



THE SPECIALISTS
**FOR SAFE
PIPE JOINTINGS**

Innovative. Experienced. Practical.

www.friatec.com

FRIATEC – WORLD LEADER IN ELECTROFUSION

Field oriented and efficient solutions for gas, water, and sewage utilities worldwide.

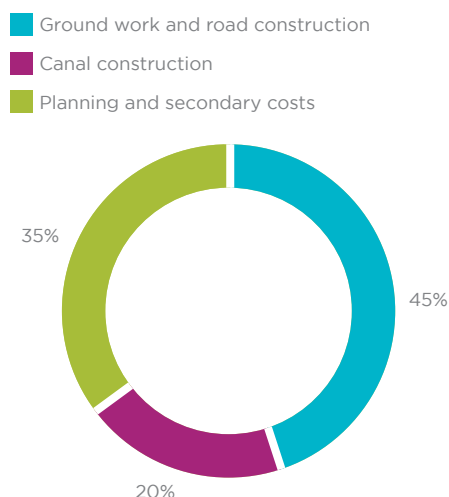
FRIATEC offers you reliable connecting systems for gas, water, sewage, and industrial pipes in HDPE and other materials. As the market leader in electrofusion systems for HDPE fittings, we can offer products that help to optimise the reliability and cost efficiency of your processes.

With many years of experience in the industry, we know exactly what the

easier and more efficient with innovative FRIATEC products – for instance, the special FRIALEN fittings or our special fusion technology.

Utilise both these advantages: Use FRIATEC products to optimise your workflows, and let these pioneering solutions benefit you by minimising your rehabilitation work!

We think like our customers and develop solutions for the field.



80% of the costs for canal renovation projects are swallowed by ground work, road construction, planning, and secondary work. In order to reduce the requirement for underground repair projects, it is imperative to consider pipework systems with the best jointing technology in order to eliminate costly, long-term repairs.

building site needs and what solutions help you. Use FRIATEC innovative products, applications engineering knowhow, and custom services for your project!

RELIABLE SUPPLY AND DISPOSAL

If your work as the manager of a piping network is to turn out profitable, the durability of the pipes is of utmost importance – especially in complex underground systems in an inner city area. Our innovative connecting systems provide an extraordinary level of reliability and durability on pipes, allowing the user to reduce the time needed for repairs, rehabilitation, and replacements over the long term. Yet also the daily routines on the building site are made

HIGH PRODUCT QUALITY

Our customers demand a lot from connecting systems. The pipe material, fittings, and equipment should be reliable, robust, and long lasting. To guarantee this, we gave the highest priority to outstanding product quality. A crucial contribution is also made by our consistent quality management system complying with DIN EN ISO 9001. Our claim: FRIATEC products must prove themselves in the field and be virtually indestructible. We can offer you reliable solutions that meet these requirements each and every time.

SPECIAL EXPERTISE

We understand what you need because the ideas come from the customer. From this practical source, we develop solutions that are suitable for building sites. This powerful innovation philosophy at FRIATEC is the driving force and leitmotif of every single employee. We not only aim to provide superior products, but also the best service. We can offer you competent advice on all product solutions as well as training programmes that are held directly on the building site.

COMPLEX URBAN PROJECTS

Our products and services support both industrial companies and public utilities. We can provide solutions designed specifically for complex underground systems in inner city areas, above all for the benefit of gas, water, and sewage utilities. Crucial here is our ability to realise complex projects even in confined spaces and to manufacture connections that remain effective for many years. Our range includes special repair solutions for rehabilitation projects.

SPECIAL LARGE PIPE INSTALLATIONS

FRIALEN XL products are used for large scale projects worldwide and define the state of the art in this sector. Special solutions like large couplers that adjust flexibly to the pipe and the corresponding XL tools fulfil the special requirements applying to the installation of HDPE pipes up to 1200 mm in diameter.

Specifically industrial companies and engineering offices for large scale projects profit from these innovative XL solutions. These special FRIALEN XL products require special expertise, so we offer our customers our special XL service involving advice and support on site.

