



Tunnel Pardorea southern portal



Jet fan before retrofit



New jet fans in Piumogna Tunnel

Description

The Piottino Tunnels are situated on the southern ramp approaching the Gotthard Tunnel. The series of tunnels consists of the four tunnels Monte Piottino (0.9 km), Pardorea (0.6 km), Casletto (0.2 km) and Piumogna (1.6 km). Each of the tunnels has two parallel tubes. They are designed for uni-directional traffic.

Due to its short length, the Casletto Tunnel is not equipped with a mechanical ventilation system and fresh air requirements are satisfied through natural ventilation. The ventilation system for the tunnels Monte Piottino, Pardorea and Piumogna was a longitudinal system with jet fans. The ventilation system was installed in 1983. Due to the advanced age of the equipment, an upgrade of the systems was required in order for the tunnel to comply with the current national safety standards.

The original tunnel ventilation concept remained unchanged, i.e. longitudinal or natural ventilation. The existing 42 jet fans were replaced by 52 new fans. All new jet fans are of the same type with an internal diameter of 1,000 mm and a nominal thrust of 930 N.

Services

- Concept design tunnel ventilation
- Detailed design tunnel ventilation
- Detailed functional description of tunnel ventilation control system (TVCS)
- Jet fan tender documentation
- Jet fan bid evaluation and award recommendation
- Evaluation of jet fan manufacturer documentation
- Jet fan factory acceptance test
- Site acceptance tests and commissioning of jet fans with the tunnel open to traffic
- In-tunnel aerodynamic measurements
- Commissioning tests of tunnel ventilation control system