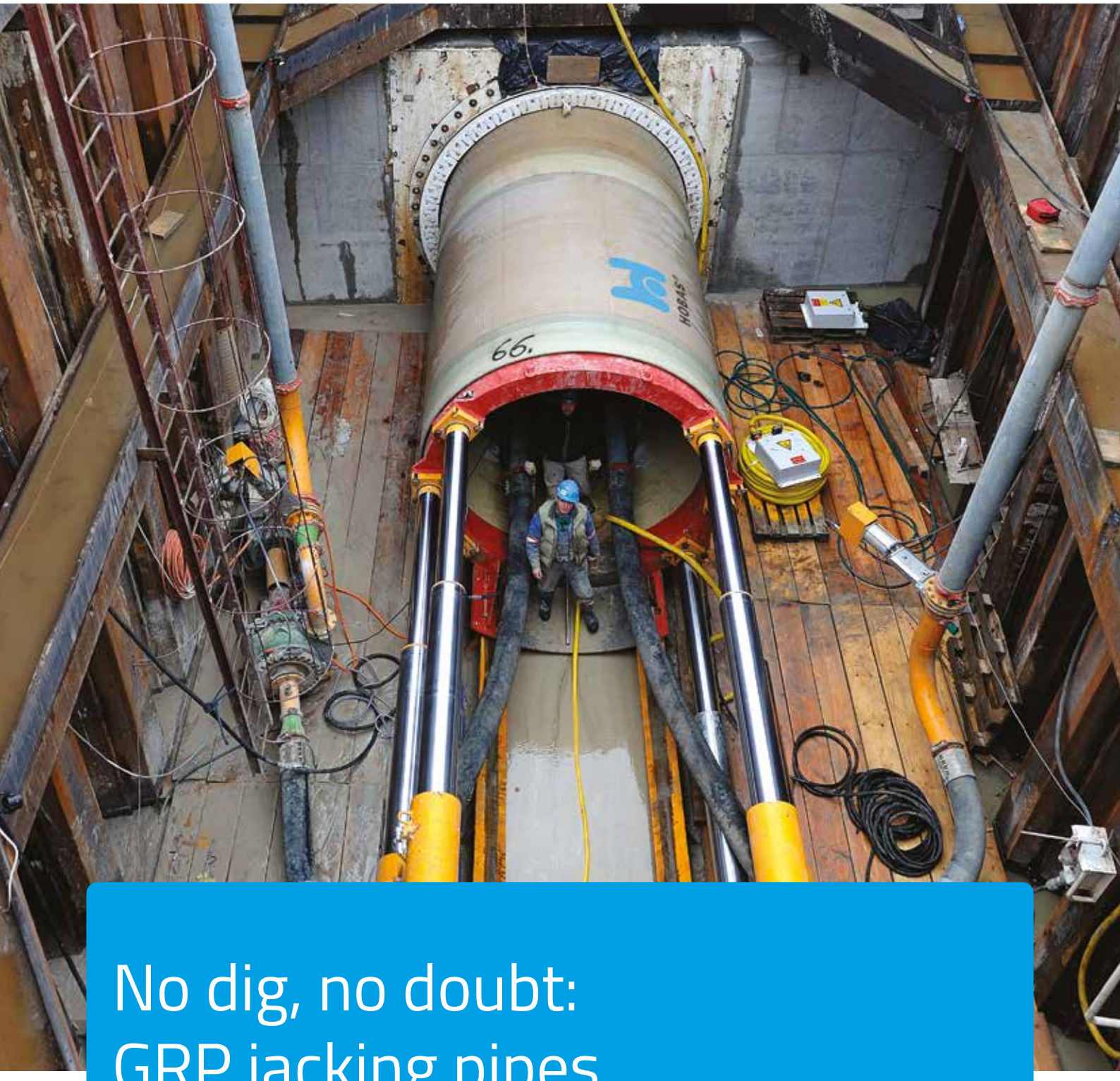
Amiblu®

Amiblu Pipe Systems
Engineered for the next generations



No dig, no doubt: GRP jacking pipes

Trenchless installation with customized system solutions

FLOWTITE®

HOBAS®

Amiblu GRP pipe systems Engineered for the next generations

Glassfiber reinforced plastic (GRP) pipe systems by Amiblu are the product of over five decades of innovation, experience and development. With our centrifugally cast Hobas and filament wound Flowtite products, we offer two premium technologies for all types of jacking installations. This way, we guarantee that you get the best option for your individual project – our Amiblu experts are happy to assist you in making the optimal choice.

