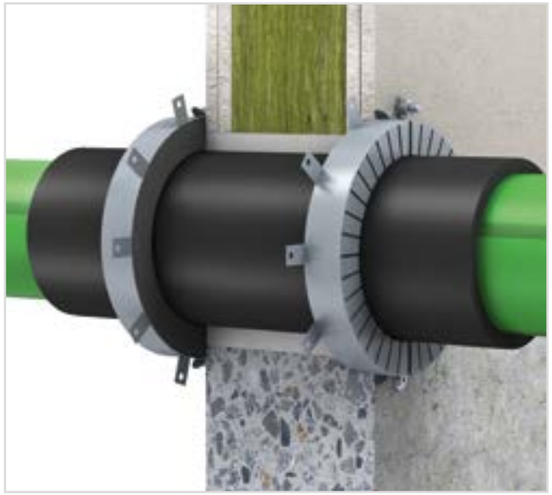
Fire protection sleeve AWM II:
Flamro Brandschutz
Vertriebs GmbH
Am Sportplatz 2
56291 Leiningen
Tel. +49 6746 9410-0
Mail: info@flamro.com
www.flamro.de

Hilti Deutschland AG
Hiltistrasse 2 · 86916 Kaufering
Tel: +49 800 888 · www.hilti.de

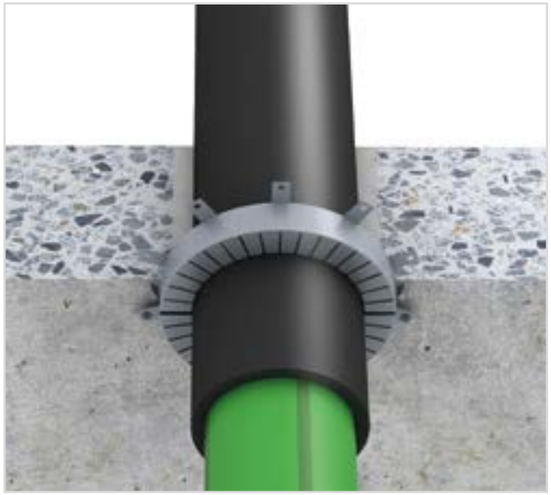
Roku System AWM II in the wall

Roku System AWM II in the ceiling

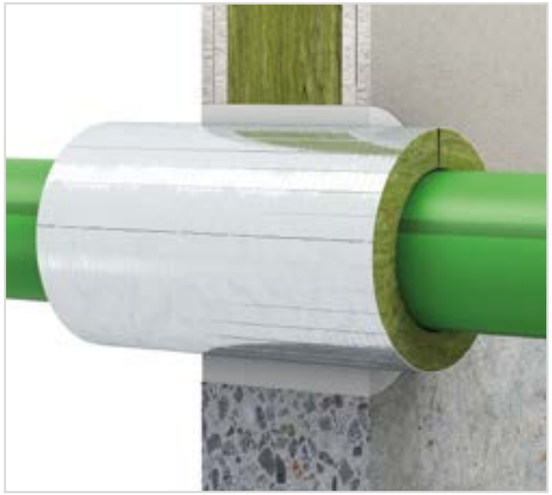
Roku System AWM II with synthesis rubber in the wall



Roku System AWM II with synthesis rubber in the ceiling



Rockwool Conlit 150 U in the wall



Rockwool Conlit 150 U in the ceiling

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Excerpt from the **Rockwool planning and installation aid** __

R 30- to R 90 pipe penetrations for the aquatherm installation systems with non-combustible media, such as drinking water, heating and cooling

Product name/ Material:

aquatherm green
PP-R
SDR 6 S
SDR 7,4 S
SDR 7,4 MF
SDR 7,4 MF UV
SDR 11 S

aquatherm green
PP-RCT
SDR 9 MF RP
SDR 9 MF RP UV

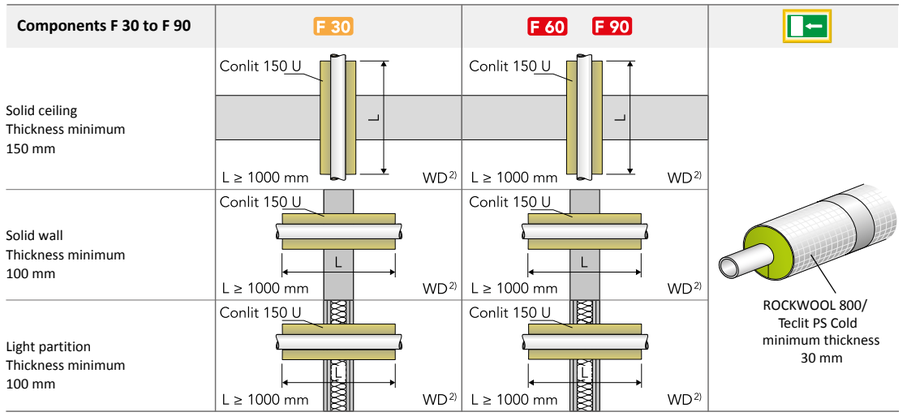
aquatherm blue
PP-R
SDR 7,4 MF
SDR 7,4 MF OT
SDR 7,4 MF UV
SDR 11 S

aquatherm blue
PP-RCT
SDR 9 MF RP
SDR 9 MF RP OT
SDR 9 MF RP UV
SDR 11 MF RP
SDR 11 MF RP OT
SDR 11 MF RP UV

aquatherm red
PP-R (B1)
SDR 7,4 MF HI

aquatherm black
grid connection pipe

aquatherm orange
PE-RT



Variant according to ROCKWOOL abP P3726/4140MPA BS

System	Pipe dimension	Conlit 150 U			ROCKWOOL 800 1), 2), 3) TECLIT PS Cold 1), 2), 3)		
	Outer diameter Da [mm]	Type 3)	Insulation thickness 4) s [mm]	Core drilling DK [mm]	EnEV 100 % hot, type	EnEV 50 % hot, type	DIN 1988-200 cold, type 3)
pipes without OT or UV layer aquatherm green aquatherm blue aquatherm red aquatherm grey aquatherm black aquatherm orange	14,0	12/24	24,0	60	15/20	15/20	15/20
	16,0	16/22	22,0	60	18/20	18/20	18/20
	17,0	17/21,5	21,5	60	18/20	18/20	18/20
	20,0	20/20	20,0	60	22/20	22/20	22/20
	25,0	25/17,5	17,5	60	28/20	28/20	28/20
	26,0	26/17	17,0	60	28/20	28/20	28/20
	32,0	32/24	24,0	80	35/30	35/20	35/30
	40,0	40/20	20,0	80	42/40	42/20	42/40
	50,0	50/25	25,0	100	54/40	54/30	54/40
	63,0	63/33,5	33,5	130	64/50	64/30	64/50
	75,0	75/52,5	52,5	180	76/70	76/40	76/70
	90,0	90/65	65,0	220	102/80	102/40	102/80
	110,0	110/70	70,0	250	114/100	114/50	114/100
pipes without OT or UV layer aquatherm green UV aquatherm blue OT + UV	16,0	18/21	21,0	60	18/20	18/20	18/20
	20,0	22/19	19,0	60	22/20	22/20	22/20
	25,0	27/16,5	16,5	60	28/20	28/20	28/20
	32,0	34/23	23,0	80	35/30	35/20	35/30
	40,0	42/19	19,0	80	42/40	42/20	42/40
	50,0	52/24	24,0	100	54/40	54/30	54/40
	63,0	65/57,5	57,5	180	76/50	76/30	76/50
	75,0	77/51,5	51,5	180	89/70	89/40	89/70
	90,0	90/65	65,0	220	102/80	102/40	102/80
	110,0	113/53,5	53,5	220	114/100	114/50	114/100

Notes/special installation conditions

1) In some cases, the available minimum insulation thickness is specified.
2) For further insulation, the insulation ROCKWOOL 800 or TECLIT PS Cold can be used.
3) For cold pipes, a vapor barrier must be available according to DIN 1988-200, therefore only use fire protection pipe shell Conlit 150U/ Insulating shell ROCKWOOL 800 or TECLIT PS Cold.
4) Insulation thickness according to EnEV 50% and according to DIN 1988-200 suitable for the core bore diameter DK.

All basic conditions of the specified general building inspectorate test certificates must be considered.

Fireload __

The values required for determining the fire load within a fire section are calculated from the total of all flammable materials located within this area. The calculation for establishing the combustion heat V [kWh/m] for a fire section in the event of an outbreak is dependent on dimensions and materials. The basis used for the calculation of pipe systems made of polypropylene is the lower calorific value Hu = 12.2 kWh/kg (as per DIN V 18230 T1) in conjunction with the mass of material mpipe [kg/m]. The integrated layers of fibres in the aquatherm fibre composite pipes are also considered.

Depending on the calculation procedure, the fire load is worked out with reference to the burn-up factor. This value is designated as mfactor and is taken as 0.8 for polypropylene.

Combustion values V [kWh/m] for aquatherm green piping systems __

Dimension mm	aquatherm green SDR 11 S	aquatherm green SDR 7,4 S	aquatherm green SDR 6 S	aquatherm green SDR 9 MF RP	aquatherm green SDR 7,4 MF
16	-	1,17	1,5	-	-
20	1,32	1,82	2,12	-	1,76
25	2,01	2,83	3,27	-	2,74
32	3,18	4,54	5,33	3,12	4,39
40	5,05	7,05	8,24	5,69	-
50	7,82	10,99	12,77	8,80	-
63	12,35	17,28	20,26	14,03	-
75	17,21	24,58	28,68	19,71	-
90	24,92	35,21	41,22	28,41	-
110	36,89	52,68	61,45	42,17	-
125	47,91	-	-	54,38	-
160	78,28	-	-	88,90	-
200	121,89	-	-	139,00	-
250	189,59	-	-	216,18	-
315	313,54	-	-	343,66	-
355	381,86	-	-	436,33	-
400	505,08	-	-	-	-
450	639,28	-	-	-	-
500	-	-	-	-	-
630	-	-	-	-	-

AQUATHERM CHARACTERISTICS AND SPECIAL FEATURES

Processing

There are many possibilities for the connection of aquatherm green piping systems. Whether welding or plugging: With the fusion techniques of aquatherm you quickly create a permanently tight connection.

Welding techniques

Due to their exceptionally good welding properties, pipe and fitting fuse to form a homogeneous, materially bonded unit. For this purpose, the pipe and fitting are briefly heated with the aid of tools provided for this purpose and then simply joined together; that's it! Double material thickness at the joint - this means double safety at the otherwise critical point of a piping system.

Socket welding
A safe and fast connection in the socket welding process is possible with our manual welder for pipes with dimensions of 20 to 63 mm.

View video

Socket welding with welding machine
With pipe dimensions from 50 to 125 mm, our aquatherm welding machines ensure a safe and durable connection.

View video

Butt welding
Large pipe dimensions from 160 to 630 mm are welded with special butt welding machines.

View video

Electric welding jig
The aquatherm electrical welding jig facilitates the fusion of pipes with diameters of 63 to 125 mm.

View video

Electric socket welding
Electric socket welding (heating coil welding) is suitable in hard-to-reach areas for pipes with dimensions of 20 to 250 mm. In this welding process, special sleeves with integrated heating wires are electrically heated and fused to the pipe.

View video

Welding techniques for aquatherm blue OT

Weld-in saddle OT
Branches in aquatherm blue OT can be easily produced with welding calipers, even subsequently. The use of shrink-wrapping calipers also reduces the amount of material and time.

View video

Socket welding OT
A secure and quick connection for the oxygen-tight aquatherm blue pipe OT pipes in the dimensions 20 to 125 mm is possible using the socket welding method.

View video

Push-fit technique

Push-fit fittings
Highest safety in a few minutes: This is offered by the new aquatherm push-fit fittings. Compared to the electro socket welding process, pipe connections can be made up to 40 % faster with the aquatherm push-in socket. In addition, the tooling requirement is significantly lower.

View video

AQUATHERM CHARACTERISTICS AND SPECIAL FEATURES

Chemical and thermal **disinfection** __

of aquatherm potable water systems made of polypropylene

a) Chemical disinfection of the system

Contrary to the disinfection of potable water, the disinfection of a system is a discontinuous measure, comprising a potable 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 potable water system. Under no circumstances should chlorine dioxide be used.

b) Chemical disinfection of potable water

In case of continuous disinfection with chlorinated potable water, it can be used with a content of free chlorine of up to 0.3 mg/l (liwith according to 2001 potable 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 potable 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 potable water system. The maximum admissible liwiths 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 polypropylene (e.g. valves, pumps, other piping, check valves, strainers, etc), care must be taken to ensure the operating parameters for polypropylene 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 the 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 the aquatherm pipe with other piping systems in conditions that will cause the other system or components to fail.

AQUATHERM CHARACTERISTICS AND SPECIAL FEATURES

Domestic hot water recirculation (DHWR)

A hot water circulation system includes all components that are in contact with the circulating water, including the flow and return supply. When there is copper piping used in conjunction with PP-R/PP-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.

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 catalogue – table: permissible working pressure potable water – Fluid transported: water according to DIN 2000)

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 – liwiths the velocity in DHWR system to similar rates. Permissible working pressure

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 other components as well, shortening their service life.

When adding PP-R/PP-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 oversized 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 liwithations of DHWR systems, and these components may be not suitable for potable water contact.

AQUATHERM CHARACTERISTICS AND SPECIAL FEATURES

Certificates __

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

Some examples:
DVGW, SKZ, HIG (Germany)
AENOR (Spain)
ÖVGW (Austria)
WRAS (UK)
SAI-Global (Australia)
CSTB, CARSO (France)
SII (Israel)
TIN (Poland)
SITAC, KIWA, SWEDCERT (Sweden)
IIP (Italy)
BNQ (Canada)
BRANZ (New Zealand)
CERTIF (Portugal)
EMI (Hungary)
u.v.m.

Hygienic suitability
According to DIN 1988 T2 all installation parts coming directly in contact with potable water are commodity goods according to the Law for Food and Commodity Goods. Plastic pipes have to comply with the KTW-recommendations of the Federal Public Health Department.

Material:
The hygienc suitability of the material used for the aquatherm green pipe system is independently verified through test certificates from the Hygienic Institute in Gelsenkirchen. The suitability for potable water pipes in the field of cold and hot water is confirmed by continuous tests.

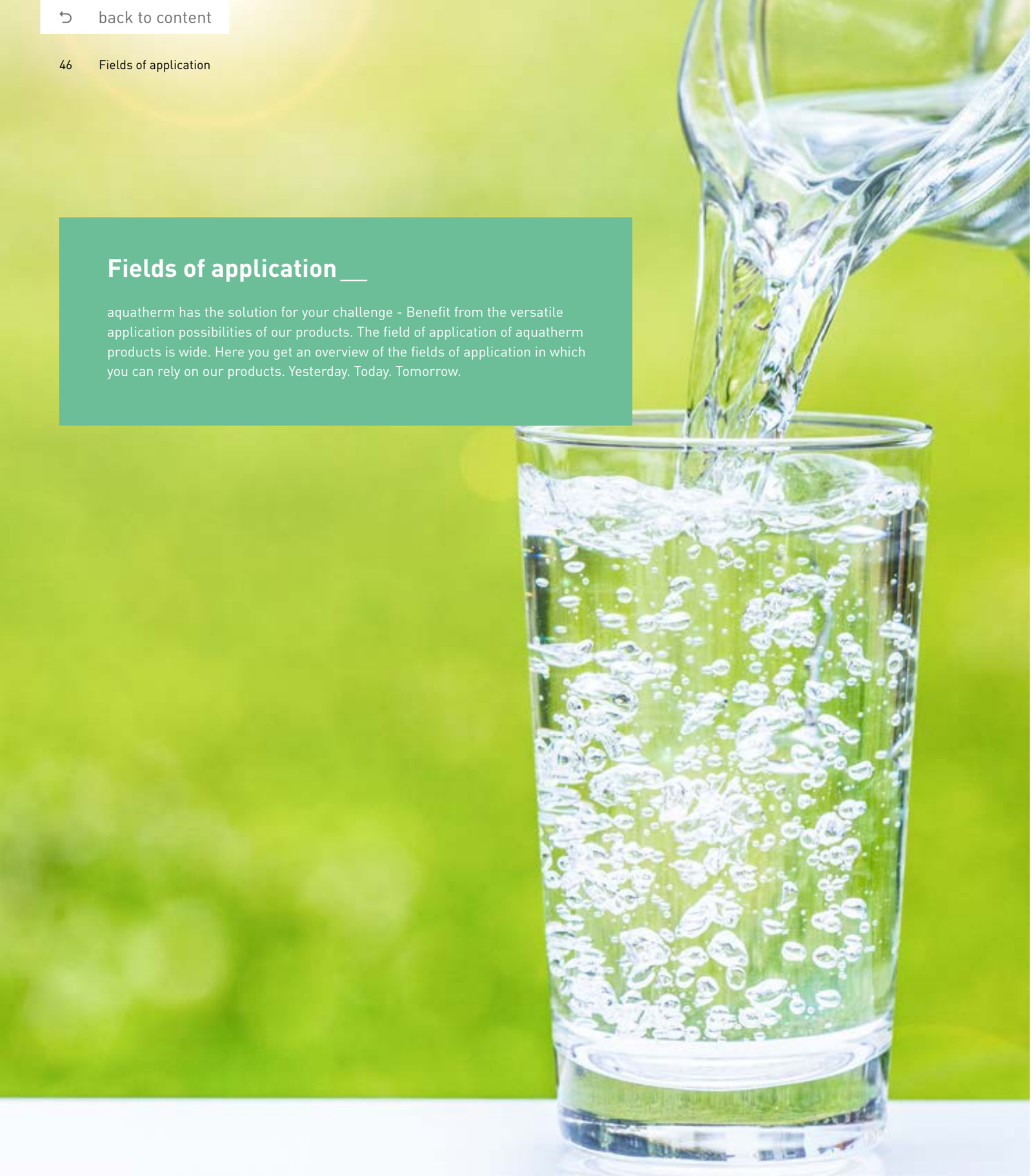
Processing:
The joining method requires no additives such as fluxes or solder. The connection is made by socket fusion.

Potable water – our most precious commodity good:
The increasing use of PP in the field of food packing confirms the hygienic qualities of the material. This makes aquatherm green pipe the optimal packing for our most precious commodity good – potable water.

Comparison of the **Water content per metre (L)** __

Dimension mm	aquatherm green SDR 6 S	aquatherm green SDR 7,4 MF	aquatherm green SDR 9 MF RP	aquatherm green SDR 11 S
ø 20	0,137	0,163	-	0,206
ø 25	0,216	0,254	-	0,327
ø 32	0,353	0,423	0,483	0,539
ø 40	0,555	0,660	0,754	0,834
ø 50	0,876	1,029	1,182	1,307
ø 63	1,385	1,647	1,869	2,074
ø 75	1,963	2,323	2,659	2,959
ø 90	2,826	3,358	3,825	4,252
ø 110	4,229	4,999	5,725	6,359
ø 125	-	-	7,386	8,199
ø 160	-	-	12,109	13,430
ø 200	-	-	18,908	21,010
ø 250	-	-	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 630	-	-	-	-

aquatherm green
Fields of application



Fields of application __

aquatherm has the solution for your challenge - Benefit from the versatile application possibilities of our products. The field of application of aquatherm products is wide. Here you get an overview of the fields of application in which you can rely on our products. Yesterday. Today. Tomorrow.

AQUATHERM GREEN FIELDS OF APPLICATION

Potable water __

Impeccable potable water quality -
Why you can rely on aquatherm products.
There are no stricter quality controls for any foodstuff than for potable water. Rightly so, because with no food we have more contact. aquatherm green offers you a corrosion-resistant, plasticiser-free, odourless and tasteless pipe system, with which you achieve a hygienically perfect water quality.

The fast and safe connection technology also ensures low installation costs. aquatherm also offers you solutions when it comes to drinking water distributors, chemical and thermal disinfection, underground potable water pipes and - in case of renovations - mixed installations.

back to content

AQUATHERM GREEN FIELDS OF APPLICATION

Maritime application __

Sustainable and weight-saving piping systems for shipbuilding
Shipbuilding - The global shipbuilding market has been steadily for many years and, at the same time, is undergoing a profound environmental standards. With our sustainable and weight-saving piping systems that help to reduce fuel reduce fuel consumption, we support you in solving emerging technical help you solve emerging technical, operational and environmental challenges.

The odourless and tasteless piping system aquatherm green is particularly suitable for drinking water applications due to its for drinking water applications due to its ecological properties, as it is is completely free of heavy metals and toxic chemicals. A corrosion resistance, which is particularly important in maritime especially important in maritime applications with their salty environment. Especially in comparison to metal systems, aquatherm green considerably extends the of the drinking water system considerably. In addition, aquatherm green can be used in the Technical Water System. Due to its very good thermal insulation properties, it requires much less insulation against metal pipes, it requires a significantly lower insulation against heat/cold loss or condensation when the temperature falls below the dew below the dew point - a very great advantage when piping for technical purposes in shipbuilding, e.g. in the context of turbine washing.

aquatherm green
Quality assurance

AQUATHERM QUALITY ASSURANCE

Quality **„100 % Made in Germany“**

To produce safe and innovative piping systems - that is the lived promise of aquatherm. This already starts with the raw material: We develop and refine our polypropylene granulate under the fusiolen® brand. This way we can always perfectly adjust the properties of our products to the requirements of the different fields of application. No matter whether its pipes or fittings: „100 % Made in Germany“ applies to all of them. We produce exclusively and with the latest manufacturing technology at our German sites in Attendorn (headquarters), Ennest and Radeberg.

