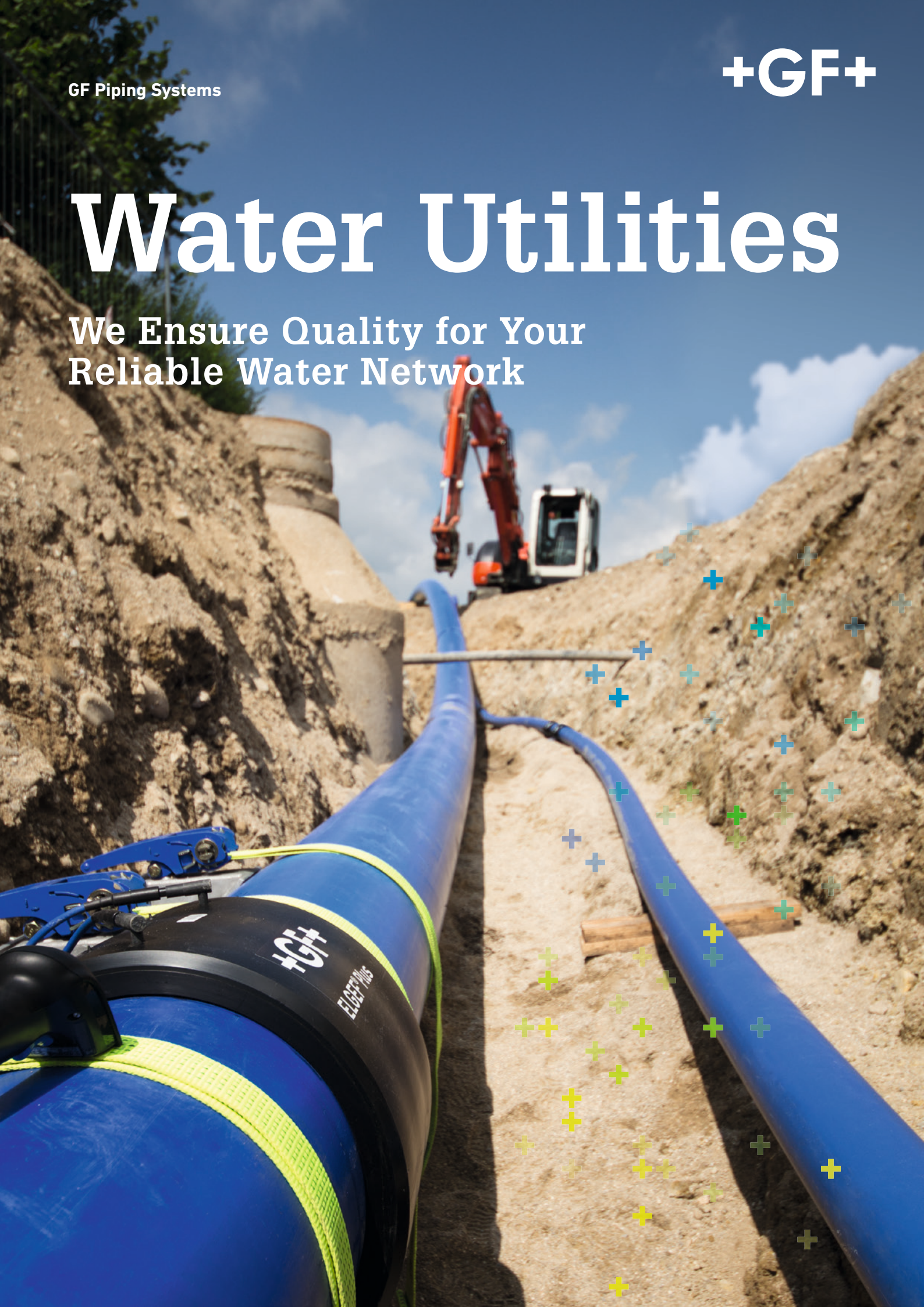


Water Utilities

We Ensure Quality for Your
Reliable Water Network



Introduction

The Best Choice for You

Corrosion resistant and flexible system solutions

+ Georg Fischer

GF focuses on three core businesses: GF Piping Systems, GF Casting Solutions and GF Machining Solutions. The industrial corporation founded in 1802 headquarters in Switzerland and operates approximately 130 companies with more than 14 000 employees across 30 countries. GF Piping Systems is a leading supplier of plastic and metal piping systems with global market presence. For the treatment and distribution of water and chemicals, as well as the safe transport of liquids and gases in industry.

+ Our market segments

Being a strong partner, GF Piping Systems supports its customers in every phase of the project in the following market segments:

- Building Technology
- Chemical Process Industry
- Energy
- Food & Beverage / Cooling
- Microelectronics
- Marine
- Water & Gas Utilities
- Water Treatment

+ Global presence

Our global presence ensures customer proximity worldwide. Sales companies in 26 countries and representatives in another 80 countries provide customer service around the clock. With 48 production sites in Europe, Asia and the USA we are close to our customers and comply with local standards. A modern logistics concept with local distribution centers ensures highest product availability and short delivery times.

