



Tunnel Bertoldshofen (D) Sheet Waterproofing

Country	Germany
Type	Motorway Tunnel
Client	Federal roads office - South Bavaria (Autobahndirektion Südbayern)
Main Contractor	BeMo Tunnelling GmbH
Execution of the work	Renesco GmbH
Designer	EDR, PSP Consulting Engineers
Supervision	Dipl.-Ing. Bernd Gebauer Ingenieur
Construction Period	2019-2020

Project Description

The local bypass B16 / B472 between Marktoberdorf and Bertoldshofen is built as a two-lane road tunnel in one tube with two lanes in both directions. The 594-meter-long Bertoldshofen tunnel and the 155-meter-long rescue tunnel are largely excavated using excavators and explosives. The pre-portal areas consist of a nailed shotcrete shell in the north and a permanently back-anchored bored pile wall with a noise protection cladding in the south.

- Standard section/widened section: 100 /130m²
- Excavation: excavator, loosening blastings
- Execution: NATM partly with pipe umbrella, side wall drift in widened cross-sections
- Final lining: in-situ concrete reinforced d=35–60cm with waterproofing membranes, PP-fiber concrete in the vault
- One technical and rescue tunnel, length 170,00m, cross-section 13,00m²
- Precuts south portal by permanent discontinuous bored pile walls with shotcrete infilling and top plates, back anchorages by strand anchors
- Operations building with retention basin and firewater basin
- Slope stabilization by nail wall
- Earthworks, Tunnel upgrade incl. extinguishing water pipe and road construction

Geology

Upper freshwater molasse, ground moraine, glacial outwash gravel.

Scope of Service

Waterproofing sealing system including injection/grouting possibilities for maintain/repair works, full-round (360°) sealing with a 3mm thick TPO/FPO sheet waterproofing membrane acc. to ZTV-ING (German standard), 900g/m² protection geotextile based on polypropylene (PP), , 3mm thick protection sheet membrane with signal layer, 600mm wide water barriers including 6 ribs and injection hose system.



1. Invert Sheet Waterproofing Application
2. Invert Reinforcement Application
3. Storage Place