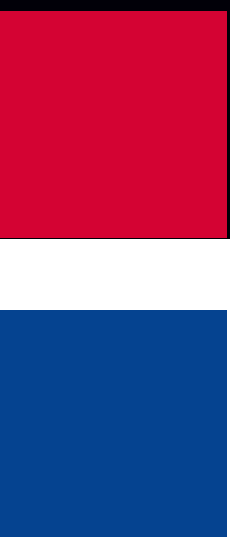


A close-up photograph showing a person's hands using a silver crimping tool to connect a brass fitting to a white pipe. The fitting is a 90-degree elbow with a threaded end. The pipe is white with a blue stripe. The background is a blurred blue and white. A red banner is in the top right corner.

**Secure connections
for the past 20 years**

Two solid-colored rectangles, one red and one blue, are positioned on the left side of the page. The red one is above the blue one.

TECEflex – the universal
installation system

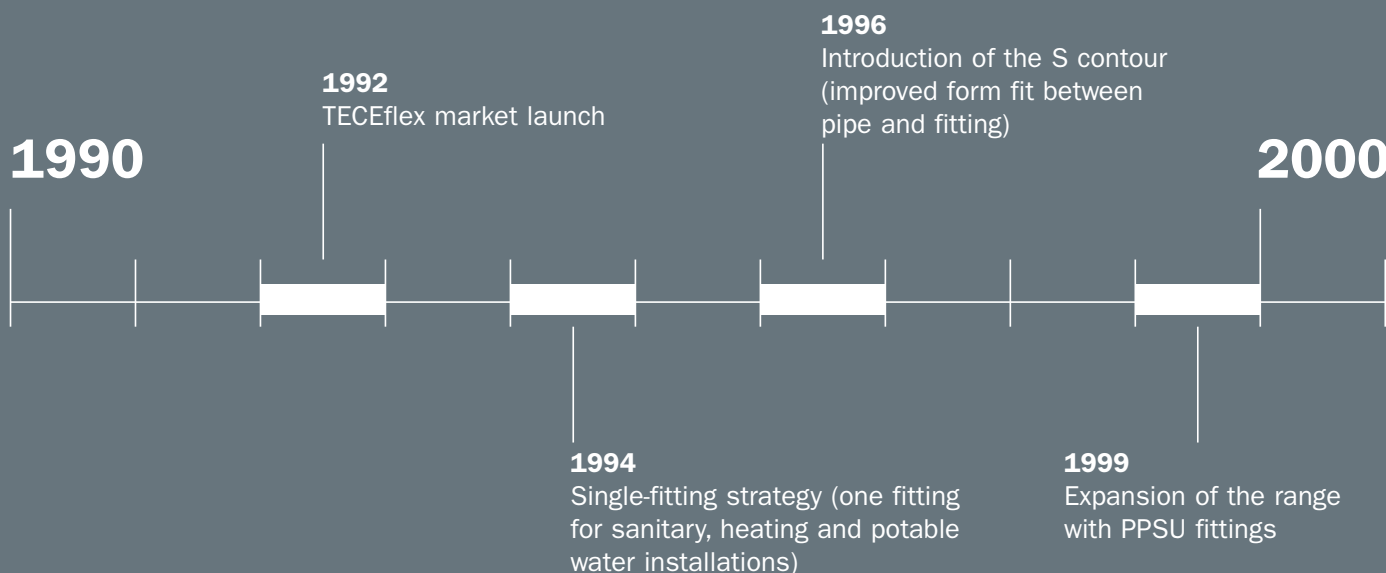
TECE:

Intelligente Haustechnik

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Twenty years of **TECEflex**.