Only tested products then start their journey to our customers worldwide. In addition to the permanent in-house quality assurance, which includes the monitoring of testing equipment, process, production and incoming goods inspections as well as the final inspection, external monitoring is carried out by e.g. the Süddeutsche Kunststoffzentrum (SKZ), NSF (National Sanitation Foundation, USA), IIP (Instituto Italiano di Plastici, Italy), CSTB (Centre Scientifique et Technique du Bâtiment, France), TGM (Technologisches Gewerbemuseum, Austria) and the Hygieneinstitut des Ruhrgebiets. Numerous national and international neutral authorities and institutions confirm the high aquatherm quality standard.

Numerous national and international quality seals and approval certificates as well as our satisfied customers confirm again and again the high quality of our products.

Since 1996 aquatherm fulfills the requirements of the quality management system according to DIN ISO 9001.

This success is another step towards strengthening our competitive position and to meet the high requirements and the responsibility for our customers, partners and the environment.

See for yourself!

TÜVRheinland ZERTIFIZIERT
Management System
ISO 9001:2015
ISO 14001:2015
ISO 50001:2018
www.tuv.com
ID 0091005348

Made in Germany

Compliance with the system standard

Various national and international independent authorities and institutions confirm aquatherm's quality standard. You can see our certificates on our website.

The product certificates are provided for reference purposes only. The certificates have been issued in accordance with the laws, regulations and product standards applicable in the respective country. The certificates can therefore not be used outside the respective jurisdiction. They contain neither express nor imply warranties of aquatherm GmbH or its affiliates.

You can find the overview of our international certificates here: Certificate

aquatherm green
Planning services

AQUATHERM PLANNING SERVICES

Optimise the efficiency of your entire project workflow __

Contact - Our experts for your request

Our team has many years of experience in the field of building services and is very familiar with the aquatherm product portfolio. Regular training ensures that our project planning is always up to date and that all legal regulations are implemented. This saves you the planning work and gives you significantly more time to concentrate on your core business.

AQUATHERM PLANNING SERVICES

What **planning services** does aquatherm offer? __

„Time is money" - a wisdom that proves true every day, especially in the construction industry. The sanitary, heating, and air-conditioning installations of any building project are always a time challenge, not only for architects and planners. The implementation on site often presents the executing site managers and installers with inconsiderable problems. If you choose aquatherm, you have a strong partner at your side who supports you before, during and after the completion of your project.

Digital planning tools on our website

AQUATHERM PLANNING SERVICES

Pressure loss __

For hydraulic pipeline calculations for the mathematical determination in pipe fittings, pressure loss coefficients are required. These result from friction, deflection and detachment losses. Losses often account for an inconsiderable proportion of the total pipe system.

The following table shows the calculated pressure loss coefficients or resistance coefficients for aquatherm fittings.

PDF Planning and design

aquatherm green
References

AQUATHERM GREEN REFERENCES

Geothermal

Project
Gippsland Recreation
and Aquatic Centre (GRAC)

Location
Traralgon, Australia

Completion
2021

Application
Geothermie

The challenge
For the new aquatic centre, a piping system was sought that was not only suitable for geothermal energy, but was also corrosion-resistant, durable, flexible and had good insulation properties.

The solution
Due to the special material properties, aquatherm green pipe in the dimensions 110 mm and 250 mm was selected and installed with technical support from aquatherm.

Photo: Gippsland Regional Aquatic Centre.

Photo: Gippsland Regional Aquatic Centre.

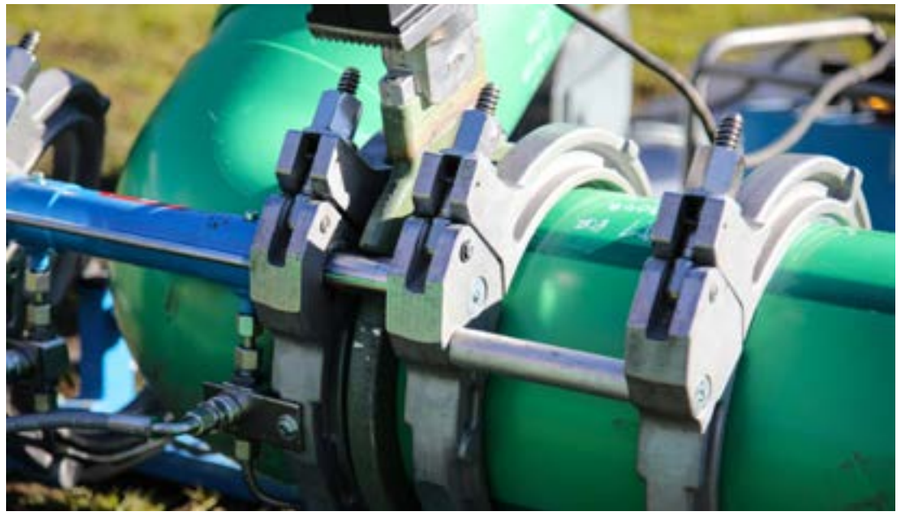


Photo: Riu Hotels & Resorts

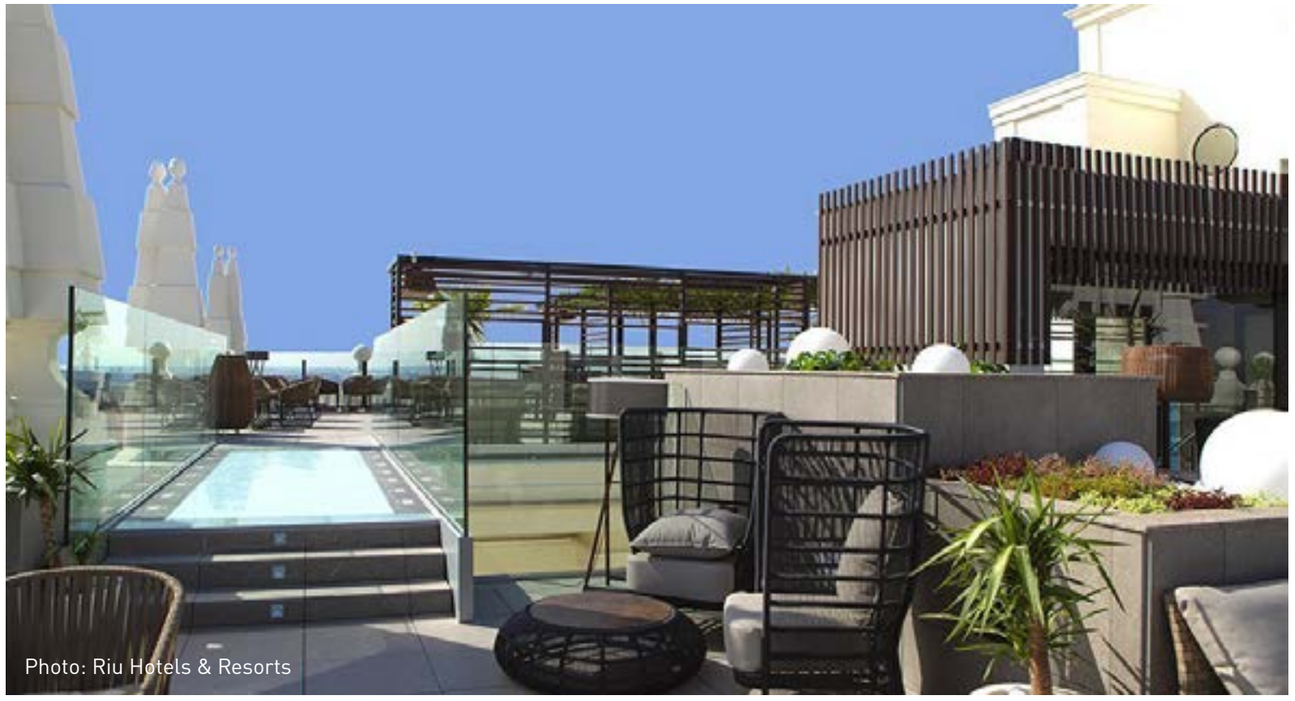


Photo: Riu Hotels & Resorts

AQUATHERM GREEN REFERENCES

Potable water __

Project
Riu Plaza de España

Location
Madrid, Spain

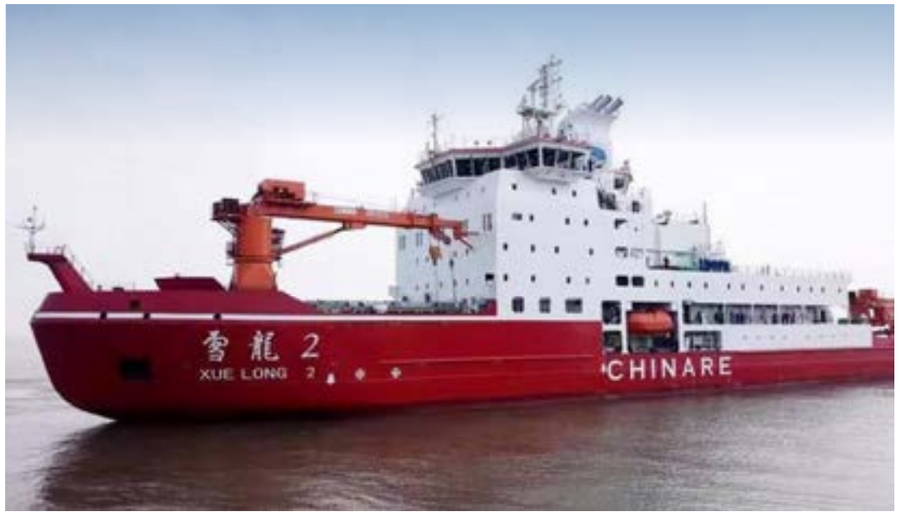
Completion
2019

Application
Potable water
Refrigeration
Sprinkler

The challenge
Fast and easy installation, safe and durable in operation: These were the piping system requirements that were desired in the rehabilitation of a historic tower in the areas of potable water, air conditioning piping and sprinklers.

The solution
Thanks to their special material properties, three products from aquatherm were selected to ensure smooth installation and trouble-free operation in Riu Plaza de España.

Photo: Riu Hotels & Resorts



AQUATHERM GREEN REFERENCES

Potable water

Project
Research vessels
„Snow Dragon 1" and „Snow Dragon 2"

Location
Shanghai, China

Completion
2020

Application
Potable water
Grey water
Black water

The challenge
For the new construction of the "Snow Dragon 2," a corrosion-resistant piping system was sought for the areas of drinking water, grey water and black water.

The solution
Products from aquatherm scored points due to their material properties and were used not only in the "Snow Dragon 2" but also in the sister ship "Snow Dragon 1" as a replacement for metal pipes.

aquatherm green
Chemical resistance

AQUATHERM CHEMICAL RESISTANCE

Resistance __

Our corrosion-resistant material polypropylene is resistant to many acids and alkalis. However, each individual case must always be examined with special care. Chemical resistance must always be considered in conjunction with other factors such as operating temperature, operating pressure or external stresses. Detailed information is available from our competent team of experts, who will be happy to deal with individual enquiries.

Table „Chemical resistance“

Formular „Chemical resistance request“

aquatherm green
Warranty

Explanatory comments on the aquatherm GmbH warranty

1. Foreword

Thank you very much for making the decision to use a product from aquatherm GmbH, Germany (herein referred to as "aquatherm"). With nearly 50 years of experience in the international plastic pipes market, and our trendsetting innovations, we have the expertise needed to offer you engineered piping solutions made in Germany.

The trust placed in the quality of our products has motivated us to offer all pipes and moulded, fabricated, machined, and/or assembled parts with a 10-year warranty instead of the standard 2-year warranty required by German law. This extended time covered by warranty is backed by a comprehensive insurance policy from a leading insurance company for our line of business. The warranty period will begin with the date of delivery by aquatherm GmbH, but only comes valid with the successful pressure test, which must be carried out and documented in accordance with the aquatherm specification.

2. Scope of warranty

The aquatherm warranty protects you from financial loss proven to be caused by material defects, manufacturing defects and/or aquatherm's consulting/engineering services. The warranty coverage shall apply for the following product groups:

- aquatherm green pipe (fusiotherm and aquatherm ISO)
- aquatherm blue pipe (climatherm and aquatherm ISO)
- aquatherm red pipe (firestop)
- aquatherm black system (climasystem)
- aquatherm lilac pipe (aquatherm lilac)
- aquatherm orange system (aquatherm heating systems)
- aquatherm grey pipe (aquatherm SHT-system)
- assemblies fabricated by aquatherm from these product groups

2.1 What is covered by the aquatherm warranty?

The aquatherm warranty covers three aspects of damages: property damage, financial loss and personal injury.

2.1.1 What is property damage?
The damage to or destruction of a tangible item as a result of a defective product (e.g. classic water damages as a result of a leak). As a result of this, the suitability of the tangible item to fulfill its actual purpose is impaired. The term property damage is used if tangible items are damaged or destroyed. Considerable costs can be incurred as a result of property damage, such as renovation costs, repair costs or replacement costs.

2.1.2 What is meant by financial loss?
Financial loss may either be out-of-pocket loss or loss of business. Out-of-pocket financial loss is for example the costs of removing products and installing replacements after damage. Loss of business is the financial disadvantage suffered by an injured party as a result of a damaging event (e.g. lost income as a result of renovations following property damage).

2.1.3 What is meant by personal injury?
If a person suffers physical injury, this is known as personal injury. For the purposes of this document, the coverage of personal injury means the direct medical costs incurred as a result of the injury.

3. What is not covered?

Costs related to the damages incurred such as a result of:

- Non-compliance with the operating parameters defined and specified by aquatherm as found in aquatherm's technical documents. In cases of doubt, contact your local aquatherm manufacturer's rep. Exceptions must be provided for, in writing, by a member of aquatherm's engineering team.
- Non-compliance with the installation guidelines as set out in the aquatherm Catalogue, with emphasis to the required installation of aquatherm propriety clipping or other compatible with aquatherm piping.
- Non-compliance with respective National Plumbing Standards and Regulations.
- Joints which were not made in accordance with the aquatherm guidelines, including but not liwithed to: improper fusion technique, use of contaminated materials or tools, use of faulty or unsuitable tools, use of damaged materials or tools, or any connection made by an installer without sound knowlegde of the aquatherm connection techniques and their processes.
- Improperly assembled connections to other pipeline systems and/or components (threads, flanges, stubs, mechanical joints not intended for use with aquatherm PP piping etc.).
- All sealing elements used in the product lines manufactured by aquatherm.
- Tools and accessories sold by aquatherm GmbH are covered for the warranty period by law under the statutory warranty provisions.
- Systems with defective pipeline sections or fittings that were not subjected to the aquatherm pressure test or alternative testing approved by aquatherm prior to start-up.
- Damage to our products caused by incorrect handling after the material has left aquatherm's possession.
- Damage caused or exacerbated by copper in the water resulting from erosion/corrosion or other degradation of copper components in a domestic hot water recirculating system.
- Time delay, caused by incorrect planning, delivery problems and/or incorrect orders.
- Damage caused by entrained air, cavitation and pressure fluctuations.

Note: This list only includes the most prominent examples. Other circumstances, which compromise the integrity of the products, may also jeopardise the coverage.

4. How is the amount of compensation under the aquatherm warranty determined?

In the event of a material failure, samples of the damaged/faulty product are collected by the national aquatherm partner to forward them to aquatherm GmbH for examination and analysis. Working in collaboration with the injured party, aquatherm will identify the cause of the damage, and call in external bodies (test institutes, laboratories, assessors, etc.) as needed. If the damage has been caused by a material and/or manufacturing defect or by aquatherm's consulting/engineering services, the underwriter shall quantify the compensation claim for damages. All expenditures associated with the damages for this claim must be verified/recorded in detail and in a verifiable format as a required measure.

5. How much is the maximum coverage?

For the first 5 years of the warranty period, property damage, personal injury and financial loss is covered for the sum of €20 million per insurance claim. Total coverage for all claims made in a year is a maximum of €40 million. For years 6-10 of the warranty period, these coverage amounts are €8.5 and €17 million respectively. Subliwith for losses on designed projects (Professional Indemnity) €2 million and €6 million for all losses in the annual aggregate.

6. Why is the coverage stated in Euro?

The insured manufacturer, aquatherm, as well as the insurer, are both based in the EU, so that their agreements are issued in Euros (€). Since exchange rates fluctuate, the exchange rate current on the date of compensation shall apply.

7. What is the channel of communication for notifying claims under warranty and making enquiries about them?

Warranty claims have to be made to aquatherm via the national aquatherm GmbH partners. Information about the progress of the claim will only be released by the aquatherm partner or aquatherm GmbH.

8. Legal note

If a discrepancy or conflict arises between this document and the underlying insurance policy, the latter shall in all cases prevail.

9. Information about avoiding damage

I) Manufacture under certified quality level
As a trusted manufacturer, aquatherm works to a certified quality standard (ISO 9001); constant internal quality controls are part of the daily routine. In addition to this, all employees are integrated into a quality assurance program. As a result of this, products failing to comply with our high standards are quickly identified and removed from our product range.

II) Preventing damage caused by incorrect handling
Our products must be handled conscientiously and carefully when they are delivered from our production plants. Experience shows that most damage is caused in transit, storage and/or when working on site. At this point we would draw close attention to the fact that correct handling contributes to maintaining the product quality.

III) Work is to be carried out by qualified installers
Installation defects are easy to avoid. Our training courses teach the correct techniques in detail for working with our products. In doing so, particular importance is attached to work being carried out attentively and with care. The work of installers trained by us or our aquatherm partners is much more reliable and carried out much more efficiently.

For a safe connection, we recommend using only aquatherm PP products in a piping system. Mixing with other PP piping systems should be avoided.

February 2023
aquatherm GmbH, Biggen 5, 57439 Attendorn, Germany

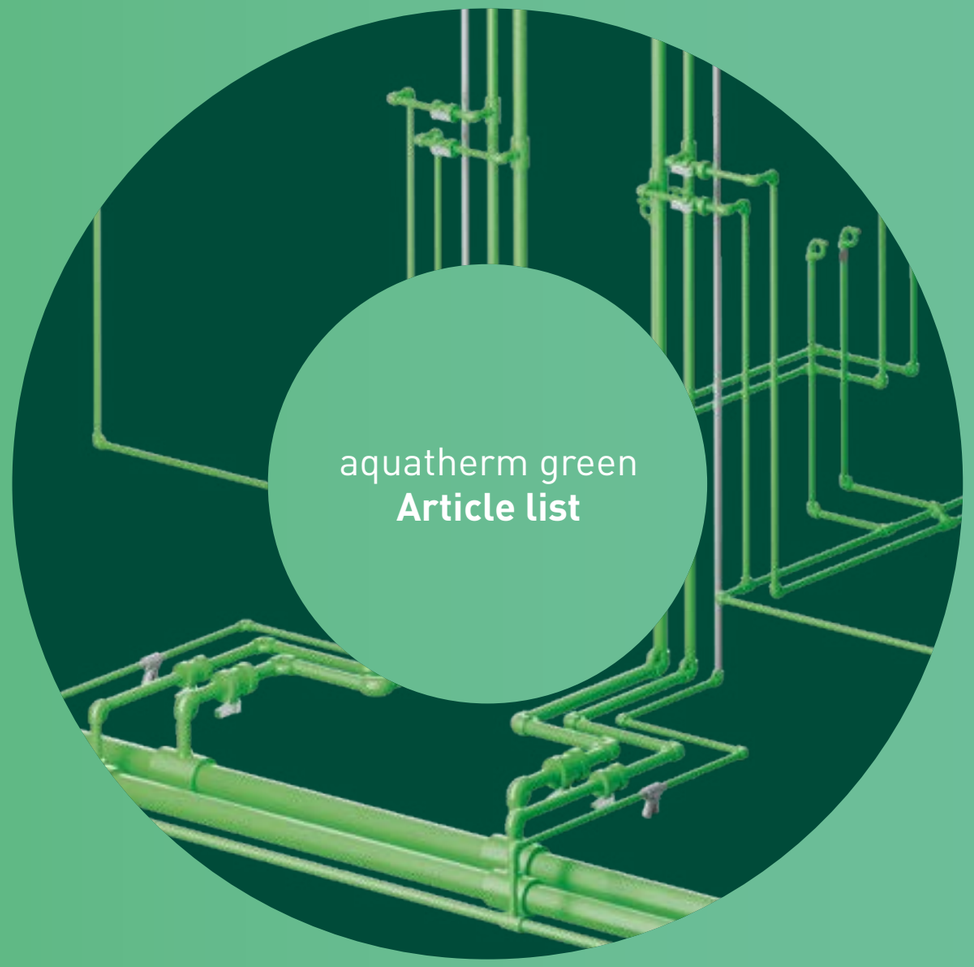
aquatherm green
Transport and storage

AQUATHERM TRANSPORT AND STORAGE

Careful **storage**

aquatherm polypropylene pipes may be stored outside at any temperature. A solid base for the pipe is very important to avoid a deformation of the pipes while in transport and storage.