PROJECT FRAPORT

The Frankfurt Airport project is a good example of FRIATEC's capabilities. The project used HDPE pipes and FRIAFIT sewage system in the construction of a hangar for the Airbus A380. With its low pipe weight and modern fusion technology, FRIAFIT fulfilled all requirements for lightweight, reliable handling.

Yet more importantly, we already had the perfect solution in the form of FRIAFIT for the high static loads. Above all, it could provide the maximum level of safety for the piping system.

A photograph showing three construction workers in safety gear (hard hats and high-visibility vests) working on a large pipe installation. One worker is kneeling and using a tool on a pipe, while two others stand nearby observing. The background is a wooden structure.

**FRIATEC –
developed for
greater reliability
and efficiency**

FRIATEC FOR EVERY SITUATION A RELIABLE SOLUTION

GAS

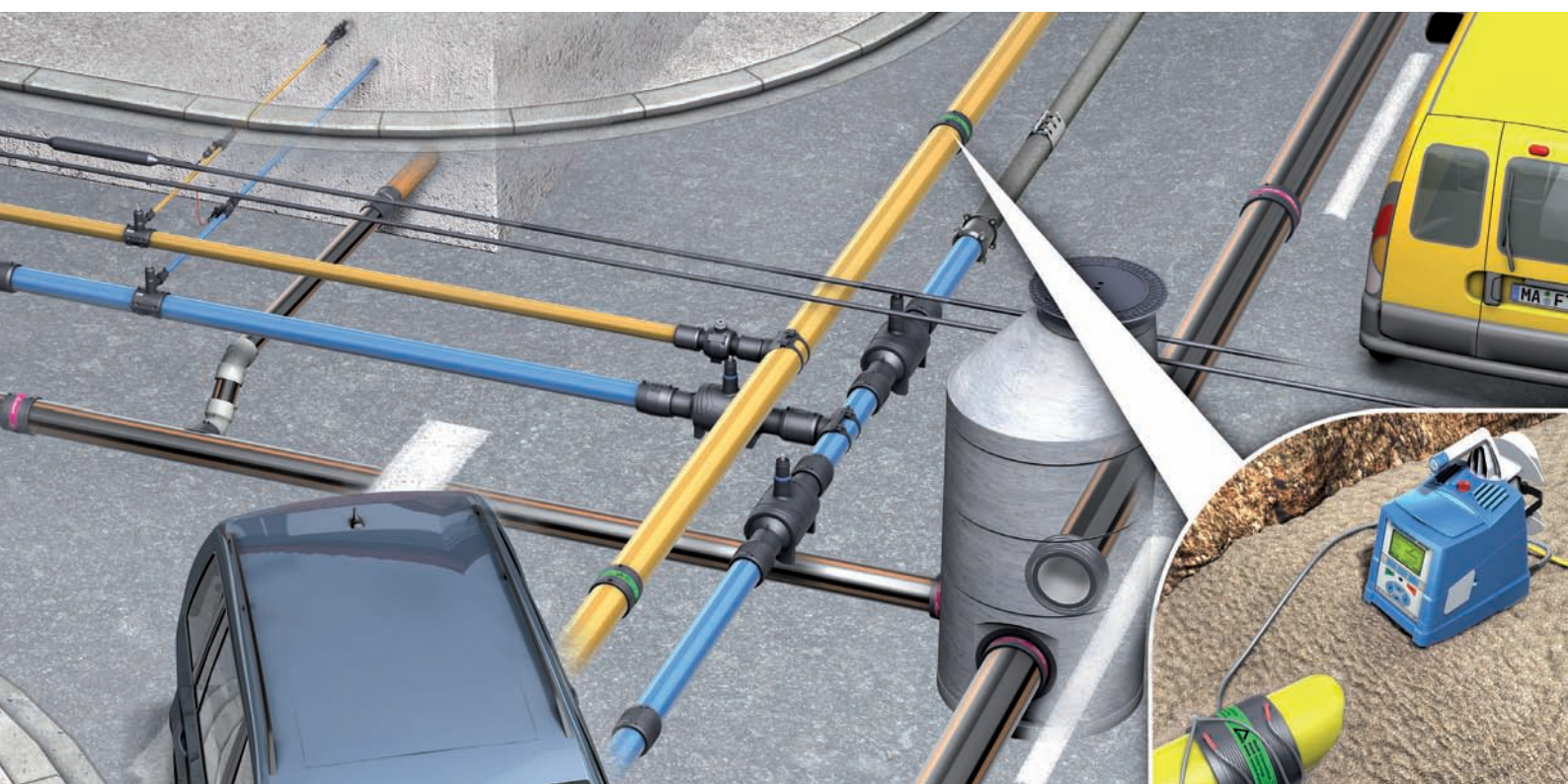
FRIATEC innovative fusion methods and products offer a professional, all round system for the field. FRIALEN electrofusion generates a homogeneous material bond between the pipe and the fitting – without additional sealing elements. Fused PE connections are therefore ideal for building reliable, extremely robust, and resistant piping systems, for instance in development areas. FRIALEN is the first choice for existing systems as we can offer solutions that greatly increase the efficiency remedial work on existing systems which are often highly complex.