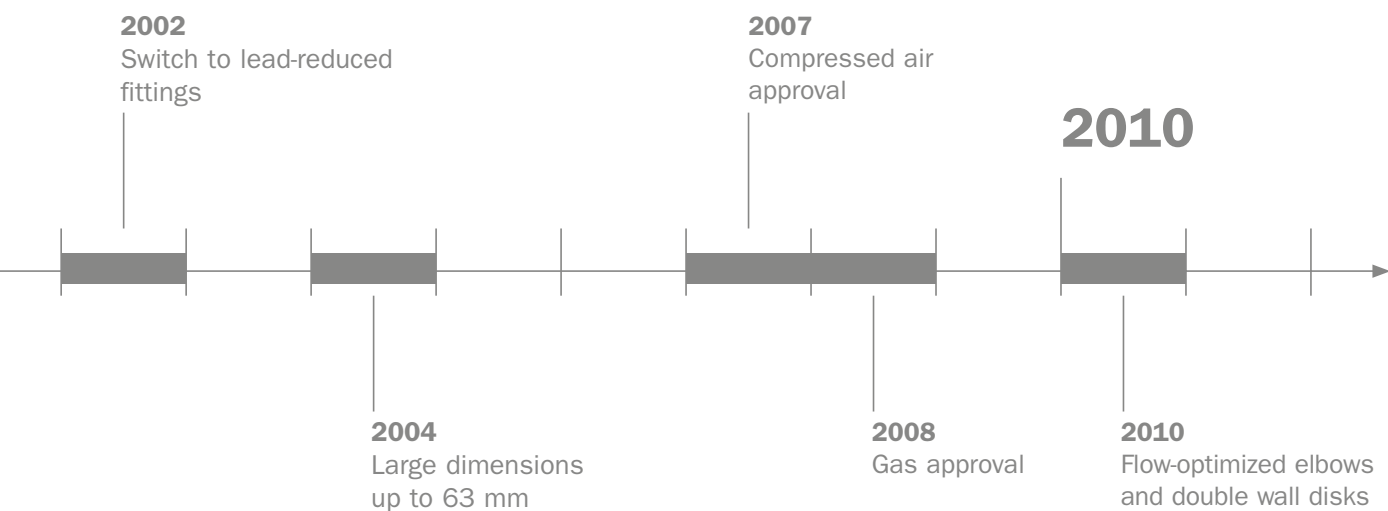




TECEflex – secure connections for the past 20 years

For the past 20 years, many millions of pipe connections have been pressed with TECEflex around the world - all using the same unchanged principle of axial pressing: The pipe is expanded and pushed over the fitting – the pressure sleeve secures everything. Nothing has changed in this basic technology since the market launch of TECEflex. The scope has simply been extended through constant additions to the range.

With the introduction of large pipe dimensions up to 63 mm and approval for gas installation in several countries, TECEflex became one of the few truly universal plastic installation systems on the market. Where necessary, the system has been adapted to new standards and changes in legislation. Our customers can therefore confidently press many more millions of connections.



TECEflex – the universal installation system.



