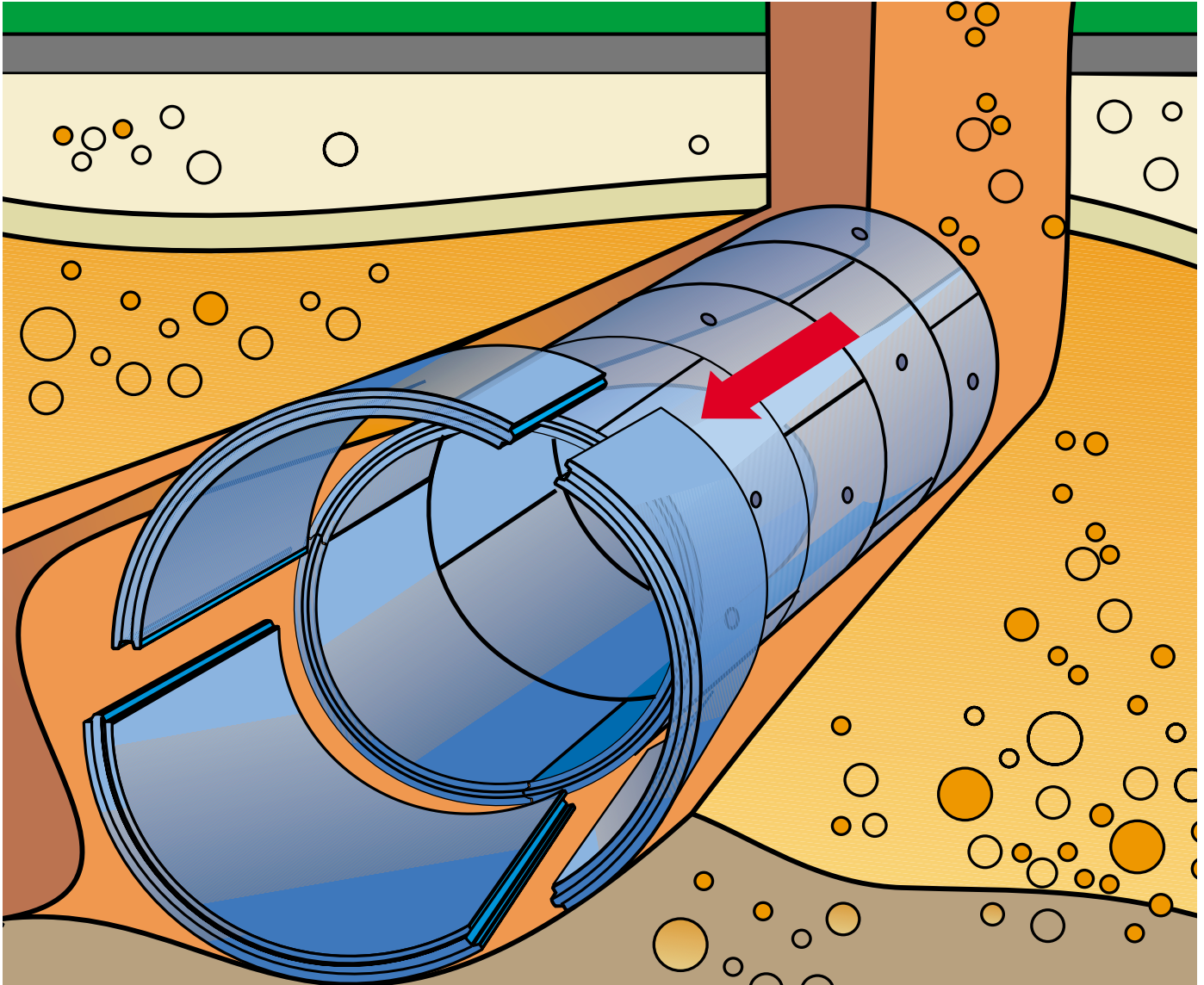


TAUBER TUNNELING WITH SEGMENTS MADE OF POLYMER CONCRETE



This construction method uses a conventional open face shield-tunneling machine. The soil is excavated by a drag bucket, which is typically set on rails and pulled back to the insertion shaft where it is emptied.

Pre-fabricated POLYCRETE® segments, or tubings are safely installed behind the driving shield. The pipe, which consists of three segments, provides the support for driving the shield. In conventional micro tunneling or pipe jacking the pipe is jacked through the soil by large hydraulic forces. With the TAUBER tunnel system the previously installed tubings do not move.

 **TAUBER**

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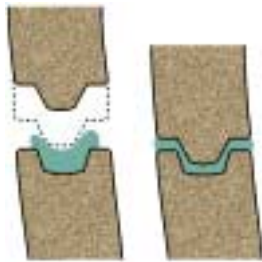
POLYCRETE® SEGMENTS ONE BY ONE

LEAK PROOF, CORROSION-RESISTANT PIPELINE MADE OF POLYCRETE SEGMENTS

Prior to the development of POLYCRETE® pipe segments installed by minitunneling it was always necessary to install a minitunnel casing pipe made of non-corrosion resistant material. A corrosion resistant inner pipe was then pulled inside the casing. This method is commonly known as the „Two Pass System“. Now that POLYCRETE® segments consisting of only corrosion resistant polymer concrete are used the „Two Pass System“ is not necessary. The material properties, which meet the requirements of German Standard DIN 54815, insure that the pipeline is corrosion resistant.

