References

Battery of retention tanks



Uponor involvement

- 2019: tank batteries DN1000 SN8 L=10x110m + L=6x50m, retention system DN2500 SN8 L=273,5m with total capacity of V=2441 m3
  2020: retention system DN3000 SN8 L=223,4m with total capacity of V=1578m3
- Technical support at the design and task implementation stage, conducting training in the field of extrusion welding.

Battery of retention tanks to prevent flooding

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In Mielec, modern storm water and snowmelt retention systems have been built, which will solve the problems with periodical flooding of streets and buildings in the city centre. An underground system of retention tanks will not only allow for efficient removal of excess storm water, but also for its subsequent use.

Project Facts:

Location Mielec, Poland	Completion 2020
Building Type Municipal	Product systems Storm water, Tailor made constructions

Partners

Investor:
City of Mielec

Contractor:
I stage in 2019 - Inżynieria Rzeszów
II stage in 2020 - Santex Sędziszów
Młp.

No more flooding

For years, residents of Mielec have struggled with flooding in the city centre. During downpours, water completely flooded some streets within tens of minutes, paralysed communication, and broke into cellars and garages. In order to finally cope with this problem, the Mielec authorities undertook a project called Construction of storm water and snowmelt retention systems in the Mielec Municipal Commune, co-financed by the European Cohesion Fund. The total cost of the project is nearly PLN 30 m, of which PLN 20 m comes from the Infrastructure and Environment 2014-2020 Operational Programme. The project involves the construction of a storm water system with inspection chambers, retention tanks and a sewage pumping station, along with a power connection and a control system. The project also includes the development of a part of the area over the retention tanks, e.g. by designating parking space or preparing the surface for sports and recreational areas.

PE-HD – a reliable solution

The project was divided into three stages covering the parts of Mielec most threatened by heavy rainfall. The contract for Stage 1 was signed in September 2019 and field work began in October. Uponor Infra was selected as the retention tank supplier for the project. Storm water storage tanks, made from Weholite system pipes, are flexible, leak-proof and durable. They are also distinguished by high tolerance to ground settlement, corrosion resistance and low sensitivity to abrasion by abrasive materials transported in wastewater. An additional advantage is the relative lightness of the tanks compared to other materials on the market and the ease of installation. Depending on the available space and technical requirements of the project, it is possible to produce tanks with unusual shapes along with a set of fittings. A typical tank is single-layered, but it is possible to combine tanks into batteries of any capacity, as was the case with the project in Mielec.

Installation completed ahead of schedule

The first stage of the project in Mielec was completed between two streets, near a sports field. The contractor for this stage was Inżynieria Rzeszów. In early November 2019, Uponor Infra delivered the first batch of tank construction components in sections up to 15 m long to the site, which were then placed in the trenches using a crane. The components were joined using extrusion welding by Uponor Infra's service team. In total, two sets of SN10 DN1000 tanks were installed as part of the first stage of the project – a 10-tank system with the length of 110 m and a 6-tank system with the length of 50 m, as well as a non-standard system of SN8 DN2500 retention tanks, parallel and perpendicular to each other with a total length of 277.5 m. After installation, the tanks were anchored taking into account the ground and water conditions, in order to protect them against buoyancy, and backfilled. The acceptance of the first stage of the project took place at the end of July 2020, three months ahead of the scheduled date.

Work on the second stage of the project, located on the MOSiR grounds near the Polski Hotel, began in February 2020. The contractor for this stage of the project was Santex Sędziszów. Between March and July, Uponor Infra delivered 223.4 m of DN3000 SN8 angle tank elements together with DN3000 bends and tees to the site. Some of the welding was carried out by the contractor, who had been trained in this area by Uponor Infra. The work was completed in late 2020.

Great project, great benefits

In total, under the first and second stage of the project, Mielec gained three systems of retention tanks with pumping stations with a total capacity of over 4,000 m3. Now, during storms, water will not break out of sewer manholes and flood streets, but will be drained into retention tanks. After the rainfall ceases, it will be pumped from the retention tanks and discharged to a receiving tank. The priority of the Mielec project is to solve the problem of flooding in the city, but the authorities are already thinking about how to manage the collected storm water. There are plans to use it to water lawns in city parks or sports fields.

Battery of retention tanks in Mielec











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