



Sureline®

PE 100-RC FOR NATURAL GAS, WATER & SEWAGE



agru

Worldwide Competence
in Plastics



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Worldwide competence in plastics

AGRU Kunststofftechnik GmbH is a family-owned, highly productive enterprise headquartered in Austria with worldwide activities. These include the production and sales of high-quality thermoplastic polymer products. One of our core competences are piping systems made of polyethylene (PE).

Our product group AGRULINE offers a complete and top quality range of pipes, fittings, valves and special parts. The main focus is the environmentally friendly and safe supply with natural gas and potable water as well as the disposal of wastewater.

In order to fulfil the requirements of alternative installation technologies (e.g.: installation without sand embedding and trenchless techniques) it is essential to use the best quality available. To meet these stringent requirements, a full range of Sureline® pipes made from PE 100-RC is offered.

Sureline®





Sureline® made of PE 100-RC

To ensure a cost effective and fast installation of piping systems alternative installation technologies are becoming increasingly important. With a sandbed-free installation costs can be reduced because no sand is needed on-site. On top of that, trenches are redundant when trenchless methods are applied (e.g. relining, horizontal directional drilling, burst lining). Nature and living environment remain entirely untouched, traffic keeps flowing without interruption and an expensive restoration of the surface is obsolete.

Alternative installation technologies are very demanding for the outside surface of pipes. Scratches and point loads are unavoidable. In order to ensure a safe and reliable operation of PE pipes it is recommended to use Sureline® pipes made from PE 100-RC. For most demanding applications (e.g. burst lining) Sureline® pipes are also available with an additional protective layer made of PP.

ADVANCED MATERIAL FOR ADVANCED APPLICATIONS



Advantages

- Light & flexible (earthquake-proof)
- Easy installation
- Excellent joining technology
- Weldable (no ingrowths & permanently leak-proof)
- Outstanding abrasion properties
- Excellent chemical resistance
- No deposits & good flow characteristics
- Durability of more than 100 years
- Excellent overall economic efficiency



Application areas

Sureline® pipes are suitable for alternative installation techniques:

- Sandbed-free installation
 - OD < 63 mm suitable for grain size up to 22 mm
 - OD ≥ 63 mm suitable for grain size up to 100 mm
- Ploughing
- Milling
- Horizontal directional drilling (HDD)
- Burst lining
- Relining

Especially for burst lining it is recommended to use Sureline® pipes with an additional protective layer. Depending on the condition of the soil and the old pipe, Sureline® with protective layer are beneficial for horizontal directional drilling as well as relining.

