



## Sigirino Access Tunnel (CH) Structural Waterproofing

<b>Country</b>	Switzerland
<b>Type</b>	Access tunnel, railway, rehabilitation
<b>Client</b>	Federal Railway Authority – FFS
<b>Main Contractor</b>	Notari Suisse SA
<b>Execution of the work</b>	Renesco AG
<b>Designer/ Engineering</b>	Pini Swiss
<b>Construction Period</b>	2022-2023

## Project Description

The project consists of the construction/completion of an intermediate access tunnel including a pedestrian and road service connection for future's maintenance of the Monte Ceneri Base Tunnel. The access tunnel will ensure the connection from the outside to the Monte Ceneri base tunnel in approximately half of the track.

The tunnel consists in several different structures:

- an access artificial section approx. 70m long.
- a mined section approx. 50m long. which will connect the access section with the TBM section.
- a TBM tunnel section 2'248m long.
- the pedestrian walkway of approx. 16.5m long which will connect the TBM tunnel section with the pedestrian tunnel.
- the pedestrian cut & cover sections central (36m long), east (100m long) and west (37m long) which will connect the pedestrian walkway to the Ceneri Base Tunnel.

## Scope of Service

Supply & install the waterproofing system in the above structures except in the TBM tunnel.

Artificial/cut & cover waterproofing – approx. 3'800m<sup>2</sup>.

- Base slab waterproofing consists of a 1'000g/m<sup>2</sup> geotextile used as a regularization layer, 2mm PVC waterproof membrane, 240 and 400mm wide waterbar with 4 (6) ribs for compartmentalization and 3mm PVC protection layer.
- Walls and roof slab waterproofing consists of a post-applied flexible sheet waterproofing system of a 2mm PVC membrane, fully glued and bonded onto the concrete surface, adhesive tape for compartmentalization and 1'500g/m<sup>2</sup> geotextile as a protection layer.

Mined section waterproofing – approx. 1'200m<sup>2</sup>.

- Mined section waterproofing consist of a 2mm PVC-P sheet membrane with a geotextile along the vault/crown and a drainage profile installed at the bottom left and right.



1. Mined section
2. Roof slab waterproofing
3. Peel-off tests for the glued membrane