

Always the right decision:

# **FRIAFIT<sup>®</sup>** **Sewage System**

Joining Technology for a long useful life



## REHABILITATION SCENARIO:

# Sewage drain



**About 20% of the public waste and mixed water drainage network needs to be rehabilitated\*. The main reason for this is the use of pipe materials which are not consistently able to meet such impacts as e.g. ground movement, peak loads or in-growing roots.**



**Large amounts of contaminated sewage may therefore reach the soil in an untreated state, and inversely ground water may enter the waste water pipe systems. Consequences of such a development are a serious impact on ground water as well as increasing costs for the operators of the sewage treatment plants.**

**You can put an end to this.**

*\*Source: German Association for Water Economy, Sewage and Waste, 2004*

## **FRIATEC: ALWAYS THE RIGHT DECISION.**

FRIATEC, as specialist for jointing technology in pipe systems and technological leader in electrofusion, provides the certainty that the right decision is made. A decision contributing to the optimisation of safety, economy and efficiency of your processes.

# age

## **A material which convinces completely: HDPE**

HDPE has been tried and tested for more than 40 years in both gas and water supply. It convinces through a number of advantages which allow a safer and more efficient operation of sewage drainage systems – now and in future:

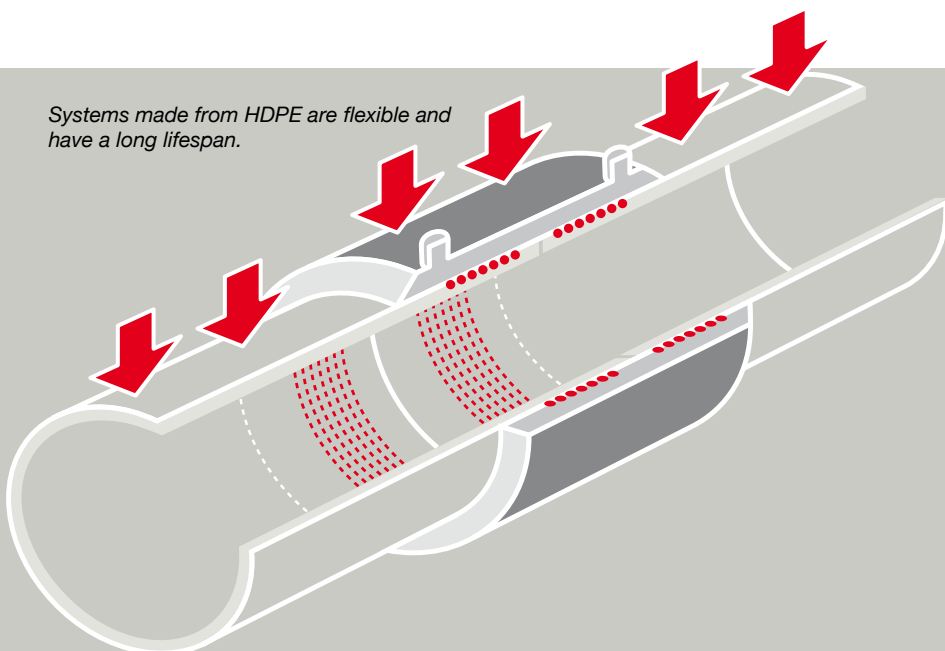
- useful life of over 100 years forecast according to DIN 8074
- excellent resistance to aggressive media
- high abrasion resistance to debris movement and high pressure rinsing
- low surface roughness prevents deposits and encrustations
- the elasticity of the pipe system allows absorption of peak loads and ground movement
- material rupture is excluded
- ideal handling on construction sites due to low weight
- excellent fusibility



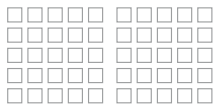
## **The jointing technology which is really convincing: electrofusion**

The superior electrofusion technology joins HDPE pipes permanently and longitudinally strong: pipe and FRIAFIT coupler make one inseparable unit. This way water is prevented from entering or leaking out, and the in-growing of roots is prevented. A HDPE pipe systems using FRIAFIT fittings is the right decision for efficient and safe operation and against an early need for rehabilitation.