At temperatures below 0 °C it is possible to damage the pipes through strong impacts. The material has to be treated with caution at low temperatures. In spite of its high resistance, aquatherm pipes should be treated with care. UV-radiation has effects on all high polymer plastics. Do not store permanently outdoor. The maximum permissible storage time outdoors is 6 months.



aquatherm green
Article list

Pipes / basic elements

aquatherm green SDR 6 / 7,4 S

S = single / single layer

Material: fusiolen® PP-R
Pipe series: SDR 6 / S 2,5 & SDR 7,4 / S 3,2
Standards: DIN 8077, DIN 8078, DIN EN ISO 15874, ASTM F 2389, CSA B 137.11
Colour: green
Packing unit: 4 m straight lengths

Article no.	d	s	di	l/m	kg/m	DN	PU	RG
socket welding								
SDR 6								
1011020006	20	3,4	13,2	0,137	0,174	12	100	1
1011025008	25	4,2	16,6	0,216	0,268	15	100	1
1011032010	32	5,4	21,2	0,353	0,437	20	40	1
1011040012	40	6,7	26,6	0,555	0,675	25	40	1
1011050014	50	8,3	33,4	0,876	1,047	32	20	1
1011063016	63	10,5	42,0	1,385	1,662	40	20	1
1011075018	75	12,5	5,0	1,963	2,351	50	20	1
1011090020	90	15,0	6,0	2,826	3,379	60	12	1
1011110022	110	18,3	73,4	4,229	5,040	65	8	1
1011016303 *	16	2,7	10,6	0,088	0,111	10	100	1
1011020306 *	20	3,4	13,2	0,137	0,174	12	100	1
1011025308 *	25	4,2	16,6	0,216	0,268	15	100	1
SDR 7,4								
1012020006	20	2,8	14,4	0,163	0,149	15	100	1
1012025008	25	3,5	18,0	0,254	0,232	20	100	1
1012032010	32	4,4	23,2	0,423	0,372	25	40	1
1012040012	40	5,5	29,0	0,660	0,578	32	40	1
1012050014	50	6,9	36,2	1,029	0,901	40	20	1
1012063016	63	8,6	45,8	1,647	1,416	50	20	1
1012016303 *	16	2,2	11,6	0,106	0,096	12	100	1
1012020306 *	20	2,8	14,4	0,163	0,149	15	100	1

*Packing unit: in ring

Pipes / basic elements

aquatherm green SDR 7,4 MF UV

MF = multi-layer, fibre-reinforced
UV = 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
Colour: insdie green, outside black
Packing unit: 4 m straight lengths

Article no.	d	s	di	l/m	kg/m	DN	PU	RG
socket welding								
1212020006	20	2,8	14,4	0,163	0,210	15	100	1
1212025008	25	3,5	18,0	0,254	0,314	20	100	1

aquatherm green SDR 7,4 MF

MF = multi-layer, 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
Colour: green with 4 dark green stripes
Packing unit: 4 m straight lengths

Article no.	d	s	di	l/m	kg/m	DN	PU	RG
socket welding								
1012020506	20	2,8	14,4	0,163	0,157	15	100	1
1012025508	25	3,5	18,0	0,254	0,244	20	100	1

aquatherm green SDR 9 MF RP

MF = multi-layer, fibre-reinforced
RP = raised pressure resistance

Material: fusiolen® PP-RCT
Pipe series: SDR 9 / S 4
Standards: SKZ HR 3.28, ASTM F 2389, ISO 21003, SKZ A632/A644
Colour: green with 4 dark green stripes
Packing unit: Ø 32 – 125 mm 4 m straight lengths
Ø 160 – 315 mm 5,8 m straight lenghts

Article no.	d	s	di	l/m	kg/m	DN	PU	RG
socket welding								
1013032010	32	3,6	24,8	0,483	0,328	25	40	1
1013040012	40	4,5	31,0	0,754	0,511	32	40	1
1013050014	50	5,6	38,8	1,182	0,791	40	20	1
1013063016	63	7,1	48,8	1,869	1,261	50	20	1
1013075018	75	8,4	58,2	2,659	1,771	-	20	1
1013090020	90	10,1	69,8	3,825	2,553	65	12	1
1013110022	110	12,3	85,4	5,725	3,789	80	8	1
1013125024	125	14,0	97,0	7,386	4,886	100	4	1
butt welding								
1013160026	160	17,9	124,2	12,109	7,987	125	5,8	1
1013200028	200	22,4	155,2	18,908	12,488	150	5,8	1
1013250030	250	27,9	194,2	29,605	19,422	200	5,8	1
1013315032	315	35,2	244,6	46,966	30,876	250	5,8	1

Legend table abbreviations: (Units in mm unless otherwise specified)

d diameter in mm
D diameter in mm
s wall thickness in mm
di internal diameter in mm
l/m water content in litres/metre
kg/m weight data in kg per metre
DN diameter nominal
PU packing unit in metre
SDR standard dimension ratio (Diameter/wall thickness ratio)

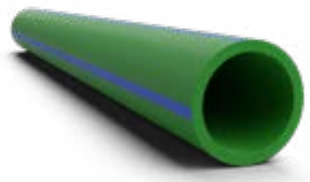
Pipes / basic elements

aquatherm green SDR 9 MF RP UV

MF = multi-layer, fibre-reinforced
RP = raised pressure resistance
UV = UV-resistant

Material: fusiolen® PP-RCT
Pipe series: SDR 9 / S 4
Standards: SKZ HR 3.28, ASTM F 2389, ISO 21003, SKZ A632/A644
Colour: inside green, outside black
Packing unit: Ø 32 – 125 mm 4 m straight lengths
Ø 160 – 200 mm 5,8 m straight lenghts

Article no.	d	s	di	l/m	kg/m	DN	PU	RG
socket welding								
1213032010	32	3,6	24,8	0,483	0,422	25	40	1
1213040012	40	4,5	31,0	0,754	0,630	32	40	1
1213050014	50	5,6	38,8	1,182	0,944	40	20	1
1213063016	63	7,1	48,8	1,869	1,457	50	20	1
1213075018	75	8,4	58,2	2,659	1,998	-	20	1
1213090020	90	10,1	69,8	3,825	2,894	65	12	1
1213110022	110	12,3	85,4	5,725	4,397	80	8	1
1213125024	125	14,0	97,0	7,386	5,530	100	4	1
butt welding								
1213160026	160	17,9	124,2	12,109	8,287	125	5,8	1
1213200028	200	22,4	155,2	18,908	12,818	150	5,8	1



aquatherm green SDR 11 S

S = single / single layer

Material: fusiolen® PP-R
Pipe series: SDR 11 / S 5
Standards: DIN 8077 / 78, DIN EN ISO 15874, ASTM F 2389, CSA B 137.11
Colour: green with 4 blue stripes
Packing unit: Ø 32 – 125 mm 4 m straight lengths
Ø 160 – 315 mm 5,8 m straight lenghts

Article no.	d	s	di	l/m	kg/m	DN	PU	RG
socket welding								
1014020006	20	1,9	16,2	0,206	0,108	15	100	1
1014025008	25	2,3	20,4	0,327	0,165	20	100	1
1014032010	32	2,9	26,2	0,539	0,261	25	40	1
1014040012	40	3,7	32,6	0,834	0,414	32	40	1
1014050014	50	4,6	40,8	1,307	0,641	40	20	1
1014063016	63	5,8	51,4	2,074	1,012	50	20	1
1014075018	75	6,8	61,4	2,959	1,411	65	20	1
1014090020	90	8,2	73,6	4,252	2,043	80	12	1
1014110022	110	10,0	9,0	6,359	3,026	-	8	1
1014125024	125	11,4	102,2	8,199	3,924	100	4	1
1014020306 *	20	1,9	16,2	0,206	0,108	15	100	1
1014025308 *	25	2,3	20,4	0,327	0,165	20	100	1
1014032310 *	32	2,9	26,2	0,539	0,261	25	50	1
butt welding								
1014160026	160	14,6	130,8	13,430	6,415	125	5,8	1
1014200028	200	18,2	163,6	21,010	9,992	150	5,8	1
1014250030	250	22,7	204,6	32,861	15,548	200	5,8	1
1014315032	315	28,6	257,8	52,172	24,664	250	5,8	1

*Packing unit in ring

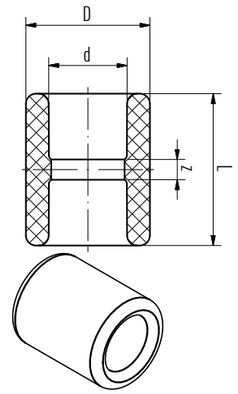
Socket

Socket

SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	z	kg	PU	RG
socket welding							
1040020002	20	27,0	32,0	3,0	0,008	10	1
1040025003	25	34,0	35,0	3,0	0,013	10	1
1040032004	32	43,0	40,5	4,5	0,026	5	1
1040040005	40	52,0	47,5	6,5	0,044	5	1
1040050006	50	68,0	53,0	6,0	0,084	5	1
1040063007	63	84,0	60,5	5,5	0,139	1	1
1040075008	75	100,0	66,5	6,5	0,226	1	1
1040090009	90	120,0	72,5	6,5	0,343	1	1
1040110010	110	147,0	82,0	8,0	0,581	1	1
1040125011	125	167,0	92,0	12,0	0,845	1	1



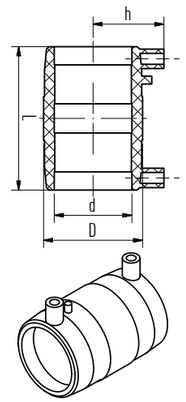
Electrofusion socket

SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	h	kg	PU	RG
socket welding							
1040020094	20	31,5	70,0	36,0	0,049	1	1
1040025100	25	36,5	78,0	38,5	0,057	1	1
1040032101	32	45,0	80,0	42,5	0,077	1	1
1040040102	40	54,0	92,0	47,0	0,103	1	1
1040050103	50	65,0	103,0	52,0	0,142	1	1
1040063104	63	81,5	118,0	58,0	0,239	1	1
1040075105	75	96,0	130,0	64,5	0,347	1	1
1040090106	90	113,5	145,0	72,0	0,501	1	1
1040110107	110	139,0	160,0	82,5	0,821	1	1
1040125108	125	156,0	172,0	90,0	1,097	1	1
1040160109 *	160	197,0	186,0	109,5	1,754	1	1
1040200110 *	200	243,0	210,0	134,0	3,625	1	1
1040250111 *	250	315,0	250,0	170,0	7,142	1	1

*Electrofusion sockets cannot be used with 160 mm to 250 mm fittings (not for aquatherm blue pipe MF OT)

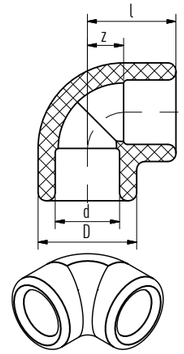


Elbow 90° socket welding

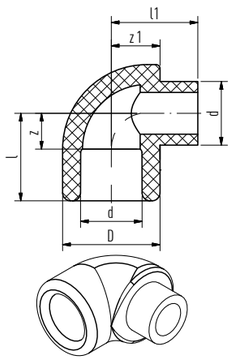
SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	D	z	kg	PU	RG
socket welding							
1080020041	20	25,5	27,0	11,0	0,013	10	1
1080025042	25	29,5	34,0	13,5	0,023	10	1
1080032043	32	35,0	43,0	17,0	0,043	5	1
1080040044	40	41,5	52,0	21,0	0,077	5	1
1080050045	50	49,5	68,0	26,0	0,162	5	1
1080063046	63	60,0	84,0	32,5	0,293	1	1
1080075047	75	68,5	100,0	38,5	0,445	1	1
1080090048	90	79,0	120,0	46,0	0,729	1	1
1080110049	110	93,0	147,0	56,0	1,292	1	1
1080125050	125	116,5	167,0	76,5	2,004	1	1



Elbow __

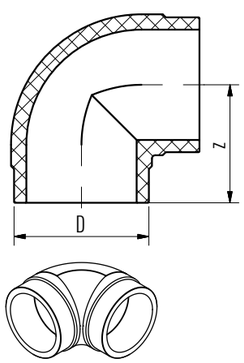


Elbow 90° inside / outside

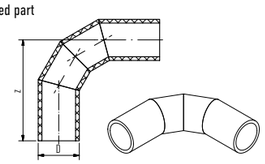
SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	z	z1	kg	PU	RG
socket welding									
1080020061	20	25,5	25,5	27,0	11,0	13,5	0,032	10	1
1080025062	25	29,5	29,5	34,0	13,5	17,0	0,023	10	1
1080032063	32	35,0	39,0	43,0	17,0	21,5	0,048	5	1
1080040064	40	41,5	45,5	52,0	21,0	26,0	0,080	5	1



Injection moulded part



Segment welded article

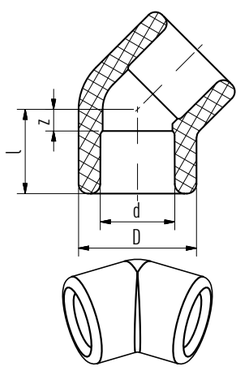
Elbow 90° butt welding

Material: fusiolen® PP-R / PP-RCT
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	D	z	kg	PU	RG
butt welding					
SDR 9					
1083160070 *	160,0	145,0	2,371	1	1
1083200071 *	200,0	209,0	4,320	1	1
1083250072 *	250,0	240,0	8,500	1	1
SDR 11					
1084160052 *	160,0	145,0	1,956	1	1
1084200054 *	200,0	209,0	4,575	1	1
1084250056 *	250,0	240,0	7,180	1	1

*Injection moulded part

Please note! Electrofusion sockets cannot be processed directly with injection moulded parts. When using electrofusion sockets, either segment welded special fittings must be used or pipe sections must be welded to the injection moulded fittings.



Elbow 45° socket welding

SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	D	z	kg	PU	RG
socket welding							
1080020002	20	19,5	29,5	5,0	0,014	10	1
1080025003	25	22	34,0	6,0	0,018	10	1
1080032004	32	25	43,0	7,5	0,035	5	1
1080040005	40	30	52,0	9,5	0,053	5	1
1080050006	50	35	68,0	11,5	0,112	5	1
1080063007	63	41,5	84,0	14,0	0,227	1	1
1080075008	75	46,5	100,0	16,5	0,350	1	1
1080090009	90	52,5	120,0	19,5	0,568	1	1
1080110010	110	60,5	147,0	23,5	1,025	1	1
1080125011	125	67	167,0	27,0	1,329	1	1

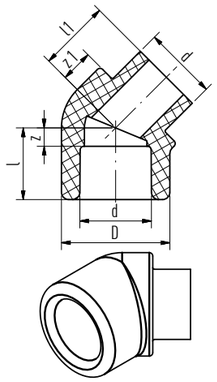
Elbow __

Elbow 45° inside / outside

SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	z	z1	kg	PU	RG
socket welding									
1080020020	20	19,5	19,5	29,5	5,0	9,0	0,013	10	1
1080020021	25	22,0	22,0	34,0	6,0	8,5	0,017	10	1
1080032022	32	25,5	29,0	43,0	7,5	11,5	0,036	5	1
1080040023	40	30,0	33,0	52,0	9,5	13,5	0,057	5	1



Elbow 45° butt welding

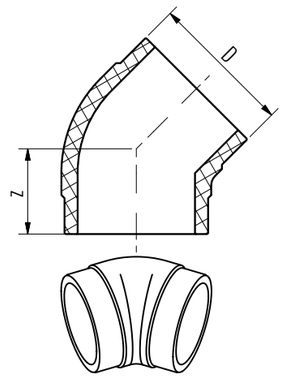
segment welded* (or injection moulded part)

Material: fusiolen® PP-RCT
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

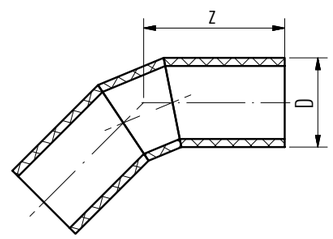
Article no.	D	z	kg	PU	RG
butt welding					
SDR 9					
1083160030	160,0	95,0	4,230	1	1
1083200031	200,0	146,0	7,500	1	1
1083250032	250,0	182,0	17,000	1	1
1083315033 *	315,0	498,0	30,567	1	1
SDR 11					
1084160013	160,0	95,0	1,371	1	1
1084200015	200,0	146,0	3,310	1	1
1084250017	250,0	182,0	6,218	1	1
1084315018 *	315,0	498,0	27,300	1	1

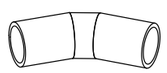
*segment welded

Please note! Electrofusion sockets cannot be used with injection moulded parts. When using electrofusion sockets, welded special moulded parts must be used.



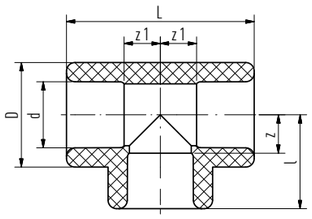
Injection moulded part

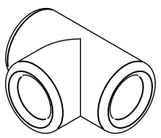




Segment welded article

T-piece __



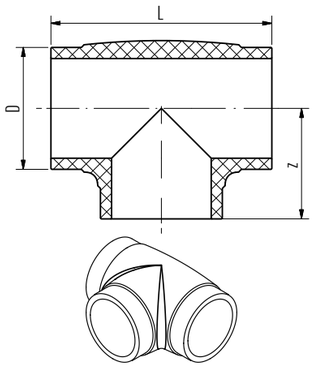


T-piece socket welding

SDR 6 / 7,4 / 9 / 11 / 17,6 — Injection moulded fittings

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	D	L	z	z1	kg	PU	RG
socket welding									
1060020016	20	25,5	27,0	51,0	11,0	11,0	0,017	10	1
1060025017	25	30,5	34,0	62,0	14,5	15,0	0,033	10	1
1060032018	32	33,5	43,0	70,0	15,5	17,0	0,054	5	1
1060040019	40	40,5	52,0	81,0	20,0	20,0	0,099	5	1
1060050020	50	49,5	68,0	99,0	26,0	26,0	0,177	5	1
1060063021	63	60,0	84,0	120,0	32,5	32,5	0,368	1	1
1060075022	75	68,5	100,0	137,0	38,5	38,5	0,541	1	1
1060090023	90	79,0	120,0	158,0	46,0	46,0	0,920	1	1
1060110024	110	93,0	147,0	186,0	56,0	56,0	1,598	1	1
1060125025	125	116,5	167,0	233,0	76,5	76,5	2,673	1	1



T-piece butt welding

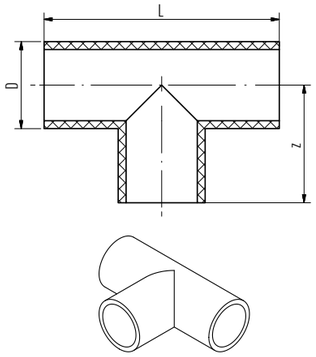
Material: fusiolen® PP-RCT
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	D	L	z	kg	PU	RG
butt welding						
SDR 9						
1063160019	160,0	290,0	145,0	3,290	1	1
1063200020	200,0	410,0	205,0	7,000	1	1
1063250021	250,0	486,0	243,0	12,500	1	1
1063315022 *	315,0	920,0	460,0	42,609	1	1
SDR 11						
1064160013	160,0	290,0	145,0	2,943	1	1
1064200015	200,0	410,0	205,0	6,099	1	1
1064250017	250,0	486,0	243,0	10,710	1	1
1064315018 *	315,0	920,0	460,0	20,450	1	1

*segment welded

Please note! Electrofusion sockets cannot be used with injection moulded parts. When using electrofusion sockets, welded special moulded parts must be used.

