

Whampoa MTR Station Waterproofing Repair

Hong Kong, China (2017)

BACKGROUND

As the population of Hong Kong continues to grow, its Mass Transit Railway operator (MTR) continues to enhance its existing railway network. In 2016, MTR undertook an extension of the Kwun Tong line to Whampoa. In 2017, waterproofing challenges were discovered at the new Whampoa station when the contractor found leaks. There was a very high hydrostatic pressure as the station and tunnels were dug 16 meters below grade. An additional challenge was that construction crews were only allowed to work between 2:00 am and 4:00 am to avoid disturbing residents in the area. The General Contractor considered using epoxy injections to repair leaks but decided this was not a permanent solution.

SOLUTION

The project team opted for Kryton's Krystol Leak Repair system knowing it can be applied to the negative side of hydrostatic pressure (inside the tunnel) and provides a permanent waterproof solution. The leaks in the tunnel were stopped by first using fast setting, Krystol Plug before applying Krystol Repair Grout. Krystol Internal Membrane (KIM) treated concrete and Krystol Bari Cote were used to repair honeycombs in the concrete, before the concrete surface of the tunnel was waterproofed using Krystol T1 and T2 surface applied waterproofing system. Krystol T1 & T2, Krystol Bari-Cote, KIM and the Krystol Repair Grout all contain Krystol technology. When added to concrete, Krystol chemically reacts with water and un-hydrated cement particles to form insoluble needle-shaped crystals that fill capillary pores and micro-cracks in the concrete and block the pathways for water and waterborne contaminants. The project team found that by choosing Kryton solutions, they saved considerable time on the repair and reduced short-term costs. The tunnel is now permanently waterproof and the Kryton products are also providing long term durability.



Teams working on waterproofing repairs



An applicator getting ready to apply T1 to the tunnel wall

OWNER / ARCHITECT:

MTR Corporation Limited

DISTRIBUTOR:

Chevalier (Building Supplies & Engineering) LTD.

CONTRACTOR:

Chun Wo Construction Ltd.

ENGINEER:

MTR Corporation Limited

APPLICATOR:

Chun Wo Construction Ltd.

PRODUCTS:

Learn more at kryton.com

Krystol Plug™

Krystol Repair Grout™

Krystol T1® & Krystol T2®

Krystol Internal Membrane™ (KIM®)

Krystol Bari-Cote™