Sureline®

Sureline® I

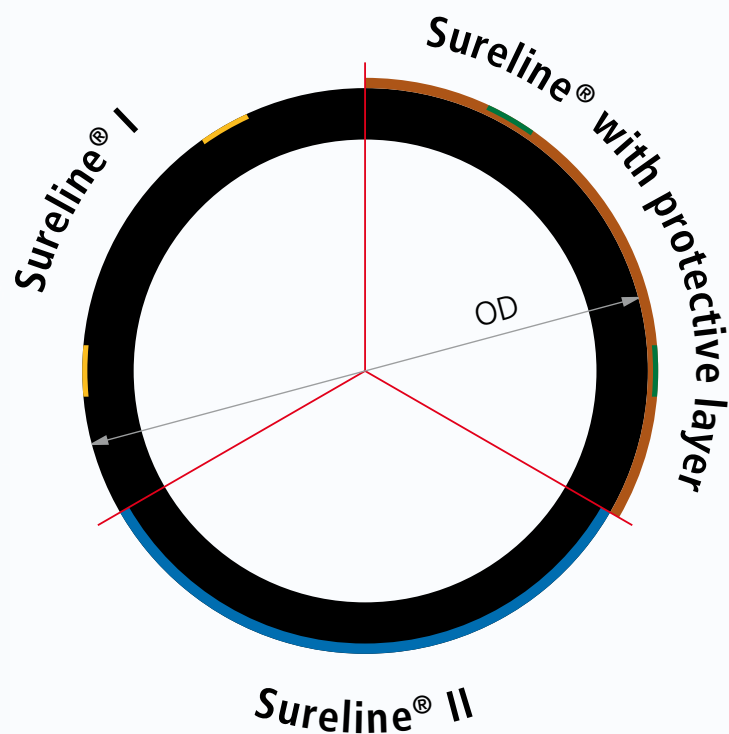
PE 100-RC pipe with coloured stripes

Sureline® II

PE 100-RC pipe with integrated signal layer

Sureline® with protective layer

PE 100-RC pipe with additional protective layer made of PP



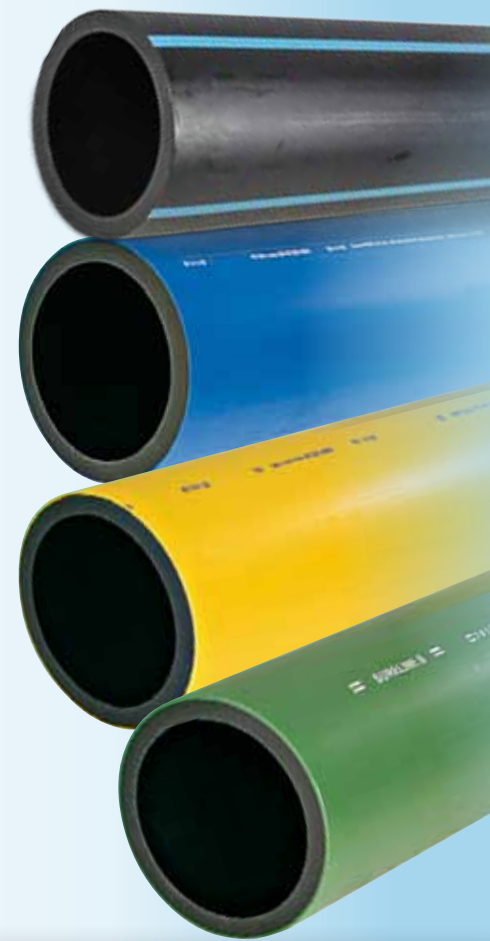
Supply programme

Sureline® I is made from PE 100-RC and can be produced in the dimensions OD 32 mm up to OD 2200 mm with coloured axial stripes. Whereas Sureline® II is offered with an integrated signal layer from OD 75 mm up to OD 400 mm.

From OD 90 mm up to OD 400 mm Sureline® pipes are also offered with an additional protective layer made of PP. In order to clearly identify these pipes the protective layer features green stripes.

OD [mm]	Sureline® I	Sureline® II	Sureline® with protective layer
≤63	✓		
75		✓	
90 - 400		✓	✓
≥450	✓		

All dimensions are available in SDR 11 and 17.



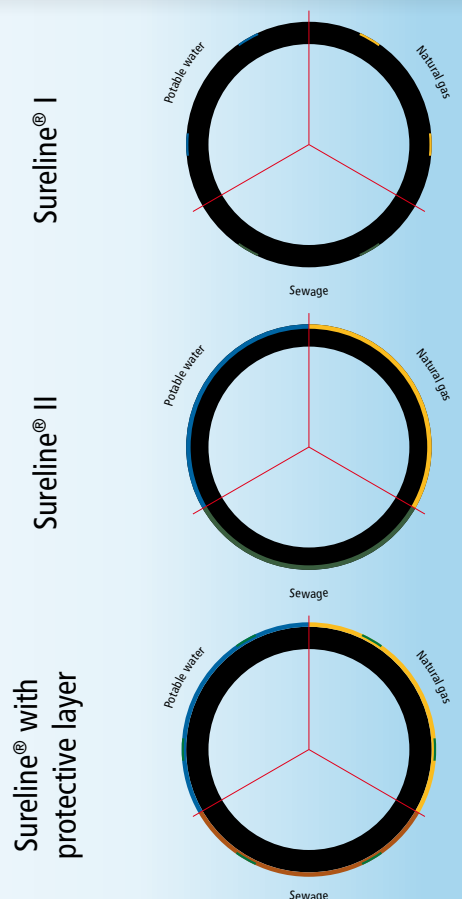
MAXIMUM SAFETY FOR TRENCHLESS INSTALLATIONS

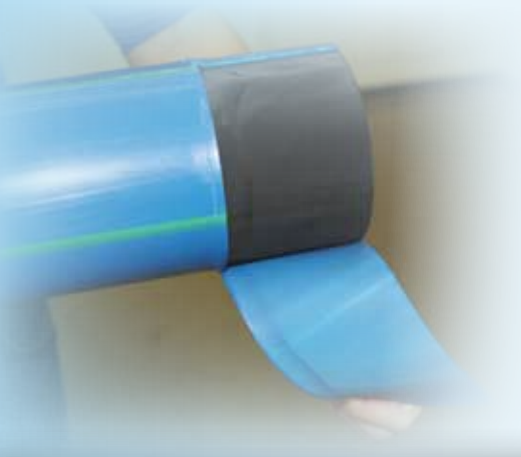


Colour schemes

Depending on the application the signal layer, the stripes or the protective layer have different colours (see right hand pictures).