Potable water



Heating



Gas



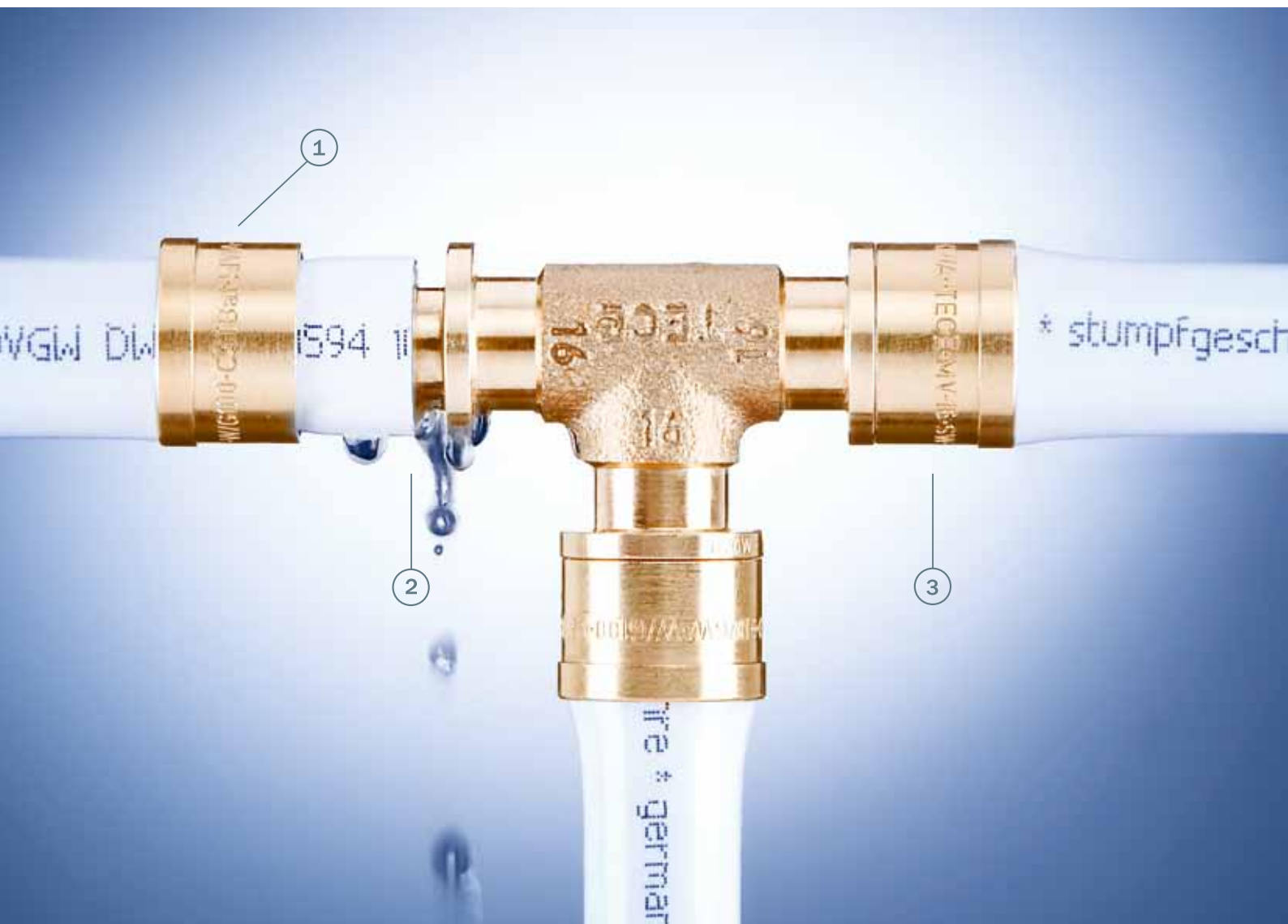
Compressed air

One fitting and one pipe for all application areas

The universalist TECEflex renders a brilliant performance in all fields of application: One single pipe system can be used not only for the entire domestic field, but also for compressed air and gas installations – and the same fittings are used as well. There are no pipe cut-offs or leftovers. What is left over from the compressed air installation can be used for potable water or heating. The universal applicability of TECEflex reduces the warehousing costs. This advantage also applies for gas installation, because TECEflex is approved by DVGW for gas distribution. Although the gas pipes are supplied in the signal colour yellow to better distinguish them from the white sanitary and heating pipes, the same brass fittings are used here as in all other TECEflex applications.



TECEflex offers a broad range of metal fittings in sizes from 14 to 63 mm. Special components such as those for radiator installation and floor heating round out the system and make it truly complete.



TECEflex does not allow errors. Forgot to press? Won't happen! With TECEflex, unpressed connections are noticeable twice over – firstly through the loose pressure sleeve, and secondly through the leaking liquid in the pressure test.

Most systems use radial pressing and only work with O-rings. The axial pressing technique used in the TECEflex system works without O-ring seals and thus offers real safety benefits:

1. Unpressed connections can be recognised easily due to the loosely attached pressure sleeve.
2. Unpressed connections become wet during the pressure test (DVGW-tested forced leakage).
3. Safety ensured by O-ring free connection.

**TECEflex – flexible, robust,
hygienic and safe.**



Fitting

The fitting is made of just one component and one material. It therefore has no dead space, chinks or joints in which water could stagnate. In addition, it does not use sensitive O-rings.



Pipe

A robust sheath made of aluminium protects it against knocks and blows. The inner pipe is particularly strong and maintains the pipe shape even under high load. It can nevertheless be easily bent by hand.



Tool

Pressed but still not tight? Poorly maintained tools or the wrong pressing jaw are often the cause of faulty connections. With TECEflex, these are not sources of error thanks to the maintenance-free manual tools.



Cut to length, ...



... expand, ...



... press – you're done!



TECEflex allows you to work quickly without time-consuming sawing, deburring, welding, soldering or overpacking. With TECEflex, the most common connections up to dimension 32 mm can be processed easily by hand. The available manual tools are always compatible and do not require electricity.

- Cut to length, calibrate, expand, press – and the connection is ready!
- TECEflex does not allow errors. Forgot to press? Won't happen!
Because the unpressed connections are immediately visible due to the loose pressure sleeves.
- A pressed connection can be undone again using hot air, and the fitting can be reused.



TECEflex – for the past 20 years simply pressed by hand.



RazFaz – mechanical pressing up to 32 mm

Lightweight, powerful tools for comfortable single-handed operation:

- Expand and press without great exertion of force
- Small, handy tool, therefore easy handling even in confined assembly situations
- Two dimensions can be processed without changing the pressing jaw
- Up to 70 pressing operations with one charging of the long-life NiMH battery without "memory effect"*



Expansion and pressing tools from dimensions from 40 to 63 mm

Special expansion and pressing tools are available for dimensions 40 to 63 mm. They are compatible with a large number of pressing machines.

* for dimension 32 mm

**TECEflex fittings –
optimum flow values.**



Connection technology with good flow properties for the past 20 years

With TECEflex, the expanded pipe is pushed over the fitting. The inner diameter of the fitting is therefore almost as large as the pipe, even in the area of the connection.



