



# Clean for a lifetime

Polyethylene. Hygienic. Durable. Robust.



# Polyethylene – because we need to invest in the future.

**Our drinking water in Central Europe is characterised the highest quality standards. You, as a utility in your region and as a decision-maker in water supply also contribute to this. In order to maintain this high level for generations to come, we need a material that can do more and lasts longer: Polyethylene (PE).**

## Drinking water supply

Drinking water networks around the globe have to function perfectly. While „perfectly“ means to us: durable, robust and hygienically safe. In short: Polyethylene – the material from which our plastic pipes, shut-off valves, pressure tapping valves, sockets, fittings and flanges are made. PE-100 is a high-tech material made of thermoplastic polyethylene – insensitive to cracking, resource-

efficient and a technically safe investment in the future, even in the long term.

The European Drinking Water Directive from 2020 sets uniform and binding requirements for the EU member states. PE therefore knows no limits when it comes to good drinking water quality.



The fused polyethylene piping system

# Why polyethylene for drinking water?

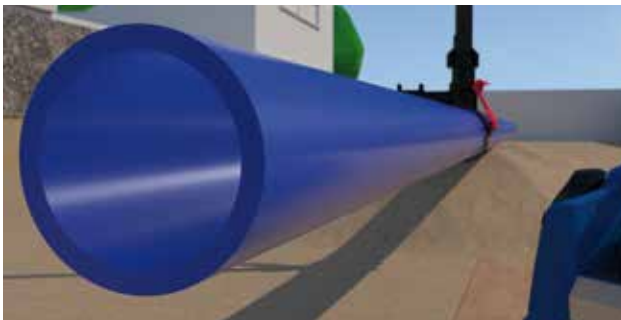
Especially in the hygienic area, PE as a material brings along properties that cannot be found in alternative systems or materials: The particular smooth inner wall prevents large deposits from forming in the first place, thus giving germ-forming microorganisms no chance to develop.

The main cause of hygienic risks in the water supply – when larger unstable deposits detach – is thus largely averted. Another decisive criteria is our conformity to standards and law: All components used in PE are tested and evaluated worldwide and are therefore hygienically suitable for use in the drinking water sector.

## A material that keeps its promise

Polyethylene scores not only for quality and economy: With an expected service life of approx. 100 years, our PE products are ideally suited for the production of safe and sustainable drinking water supply systems. Durability plays a major role, especially with the increasing sand-bed and trenchless installation methods.

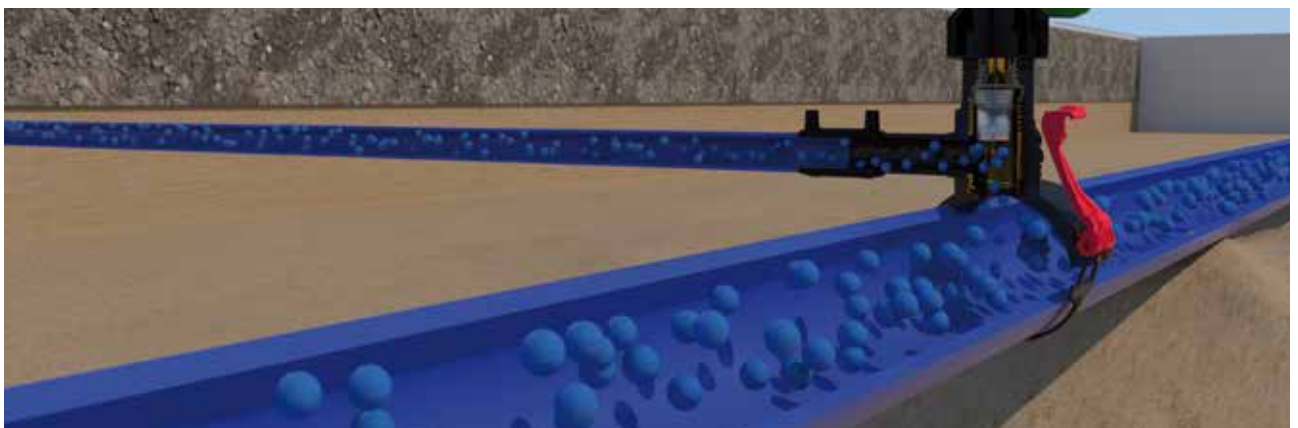
PE offers particularly high stress crack resistance, as well as high compressive strength and flexibility. Finally, our sophisticated, material-homogeneous connection technology ensures the permanent robustness of your supply systems.



No incrustation due to smooth inner walls

## Did you know...

- the use of plastic in the DN 100 nominal diameter range is around 50 % more cost-effective than steel or cast iron?
- the material PE has been on the road to success for over 60 years?
- PE 100 has a useful life of around 100 years?
- PE 100 is 100 % recyclable?



