



Pressure tunnel Schwarza – Witznau, Berau (DE) Grouting test

Client	Schluchseewerk Aktiengesellschaft
Main Contractor	Schluchseewerk Aktiengesellschaft
Execution of works	Renesco GmbH
Construction period	May 2020 – June 2020
Contract sum (grouting only)	0,4 Mio €

Object description

The Schwarza-Witznaustollen was built in the thirties and belongs to Schluchseewerk AG in the Black Forest. In 2018 investigations of the current state of construction revealed superficial spalling of the concrete lining and softening of the concrete in the connection area adjacent to the rock (also widespread under an intact layer of mortar plaster) were identified. In the section between the Eichholz gallery and the surge shaft "Berau", test injections were carried out. The evaluation of the test results will serve as a basis for a comprehensive rehabilitation of the tunnel.

Grouting works

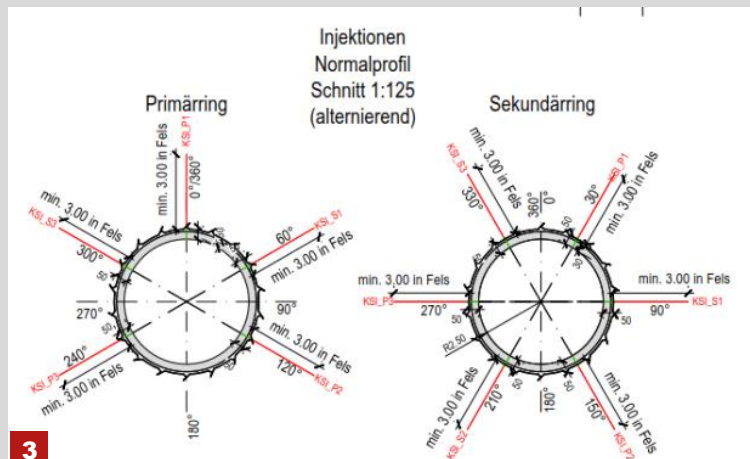
For the extensive renovation measures, test injections with various cement suspensions were to be carried out in the pressure tunnel with an inner diameter of 5 m. The radial holes for the contact and consolidation grouting were drilled with a specially adapted drill rig.

Scope of work

- Creation of the entire infrastructure for the supply of electricity and water as well as the water treatment.
- Execution of boreholes to a depth of 3 meters
- Injected cement suspension: 50,000 liters (Normal, fine and finest cement)

Particularities

The construction site was supplied via an access tunnel and via the surge shaft "Berau" with a depth of 70 m. The infrastructure in the tunnel for the power and water supply was planned and implemented by Renesco. The cleaning water and rock water mixed with cement suspension flowing eventually out of the lining were collected by means of barriers and pumped through a 700 m long pipe to the water purification plant.



1. Drilling works
2. Cement Injection system
3. Drilling and Injection sketch