The new flow-optimized elbows enable the hydraulics of TECEflex installations to be improved even further. They are an option for planners if particularly good hydraulics are required when laying gas or potable water installations, for example. The flow-optimized fittings are available in dimensions 16 to 63 mm.



1. Large cross-section as a result of expansion technology
2. Single-piece fittings
3. Hygienic connection technology without dead space



Reduce costs with PPSU fittings ...

In addition to the new metal fittings, the TECEflex range contains fittings made of PPSU. This material is ideal for potable water applications and in many cases an economic alternative to metal.

Brass, red brass or PPSU, the customer has the choice ...

With TECEflex, fittings made of PPSU can in many cases be used instead of metal ones. These are about 50 % cheaper than metal fittings.

**Tried and trusted for years:
Installation with 100 %
metal fittings**



Threaded fittings made of metal



Non-threaded metal fitting

**The economic alternative:
Combined installation
using metal
and PPSU fittings**



Threaded fittings made of metal



Non-threaded PPSU fitting

up to
50%*
cheaper

* Fittings made of PPSU compared to metal



Approved by DVGW for potable water installation





TECEflex composite pipe is highly flexible and can be easily shaped by hand for tight radii of up to 32 mm. Thus, laying is simplified and has few joints. No flexible spring is required for bending because the pipe is solid and does not kink.

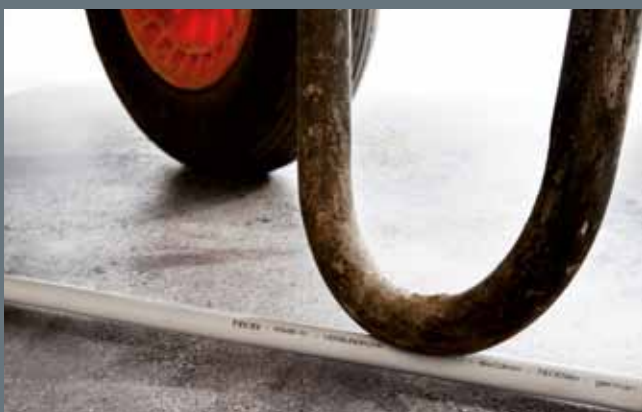
TECEflex composite pipe – an excellent symbiosis of metal and plastic.

With eight different dimensions from 14 to 63 mm, TECEflex can be used to lay all pipes in the house – including cellar pipe and risers: from the boiler to the radiators and from the water meter to the tap.

TECEflex composite pipe brings together all the advantages of metal and plastic pipes. The pipe core is "electron beam cross-linked". This gives the pipe its excellent temperature and pressure resistance. The pipe has a high notched impact strength and no crack propagation. As a result of the oxygen barrier layer made of butt-welded aluminium, TECEflex is completely diffusion-tight – a decisive advantage for heating connections.

The advantages at a glance:

- One pipe for sanitary, heating, floor heating, compressed air and gas installation
- Certified to DVGW registration DW-8501 AQ 2007/EN ISO 21003
- High safety reserve thanks to particularly thick-walled PE-Xc inner pipe
- Oxygen-tight thanks to butt-welded aluminium sheath
- Linear extension as in metal pipes
- Can also be used in visible areas thanks to white cover layer



The TECEflex composite pipe – thick-walled, robust, suitable for building sites.

Peace, warmth and food – ideal conditions for the spread of harmful microbes and germs. The use of TECEflex effectively removes microorganisms' necessities for life. The dead-space and O-ring-free connection technology offers microorganisms no space to reproduce unhindered. Thanks to the good hydraulic properties of the TECEflex fittings, pipe dimensions can be kept as small as possible. The time potable water spends in the pipe is minimized and stagnation avoided.

TECEflex – the clean solution for potable water.