Our promise: minimum disruptions and maximum convenience

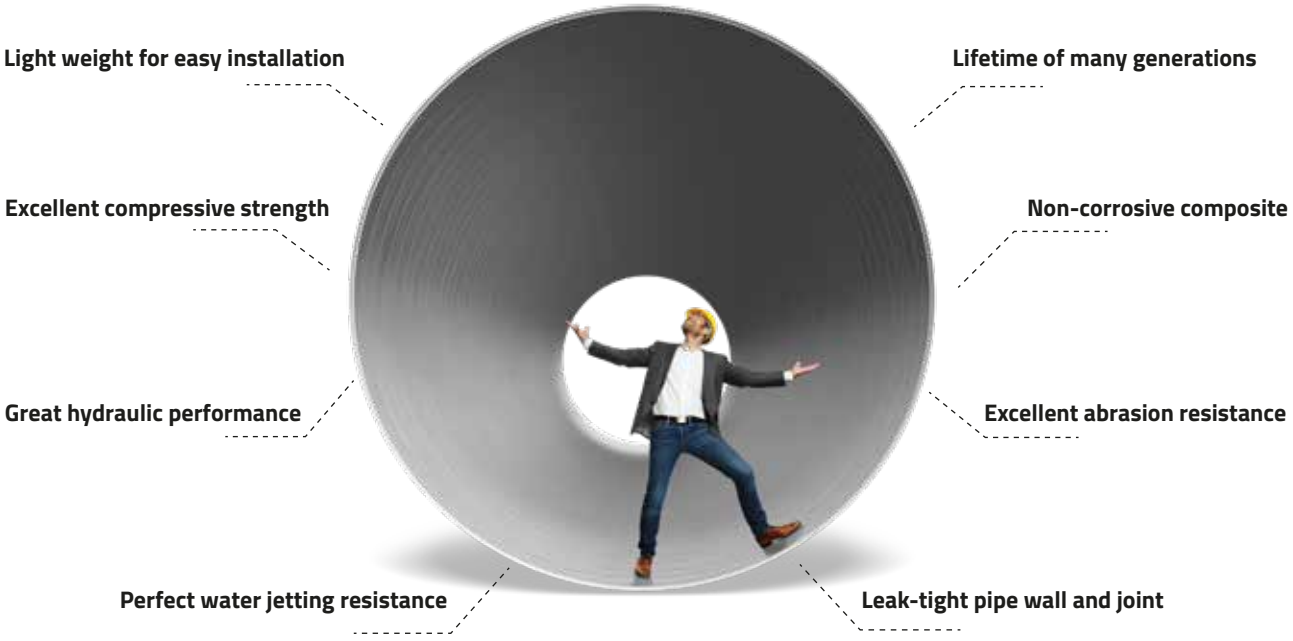
When pipes need to be laid and replaced in densely populated areas or protected natural habitats, jacking is often the first choice. The impact of trenchless construction on residents and nature is much smaller compared to open cut installations which involve large amounts of excavated soil and high CO_2 emissions due to traffic disruptions. Pressure applications, curved pipeline routes, or critical environments such as railway tracks pose particular challenges to designers as they require pipes with specific properties to achieve an optimal and cost-efficient result.

Hobas and Flowtite GRP pipes by Amiblu have gained a firm foothold in jacking and microtunneling over the past years. With their high strength, light weight, smooth inner and outer surface, and long lifetime, the pipes are perfectly suited for trenchless installation. The composite GRP material features low life-cycle costs and provides a sustainable overall solution for trenchless projects.

Environmental sustainability
Our thermoset resins are designed to be inert and stable for many generations. Glassfibers add stability and strength.

Economic sustainability
Lowest capital cost, lowest installed cost, and lowest lifetime cost. Sustainability doesn't have to cost the earth.

Social sustainability
Operators of water, sewer, and energy infrastructure need our pipe technologies. We design GRP pipe networks for generations to come.



Your benefit: custom solutions that push technical limits

With their smooth, almost non-absorbing exterior surface, tight outer-diameter tolerances and light wall structure, Amiblu GRP jacking pipe systems require the lowest necessary jacking loads in the industry and are suitable for very long and also curved drives. The comparably small outside diameter makes it possible to use smaller jacking machines, resulting in less excavated material (> 25 % less than with concrete pipes) and reduced overall equipment and construction costs. A weather-independent installation further reduces the installation time and expenses.

Thanks to the pipes' corrosion and abrasion resistance, high structural stability, and leak-tightness, they feature an extraordinary operational service life of many generations.

Engineered for several generations
Our strain corrosion data results in an expected service life of many generations. This is supported by the evidence from existing installations that are as good as new after over 40 years of service.

Corrosion free by nature
Other than concrete and steel pipes, Amiblu GRP products are inherently resistant to corrosion caused by the sulfuric acid that occurs in sewage and stray currents (e.g. near rail lines).

Unrivalled abrasion resistance
Our inner liner technology offers unrivalled abrasion resistance and therefore requires only very little maintenance. It is fully compatible with water jet cleaning.

Smooth inner surface
Amiblu pipes have a smooth, resin-rich internal surface which sustainably prevents fouling and incrustations, leading to low maintenance costs and high flow rates even at low gradients.

Light weight, easy handling
Our pipes require no heavy handling equipment, reducing transportation and installation costs. This makes them a perfect solution for project areas with limited installation and storage space.

Broad range of lengths and diameters
Amiblu jacking pipes are available in a broad range of nominal diameters from OD 272 up to OD 3600 and can be custom manufactured in various lengths according to the project requirements.

High compressive strength

Amiblu jacking pipes feature a high compressive strength and, compared with conventional materials, a great ratio of wall thickness to inside diameter. Smaller outer diameters and lower weight are the resultant advantages, with the pipes still withstanding high jacking loads easily.

Lower necessary jacking forces

Given their impermeable outer surface, Amiblu GRP jacking pipes do not adhere to damp soil material. There is therefore comparatively low resistance when jacking is initiated, even after longer standstills.

