



N13 Tunnel GEI SiSto, Mesocco (CH) Structural Waterproofing

Country	Switzerland
Type	Gallery, Cut & Cover, Tunnel, Rehabilitation
Client	Ufficio federale delle strade USTRA (ASTRA)
Main Contractor	Renzo Tarchini Cantieri, Contratti SA
Execution of the work	Renesco AG
Designer/ Engineering	Pini Group, Project Partners Ltd Consulting Engineers
Construction Period	2022-2023

Project Description

Rehabilitation works of the Gei tunnel project on the A13 national road between San Bernardino and Mesocco. The tunnel, put into operation in 1967 and partially renovated between the 80s and 90s, requires maintenance work along its 457 meters (gradient of approx. 6%). The project involves the rehabilitation of the concrete & surface protection, the renewal of the road surface, the drainage system and other aspects related to the electromechanical infrastructures.

Part of the project is also the construction of a new safety tunnel (SiSto) with a length of 55m (gradient of approx..12%) incl. niches and the rehabilitation of the galleries at the north and south end of the tunnel.

Scope of Service

Rehabilitation of the structural waterproofing:

- Replacement of the existing waterproofing membrane, which was damaged.
- Post-applied' flexible sheet waterproofing system, 'fully adhered/glued/bonded' onto the concrete surface.
- 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.
- Injection and grouting works, concrete repair, crack injection, and joint rehabilitation with a PUR resin.
- Supply & apply of drainage system.



1. Application of the adhesive
2. Roof of the gallery
3. Tunnel rehabilitation