



# AGRULINE

PIPING SYSTEMS FOR NATURAL GAS, WATER & SEWAGE



## agru

Worldwide Competence  
in Plastics





## Worldwide competence in plastics

AGRU Kunststofftechnik GmbH is an Austrian company. AGRU proves its competence and innovation in the development and production of high-quality products which are made of thermoplastic polymers, for almost 50 years.

The product group AGRULINE offers a complete and first-class range of pipes, fittings, valves and special parts made of polyethylene for the environmentally friendly and safe supply of natural gas and potable water as well as the disposal of sewage.

The most modern machinery and well-trained special staff ensure production of highest grade products.

## PE PIPING SYSTEMS

### Quality



Customer satisfaction is the top priority for AGRU. Technical consultancy, installation and welding training - at AGRU's facilities or on-site - are offered services. Constantly high quality is ensured by a quality management system, based on ISO 9001:2008. AGRU products are regularly tested in internal production controls as well as third party inspections according to the requirements of international standards.

The extensive quality awareness guarantees that the products live up to the high technical expectations of the municipal natural gas and potable water industries.





## Application areas

AGRULINE has a broad product range of high quality PE products for the natural gas and potable water industries, as well as sewage disposal. Pipes, fittings, valves and special parts made of PE 100 are especially suitable for those application areas due to their maintenance free characteristics and extended durability. Due to the excellent weldability different joining technologies are applicable, e.g. heating element butt welding, electrofusion welding and heating element socket welding. This enables flexible installation adjusted to the special conditions on-site.



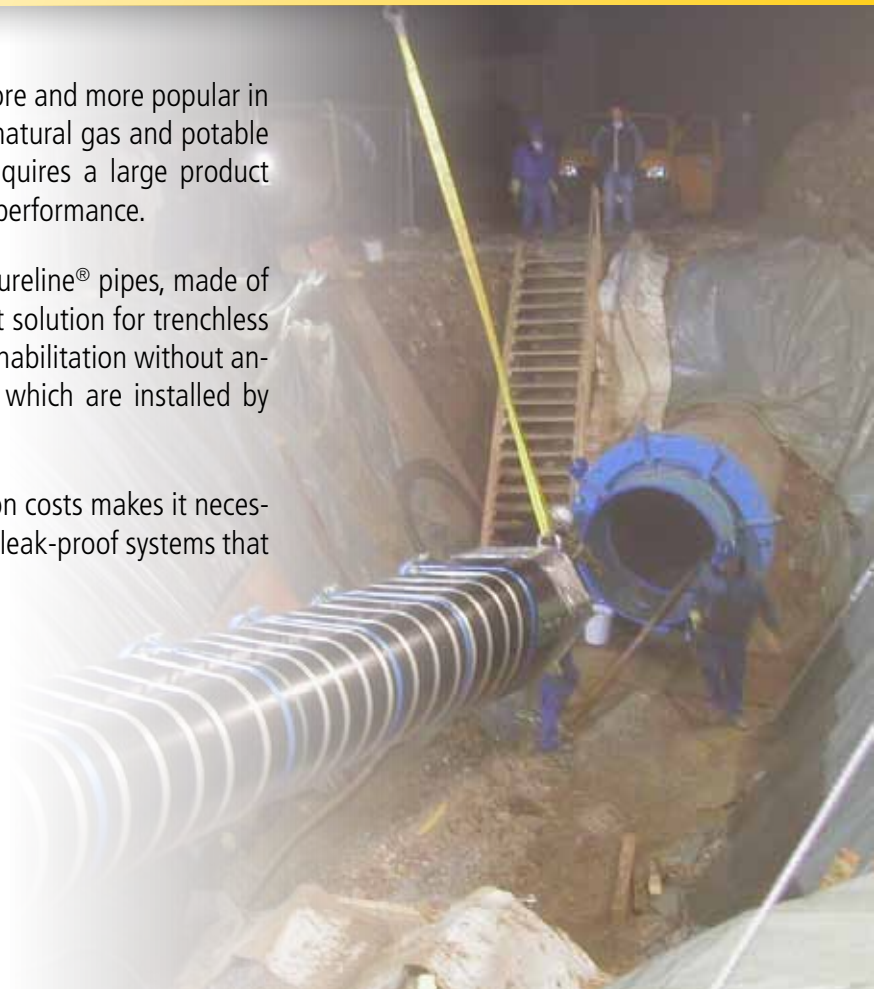
## FOR NATURAL GAS AND POTABLE WATER SUPPLY



Nowadays pipe rehabilitation becomes more and more popular in not only sewage disposal but also in the natural gas and potable water supply industries. Rehabilitation requires a large product variety as well as improved pipe material performance.

