



SIMONA® large-diameter pipes in special dimensions for XXL project



Top: The 500 m long pipeline was drawn into the old pipe in a single feed.
 Bottom left: The pipelines were welded together by means of heated-tool butt welding.
 Bottom right: The entire pipeline was transported to the access trench with light construction equipment.

Approximately 500 tons of SIMONA® PE 100 pressure pipes in a special dimension were used for the rehabilitation of a grey cast iron pipeline of DN 1000 mm. Berliner Wasserbetriebe chose the innovative swagelining process, a very quick and cost-effective method.

The project at a glance

Project

Rehabilitation of a waste-water pressure pipe made of grey cast iron (DN 1000) with SIMONA® PE 100 pressure pipes (d = 1060 mm, SDR 17) using the swagelining method

Client

Berliner Wasserbetriebe (BWB), Berlin

Contractor

Ludwig Pfeiffer Hoch- und Tiefbau GmbH & Co. KG, Leipzig, Berlin branch

Project planning

Berliner Wasserbetriebe Netz- und Anlagenbau, Berlin

Technical support

Technical Sales Service SIMONA AG, Kirm

Products used

- SIMONA® PE 100 pressure pipes
d = 1060 mm, SDR 17 (500 m)

Project duration

2008



Fig. from left to right: The reducing tool brought down the circumference of the SIMONA® PE 100 pipe from 1060 mm to approx. 970 mm. Small access and exit trenches guarantee minimal disturbance for residents and traffic. The high flexibility of the SIMONA® PE 100 pipes also enabled narrow curve radii.

SIMONA® PE 100 pressure pipes – the ideal pipe system for modern repair methods

Initial situation

In Greater Berlin, Berliner Wasserbetriebe (BWB) operate a 1127 km long waste-water pressure pipe network, 147 pump stations and 6 waste-water treatment plants. The reconstruction of these pipelines presents a considerable challenge.

Task

In the district of Rudow in Berlin-Neukölln, an old grey cast iron pipeline of DN 1000 mm required reconstruction. The restrictions for the residents needed to be kept to a minimum. Only one trench was planned at the start and end of the over 500 m long construction section, plus 40 hours of feed-in time. The pipe material needed to offer the following advantages for this rehabilitation project:

- Long service life of up to 100 years
- Easy handling thanks to low weight
- Extreme bending capacity due to high flexibility
- Absorption of all load influences by the new pipe
- Excellent corrosion resistance
- No formation of incrustation
- Permanently leak-proof and tight weld connections

Solution

Swagelining is a cost-effective method for trenchless rehabilitation of pipelines with SIMONA® PE 100 pressure pipes without permanent annular space. After installation, the new solid-wall pipe lies closely-fitting against the old pipe. This position and the excellent hydraulics of the pipes guarantee the necessary flow capacity. The cross-section of the new pipe was reduced from 1060 mm to approx. 970 mm for the duration of the feed-in. For this purpose, the pipe was pulled through a reduction tool at a speed of 40 to 60 m/h. During the feed-in process, the pipe was constantly subjected to a maximum tensile stress of 202 tons. After reaching the exit trench, the tensile force was relieved and the outer diameter increased again. The result was a perfect pipe reconstruction with minimal environmental impact.

SIMONA® PE 100

Properties

- Notch insensitivity
- Long service life up to 100 years
- Permanently bonded, tight and leak-proof connections by means of welding
- No incrustation
- Excellent hydraulic properties thanks to minimal wall roughness
- High resistance to abrasion
- High corrosion resistance
- Temperature range -20 to +60°C
- High flexibility
- Good chemical resistance
- Good storage properties thanks to insensitivity to frost and UV radiation

Range of products

- Pipes
- Fittings
- Fittings for electrofusion welding
- Flanges
- Sheets
- Solid rods
- Profiles and welding rods

Further information

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