TECEflex fittings provide bacteria and germs with practically nowhere to attack

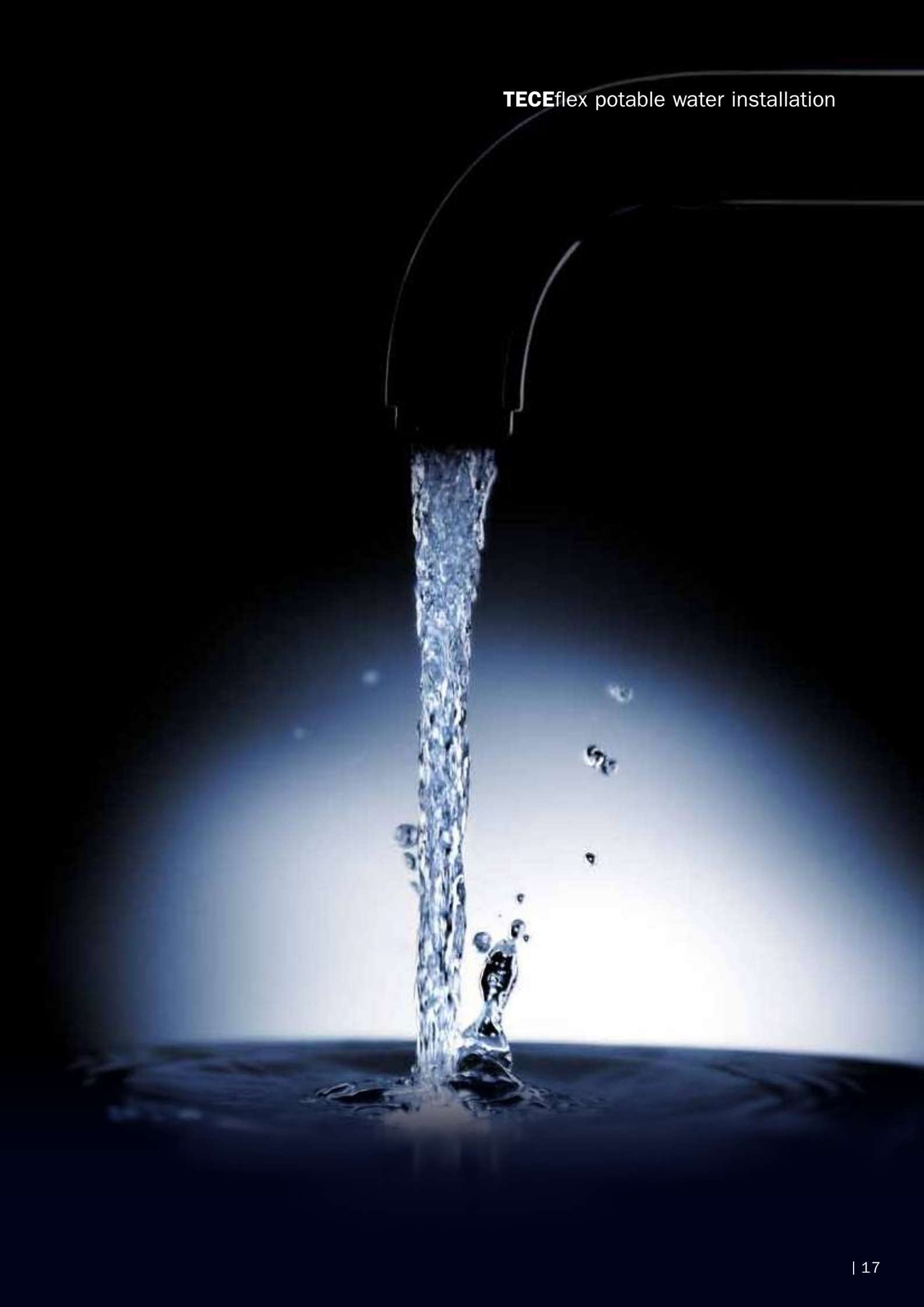
All TECEflex fittings are made of a special brass or plastic alloy that is not only tested but also recommended for potable water applications by DVGW. The axial connection technology means hygienically critical O-rings are not needed, and fittings from a single component are used.

This creates a connection free of dead space, offering bacteria nowhere to survive.

TECEflex composite pipe – ideal for use in potable water systems

In potable water lines, the temperature for cold water should not exceed 25°C, and hot water should not fall below 55°C. The TECEflex composite pipe can withstand the resulting material loads over the long term. With its inliner made of PE-Xc, it has a long life, even under high temperatures. Even a 24-hour permanent exposure to 70°C is not a problem for the TECEflex system, and that over a period of more than 50 years.





Bacteria and germs in potable water installations are a risk to health and in many cases are the source of dangerous infections caused by legionella, pseudomonas and other microorganisms. Stringent rules therefore apply for the planning and installation of potable water systems, and legislation requires these to be complied with based on a tight set of rules. For more than 20 years, TECEflex has been minimizing the risks in potable water installations and provides planners and fitters with the safety that only sophisticated installation system can offer.



Hygienically unobjectionable potable water installations can be created by following a few simple principles:

■ **Clean potable water: It's all about the packaging**

All TECEflex system components that come into contact with potable water are tested and certified for their hygienic suitability and have proven their worth for years.

■ **Microbiology likes it damp and warm**

Even though it may seem like a contradiction, TECE recommends insulating potable water pipes well. Sufficiently insulated potable water pipes keep cold water cold and hot water hot.

■ **Clean water moves**

The laying of closed circular pipelines ensures that water does not stagnate under normal usage conditions. The regular flushing of even rarely used sanitary objects is ensured. The TECEflex range offers double wall disks of various sizes.