Longer jacking drives

The smooth and precise outside surface of Amiblu pipes guarantees low friction during jacking and makes it possible to realize impressively long drives, save on intermediate jacking stations, and thereby reduce installation costs.

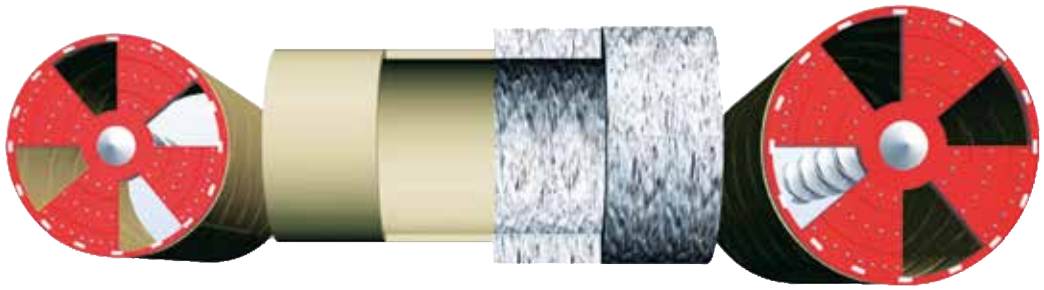
Ideal transmission of jacking forces

Amiblu GRP pipes feature a high material elasticity and therefore easily absorb eccentric loads. They enable an optimal transmission of jacking forces without load distribution rings – a decisive benefit, especially for curved jacking drives.

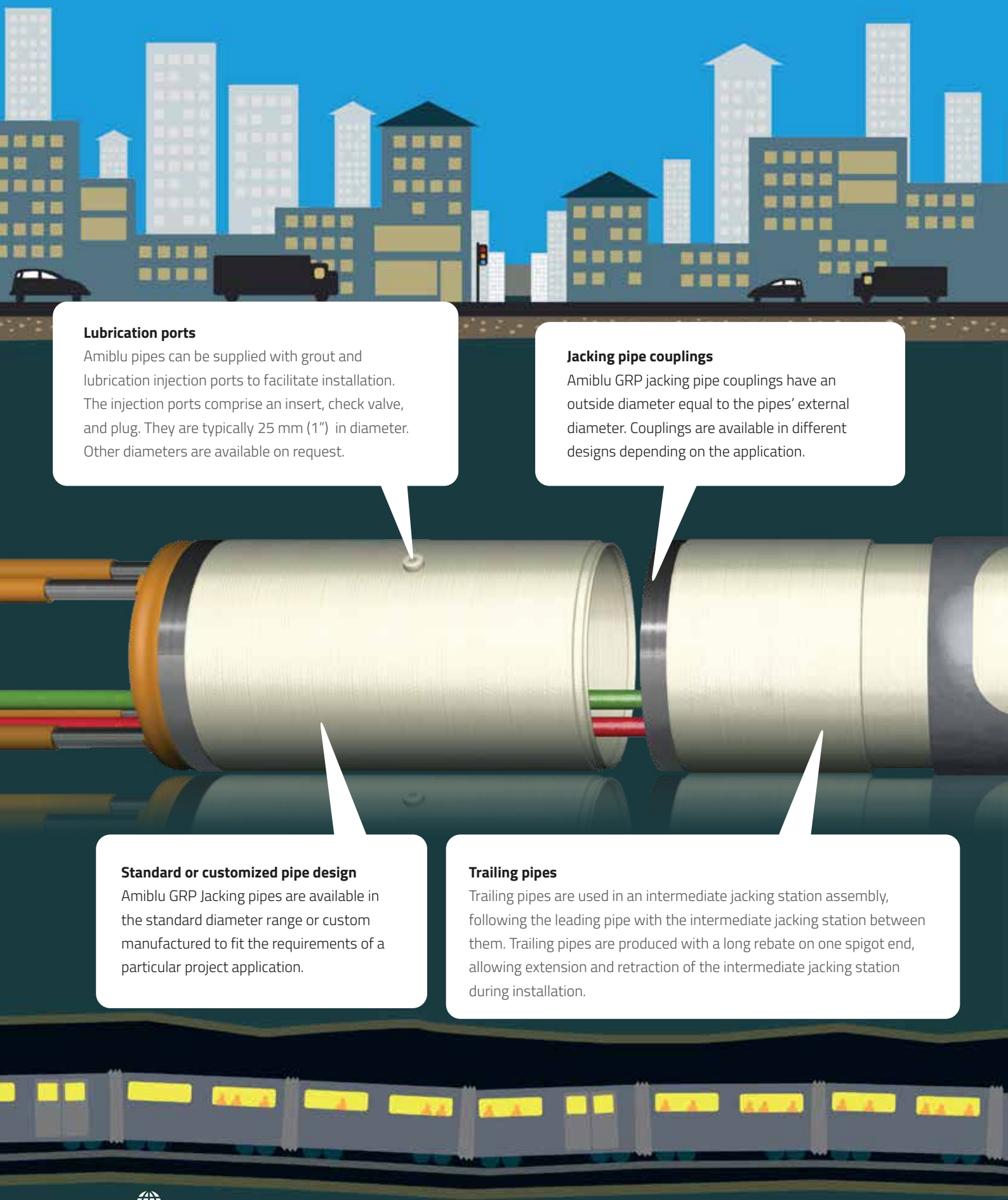
Smaller outer diameter – lower machine costs, less excavation

The smaller outer diameter in relation to comparable inner diameter makes it possible to use smaller machines and equipment. This results in considerable savings regarding the costs for the construction site and thrust pit preparation.

