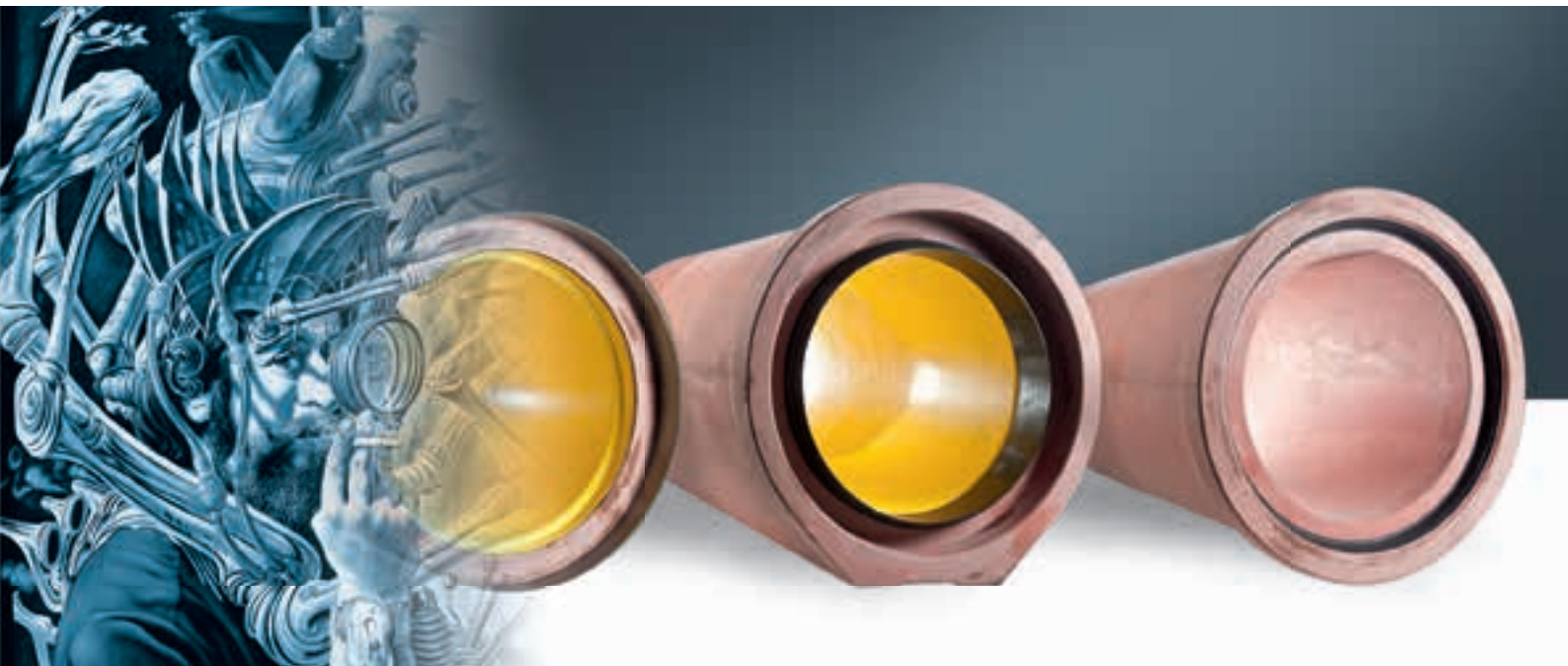


PERFECT 

## PERFECT PIPE

THE SANITARY  
SEWER PIPE SYSTEM  
THAT STANDS  
THE TEST OF TIME



**SCHLÜSSELBAUER**  
Technology for people



## PERFECT PIPE SEWER PIPES IN THE EXCAVATION METHOD AND PIPE JACKING



A revolution in pipe construction for sewerage systems: PERFECT PIPE combines the product benefits of robust concrete pipes and durable synthetic liners. The ideal combination of a conduit and a structure. PERFECT PIPE thus heralds a new era in sewerage, combining the requirements in terms of static strength and resistance in the event of increased chemical attack with the economic benefits of production, installation and operation.