*Systems made from HDPE are flexible and have a long lifespan.*



# LONG LIFESPAN, SAFE, ECONOMICAL:



# FRIAFIT® Joint

**By choosing FRIAFIT you are creating the perfect conditions for an efficient installation and economic operation of your drainage. The superior advantages of FRIAFIT fittings make sure of that:**

## **Exposed heating coil**

FRIAFIT boasts exposed heating coils without a HDPE layer getting in the way. These provide:

- optimum heat transfer during fusion
- a good build-up of molten pressure
- a homogenous connection of the materials – pipe and fitting become an inseparable unit

## **Large insertion depth**

FRIAFIT fittings boast large insertion depth.

This allows for:

- ease of pipe guidance
- optimum chambering of the molten mass resulting in constant pressure during fusion.

## **Long fusion zone**

FRIAFIT fittings boast extra long fusion zones.

These provide:

- maximum processing safety and reliability
- permanently tight connections due to expansion of force transmitting area

*FRIAFIT sewage system:  
For every request the right  
decision..*





# ing Technology

## Areas of application

The FRIAFIT sewage system may be fused without any limitations with pipes made from HDPE according to DIN 8074/8075, EN 12666 of grades SDR 33, SDR 26, SDR 17.6 and SDR 17. Pipes made of PE 63, PE 80 and PE 100 with a melt flow rate MFR190/5 between 0.2 - 1.7 g/10 min. can be fused. Processing is possible with ambient temperatures between -10 °C to +45 °C.

## Preparation

HDPE pipes react in contact with ambient air creating an oxide layer. This oxide layer must be removed from the surface to be covered as part of the preparation for the fusion process in order to achieve good results. FRIATEC provides perfectly designed tools in its FRIATOOLS range.



## Fusion

The fusion process for connecting HDPE pipes with the FRIAFIT fittings is carried out using FRIAMAT fusion units from the FRIATOOLS range. These are controlled automatically by the barcode attached to the FRIAFIT fittings in regards to energy required and duration of the fusion process. In addition FRIAFIT electrofusion fittings have an automatic temperature compensation system which, together with FRIAMAT fusion units, prevents the ambient temperature having a negative effect on the fusion result.



## UNIVERSAL:

FRIATEC with its assembly friendly complete range of fittings for

pipes from d 110 to d 630 offers you a suitable jointing technique to

meet all requirements.

# THE PERFECT DOUBLE:



# FRIAFIT®

# Inspect

FRIAFIT inspection chamber connections consist of two components: the sewage inspection chamber adapter and the sewage insert sleeve. Adjusted perfectly to the different properties of concrete and HDPE, they provide optimum connection up to d 630 for a flexible joint to the inspection chamber according to the standards DIN V 4034-1 and ATV-DVWK-A 157.

