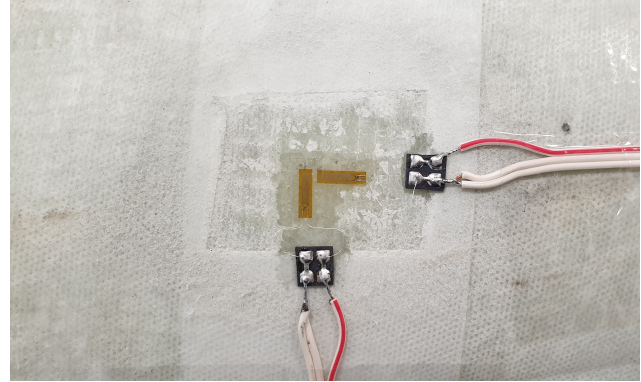




Pressure curve measurement



Strain gauges

## Dynamic Load Test (DLT)

Long-term testing for systems / Qualification for pressure pipe liners

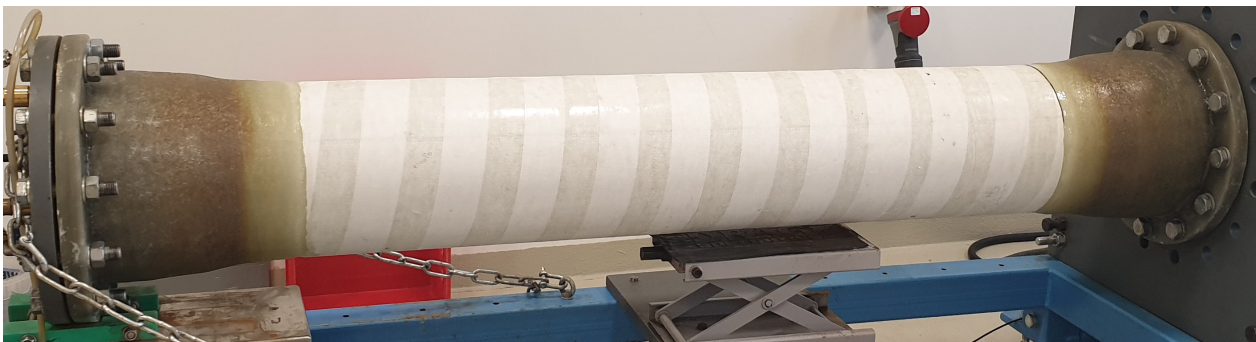
### DLT Test Facility Overview:

- Test procedure according to DIN 3603
- Freely adjustable test pressures, typically 10 bar positive pressure / -0,8 bar negative pressure
- Designed for continuous operation of  $10^7$  cycles at 2 Hz
- Components can be installed either with one sided allowance for movement or in a fixed/friction locked configuration
- Test medium: Tap water
- Location: Oststeinbek near Hamburg

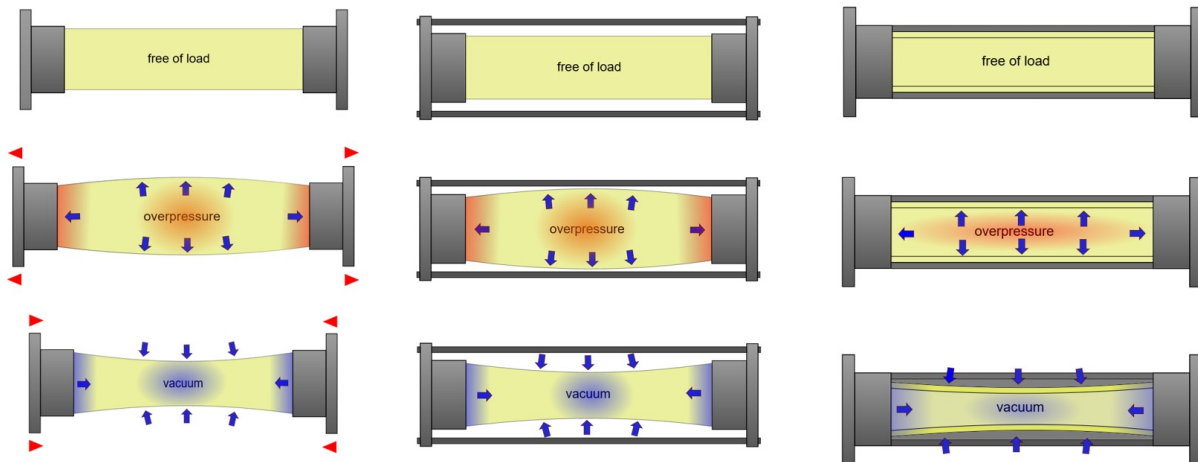
The dynamic component testing according to DIN 3603 makes it possible to evaluate, for example, rehabilitation systems for pressure pipelines **under real conditions** and to determine their long term load capacity.

The worst case scenarios simulated inside the pipe are based on actual field data:

The system generates **cyclic pressure conditions** that have been measured in real underground wastewater pressure pipelines.



Example IBB 16 Pressure liner (by IBG Hydrotech) under testing



Example test setups in accordance with DIN 3603

## Testing of Pressure Pipe Components

The tests performed with the DLT system reveal which material changes may occur in components under the conditions present in pressure pipeline networks. Strain gauges continuously capture changes in material strain in both longitudinal and circumferential directions, allowing early **detection of damage initiation** during testing.

Additional examinations – such as mechanical tests, microscopic structural analyses, inspections for potential delamination, and evaluation of monitoring data – provide the basis for **estimating the expected service life**. They also yield insights into the specific development potential of the tested products and systems.

Systems that show no changes after completing the full  $10^7$  cycle test period receive a **test certificate** from Siebert + Knipschild confirming successful testing according to DIN 3603.

This qualification provides manufacturers and network operators with confidence regarding system performance. They receive proof that a liner, including its connection components, has demonstrated its suitability in a realistic system test.

For some network operators, such as Hamburger Stadtentwässerung, this test is already a mandatory qualification procedure for pressure pipe rehabilitation systems.

### Contact:



**Dipl.-Ing. Andreas Haacker**  
Managing Director

Tel.: +49 (0)40 688714-0  
Email: a.haacker@siebert-testing.com

### Application Areas of the DLT:

- Pipe systems for pressurized water (drinking water, wastewater)
- Connection components, such as flanges, couplings, bonded joints
- Lining and repair technologies
- PVC pipes, GRP pipes, co-extruded pipes
- Variable diameters from approx. DN 100 to DN 500
- Test specimen length approx. 2.0 m