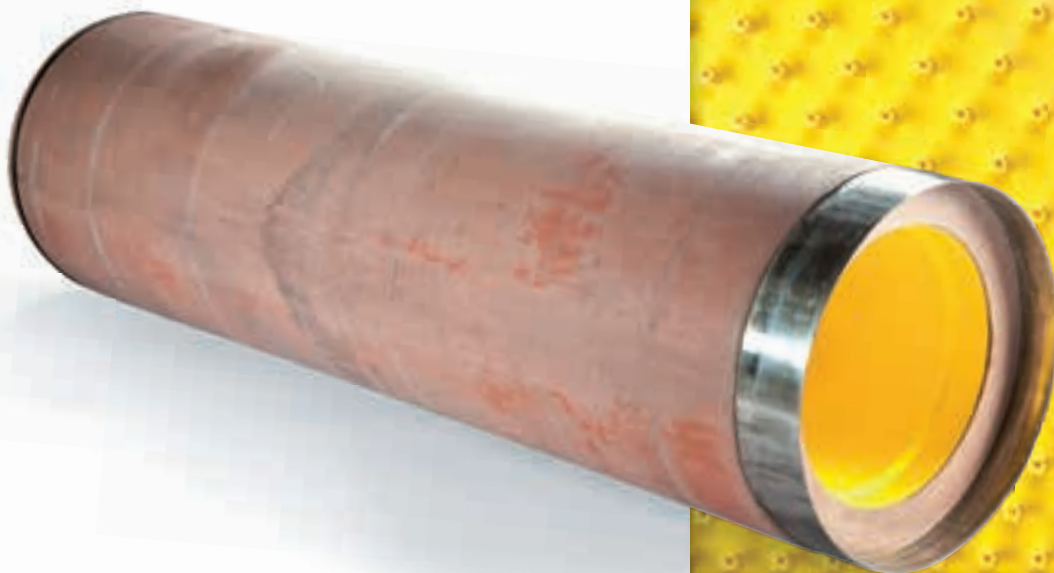
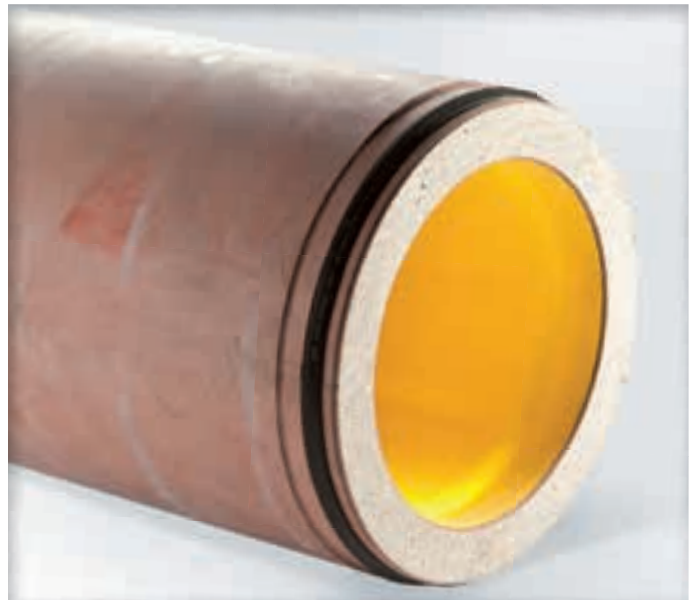
The manufacture of a durable connection of inliners made of high-quality synthetic material (polyethylene) and pipes made of high-strength concrete in an economical production process fulfils the essential demands on pipes for effluent disposal:

- Resistance to increased chemical attack
- Static load capacity even with traffic loads
- Easy handling on the building site
- Safe to install and operate
- Cost-effective use of resources

Wet cast concrete pipes without inliner can be produced using the same method. Thus for the first time, an economic mass production of wet cast pipes will be achievable. According to the different project requirements pipes can be produced with or without integrated gaskets as well as concrete pipes or steel concrete pipes.



## PERSUASIVE ARGUMENTS FOR USING PERFECT PIPE



### CORROSION-RESISTANT

Uniform lining in pipe and sleeve, permanently resistant against chemical aggression in the attack spectrum PH 1.0 to PH 14.0.

### STATICALLY LOADABLE

Use of different types of concrete and manufacture with or without reinforcement. The load capacity of the pipe can be increased by the use of high compaction concrete as and when required.

### ECONOMICAL MANUFACTURE

Ideal material combination with the use of concrete and polyethylene with no need for adhesives, resins or the like. Consumption of both materials is as low as needed to ensure the statical load and resistance against chemical aggression.