Injection moulded part



Segment welded article

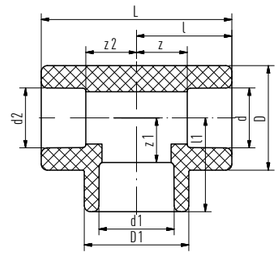
T-piece __

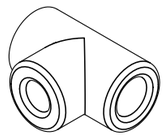
Red. T-piece socket welding

SDR 6 / 7,4 / 9 / 11 / 17,6 — Injection moulded fittings

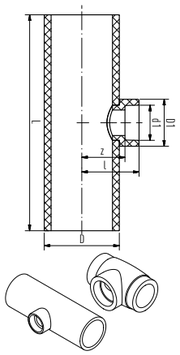
Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	d1	d2	l	l1	D	D1	L	z	z1	z2	kg	PU	RG
socket welding														
1060020030	20	16,0	16,0	25,5	25,3	29,5	29,5	51,0	11,0	12,3	12,5	0,025	10	1
1060020031	20	16,0	20,0	25,5	25,3	29,5	29,5	51,0	11,0	12,3	11,0	0,024	10	1
1060020032	20	20,0	16,0	25,5	25,3	29,5	29,5	51,0	11,0	10,8	12,5	0,023	10	1
1060020033	20	25,0	20,0	31,0	30,5	34,0	34,0	62,0	16,5	14,5	16,5	0,040	10	1
1060025034	25	16,0	16,0	31,0	30,5	34,0	34,0	62,0	15,0	17,5	18,0	0,043	10	1
1060025035	25	16,0	20,0	31,0	30,5	34,0	34,0	62,0	15,0	17,5	16,5	0,041	10	1
1060025036	25	16,0	25,0	31,0	30,5	34,0	34,0	62,0	15,0	17,5	15,0	0,038	10	1
1060025037	25	20,0	20,0	31,0	30,5	34,0	34,0	62,0	15,0	16,0	16,5	0,039	10	1
1060025038	25	20,0	25,0	31,0	30,5	34,0	34,0	62,0	15,0	16,0	15,0	0,036	10	1
1060032039	32	16,0	32,0	35,0	31,0	43,0	29,5	70,0	17,0	18,0	17,0	0,053	5	1
1060032040	32	20,0	20,0	36,8	37,0	43,0	43,0	73,5	18,8	22,5	22,3	0,076	5	1
1060032041	32	20,0	32,0	35,0	31,0	43,0	29,5	70,0	17,0	16,5	17,0	0,053	5	1
1060032042	32	25,0	25,0	35,0	34,5	43,0	43,0	70,0	17,0	18,5	19,0	0,069	5	1
1060032043	32	25,0	32,0	35,0	32,0	43,0	34,0	70,0	17,0	16,0	17,0	0,050	5	1
1060040044	40	20,0	40,0	41,5	36,0	52,0	34,0	83,0	21,0	21,5	21,0	0,091	5	1
1060040045	40	25,0	40,0	41,5	36,0	52,0	34,0	83,0	21,0	20,0	21,0	0,089	5	1
1060040046	40	32,0	40,0	42,0	40,5	52,0	52,0	84,0	21,5	22,5	21,5	0,092	5	1
1060050047	50	20,0	50,0	49,5	40,5	68,0	29,5	99,0	26,0	26,0	26,0	0,162	5	1
1060050048	50	25,0	50,0	49,5	44,5	68,0	34,0	99,0	26,0	28,5	26,0	0,158	5	1
1060050049	50	32,0	50,0	49,5	44,5	68,0	43,0	99,0	26,0	26,5	26,0	0,160	5	1
1060050050	50	40,0	50,0	49,5	49,5	68,0	68,0	99,0	26,0	29,0	26,0	0,161	5	1
1060063051	63	20,0	63,0	60,0	48,5	84,0	34,0	120,0	32,5	34,0	32,5	0,335	1	1
1060063052	63	25,0	63,0	60,0	48,5	84,0	34,0	120,0	32,5	32,5	32,5	0,331	1	1
1060063053	63	32,0	63,0	60,0	53,0	84,0	52,0	120,0	32,5	35,5	32,5	0,340	1	1
1060063054	63	40,0	63,0	60,0	53,0	84,0	52,0	120,0	32,5	33,0	32,5	0,332	1	1
1060063055	63	50,0	63,0	60,0	56,0	84,0	68,0	120,0	32,5	36,5	32,5	0,398	1	1
1060075056	75	20,0	75,0	68,5	54,5	100,0	34,0	137,0	38,5	40,0	38,5	0,501	1	1
1060075057	75	25,0	75,0	68,5	54,5	100,0	34,0	137,0	38,5	38,5	38,5	0,497	1	1
1060075058	75	32,0	75,0	68,5	59,0	100,0	52,0	137,0	38,5	41,0	38,5	0,505	1	1
1060075059	75	40,0	75,0	68,5	59,0	100,0	52,0	137,0	38,5	38,5	38,5	0,497	1	1
1060075060	75	50,0	75,0	68,5	66,0	100,0	84,0	137,0	38,5	42,5	38,5	0,550	1	1
1060075061	75	63,0	75,0	68,5	66,0	100,0	84,0	137,0	38,5	38,5	38,5	0,515	1	1
1060090062	90	32,0	90,0	79,0	64,0	120,0	43,0	158,0	46,0	46,0	46,0	0,880	1	1
1060090063	90	40,0	90,0	79,0	66,5	120,0	52,0	158,0	46,0	46,0	46,0	0,862	1	1
1060090064	90	50,0	90,0	79,0	69,5	120,0	68,0	158,0	46,0	46,0	46,0	0,905	1	1
1060090065	90	63,0	90,0	79,0	73,5	120,0	84,0	158,0	46,0	46,0	46,0	0,876	1	1
1060090066	90	75,0	90,0	79,0	76,0	120,0	100	158,0	46,0	46,0	46,0	0,991	1	1
1060110067	110	63,0	110,0	93,0	83,5	147,0	84,0	186,0	56,0	56,0	56,0	1,534	1	1
1060110068	110	75,0	110,0	93,0	86,0	147,0	100,0	186,0	56,0	56,0	56,0	1,517	1	1
1060110069	110	90,0	110,0	93,0	89,0	147,0	120,0	186,0	56,0	56,0	56,0	1,548	1	1
1060125070	125	75,0	125,0	116,5	106,5	167,0	100,0	233,0	76,5	76,5	76,5	2,427	1	1
1060125071	125	90,0	125,0	116,5	109,5	167,0	120,0	233,0	76,5	76,5	76,5	2,509	1	1
1060125072	125	110,0	125,0	116,5	113,5	167,0	147,0	233,0	76,5	76,5	76,5	2,563	1	1





T-piece



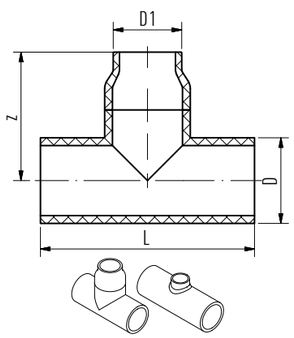
Please note! Electrofusion sockets cannot be used with injection moulded parts. When using electrofusion sockets, welded special moulded parts must be used.

*MF = multi-layer, fibre-reinforced

Red. T-piece Sockets- and butt welding

Material: fusiolen® PP-R / PP-RCT
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d1	l	D	D1	L	z	kg	PU	RG
Depature: socket welding									
SDR 9									
1063160120	75,0	122,0	160,0	100,0	460,0	92,0	3,903	1	1
1063160121	90,0	125,0	160,0	120,0	460,0	92,0	4,039	1	1
1063200122	75,0	142,0	200,0	100,0	500,0	112,0	6,476	1	1
1063200123	90,0	145,0	200,0	120,0	500,0	112,0	6,581	1	1
1063200124	110,0	149,0	200,0	147,0	500,0	112,0	6,863	1	1
1063200125	125,0	155,0	200,0	167,0	500,0	115,0	7,114	1	1
1063250127	75,0	167,0	250,0	100,0	750,0	137,0	14,802	1	1
1063250128	90,0	170,0	250,0	120,0	750,0	137,0	14,932	1	1
1063250129	110,0	174,0	250,0	147,0	750,0	137,0	15,178	1	1
1063250130	125,0	180,0	250,0	167,0	750,0	140,0	15,398	1	1
1063315133 *	125,0	212,5	315,0	167,0	920,0	172,5	29,196	1	1
SDR 11									
1064160074	75,0	122,0	160,0	100,0	460,0	92,0	3,140	1	1
1064160076	90,0	125,0	160,0	120,0	460,0	92,0	3,176	1	1
1064160078	125,0	120,0	160,0	167,0	290,0	80,0	2,842	1	1
1064200080	75,0	142,0	200,0	100,0	500,0	112,0	5,284	1	1
1064200082	90,0	145,0	200,0	120,0	500,0	112,0	5,168	1	1
1064200084	110,0	149,0	200,0	147,0	500,0	112,0	5,648	1	1
1064200086	125,0	155,0	200,0	167,0	500,0	115,0	5,786	1	1
1064250090	75,0	167,0	250,0	100,0	750,0	137,0	12,000	1	1
1064250092	90,0	170,0	250,0	120,0	750,0	137,0	12,000	1	1
1064250094	110,0	174,0	250,0	147,0	750,0	137,0	13,000	1	1
1064250096	125,0	180,0	250,0	167,0	750,0	140,0	12,000	1	1
1064315101 *	125,0	213,0	315,0	167,0	920,0	173,0	25,150	1	1



Red. T-piece butt welding

Material: fusiolen® PP-RCT
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	D	D1	L	z	kg	PU	RG
Depature: butt welding							
SDR 9							
1063200126	200,0	160	500,0	300,0	9,332	1	1
1063250131	250,0	160	750,0	375,0	21,547	1	1
1063250132	250,0	200	750,0	376,0	21,853	1	1
1063315134 *	315,0	160	920,0	238,0	29,237	1	1
1063315135	315,0	200	920,0	460,0	42,166	1	1
1063315136	315,0	250	920,0	460,0	42,557	1	1
SDR 11							
1064200088	200,0	160	500,0	300,0	7,445	1	1
1064250098	250,0	160	750,0	375,0	19,500	1	1
1064250100	250,0	200	750,0	375,0	18,500	1	1
1064315102 *	315,0	160	920,0	237,5	24,850	1	1
1064315103	315,0	200	920,0	460,0	29,400	1	1
1064315104	315,0	250	920,0	460,0	30,500	1	1

*Pipe with weld-in saddle

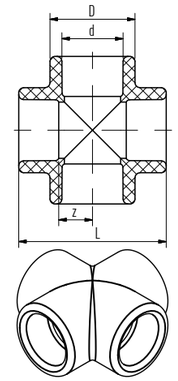
Crosspiece, cross-over fitting, end caps

Crosspiece

SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	z	kg	PU	RG
socket welding							
1040020090	20	29,5	51,5	11,3	0,025	10	1
1040025091	25	34,0	59,0	13,5	0,035	10	1
1040032092	32	43,0	70,0	17,0	0,062	5	1
1040040093	40	52,0	83,0	21,0	0,099	5	1

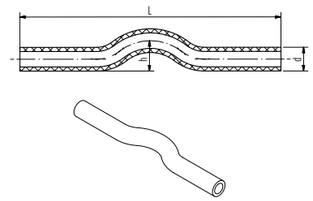


Cross-over fitting

SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	L	h	kg	PU	RG
socket welding						
1090020002	20	352,0	32,0	0,060	10	1
1090025003	25	352,0	37,5	0,091	10	1
1090032004	32	352,0	48,0	0,154	5	1

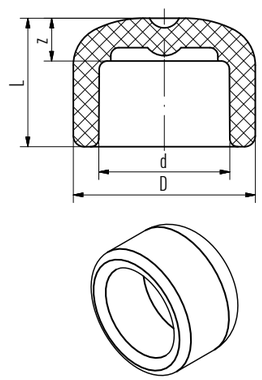


End caps

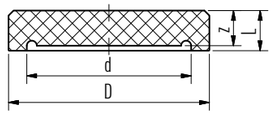
SDR 6 / 7,4 / 9 / 11

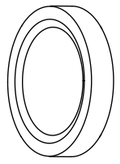
Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	z	kg	PU	RG
socket welding							
1020020002	20	29,5	24,0	9,5	0,009	10	1
1020025003	25	34,0	24,0	8,0	0,011	10	1
1020032004	32	43,0	29,0	11,0	0,023	5	1
1020040005	40	52,0	38,0	17,5	0,042	5	1
1020050006	50	68,0	44,5	21,0	0,082	5	1
1020063007	63	84,0	52,0	24,5	0,146	1	1
1020075008	75	100,0	58,5	28,5	0,243	1	1
1020090009	90	120,0	67,5	34,5	0,365	1	1
1020110010	110	147,0	65,0	28,0	0,635	1	1
1020125011	125	167,0	82,0	42,0	0,872	1	1



Crosspiece, cross-over fitting, end caps

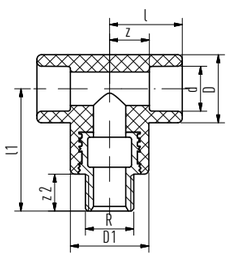


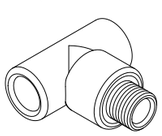


End caps butt welding

Material: fusiolen® PP-RCT
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	z	kg	PU	RG
butt welding							
SDR 9							
1023160022	124,2	160,0	70,0	17,9	0,847	1	1
1023200023	155,2	200,0	80,0	22,4	1,373	1	1
1023250024	194,2	250,0	90,0	27,9	2,856	1	1
1023315025	244,6	315,0	70,0	52,5	5,080	1	1
1023355026	275,6	355,0	80,0	66,5	7,050	1	1
SDR 11							
1024160013	130,8	160,0	70,0	14,6	0,631	1	1
1024200015	163,6	200,0	80,0	18,2	1,070	1	1
1024250017	204,6	250,0	90,0	22,7	1,989	1	1
1024315018	257,8	315,0	70,0	52,5	4,200	1	1
1024355019	290,6	355,0	80,0	67,5	6,410	1	1
1024400020	327,4	400,0	70,0	60,0	7,190	1	1
1024450021	368,2	450,0	80,0	70,0	10,500	1	1





Transition-T-Piece with male thread

SDR 6 / 7,4 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	D1	z2	R	z	kg	PU	RG
socket welding											
1060020154	20	31,5	53,0	29,5	37,0	16,0	1/2"	17,0	0,102	10	1

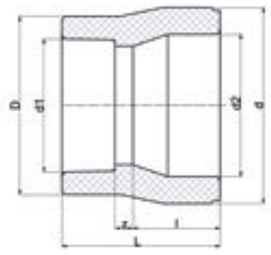
Reducing piece

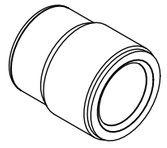
Reducing piece socket welding

SDR 6 / 7,4 / 9 / 11 / 17,6

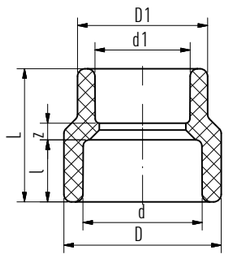
Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

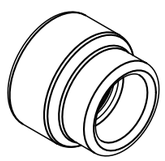
Article no.	d	d1	d2	l	D	L	z	kg	PU	RG
socket welding										
1040020020	20	16,0	13,5	14,5	24,5	39,0	11,5	0,009	10	1
1040025021	25	16,0	16,5	16,0	26,0	38,0	9,0	0,012	10	1
1040025022	25	20,0	16,5	16,0	29,5	38,5	8,0	0,012	10	1
1040032023	32	20,0	21,5	18,0	29,5	37,5	5,0	0,015	5	1
1040032024	32	25,0	21,0	18,0	34,0	38,0	4,0	0,016	5	1
1040040025	40	20,0	26,5	20,5	29,5	45,0	10,0	0,025	5	1
1040040026	40	25,0	26,5	20,5	34,0	50,0	13,5	0,028	5	1
1040040027	40	32,0	26,5	20,5	43,0	50,0	11,5	0,032	5	1
1040050028	50	20,0	33,5	23,5	29,5	55,0	17,0	0,045	5	1
1040050029	50	25,0	33,5	23,5	34,0	55,0	15,5	0,044	5	1
1040050030	50	32,0	33,5	23,5	43,0	54,0	12,5	0,048	5	1
1040050031	50	40,0	33,5	23,5	52,0	53,0	9,0	0,053	5	1
1040063032	63	20,0	42,0	27,5	29,5	65,0	23,0	0,073	1	1
1040063033	63	25,0	42,0	27,5	34,0	65,0	21,5	0,071	1	1
1040063034	63	32,0	42,0	27,5	43,0	62,0	16,5	0,080	1	1
1040063035	63	40,0	42,0	27,5	52,0	64,5	16,5	0,089	1	1
1040063036	63	50,0	42,0	27,5	68,0	63,5	12,5	0,107	1	1
1040075037	75	40,0	50,0	30,0	52,0	69,5	19,0	0,131	1	1
1040075038	75	50,0	50,0	30,0	68,0	63,0	9,5	0,141	1	1
1040075039	75	63,0	50,0	30,0	84,0	71,0	13,5	0,170	1	1
1040075040	75	20,0	50,0	30,0	34,5	65,5	21,0	0,113	1	1
1040075041	75	25,0	50,0	30,0	34,5	65,5	19,5	0,111	1	1
1040075042	75	32,0	50,0	30,0	52,0	69,5	21,5	0,140	1	1
1040090043	90	50,0	60,0	33,0	68,0	75,0	18,5	0,193	1	1
1040090044	90	63,0	60,0	33,0	84,0	78,0	17,5	0,224	1	1
1040090045	90	75,0	60,0	33,0	100,0	81,5	18,5	0,273	1	1
1040110046	110	63,0	73,5	37,0	84,0	86,0	21,5	0,356	1	1
1040110047	110	75,0	73,5	37,0	100,0	89,0	22,0	0,383	1	1
1040110048	110	90,0	73,5	37,0	120,0	99,0	29,0	0,500	1	1
1040125049	125	75,0	84,0	40,0	100,0	101,0	31,0	0,518	1	1
1040125050	125	90,0	84,0	40,0	120,0	99,0	26,0	0,588	1	1
1040125051	125	110,0	84,0	40,0	147,0	112,0	35,0	0,832	1	1





Reducing piece



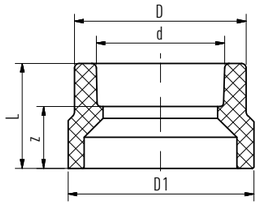


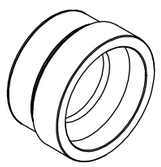
Red.-Sockets inside / inside

SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	d1	l	D	D1	L	z	kg	PU	RG
double sided socket welding										
1040040073	40	32,0	20,5	52,0	43,0	44,0	5,5	0,035	1	1
1040050074	50	32,0	23,5	68,0	43,0	53,0	11,5	0,066	1	1
1040050075	50	40,0	23,5	68,0	52,0	50,5	6,3	0,069	1	1
1040063076	63	40,0	27,5	84,0	52,0	61,0	13,0	0,115	1	1
1040063077	63	50,0	27,5	84,0	68,0	56,0	5,0	0,120	1	1
1040075078	75	50,0	30,0	100,0	68,0	68,0	14,5	0,192	1	1
1040075079	75	63,0	30,0	100,0	84,0	62,5	5,0	0,185	1	1
1040090080	90	63,0	33,0	120,0	84,0	74,0	13,5	0,276	1	1
1040090081	90	75,0	33,0	120,0	100,0	69,0	6,0	0,297	1	1
1040110082	110	75,0	37,0	147,0	100,0	85,0	18,0	0,516	1	1
1040110083	110	90,0	37,0	147,0	120,0	77,3	7,3	0,520	1	1
1040125084	125	90,0	40,0	167,0	120,0	91,0	18,0	0,749	1	1
1040125085	125	110,0	40,0	167,0	147,0	87,0	10,0	0,726	1	1





Reducing piece socket- and butt welding

Material: fusiolen® PP-RCT
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

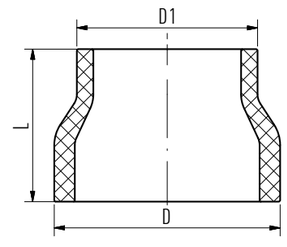
Article no.	d	D	D1	L	z	kg	PU	RG
one side socket welding, other side butt welding								
SDR 9								
1043160122	110	147,0	160	90,0	53,0	0,694	1	1
1043160123	125	167,0	160	90,0	50,0	0,868	1	1
1043200124	125	167,0	200	135,0	95,0	1,599	1	1
SDR 11								
1044160053	110	147,0	160	90,0	53,0	0,673	1	1
1044160055	125	167,0	160	90,0	50,0	0,709	1	1
1044200057	125	167,0	200	135,0	95,0	1,341	1	1

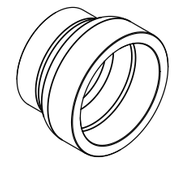
Transition piece

Reducing piece butt welding

Material: fusiolen® PP-RCT
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	D	D1	L	kg	PU	RG
double sided butt welding						
SDR 9						
1043200125	200,0	160	135,0	1,588	1	1
1043250126	250,0	160	172,5	2,900	1	1
1043250127	250,0	200	172,5	3,206	1	1
1043315128	315,0	250	225,0	7,050	1	1
1043315131	315,0	200	225,0	6,350	1	1
SDR 11						
1044200059	200,0	160	135,0	1,140	1	1
1044250061	250,0	160	172,5	2,152	1	1
1044250063	250,0	200	172,5	2,681	1	1
1044315065	315,0	250	225,0	4,690	1	1





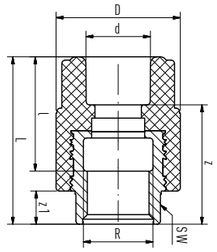
Transition piece with female thread

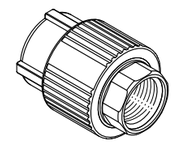
with spanner flat – SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass or stainless steel
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