A smaller outer diameter requires a smaller borehole, which in turn means less soil to be excavated, carried away, and disposed of. Compared with e.g. concrete, Amiblu pipes reduce spoil by more than 25 %, with some diameters even more than 50 %. On top of that, less bentonite is used for lubricating smaller outer diameters and smoother surfaces.



Amiblu GRP pipe and adequate bore head on the left, comparable concrete pipe with much larger necessary bore head on the right.

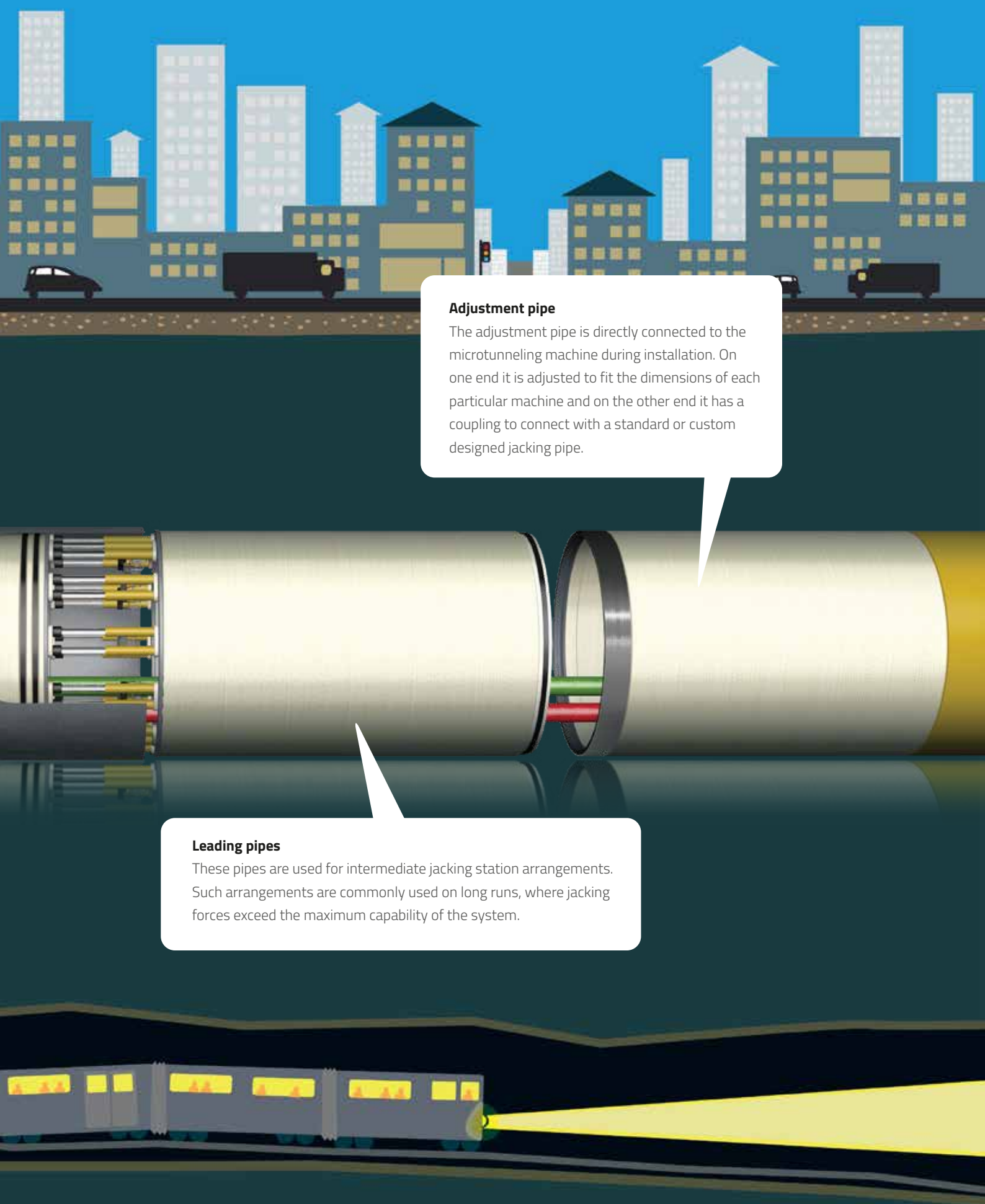


Lubrication ports
Amiblu pipes can be supplied with grout and lubrication injection ports to facilitate installation. The injection ports comprise an insert, check valve, and plug. They are typically 25 mm (1") in diameter. Other diameters are available on request.

Jacking pipe couplings
Amiblu GRP jacking pipe couplings have an outside diameter equal to the pipes' external diameter. Couplings are available in different designs depending on the application.

Standard or customized pipe design
Amiblu GRP Jacking pipes are available in the standard diameter range or custom manufactured to fit the requirements of a particular project application.