### PERFECT PIPE PRODUCT SPECTRUM

PERFECT PIPE DN250 – DN1200 (10" – 48"):

Standard construction length up to:

1.000 mm (40"), 3.000 mm (120")

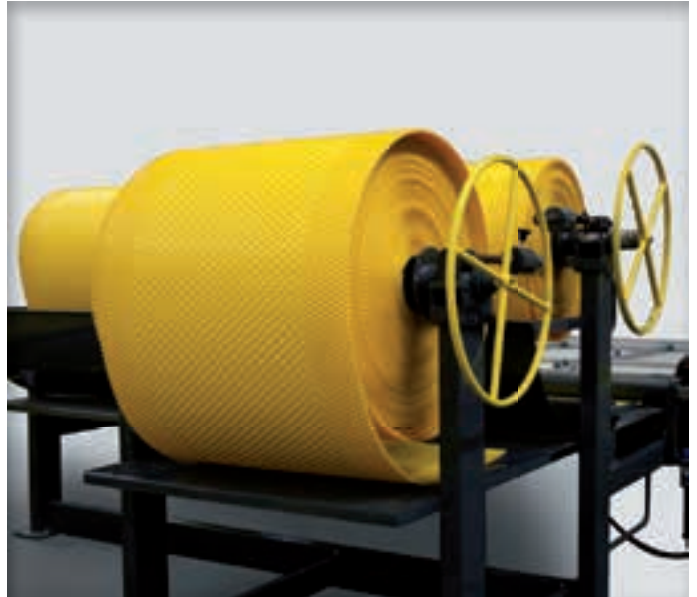
Construction length of distance pipes/spacers: variable

Concrete pipe DN300 – DN1200: (12" – 48")

Standard construction length up to 3.000 mm (120")

PERFECT PIPE Jacking pipe:

Product parameters are set on a project basis.



## PERFECT LINER



The PERFECT LINER is made of high-quality polyethylene (PE). This material is resistant to chemical attacks up to a ph-value of 1.0, abrasion-resistant and weldable.

Multiple anchoring points are used to connect the inliner tightly to the surrounding concrete pipe. The high anchor density locked to the pipe sections and the optimum anchor geometry developed for PERFECT PIPE facilitates a reliable connection right into the sleeve.

The withdrawal resistance of each anchor is more than 250 N (56 lb); the entire inliner can safely withstand permanent groundwater pressure of at least 1.5 bar (22 psi). Even strong temperature fluctuations will not cause the inliner to separate from the surrounding concrete.

Inliners can be produced in varying material thicknesses (1.65 – 3 mm) for different regional, standard- or project-specific requirements relating to the wall thickness of lining.





## PERFECT PIPE PRODUCTION SYSTEM



The use of the PERFECT LINER involves the following procedural steps:

- Trimming the inliner track as per the internal pipe diameter.
- Welding the inliner track to the circumferential inner pipe lining.
- Shaping of the ends of the inliner to sleeves for the pipe connection required.
- Fixing the inliner on a stable steel core.
- Setting up the cast mould with fixed PERFECT LINER, shear loads and anchors.

The position of the PERFECT LINER in the pipe is determined on completion of the set-up process of the moulds. In the area of the pipe connections, an increased number of anchors on the inliner provide a reliable, permanent connection to the concrete pipe.