DRINKING WATER

FRIALEN connecting technology strives to achieve a fit and forget solution. Products delivered today are far superior to those 20 years ago and are designed with a long life span. FRIALEN XL large pipe installations are best for projects with large PE pipes up to 1200 mm in diameter. We also have special solutions for existing piping systems that have a long history of development – for example, flexible repair solutions provided by our repair saddle or the repair set RPS.

SEWAGE

Fused PE pipe networks have now been used in sewage systems for over twenty years as instead they offer crucial advantages: pipe flexibility, long service life, and permanently tight connections. Cracks in existing pipes and damaged connections still make up the most frequent repair cases – but you can put an end to this. We offer convincing solutions in the form of FRIAFIT and particularly efficient electrofusion – for the installation of both complex collecting lines and domestic services. Together with the specially matched fittings and the right professional tools, our range of products leaves nothing to be desired.



FRIATEC and HDPE – A reliable connection

FRIATOOLS – PROFESSIONAL TOOLING EQUIPMENT FOR ALL INSTALLATIONS

In order to be able to provide our customers with everything they require to complete quality installations, we also offer a range of tools and equipment. The FRIATOOLS range offers our customers the ability to complete installation in an efficient reliable manner. The FRIATOOLS range includes the tried and tested FRIAMAT fusion units as well as tools for the installation of FRIALEN and FRIAFIT. Specifically for our innovative fusion systems used all over the world, we can offer you an outstanding portfolio including device servicing, seminars, and tips from our experts in the field.

FRIATEC – CONNECTING TECHNO- LOGY FOR ALL CASES

We specialise in offering you the right situations. Solutions in the field, solutions that not only work to perfection, but also enhance reliability and cost effectiveness. One good example of our innovative strength is our special fusion method. All FRIATEC fittings feature exposed heating coils that transfer the fusion heat directly between the fitting and the pipe. The result is a perfect connection, even under the rough conditions on building sites.

Learn more about
our products and services.
www.friatec.com



FRIALEN[®] SAFETY FITTINGS FOR LONG LASTING DOMESTIC SERVICE PIPES

Thanks to the high product quality of FRIALEN Safety Fittings, gas and water utilities can operate at a greater cost efficiency – and with far less stress.

CONNECTIONS THAT LAST

At FRIATEC, we recognise that it is important that domestic service pipe installations require minimal repair work. For this reason, the installed pipes are mostly made of HDPE. The FRIALEN domestic services system is characterised by ease of installation, cost effectiveness, long life, and reliability.

FRIALEN boasts an impressive range of products. With a comprehensive range of fittings for pipe from 20mm-63mm in diameter, FRIALEN can offer the right connection for all your requirements. This means that even the most complex applications can be realised.



**FRIALEN® -
The perfect
harmony between
reliability and ease
of handling**



FRIALEN® TRANSITION FITTINGS

Provides the perfect solution for connecting threaded metal components or pipe spigots to a HDPE connecting line such as fittings. HDPE side with exposed heating coils for the optimal transfer of heat, large insertion depth, and wide fusion zone.



FRIALEN® PRESSURE TAPPING VALVES

Unbeatably simple and fast. FRIALEN shutoff branch fittings for gas and water pipes are unmatched for installation and ease of handling. Only ten turns are needed for tapping and activating the functions "Open/close" (up to d 225).