Trailing pipes
Trailing pipes are used in an intermediate jacking station assembly, following the leading pipe with the intermediate jacking station between them. Trailing pipes are produced with a long rebate on one spigot end, allowing extension and retraction of the intermediate jacking station during installation.



Adjustment pipe

The adjustment pipe is directly connected to the microtunneling machine during installation. On one end it is adjusted to fit the dimensions of each particular machine and on the other end it has a coupling to connect with a standard or custom designed jacking pipe.

Leading pipes

These pipes are used for intermediate jacking station arrangements. Such arrangements are commonly used on long runs, where jacking forces exceed the maximum capability of the system.

Pipes for intermediate jacking stations

An intermediate jacking station is used when jacking forces for the complete drive are expected to exceed the capacity of the main jacks due to the soil conditions or drive lengths. It enables the complete pipeline to be divided into more easily jackable sections. Amiblu supplies leading and trailing (upstream / downstream) pipes specially manufactured for intermediate jacking stations to customer specifications. The dimensions of the pipe ends are tailored to the steel cylinder used. They are joined with double seals on the downstream pipe and usually lubricated.

Lubrication ports

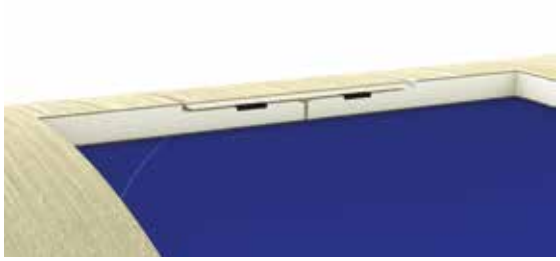
Amiblu jacking pipes can be supplied with special bushings that serve for injecting lubricant between the pipe and the soil. The lubrication ports are corrosion-resistant, they are securely fitted, have a female thread, and a plug for sealing.

Manholes for jacking sites

Standard or tangential manholes by Amiblu can be installed after jacking – for example where intermediate jacking stations have been removed. The manhole design is customized to suit the actual location and height constraints of the pipeline involved. Apart from this, tangential manholes can of course also be placed on the jacked pipeline.

Joints for jacking pipes

Amiblu provides different types of couplings for jacking and microtunneling applications which are specified according to the individual project requirements. The couplings safely connect and guide the pipes throughout the installation process and fit both centrifugally cast Hobas and filament wound Flowtite GRP pipes.

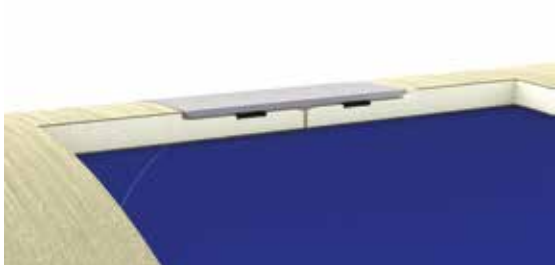


GRP sleeve

This joint includes a GRP sleeve with integrated EPDM rubber gasket. It is suitable for both pressure and non-pressure applications and can be produced in various diameters to fit the project and installation requirements.

Stainless steel & rubber sleeve

This joint consists of a stainless steel sleeve with integrated EPDM rubber seal. It is suitable for both pressure (up to PN 16) and non-pressure applications.



Stainless steel sleeve

The inner surface of the stainless steel sleeve fits tightly to the EPDM rubber seal embedded into a special groove on the pipe spigot. The joint is applicable for both pressure and non-pressure applications.

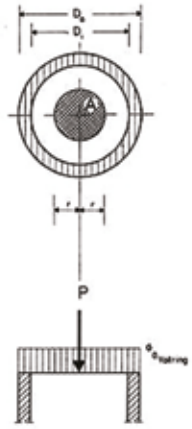
Curved jacking with Amiblu GRP pipes

Amiblu pipes enable an optimal transmission of jacking forces and a high steering precision without load distribution rings – a great benefit especially for curved jacking drives.

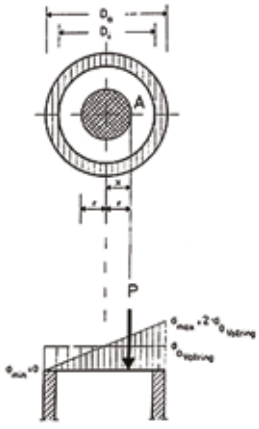
For economic and environmental reasons, curved pipe jacking is increasingly specified by designers and clients. Dividing the drive into straight sections with bends located inside the shafts makes it necessary to dig more and in many cases deeper pits. With curved drives, the quantity and the depth of these jacking pits can often be optimized.

Curved drives require special jacking equipment and of course a suitable pipe system. For the pipeline, curved jacking means there is angular deflection in the joints and eccentric longitudinal loading of the pipes. The loading has to be considered particularly in the calculation of the maximum allowable angular deflection of the joints and the maximum allowable jacking force on the pipes.

