

SANIERUNGSTUNNEL BELCHEN

Bi-Component Mixing Plant



Location

A2 Eptingen, Switzerland

Client

Bundesamt für Strassen
ASTRA

Contractor

Marti AG

Field of application

Annular gap grouting

Products used

Mixing plant MCM5500 and
pumping container with
2 grout pumps ZMP726

Volume mixed/pumped

Approx. 27,700 m³

Delivery of plant

January 2016

Sales contact

mitinfo@haeny.com

The Belchen Tunnel, built in the 1970s, had to be rehabilitated due to damage to the tunnel support structure. In order to keep the traffic restrictions to a minimum, the Belchen rehabilitation tunnel was constructed parallel to the existing tunnels.

Background

The original Belchen Tunnel, a twin road tunnel along the A2 highway between Basel and Egerkingen, was built in 1970. Due to damage to the supporting structure of the two existing tunnels, it was decided to build a new tunnel (dia. 13.97 m) parallel to the existing ones, with the purpose of diverting traffic through this new tunnel while the existing tubes were being renovated.

The excavation work is expected to be completed between 2016 and 2019, and the new tunnel is scheduled to be up and running by 2022.

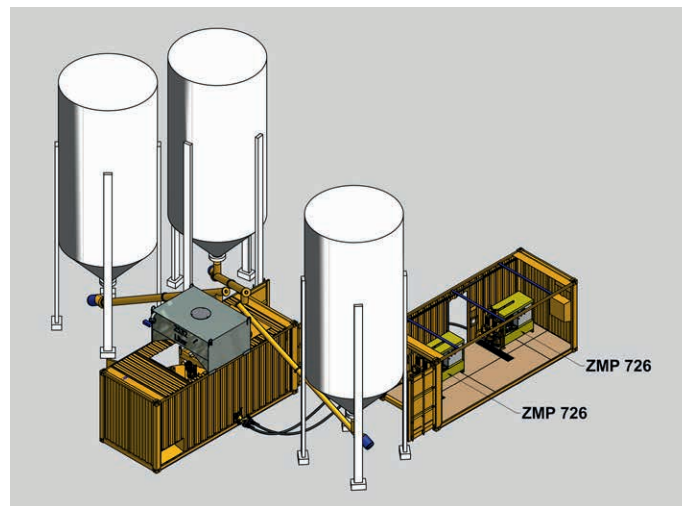
The challenge

The challenges involved in this project are the fully automatic preparation of up to 30 m³/h of suspension, consisting of water, bentonite, cement, and a stabilizer, as well as continuous pumping of the suspension from the agitator from outside the tunnel over a maximum distance of 3.2 km into the storage tank on the TBM.



SANIERUNGSTUNNEL BELCHEN

Bi-Component Mixing Plant



Our solution

Our solution is the Häny mixing plant MCM 5500, consisting of a mixer HCM2500 and agitator HRW3000, which is installed at the tunnel portal. The integrated control monitors the feed of the dry materials (1x bentonite, 2x cement) and the mixing water by weighing, as well as the addition of the stabilizer by means of a flow meter. The data recording enables volume and quality control of the mixing processes, with an hourly throughput of up to 30 m³/h. In addition to the local control of the mixing container, the complete mixing plant and pumps could be operated in parallel from the TBM control room at the tunnel face.

The grout is pumped into the tunnel to the TBM by means of two highly reliable Häny grout pumps of type ZMP726.

- ▶ Fully automatic operation with minimal monitoring
- ▶ High reliability with low maintenance costs both for the mixer and for the transfer pumps

Reliable systems and services from Häny

For almost 90 years, Häny AG has been building its expertise in mixing and injection systems for cement-based suspensions. Häny's strength lies in advising its customers on the dimensioning of plants and providing technical support as well as on-site training.

The Häny product range includes components such as colloidal mixers, agitators, injection pumps, and compact grout plants for cementitious grouts. Various degrees of automation are available, from manual to fully automatic systems, alongside state-of-the-art control technology and data recording systems for pressure and flow. Large, containerized mixing plants including transfer pumps for stationary use complement the portfolio.

Häny machines are characterized by simple operation, easy cleaning, robust construction, and extremely low maintenance and servicing costs. In addition to its own sales offices in the US, Austria, and Bulgaria, Häny works with over 30 sales partners to provide its customers with the best possible local service.

Häny is your reliable supplier of mixing and injection technology for the preparation of cement and bentonite suspensions, 2-component backfills for TBM and pipe jacking, as well as in any situation in which soil, rock, anchors, or tunnels need to be reinforced or sealed.

Document No. PM2-102102 00/11.18. Legal Notice © Copyright 2018, Häny AG, Jona/Switzerland. Any unauthorized use or copying of the contents or any part hereof is prohibited. Illustrations and photos may show equipment with optional extras. No warranty is made regarding specifications or otherwise. Specifications and equipment are subject to change without notice.