



Turin



Line 1 of the Turin Subway covers a route from Rivoli - Cascine Vica - Collegno - Porta Nuova - Lingotto - Piazza Bengasi which is roughly 28 km long. The trains use an automatic control system which allows them to operate without operators onboard and reduce waiting times, up to 69 seconds.



Subway tunnel

TUNNEL54 and TAIS Series

RISK PROFILE

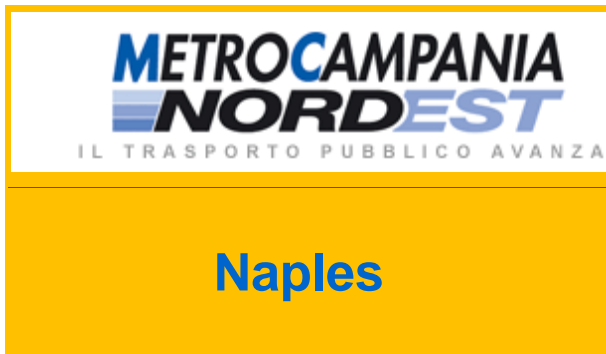
- Power supply to the emergency line also in the event of a fire;
- Location with the highest fire risk;
- To guarantee that the air ventilation and treatment systems all work;
- High levels of vibration and humidity rates;
- Release of hazardous substances;
- To reduce maintenance to a minimum.

THE SOLUTIONS

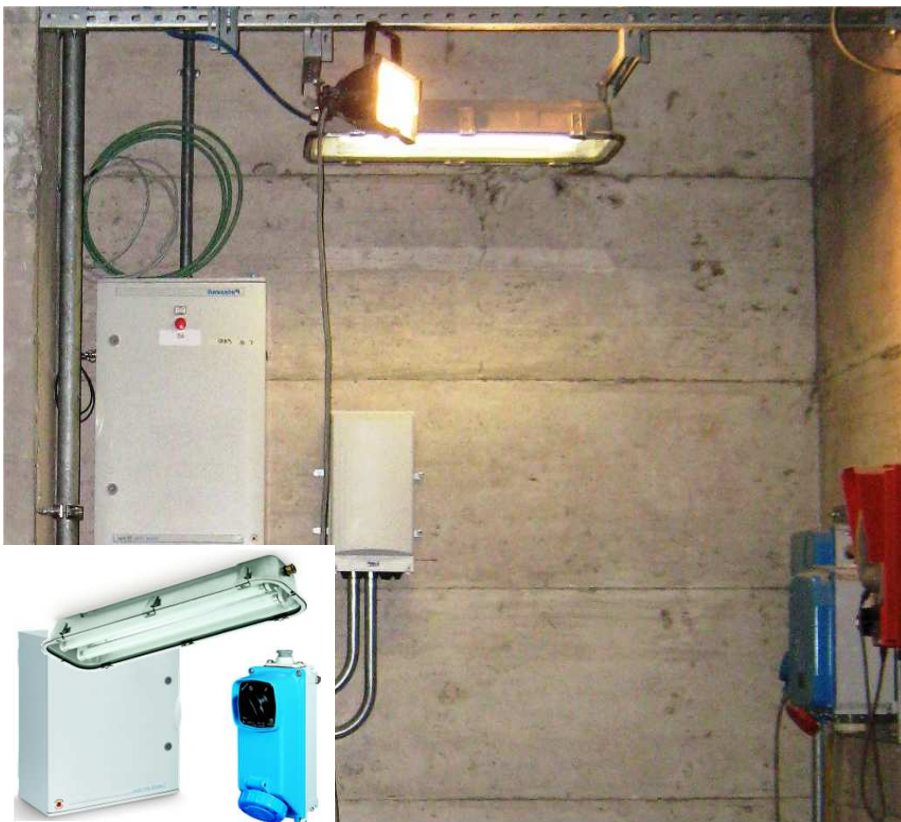


- Fire proof TUNNEL54 series : test passed at 850°C for 90' and at 400°C for 120';
- TAIS Series in "Flame Proof" THERMOSETTING enclosure with GWT 960°C, self-extinguishing V0 and impact resistance >> IK10;
- Interlocked sockets fitted with AC3 AC23A isolator switch at plate data amperage (16A,32A etc.), starting and stopping of cage motors.
- Completely indeformable material to changes in temperature.





The Alifana Bassa Railway is based on the renovation, with modern infrastructures (new track, normal gauge, direct current electrical supply at 1500 V) of the old railway Alifana Napoli Piazza Carlo III. Line 1 (or 'collinare') of the Naples Subway was opened in 1993 and constitutes a most important and modern infrastructure for public transport in Naples.



TAIS TRE, ALUPRES and RINO Series

Technical room



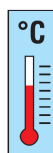
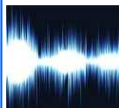
Alupres Series

Tunnel

RISK PROFILE

- Lighting in places with high humidity rates;
- Location with the highest fire risk;
- High vibration levels;
- Risks of condensation;
- Presence of brake oil and release of hazardous substances;
- To reduce maintenance to a minimum.