## **FRIAFIT ASF sewage inspection chamber adapter**

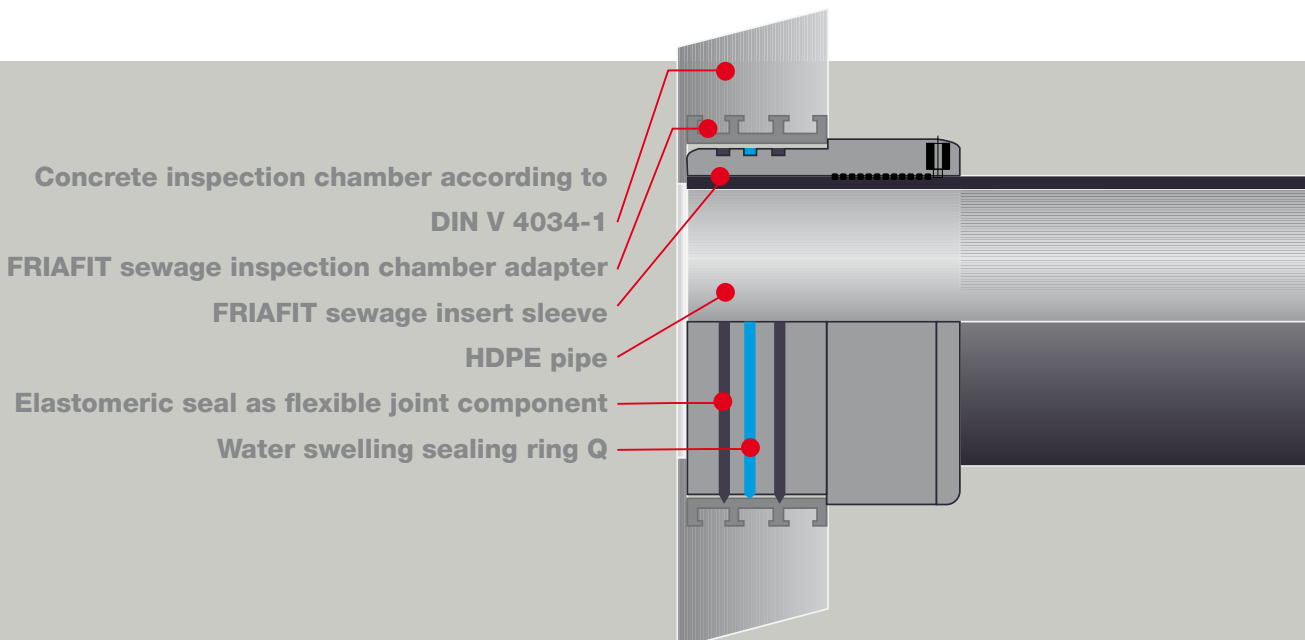
The FRIAFIT sewage inspection chamber adapter has usually been anchored tightly in the inspection chamber by the concrete factory. Special fixing bridges with T profiles provide this. Only on the construction site the sewage insert sleeve is inserted.

- width of component and HDPE/concrete connection correspond to DIN V 4034-1
- stable internal diameter due to large wall thickness
- defined interior area for reliably system sealing
- also available longer length (**ASFL**) for subsequent integration in bricks chamber

## **The AEM FRIAFIT sewage insert sleeve**

The FRIAFIT sewage insert sleeve provides a flexible connection due to its two elastomeric sealing rings as well as water swelling sealing ring. Connection with HDPE pipe is achieved by electrofusion with all FRIAFIT couplers.

- double elastomeric sealing allows flexible joint to chamber adapter according to DIN V 4034-1 and ATV-DVWK-A 157
- the inspection chamber remains free from axial pipe stress due to the push-fit joint between chamber adapter and insert sleeve
- water swelling sealing ring provides additional safety



# tion chamber connection



## PERFECT:

The FRIAFIT inspection chamber adapter and the insert sleeve are

the perfect double to join HDPE pipes with inspection chambers

up to d 630. Flexible and reliably leak-proof.



