References

Storm water of the railway station



Uponor involvement

- 2 Weho tanks DN3000 SN8 (one wirh a capacity of V=100 m3 and a length of 16.4m, the other – 387 m3; 61,4 m)
- Consultation on assembly and foundation.

Modernization of the stormwater system of the railway station in Konin

The specificity of constructing a storm water system as part of railway projects is that it must be resistant to, among other things, dynamic loads from the passing trains. In the case of the station in Konin, an important element of the storm water system is the retention tanks

The aim of modernising the 230-kilometre Sochaczew-Swarzędz railway line, which is estimated to cost PLN 463 million, is to speed up travel between Warsaw and Poznań. The project includes the construction of local control centres, modernising four stops and five stations, as well as replacing 160 km of tracks. However, in order for train traffic to run smoothly, an efficient storm water system is required to protect the tracks and other infrastructure from flooding. One of these projects was completed at Konin station.

Project Facts:

Location
Konin, Poland

Completion
2020

Building Type
Transportation

Product systems
Storm water

Project Type
New building

Partners

Investor:
PKP Polskie Linie Kolejowe S.A.

General contractor:
Torpol S.A.

Storm water system suitable for railway loads

The specificity of constructing a storm water system as part of railway projects is that it must be resistant to, among other things, dynamic loads from the passing trains. In the case of the station in Konin, an important element of the storm water system is the retention tanks (one with a capacity of 100 m3 and a length of 16.4 m, and the other – 387 m3; 61.4 m) together with the pumping stations discharging water from the station. Originally, GRP products were considered for the construction of the tanks, but it was finally decided that a polyethylene system would be used. Torpol S.A., the general contractor from Poznań, ordered the delivery of the tanks from Uponor Infra.

Full tightness and optimal use of available space

There were several reasons for this decision. One of the main ones is the fact that thanks to extrusion welding, PE-HD systems are 100% tight and homogeneous, also at the point of connection. In addition, the modular design makes optimal use of the available land (the tanks were placed between the tracks, at the site of the decommissioned platform, in narrow trenches with formwork).

PE-HD components were delivered to the site in mid-January 2020 and extrusion welding services were completed in early March. Both tanks were placed in trenches using a crane at a depth of 4.5 m. The tanks were placed on a 30 cm bedding and additionally, for protection, in case of an increased level of groundwater, they were anchored to the footing.

Weholite PE-HD DN3000 pipes were used to build the tanks and two pumping stations were designed behind the outlets, with the capacity of Q=10 l/s each. In addition to the permanent connection of the tank body by means of extrusion welding, the double-wall construction provides double security and guarantees leak tightness. Tanks are made of pipes with stiffness class SN8 kN/m2, according to PN-EN ISO 9969.
The works at the Konin station related to the water and sewage infrastructure also include the reconstruction of the water pipeline, construction of the sanitary sewage system, connections and a drainage ditch. After the completion of the modernisation of the Sochaczew-Swarzędz line, passenger trains travelling on this line will reach speeds of 160 km/h, and 120 km/h for other trains.

Storm water for the Konin station











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