

Preprufe® Utilized in Milan Metropolitan's Underground Construction Project

Preprufe® used to waterproof 25,000 m² of underground construction.



Project	Milan Metropolitan
Client	Milan Metropolitan
Main Contractor	Costruzione Grandi Lavori Fincosti Spa
GCP Solutions	Preprufe® pre-applied waterproofing, Bituthene® waterproofing

Project

The project comprised building an artificial tunnel 1 km long for Milan's Metropolitan line. Waterproofing was carried out for the horizontal foundation slab, against vertical diaphragms and for the roof, the total area being 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 problem is raising the level of the water table from which the whole city has been suffering from in recent years. The Preprufe® system has a high resistance to hydrostatic pressure — up to 80 meters high."



Challenge



The tunneling and mining site is located to the South of Milan and runs close to the canal for about 1 km with the constant presence of a water table under pressure. The design company Milan Metropolitan, having considered the complexity and importance of the underground construction work to be carried out, consequently sought and selected a highly reliable waterproofing system, which provides effective and permanent protection of the important structure. The major problem was raising the level of the water table from which the whole city of Milan has been suffering in recent years.

Solution

Preprufe® pre-applied waterproofing membrane was selected. The unique ability to develop a high level of adhesion to concrete during the pouring and hardening phase made it the most suitable solution. 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 does not require additional mechanical protection, has a high resistance to hydrostatic pressures up to 80 metres head of water, and is highly resistant to any chemical agents dissolved in the water.

Blue360SM Product Performance Advantage: Because every project, large or small, deserves the best level of protection.

Applying Preprufe

The Preprufe®300R membrane was laid on the screen, followed by laying the reinforcement and pouring of the main slab. Preprufe®160R 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.

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