# PERFECT FUSION IN ALL SIZES

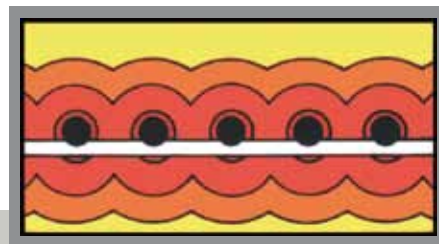
# FRIAFIT® - Coupler



## FRIAFIT couplers (AM)

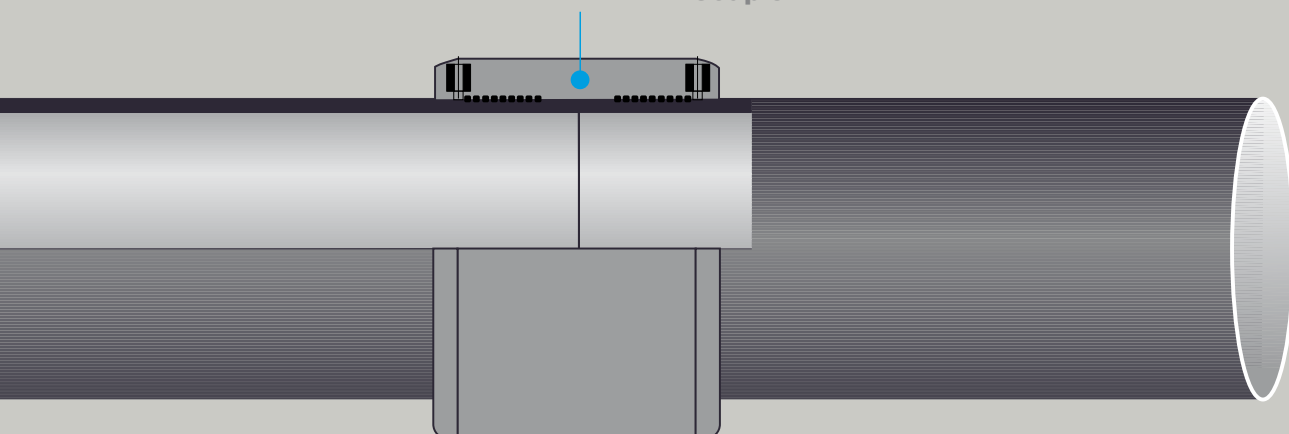
FRIAFIT couplers provide a lasting connection for pipe systems made from HDPE which is tight and longitudinally strong. Due to the superior electrofusion technology pipe and coupler become an inseparable unit giving even in-growing roots no chance at all.

- designed as slide-over coupler without centre stop for equally bottom levelled pipe connections without gap between the pipes
- external reinforcement on large couplers for stability and optimum molten pressure during fusion
- low weight even with larger dimensions



*Direct heat transfer because of exposed heating coils*

FRIAFIT Coupler





# plers

## And what you are used to in small sizes: Now also available in large sizes.

With the dimensions up to d 630, the FRIAFIT product range now offers you sizes which no other manufacturer has ever introduced to the market in such a comprehensive way – anywhere in the world.

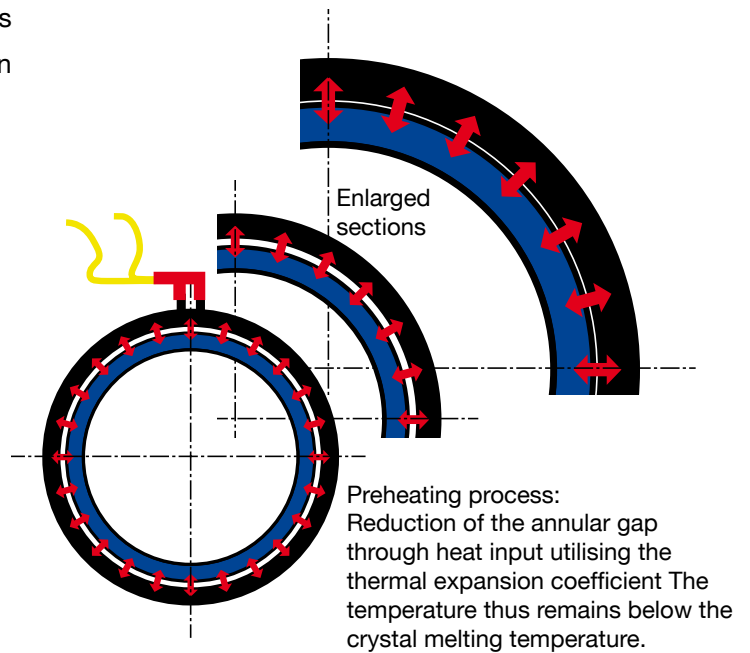
This safe connection is supported by a preheating barcode for couplers d 560 - d 630 which compensates for a larger annular gap (> 1mm, max. 3mm) between coupler and pipe.