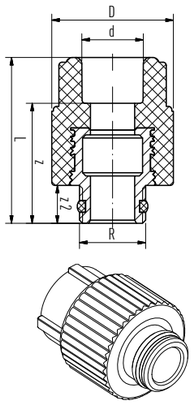
Article no.	d	l	D	L	z	z1	R	SW	kg	PU	RG
one side socket welding											
1070020008	20	34,5	38,5	50,5	36,0	10,0	1/2"	24	0,078	10	1
1070020009	20	29,0	43,5	50,0	35,5	10,0	3/4"	31	0,112	10	1
1070025010	25	36,0	38,5	52,0	36,0	10,0	1/2"	24	0,081	10	1
1070025011	25	29,0	43,5	50,0	34,0	10,0	3/4"	31	0,109	10	1
1070032012	32	32,0	43,5	53,0	35,0	10,0	3/4"	31	0,114	5	1
1070032013	32	37,5	60,0	59,5	41,5	14,0	1"	39	0,239	5	1
1070040014	40	40,0	60,0	62,0	41,5	14,0	1"	39	0,227	5	1
1070040015	40	40,0	74,0	63,0	42,5	15,0	1 1/4"	50	0,385	5	1
1070050016	50	43,0	74,0	66,0	42,5	15,0	1 1/4"	50	0,404	5	1
1070050017	50	45,0	85,5	67,0	43,5	15,0	1 1/2"	55	0,418	5	1
1070063018	63	51,5	84,0	73,5	46,0	15,0	1 1/2"	55	0,442	1	1
1070063019	63	51,0	101,0	77,0	49,5	19,0	2"	67	0,600	1	1
1070075020	75	51,0	100,0	77,0	47,0	19,0	2"	67	0,608	1	1
1070032066 *	32	37,5	60,0	59,5	41,5	14,0	1"	39	0,232	5	1
1070040067 *	40	40,0	60,0	62,0	41,5	14,0	1"	39	0,219	5	1
1070040068 *	40	40,0	74,0	63,0	42,5	15,0	1 1/4"	50	0,331	5	1
1070050069 *	50	43,0	74,0	66,0	42,5	15,0	1 1/4"	50	0,351	5	1
1070050070 *	50	45,0	84,0	67,0	43,5	15,0	1 1/2"	55	0,445	5	1
1070063071 *	63	51,5	84,0	73,5	46,0	15,0	1 1/2"	55	0,425	1	1
1070063072 *	63	51,0	101,0	77,0	49,5	19,0	2"	67	0,196	1	1
1070075073 *	75	51,0	100,0	77,0	47,0	19,0	2"	67	0,676	1	1

*stainless steel





Transition piece __

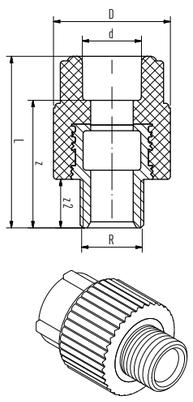


Transition piece with male thread

round, self-sealing — SDR 6 / 7,4 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	z	z2	R	kg	PU	RG
one side socket welding									
1070020051	20	38,5	52,5	38,0	12,0	1/2"	0,090	10	1
1070025052	25	38,5	54,0	38,0	12,0	1/2"	0,078	10	1
1070025053	25	38,5	53,5	37,5	13,0	3/4"	0,085	10	1



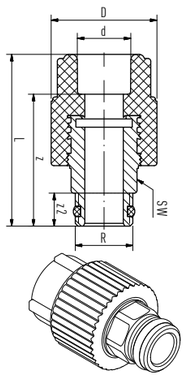
Transition piece with male thread

round, brass or stainless steel — SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass or stainless steel
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	z	z2	R	kg	PU	RG
one side socket welding									
1070020022	20	38,5	56,5	42,0	16,0	1/2"	0,084	10	1
1070020023	20	38,5	57,5	43,0	17,0	3/4"	0,109	10	1
1070025024	25	38,5	58,0	42,0	16,0	1/2"	0,085	10	1
1070025025	25	38,5	57,5	41,5	17,0	3/4"	0,090	10	1
1070032026	32	38,5	59,5	41,5	17,0	3/4"	0,095	5	1
1070020074 *	20	38,5	56,5	42,0	16,0	1/2"	0,096	10	1
1070020075 *	20	38,5	57,5	43,0	17,0	3/4"	0,108	10	1
1070025076 *	25	38,5	58,0	42,0	16,0	1/2"	0,098	10	1
1070025077 *	25	38,5	57,5	41,5	17,0	3/4"	0,108	10	1
1070032078 *	32	38,5	59,5	41,5	17,0	3/4"	0,115	5	1

*stainless steel



Transition piece with male thread

self-sealing, with hexagon threaded transition — SDR 6 / 7,4 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

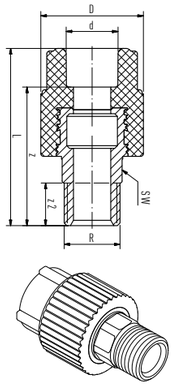
Article no.	d	D	L	z	z2	R	SW	kg	PU	RG
one side socket welding										
1070020056	20	38,5	63,5	49,0	13,0	1/2"	22	0,111	10	1

Transition piece __

Transition piece with male thread

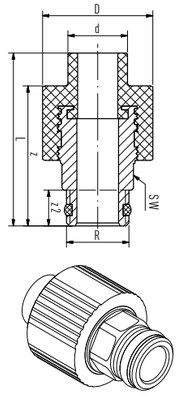
with spanner flat, brass or stainless steel — SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass or stainless steel
Standards: DIN 16962, DIN EN ISO 15874
Colour: green



Article no.	d	D	L	z	z2	R	SW	kg	PU	RG
one side socket welding										
1070020027	20	38,5	66,5	52,0	16,0	1/2"	22	0,104	10	1
1070020028	20	38,5	67,5	53,0	17,0	3/4"	24	0,129	10	1
1070025029	25	38,5	68,0	52,0	16,0	1/2"	21	0,107	10	1
1070025030	25	38,5	67,5	51,5	17,0	3/4"	24	0,103	10	1
1070032031	32	53,0	78,5	60,5	20,0	1"	32	0,216	5	1
1070032032	32	68,0	81,0	63,0	21,0	1 1/4"	42	0,318	5	1
1070040033	40	52,0	81,0	60,5	20,0	1"	32	0,222	5	1
1070040034	40	68,0	84,5	64,0	21,0	1 1/4"	42	0,324	5	1
1070050035	50	68,0	85,5	62,0	21,0	1 1/4"	42	0,351	5	1
1070050036	50	74,0	88,5	65,0	22,0	1 1/2"	46	0,425	5	1
1070063037	63	72,5	94,5	67,0	22,0	1 1/2"	46	0,467	1	1
1070063038	63	84,0	102,5	75,0	23,5	2"	50	0,685	1	1
1070075039	75	84,0	102,0	72,0	23,5	2"	50	0,733	1	1
1070075040	75	100,0	105,0	75,0	26,7	2 1/2"	65	0,970	1	1
1070090041	90	120,0	121,0	88,0	30,0	3"	85	1,326	1	1
1070110042	110	147,0	148,0	111,0	39,0	4"	105	2,730	1	1
1070032079 *	32	53,0	78,5	60,5	20,0	1"	32	0,204	5	1
1070032080 *	32	68,0	81,0	63,0	21,0	1 1/4"	41	0,360	5	1
1070040081 *	40	52,0	81,0	60,5	20,0	1"	32	0,251	5	1
1070040082 *	40	68,0	84,5	64,0	21,0	1 1/4"	41	0,362	5	1
1070050083 *	50	68,0	85,5	62,0	21,0	1 1/4"	41	0,389	5	1
1070050084 *	50	74,0	88,5	65,0	22,0	1 1/2"	46	0,480	5	1
1070063085 *	63	72,5	94,5	67,0	22,0	1 1/2"	46	0,523	1	1
1070063086 *	63	84,0	102,5	75,0	23,5	2"	50	0,708	1	1
1070075087 *	75	84,0	102,0	72,0	23,5	2"	50	0,699	1	1

*stainless steel



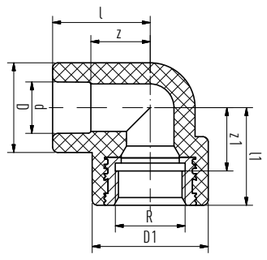
Transition piece with male thread

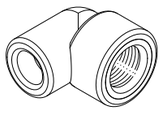
self-sealing., with hexagon threaded transition, outside/outside — SDR 6 / 7,4 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	z	z2	R	SW	kg	PU	RG
one side socket welding										
1070020054	20	38,5	59,0	48,0	13,0	1/2"	22	0,107	10	1

Transition piece __





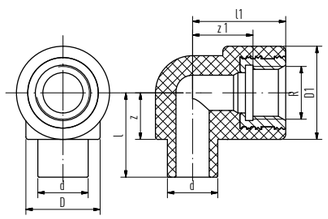
Transition-Elbow with female thread

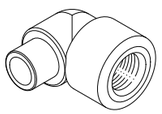
brass or stainless steel – SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass or stainless steel
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	D1	z	z1	R	kg	PU	RG
one side socket welding											
1070020091	20	37,0	37,0	34,0	44,0	22,5	24,0	3/4"	0,102	10	1
1070020092	20	31,0	31,5	29,5	37,0	16,5	18,5	1/2"	0,076	10	1
1070025093	25	37,0	37,0	34,0	44,0	21,0	24,0	3/4"	0,100	10	1
1070025094	25	33,5	31,5	34,0	37,0	17,5	18,5	1/2"	0,075	10	1
1070032095	32	27,5	51,0	43,0	44,0	9,5	38,0	3/4"	0,104	5	1
1070032096	32	34,0	66,5	43,0	60,5	16,0	44,5	1"	0,249	5	1
1070020110 *	20	37,0	37,0	29,5	37,0	22,5	24,0	3/4"	0,095	10	1
1070020111 *	20	31,0	31,5	29,5	37,0	16,5	18,5	1/2"	0,081	10	1
1070025112 *	25	37,0	37,0	34,0	44,0	21,0	24,0	3/4"	0,101	10	1
1070025113 *	25	33,5	31,5	34,0	37,0	17,5	18,5	1/2"	0,082	10	1
1070032114 *	32	35,0	37,0	43,0	37,0	17,0	24,0	1/2"	0,112	5	1
1070032115 *	32	27,5	51,0	43,0	44,0	9,5	38,0	3/4"	0,097	5	1
1070032116 *	32	34,0	66,5	43,0	60,5	16,0	44,5	1"	0,240	5	1

*stainless steel



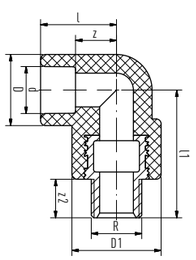


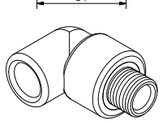
Transition-Elbow with female thread

SDR 6 / 7,4 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	D1	z	z1	R	kg	PU	RG
one side socket welding											
1070020097	20	33,5	37,0	29,5	37,0	18,5	24,0	1/2"	0,076	10	1





Transition-Elbow with male thread

brass or stainless steel – SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass or stainless steel
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	D1	z	z2	R	kg	PU	RG
one side socket welding											
1070020099	20	31,5	53,0	29,5	37,0	17,0	16,0	1/2"	0,108	10	1
1070020100	20	31,5	54,0	34,0	38,0	17,0	17,0	3/4"	0,128	10	1
1070025101	25	31,5	54,0	34,0	38,0	15,5	17,0	3/4"	0,104	10	1
1070032102	32	27,5	68,0	43,0	38,0	9,5	17,0	3/4"	0,112	5	1
1070032103	32	31,0	85,5	43,0	52,0	13,0	20,0	1"	0,231	5	1
1070020117 *	20	31,5	53,0	29,5	37,0	17,0	16,0	1/2"	0,035	10	1
1070020118 *	20	31,5	54,0	34,0	38,0	17,0	17,0	3/4"	0,123	10	1
1070025119 *	25	31,5	54,0	34,0	38,0	15,5	17,0	3/4"	0,121	10	1
1070032120 *	32	27,5	68,0	43,0	38,0	9,5	17,0	3/4"	0,128	5	1

*stainless steel

Transition piece __

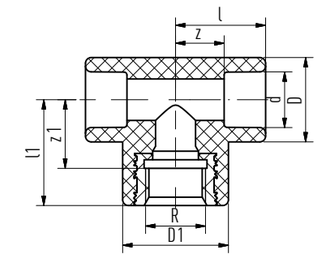
Transition-T-piece with female thread

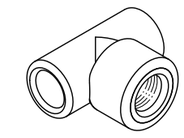
brass or stainless steel – SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass or stainless steel
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	D1	z	z1	R	kg	PU	RG
double sided socket welding											
1060020141	20	31,5	37,0	29,5	37,0	17,0	24,0	1/2"	0,086	10	1
1060020142	20	37,0	37,0	34,0	44,0	22,5	24,0	3/4"	0,121	10	1
1060025143	25	34,0	38,0	34,0	37,0	18,0	25,0	1/2"	0,090	10	1
1060025144	25	37,0	37,0	34,0	44,0	21,0	24,0	3/4"	0,109	10	1
1060032145	32	35,0	37,0	43,0	37,0	17,0	24,0	1/2"	0,103	5	1
1060032146	32	27,5	51,0	43,0	44,0	9,5	38,0	3/4"	0,111	5	1
1060032147	32	31,5	67,0	43,0	60,0	13,5	45,0	1"	0,255	5	1
1060040148	40	42,0	40,0	52,0	37,0	21,5	27,0	1/2"	0,142	5	1
1060040149	40	40,5	40,5	52,0	52,0	20,0	27,5	3/4"	0,147	5	1
1060040150	40	41,5	56,0	52,0	60,0	21,0	34,0	1"	0,276	5	1
1060050151	50	49,5	63,5	68,0	60,0	26,0	41,5	1"	0,385	5	1
1060050152	50	49,5	44,5	68,0	43,0	26,0	31,5	1/2"	0,237	5	1
1060050153	50	49,5	44,5	68,0	43,0	26,0	31,5	3/4"	0,243	5	1
1060020160 *	20	31,5	37,0	29,5	37,0	17,0	24,0	1/2"	0,087	10	1
1060020161 *	20	37,0	37,0	34,0	44,0	22,5	24,0	3/4"	0,108	10	1
1060025162 *	25	34,5	38,0	34,0	37,0	18,5	25,0	1/2"	0,093	10	1
1060025163 *	25	37,0	37,0	34,0	44,0	21,0	24,0	3/4"	0,111	10	1
1060032164 *	32	35,0	37,0	43,0	37,0	17,0	24,0	1/2"	0,113	5	1
1060032165 *	32	27,5	51,0	43,0	44,0	9,5	38,0	3/4"	0,111	5	1
1060032166 *	32	31,5	67,0	43,0	60,0	13,5	45,0	1"	0,082	5	1

*stainless steel





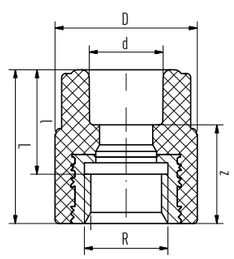
Transition piece with female thread

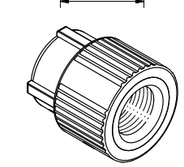
round, brass or stainless steel – SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass or stainless steel
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

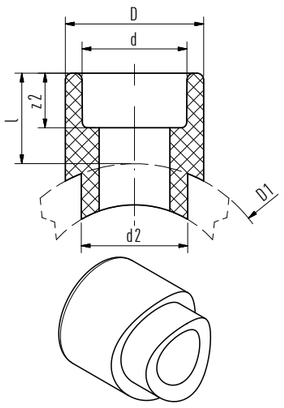
Article no.	d	l	D	L	z	R	kg	PU	RG
one side socket welding									
1070020002	20	27,5	37,5	40,5	26,0	1/2"	0,064	10	1
1070020003	20	27,5	43,5	40,5	26,0	3/4"	0,089	10	1
1070025004	25	29,5	38,5	42,5	26,5	1/2"	0,065	10	1
1070025005	25	27,5	43,5	40,5	24,5	3/4"	0,087	10	1
1070032006	32	30,5	43,5	43,5	25,5	3/4"	0,092	5	1
1070020060 *	20	27,5	37,5	40,5	26,0	1/2"	0,069	10	1
1070020061 *	20	27,5	43,5	40,5	26,0	3/4"	0,090	10	1
1070025062 *	25	29,5	38,5	42,5	26,5	1/2"	0,069	10	1
1070025063 *	25	27,5	43,5	40,5	24,5	3/4"	0,086	10	1
1070032064 *	32	30,5	43,5	43,5	25,5	3/4"	0,092	5	1
1070032065 *	32	28,0	37,0	41,0	23,0	1/2"	0,078	5	1

*stainless steel





Weld-in and weld-on saddle __



Weld-in saddle

SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	D1	d	d2	l	D	z2	kg	PU	RG
socket welding									
1030040001 *	40	20	25,0	27,0	29,5	14,5	0,016	5	1
1030040002 *	40	25	25,0	28,5	34,0	16,0	0,017	5	1
1030050003	50	20	25,0	27,5	29,5	14,5	0,018	5	1
1030050004	50	25	25,0	28,5	34,0	16,0	0,019	5	1
1030063005	63	20	25,0	27,5	29,5	14,5	0,017	5	1
1030063006	63	25	25,0	28,5	34,0	16,0	0,019	5	1
1030063007	63	32	32,0	30,0	43,0	18,0	0,028	5	1
1030075008	75	20	25,0	27,5	29,5	14,5	0,018	5	1
1030075009	75	25	25,0	28,5	34,0	16,0	0,019	5	1
1030075010	75	32	32,0	30,0	43,0	18,0	0,028	5	1
1030075011	75	40	40,0	34,0	52,0	20,5	0,049	5	1
1030090012	90	20	25,0	27,5	29,5	14,5	0,018	5	1
1030090013	90	25	25,0	28,5	34,0	16,0	0,019	5	1
1030090014	90	32	32,0	30,0	43,0	18,0	0,029	5	1
1030090015	90	40	40,0	34,0	52,0	20,5	0,048	5	1
1030110016	110	20	25,0	27,5	29,5	14,5	0,019	5	1
1030110017	110	25	25,0	28,5	34,0	16,0	0,020	5	1
1030110018	110	32	32,0	30,0	43,0	18,0	0,030	5	1
1030110019	110	40	40,0	34,0	52,0	20,5	0,050	5	1
1030110020	110	50	50,0	34,0	68,0	23,5	0,091	5	1
1030125021	125	20	25,0	27,5	29,5	14,5	0,019	5	1
1030125022	125	25	25,0	28,5	34,0	16,0	0,020	5	1
1030125023	125	32	32,0	30,0	43,0	18,0	0,029	5	1
1030125024	125	40	40,0	34,0	52,0	20,5	0,050	5	1
1030125025	125	50	50,0	34,0	68,0	23,5	0,090	5	1
1030125026	125	63	63,0	38,0	84,0	27,5	0,149	5	1
1030160027	160	20	25,0	27,5	29,5	14,5	0,021	5	1
1030160028	160	25	25,0	28,5	34,0	16,0	0,023	5	1
1030160029	160	32	32,0	30,0	43,0	18,0	0,034	5	1
1030160030	160	40	40,0	34,0	52,0	20,5	0,054	5	1
1030160031	160	50	50,0	34,0	68,0	23,5	0,094	5	1
1030160032	160	63	63,0	38,0	84,0	27,5	0,157	5	1
1030160033	160	75	75,0	42,0	100,0	30,0	0,238	5	1
1030160034	160	90	90,0	45,0	120,0	33,0	0,360	5	1
1030250035	200-250	20	25,0	27,5	29,5	14,5	0,020	5	1
1030250036	200-250	25	25,0	28,5	34,0	16,0	0,021	5	1
1030250037	200-250	32	32,0	30,0	43,0	18,0	0,031	5	1
1030200038	200	40	40,0	34,0	52,0	20,5	0,049	5	1
1030200039	200	50	50,0	34,0	68,0	23,5	0,087	5	1
1030200040	200	63	63,0	37,5	84,0	27,5	0,146	5	1
1030200041	200	75	75,0	42,0	100,0	30,0	0,225	5	1
1030200042	200	90	90,0	45,0	120,0	33,0	0,356	5	1
1030200043	200	110	110,0	49,0	147,0	37,0	0,638	5	1
1030200044	200	125	125,0	55,0	167,0	40,0	0,862	5	1

*not for aquatherm blue pipe OT continued on next page ...

Weld-in and weld-on saddle __

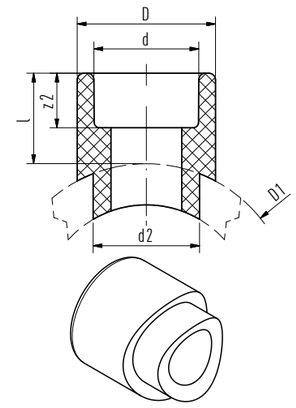
Weld-in saddle

(Continued) SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	D1	d	d2	l	D	z2	kg	PU	RG
1030250045	250	40	40,0	34,0	52,0	20,5	0,053	5	1
1030250046	250	50	50,0	34,0	68,0	23,5	0,090	5	1
1030250047	250	63	63,0	37,5	84,0	27,5	0,152	5	1
1030250048	250	75	75,0	42,0	100,0	30,0	0,222	5	1
1030250049	250	90	90,0	45,0	120,0	33,0	0,348	5	1
1030250050	250	110	110,0	49,0	147,0	37,0	0,602	5	1
1030250051	250	125	125,0	55,0	167,0	40,0	0,820	5	1
1030315052	315-355	63	63,0	37,5	84,0	27,5	0,153	1	1
1030315053	315-355	75	75,0	42,0	100,0	30,0	0,230	1	1
1030315054	315	90	90,0	45,0	120,0	33,0	0,363	1	1
1030315055	315	110	110,0	49,0	147,0	37,0	0,592	1	1
1030315056	315	125	125,0	55,0	167,0	40,0	0,830	1	1

With weld-on surface and additional weld-in socket for fusion with the pipe wall. The tools required for processing are listed from page /.