Heat kills, warmth nurtures

If warm water cools down too much, microorganisms can reproduce extremely rapidly. TECEdendrit, TECE's own calculation software, enables the temperature relationships in a circulation line to be simulated. Temperatures and water volumes can be accurately calculated, even in complex systems. With TECEflex fittings that have low pressure loss, and system hydraulics accurately defined with TECEdendrit, circulation pumps can be installed at exactly the right point. This saved costly pump electricity while ensuring optimum hygiene.



TECEflex – heating connection for any assembly situation.

Heating installation with TECEflex

The TECEflex range contains a comprehensive series of fittings and components specially for radiator connection. As a result, every common installation situation can be mastered appropriately. TECEflex has been certified for heating installation by DIN CERTCO.



Just a few examples of connection types possible with TECEflex.

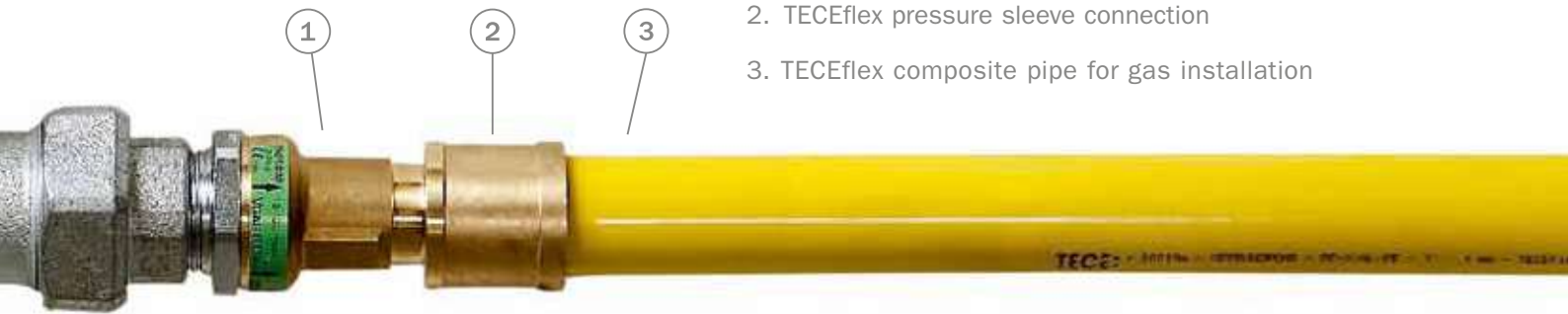


TECEflex: One fitting and one system –
Also for gas and compressed air.



With TECEflex, the same brass fittings can be used for gas, compressed air and potable water installations. This simplifies warehousing and reduces costs.

TECEflex gas and compressed air installation



1. TECEflex gas safety fitting with integrated gas flow detector and thermal shut-off unit
2. TECEflex pressure sleeve connection
3. TECEflex composite pipe for gas installation

Gas installation with TECEflex

With TECEflex, indoor gas installations up to 100 mbar can be installed. The same brass fittings are used as for installations for potable water, heating and compressed air systems. The proven TECEflex composite pipe is supplied in yellow signal colour for gas installations. As secondary safety equipment, the TECEflex gas safety fittings ensure the required HTB resistance. Without fittings, gas lines can be laid from the roll through shafts and hollow spaces without the need to ventilate them. This fact makes TECEflex especially interesting for the connection of roof-mounted central heating plants, and the simplified laying aids from TECE facilitate the planning work.

Gas installation in projects with pipe shielding system Conlit 150 U, certified in Germany

With the Conlit 150 U pipe shells from Rockwool, TECEflex gas pipes can be fed through components that have to meet high requirements relating to fire resistance. The pipe shielding system has now received general building inspectorate approval from the Fraunhofer Institute for Building Physics. This means the advantages of TECEflex composite pipe in gas installations can now also be used in large buildings with tested safety.

