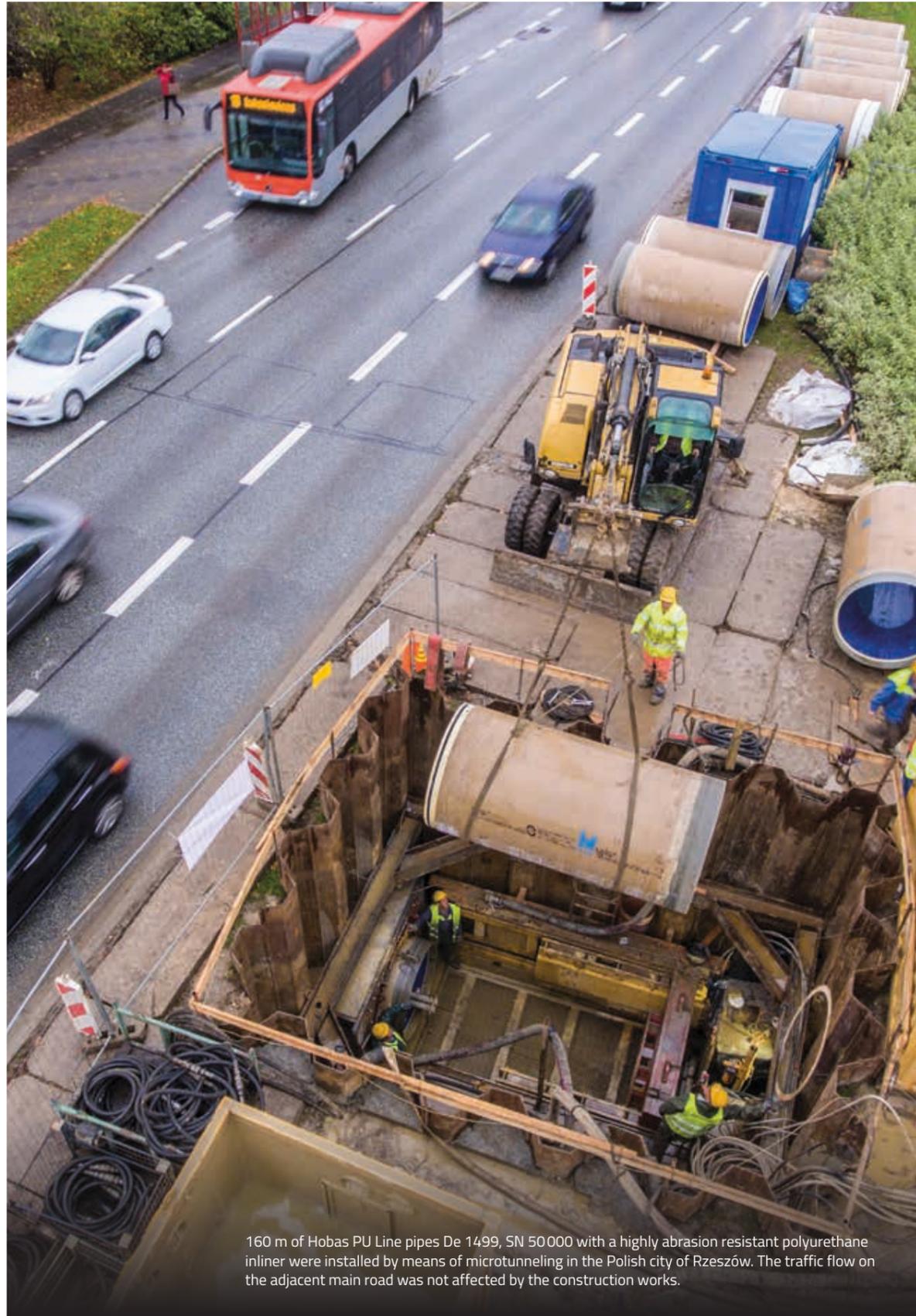


# No dig, no doubt: GRP jacking pipes

Trenchless installation with  
customized system solutions



160 m of Hobas PU Line pipes De 1499, SN 50000 with a highly abrasion resistant polyurethane inliner were installed by means of microtunneling in the Polish city of Rzeszów. The traffic flow on the adjacent main road was not affected by the construction works.