The linear-elastic properties of Hobas and Flowtite GRP jacking pipes allow the pipes to react to eccentric loads by means of spigot deformation. Therefore, the contact between the pipes for the transmission of jacking forces remains at the optimal level until deformation limits are exceeded. A further benefit is the high compressive strength of the material. Numerous tests on our pipes have shown that, below the allowable compressive stress, the material reacts linear-elastic and is not influenced by frequent cyclic loading or wetness. The deformation and the allowable jacking force for the curved alignment of GRP jacking pipes can therefore be calculated very accurately and and reliably.



Centric loading



Eccentric loading

Jacking of a 105 m long Hobas GRP pressure pipline OD 1720, PN 6 in a curve with 300 m radius for the voestalpine AG in Donawitz, Austria.

Pressure jacking with Amiblu GRP pipes

No casing pipe needed: Amiblu GRP pipes can be designed as two-in-one solutions that withstand both high thrust forces and internal working pressure.

When a pressure main needs to be installed by jacking, two different pipes are often used - one for jacking, and one for the operating pressure. This is because pipes that are designed to withstand jacking forces are usually not suitable for internal pressure above 2 bars and vice versa. A pipe designed for jacking (very often concrete) is usually utilized as casing into which a second pipe, the carrier pipe (e.g. steel, PEHD, etc.) is inserted for the pressure application.

This solution asks for more space, a larger jacked host pipe to accommodate the carrier pipe, and larger jacking machinery, It results in more excavated material to deal with and also increases the construction time considerably, since the carrier pipe needs to be assembled and inserted into the jacked casing. Needless to mention the increased costs regarding the above points as well as of course pipe material costs that may almost double, and in many cases a second supplier to come to an arrangement with.

Amiblu produces and supplies jacking pipes as two-in-one solution, withstanding high thrust forces as well as internal working pressure. No casing or carrier pipe is necessary, and the client can conveniently coordinate the project with one pipe supplier only.

Jacking of Hobas pressure pipes OD 1720, PN 6 under the Venice lagoon in Italy. The entire 351 m long section was jacking in one drive only.

Jacking of Hobas pressure pipes OD 860, PN 6 beneath the bay of Golden Sands in Bulgaria to convey purified wastewater from a treatment plant into the Black Sea.

XL SEWER JACKING "BURAKOWSKI" (POLAND)
Hobas GRP pipes OD 3270 were jacked for transporting sewage to the wastewater treatment plant Czajka in Warsaw. The installation involved the largest-diameter microtunneled curve ever realized with a GRP pipe so far.

Reference projects all around the globe

Under highways and rail tracks, in densely populated cities and natural reserves, for curved routes and in greath depths: Amiblu GRP pipes have been the number one choice and proved their worth in numerous jacking projects around the globe.

PIPE JACKING UNDER RAILWAY IN HAMBURG (GERMANY)
Flowtite pipes DN 650, SN 17 500 were jacked under a railway at the Port of Hamburg as protective pipeline for electric cables. Rail operations were not interrupted by the installation works. Flowtite GRP pipes by Amiblu comply with the strict regulations of the German Federal Railway Authority (EBA).

SEWER MAIN IN NATURE RESERVE (LUXEMBOURG)
Flowtite GRP pipes OD 1280 were jacked underneath a highway for a new sewer main in the municipality of Bettembourg. The project also involved an open-trench section with Flowtite pipes DN 1000. Amiblu complied with the strict environmental demands given the surrounding nature reserve area.

SEWER PIPES JACKED UNDER RAIL LINE (GERMANY)
Flowtite GRP pipes DN 1280 were jacked under the Elm-Lappwald railroad line as part of a stormwater sewer system. The pipes were chosen due to their high stiffness and load capacity at comparably small wall thickness.

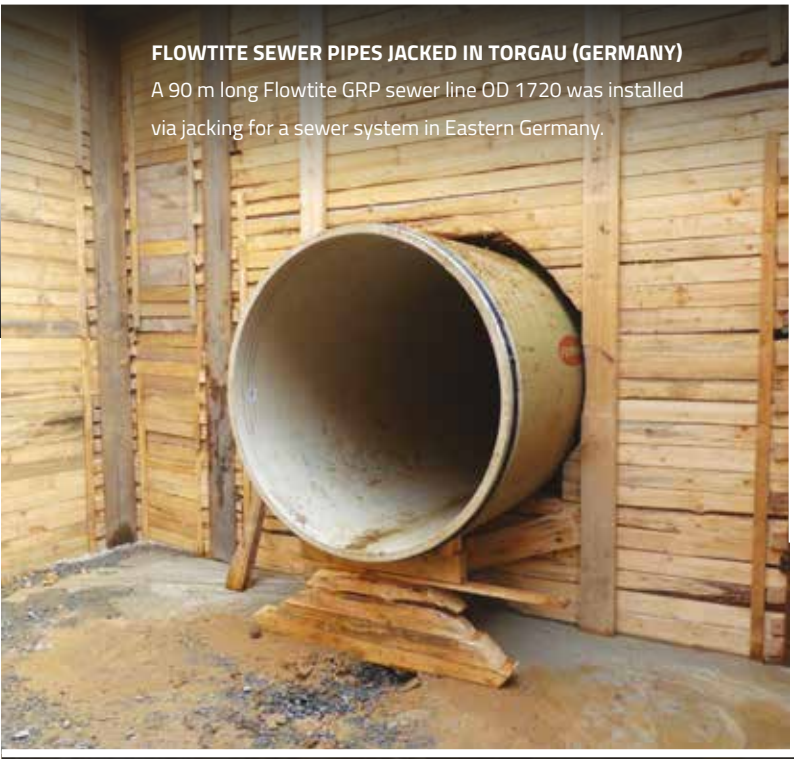
CURVED JACKING OF COOLING WATER LINE (AUSTRIA)
For the steel manufacturing company voestalpine AG in Austria, a more than 100 m long Hobas GRP pressure pipeline OD 1720 for cooling water has been installed by means of curved jacking.