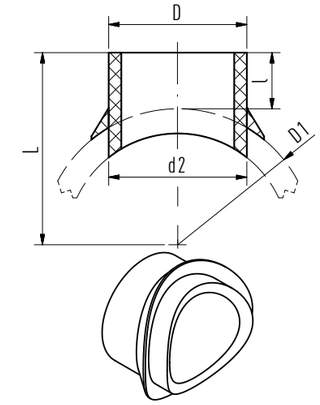


Weld-in saddle butt-welding

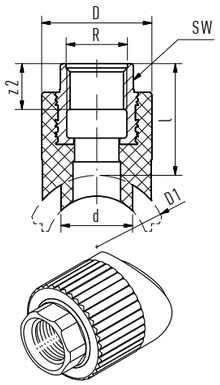
Material: fusiolen® PP-RCT / fibreglass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	D1	D	d2	l	L	kg	PU	RG
butt welding								
SDR 9								
1033315073	315	160,0	160,0	80,0	237,5	0,831	1	1
1033355074	355	160,0	160,0	80,0	257,5	0,845	1	1
SDR 11								
1034315057	315	160,0	160,0	80,0	237,5	0,862	1	1
1034355061	355	160,0	160,0	80,0	257,5	0,867	1	1

With weld-on surface and additional weld-in socket for fusion with the pipe wall. The tools required for processing are listed from page 178.



Weld-in and weld-on saddle



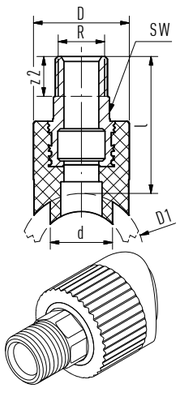
Weld-in saddle with female thread

With spanner flat — SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	D1	d	l	D	z2	R	SW	kg	PU	RG
socket welding										
1030040100 *	40	25	39,0	38,5	16,0	1/2"	24	0,088	5	1
1030050106	50	25	39,0	38,5	16,0	1/2"	24	0,090	5	1
1030063112	63	25	39,0	38,5	16,0	1/2"	24	0,089	5	1
1030075118	75	25	39,0	38,5	16,0	1/2"	24	0,083	5	1
1030090126	90	25	39,0	38,5	16,0	1/2"	24	0,090	5	1
1030110134	110	25	39,0	38,5	16,0	1/2"	24	0,089	5	1
1030125142	125	25	39,0	38,0	16,0	1/2"	24	0,092	5	1
1030160150	160	25	39,0	38,5	16,0	1/2"	24	0,092	5	1
1030250158	200-250	25	39,0	38,5	16,0	1/2"	24	0,092	5	1
1030040101	40	25	39,0	43,5	21,0	3/4"	31	0,107	5	1
1030050107	50	25	39,0	43,5	21,0	3/4"	31	0,110	5	1
1030063113	63	25	39,0	43,5	21,0	3/4"	31	0,109	5	1
1030075119	75	25	39,0	43,5	21,0	3/4"	31	0,109	5	1
1030090127	90	25	39,0	43,5	21,0	3/4"	31	0,110	5	1
1030110135	110	25	39,0	43,5	21,0	3/4"	31	0,110	5	1
1030125143	125	25	39,0	43,5	21,0	3/4"	31	0,112	5	1
1030160151	160	25	39,0	43,5	21,0	3/4"	31	0,112	5	1
1030250159	200-250	25	39,0	43,5	21,0	3/4"	31	0,112	5	1
1030075120	75	32	43,0	60,0	22,0	1"	39	0,223	5	1
1030090128	90	32	43,0	60,0	22,0	1"	39	0,223	5	1
1030110136	110	32	43,0	60,0	22,0	1"	39	0,223	5	1
1030125144	125	32	43,0	60,0	22,0	1"	39	0,224	5	1
1030160152	160	32	43,0	60,0	22,0	1"	39	0,226	5	1
1030250160	200-250	32	43,0	60,0	22,0	1"	39	0,244	5	1

*not for aquatherm blue pipe OT



Weld-in saddle with male thread

With spanner flat — SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	D1	d	l	D	z2	R	SW	kg	PU	RG
one side socket welding										
1030040102 *	40	25	55,0	38,5	16,0	1/2"	21	0,088	5	1
1030050108	50	25	55,0	38,5	16,0	1/2"	21	0,090	5	1
1030063114	63	25	55,0	38,5	16,0	1/2"	21	0,089	5	1
1030075121	75	25	55,0	38,5	16,0	1/2"	21	0,097	5	1
1030090129	90	25	55,0	38,5	16,0	1/2"	21	0,090	5	1
1030110137	110	25	55,0	38,5	16,0	1/2"	21	0,089	5	1
1030125145	125	25	55,0	38,5	16,0	1/2"	21	0,092	5	1
1030160153	160	25	55,0	38,5	16,0	1/2"	21	0,092	5	1
1030040103 *	40	25	56,0	43,5	17,0	3/4"	24	0,107	5	1
1030050109	50	25	56,0	43,5	17,0	3/4"	24	0,110	5	1
1030063115	63	25	56,0	43,5	17,0	3/4"	24	0,109	5	1
1030075122	75	25	56,0	43,5	17,0	3/4"	24	0,109	5	1
1030090130	90	25	56,0	43,5	17,0	3/4"	24	0,110	5	1
1030110138	110	25	56,0	43,5	17,0	3/4"	24	0,110	5	1
1030125146	125	25	56,0	43,5	17,0	3/4"	24	0,112	5	1
1030160154	160	25	56,0	43,5	17,0	3/4"	24	0,112	5	1

*not for aquatherm blue pipe OT

With weld-on surface and additional weld-in socket for fusion with the pipe wall. The tools required for processing are listed from page 178.

Weld-in and weld-on saddle

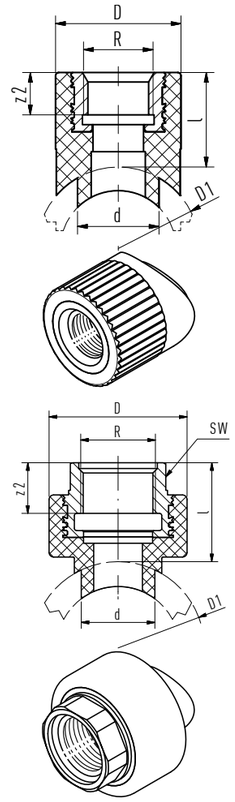
Weld-in saddle with female thread

SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R / stainless steel
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	D1	d	l	D	z2	R	SW	kg	PU	RG
one side socket welding										
1030040104 **	40	25	39,0	38,5	16,0	1/2"	-	0,062	5	1
1030050110	50	25	39,0	38,5	16,0	1/2"	-	0,064	5	1
1030063116	63	25	39,0	38,5	16,0	1/2"	-	0,064	5	1
1030075123	75	25	39,0	38,5	16,0	1/2"	-	0,064	5	1
1030090131	90	25	39,0	38,5	16,0	1/2"	-	0,064	5	1
1030110139	110	25	39,0	38,5	16,0	1/2"	-	0,069	5	1
1030125147	125	25	39,0	38,5	16,0	1/2"	-	0,065	5	1
1030160155	160	25	39,0	38,5	16,0	1/2"	-	0,066	5	1
1030250161	200-250	25	39,0	38,5	16,0	1/2"	-	0,065	5	1
1030040105	40	25	39,0	43,5	21,0	3/4"	-	0,082	5	1
1030050111	50	25	39,0	43,5	21,0	3/4"	-	0,074	5	1
1030063117	63	25	39,0	43,5	21,0	3/4"	-	0,073	5	1
1030075124	75	25	39,0	43,5	21,0	3/4"	-	0,074	5	1
1030090132	90	25	39,0	43,5	21,0	3/4"	-	0,074	5	1
1030110140	110	25	39,0	43,5	21,0	3/4"	-	0,083	5	1
1030125148	125	25	39,0	43,5	21,0	3/4"	-	0,074	5	1
1030160156	160	25	39,0	43,5	21,0	3/4"	-	0,076	5	1
1030250162	200-250	25	39,0	43,5	21,0	3/4"	-	0,084	5	1
1030075125 *	75	32	43,0	60,0	22,0	1"	39	0,234	5	1
1030090133 *	90	32	43,0	60,0	22,0	1"	39	0,235	5	1
1030110141 *	110	32	43,0	60,0	22,0	1"	39	0,236	5	1
1030125149 *	125	32	43,0	60,0	22,0	1"	39	0,235	5	1
1030160157 *	160	32	43,0	60,0	22,0	1"	39	0,238	5	1
1030250163 *	200-250	32	43,0	60,0	22,0	1"	39	0,237	5	1

*with hexagon threaded transition
***not for aquatherm blue pipe OT



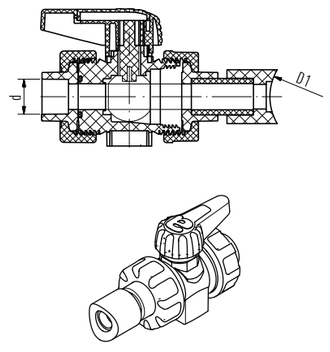
aquatherm weld-on saddle set

with ball valve for mounting under pressure
in use with hot tapping tool — SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

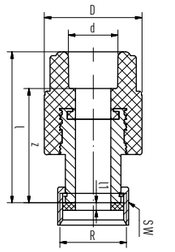
Article no.	d	D1	PU	RG
socket welding				
1090075010	40	75	1	1
1090090011	40	90	1	1
1090110012	40	110	1	1
1090125013	40	125	1	1
1090125014	63	125	1	1
1090160015	40	160	1	1
1090160016	63	160	1	1
1090200017	40	200	1	1
1090200018	63	200	1	1
1090250019	40	250	1	1
1090250020	63	250	1	1
1090315021	63	315-355	1	1
1090400022	63	400-630	1	1

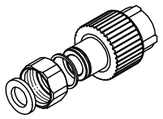
Items are not always available from stock. Please enquire separately about delivery times and quantities.
The tools required for processing are listed from page 184.



back to content

Screwed connections



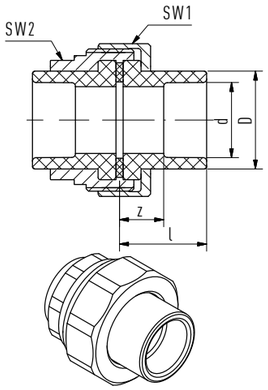


Water meter nut adapter

with gasket – SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	z	R	SW	kg	PU	RG
one side socket welding										
1050020090	20	59,5	3,0	38,5	45,0	3/4"	30	0,136	1	1
1050025091	25	61,0	3,0	38,5	45,0	3/4"	30	0,155	1	1
1050032092	32	62,0	3,0	43,5	44,0	3/4"	30	0,162	1	1

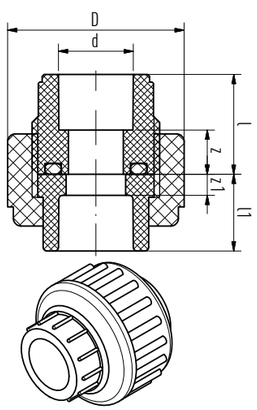


Coupling screw joint, brass

SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green, brass

Article no.	d	l	D	z	SW1	SW2	kg	PU	RG
socket welding									
1050032040	32	36,5	41,0	18,5	64	50	0,479	1	1
1050040041	40	38,0	50,0	17,5	80	60	0,841	1	1
1050050042	50	41,0	61,0	17,5	86	70	0,821	1	1
1050063043	63	45,0	76,0	17,5	108	90	1,498	1	1
1050075044	75	31,0	90,0	17,5	128	104	1,998	1	1



Coupling screw joint

SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	z	z1	kg	PU	RG
socket welding									
1050020050	20	26,0	20,0	46,0	12,0	5,5	0,036	10	1
1050025051	25	28,0	21,0	56,0	12,0	5,0	0,058	10	1
1050032052	32	30,0	23,0	66,0	12,0	5,0	0,089	5	1
1050040053	40	34,0	25,5	79,0	13,5	5,0	0,136	5	1
1050050054	50	39,0	28,8	87,0	15,5	5,0	0,170	5	1
1050063055	63	47,5	32,5	107,0	20,0	5,0	0,240	1	1
1050075056	75	50,0	36,0	128,0	20,0	6,0	0,546	1	1

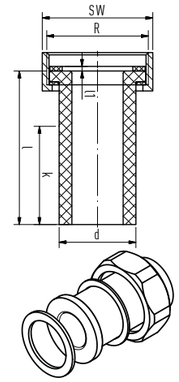
Screwed connections

Loose nut adapter

with gasket – SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	k	R	SW	kg	PU	RG
one side socket welding									
1050020082	20	100,0	3,0	65,0	1"	36	0,079	1	1
1050025083	25	100,0	3,0	62,0	1 1/4"	46	0,104	1	1
1050032084	32	100,0	3,0	58,0	1 1/2"	52	0,175	1	1
1050040085	40	100,0	3,0	53,0	2"	64	0,258	1	1

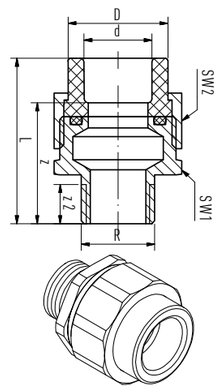


Transition coupling with male thread

with union nut and welding socket – SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	z	z2	R	SW1	SW2	kg	PU	RG
one side socket welding											
1050020070	20	27,5	52,5	38,0	13,5	1/2"	34	36	0,145	1	1
1050025071	25	36,0	59,5	43,5	14,5	3/4"	42	46	0,243	1	1
1050032072	32	41,5	64,5	46,5	16,8	1"	48	52	0,336	1	1
1050040073	40	53,0	70,0	49,5	19,1	1 1/4"	60	64	0,517	1	1
1050050074	50	59,0	84,8	61,3	22,0	1 1/2"	48	72	0,624	1	1
1050063075	63	74,0	95,5	68,0	25,0	2"	62	89	1,045	1	1

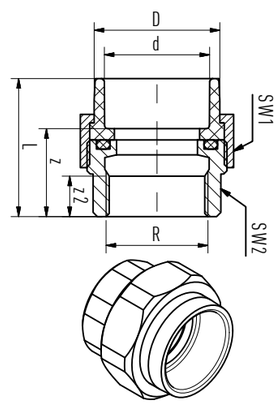


Transition coupling with female thread

with union nut and welding socket – SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	z	z2	R	SW1	SW2	kg	PU	RG
one side socket welding											
1050020076	20	27,5	45,0	30,5	15,0	1/2"	36	24	0,112	1	1
1050025077	25	36,0	49,0	33,0	15,5	3/4"	46	32	0,193	1	1
1050032078	32	41,5	54,0	36,0	15,0	1"	52	40	0,291	1	1
1050040079	40	53,0	56,5	36,0	20,0	1 1/4"	64	47	0,423	1	1
1050050080	50	59,0	64,8	41,3	19,0	1 1/2"	72	57	0,610	1	1
1050063081	63	74,0	74,5	47,0	18,0	2"	89	68	0,924	1	1



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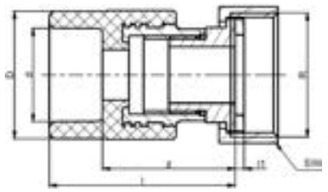
Screwed connections

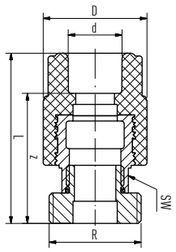


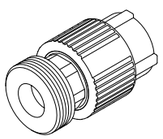
Nut adapter ISO-standard

SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	z	R	SW	kg	PU	RG
one side socket welding										
1050020097	20	58,5	3,0	38,5	34,0	1"	36	0,182	10	1
1050025098	25	60,0	3,0	38,5	44,0	1"	36	0,186	10	1
1050025099	25	60,0	3,0	43,5	44,0	1 1/4"	46	0,274	10	1
1050032100	32	63,0	3,0	43,5	45,0	1 1/4"	46	0,279	5	1
1050032101	32	69,5	3,0	60,0	51,5	1 1/2"	52	0,446	5	1
1050040102	40	72,0	3,0	60,0	51,5	1 1/2"	52	0,421	5	1
1050040103	40	72,0	3,0	74,0	51,5	2"	64	0,719	5	1
1050050104	50	75,0	3,0	74,0	51,5	2"	64	0,736	5	1
1050050105	50	77,0	3,0	84,0	53,5	2 1/4"	72	0,831	5	1
1050063106	63	83,5	3,0	84,0	56,0	2 1/4"	72	0,889	1	1
1050063107	63	82,5	3,0	101,0	55,0	2 3/4"	89	1,306	1	1
1050075108	75	85,0	3,0	100,0	55,0	2 3/4"	89	1,275	1	1
1050075109	75	91,0	3,0	100,0	61,0	3 1/2"	110	1,818	1	1



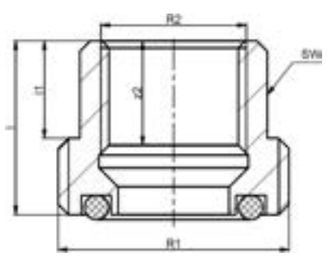


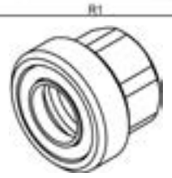
Counterpart with male thread

with welding socket for ISO-Norm-screwed connection — SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	D	L	z	R	SW	kg	PU	RG
one side socket welding									
1050020110	20	37,5	61,5	47,0	1"	24	0,151	10	1
1050025111	25	37,5	63,0	47,0	1"	24	0,153	10	1
1050025112	25	43,5	63,0	47,0	1 1/4"	31	0,221	10	1
1050032113	32	43,5	66,0	48,0	1 1/4"	31	0,226	5	1
1050032114	32	60,0	76,5	58,5	1 1/2"	39	0,408	5	1
1050040115	40	60,0	79,0	58,5	1 1/2"	39	0,414	5	1
1050040116	40	74,0	79,0	58,5	2"	50	0,650	5	1
1050050117	50	74,0	82,0	58,5	2"	50	0,634	5	1
1050050118	50	84,0	83,0	59,5	2 1/4"	55	0,750	5	1
1050063119	63	84,0	89,5	62,0	2 1/4"	55	0,728	1	1
1050063120	63	101,0	95,0	65,5	2 3/4"	67	1,093	1	1
1050075121	75	100,0	95,0	65,0	2 3/4"	67	1,117	1	1
1050075122	75	100,0	100,0	70,0	3 1/2"	67	1,436	1	1





brass counterpart with female thread

to ISO-Norm-screwed connection — SDR 6 / 7,4 / 9 / 11

Material: brass

Article no.	l1	L	z2	R1	R2	SW	kg	PU	RG
1050000130	14,0	25,0	15,0	1"	1/2"	25	0,063	10	1
1050000131	12,5	26,0	14,0	1 1/4"	3/4"	32	0,119	10	1
1050000132	15,0	31,0	17,0	1 1/2"	1"	40	0,175	5	1
1050000133	17,0	33,0	22,0	2"	1 1/4"	47	0,263	5	1
1050000134	20,0	36,0	19,0	2 1/4"	1 1/2"	57	0,333	5	1
1050000135	24,0	42,0	24,0	2 3/4"	2"	68	0,517	1	1
9600027522	24,0	46,0	27,0	3 1/2"	2 1/2"	84	0,801	1	1
9600027524	27,0	46,0	27,0	4"	3"	97	0,943	1	1

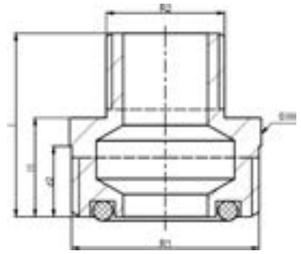
Flange adapter

brass counterpart with male thread

to ISO-Norm-screwed connection — SDR 6 / 7,4 / 9 / 11

Material: brass

Article no.	l1	L	z2	R1	R2	SW	kg	PU	RG
1050000138	17,5	32,5	10,5	1"	1/2"	34	0,109	10	1
1050000139	21,0	38,5	12,5	1 1/4"	3/4"	42	0,188	10	1
1050000140	22,5	41,5	13,5	1 1/2"	1"	48	0,211	5	1
1050000141	22,5	44,5	13,0	2"	1 1/4"	60	0,363	5	1
1050000142	34,0	56,0	16,0	2 1/4"	1 1/2"	48	0,472	5	1
1050000143	38,0	63,0	16,0	2 3/4"	2"	62	0,803	1	1
9600027722	42,0	70,0	22,0	3 1/2"	2 1/2"	82	1,189	1	1
9600027724	42,0	74,0	22,0	4"	3"	97	1,398	1	1



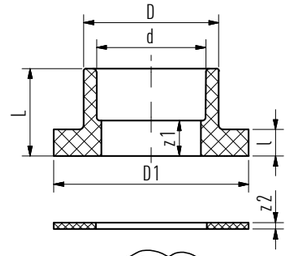
Flange adapter with gasket

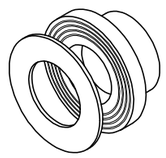
SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	L	l	D	D1	z1	z2	kg	PU	RG
one side socket welding										
1050032020	32	34,0	10,0	41,0	68,0	16,0	3,0	0,053	1	1
1050040021	40	35,5	11,0	50,0	78,0	15,0	3,0	0,071	1	1
1050050022	50	39,5	12,0	61,0	88,0	16,0	3,0	0,071	1	1
1050063023	63	43,5	14,0	76,0	102,0	16,0	3,0	0,112	1	1
1050075024	75	46,0	16,0	90,0	122,0	16,0	3,0	0,169	1	1
1050090025	90	50,0	17,0	108,0	138,0	17,0	3,0	0,261	1	1
1050110026	110	55,5	18,5	131,0	158,0	18,5	3,0	0,329	1	1
1050125028	125	63,0	20,0	165,0	188,0	23,0	3,0	0,724	1	1
1050125027 *	125	195,0	18,5	131,0	158,0	-	3,0	1,180	1	1

*Can only be used with 125 mm fitting; with 110 mm flange adapter / suitable flange adapter for shutt-off valve available on request





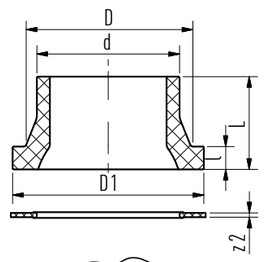
Flange adapter butt welding

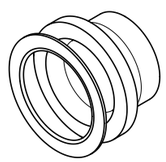
with gasket

Material: fusiolen® PP-RCT
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	D	D1	L	z2	kg	PU	RG
one side butt welding									
SDR 9									
1023160000 *	160	25,0	175,0	212,0	93,0	3,0	1,150	1	1
1023200031	200	32,0	232,0	268,0	130,0	6,0	2,292	1	1
1023250032	250	35,0	285,0	320,0	130,0	6,0	3,313	1	1
1023315033	315	52,0	337,0	370,0	172,5	6,0	5,640	1	1
SDR 11									
1054160030	160	25,0	175,0	212,0	93,0	3,0	0,955	1	1
1054200032	200	32,0	232,0	268,0	130,0	6,0	1,957	1	1
1054250034	250	35,0	285,0	320,0	130,0	6,0	2,717	1	1
1054315035	315	35,0	335,0	370,0	168,0	6,0	6,000	1	1

*Up to 160 mm EPDM seal without steel ring insert. From 200 mm EPDM seal with steel ring insert.
Suitable flange adapter for shutt-off valve available on request.