## Minimum impacts, maximum convenience. Let's push technical limits together

With climate change and urbanization, cities and municipalities face two major challenges in the 21<sup>st</sup> century. A constantly growing population requires more energy resources and a comprehensive water infrastructure – and this demand is further fueled by both extreme rainfalls and long draughts.

In heavily frequented city centers, digging up trenches for new water or sewer pipelines is often plain impossible: closing busy roads for traffic results in extreme congestions, which not only cause delays and headaches, but also a considerable CO<sub>2</sub> impact. In historic districts, large-scale construction works are not possible at all.

And there are other areas too, where construction machinery and cut-up soil are not an option: in natural habitats, for example, the first priority is to protect the pristine environment from any unnecessary damage. Still, access to fresh water and a working wastewater system are vital for our health and well-being.

This is where pipe jacking comes in. The trenchless installation technology offers a minimally disruptive way for expanding existing water and wastewater networks. In fact, not having to open trenches means less damage to nature and existing infrastructure, and less CO<sub>2</sub> emissions from construction machinery and traffic.

Hobas glassfiber reinforced plastic (GRP) pipes by Amiblu have gained a firm foothold in pipe 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.

And with a number of highly innovative engineers continuously advancing GRP applications, the material is the perfect answer to the challenges of this century.



Not having to open trenches for an installation means less damage to nature and existing infrastructure, and less CO<sub>2</sub> emissions from construction machinery and traffic jams.



Scan code and watch a video animation to learn more about the benefits of pipe jacking installations with Hobas GRP pipes! Direct link: [bit.ly/3kyLm0c](https://bit.ly/3kyLm0c)

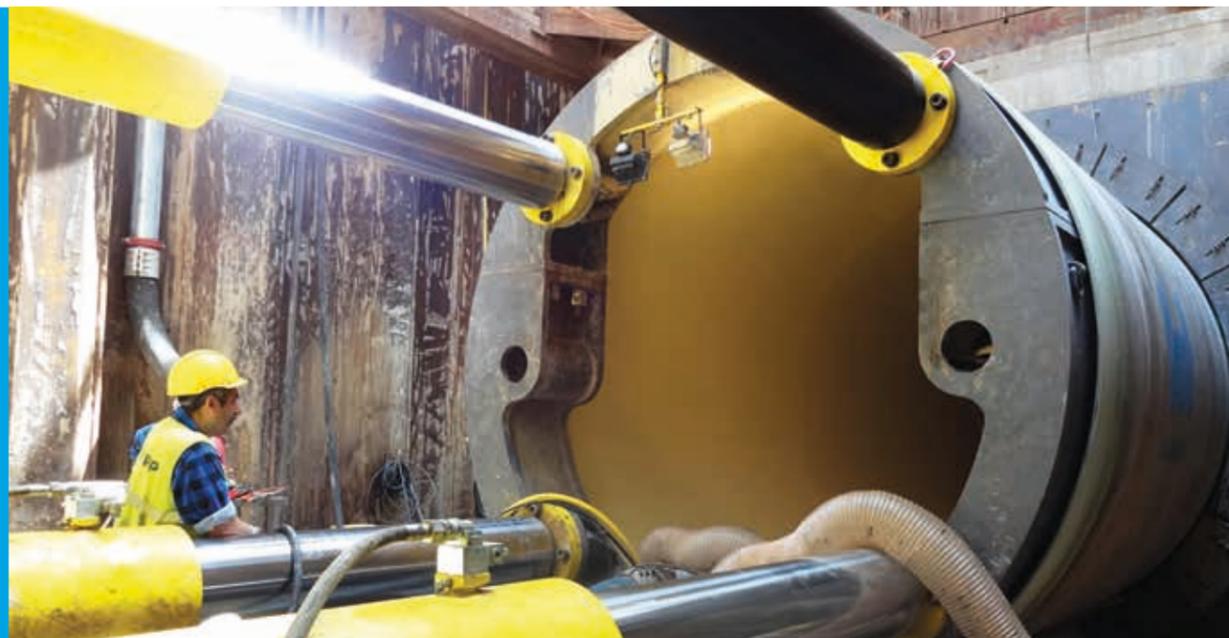
## Custom GRP solutions for a lower carbon footprint

Glassfiber reinforced plastics challenge the traditional pipe market with a range of matchless benefits. With their smooth, almost non-absorbing exterior surface, tight outer-diameter tolerances, and light wall structure, Hobas GRP jacking pipe systems require the lowest necessary jacking loads in the industry and are suitable for very long and also curved drives.

