

SIMONA

SIMONA® PE 100 products for a drinking water pipeline in Belgium



Left: Before pipe insertion, the pipes are accurately measured and checked. Top right: Transporting the 20 m long pressure pipes to the site. Bottom right: The total length renovated by horizontal directional drilling was about 740 m.

Renovation of the existing drinking water supply network in Sint-Niklaas (Belgium) was a particular challenge for FARYS, a Belgian water supply company. Owing to the existing infrastructure, numerous obstructions had to be bypassed in route planning, as a result of which it was necessary to implement a combination of open-cut and trenchless pipelaying. The optimal solution identified for this project were SIMONA® PE 100 SPC RC-Line drinking water pipes.

The project at a glance

Client

FARYS, Gent, Belgium

Contractors

Verbraeken Infra NV, Temse, Belgium
BESIX Group, Brussels, Belgium

Technical support

Profilplast BV, Zulte, Belgium
SIMONA AG, Kirn, Germany

Products used

- 740 m SIMONA® PE 100 SPC RC-Line drinking water pipes, each 20 m: d 500 mm, SDR 11
- 420 m SIMONA® PE 100 pressure pipes, each 20 m: d 500 mm, SDR 11
- SIMONA® PE 100 bends, seamless, 22°, 30°, 45° and 60°: r 1.5D, d 500 mm, SDR 11

Duration of project

4 months



From left to right: SIMONA® PE 100 SPC RC-Line protective-jacket pipes; jacket cut-back for preparation of butt welding; pipe with jacket cut-back prepared for the welding process.

Initial situation

Owing to a complex infrastructure, the pipes had to be laid in the ground with several changes of direction and at various depths. This meant that over the entire length the bore path had to be "offset" horizontally and vertically a number of times.

Task

Due to the complex infrastructure, it became necessary to implement a combination of trenchless pipelaying and laying in an open-cut trench. Therefore, a material had to be identified that would protect the inner tube against damage resulting from mechanical stresses, such as notches, abrasion or crack propagation.

Solution

For the purpose of laying the pipes by means of the HDD method and laying in an open-cut trench, the specialised contractors BESIX Group and Verbraecken Infra NV were selected. Beforehand, the pipes were subjected to extensive tests by FARYS, the competent partner Profilplast B.V. and SIMONA AG in order to verify compliance with the tensile force and resistance requirements. Meeting these is an essential prerequisite for the HDD method. With the aid of a horizontal directional drilling rig an underground path was drilled in order to draw in a pulling tube. Then, in further steps the final bore path was widened with a so-called back reamer and the pipe was introduced by a pulling-in device. SIMONA® PE 100 SPC RC-Line drinking water pipes with an additional protective jacket made of polypropylene are particularly suitable for this trenchless method of pipelaying. The jacket protects the pipe against mechanical damage and also has a high level of abrasion resistance. These outstanding properties and the high safety potential of the products convinced the end customer FARYS.

Renovation by horizontal directional drilling took place over a length of about 740 m. In another section where the pipe route was open-cut, 420 m of SIMONA® PE 100 pressure pipes were laid. For both methods of laying, the pipes used had a diameter of 500 mm in SDR 11. Even after trenchless laying, SIMONA® PE 100 SPC RC-Line pipes still possess 100 % new-pipe quality.

SIMONA® PE 100 SPC RC-Line

Properties

- Excellent bond strength and shear strength between the PE 100 RC inner pipe and the PP protective jacket
- High abrasion resistance of the PP Protect protective jacket
- No crack propagation from the PP protective jacket into the PE 100 RC inner pipe
- High inner pipe resistance to slow crack propagation (PE 100 RC)
- Extremely effective protection of PE 100 SPC against major physical damage such as notches, abrasion and wear
- Top-quality material ensures a high level of tensile strength for the pipe as a whole

Further information

SIMONA AG

Pipes and Fittings Division
 Phone +49(0)6752 14-315
 Fax +49(0)6752 14-211
pipingsystems@simona.de

Profilplast BV

De Schachelaar 1
 B-9870 Zulte
 Belgium
 Phone +32(0)92 982 510
info@profilplast.be