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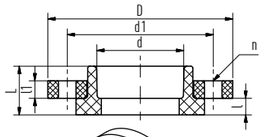
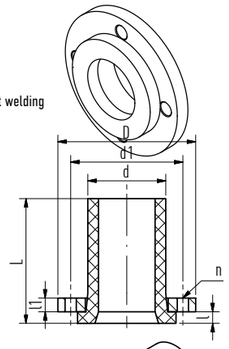
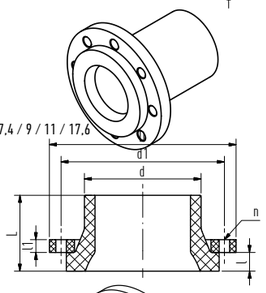
Flange adapter



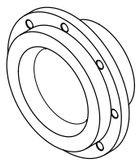
socket welding



SDR 6 / 7,4 / 9 / 11 / 17,6



butt welding



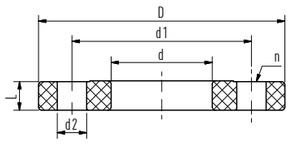
Flange adapter incl. Flange PN6

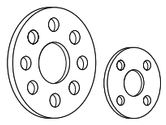
without gasket

Material: Flange: steel galvanised, Flange adapter: fusiolen® PP-R
Standards: Flange according to DIN 2641
Colour: Flange: black / Flange adapter: green

Article no.	d	D	d1	l	l1	L	n	kg	PU	RG
socket welding										
SDR 6 / 7,4 / 9 / 11 / 17,6										
1050032001	**32**	**100,0**	**75,0**	**10,0**	**10,0**	**34,0**	**4**	**1,090**	**1**	**1**
1050040002	**40**	**120,0**	**90,0**	**11,0**	**10,0**	**35,5**	**4**	**1,170**	**1**	**1**
1050050003	**50**	**130,0**	**100,0**	**12,0**	**10,0**	**39,5**	**4**	**1,360**	**1**	**1**
1050063004	**63**	**140,0**	**110,0**	**14,0**	**10,0**	**43,5**	**4**	**0,886**	**1**	**1**
1050075005	**75**	**160,0**	**130,0**	**16,0**	**10,0**	**46,0**	**4**	**1,148**	**1**	**1**
1050090006	**90**	**190,0**	**150,0**	**17,0**	**10,0**	**50,0**	**4**	**1,618**	**1**	**1**
1050110007	**110**	**210,0**	**170,0**	**18,5**	**10,0**	**55,5**	**4**	**1,824**	**1**	**1**
1050125009	**125**	**240,0**	**200,0**	**20,0**	**12,0**	**63,0**	**4**	**3,945**	**1**	**1**
SDR 6 / 7,4 / 9 / 11 / 17,6										
1050125008 *	**125**	**210,0**	**170,0**	**18,5**	**10,0**	**195,0**	**8**	**2,715**	**1**	**1**
butt welding										
SDR 11										
1050160010	**160**	**265,0**	**225,0**	**25,0**	**12,0**	**93,0**	**8**	**4,136**	**1**	**1**
1050200011	**200**	**320,0**	**280,0**	**32,0**	**12,0**	**130,0**	**8**	**6,694**	**1**	**1**
1050250012	**250**	**375,0**	**335,0**	**35,0**	**12,0**	**130,0**	**8**	**9,500**	**1**	**1**

d = Connection dimension, d1 = hole-circle, PN 6 = Flange according to DIN 2641
*125 mm Fitting with 110 mm, flange adapter incl. flange PN6 use only in combination with a fitting





Plastic coated steel flange

SDR 6 / 7,4 / 9 / 11 / 17,6

Material: PP / steel
Standards: Flange according to DIN EN 1092, DIN 2501
Colour: grey

Article no.	fitting Art. no.	Ø Flange adapter	DN	d	d1	D	d2	L	n	kg	PU	RG
1040032130	**1050032020**	**32**	**25**	**42,0**	**85,0**	**116,0**	**14,0**	**15,5**	**4**	**0,469**	**1**	**1**
1040040131	**1050040021**	**40**	**32**	**51,0**	**100,0**	**141,0**	**18,0**	**17,5**	**4**	**0,722**	**1**	**1**
1040050132	**1050050022**	**50**	**40**	**62,0**	**110,0**	**151,0**	**18,0**	**17,5**	**4**	**0,770**	**1**	**1**
1040063133	**1050063023**	**63**	**50**	**78,0**	**125,0**	**166,0**	**18,0**	**19,0**	**4**	**0,911**	**1**	**1**
1040075134	**1050075024**	**75**	**65**	**92,0**	**145,0**	**186,0**	**18,0**	**19,0**	**4**	**1,132**	**1**	**1**
1040090135	**1050090025**	**90**	**80**	**110,0**	**160,0**	**201,0**	**18,0**	**21,0**	**8**	**1,356**	**1**	**1**
1040110136	**1050110026** **1050125027**	**110**	**100**	**133,0**	**180,0**	**221,0**	**18,0**	**22,0**	**8**	**1,475**	**1**	**1**
1040125137	**1050125028** **(125 mm)**	**125**	**125**	**167,0**	**210,0**	**251,0**	**18,0**	**26,0**	**8**	**2,082**	**1**	**1**
1040160138	**1052160029** **1054160030**	**160**	**150**	**178,0**	**240,0**	**286,0**	**22,0**	**27,0**	**8**	**3,671**	**1**	**1**
1040200139	**1052200031** **1054200032**	**200**	**200**	**235,0**	**295,0**	**341,0**	**22,0**	**28,0**	**8**	**4,709**	**1**	**1**
1040250140	**1052250033** **1054250034**	**250**	**250**	**288,0**	**350,0**	**406,0**	**22,0**	**31,0**	**12**	**7,094**	**1**	**1**
1040315141	**1054315035**	**315**	**300**	**340,0**	**400,0**	**460,0**	**22,0**	**33,5**	**12**	**9,500**	**1**	**1**
1040355142	**1054355036**	**355**	**350**	**376,0**	**460,0**	**520,0**	**22,0**	**39,0**	**16**	**15,300**	**1**	**1**
1040400143	**2057400105**	**400**	**400**	**430,0**	**515,0**	**565,0**	**26,0**	**34,0**	**16**	**19,680**	**1**	**1**
1040450144 *	**2057450106**	**450**	**500**	**517,0**	**620,0**	**670,0**	**26,0**	**42,0**	**20**	**22,880**	**1**	**1**
1040500145 *	**2057500107**	**500**	**500**	**533,0**	**620,0**	**670,0**	**26,0**	**38,0**	**20**	**19,000**	**1**	**1**
1040630146 *	**2057630108**	**630**	**600**	**645,0**	**725,0**	**785,0**	**30,0**	**40,0**	**20**	**25,800**	**1**	**1**

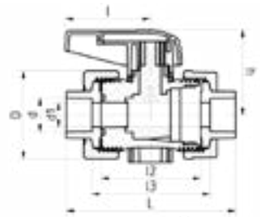
d = Connection dimension, d1 = hole-circle, PN10/16= Flange according to DIN EN1092, DIN2501
*Flange PN16 200 – 630 mm (Art. no. 9700015934–9700015954) available on request.
**Material: steel/epoxy

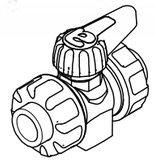
Valves

PP-ball valve, with union nut and welding socket

SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R
Colour: green





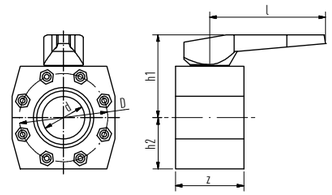
Article no.	d	d1	D	h	l1	l2	l3	L	l	kg	PU	RG
socket welding												
1090020052	**20**	**13,5**	**50,3**	**48,0**	**25,0**	**56,5**	**68,0**	**97,0**	**48,0**	**0,118**	**1**	**1**
1090025053	**25**	**18,5**	**59,0**	**56,5**	**25,0**	**65,5**	**78,0**	**110,0**	**59,0**	**0,184**	**1**	**1**
1090032054	**32**	**23,9**	**70,3**	**64,5**	**26,0**	**72,0**	**84,5**	**120,5**	**59,0**	**0,274**	**1**	**1**
1090040055	**40**	**31,0**	**85,9**	**83,3**	**45,0**	**85,0**	**100,0**	**141,0**	**63,5**	**0,483**	**1**	**1**
1090050056	**50**	**38,5**	**99,5**	**89,4**	**45,0**	**89,0**	**107,0**	**154,0**	**63,5**	**0,648**	**1**	**1**
1090063057	**63**	**50,0**	**125,5**	**115,0**	**45,0**	**101,0**	**118,0**	**173,0**	**108,0**	**1,206**	**1**	**1**
1090075051	**75**	**-**	**129,0**	**139,0**	**-**	**-**	**216,0**	**276,0**	**152,0**	**2,441**	**1**	**1**

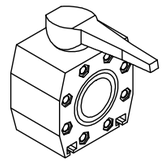
Also suitable for vacuum pipes.

PP-ball valve, with flange connection on both sides

SDR 6 / 7,4 / 9 / 11 / 17,6

Material: fusiolen® PP-R
Colour: green





Article no.	für Ø	d	l	D	z	h1	h2	kg	PU	RG
1090090058	**90**	**77,0**	**210,0**	**160,0**	**124,0**	**150,0**	**93,0**	**4,196**	**1**	**1**
1090110059	**110**	**94,0**	**260,0**	**180,0**	**145,0**	**165,0**	**103,0**	**5,612**	**1**	**1**
1090160060	**160**	**135,0**	**310,0**	**240,0**	**205,0**	**210,0**	**136,5**	**13,420**	**1**	**1**

Also suitable for vacuum pipes.

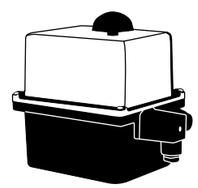
For dimension 125 mm the PP-ball valve Art. no. 1090110059 with flange adapter Art. no. 1050125027 and flange Art. no. 1040110136 is used. For connection with aquatherm green weldable flange adapter (Art. no. 3050090006 – 1054160030) and aquatherm green plastic coated steel flange (Art. no. 1040090135 – 1040160138). Hexagon screw M 16x60 mm for Art. no. 1090090058/1090110059 Hexagon screw M 20x80 mm for Art. no. 1090110059 corresponding flat washer M 16.

NOTICE: These are not included in the above articles.

Electrical drive for ball valve

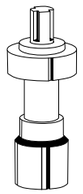
for article no. 1090020052 – 1090063057 (*for article no. 1090090058 – 1090110059)

Colour: black / red



Article no.	Dimension	for Article no.	kg	PU	RG
230 Volt					
9700041489	**20**	**incl. fixtures for 1090020052**	**1,500**	**1**	**1**
9700041491	**25**	**incl. fixtures for 1090025053**	**1,600**	**1**	**1**
9700041493	**32**	**incl. fixtures for 1090032054**	**1,600**	**1**	**1**
9700041495	**40**	**incl. fixtures for 1090040055**	**1,600**	**1**	**1**
9700041497	**50**	**incl. fixtures for 1090050056**	**1,700**	**1**	**1**
9700041499	**63**	**incl. fixtures for 1090063057**	**1,700**	**1**	**1**
9700041603 *	**90**	**incl. fixtures for 1090090058**	**3,300**	**1**	**1**
9700041605 *	**110**	**incl. fixtures for 1090110059**	**3,400**	**1**	**1**
9700041608 *	**160**	**incl. fixtures for 1090160060**	**3,700**	**1**	**1**
24 Volt					
9700041589	**20**	**incl. fixtures for 1090020052**	**1,500**	**1**	**1**
9700041591	**25**	**incl. fixtures for 1090025053**	**1,600**	**1**	**1**
9700041593	**32**	**incl. fixtures for 1090032054**	**1,600**	**1**	**1**
9700041595	**40**	**incl. fixtures for 1090040055**	**1,600**	**1**	**1**
9700041597	**50**	**incl. fixtures for 1090050056**	**1,700**	**1**	**1**
9700041599	**63**	**incl. fixtures for 1090063057**	**1,700**	**1**	**1**
9700041703 *	**90**	**incl. fixtures for 1090090058**	**3,300**	**1**	**1**
9700041705 *	**110**	**incl. fixtures for 1090110059**	**3,400**	**1**	**1**
9700041708 *	**160**	**incl. fixtures for 1090110059**	**3,700**	**1**	**1**

Valves

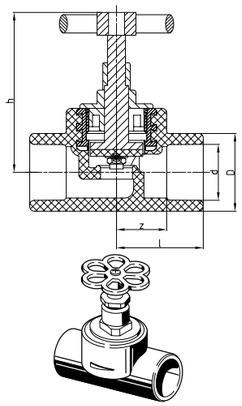


Extension for ball valve

for article no. 1090020052– 1090160060

Material: PVC
Colour: grey

Article no.	for Article no.	l	kg	PU	RG
9700098900	1090020052 L:100 mm	100	0,020	1	1
9700098901	1090025053/1090032054 L:100 mm	100	0,025	1	1
9700098902	1090040055/1090050056 L:100 mm	100	0,030	1	1
9700098903	1090063057 L:100 mm	100	0,125	1	1

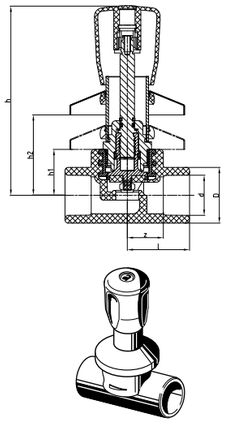


Globe valve

for surface installation — SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Colour: green

Article no.	d	l	D	z	h	kg	PU	RG
socket welding								
1090020040	20	35,0	29,5	20,5	75,3	0,165	1	1
1090025041	25	38,0	34,0	22,0	75,0	0,172	1	1
1090032042	32	49,0	43,0	31,0	97,0	0,314	1	1
1090040043	40	60,0	52,0	39,5	111,5	0,585	1	1

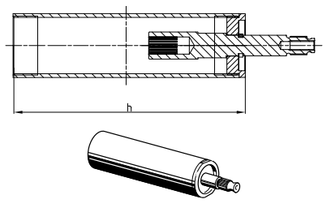


Concealed valve, chromium plated

SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Colour: green

Article no.	d	l	D	z	h	h1	h2	kg	PU	RG
socket welding										
1050020150	20	35,0	29,5	20,5	116,0	28,0	59,0	0,319	1	1
1050025151	25	38,0	34,0	22,0	116,0	28,0	59,0	0,330	1	1
1050032152	32	49,0	43,0	31,0	121,0	34,0	59,0	0,416	1	1



Extension for concealed valve

chromium-plated for art. no. 1050020150-1050032152

Material: brass
Colour: chrome

Article no.	h	kg	PU	RG
9600040900	92,0	0,148	1	1
9600040902	132,0	0,209	1	1

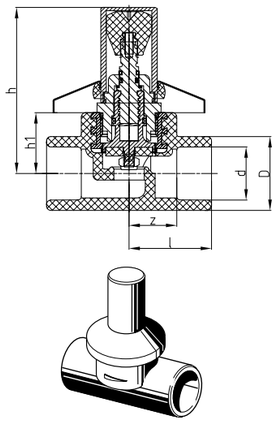
Valves

Concealed valve, tamper proof

chromium-plated / short design, socket welding — SDR 6 / 7.4 / 9 / 11

Material: fusiolen® PP-R / brass
Colour: green, chrom

Article no.	d	l	D	z	h	h1	kg	PU	RG
socket welding									
1050020153	20	35,0	29,5	20,5	71,5	28,0	0,258	1	1
1050025154	25	38,0	34,0	22,0	72,0	28,0	0,288	1	1
1050032155	32	49,0	43,0	31,0	82,5	34,0	0,376	1	1

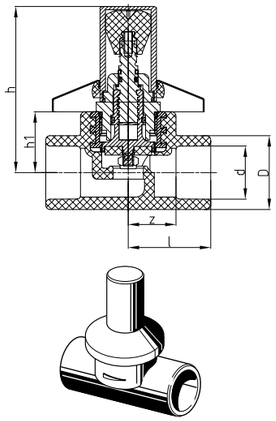


Concealed valve, tamper proof

chromium-plated / long design, socket welding — SDR 6 / 7.4 / 9 / 11

Material: fusiolen® PP-R / brass
Colour: green, chrom

Article no.	d	l	D	z	h	h1	kg	PU	RG
socket welding									
1050020159	20	35,0	29,5	20,5	109,0	28,0	0,342	1	1
1050025160	25	38,0	34,0	22,0	109,0	28,0	0,350	1	1
1050032161	32	49,0	43,0	31,0	115,0	34,0	0,432	1	1

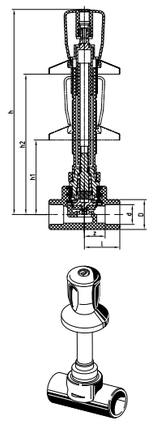


Concealed valve, construction depth 55–100 mm

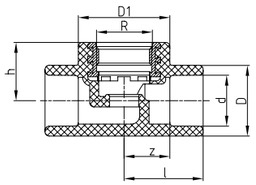
suitable for construction depth 55 mm to 100 mm, socket welding, SDR 6 / 7.4 / 9 / 11

Material: fusiolen® PP-R / brass
Colour: green, chrom

Article no.	d	l	D	z	h	h1	h2	kg	PU	RG
socket welding										
1050020156	20	35,0	29,5	20,5	213,0	59,0	147,0	0,357	1	1
1050025157	25	38,0	34,0	22,0	213,0	59,0	147,0	0,369	1	1
1050032158	32	49,0	43,0	31,0	219,0	65,0	153,0	0,455	1	1



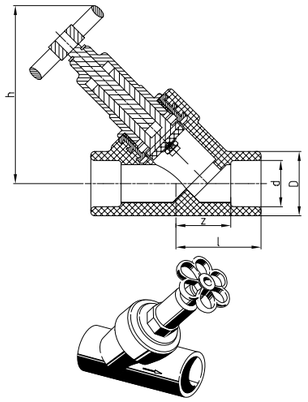
Valves



Stop valve body

Material: fusiolen® PP-R / brass
Colour: green

Article no.	d	l	D	D1	z	h	R	kg	PU	RG
socket welding										
1090020046	20	35,0	29,5	44,0	20,0	28,0	3/4“	0,082	1	1
1090025047	25	38,0	34,0	44,0	22,0	28,0	3/4“	0,101	1	1
1090032048	32	49,0	43,0	52,0	31,0	34,0	1“	0,146	1	1
1090040049	40	60,0	52,0	69,0	39,5	41,0	1 1/4“	0,313	1	1

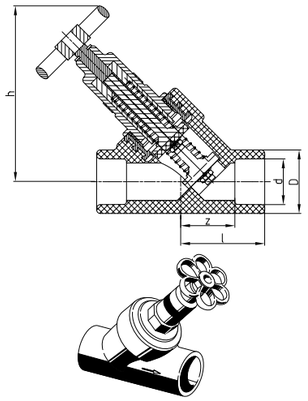


Inclined valve

without drain, socket welding — SDR 6 / 7.4 / 9 / 11

Material: fusiolen® PP-R / brass
Colour: green

Article no.	d	l	D	z	h	kg	PU	RG
socket welding								
1050020162	20	45,0	34,0	30,5	95,5	0,294	1	1
1050025163	25	45,0	34,0	29,0	95,5	0,283	1	1
1050032164	32	56,0	43,0	38,0	111,5	0,421	1	1
1050040165	40	65,0	52,0	44,5	135,0	0,834	1	1