FRIALONG LONG COUPLERS

The ideal coupler for the installation of coiled pipes for domestic service diameters of 32-63 mm. Nearly twice the length of standard couplers and without needing additional tools, they are ideal for the installation and low stress fusion of coiled pipes 32-63 mm in diameter.

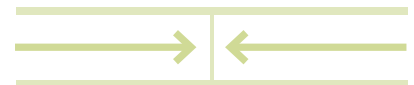
FRIALEN® SAFETY FITTINGS - SUPERIOR ON THREE FRONTS



1. EXPOSED HEATING COIL
for the uniform release of fusion heat and a particularly homogeneous material bond.



2. LONGER FUSION ZONE
for maximum fusion joint strength, far above the European standard.



3. LARGER INSERTION DEPTH
for absolutely reliable pipe connections - for better compensation of angular discrepancies and bending stress.

FRIALEN® SAFETY FITTINGS THE FIRST CHOICE FOR MAIN LINES

FRIALEN offers professionals exactly what they need: reliable electrofusion fittings and the best fusion method.

ULTRA MODERN CONNECTING TECHNOLOGY

Polyethylene (PE) piping systems offer a whole host of benefits for the supply of gas and water. The FRIALEN system is characterised by ease of handling, corrosion proof, resistant to chemicals, and outstanding fusion properties - the optimal conditions for main pipe durability.

Thanks to innovative electrofusion technology specifically for distribution lines, FRIALEN Safety Fittings have been optimised to today's high performance materials PE100 and PE100-RC. Hence they can realise reliable connections on diameters between 75 mm and 225 mm, even under difficult conditions, e.g. narrow pipe trenches in inner city areas.

RELIABILITY AND EASE OF INSTALLATION IS SYNONYMOUS WITH FRIALEN® CONNECTING TECHNOLOGY



With FRIALEN®
Safety Fittings
always on the
safe side



FRIALEN® ELBOWS

Perfect for changes of direction in the pipe routing. Besides the standard 30°, 45°, and 90° elbows, the FRIALEN range also offers the 11° elbow for greater flexibility in pipe routing.



FRIALOC® PE SHUT-OFF VALVES

The world's first PE shut-off valve features a novel mechanism that has been optimised to the properties of HDPE: robust, long lasting, and with permanent sealing properties.



FRIALEN® SHUT-OFF SADDLES

FRIALEN shut-off saddles feature a work safety bladder that shuts off gas lines operating under pressure. They can also be used for venting or flushing.



FRIALEN® FLANGE T PIECES

Factory made compact assemblies of FRIALEN T piece, reducer, and full faced flange. Their heights can be configured for the direct installation of underground hydrants.



FRIALEN® BALL VALVES

The PE ball valve can be used to shut off a section of the gas supply system - from the domestic service pipe connection to the d 225 main lines. The ball fitted on a floating bearing and the seal along the ball axis make it impervious to bending stress.

ADVANTAGES:

- Reliability and ease of installation
- Maximum join quality and high stability
- Maximum safety and cost effectiveness
- Long service life of the fittings and HDPE pipes

CONTACT

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FRIALEN® XL GREAT CONNECTING TECHNOLOGY FOR LARGE SIZES

Fusion quality and ease of installation in XL – FRIALEN® XL range utilises the advantages of HDPE on a larger scale.

WORLDWIDE PRESENCE

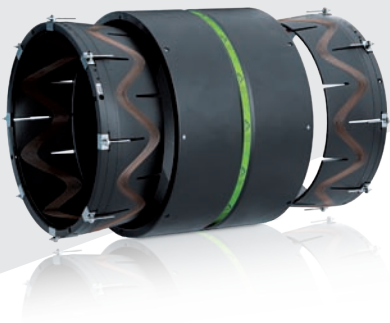
FRIALEN XL range has been used in large scale projects all over the world. The XL range has provided successful piping solutions for projects that require kilometers of pipe for gas and water in countries like the the United Kingdom, Malaysia or Russia. On the one hand, HDPE exhibits excellent fusion properties, and on the other it is easy to handle on the building site.