The relatively small outer diameter makes it possible to use smaller machines and equipment. This results in less excavated material (> 25 % less than with concrete pipes) and

reduced overall equipment and construction costs. On top of that, less bentonite is used for lubricating smaller outer diameters and smoother surfaces.

Thanks to the GRP pipes' corrosion and abrasion resistance, high structural stability, and leak-tightness, they feature an operational service life of over 150 years. This makes Hobas GRP products an environmentally sound, trouble-free, and cost-effective long-term investment.



Trouble-free. Cost-effective. Environmentally sound. And a service life of 150 years.



Click [HERE](#) or scan the code to watch our video about another trenchless extension of the WWTP Czajka in Warsaw!

**LEFT PAGE PHOTO**  
Hobas GRP pipes De 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.

**RIGHT PAGE PHOTO**  
Hobas jacking pipes De 1434 were installed by means of auger boring beneath a rail track to serve as a stormwater culvert. Hobas pipes are officially authorized by the Russian Railways RŽD for railway applications.

### Engineered for 150 years of operations

Our strain corrosion data results in an expected service life of over 150 years. 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, GRP products by Amiblu 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

Hobas GRP 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

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

### High compressive strength

Hobas 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

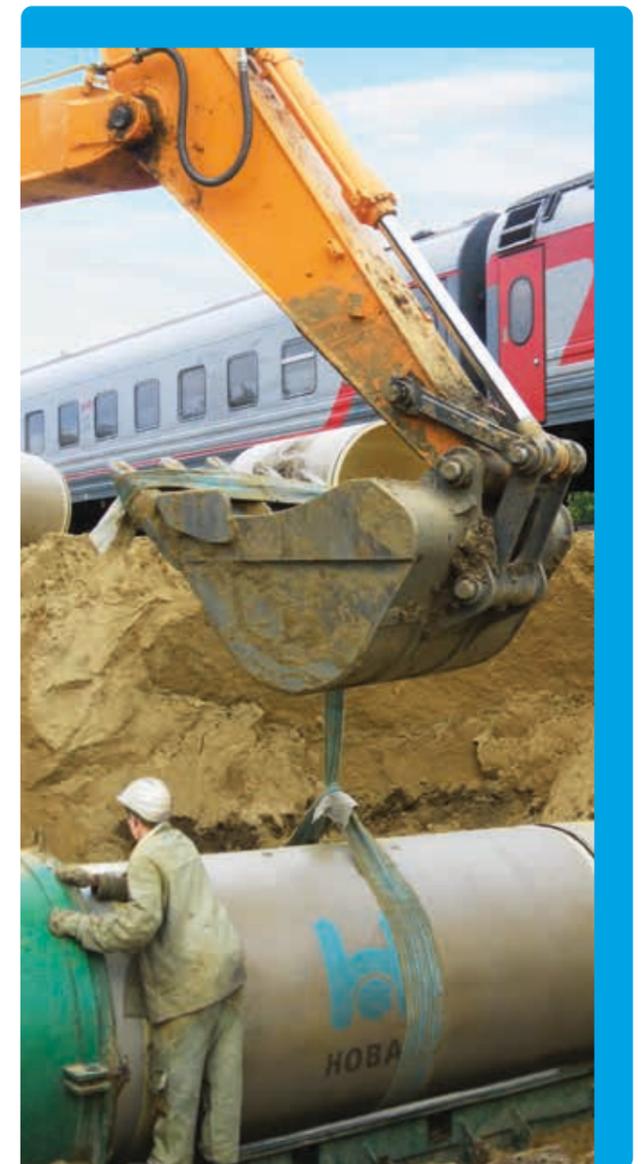
Given their impermeable outer surface, Hobas GRP jacking pipes do not adhere to damp soil material. There is therefore comparatively low resistance when jacking is initiated, even after longer standstills.

### Longer jacking drives

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

### Ideal transmission of jacking forces

Hobas 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.



# Full service, no compromise: we have everything you need

Jacking installations are complex. They require a top-notch pipe material, but also so much more – in particular reliable service and advice. Intermediate jacking stations, for example, are often useful when it comes to managing longer jacking drives. However, thanks to Hobas GRP pipes' very smooth outer surface that allows for lower jacking forces, you might be able to do without them. Other accessories such as couplings, manholes, and various fittings need to

be tailored to your project requirements so the installation works smoothly and the final structure operates perfectly over many decades.