+ Complete solutions provider

Our extensive product range represents a unique form of product and competence bundling. With over 60 000 products, allied with a broad range of services, we offer individual and comprehensive system solutions. Our automation offering perfectly fits into our complete system approach and is thus an integral part of our portfolio. Having the profitability of the project in focus, we optimize processes and applications that are integrated into the whole system. Due to our worldwide network customers benefit directly from over 50 years of experience in plastics. From start to finish, we support our customers as a competent, reliable and experienced partner.



Introduction

A Lifetime of Consistent Performance

The big advantage of plastics like PE (polyethylene), compared to metals is that there is no electro-chemical corrosion. In addition to this, plastic is lighter than other materials. The “Total Plastic Solution” from GF Piping Systems ensures safety in all applications. Safe and reliable processes and workflows achieved through the use of plastic piping systems translate into consistently high efficiency for customers over the entire lifetime of their operations.

+ PE benefits at a glance

- Corrosion resistant
- No extra corrosion prevention required
- PE is flexible during storage and installation
- Withstands earth movements best
- Smooth surface resulting in higher flow rates and reduced energy costs
- Good price performance and total cost of ownership
- Plastics are generally much lighter in weight
- PE is the optimal material for trenchless installation techniques
- PE has an estimated lifetime of 100 years
- The material is durable, reliable and material homogenous jointing technologies are available
- PE is “greener” than metal thanks to its lower carbon footprint
- Global standards: ISO, ASTM, EN and many more



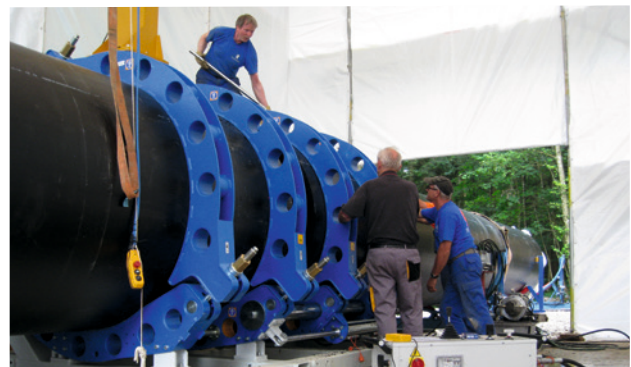
Transport and distribution lines

The Right Jointing Technology for your Application

Make your big projects easier, faster and more economical with large diameter solutions up to d2000 mm

Transportation lines (> d315 mm)

When transporting water to the domestic areas a safe and reliable connection is the key success factor, but at the same time can be a challenging task. GF Piping Systems understands your need for proper tooling, high performance jointing technologies and connection parts as well as expert support on site. It is our experience and know-how in building, operating and maintaining large dimensioned piping systems, that enables us to create the right solutions for your varied installations in water transport applications.



Distribution lines (d75 – d315 mm)

For the reliable, economical and sustainable water distribution it is essential that all piping components like pipes, fittings and valves are connected safely and reliably. GF Piping Systems offers a comprehensive range of jointing technologies to satisfy your needs. With our electro fusion system ELGEF Plus a material homogeneous connection of pipe and fitting will contribute to a reliable network. This system includes also all necessary tools and machines important for a proper installation. With the MULTI/JOINT system all kind of materials can be connected in a quick, safe and simple way – one size fits and grips all.



ELGEF Plus system

- High quality electro fusion system
- Modular concept - high flexibility
- d20 mm – d2000 mm



Spigot fittings

- No pressure derating factor
- Extensive range of spigot fittings, seamless bends and segmented fittings
- d20 mm – d1200 mm



Valves

- Welded connection to PE pipes
- Under pressure connection possible
- Pressure tapping valves up to d400 mm – 63 mm
- Ball valves up to d225 mm

Service lines and house connections

Strong for All Kind of Pipe Connections

ELGEF Plus - the electro fusion system convinces due to its outstanding modular concept

Service lines and house connections (d20 – d63 mm)

In the last stage of the water grid, service lines transport water to the meter. Due to its flexibility and material homogeneous jointing technologies, amongst many other positive characteristics, PE is today's main used material for new installations. Thanks to the modular ELGEF Plus electro fusion system an appropriate solution can be found for every application. Each individual ELGEF fitting and saddle is made to match and when put together form reliable leak-proof connections. The outstanding customizing possibilities together with its flexibility are convincing and decisive customer benefits. Many different combinations can be devised using just a few products. Also PE valves will contribute to your reliable and safe network as part of the ELGEF Plus system.