Even the most complex installations and new technologies such as pipe relining can be mastered in grand style with FRIALEN Safety Fittings, available for diameters 250–1200 mm.

COMPLEX CHALLENGES SAFELY UNDER CONTROL



FRIALEN® XL – Large scale jointing technology for professionals



FRIALEN® XL CONICAL RING COUPLER

Adjusts flexibly to pipe. Supported by the coupler's conical interior contour, the conical rings can compensate for differences in diameter or oval pipes of up to 20 mm. Installation is therefore extremely easy after scraping.



FRIALEN® XL SPIGOT SADDLES

Installing branching saddles on large pipes is easy with FRIALEN spigot saddles. Position the saddle on the prepared part of the pipe. Preinstall it under vacuum using the clamping tool VACUSET XL. Fuse on, and leave to cool.



FRIALEN® XL REPAIR SADDLES

The repair saddles are ideal for fast and simple repairs on large HDPE pipes, and are also preinstalled under vacuum.



FRIALEN® XL FITTINGS

The large scale FRIALEN XL fittings with integrated fusion couplers feature eyebolts for ease of handling. The FRIALEN XL product range offers 45° elbows, 90° elbows, reduced T pieces, and T pieces up to 315 mm in diameter.



FRIATOOLS®

Optimal processing and fusion results, especially on large HDPE pipes, can be obtained only when the right tools are used. FRIATOOLS can offer these tools for diameters up to 1200 mm (see page 14/15).

ADVANTAGES:

- Large pipe installations 250–1200 mm in diameter
- Preheating system and outer reinforcement for best fusion quality
- Suitable XL tools

CONTACT

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FRIAFIT® SEWAGE SYSTEM OUR SOLUTION TO LEAKS IN SEWAGE SYSTEMS

FRIAFIT electrofusion fittings safeguard the tightness of piping systems, preventing contamination of the soil and congestion in clarification plant.

HDPE systems are flexible and therefore have a long service life, raising the cost effectiveness of sewer systems. FRIAFIT can offer you fittings that our innovative electrofusion technology connects securely to HDPE pipes: with permanent sealing properties and high axial strength. The pipe and FRIAFIT fitting become

an inseparable unit. The connections can also resist extremely high forces caused by tree roots. So you don't have to think about repair work for a long time to come, with considerable cost savings as a result.



**Lasts forever:
FRIAFIT® with
electrofusion
technology**



FRIAFIT® COUPLERS

Our couplers are virtually unrivalled as they safeguard perfect fusion quality on all diameters up to 900 mm: large coupler depth for reliable pipe routing, open heating coil with short fusion times, extra wide fusion zones, and outer reinforcement for high stability and optimal joining pressure.



FRIAFIT® INSPECTION CHAMBER CONNECTION

Perfectly matched to the differing material properties of concrete and HDPE – for a jointed connection to shafts up to 630 mm in diameter. The shaft remains free of axial pipe stress, and a water absorbent sealing ring provides additional protection.



FRIAFIT® SADDLES

Innovative vacuum clamping technology for the reliable compensation of ovalities and geometrical deviations on pipes up to 710 mm in diameter – whether new installations or retrofits. Our saddles can be fitted flexibly to any position on the pipe, saving you the time consuming work of shutting down and parting off the main sewer.



FRIAFIT® BENDS ABM/S

For changes of direction in waste and combined water connecting lines – Our compact, space saving 15°, 30°, and 45° bends take the effort out of pipe routing and can even be combined to form angles of 60°, 90°, etc. In addition, integrated fusion couplers reduce the installation time.

ADVANTAGES:

- For efficient installations and cost effective operations
- Permanently tight, root resistant joints of high axial strength
- Competent support from the planning to the building phases
- Extensive delivery programme from the building drain to the d 900 main pipe

CONTACT

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FRIATOOLS® EQUIPMENT ENGINEERED BY SPECIALISTS FOR SPECIALISTS

Even professionals are only as good as their tools - FRIATOOLS® provides the basis for the best results.

THE CRUCIAL DIFFERENCE

Having the correct tools to perform installation on site makes all the difference. We see ourselves as specialists in the electrofusion of HDPE piping systems, so our development work has also included equipment and accessories for your needs from the very outset.