- large insertion depth – good pipe guidance
- extra large fusion zones
- flexible handling thanks to two fusion zones
- high stability thanks to patented external reinforcement
- excellent results also without fixing devices

## Products typically not yet offer any successful problem solution.

The offer includes a comprehensive service, e.g.: training, presentations, construction site service and training, advise and trial installations. It is only by this that the project can be completed with high quality.

We offer this service to our customers from our portfolio of FRIAFIT large pipe engineering.



## IN USE:



FRIAFIT couplers (AM), SDR 17, offer a safe connection of HDPE in all dimension ranges.

From d 560, the field-proven preheating technology serves as safety asset.

# SIMPLE HANDLING, PERFECT JOINTS:

# FRIAFIT<sup>®</sup>sewa



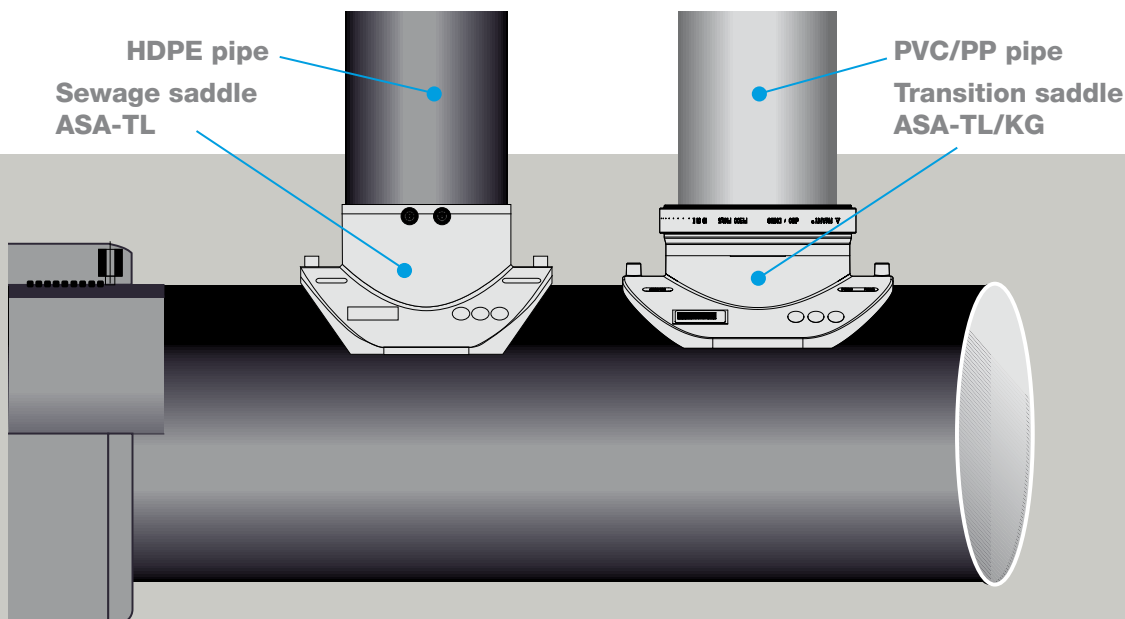
## The FRIAFIT top loading sewage saddle (ASA-TL)

The FRIAFIT sewage saddle serves for the connection of sewage service pipes to HDPE waste water drains in new installations, rehabilitation or subsequent integration. The sewage saddle is a compact construction part made from HDPE, consisting of a weld-on saddle with an integrated fusion coupler in the outlet.

Assembly is simple:

The saddle is fixed to the pipe by means of the FWFIT clamping and tapping unit from the FRIATOOLS product range and tapped after the fusion process without displacement.

- little space required in the pipe trench
- separating of pipe not necessary
- direct integration of connecting pipe – without interfering displacement or drain obstruction
- dimension range main piping d225 – d630



# ge saddles



## The FRIAFIT transition saddle (ASA-TL/KG)

The transition saddle ASA-TL/KG with integrated slip-on coupler at the outlet facilitates a direct connection for HDPE sewers to house service connections or storm drains made of PVC/PP DN 150.