MULTI/JOINT 3000 Plus system

- The quick, safe and simple repair solution
- Max. 8° misalignment per socket end (16° for a coupling)
- Suitable for all pipe materials and reusable
- Applications for under and above ground use
- Restraint up to and including DN600
- Non restraint up to DN2200



iJOINT system

- No disassembly necessary
- Suitable for all PE pipes, PEX, PVC-U (kit)
- Highest pull out resistance
- Tapping saddles for PE and PVC



Machines and tools

- CNC technology up to d630 mm
- Vast network of GF authorized service stations
- Butt fusion: d160 mm – d1600 mm
- Electro fusion: transformer and inverter technology available

Versatile Connection and Repair System

Water is precious. The amount of water that is lost or unaccounted for is typically around 20–30 % of production whereas older networks may lose as much as 50 %. Water loss can be attributed to several causes, including leakage, metering errors, public usage such as fire fighting and pipe flushing, as well as theft. Leakage is usually the major cause and occurs in all sections of the water grid. The causes include i.e. corrosion, material defects like ageing of gaskets, faulty installation, excessive water pressure, water hammer and environmental influences like ground movements.

The method of repair depends to a large extent on the site conditions, availability, preferred jointing technology, interface requirements, as well as the dimensions and type of materials. Whether it is for maintenance, to repair a leaking or corroding pipe especially the GF WAGA products allow you to repair almost anything. The products are easy to install, reducing installation time and cost even under pressure.

Connecting

With GF WAGA fittings you can connect any pipe you like, regardless of the pipe material. Very convenient, when you do not know what kind of pipes you will encounter. Moreover thanks to the quick, safe and simple installation of the fittings you will always make a reliable connection. Non restraint or restraint!



Repairing

Also for maintenance or repair of an existing or corroded pipe GF Piping Systems offers the right solution. With these repair products you can virtually repair anything. Quick, safe and simple!



Drilling

Do you want to branch off on an existing pipe or make a bypass? The end users connected to the network should not experience any inconvenience. For this purpose GF Piping Systems offers an extensive package of universal drilling products, such as drilling tools, saddles and accessories to be able to drill under pressure. Pressureless drilling is no problem either.



Further applications

Solutions for Your Reliable System

For over 50 years, GF Piping Systems has enjoyed considerable success in developing application oriented plastic piping system solutions for water utilities

District cooling

District cooling is a system in which chilled water is distributed in pipes from a central cooling plant to buildings for room cooling and process cooling. One of the biggest advantages for PE in this kind of application is a moderate loss of cold due to its insulation character, an easy maintenance and a worldwide network of customizing and pre-fabrication centers. It is essential that pipes, fittings, valves and other components are connected reliably so that they last for more than 100 years.



Irrigation

A growing world population and the changing climate enhance the food and water scarcity globally. Enough food availability is going to be an objective which will be out of reach. As counter actions more and more food production will be separated from the local weather by building large green houses or doing extended irrigation increasing the output of food per sqm. Systems simple to install and ensuring a secure water tight distribution over the total product life span will become an important attribute. GF Piping Systems provides you a comprehensive product range for irrigation as well as on the spot trainings and fast deliveries.



Pressure sewage

Rather than gravity, the pressure sewage system is using pumps to move the waste water along to the waste water treatment plant. Pressure sewage systems are using generally smaller diameter pipes that are less expensive and easier to install. Plus they follow the terrain, requiring a depth just below the frost line, and move directionally to skirt obstructions. The result is a significantly lower cost of installation compared to traditional gravity systems. Choosing the right PE system a reliable network for up to 100 years can be build.



Services

We Serve Your Business

GF Piping Systems is aware of the fact that our promised performance does not end with a products purchase or installation.

For us, it is a matter of course to provide individual support and application-oriented services along the entire lifecycle of your installation.





Non-destructive testing of butt fusion and electro fusion joints and material

We provide NDT services during construction, as well as during operation of PE piping systems. This technique is used to evaluate the properties of the joint and the welded components. We provide to you reports of each test including statements (pass / fail) regarding the long term behaviour of the joints.



Extended network documentation (Track and Trace)

Knowing exactly which components are buried in the ground and having clustered additional information to the component history is saving money for operation, maintenance and repair. We provide the proper tools for collecting, storing and analyzing component related information of your piping system. On construction site data logging is supported by the GF Trace App running on a PDA.



Customizing and rental pools

Special fittings or prefabrication on request is what makes a solution your solution. Our customizing teams work closely together with our production and engineering specialists around the globe to develop the best solutions for you. In many countries, GF Piping Systems operates rental pools providing you machines and tools for various jointing technologies like butt fusion, electro fusion and mechanical connections.