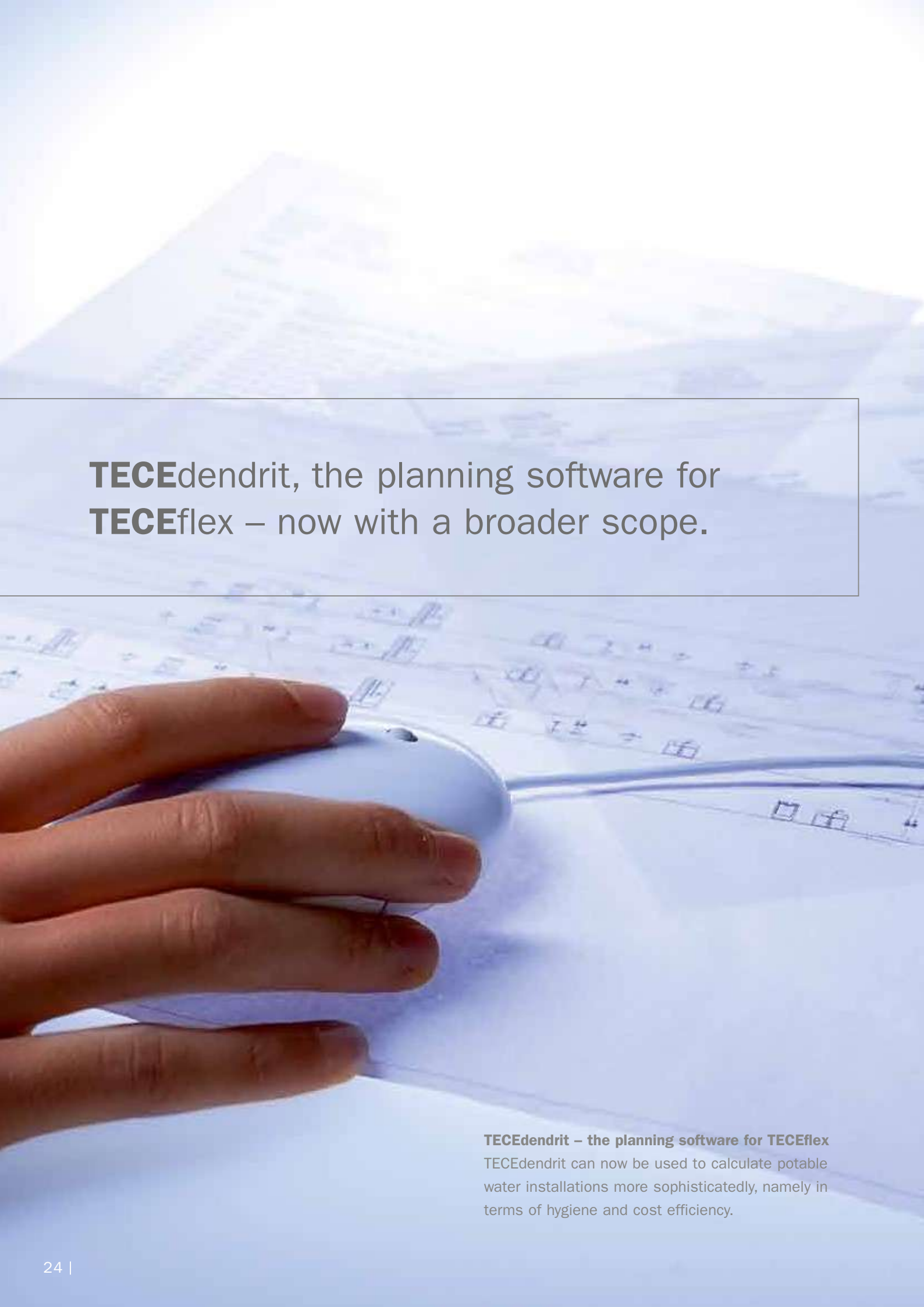
TECEflex gas safety fittings

Combines gas flow detector with a thermal shut-off unit in one component. The real highlight: The fitting can be installed horizontally and vertically upwards.



TECEflex – for compressed air too

The TECEflex system has been tested for suitability for compressed air and certified by TÜV. All components of the TECEflex system are suitable for compressed air installations. Here as well, TECEflex is an economical alternative to copper and steel.

A hand is shown holding a white computer mouse over a set of architectural blueprints. The blueprints are spread out on a surface, showing various lines, shapes, and text, though they are slightly out of focus. The background is a bright, light blue color, possibly a wall or a large window. The overall scene suggests a professional or technical environment.

TECEdendrit, the planning software for **TECEflex** – now with a broader scope.

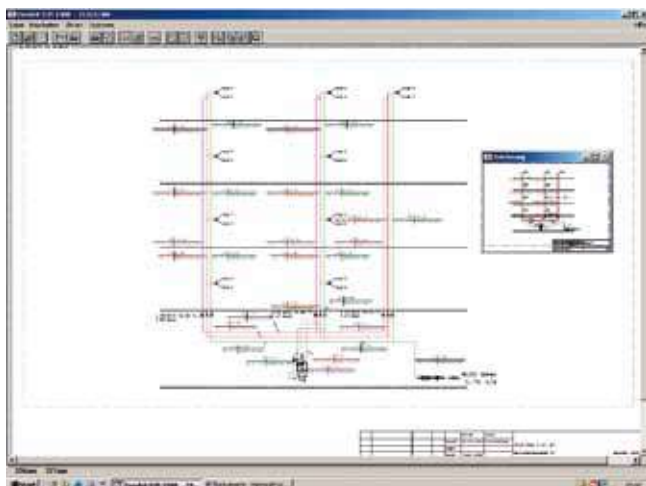
TECEdendrit – the planning software for TECEflex
TECEdendrit can now be used to calculate potable water installations more sophisticatedly, namely in terms of hygiene and cost efficiency.