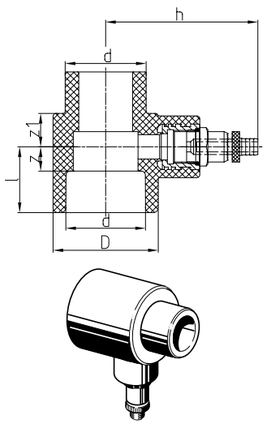


Non-return valve

without drain, socket welding— SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Colour: green

Article no.	d	l	D	z	h	kg	PU	RG
socket welding								
1050020170	20	45,0	34,0	30,5	95,5	0,297	1	1
1050025171	25	45,0	34,0	29,0	95,5	0,292	1	1
1050032172	32	56,0	43,0	38,0	111,5	0,432	1	1
1050040173	40	65,0	52,0	44,5	135,0	0,840	1	1



Draining branch

to weld in aquatherm green valves, socket welding
SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Colour: green

Article no.	d	l	D	z	z1	h	kg	PU	RG
socket welding									
1050020183	20	26,0	34,0	11,5	16,5	71,0	0,098	1	1
1050025184	25	26,0	34,0	10,0	16,5	71,0	0,096	1	1
1050032185	32	32,0	43,0	14,0	17,0	74,5	0,118	1	1
1050040186	40	32,5	52,0	12,0	16,5	80,5	0,140	1	1
1050050187	50	39,0	68,0	15,5	17,0	88,0	0,202	1	1
1050063188	63	44,0	84,0	16,5	16,5	96,0	0,288	1	1

Assembly elements

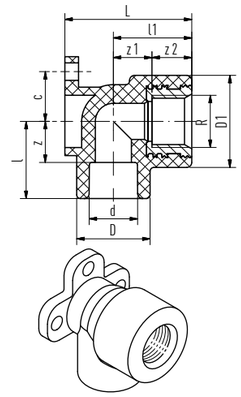
Back plate elbow

brass (*stainless steel) — SDR 6 / 7,4 / 11

Material: fusiolen® PP-R / brass or stainless steel
Standards: DIN 1692, DIN EN ISO 15874
Colour: green

Article no.	d	R	l	l1	D	D1	L	z	z1	z2	c	kg	PU	RG
one side socket welding														
1040020151	20	1/2“	31,0	31,5	29,5	37,0	51,0	16,5	18,5	13,0	20,0	0,079	10	1
1040020152	20	3/4“	37,0	37,0	34,0	44,0	54,0	22,5	24,0	13,0	-	0,106	10	1
1040025153	25	3/4“	37,0	37,0	34,0	44,0	54,0	21,0	24,0	13,0	-	0,105	10	1
1040025154	25	1/2“	33,5	31,0	34,0	37,0	53,0	17,5	18,0	13,0	20,0	0,080	10	1
1090020070 *	20	1/2“	31,0	31,5	29,5	37,0	51,0	16,5	18,5	13,0	20,0	0,084	10	1
1090020071 *	20	3/4“	37,0	37,0	34,0	44,0	54,0	22,5	24,0	13,0	-	0,101	10	1
1090025072 *	25	3/4“	37,0	37,0	34,0	44,0	54,0	21,0	24,0	13,0	-	0,111	10	1
1090025073 *	25	1/2“	33,5	31,0	34,0	37,0	53,0	17,5	18,0	13,0	20,0	0,076	10	1

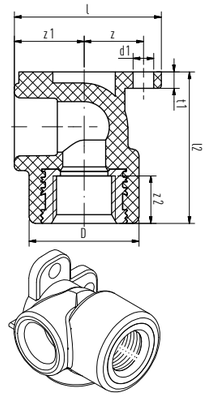
*stainless steel



Flow-through back plate elbow 90°

Material: fusiolen® PP-R / brass

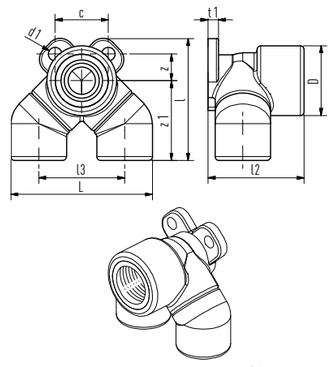
Article no.	Dimension	d1	l	l2	D	t1	z	z1	z2	PU	RG
double sided socket welding											
1090020031	90° 20 mm x 1/2“IG x 20 mm	7,0	49,5	51,0	37,0	5,5	20,0	23,5	16,0	1	1



Flow-through back plate parallel

Material: fusiolen® PP-R / brass

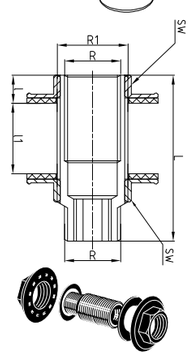
Article no.	Dimension	d1	l	l2	l3	D	L	c	t1	z	z1	PU	RG
double sided socket welding													
1050020015	parallel 20 mm x 1/2“IG x 20 mm	7,0	65,0	51,0	45,6	37,0	75,0	28,3	5,5	14,0	42,3	1	1



Dry construction wall fitting

Material: brass

Article no.	R	R1	l	l1	L	SW	kg	PU	RG
9600020114	1/2“	3/4“	10,5	26,0	62,0	30	0,213	10	1



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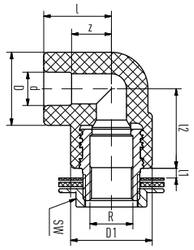
Assembly elements



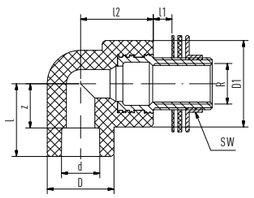
Transition piece with counternut

with gasket and tension washer, socket welding – SDR 6 / 7.4 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	l2	D	D1	z	R	SW	kg	PU	RG
one side socket welding												
1050020062	**20**	**37,0**	**3,5**	**35,0**	**29,5**	**44,0**	**22,5**	**1/2"**	**29**	**0,154**	**10**	**1**
1050025063	**25**	**37,0**	**3,5**	**37,0**	**34,0**	**44,0**	**21,0**	**1/2"**	**29**	**0,206**	**10**	**1**

E.g. for cistern connection or insert with mounting unit (Art.-Nr. 7050000001 – 7050000002)



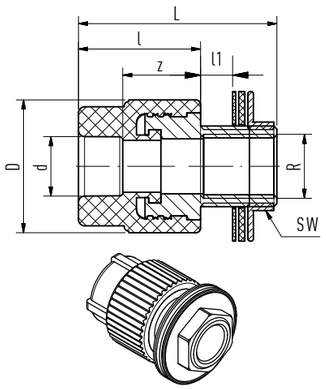
Transition elbow for plasterboard

SDR 6 / 7,4 / 11

Material: fusiolen® PP-R / brass
Colour: green

Article no.	d	l	l1	l2	D	D1	z	R	SW	kg	PU	RG
one side socket welding												
1050020064	**20**	**37,0**	**18,5**	**35,0**	**29,5**	**44,0**	**22,5**	**1/2"**	**29**	**0,223**	**10**	**1**

with 30 mm thread, counternut, gasket and tension washer

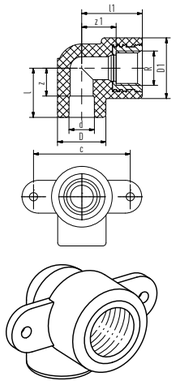


Transition piece with counternut

with gasket and tension washer, socket welding – SDR 6 / 7,4 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	L	z	R	SW	kg	PU	RG
one side socket welding											
1050020060	**20**	**40,0**	**13,5**	**43,5**	**65,0**	**25,5**	**1/2"**	**29**	**0,204**	**10**	**1**



Back plate elbow for dry construction

brass (*stainless steel) – SDR 6 / 7,4 / 11

Material: fusiolen® PP-R / brass or stainless steel
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	l1	D	D1	z	z1	R	kg	PU	RG
one side socket welding											
1040020156	**20**	**30,0**	**37,0**	**29,5**	**37,0**	**15,5**	**24,0**	**1/2"**	**0,079**	**10**	**1**
1090020074 *	**20**	**30,0**	**37,0**	**29,5**	**37,0**	**15,5**	**24,0**	**1/2"**	**0,078**	**10**	**1**

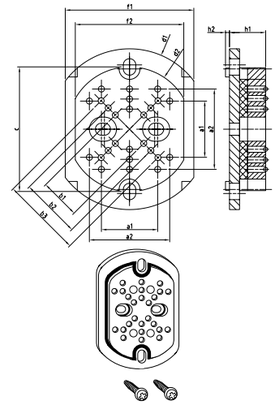
*stainless steel

Mounting units

Mounting plate for aquatherm green back plate elbow

Material: PP
Colour: white

Article no.	a1	a2	b1	b2	b3	c	d1	d2	f1	f2	h1	h2	kg	PU	RG
7020000015	**28**	**40**	**20**	**30**	**40**	**62**	**80,0**	**62,0**	**64**	**54**	**18**	**2**	**0,058**	**2**	**43**

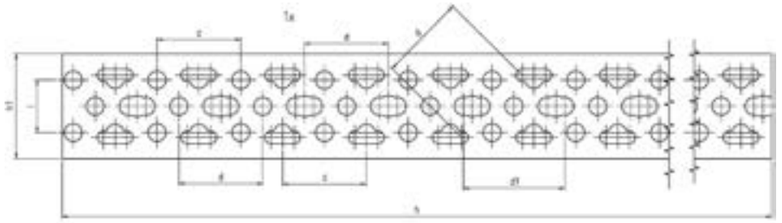


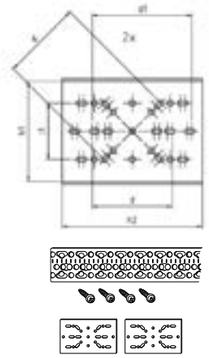
Mounting plate galvanised

to fix back plate elbows as double connection including 2 fixing plates and 4 screws

Material: Iron / galvanised

Article no.	d	d1	l	l1	h	h1	h2	kg	PU	RG
7050000016	**40**	**50,0**	**25**	**28**	**560**	**50**	**70**	**0,546**	**1**	**43**

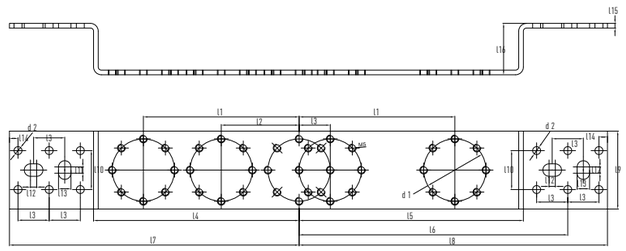


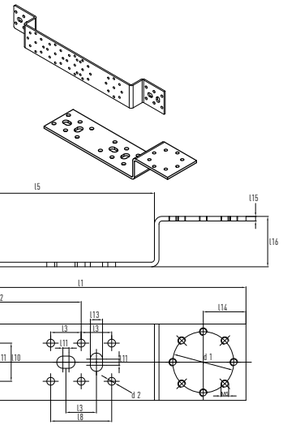


Mounting rail (double and single)

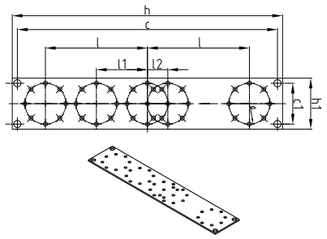
Material: Iron / galvanised

Article no.	d1	d2	kg	PU	RG
7050000017	**40,0**	**5,1**	**0,412**	**2**	**43**
7050000018	**40,0**	**5,1**	**0,235**	**2**	**43**





Mounting units



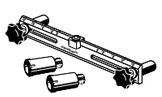
Mounting plate galvanised

to fix back plate elbows as double connection

Material: Iron / galvanised

Article no.	d	l	l1	l2	c	c1	h	h1	kg	PU	RG
7050000020	**40**	**100**	**50**	**20**	**255**	**40**	**265**	**50**	**0,221**	**1**	**43**

not suitable for connection with sound insulation plate (art. no. 7020000015). We recommend mounting rail art. no. 7050000016

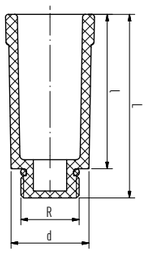


Assembling jig

as water level with 2 plugs 1/2"

Material: fusiolen® PP-R
Colour: green

Article no.	kg	PU	RG
9800050700	**0,252**	**1**	**3**

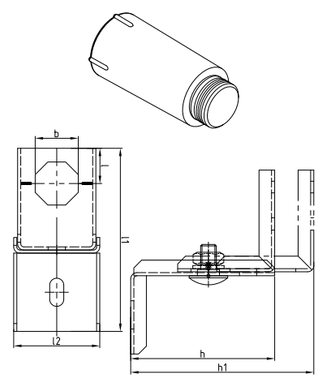


Plug for pressure tests

with gasket

Material: fusiolen® PP-R
Colour: green

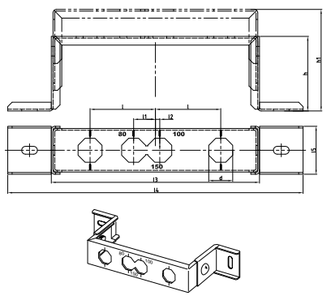
Article no.	d	l	L	R	kg	PU	RG
9800050708	**28**	**55,5**	**66,0**	**1/2"**	**0,022**	**10**	**1**
9800050710	**34**	**55,5**	**66,0**	**3/4"**	**0,027**	**10**	**1**



Mounting unit, single

Material: Iron / galvanised

Article no.	b	l	l1	l2	h	h1	kg	PU	RG
7050000002	**27,5**	**118**	**22,5**	**55**	**92,5**	**122,5**	**0,278**	**1**	**43**



Mounting unit, double

Material: Iron / galvanised

Article no.	b	l	l1	l2	h	h1	l3	l4	l5	kg	PU	RG
7050000001	**27,5**	**75**	**25**	**5**	**92,5**	**122,5**	**239**	**339**	**55**	**0,630**	**1**	**43**

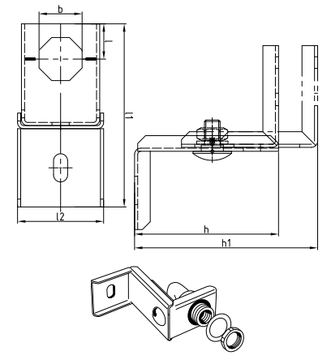
Distribution elements

Mounting unit with one aquatherm green transition elbow

with one aquatherm green transition elbow, with counternut, gasket and tension washer

Material: fusiolen® PP-R / brass, Iron / galvanised

Article no.	b	l	l1	l2	h	h1	kg	PU	RG
7050000004	**27,5**	**22,5**	**118**	**55**	**92,5**	**122,5**	**0,434**	**1**	**43**

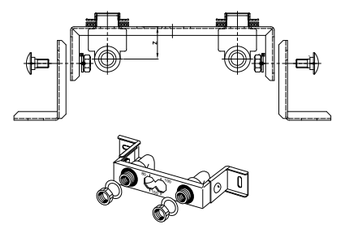


Mounting unit with two aquatherm green transition elbows

with two aquatherm green transition elbows, with counternut, gasket and tension washer

Material: fusiolen® PP-R / brass, Iron / galvanised

Article no.	b	l	l1	l2	z	h	h1	kg	PU	RG
7050000003	**27,5**	**75**	**25**	**5**	**37,5**	**92,5**	**122,5**	**0,942**	**1**	**43**



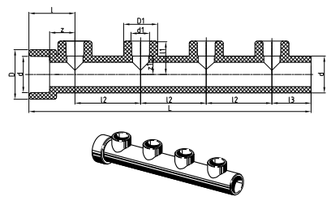
Four-port manifold

length: 246 mm, with 4 branches – SDR 6 / 7.4 / 9 / 11

Material: fusiolen® PP-R
Colour: green

Article no.	d	d1	l	l1	l2	l3	D	D1	L	z	z1	kg	PU	RG
socket welding														
1090032032	**32**	**16,0**	**40**	**29**	**57**	**36**	**43,0**	**29,5**	**245,0**	**22,0**	**16**	**0,148**	**1**	**1**
1090032033	**32**	**20,0**	**40**	**29**	**57**	**36**	**43,0**	**29,5**	**245,0**	**22,0**	**14,5**	**0,134**	**1**	**1**

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



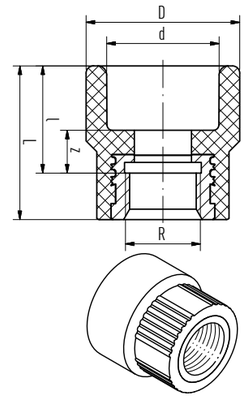
Manifold end piece with female thread

SDR 6 / 7,4 / 9 / 11

Material: fusiolen® PP-R / brass
Standards: DIN 16962, DIN EN ISO 15874
Colour: green

Article no.	d	l	D	L	z	R	kg	PU	RG
one side socket welding									
1090032034	**32**	**30,0**	**43,0**	**43,0**	**12,0**	**1/2"**	**0,073**	**1**	**1**

Transition piece as manifold endpiece with female thread



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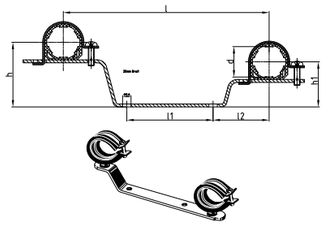
Accessories

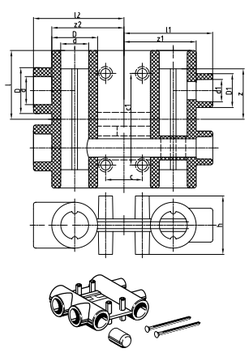


Supporting strap for four-port manifold

with clamps, galvanised, double

Material: Steel galvanized

Article no.	d	l	l1	l2	h	h1	kg	PU	RG
9600060210	32	210,0	80,0	57,0	66,0	46,0	0,226	2	43



Distribution block plumbing

SDR 6 / 7,4 / 11

Material: fusiolen® PP-R
Colour: green

Article no.	d	d1	l	l1	l2	D	D1	z	z1	z2	c	c1	cl	l3	h	kg	PU	RG
socket welding																		
1050025016	25	20,0	60	77,5	79	40,0	29,5	44,0	63	63,0	32	80	100	36	51	0,273	1	1

including 1 plug and 2 fasteners

Adhesive tape to protect against UV-radiation

Article no.	Dimension	kg	PU	RG
9700010871	Dimension 50 mm x 10 m	0,133	1	1

aquatherm-PP-Primer

for aquatherm PP pipes

Article no.	Container	kg	PU	RG
9700050230	Container: 1l	0,994	1	3
9700050231	Container: 10l	9,269	1	3

aquatherm special top coat

for aquatherm PP pipes

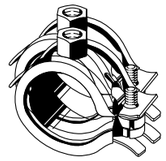
Article no.	Container	kg	PU	RG
9700050232	black Conatiner: 2,5l	3,007	1	3
9700050233	white Container: 2,5l	3,436	1	3

Accessories

Pipe clamps

suitable for sliding and fixed point installation

Material: Steel

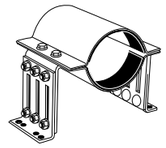


Article no.	for pipe diameters	kg	PU	RG
9600060520	20	0,048	50	43
9600060525	25	0,051	50	43
9600060532	32	0,060	50	43
9600060540	40	0,067	50	43
9600060550	50	0,079	50	43
9600060563	63	0,091	25	43
9600060575	75	0,105	25	43
9600060590	90	0,128	25	43
9600060594	110	0,155	25	43
9600060595	125	0,212	25	43
9600060597	160	0,342	25	43
9600060650	200	1,014	1	43
9600060654	250	1,193	1	43
9600060658	315	1,618	1	43

Thread connection: M8 & M10 for 16 – 125 mm | M10 for 160 mm | M16 for 200 – 355 mm

Pipe clamps suitable for fixed point installation

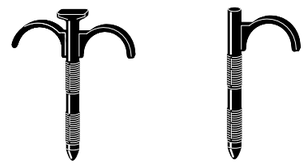
Material: Steel



Article no.	for pipe diameters	kg	PU	RG
9600060768	160	8,548	1	43
9600060770	200	9,449	1	43
9600060774	250	19,367	1	43
9600060778	315	22,753	1	43

Pipe fastening bow 16-32 mm

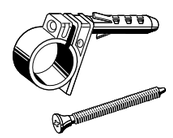
Material: PA



Article no.	for pipe diameters	kg	PU	RG
7020016005	for pipes 16-32 mm L=45 mm	0,005	50	43
7020016006	for pipes 16-32 mm L=75 mm	0,007	50	43
7020016007	for pipes 16-32 mm L=45 mm	0,007	50	43
7020016008	for pipes 16-32 mm L=75 mm	0,009	50	43

Plastic pipe clamps 20-40 mm

Material: fusiolen® PP-R



Article no.	for pipe diameters	kg	PU	RG
7090020011	for pipes 20 mm	0,008	50	43
7090025012	for pipes 25 mm	0,016	30	43
7090032013	for pipes 32 mm	0,017	30	43
7040040014	for pipes 40 mm	0,020	30	43

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aquatherm®

aquatherm GmbH

Biggen 5 | 57439 Attendorn | Germany
Tel: +49 2722 950 0 | Mail: info@aquatherm.de

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