

LREDC Achieves High-Performance Waterproofing

INTEGRITANK® waterproofing proves successful on new cut and cover tunnel



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| Project | Lusail Tunnel, Qatar |
| General Contractor | CCC-Teyseer JV |
| Authorised Contractor (Waterproofing Applicator) | Intertectra Qatar |
| GCP Solutions | INTEGRITANK® system |

Project

Building in a high water table environment

The new Lusail CP07-C-1-A commercial boulevard, Road A3 troughs, underpass, and tunnel project will connect the recently established Lusail City to the heart of Doha in Qatar. Forming part of a \$30B integrated transportation system, the Lusail Tunnel will ensure easy access to the new Lusail City Development and will be a vital transport link for the planned 2022 FIFA World Cup games.

Located 15km north of Doha, the Lusail City Development covers a 38km² site, which includes 25,000 residential units housing 175,000 people, all of whom will benefit from the Lusail Tunnel project. The development will generate significant economic diversification and strengthen Qatar's tourism sector. The tunnel will carry both road traffic and light rail traffic.

Challenging site conditions, an area with an aggressive and high water table and tight project deadlines and in, speed and ease of application were key for the project.

Challenge

Adopting waterproofing best practices

The client, Lusail Real Estate Development Company, consulted with Stirling Lloyd (now GCP Applied Technologies) on waterproofing best practices and how to ensure watertight protection.

Following a number of projects where un-bonded waterproofing systems had leaked on other Lusail sites, Lusail Real Estate Development Company was focused on pushing the boundaries and performance of waterproofing to set new standards on their projects.

In particular, it was important that the quality and effectiveness was improved, as well as the speed of installation of waterproofing systems. Using a best-in-class approach was necessary to protect these concrete structures, which are located below an aggressive and high water table.

Solution

Saving time and money

Lusail Real Estate Development Company selected the INTEGRITANK[®] system from Stirling Lloyd (now GCP Applied Technologies), due to its ability to meet their strict requirements and provide a watertight structure. The INTEGRITANK[®] system is a fully bonded offering that has been successfully used on immersed tube tunnels, metro stations and cut-and-cover below-ground structures for the past 20 years.

The ease of installation of the INTEGRITANK[®] seamless waterproofing system offered the client the quality and future proofed solution they were looking for, together with the peace of mind required when protecting their investment in the region's below ground infrastructure.

The fact that the INTEGRITANK[®] waterproofing system can be sprayed to verticals and up to 60 meters from the mixing head meant that no scaffolding was required when applying to the tunnel walls. In addition, the membranes puncture resistance and durability meant no additional protection boards or screeds were required. These features saved the client significant time and money.

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