Tunnel Eppenberg (CH)
Waterproofing

Country	Switzerland
Type	Railway Tunnel
Client	Swiss Federal Railway Company, SBB/ Olten
Main Contractor	Marti Tunnelbau AG
Execution of the work	Renesco AG
Designer	ILF, Aegerter & Bosshard, ACS-Partner, Signon
Construction Period	2017 – 2018

Renesco Group, Seedorffeldstrasse 21, CH-3302 Moosseedorf, Phone: +41 (0)31 388 74 20
info@renesco.com, www.renesco.com

Project Description

Doubel-tack railway tunnel Eppenberg is the centerpiece of the four-track extension between Olten and Aarau. The contract consist in four subprojects: Mining tunnel Eppenberg (L=2'600m), Y-Branch structure Wöschnau & Gretzenbach and change of lane Wöschnau.

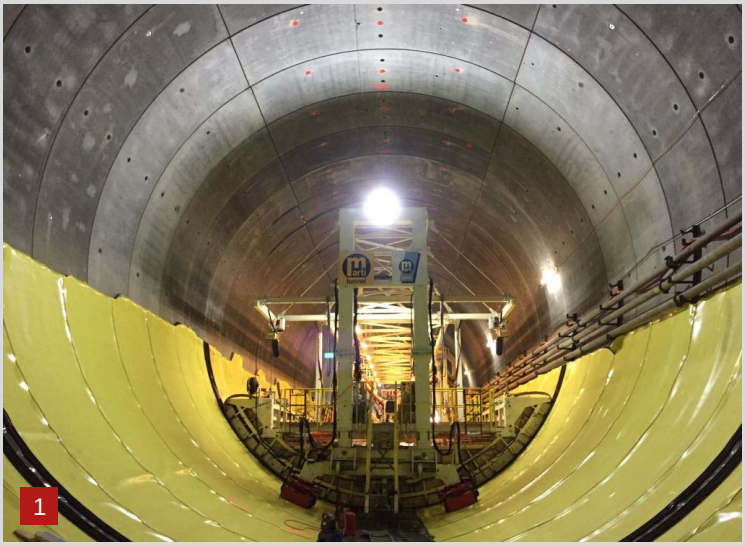
- Excavation under a pipe umbrella
- Open mode TBM excavation
- Hydroshield TBM excavation
- Geology: gravel, lower fresh water molasses, effingen beds, sulphate-containing water
- Excavation of 2 blind shafts (depth > 60m)
- Access tunnels
- Cross-passages
- 1.5 km Cut & Cover Structures

Scope of Service

Mining Tunnel: sheet waterproofing, 2.5mm PVC-P acc. to SIA272 (Swiss standard), laminated with a 500g/sqm polypropylene (PP) geotextile, full-round (360°) sealing, full-automatically installation via hot-melt process onto pre-cast concrete elements, protection sheet membrane, PVC-P water barriers and drainage strips.

For the cut & cover structures: 'post-applied' flexible sheet waterproofing system, 'fully adhered/glued/bonded' onto the concrete surface. Approximately 15'000 m^2 of a 2-K-PU based adhesive was used to apply a 2mm PVC-P sheet waterproofing on the hardened/ existing concrete structure to prevent lateral water underflow between the concrete structure and the membrane system. The seams of the sheet membrane were thermo-welded by hot-air guns.

Mining Tunnel: Partly Pre-Grouting of the leaching zone with PU resin, crack sealing/ repair and back filling of concrete elements.



1. TBM, Sheet waterproofing, fixation via hot-melt
2. Fully adhered Sheet Waterproofing, roof of the cut & cover
3. Cut & Cover, Wall section, Fully adhered Sheet Waterproofing