Therefore crack and point load resistant Sureline® pipes, made of PE 100-RC, or SurePEX pipes are a perfect solution for trenchless and sandbed-free installations. For pipe rehabilitation without annular space, SureFIT® pipes are suitable, which are installed by means of the close-fit-method.

The intensity of installation or rehabilitation costs makes it necessary to establish durable and permanently leak-proof systems that last for generations.





#### Supply range

OD 20 mm - OD 2250 mm



## PE 100 pipes

AGRU PE 100 pipes are produced as standard 5 m - 12 m pipes or coiled bundles according to EN regulations.

All PE 100 pipes and fittings are made of materials that are listed at the PE100+ Association.

Differentiation between the natural gas, potable water and sewage pipelines is ensured by the colouring (yellow-orange, black with stripes, black).

## FOR EVERY APPLICATION...



#### Supply range

SDR 17 OD 75 mm - OD 630 mm

SDR 11 OD 32 mm - OD 630 mm



## Sureline® pipes made of PE 100-RC

Sureline® pipes are co-extruded solid wall pipes with a dimensionally integrated, coloured signal layer or black with stripes. Due to the use of the most high-grade PE materials (PE 100-RC) AGRU Sureline® pipes offer an optimum protection against point loads, crack initiation, slow crack growth (SCG) and damages on the outside (notches and scratches).

Sureline® pipes are in accordance with PAS 1075. They are suitable for installations without sand-embedding and the following installation methods: horizontal directional drilling, burst lining, milling, ploughing, relining of existing pipelines, and soil displacement hammer.

For most demanding applications Sureline® pipes are also available with an additional protective layer made of PP.



## SurePEX

SurePEX pipes are made of peroxidic cross-linked polyethylene (PE-Xa). Due to their outstanding resistance to crack growth they are an ongoing solution for house connections. Given their excellent temperature resistance (up to 95 °C) they are ideal for hot water applications - at sanitary installations, at solar collectors and in the industrial sector.

The only approved method of welding SurePEX pipes is with electrofusion.



### Supply range

SDR 11 OD 25 mm - OD 125 mm  
In blue and yellow.

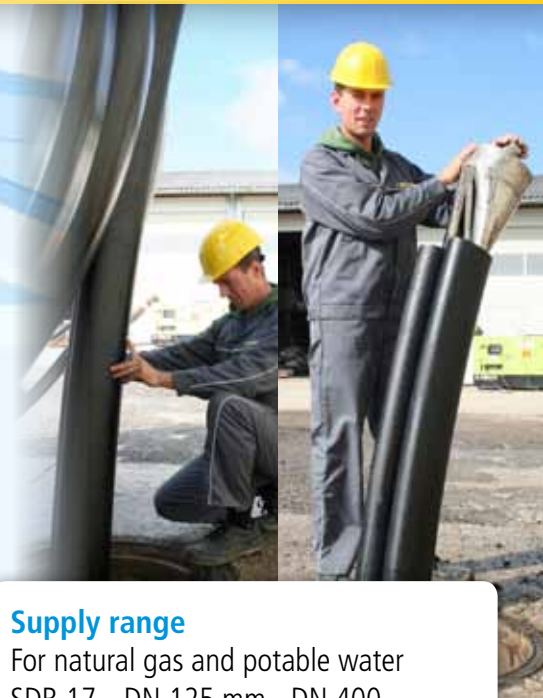
## ... THE PIPE WITH MATCHING FEATURES



## SureFIT®

The increasing importance of trenchless rehabilitation methods led us to the development of the SureFIT® / r.tec® close-fit-liner. It is a factory-preformed PE 100 pipe that is used for relining without annular space. All known advantages of standard PE-pipelines are in effect.

Damaged pipelines can be rehabilitated efficiently and durably. Pipelines of any kind - e.g. concrete, steel, cast iron, stoneware or PVC pipes - can be rehabilitated with the AGRU SureFIT®. Cracks, leaking connection, damages due to corrosion or root ingrowths can be eliminated permanently.

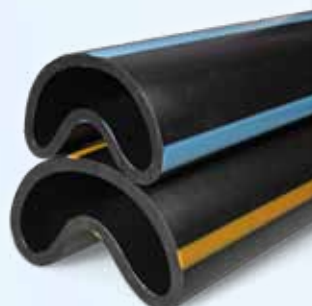


### Supply range

For natural gas and potable water  
SDR 17 DN 125 mm - DN 400

### For sewage

SDR 26 DN 150 mm - DN 400 mm  
SDR 32 DN 350 mm - DN 400 mm



### Supply range

SDR 17 OD 63 mm - OD 500 mm\*

SDR 11 OD 20 mm - OD 500 mm\*

\* Stub flanges up to OD 630 mm

## Elongated fittings

Elongated PE 100 fittings are suitable for electrofusion welding, as well as heating element butt welding. All fittings are approved according to the current natural gas and potable water regulations. They are produced with excellent long-term properties and most fittings are injection moulded via a central gating system.



