References

Construction of an alternative sewage transmission system



Uponor involvement

- WehoPipe pipes DN1770 PE100 SDR17 - 232m and DN1400 PE100 SDR17 - 755 m, segmented bends
- Butt welding of pressure pipes by the Uponor Infra Service Group using DN1600 and DN2000 welding machines.

Alternative sewage collector for Warsaw

A backup sewage collector has been built in Warsaw to service 7 of the city's 18 boroughs.
A backup sewage collector has been built in Warsaw to service 7 of the city's 18 boroughs. The new pipeline runs under the Vistula river and is connected to pumping stations on the opposite banks by a record breaking DN1770 PEHD pressure pipeline delivered by Uponor Infra.

In 2019 and 2020 the sewage collector with catchment area comprising the majority of Warsaw's left bank suffered two consecutive failures, each time resulting in a massive controlled discharge of untreated waste into the Vistula and a scramble to provide urgent solution to the problem. Uponor was invited to join the effort and within 8 days delivered and helped install a temporary PE-HD pipeline on a pontoon bridge on the Vistula for which it delivered 2,200 metres of pipes DN1,000. Interestingly, the same operation was repeated a year later using the same set of pipes, after they had undergone laboratory tests which confirmed they were fully suited for repeated use.

Following the second breakdown of the original collector, a decision was made to build a backup pipeline. The twin combined collectors were laid under the Vistula riverbed using the Direct Pipe method. The first stage of the project was concluded in July 2021 when the second of the two pipelines became operational. The next stage is currently underway, which includes the construction of auxiliary sewage facilities and infrastructure that will connect the twin pipeline with the Świderska and Farysa pumping stations situated on the right and left bank of the Vistula respectively.

Project Facts:

Location	Completion
Warsaw, Poland	2022
Vrsta objekta	Product systems
Municipal	Sewer Municipal

Partners

Investor:
Municipal Water and Sewage
Company in Warsaw

General contractor:
Budimex SA

PEHD technology - why pipelines have a 100-year durability?

PE-HD pipelines are widely used for hydraulic transport of sand and mining sludge and therefore well suited to transporting stormwater which typically carries sand, debris and other abrasive elements. In fact, the list of qualities of PE-HD technology is a lot longer and includes: low roughness coefficient k=0,01, resistance to corrosion and chemicals, light weight and easy handling. Thanks to their flexibility PE-HD pipes can be adjusted more easily to the designated route, occasionally making fittings redundant. Installation by means of butt-fusion welding guarantees 100% leak-proof joints and allows for the transmission of axial forces, which makes WehoPipe suitable to demanding applications e.g. under transport infrastructure, in areas affected by mining damage or seismic zones.

European record for pressure pipe - DN1770

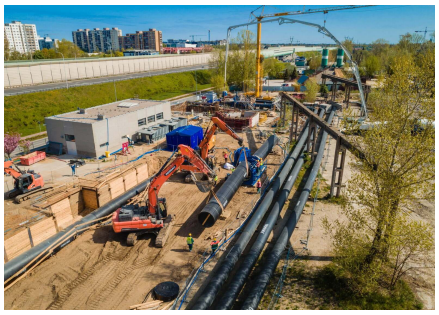
The general contractor, Budimex, commissioned Uponor Infra to deliver almost 1,000 metres of WehoPipe pressure pipes DN1,770. Specifically manufactured for the project in Uponor's factory in Kleszczów, the pipes have set a new European record for the largest diameter of a PE pressure pipe. ''We are very pleased to once again be involved in a project that is so important to the everyday functioning of the capital '''' says Edyta Zalewska, Sales Director at Uponor Infra Poland. ''Even more so because it's a record breaking installation of a PE (PE-HD) pressure pipeline''.

In total Uponor delivered 232 metres of WehoPipe DN1,770 PE100 SDR17 and 755 metres DN1,400 PE100 SDR17, transported to construction site in 15-metre sections. Uponor also delivered several dozen segmented bends, steel backing rings and stub ends for the project. Apart from delivering elements of the pipeline Uponor service teams carried out the butt-fusion welding using welding machines DN1600 and DN2000. It's worth mentioning that the latter is currently the only machine of its kind in Poland. Drawing on its extensive experience with water and sewage projects around the world, Uponor also provided the contractor with technical support at every step of the installation.

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+GF+

Telefon +381641852299
E-mail
podrskakupcima.bfs@georgfischer.com
W prod.uponor.com