

[Home](#) ■ [HUBER Report](#) ■ [Optimised stormwater overflow tank functions at Kappern/Austria](#)

Optimised stormwater overflow tank functions at Kappern/Austria



Stormwater overflow tank at Kappern: Storm Screen RoK1 on the left, Storm Screen RoK2 in the middle on top of the sewer towards the WWTP

In Kappern near Marchtrenk, a town between Wels and Linz, lies Austria's second biggest sewage treatment plant which is designed for 160,000 PE. The main collector A has to cope with a high combined rainwater and sanitary sewer flow. Due to the given specific conditions the stormwater overflow tank Kappern offered an interesting opportunity to combine the two HUBER storm screen types, ROTAMAT® Storm Screen RoK1 and ROTAMAT® Storm Screen RoK2. Due to the screens' high flexibility and capacity only minor structural adaptation work was necessary to optimally realize this project.

REQUIREMENTS:

1. Retain the solids before they enter the tank to improve the operating reliability of the pumps in the stormwater overflow tank
2. Protect the Grubmüller brook by screening two tank overflows
3. Retain the solids in the DN 250 sewer to the WWTP

KEY DATA:

- Mouth profile: 2600/1000
- Inflow: 2400 l/s
- Sewer to WWTP: DN 250
- Flow to WWTP: 150 l/s
- Tank inflow RoK 1: 2250 l/s

- Tank overflow 1 after the tank: 950 l/s
- Tank overflow 2 with RoK 2: 1300 l/s

Requirement 1) is fulfilled by using a RoK1 700-5000 screen (on the left). The RoK1 screens 2250 l/s before this water flows into the tank. The solids, which had previously caused high maintenance requirements for the pumps, are now retained within the separating structure.

Requirement 2), screening of tank overflow 1 and tank overflow 2, is fulfilled partly by the RoK1 screen, as the tank overflow 1 lies on the opposite end of the tank, and by tank overflow 2 (on the right), on the weir edge of which a RoK2 700-2500 screen is installed (in the middle).

As to requirement 3), the solids are retained by the 6 mm dia. perforated screens so that they can neither enter the tank nor tank overflow 2. They are discharged by the DN 250 sewer which runs to the WWTP.



Screening launder channel built into the berm, washing system at the left, discharge line on top

A steep launder channel was built into the about 1.2 m broad berm to allow the screenings removed by the RoK1 screen to pass to the DN 250 sewer. Screenings transport is supported by a washing system. The screenings from the RoK2 are discharged directly to the continuation sewer. The solids from two machines are reliably removed in this way.

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