## BROAD RANGE...

### Supply range

SDR 33 OD 110 mm - OD 500 mm\*

SDR 17 OD 63 mm - OD 500 mm\*

SDR 11 OD 20 mm - OD 500 mm \*

\* Stub flanges up to OD 710 mm

## Fittings with short spigots

The supply programme of PE 100 short spigot fittings can be installed via heating element butt welding. Main applications are sewage disposal and industrial applications. Fittings with short spigots can be factory-elongated on demand to make them suitable for electrofusion welding.



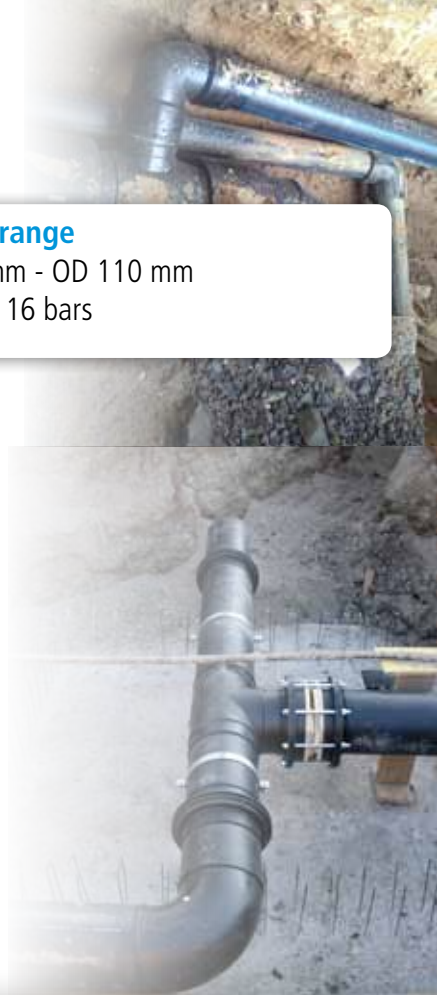


## Fittings for socket welding

Socket welding fittings are mainly used for sanitary applications in smaller dimensions (up to 110 mm).

### Supply range

OD 20 mm - OD 110 mm  
for MOP 16 bars

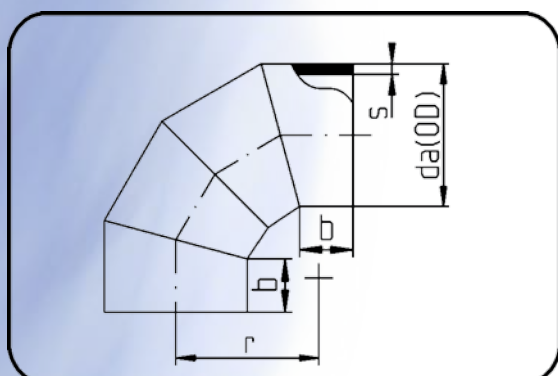


# ... OF FITTINGS



## Special fittings

Due to our in-house manufacturing abilities we are able to prefabricate special fittings according to our customers' requirements. This ensures an easy and fast installation on-site. Our technical know-how and our machining possibilities with the most modern technology make it possible to produce special parts tailored to our customers' needs and wants.





#### Supply range

SDR 17 OD 90 mm - OD 315 mm

SDR 11 OD 90 mm - OD 315 mm

Further dimensions on request.

## Sweep bends

Permanent inherently-stable high-grade bends that fulfil today's requirements are made of PE-pipes. Sweep bends are suitable for heating element butt and electrofusion welding. They are made of pipe resins suitable for natural gas and potable water applications.

The straight ends are made for double electrofusion welding.

#### Advantages:

- Available in 60°, 45°, 30°, 22°, 11°  
Customer related solutions on request.
- Improved flow characteristics due to bigger bending radii.
- Pressure conform



## INNOVATIVE SOLUTIONS...

#### Supply range

OD 63 mm - OD 500 mm

## FM - Approved pipes and fittings

AGRU offers a complete PE 100 SDR 11 FM approved piping system for 12 bars (175 psi) underground fire fighting pipelines ("PE pipes and fittings for underground fire protection equipment" according to FM 1613).

FM Global approves industrial products and services, moreover their activities help to avoid material damages. Underground installed PE 100 fire fighting pipelines that have to accomplish elevated requirements are one of those activities.

Manufacturers of FM approved products are allowed to place "FM approved" labels onto their products. The obvious advantage is the higher safety of the system. Studies showed that FM approved products which were installed according to FM Global installation guidelines reduce the risk of material damages.