## PERFECT PIPE CONCRETE TECHNOLOGY



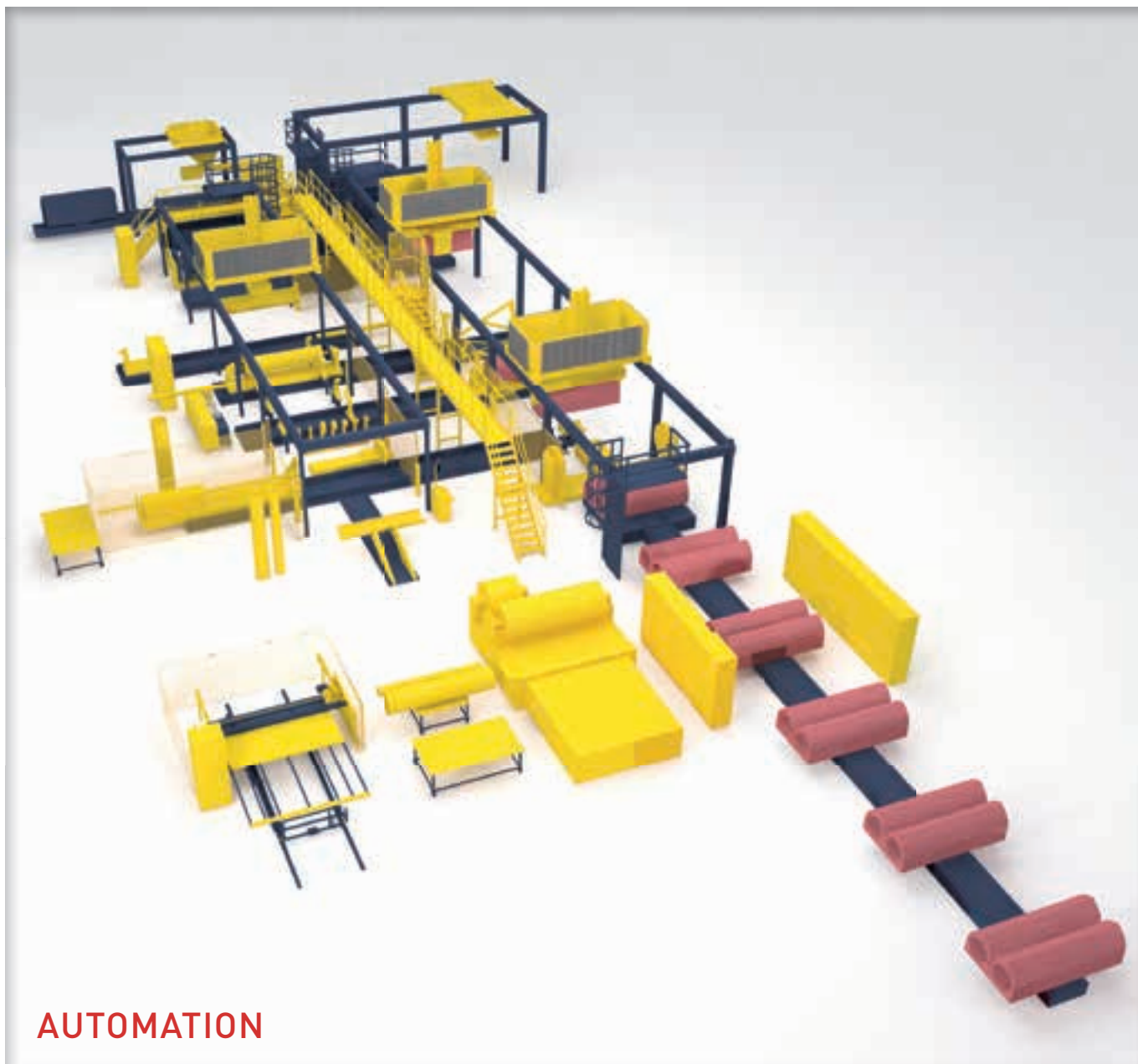
The ultimate contour of PERFECT PIPE is created by moulding the PERFECT LINER with pumped / fluid concrete. Different grades of concrete can be used. The dimensional stability of the inliner in the production process is in any case guaranteed by the inner steel core.

Cast production permits an environmentally-sound production process for all components – inliner, moulds and cores. The process safety of SCC inliner cast production is far above any traditional pipe production method.

After the hardened products are removed from the moulds, the manufacturing process is completed. The moulds are cleaned and are ready for the next production cycle. The method is also suitable for multi-shift operation.

The anchors connect the PE inliner securely across the entire length of the pipe and the full breadth with the concrete enclosure of the PERFECT PIPE.

Due to ongoing innovations in concrete technology and the combination with the polyethylene inliner the pipe material well established for hundreds of years will remain successfully. With the PERFECT PIPE technology concrete stands for dense and durable sewage systems also in the future.



## AUTOMATION

PERFECT PIPE allows the cost-effective production of highly resistant pipes in application-specific production systems.

The degree of automation of PERFECT PIPE production ranges from manually supported handling of the moulds and products through to fully-automatic circulation systems, in which the operator remains exclusively responsible for steering and controlling all the processes.

Staged automation with increasing production capacity or product variety, in particular in the manufacture of large diameter pipes or jacking pipes, is possible.





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



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