No deposits

# Welcome to the plastic piping systems specialists

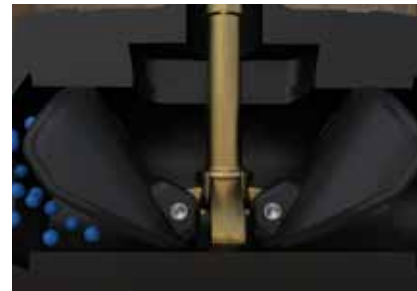
As a global industry leader in advanced plastic piping systems, we specialise in jointing technology made of wear-resistant and hygienically reliable polyethylene. Under the brand name FRIATEC, we present the innovative PE shut-off valve FRIALOC for use in water distribution - applicable for plastic pipelines in water supply.

## Better to go for the original: FRIALOC

If you want to be on the safe side when it comes to water supply, it's better to opt for the original from the industry leader: With the PE shut-off valve FRIALOC from the FRIALEN product line, your pipelines form a completely fused and homogeneous unit without material transitions, seals or mechanical connections. Corrosion and incrustation are now a thing of the past, as are dead spaces and water stagnation.

## Advantages: flexible to use, easy to operate

Thanks to the innovative, plastic-compatible two-flap shut-off mechanism, FRIALOC adapts flexibly to all operating conditions and enables shut-off without much effort, just a few turns from the road cap. Embedded in a valve cross, FRIALOC can also be integrated into existing pipe networks made of other materials: As a „bridge to the premium material PE“, the mechanical pipe connector FRIAGRIP creates the technical prerequisites for the transition from other materials such as PVC, steel, cast iron and concrete to polyethylene.



FRIALOC closed

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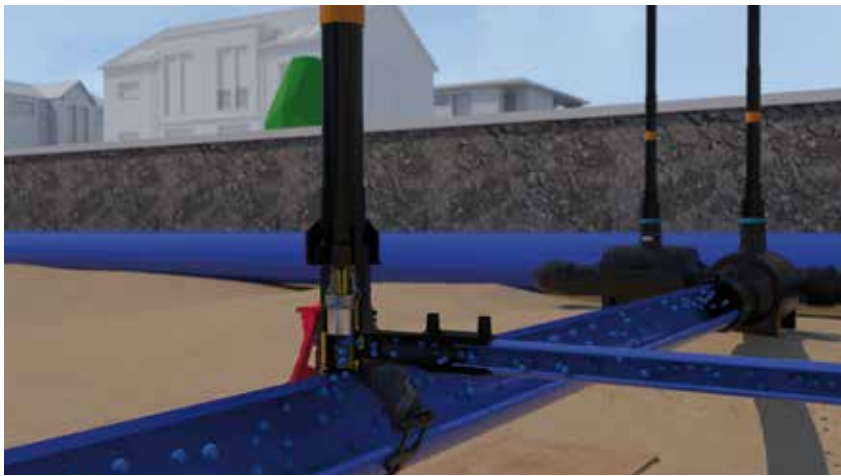


Valve cross with FRIALOC valve

## FRIALOC at a glance

- no corrosion and incrustation
- innovative two-flap system for safe shut-off under all operating conditions
- extremely low-wear
- smooth-running even at full differential pressure
- only half the weight of a cast iron gate valve
- stable stand due to large support surface

# The new generation of pressure tapping valves



DAV open



DAV closed

Our FRIALEN pressure tapping valve (DAV) with the patented RED SNAP quick-release lever is also particularly hygienic, durable and efficient. The PE valve is used to connect a supply line to be drilled with an outgoing line. The service line connection is permanent and robust, with the assembly of the DAV without additional tools and in seconds! An elastic lower clamp covers pipe tolerances and ensures a uniform build-up of pressure during fusion.

The RED SNAP quick-release lever minimises installation time by 50 % - rechecking for correct fitting is no longer necessary. Of course, all materials used here also comply with the current drinking water regulations.

## FRIALEN DAV with RED SNAP at a glance

- durable, economical and corrosion-free
- fast, safe and tool-free assembly
- simplified commissioning
- higher flow rate, lower pressure loss
- maintenance-free service shut-off valve
- solid drive for the transmission of high torques

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# Electrofusion technology – simply clean

**The FRIALOC high-tech shut-off valve made of polyethylene is integrated into the PE pipeline by means of a connection technique that has been tried and tested for years: electrofusion. The equipment required is low, the handling simple.**

