



Acceptance test of jet fans in factory



Jet fans at northern portal of tunnel Berne/Lucerne



Tunnel Arisdorf

Description

The Arisdorf Tunnel consists of two parallel tunnels with a length of 1'349 and 1'401 m. The tunnel ventilation system was of semi-transverse type with ventilation ducts for fresh air and for exhaust air. In 2005, both tunnels were renovated. The ventilation system was improved according to the requirements of the 2004 edition of the Swiss guideline for road tunnel ventilation. Close to the tunnel portals, the false ceiling was removed along a length of a few hundred meters to accommodate the new jet fans. The new tunnel ventilation is a longitudinal system with jet fans. In the tunnel Berne/Lucerne eight jet fans with an internal diameter of 1'120 mm and a static thrust of 1'220 N were installed. In the tunnel towards Basel the installation of six jet fans was sufficient to meet the requirements for normal and emergency operation.

The Arisdorf Tunnel was renovated in two stages in order to maintain at least one tunnel open for traffic. The renovation of the tunnel Berne/Lucerne was finalised in June 2005. The tunnel Basel was re-opened for traffic in December 2005.

Services

HBI Haerter Consulting Engineers was responsible for:

- Finalising the ventilation concept
- Study and recommendation on the future application of the original axial fans for fresh air and exhaust air
- Tunnel ventilation detailed design
- Technical specifications for the jet fan tender
- Comparison of offers and recommendation for equipment selection
- Jet fan factory acceptance test
- Site supervision of installation of tunnel ventilation
- Commissioning of jet fans in two stages
- Aerodynamic measurements in the tunnel
- Concept design of control system of ventilation
- Commissioning of the ventilation control system by supervision of tests on site