AUGER BORING THROUGH LIMESTONE IN LECCE (ITALY)
800 m Hobas GRP pipes OD 860, SN 32 000 were installed by means of auger boring in Southern Italy as part of a new interceptor sewer. The marble-like and water senstitive Lecce limestone represented a special challenge that was successfully mastered.

CURVED JACKING UNDER RIVER RHINE (SWITZERLAND)
423 m Hobas pressure pipes OD 1499, PN 10 were jacked in a curve with 1000 m radius under the river Rhine in Basel. The jacking was conducted 16 m below ground water level at a depth of 32 m.

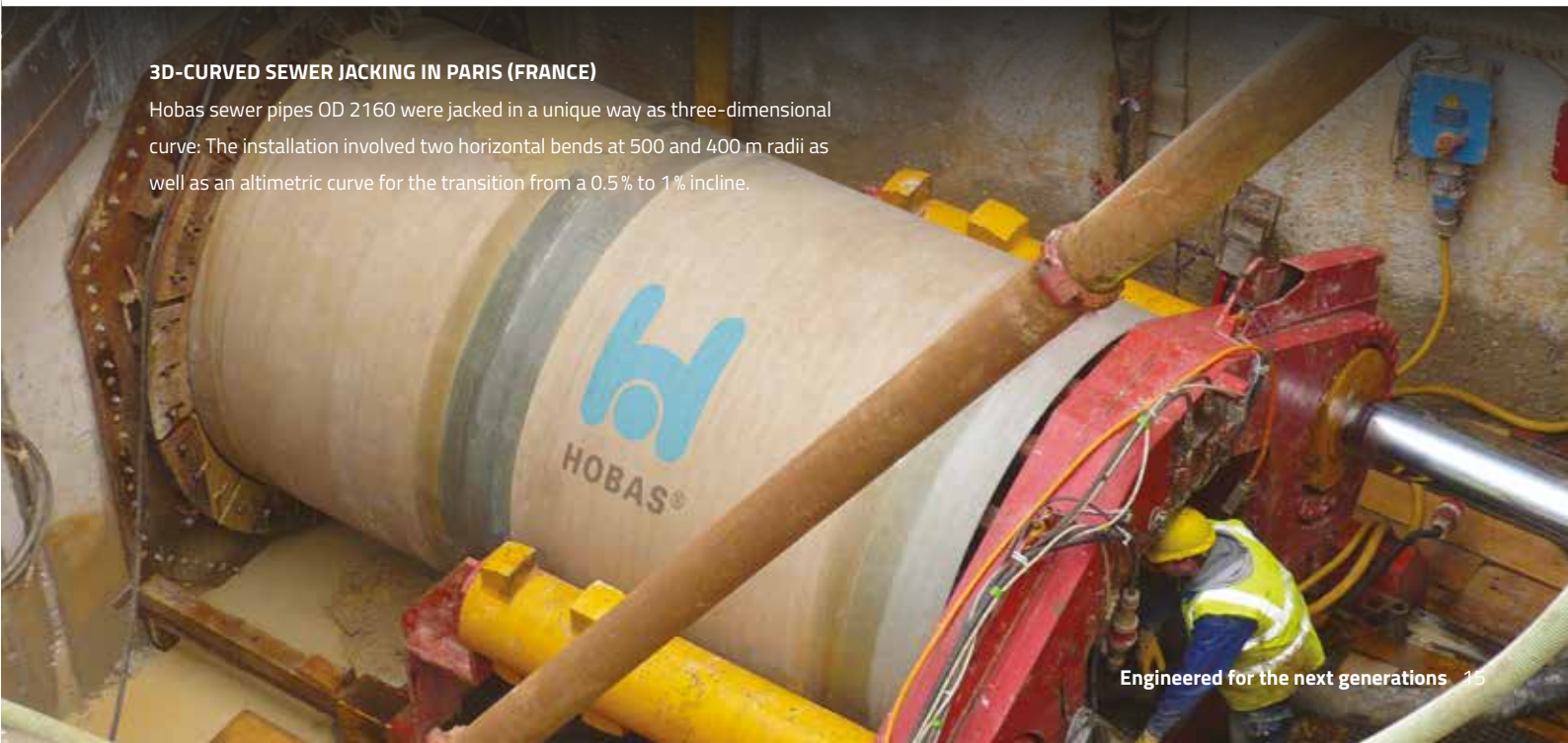
STORMWATER SEWER FOR KRAKÓW AIRPORT (POLAND)
A combination of Flowtite and Hobas GRP pipes was installed for the new stormwater sewer system of Kraków Airport. One section involved Hobas pipes OD 1280 being installed via jacking as casing pipes, into which Flowtite pressure pipes with distance rings were inserted.