On request Sureline® pipes for sewage systems are available with a light-coloured inner layer to allow an easier camera inspection.





Joining technology

Sureline® pipes can be joined by heating element butt fusion and electrofusion welding. It is recommended to perform the welding according to DVS codes. Sureline® pipes can be used in combination with pipes and fittings made of standard PE 100 or PE 80 material. The coloured signal layer of the Sureline® II pipe is an inseparable part of the pipe wall and must not be removed for welding.

On the contrary - for Sureline® pipes with protective layer - it is essential to remove the PP layer, which is located within the welding zone, prior to welding. The protective layer is easily recognisable due to axial green stripes.

Sureline®



E-couplers made of PE 100-RC

In addition to the existing electrofusion programme, AGRU is offering injection moulded e-couplers made of PE 100-RC. They are perfect for joining high quality Sureline® pipes. These e-couplers offer a higher durability and further significant advantages due to the outstanding resistance to slow crack growth:

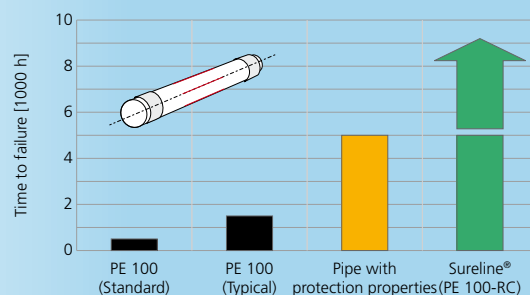
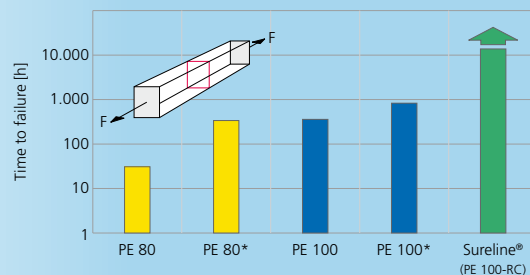
- Suitable for sandbed-free installations
- Insensitive to point loads
- Applicable for horizontal directional drilling



The PAS 1075 and ÖVGW PW 405/1

The first standard for PE 100-RC was the PAS 1075 (Public Available Specification, published by DIN) titled "Pipes made of polyethylene for alternative installation technologies". The ÖVGW PW 405/1 was published shortly after. Both are considered as supplements to existing standards and do set the requirements for PE 100-RC materials and pipes.

Pipes, meeting the requirements set by PAS 1075 and ÖVGW PW 405/1, are considered suitable for sandbed-free and trenchless installation. Most important is to ensure a high resistance to slow crack growth: >8,700 h in the "Full Notch Creep Test" (FNCT); tested at 80 °C and 4 N/mm² with an aqueous solution of 2 % Arkopal N-100.



HIGH QUALITY



Quality

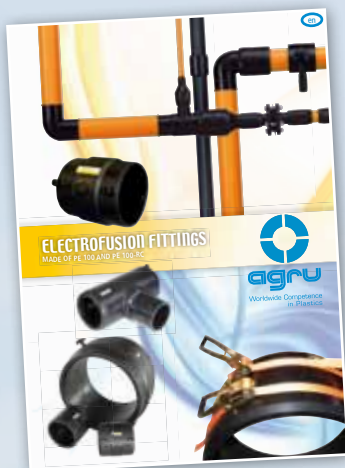
AGRU Sureline® pipes are produced according to international standards (EN 12201, EN 1555 and EN 13244). In the course of the internal quality control according to the quality management system ISO 9001:2008 the finished pipes are inspected with regard to:

- Dimensional accuracy
- Hydrostatic long-term strength
- Oxidation Induction Time (OIT)

The constantly high product quality is ensured by the exclusive use of high-grade PE 100-RC material types and the most modern production machinery.

Ongoing internal tests, as well as regular third party certifications ensure high precision and performance of AGRU products. Various approvals document the excellent quality.





Electrofusion fittings

... made of PE 100 for safe and reliable joining of PE piping systems

- Easy joining procedure
- Entirely embedded resistance wire
- Excellent long-term behaviour
- Large product range for flexible solutions

E-couplers made of PE 100-RC are the optimum solution for demanding applications, such as no sand embedding!



AGRULINE

PIPING SYSTEMS FOR NATURAL GAS, WATER & SEWAGE

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