Easy installation thanks to the proven FWFIT clamping and tapping tool from the FRIATOOLS product range.

- integrated slip-on coupler at the outlet d 160 (DN 150)
- direct transition to the connecting pipes PVC/PP without interfering displacement or drain obstruction
- no fusion required at outlet
- little space required in the pipe trench



## IN USE:

FRIAFIT sewage saddles component parts cover all requirements in domestic sewage discharge.

They are matched to the FWFIT clamping and tapping tool and facilitate easy and safe handling

in all situations.

# SIMPLE HANDLING, PERFECT JOINTS:

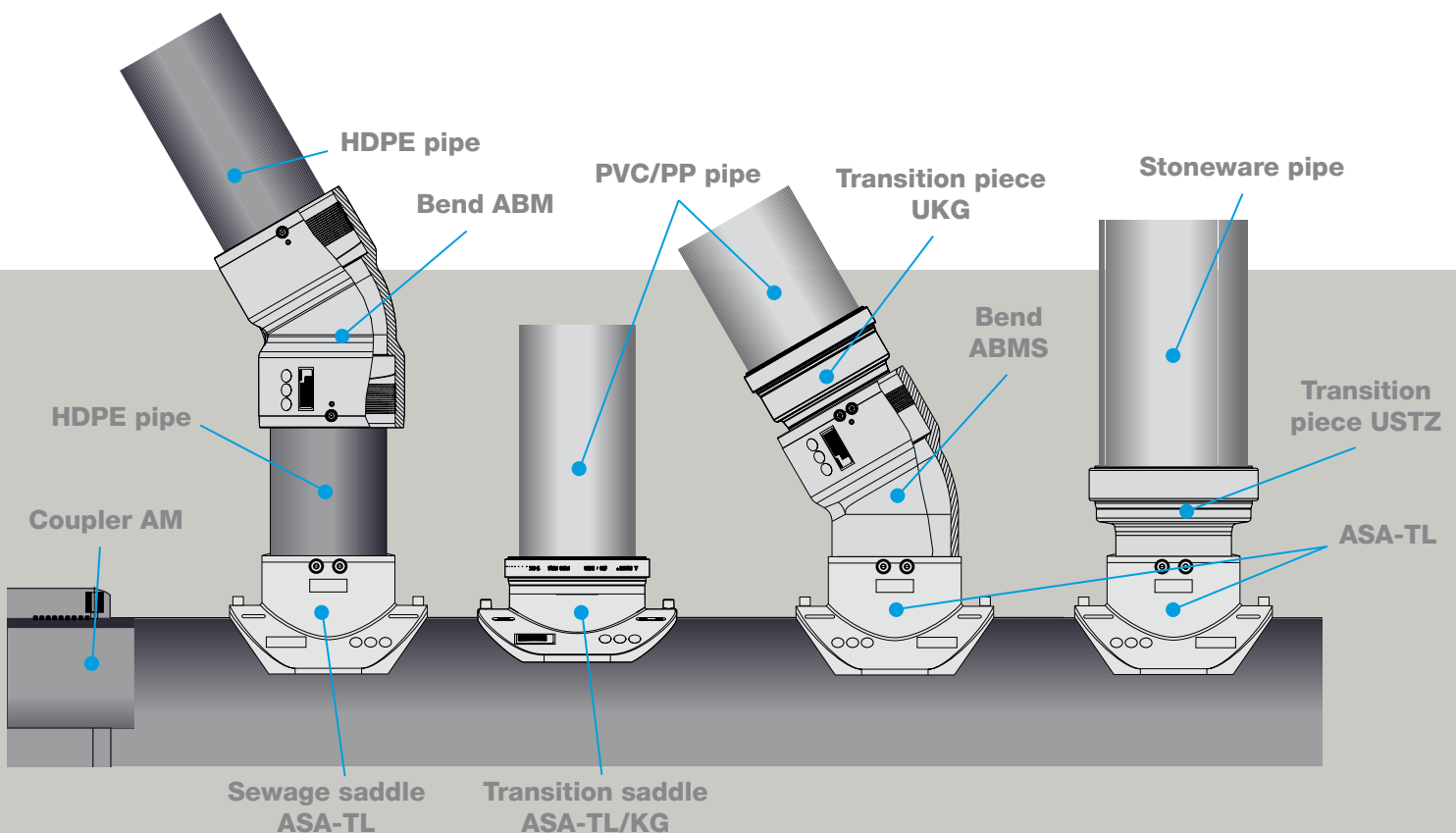
# FRIAFIT® mou



## FRIAFIT bends (ABM / ABMS)

The FRIAFIT® bends d 160/DN 150 are used for change of direction in domestic and combined sewage drainage. The types ABM (coupler/coupler) or ABMS (coupler/pipe spigot) and the angle spacings 15°, 30° and 45° facilitate a comfortable piping configuration. Angles of 60°, 90° etc. can e.g. also be produced by using multiple elbows.

- little space required thanks to compact design
- reduction of the installation time thanks to integrated fusion couplers
- bright component part interior surface for continuous camera inspection
- level when using SDR 17/17.6 connecting pipes, no drain obstructions
- hydraulically optimised internal contour through curved form





# Added parts



USTZ

## FRIAFIT transition fittings (UKG and USTZ)

FRIAFIT transition fittings serve continuous material transition from HDPE pipes SDR 33 to SDR 17 to PVC/PP pipes or stoneware pipes. The spigot end can be fused to FRIAFIT coupler or to the outlet of the FRIAFIT sewage saddle ASA-TL.

- continuous material transition in application with HDPE pipe SDR 33 to SDR 17.
- on the Plug-in side with integrated SBR-sealing-lip for PVC/PP pipe or stoneware pipe.



UKG



## In use:

FRIAFIT couplers, sewage saddles, bends and adapters are perfectly in tune

with one another and allow simple and safe handling in all situations.

# ALWAYS THE RIGHT DECISION:

# Joints for all

*Always on site when you need us: your FRIATEC advisory team.*