NO-DIG INSTALLATION OF SEWER PIPES (GERMANY)
113 m of Flowtite GRP pipes OD 1720 were jacked as part of a sewer system in Stuttgart.



FLOWTITE SEWER PIPES JACKED IN TORGAU (GERMANY)
A 90 m long Flowtite GRP sewer line OD 1720 was installed via jacking for a sewer system in Eastern Germany.

HOBAS PU LINE JACKED IN RZESZÓW (POLAND)
160 m of Hobas GRP pipes OD 1499, SN 50 000 with highly abrasion resistant polyurethane inliner have been installed by means of microtunneling in the Polish city of Rzeszów.

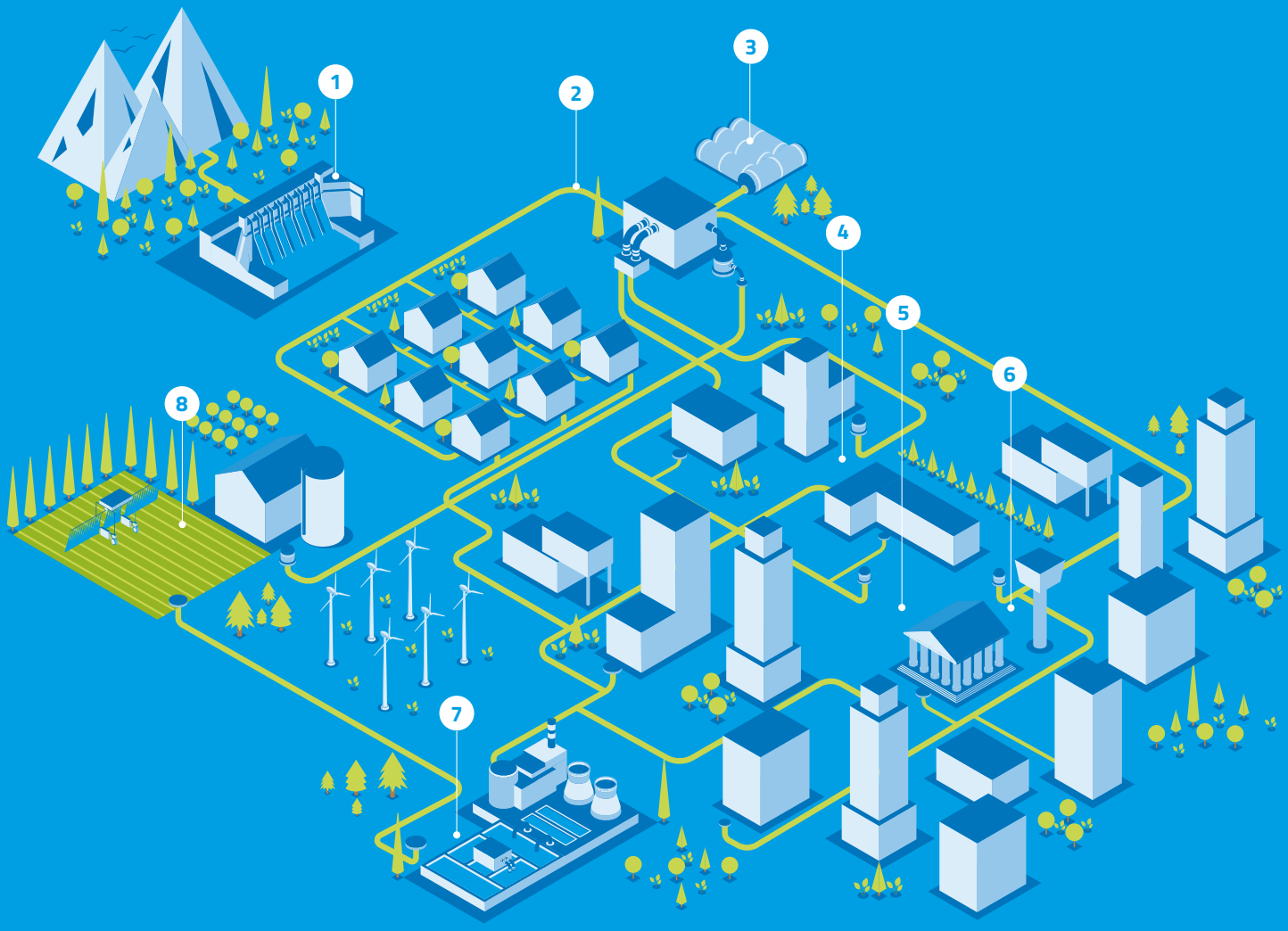


3D-CURVED SEWER JACKING IN PARIS (FRANCE)
Hobas sewer pipes OD 2160 were jacked in a unique way as three-dimensional curve: The installation involved two horizontal bends at 500 and 400 m radii as well as an altimetric curve for the transition from a 0.5 % to 1 % incline.

Amiblu®

Let’s value water as we should.

1. Hydropower
2. Potable Water
3. Storage Tanks
4. Sewage and Stormwater
5. NC Pipes Rehabilitation
6. Jacking Pipes
7. Industry
8. Irrigation



Amiblu Holding GmbH
www.amiblu.com | +43.463.48 24 24 | info@amiblu.com