

MARCHFELD DAM REHABILITATION

Soil-Mixing



Since March 2018, Züblin Spezialtiefbau GmbH, part of the STRABAG Group, has been commissioned with the rehabilitation of sections of the 67 km-long Donau–Marchfeld protection dam.

Location

Mannsdorf an der Donau,
Austria

Client

Donauhochwasserschutz
Konkurrenz (DHK)

Contractor

Züblin Spezialtiefbau GmbH

Field of application

Soil mixing

Products used

Mixing plant MCM5500
Agitator HRW25000

Throughput

Max. 45 m³/h

Delivery of plant

March 2018

Sales contact

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Background

The dam, located in the east of Austria, was built almost 100 years ago and has protected the Marchfeld area and its inhabitants from flooding of the nearby Danube ever since. Over the years, and especially during the floods of 2013, seepage, softening, and settlement have occurred. The rehabilitation project mainly consists of a central, longitudinally running concrete sealing wall, which is erected using the FMI method (cut-mix injection method) to prevent the dam from seeping through. The rehabilitated dam will ultimately provide adequate protection for the inhabitants of approx. 4,000 houses in the region. With a total cost of approx. 100 million euros, the rehabilitation is one of the largest flood protection projects in Austria and is due to be completed by 2022.

The challenge

A special challenge for the executing construction company is the careful handling of nature, mostly located in the Donau-Auen National Park. Compliance with the strictest nature conservation regulations is the top priority. The special task for Häny in securing the contract was the required mixing capacity of up to 45 m³/h.



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Our solution

A heavy soil trencher with a cutter blade length of 12 m is used to install the sealing wall. A Häny MCM5500 mixing plant combined with a HRW25000 large-volume agitator supplies the trencher with cement suspension. The suspension is transferred to the milling machine by an existing eccentric worm pump. The MCM5500 mixing plant consists of a colloidal mixer HCM2500, an agitator HRW3000, and a complex weighing control HWS080, all installed in a 20' container. The dry material is stored in two silos near the mixing container and fed to the mixer by a screw conveyor. Due to the relatively low specific weight of the dry material, achieving the required mixing capacity of 45 m³/h was a challenge for the mixing plant. Our solution was to combine the screw conveyor from silo 1 with that from silo 2, whereby the second screw conveyor was only temporarily in operation. As a result, the time required to feed the mixer could be significantly reduced and the required hourly mixing capacity achieved. The HRW25000 high-volume agitator with a net capacity of approx. 20 m³ is located just next to the mixing plant. Attention was paid to ensuring a high level of site usability and operational safety: Smooth interior walls and an inclined floor allow efficient cleaning and complete emptying of the suspension. Two Häny TMP22 mixing pumps installed at the bottom of the tank and two inclined blade mixers ensure an effective post-mixing effect. A walk-on scaffold alongside the agitator provides safe access for inspection and optimum cleaning of the interior.

Reliable systems and services from Häny

The equipment supplied by Häny impresses with its reliability and user-friendliness. A highlight was the adaptation of the control software to maximize the mixing performance: this was not done on site, but via remote maintenance directly from Switzerland! Also remarkable was the excellent teamwork between Züblin and Häny to get the complex plant up and running on site in the planned manner within just a few days.

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