SEALING

The pre-fabricated pipe segments make up a high quality leak proof pipe. The tongue and groove joints are bonded with an epoxy resin, which remains elastic. When the resin is cured the annulus between the outside of the pipe and the soil is filled with a fine gravel (2-8mm) and grouted in place. This procedure insures that the pipe meets the required test pressure of 5 m water column.



MAINTENANCE OF SEWAGE FLOW DURING CONSTRUCTION

Branch sewers may be connected to the new interceptor sewer during construction. These branch sewers may continue in operation. Bypassing the branch sewer is not required. House connections may also be connected to the new interceptor during construction.

COST-EFFICIENCY

The TAUBER tunnel system with POLYCRETE® pipe segments is very cost efficient. The outside diameter of the pipe segments is smaller than the outside diameter of the casing in a „Two Pass System“, there is less soil to be removed, and only one pipe is required. Branch sewers and house connections can be made and none of these sewers or house connections require bypassing.



THE BENEFITS



LESS DISRUPTION

Small diameter insertion and reception shafts less than 3.8 meters in diameter are required.

SHARP BENDS POSSIBLE

Since the pipe does not move after it is installed in the ground, the bend radius may be as small as 65 meters.

NO PROBLEM WITH OBSTACLES IN THE WAY

Obstacles in the path of the open face shield may be removed without having to dig up the tunneling machine.

NO PROBLEM WITH SUBSIDENCE OR HEAVE

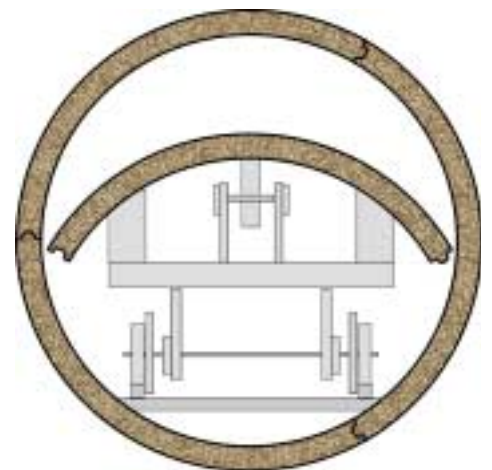
Since the driving force is as low as 60 tons there is very little or no subsidence or heave. This benefit allows the new pipeline to be constructed very close to buildings, gas line, water lines, etc.

NO LIMITATION OF PIPE RUN LENGTH

The TAUBER tunnel system allows construction of pipe runs of any length. Intermediate jacking stations used in microtunneling and pipe jacking are not required.

MATCHING POLYMER CONCRETE MANHOLES

Tangential manholes with the bottom part made of one complete segment ring can be directly connected with the segmental pipeline. The result is one complete corrosion resistant, leak proof system. All from one supplier.

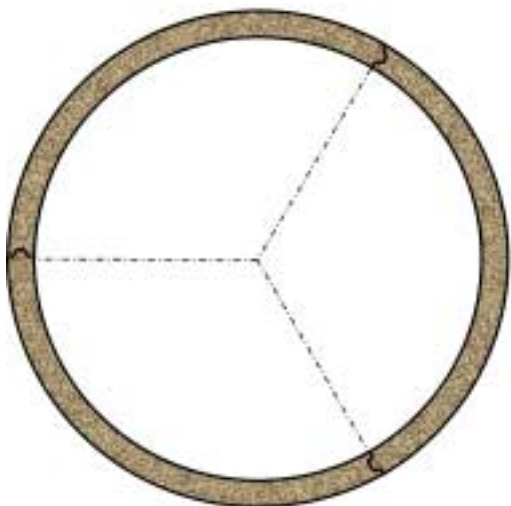


POLYCRETE® SEGMENTS

MINI TUNNEL SYSTEM

The most important part of the corrosion resistant TAUBER tunnel system are the segments. These segments are polymer concrete pipe segments, which are 60 or 75 cm long. The joints are tongue and groove in the axial direction. Three segments are joined to make up each pipe ring. Tongue and groove joints along the leading and trailing edges of the pipe provide leak proof connections to the previously installed pipe.

SEGMENT RING DN 1300



groove and tongue
joint profile

STRUCTURAL SAFETY

The TAUBER tunnel system using POLYCRETE® pipe segments is a structural pipe. The pipe is designed with Factors of Safety used in tunnel construction. The TAUBER tunnel system with segment rings and butt joints is suitable for construction in most soil conditions.

POLYCRETE® SEGMENTS DN 1000 - DN 3000

Inner diameter mm	Outer diameter mm	Wall-thickness mm	Length mm	Weight kg/Ring
1000	1140	70	600	320
1300	1480	75	750	545
2000	2280	120	750	1385
2500		<i>Under preparation</i>		
3000		<i>Under preparation</i>		

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