TECEdendrit – now with new features for potable water installation

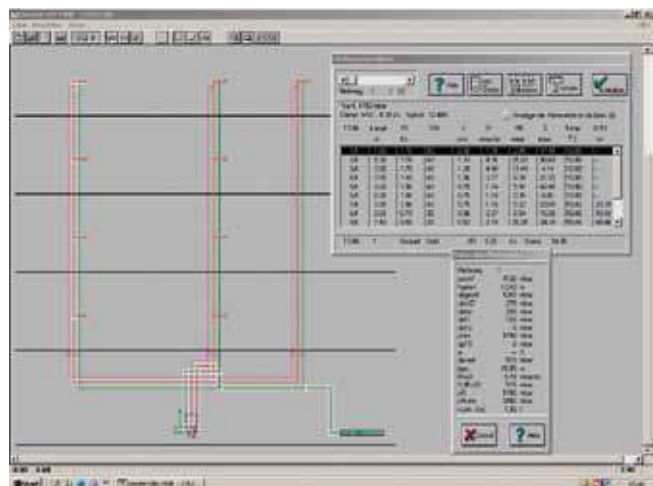
TECEdendrit is not just used for the fast and simple calculation of installation systems. The scope of this software goes far beyond the creation of a piping layout. Intelligent features even permit the simulation of temperature relationships in a circulation line or the design of a safe TECEflex gas installation (see page 20).

TECEdendrit software 5.6:

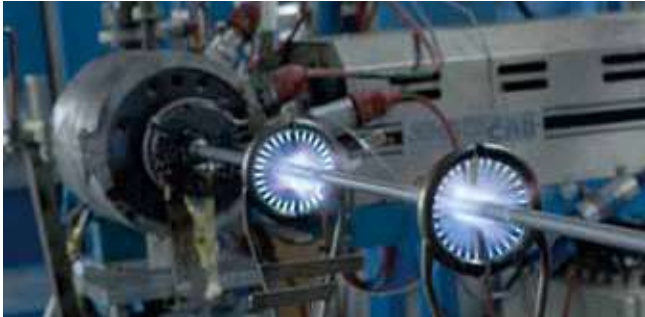
- Potable water installation to DIN 1988
- Circulation line calculation to DVGW W 553
- Circulation line simulation with Kemper control technology
- Hygiene technology: Kemper distributor unit with simulation
- Drainage to DIN EN 12056 and DIN 1986-100
- U-value calculation to DIN EN ISO 6946
- EnEV interface to Hottgenroth Energieberater software
- Heating load calculation to DIN EN 12831
- Radiator layout to VDI 6030
- Hot and cold area layout to EN 1264
- Heating pipe network, 1-pipe, 2-pipe, Tichelmann
- Hydraulic comparison
- Cooling load calculation to VDI 2078 (EDP procedure)
- Gas pipe network calculation to DVGW-TRGI 2008



TECEdendrit input window.







Pipe production

Since 1998, the TECE Group has been manufacturing composite pipes and plastic pipes for domestic installation on the latest extruder lines. One particular technical innovation is the aluminium composite pipe butt-welded with a cross-linked PE-Xc basic standard pipe using laser technology, which is also used for TECEflex.

TECEflex – tested quality, safe for decades.

Quality assurance

Laboratories affiliated to production ensure the highest quality standards are met in TECEflex and conduct extensive tests for international approvals. For TECE pipe systems, the laboratories have certified, complex testing equipment for creep rupture testing and temperature change test beds.



System for checking the creep rupture strength of installation pipes.

Fig. left: Tensile test with TECEflex composite pipe.

TECEflex – satisfied customers for the past 20 years.

Many of our customers have been working with TECEflex for 20 years and have never regretted the decision. The excellent processing qualities and extremely low complaint rate still speak for our system today. One big advantage is its universal use: One system for heating, potable water and gas installation – along with an extensive product range. TECEflex proves its worth both in large commercial projects and private homes.



For more on TECEflex
visit www.tece.com

TECE GmbH
International Business
Phone +49 (0) 25 72 / 928 999
international-business@tece.de
www.tece.com