References

Quick installation in the Konotopa channel



Uponor involvement

- Weholite pipes PEHD SN4 DN2000 mm – 165 m

Weholite guaranteed a simple and quick installation in the Konotopa channel

The renovation of the Konotopa channel is one of the most interesting hydro projects recently completed in Warsaw, Poland. The renovation of the Konotopa channel is one of the most interesting hydro projects recently completed in Warsaw, Poland. Local authorities in the Ursus district faced the problem of a polluted waterway with a collapsing embankment. The piping of the channel with Weholite technology prevented further devastation, restored damaged sections of the waterway, and helped to improve local sanitary conditions.

Project Facts:

Location	Completion
Warsaw, Poland	2016
Building Type	Product systems
Municipal	Drainage, Tailor made constructions
Project Type	
New building	

Partners

Investor:
Urząd Dzielnicy Ursus m.st.
Warszawy

Contactor:
Przedsiębiorstwo Budowlano-
Melioracyjne TOLOS

The Konotopa channel (Żbikówka watercourse) is an open discharge channel which receives storm- and meltwater from the Ursus area. Once a small river, the watercourse begins west of the Ursus district and ends in Pruszków, where it flows into the Utrata river. For years, the channel had been polluted by industrial wastewater from local factories and workshops. While the authorities were successful in stemming the pollution, local residents were still bothered by odours from the channel. In the meantime, the area became increasingly urbanised with a new housing development and swaths of parking space being built in the vicinity of the channel. This posed an entirely new problem and, in 2013, stormwater from heavy rainfall caused parts of the channel's embankment to collapse.

An inspection of the site carried out by Geoteko Sp. z o.o. revealed that the damage was due to the faulty geometry of the embankment (the slope was too steep), lack of proper reinforcement and the adverse effect on the channel of a new parking lot built on the left bank. The investor considered several options for restoring the embankment, such as the use of gabion mattresses placed on an anchored sheet pile wall fitted with a drainage system, but this solution proved too costly. Finally, a decision was made to use PE-HD technology to close the section of the channel between the city limits and Magnacka street. Uponor Infra's structured-wall PE-HD Weholite was the pipe of choice for this project.

The benefits of Weholite pipes include their low weight in comparison to traditional steel, concrete and clay technologies, their overall resistance to corrosion, and their durability, joint tightness and simple and quick installation. Thanks to Weholite, the installation could be performed on a functioning channel, with no need for a by-pass or shutdown. The pipes were installed on a bedding and exisiting native soil, without the expensive and time-consuming strip footings necessary when heavy and rigid pipes are used.

The ideal solution – piping with Weholite

Following a tender, in September 2016 Drainage Construction Company Tolos was appointed as the general contractor for the project. Uponor Infra delivered a total of 165 metres of structured-wall PE-HD Weholite, DN/ID 2,000mm SN4 pipes to the installation site. Prep work included clearing the channel of concrete slab lining, dredging the ditch to make room for the new pipeline and laying the bedding. Uponor Infra pipe service staff then joined up the Weholite pipes to form two sections. The work was carried out on dry land on the right bank of the channel, by means of automatic extrusion welding using a WLI- 3000 machine. This guaranteed the 100% tightness and homogeneity of the pipeline. A 100- metre section of pipeline was then lowered into the ditch, followed by the remaining 50-metre section with a fitted bend two days later. Since the channel was operational during installation, the two connecting sections of the pipeline were raised above the water level, where they were welded together. The pipeline was then connected to a reinforced concrete inlet of the underground section of the channel. A socket- and- spigot DN/ID200mm joint was fitted onto the pipeline, connecting it to an existing stormwater channel. Finally, the ditch was backfilled. At the spot where the new pipeline meets the open section of the channel, an outlet was secured with a steel grate to prevent unauthorised entry. The installation was completed in December 2016.

The investor was impressed with PE-HD Weholite pipes and the technology involved in the automatic extrusion welding, which enabled quick installation despite the difficult hydrogeological conditions and changing weather. The contractor, Tolos, also commended Uponor Infra's technical support for its flexibility and help in tackling the occassional problems that occurred during construction.

The curious case of Weholite technology

The renovation of the Konotopa channel was the first project in Warsaw to involve large diameter piping from Uponor Infra, but surely not the last. The installation was closely monitored by the district authorities in Ursus and drew the attention of both the municipal services and the private sector, which were keen to see Weholite technology in action.

Visitors to the site, including representatives of Water Utility of Warsaw and the city's Infrastructure Department, as well as civil engineering companies and contractors, had the opportunity to witness first-hand just how simple and quick PE-HD installation is. Durable, leak-proof, totally resistant to corrosion and highly resistant to chemicals and damage from environmental factors, as well as being easy to install in even the most demanding conditions, Weholite proved once again to be the ultimate piping solution. It is no surprise that it wins over even the strongest sceptics time and time again.

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Address

Uponor UK
The Pavilion, Blackmoor Lane,
Watford, WD18 8GA

Phone 01923 381212
E-Mail
customerservice.uk.bfs@georgfischer.com
W www.uponor.com