We know exactly what matters and what is needed in the field, and we can offer you a range of equipment tailored to the daily challenges encountered on the building site. FRIAMAT fusion units and mechanical tools like scraper tools, rounding techniques, clamping tools, and installation auxiliaries: that crucial contribution towards making your work easier on the building site.

THE RIGHT TOOL AND ULTRA MODERN FUSION TECHNOLOGY



FRIATOOLS® - The right tools for every situation



FRIAMAT® FUSION UNITS

Our universal fusion units are designed for simple, safe handling and the highest reliability. They bring their whole strength to bear especially in continuous duty and when processing large scale fittings. FRIAMAT fusion units have proved their worth under the most gruelling conditions on the most diverse building sites, with their compact design and low, well balanced weight cannot fail to convince the professional fitter.



Tilted position for easier handling



FRIATOOLS® SCRAPERS AND TOOLS

The optimal processing and reliable fusion results on HDPE pipes can be obtained only when the right tools are used. FRIATOOLS can offer you robust scraper tools for all pipe diameters and for a wide range of scrape lengths and saddle surfaces. Moreover, our range contains innovative clamping tools for the installation of saddle fittings, flexible rounding techniques, and further processing tools for all requirements on the building site. Put your trust in tools that produce the perfect results.

SERVICE AND MORE:

With FRIATOOLS, you profit not only from extraordinary product properties, but also from our extensive service portfolio:

- Worldwide service stations
- Loan equipment service
- Replacement parts service
- 24 hour service
- Field oriented seminars

CONTACT

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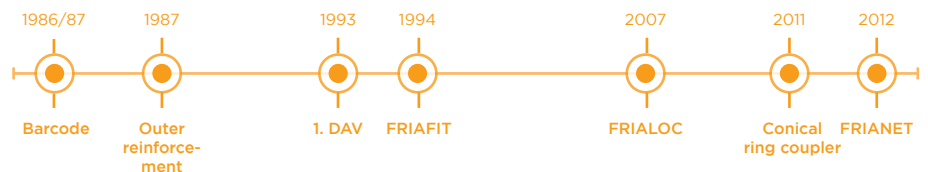
INNOVATIONS BY FRIATEC

OUR IDEAS ARE TUNED TO THE FIELD AND TO THE FUTURE

We are the leader in innovative electro-fusion technology, and many of our other products testify to the innovative strength of FRIATEC. A strength that is continuing to shape the market.

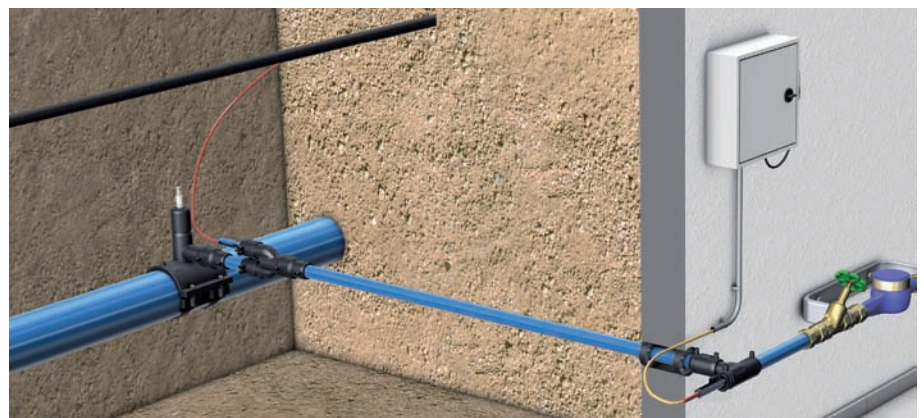
Practice on the building site never fails to throw up new challenges. Our goal is to make your work easier, and the results as permanent as possible, with pipes and connectors of the highest quality and with products that tap into an all-new potential. To achieve this, we must continue developing ourselves and creating innovations that have now become milestones in modern connecting technology:

