References

# Sealing of the sewage discharge channel



**Uponor involvement**

- Weholite SN8 DN1400÷1500 pipes and fittings – 2257 m, Weho DN 1200 mm manholes – 22 pcs.

## Sealing of the sewage discharge channel

The piping by Weholite of an open discharge channel carrying treated waste water from the “Dębogórze” Sewage Treatment Plant in Gdynia to the village of Kazimierz.
The 2,2-kilometer open discharge channel running in an old river bed from the “Dębogórze” treatment plant to the inlet of a closed channel outside the village of Kazimierz, was put into operation in the 1960s. For years its existence had caused problems both to local farmers, whose lands were repeatedly flooded during seasonal rise in water levels, and to the Water Supply and Sewage Management Company PEWIK Gdynia. PEWIK, which owns and operates the channel, was forced to pay compensation for damages to the farmland. It also incurred costs related to day-to-day and periodical maintenance of the channel, including mowing and elutriation.

**Project Facts:**

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|---|---|
| Location | Completion |
| Gdynia Dębogórze , Poland | 2008 |
| Building Type | Product systems |
| Soil & Forestry | Sewer Municipal, Storm water |
| Project Type | |
| New building | |

**Partners**

Investor:
PEWIK Gdynia Sp. z o.o.
Contractor:
Budimex Dromex S.A. Olsztyn Branch

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Following Poland's access to the European Union in May 2004 public utilities companies gained access to structural funds, which enabled them to launch a number of investments aimed at modernization of local water supply and waste treatment systems. One of such investments was "Dolina Redy i Chylonki water supply and waste water treatment", a program implemented by PEWIK. Worth an estimated 66 million euro the program is designed to improve and extend water supply and sewage network in several municipalities, including the city of Gdynia, and to protect the waters of the Puck Bay. One of the program's tasks called for the piping of the open discharge channel running from the "Dębogórze" treatment plant.

Taking into consideration the desired flow capacity of the channel as well as local hydrogeological conditions the authors of the study recommended the application of non-pressure plastic pipes in the project . Some of plastic pipes' foremost qualities include: low roughness, light weight in comparison to steel and cement pipes, the possibility of producing pipes and manholes from the same material as well as the possibility of installing the pipeline through submersion. Installation in an operating channel was one of the basic premises of the project study as the alternative of dewatering the channel and constructing by-passes was deemed too costly and time-consuming.

According to Jan Szustowicz of Budimex Dromex, the site manager for the project, the contractor briefly considered the use of fiberglass reinforced polymer mortar pipes installed on a concrete base fitted with poles with the channel walls braced with sheet piles. The idea was abandoned, however, as it was too expensive. Ultimately the contractor decided to use PEHD pipes, which met all of the project's requirements.

The pipes were produced and delivered by Uponor Infra (former KWH Pipe Poland), which was handpicked as a supplier by Budimex Dromex. Between August 2007 and April 2008 Uponor Infra delivered to the installation site 2257 meters of Weholite pipes DN1400-1500 SN8 and 22 Weho manholes DNS1200mm. The majority of the pipes were manufactured and delivered to the installation site in custom-length 15-meter sections in order to minimize the time needed to assemble the pipeline. Installation works began in September 2007 near the village of Kazimierz. Once the channel bed had been prepared and both the inlet and the outlet – installed, the Uponor Infra service staff joined the pipes into eight 300-meter sections on dry land by means of extrusion welding, which provides for 100% tightness and homogeneity of the pipeline.

Uponor Infra technology allowed for the manufacturing of special fittings, which significantly shortened the installation process.
The welded sections of the pipeline were placed onto steel joists HB300 and lowered into the channel. They were assembled then and treated waste water pumped into the new discharge pipe. Subsequently the pipeline was backfilled. An additional layer of humus was applied where necessary. The installation was completed in April 2008. The new pipeline covered almost the entire length of the open channel, except for a 64-meter discharge area adjacent to the treatment plant, which was reinforced with stone coating in order to decelerate the flow of treated waste into the new pipeline.

According to the contractor the installation went smoothly and according to plan despite unfavorable weather conditions. Occasional problems related to obstacles along the channel route were resolved on the spot. Mr. Szutowicz, who has worked with Uponor Infra in the past, praises excellent organization of deliveries as well as the flexibility of the logistics team who handled the transport of the 15-meter pipes to the installation site.

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