

# PANTA RHEI

ALLES FLIESST - EVERYTHING FLOWS - LES EAUX VIVES - TUTTO SCORRE - VŠETKO PLYNIE - BČE TEČEŤ - ALLES FLIESST - TUTTO SCORRE - VŠETKO PLYNIE - VŠE PLYNE - TODO FLUYE - WSZYSTKO PLYNIE - BČE TEČEŤ - ALLES FLIESST

PERFECT  PIPE

[www.perfectsystem.eu](http://www.perfectsystem.eu)





## EASY AND RAPID INSTALLATION

### THE CONNECTOR SYSTEM

### ENABLES INCREASED EFFICIENCY

### WHEN LAYING PIPE

The use of preinstalled plastic connectors with the various types of PERFECT PIPE helps construction companies to rapidly install the pipe inline with the technical requirements.

Depending on the pipe diameter, depth and soil conditions, the use of prebed PERFECT PIPE can reduce the size of the trench as well as the volume of soil and backfill material needed.

A simple and compact ground level is sufficient support for prebed PERFECT PIPE. There is no need for extra excavation due to protruding bells. The prebed pipe remains stable in its bedding. Uneven pressure loads on the pipe are avoided thanks to the pipe's flat base.

Depending on soil conditions, the already excavated soil can be reused to refill the pipe zone, thanks to the structural strength of the pipe.

The laying of round, circular pipe in an open trench is consistent with the already well established practice in concrete and reinforced concrete pipe installation.



## WATER TIGHT CONNECTIONS/JOINTS - ZERO LEAKS

### THE PERFECT LINER RECESS AND CONNECTOR

In order to protect the entire sanitary sewer line against aggressive chemical attack, also the pipe joints are well protected by corrosion-resistant plastic connectors.

within certain limits. Connectors are made in various sizes in hard metric dimensions for the various pipe diameters from DN 300 mm (12 inches) - DN 1200 mm (48 inches).

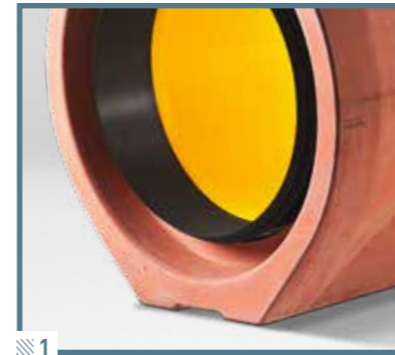
Gaskets at both ends are fitted with connectors that withstand a constant internal pressure of 2.5 bar (36 psi). The entire internal surface of the pipeline, liner and connector, is permanently sealed against infiltration/inflow and exfiltration. Being able to guarantee zero leak was clearly our goal when developing PERFECT PIPE.

The proven and certified long-term water tightness of PERFECT PIPE, tested under 2.5 bar (36 psi) of internal pressure, enables PERFECT PIPE to be used even in sensitive areas where drinking water is being recovered/procured. Certification of this standard was tested and confirmed by the German PÜZ BAU GmbH, a recognized organization for the testing, monitoring and certification of construction products and processes. Optionally, pipe liner connections can be welded.

In addition to meet standard specifications for concrete pipe, the connector allows reliable sealing when PERFECT PIPE is being deflected



- ▣ **1 Project specific** manufactured pipe lengths
- ▣ **2 Simple compact bedding** supports the pipe
- ▣ **3 Homing pipe** with connectors
- ▣ **4 Rapid backfilling** of the trench
- ▣ **5 Additional lateral pipe connections** can be added at any time by using commercially available fittings



- ▣ **1 The pipe joint** is protected against chemical attack by the connector.
- ▣ **2 PERFECT PIPE** to manhole connections are made in the same way as conventional pipe to manhole connections, using plastic connectors.
- ▣ **3 PÜZ BAU** approves PERFECT PIPE.
- ▣ **4 The German Institute for Building Technology DIBt** approves the PERFECT PIPE liner.

## SAFETY IN DESIGN AND OPERATION INSPECTION AND MAINTENANCE-FRIENDLY

The easy inspection and maintenance of PERFECT PIPE, in addition to its corrosion resistance and high static load characteristics, contribute to its long life cycle of more than 100 years.

PERFECT PIPE's robust rigid concrete shell prohibits internal changes in the pipe cross-section, which enables easy inspection of the pipe using standard inspection equipment.

The bright coloured liner facilitates the inspection process by providing a robotic camera with sufficient luminosity for imaging. Possible contaminants are easily recognized.

Especially in traditional pipelines with low overall gradients, sediment generally occurs. Prebed PERFECT PIPE, however, is ideal in supporting low but constant gradients and ensures that deposits do not occur.

For cleaning purposes, PERFECT PIPE is fully suitable for all common high pressure flushing.

## PRODUCTION, INSTALLATION AND OPERATION OPTIMIZED USE OF RESOURCES FOR CONCRETE-HDPE COMPOSITE PIPE

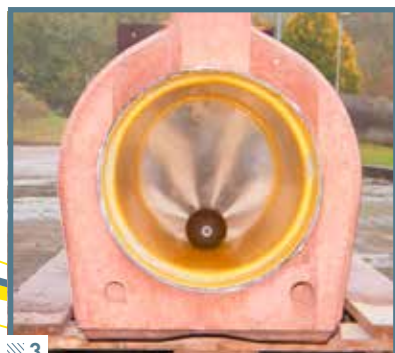
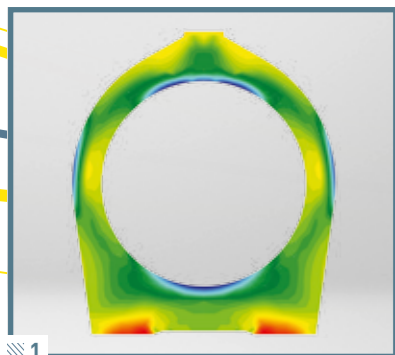
### INSTALLATION / OPERATION

- ▣ **Economical** due to rapid installation
- ▣ **Economical** due to longevity, easy inspection and maintenance, resulting in low life cycle costs.

### DECOMMISSIONING / RECYCLING

- ▣ **Recycling of safe raw materials** – concrete and environmentally friendly thermoplastics, even after a hundred years of use.

PERFECT PIPE has a very favorable overall CO<sub>2</sub> footprint, from its manufacturing and installation stages, all the way through to its ongoing operation and decommissioning stages.



- ▣ **1 The ideal tube shape** is determined using a finite element analysis ("Finite-Elemente-Berechnung").
- ▣ **2 Permanently sealed piping system**, tested with up to 36 psi of internal pressure.
- ▣ **3 Proven durability** for normal and high-pressure flushing
- ▣ **4 The inspection and maintenance-friendly plastic lining**



Production and operation  
with a low CO<sub>2</sub> footprint

COST SAVINGS,  
TIME SAVINGS,  
ENVIRONMENTALLY FRIENDLY





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# A REVOLUTION IN PIPELINE CONSTRUCTION

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