## Ball valve

The PE 100 ball valve is a unique and innovative solution for natural gas, potable water and sewage. Its stable construction offers exceptional advantages compared to common systems.

By means of heating element butt welding and electrofusion welding the ball valve can be installed leak-proof in new, as well as in existing water and natural gas supply lines. It conforms to the EN 12201 regulation for water supply and EN 1555 regulation for natural gas supply. The PE 100 ball valve is designed in SDR 11.

Ball valves  $\geq$ OD 63 mm are available with an integrated gearbox, which guarantees a soft opening and closing. The valve is suitable for above-ground or underground installations. In underground installations the ball valve is operated via a telescopic spindle.

### Supply range

Without gearbox

SDR 11 OD 32 mm - OD 125 mm

With gearbox

SDR 11 OD 63 mm - OD 225 mm

In black and orange.



# ... FOR ANY APPLICATION



## IPS fittings

AGRU offers a fitting programme with inch dimensions especially for the American market.

The PE 100 materials used, are listed as PE 4710 (former PE 3408) according to PPI ("Plastic Pipe Institute"). The precise cell classification is done according to ASTM D 3350, which allows a detailed breakdown of the density, MFR and other raw material properties.

The IPS-fitting programme includes fittings for both heating element butt welding and electrofusion welding.

### Supply range

SDR 17 OD 2" - OD 12"

SDR 11 OD 1/2" - OD 12"

E-couplers up to 48"





### Supply range

#### E-fittings

SDR 11 OD 20 mm - OD 225 mm

#### E-couplers injection moulded

SDR 17 OD 90 mm - OD 500 mm

SDR 11 OD 20 mm - OD 500 mm

#### E-couplers machined

SDR 17 OD 560 mm - OD 1400 mm

SDR 11 OD 560 mm - OD 800 mm




## Electrofusion fittings

In order to get permanently leak-proof material connections between polyethylene pipes and fittings, the electrofusion technology has proven to be an alternative solution to other welding technologies. These piping systems for natural gas supply, potable water supply, sewage disposal and industrial plants has been successfully used for many years.

Injection moulded electrofusion fittings from AGRU are produced with a fully embedded heating wire. This offers optimal safety during installation and operation. The monofilar design enables a one-step welding process. Injection moulded electrofusion fittings up to 560 mm allow welding without appliances and are able to close big gaps easily due to the excellent shrinking behaviour.


## SIMPLE INSTALLATION...



AGRU electrofusion fittings are entirely made of high-grade PE 100 materials and produced on the most modern, fully automated production machinery. Therefore a consistently high production quality is ensured.

Electrofusion fittings are weldable with the following materials: PE 80, PE 100, PE 100-RC, PE-X.

### Advantages:

- Processable from -10 °C up to +45 °C
  - Very good pipe guidance due to long insertion depths
  - Entirely embedded resistance wire
  - Easy to clean
  - Resistance wire is protected against damages, corrosion and contamination
  - Controlled heat transfer
- 



## Tapping saddle

Tapping saddles are produced in a similar way to electrofusion fittings. They are made with an entirely embedded resistance wire in a fully automated injection moulding process.

The patented telescope unit enables gas-tight and water-tight tapping under pressure (10 bars natural gas / 16 bars potable water). A leak test of the finished house connection is possible through the tapping system.

The AGRU PE 100 tapping saddle is optionally available with an integrated excess flow valve and/or an E-screw cap.

### Supply range

SDR 11 OD 63/20 mm - OD 225/63 mm

E-screw cap

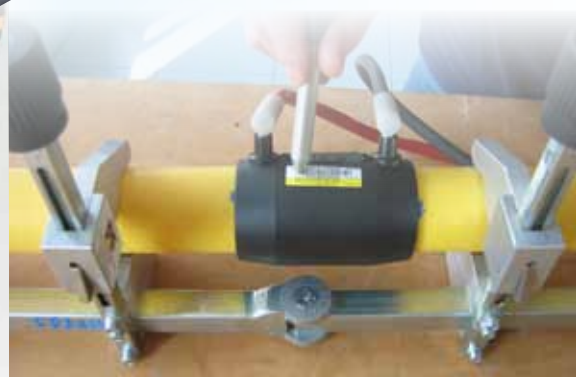
# ... EVERLASTING SOLUTION



## Accessories

In addition to pipes and fittings AGRU also supplies matching tools for the optimal installation of the AGRULINE product range.

- Welding machines
- Re-rounding tools
- Scrapping devices
- Pipe clamps
- Drilling tools for tapping saddles





Trenchless rehabilitation with the

## SureFIT® / r.tec® close-fit-liner

suitable for natural gas, potable water, sewage and industrial pipelines

- Fast & easy
- Sustainable & environmentally friendly
- Long-lasting (+100 years)
- DN 125 mm up to DN 400 mm



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