Milan Metropolitan Underground Tunnel Relies on PREPRUFE®

PREPRUFE® used to waterproof 25,000 m² of underground construction

Project

Meeting the challenges of underground construction

Milan’s Metropolitan line set out to build an artificial tunnel 1 km long. Waterproofing was carried out for the horizontal foundation slab, against vertical diaphragms and for the roof, with a total area of 25,000 m². The underground construction work was commissioned by Milan Metropolitan, contracted out to Costruzione Grandi Lavori Fincosit Spa, and the waterproofing was laid by Eng.Prati Srl.

The major challenge of the project was the elevated water table, which the whole city of Milan has been suffering in recent years.

“The major challenge of the project was the elevated water table, which the whole city of Milan has been suffering in recent years.”
High water table adds complexity to construction

Located south of Milan, the tunneling and mining site runs close to the canal for about 1 km, with the constant presence of a water table under pressure. Having considered the complexity and importance of the underground construction work to be carried out, Milan Metropolitan sought and selected a highly reliable waterproofing system that would provide effective and permanent protection of the important structure.

"Located south of Milan, the tunneling and mining site runs close to the canal for about 1 km, with the constant presence of a water table under pressure."

Waterproof membrane prevents water migration

Milan Metropolitan selected the PREPRUFE® pre-applied waterproofing membrane. The product has a unique ability to develop a high level of adhesion to concrete during the pouring and hardening phase. Consisting of a robust film of high density polyethylene, PREPRUFE® waterproofing ensures impermeability and, in the event of accidental damage, prevents lateral migration of water between the membrane and the structure itself.

The PREPRUFE® system has a high resistance to hydrostatic pressures – up to 80 meters high, is highly resistant to any chemical agents dissolved in the water, and does not require additional mechanical protection.

The PREPRUFE®300R membrane was laid on the screen, followed by laying the reinforcement and pouring of the main slab. PREPRUFE®16OR was mechanically fixed directly to the surfaces of the diaphragms and the BITUTHENE® System, was then laid after spreading primer on the surfaces of the covering screeds. Both PREPRUFE® and BITUTHENE® provide a waterproof system, with complete adhesion for tunneling and mining.

"The product has a unique ability to develop a high level of adhesion to concrete during the pouring and hardening phase."
This document is only current as of the last updated date stated below and is valid only for use in the United States. It is important that you always refer to the currently available information at the URL below to provide the most current product information at the time of use. Additional literature such as Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations and other relevant documents are also available on www.gcpat.com. Information found on other websites must not be relied upon, as they may not be up-to-date or applicable to the conditions in your location and we do not accept any responsibility for their content. If there are any conflicts or if you need more information, please contact GCP Customer Service.

Last Updated: 2019-09-04

gcpat.com/about/project-profiles/milan-metropolitan-underground-tunnel-relies-prepruf