- **Barcode** – The first barcode that a scanner can read on the fitting to input its fusion parameters
- **Outer reinforcement** – The first reinforcement that maintains the melt pressure during fusion
- **FRIALEN-DAV** – The first fuse-on pressure tapping valve, completely of HDPE
- **FRIAFIT** – The first PE fusion system for sewer pipes
- **FRIALOC** – The first shut-off valve completely of HDPE



FRIANET CONDUIT INSTALLATION KIT (FTTH)

The innovative FRIANET conduit installation kit (FTTH = fibre to the home) is one outstanding example of our innovative strength and our close cooperative partnership with our customers: We developed the two FRIATEC systems, the “water conduit installation kit” and the “gas conduit installation kit”, at the request of two public utilities. This technology allows the installation of broadband fibre optic cables through existing domestic gas and drinking water service pipes to the home – a huge advantage for our customers.



EXCELLENT SERVICE FOR INNOVATIVE PRODUCTS

Supporting
Experts with
360° Service

DEEP SERVICE PHILOSOPHY

FRIATEC supports professionals on the building site with outstanding products and special services. From the very outset, our advice targets your solution and your benefit. In other words, we take the time to analyse in depth your quite specific requirements. All FRIATEC advisers are highly qualified experts with extensive experience in applications engineering. Working together with you, we can therefore find the best solution for your project and provide you with all of the details you need for efficient applications on your building site. In addition, we also offer training programmes and seminars on specific subjects taken directly from the field. Profit from the FRIATEC 360° service concept guaranteeing you end to end support.

BUILDING AND PLANNING SITE SERVICE TAILORED TO YOUR SOLUTION

We can show you where you can increase efficiency on your building site, so you can benefit to the optimal effect from our high quality FRIATEC products. Our building site service assists planning engineers, utilities, and building subcontractors from the initial planning to the final project conclusion. We give you instructions and practical tips and support you in installing trial systems. For example, we can provide knowhow specific to FRIALEN for the installation of complex pipe connections. Use this special service – an onsite FRIATEC expert can often prevent delays on the building site and shorten downtimes.



EXCELLENT SERVICE FOR INDIVIDUAL CUSTOMERS

FIELD BASED SEMINARS

Our field experience gathered over many years has given us invaluable knowledge that we are pleased to pass on in our professional seminars at our modern training and congress centre in Mannheim. We offer field based seminars for all of our FRIATEC products. Every participant will find the ideal seminar for his field of interest, whether he is seeking a knowledge base for supply and disposal utility users, traders, or pipe manufacturers, or specialised knowhow for waterworks supervisors, fusion supervisors, or planners.

Here your personnel learn how to handle FRIATEC products and equipment on the building site, e.g. how to replace wearing parts. In addition, professionals learn all they need to know on the storage, transport, and care of our high quality FRIATEC devices. In this manner, your personnel learn how to maintain the equipment on their own responsibility and so save unnecessary subsequent costs – a FRIATEC service that pays off for your company over the long term.

Our seminars promote the intensive sharing of knowledge and personal contacts with a competent representative.

YOUR FRIATEC BENEFITS

- Comprehensive advice on individual product solutions
- Practical support from experts on site
- Tips and tricks from professionals for professionals
- Professional product training programmes and seminars in Mannheim

Learn more about
our innovations and services.

www.friatec.com



FRIATEC WORLDWIDE

NO DISTANCE TOO FAR

NO TASK TOO DIFFICULT

As a partner of a strong community, the ALIAXIS group, FRIATEC can realize interesting projects worldwide.

Legoland Malaysia

For a project on this scale, everything should run smoothly, and there should be no downtimes or bottlenecks. Consequently, this project used exclusively our FRIALEN d 32 to d 400 fittings.



Legoland, Malaysia

Sweden

Extremely low temperatures like here in Karlstadt pose no problems for our FRIALEN fittings. A water pipe was renovated successfully thanks to our UB couplers and, for ventilation, our SA-XL spigot saddles.



Karlstadt, Sweden

Saudi-Arabia

When they were being installed in a storm pipe in the port of Yanbu' al Bahr, our fittings were exposed to extremely high temperatures. This pipe is used to pump back water at 2 bar when a storm forces it into the port area.



Yanbu' al Bahr, Saudi-Arabia



Aliaxis
UTILITIES & INDUSTRY

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