IP66



THE SOLUTIONS

- AISI 304 stainless steel lamp base and humidity-proofing filter;
- TAIS TRE with "Flame Proof" THERMOSETTING enclosure with GWT 960°C, self-extinguishing V0 and impact resistance >> IK10;
- Protection rating IP66: completely insulated against dust and resistant to water infiltrations;
- Completely sturdy and resistant to changes in temperature.



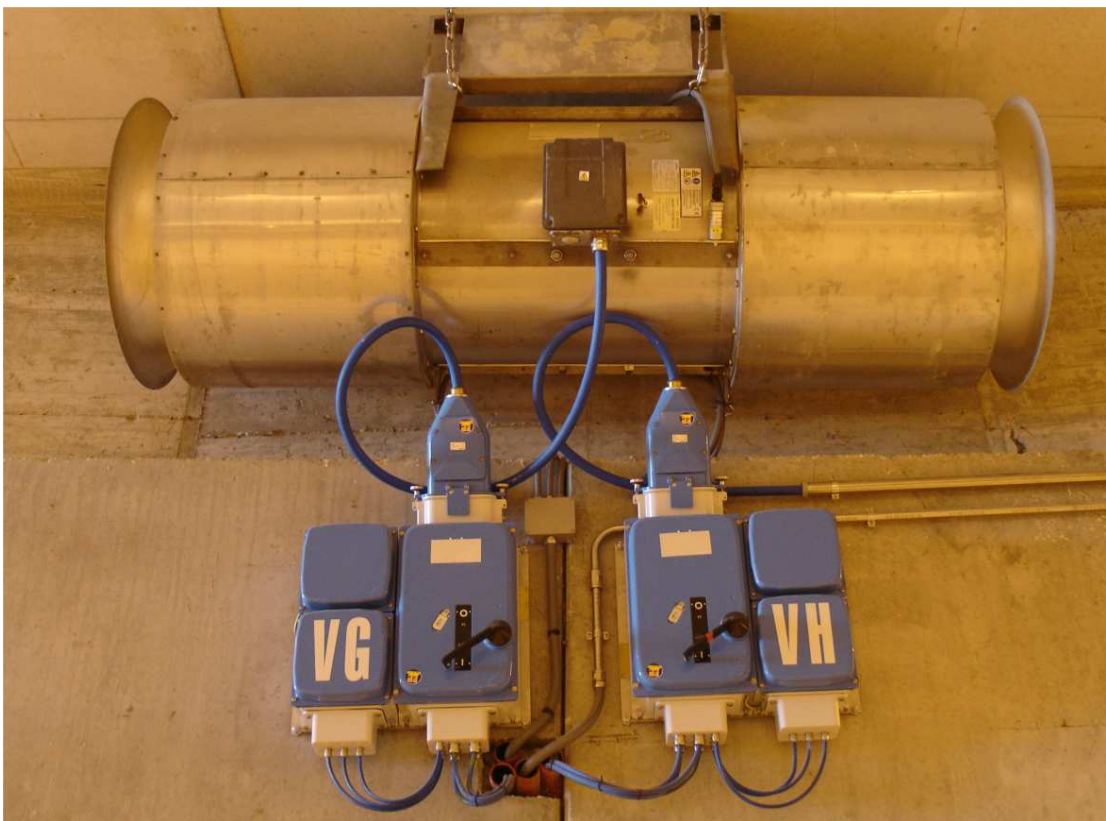
T17 SECANTE



Cesena



The characteristics of the works are as follows: two independent separate carriageways, two lanes in each direction, no crossroads, tunnel about 1.600m long fitted with a vehicle exhaust fume treatment system, natural and artificial noise-proofing barriers, sliproads at intersections with urban road networks.



TUNNEL54 Series

RISK PROFILE

- Fire hazard and obligation to comply with Directive 2004/54/CE that requires the supply of automatic forced ventilation even in the event of a fire;
- Obligation to comply with the recent Guide Lines for the planning of Road Tunnel Safety and therefore the use of interlocked sockets and plugs which will ensure power supplies at 400°C for 90 minutes.



THE SOLUTIONS

- The TUNNEL54 series complies with the European Directives in force and with that provided in the Guide Lines;
- Guarantee to supply power to the ventilation and lighting devices even in the event of a fire;
- Power supply with 48 socket groups and 24 couples of fans and the condensers battery rephasing unit.

RONCO



Cossato – Vallemosso Pedemontana



When the tunnel called 'Ronco' was opened, 1.460m long, the section from Cossato towards Vallemosso was closed. The tunnels in this section of Pedemontana have all been installed with avant garde security systems and comply to the strictest safety standards.



TUNNEL54 Series

RISK PROFILE

- Power supply to the automatic forced ventilation systems and emergency lighting also in the event of a fire;
- Presence of exhaust fumes;
- Presence of water infiltrations;
- Location with the highest fire risk;
- High vibration levels;
- Condensation risks.

THE SOLUTIONS



- Fire proof TUNNEL54 series : test passed at 850°C for 90' and at 400°C for 120';
- Series tested and certified by accredited laboratories, namely INTEK and IMQ;
- The galvanised aluminium alloy enclosure provides excellent resistance against hydrocarbons, acids and base products;
- Completely sturdy material to changes in temperature.