

Ensuring safety in rail tunnels

Every day, trains transport hundreds of thousands of people and many tons of goods through rail tunnels – proof of how crucial they are to the smooth functioning of the economy. Siemens has set itself the task of improving the safety of these sensitive components of the transportation networks. Below is a selection of rail tunnels equipped with safety technology from Siemens Building Technologies.

Kraków Rapid Transit (Poland)

The underground rapid transit line in Kraków, a city of 760,000, was opened in 2008. The line runs through a 1,400 meter tunnel which houses two railway stations. The tunnel is equipped with a control system and protection equipment from Siemens, including alarm, video management and communication systems. Fire detectors and FibroLaser cables were installed throughout the tunnel to ensure reliable fire detection. In addition, Siemens is responsible for the maintenance of the fire detection and control systems as well as the emergency alarm and communication systems.

Helsinki Metro (Finland)

The Helsinki Metro is currently being expanded. The line has two tunnels; one has a length of 14 km, the other 7 km. Every day, approximately 170,000 passengers travel through the tunnels. Siemens will implement fire safety systems and a central management station for the new section of the Metro. The integrated systems consist of nine networkable fire control panels connecting the tunnels and stations. The tunnels are protected by approximately 6,700 fire detectors and 47 km of FibroLaser cabling. In addition, the solution includes safety systems for danger management in the tunnels and stations.

Zurich Airport (Switzerland)

The railway station at Zurich Airport is located in the crescent-shaped twin-track 1,510 m airport rail tunnel. Every day 300 trains use the four tracks, which makes the airport tunnel one of the busiest tunnels in the entire country. On either side of the platforms is a group of switches and above it a ventilation opening. Siemens has equipped each platform with 85 optical and thermal fire detectors and 11 manual call points. In addition, 1,850 m of FibroLaser cabling is installed along the roof edge of the platform. If a fire alarm occurs, a number of fire controls are triggered: The fire doors are closed; the smoke extraction system is turned on; the escalators are placed into crawl mode; the elevators travel to the selected floor, are blocked, and the doors are opened.

Lucerne (Switzerland)

The 300 m underground railway station "Luzern Allmend/Messe" is located between the 560 m Hubelmatt Tunnel and the 470 m Allmend Tunnel, both of which are below ground. The station is served by four trains in each direction every hour. The safety concept covers the platform and the tracks. The platform is monitored by 70 ceiling-mounted fire detectors. FibroLaser cables installed on the tunnel wall protect the tracks. In addition, three manual call points are within easy reach. Fires are detected by the FibroLaser sensors or fire detectors, triggering automatic evacuation of the station and notifying the command centers of the police and the Zentralbahn.

This references are available at <https://tag.siemens.com/content/dam/mam/tag-siemens-com/dlc/bt/press/2016050087-en-references.pdf>

For further information on the Building Technologies Division, please see www.siemens.com/buildingtechnologies

For more information about tunnel safety, please visit www.siemens.com/tunnels.

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