

# Südostbahn (Swiss South Eastern Railway), repairs to the Wasserfluh Tunnel



**The Swiss South Eastern Railway's single-track Wasserfluh Tunnel, over 100 years old, needed comprehensive repairs and technical re-equipping, and the floor was lowered in places.**

## The construction project

The 3.5 km Wasserfluh Tunnel, 100 years old and single-track, no longer satisfied the current safety and profile requirements. In 2011 and 2012 it had to be comprehensively repaired, expanded and technically re-equipped.

In the course of the tunnel renovations, damaged parts of the shotcrete shell were replaced, water leaks and damp patches made tight and weathered or worn masonry or joints repaired. In addition, localised areas of the base profile were ground down by a few centimetres. The works were carried out in 2011 with periods of night-time closures.

On the Brunnadern side, a stretch of the base of the tunnel, extending to around 1.3 km, had to be fully removed, lowered by 10–40 cm using a cold milling machine, and a new concrete floor plate laid. At the same time, the whole drainage system for this section was renewed and new hollow floors installed. The ballast was then replaced and the new tracks laid.

It was only possible for operational reasons to close the Wasserfluh Tunnel completely for five weeks in order to carry out the lowering on the Brunnadern side and the installation of the contact rail along the full length of the tunnel. The quantities of materials, transport logistics and staff resources meant that this presented a huge challenge to all involved.

## Client

Schweizerische Südostbahn AG (SOB;  
Swiss South Eastern Railway)

## Facts

Period 2010 - 2012

Project Country Switzerland

## Contact persons

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Careful planning, tight coordination and the great flexibility of all involved enabled the construction and installation works to be completed on schedule.

The complete closure was followed by the installation of the rescue and emergency facilities, which were again undertaken during extended night-time closures. These included in-tunnel communication systems, handrails with emergency lighting and emergency telephones in personal protection alcoves.

### **Our tasks**

From the call for tenders stage, the Swiss South Eastern Railway (SOB) instructed us with the overall project management and construction supervision for all the building and installation works. As representatives of the client we were responsible for coordinating all those involved in the project, including SOB specialist departments. The public relations work included providing information to local municipalities and residents, as well as the press.