## **Perfect advice leads to the right decisions**

Your competent FRIATEC advisers have excellent practical experience. No set of circumstances will be a challenge to them. They will analyse your requirements in co-operation with your staff and create solutions tailor-made to your needs giving you the certainty that you are always making the right decision, both in terms of technology and economy.

*Demonstrating a fusion unit right at the construction site.*



## **Perfect service leads to safe operation**

Perfect service also means having enough time for the customer. Being available to the customer is as important to us as the specialist qualifications of our advisory and service team. You too can benefit from our range of services ranging from training, construction site consultations, and sample installations to a comprehensive equipment hire service.

*Practical based construction site training by your FRIATEC adviser.*



# events

**We focus on jointing technology for pipe systems.**

**This gives us the expertise to come up with a high-**

**ly specialised solution for any requirements in this**

**area.**

## ■ FRIATOOLS

FRIATOOLS Technical Equipment offers a sophisticated and complete product range with its FRIAMAT electrofusion units and mechanical tools such as scraper tools and rounding clamps. Comprehensive service and practice-orientated workshops round off the offer.

## ■ FRIALEN

Couplers, fittings and valves for electrofusion of HDPE pipes in gas and water supply.

## ■ FRIALEN geo

Ground probes, probe feet, Y pieces, plastic manifolds, plastic manholes for construction of complete systems for geothermal heat recovery.

## ■ FRIAGRIP

Couplings and repair technology for the repair of various pipe materials.

## ■ STRAUB

Pipe couplings for different pipe materials in plant construction.



**Would you like to know more about our products and services?**

**More detailed information is available in our separate product leaflets**

**or online at**

**[www.friatec.com](http://www.friatec.com)**

FRIAFIT®

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