## 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 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.



## Lubrication ports

Hobas 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.

## Production range of Hobas jacking pipes

Diameter range (De)	272 - 3600 mm
Pressure (PN)	up to 16 bar
Nominal lengths	1 - 6 m
Stiffness (SN)	32,000 - 1,000,000 N/m <sup>2</sup>



Click [HERE](#) or scan the code to watch a spectacular time-lapse video about the Jacking of Hobas pipes De 1280 under a highway in Roosendaal, NL.

## 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 Hobas GRP pipes throughout the installation process.



## 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.



## Your pipe route runs in a curve? GRP can handle every radius

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.

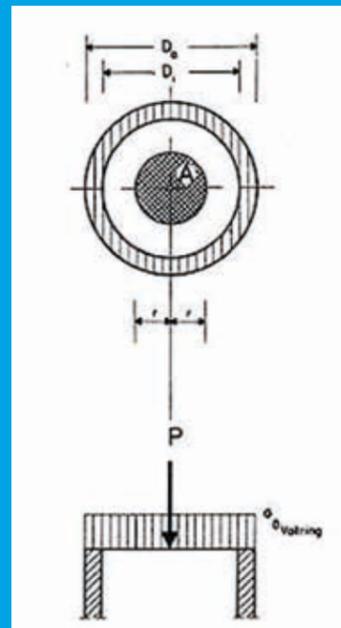
The linear-elastic properties of Hobas GRP jacking pipes allow the pipes to react to eccentric loads by means of spigot deformation. Therefore, the contact between the pipes for

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.

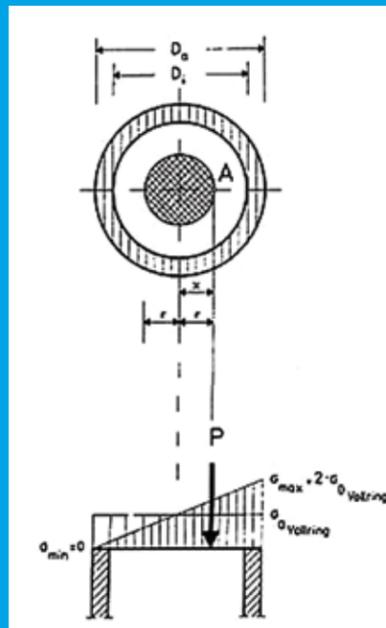
Numerous tests on our pipes have shown that, below the allowable compressive stress, the material reacts linear-elastic and is not influenced by frequent cyclic loading or wetness. The deformation and the allowable jacking force for the curved alignment of GRP jacking pipes can therefore be calculated very accurately and reliably.



In Paris, Hobas sewer pipes De 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.



Centric loading



Eccentric loading

Hobas pipes enable an optimal transmission of jacking forces and a high steering precision without load distribution rings.



A 105 m long Hobas GRP pressure pipeline De 1720, PN 6 was jacked in a curve with 300 m radius for the voestalpine AG in Donawitz, Austria.

## A two-in-one solution for high thrust and internal 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.

may almost double, and in many cases a second supplier to come to an arrangement with.

Amiblu produces and supplies Hobas 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 you can conveniently coordinate the project with one pipe supplier only.

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



No casing needed: one Hobas pipe works for two, reducing your time and costs for construction and coordination.

ABOVE PHOTO  
Hobas pressure pipes De 860, PN 6 were jacked beneath the bay of Golden Sands in Bulgaria to convey purified wastewater from a treatment plant into the Black Sea.



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

## Solutions



Urban Areas



Rural Areas



Wastewater



Potable Water



Irrigation



Hydropower



Industry Applications

## Products



STORAGE & RETENTION



FILTERS



NC PIPES



- S Sewer Pipes
- P Pressure Pipes
- J Jacking Pipes
- PJ Pressure Jacking Pipes
- PU PU Line
- G Flowtite Grey
- O Flowtite Orange
- B Biaxial Pipes
- NC Non-Circular
- SS Storage Sewer
- PWT Potable Water Tanks
- RT Retention Tanks
- A Amiscreen

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