## For a homogeneous unit

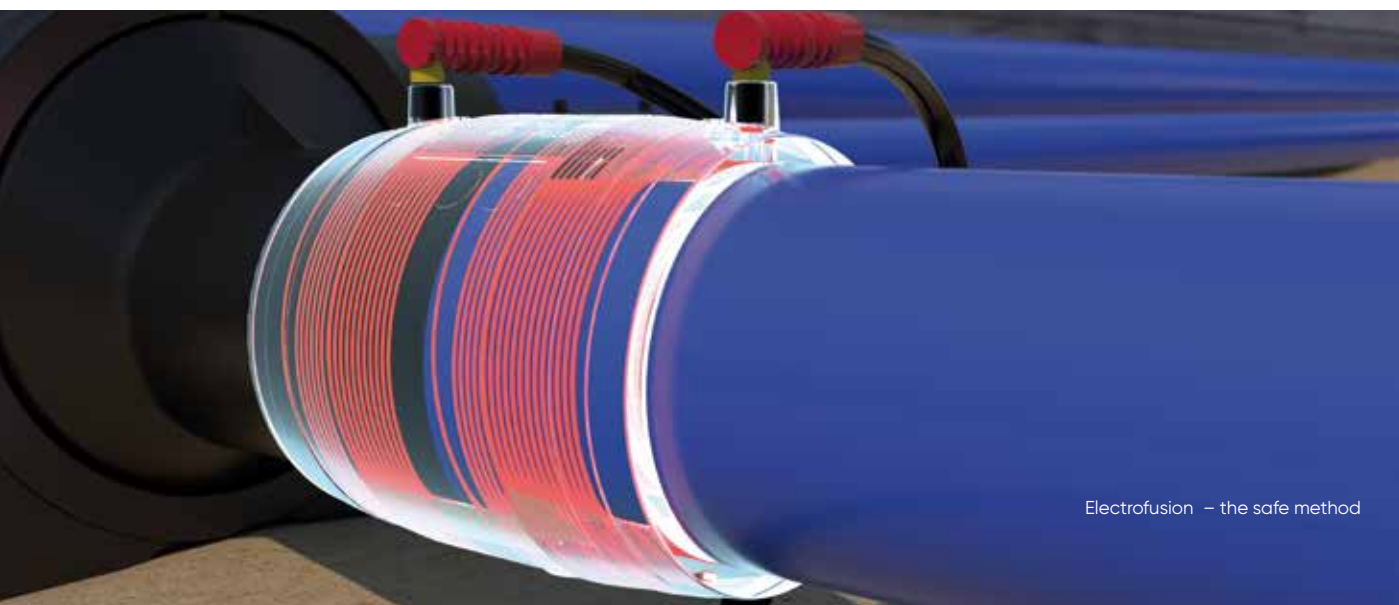
The electrofusion of PE piping systems is inseparably linked to the products from our company. FRIALEN, FRIALOC as well as the FRIAMAT fusion units have been setting standards in this field for more than 30 years. The special heating open wire electrofusion connects the FRIALOC shut-off valve and the plastic pipeline by means of FRIALEN safety fittings to form a homogeneous unit – significant longitudinal force and permanently tight.

The inside of the socket with embedded heating coil wire and the outside of the pipe are heated to fusion temperature and fused under pressure to form a connection that can no longer be detached. And another advantage: In contrast to butt welding, open wire electrofusion does not create a bead inside the pipe and thus no surface that can build up deposits.

## Important: the right tool – FRIATOOLS

For the fusion process, we recommend the universal fusion unit FRIAMAT 7, our powerful electrofusion unit with state-of-the-art converter technology and flow-optimised, active cooling. FRIAMAT 7 also impresses with its low weight, high performance and ease of use. The unit is available in two versions:

- FRIAMAT Basic – the successful basic model with robust housing suitable for construction sites, high-quality graphic display, intuitive user guidance and much more
- FRIAMAT Prime with additional digital functions for documentation and extended traceability, such as Bluetooth interface to the FRIAMAT App and optional 1D/2D scanner for processing 2D barcodes according to ISO 12176-5



# Top priority: Cleanliness

Careful fuse preparation is essential for the best possible welding result. After scraping the fusion zones to remove the oxide layer with our FRIATOOLS scraper tools, it is imperative to clean the fusion zones for perfectly clean, dry and grease-free surfaces of the pipe and fitting. Then the marking lines for the welding zone width must be redrawn on the pipe, as these were previously removed by scraping and cleaning.

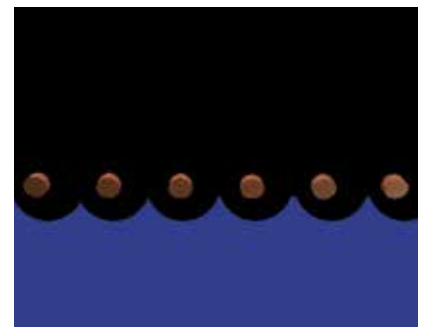
Avoid touching the cleaned fusion zone with your hand. With the FRIAMAT fusion unit, FRIALEN and FRIAFIT safety fittings up to d 900 can be fused in the entire working temperature range from  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ . The use for processing fittings of other manufacturers also up to d 1200 and possibly larger is also possible.



FRIAMAT 7 universal fusion box



The right tool – FRIATOOLS scraper tool type FW5G SE



Cross-section of the homogeneous unit of pipe and fitting

## Electrofusion – the advantages at a glance

- high safety due to wide insertion depth and large fusion surfaces
- no fusion bead on the inside of the pipe
- one light and compact welder for all dimensions
- fully automatic fusion process
- no tree-root ingrowth into the pipework
- easy handling
- subsequent integration and repair possible
- universal socket and saddle fittings
- Processing safety through our FRIATOOLS tools
- comprehensive service and competent application support

## Get the FRIAMAT App here:



**Aliaxis Deutschland GmbH**

Infrastructure

Steinzeugstrasse 50

68229 Mannheim

T +49 621 486-0

info.de@alixis.com

**[www.alixis.de/en](http://www.alixis.de/en)**