Global trainings

GF Piping Systems specialists are always close by. Worldwide, a comprehensive range of training courses is conducted by our local expert teams. The trainings are focused on methods with high practical relevance. Geared specifically toward your individual priorities as well as to your level of knowledge, our courses offer a high degree of quality and exclusivity. On site, the training pays off. Since instructing pipe fitters in the specific aspects of the installation prior to the actual construction work saves you valuable time on site.



References

Clean Water for 150 000 Inhabitants

Providing large cities with drinking water is never an easy task. Outdated systems can cause problems such as leakages or contaminations. To secure a reliable, economical and sustainable water supply in the future, the Waterworks Lublin (Poland) decided to renew a part of their old steel piping system.

The new polyethylene piping system from GF Piping Systems now serves nearly half of the 350 000 inhabitants.

Molewski Sp. z o.o. realized the project from May to November 2014 for the Waterworks Lublin. Established in the market since 1978, the well experienced construction company is specialized in building and environmental engineering such as road building and trenchless technology.

The transport line leads right through the city center. So this project required the relining method, to be as space-saving as possible and due to the limited number of branch connections in the city.

Deciding for plastics means deciding for the future

The advantages of plastic in comparison to metal pipelines were obvious and made GF Piping Systems the desired provider for the jointing technology. Compared to metals plastics are resistant to corrosion and abrasion, warranting a long service life. When professionally installed 100 years can be expected. They score particularly well because of their low weight, which pays off especially in the areas of transportation and processing. Energy costs can be reduced with targeted layout planning and optimal sizing contributing to a steady flow rate. Furthermore plastic solutions have a considerably smaller carbon footprint than traditional materials – an important factor in designing sustainable and future-oriented piping systems.

Cutting-edge couplers for safe connections

For the project the installation company used GF electro fusion couplers for water and gas applications. They ensure a quick and reliable connection of pipes and spigot fittings with active reinforcement - a unique jointing principle. The functioning of the coupler has its origin from the manufacturing technology. The outer pipe section is pressed over the inner pipe section. During the fusion process, the active reinforcement fully effects: The heat in the fusion zone reduces the stiffness of the inner ring and the reinforcement ring pushes actively from the outside to the inner ring. Thus, larger gaps can be closed more quickly and the expansion of the coupler is inhibited. During the cooling process the constant pressure from the outside makes the coupler shrink onto the pipe. This patented principle ensures a perfect welding result.

360° services

Being a well-known brand on the market GF also offered the best package of service. This project in Poland where GF Piping Systems new electro fusion coupler with active reinforcement technology in dimension d710mm were installed is a great success. It will help secure the water supply for coming generations.



MULTI/JOINT Below Water, Yet Above Standard

Just southwest of the coast of Sardinia you find the small island Isola di San Pietro. Almost all of the inhabitants live in the town Carloforte. The water treatment plant of the water company Abbanoa S.p.A. is located in this town as well. The sewage and waste water of the island is transported to this water treatment plant. After the sewage and waste water have been processed, the treated water is discharged into the sea. This is done via a two kilometre long steel pipe line with an O.D. of 429 mm. The pipes lay at the bottom of the sea at a depth of 15 to 20 meters. In order to keep the pipes on the seabed at all times, concrete anchors have been used on various locations.

Leakage

In July 2014 a part of the pipe line came loose from the seabed. Problems with the concrete anchors in combination with air in the pipe line caused parts of the pipes to break. Parts of the pipes floated on the water. The floating pipes needed to be removed as soon as possible to prevent accidents with boats and jet skis.

Sea water demands high quality

After removing the floating pipes, the damaged pipe line needed to be repaired as well. On the seabed you cannot use just any fitting. The demands of the water company Abbanoa S.p.A for this specific repair included the following points:

- The fitting had to compensate for the difference in alignment of the pipes
- The fitting had to be end load resistant
- The fitting needed to be coated with excellent, seaworthy and corrosion resistant coating
- The fitting should be easy to install underwater by divers
- The fittings had to be delivered quickly

Customer service prevails

Besides a good product the organization behind the product needs to be on a high level as well. Georg Fischer S.p.A. responded quickly and effectively to the challenge. A quick delivery was possible because the fittings were on stock in the distribution centre of Georg Fischer S.p.A. All requested certificates and a clear user manual could be provided on short notice as well. This gave the water company Abbanoa S.p.A. the necessary peace of mind that everything would go well.

Successful installation

In September a team of divers from a contractor who is specialized in working below sea water, came to Carloforte. To be able to install the couplings, the pipes were lifted slightly off the seabed by using special balloons to enable the divers to slide the couplings over the pipes. In total 11 MULTI/JOINT 3000 Plus DN400 couplings were installed.

Carefree sailing

By acting quickly the problems were solved. Everybody can sail across the waters around Isola di San Pietro again, without worrying about hitting any floating steel pipes.

Worldwide at home

Our sales companies and representatives ensure local customer support in more than 100 countries.

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