



# integritank®



## Western Harbour Crossing . Hong Kong

stirlinglloyd.com / tunnels

Client HONG KONG GOVERNMENT (HIGHWAYS DEPARTMENT)

Main Contractor NISHIMATSU KUMAGAI JV

Authorised Contractor ASTEL (HONG KONG)

The **Integritank®** Seamless Waterproofing System was chosen to waterproof the 12 tunnel sections of the Western Harbour Crossing, which forms part of the highway linking Hong Kong Island to the new international airport at Chek Lap Kok.

The Immersed Tube Tunnel has a design life of 120 years and the specification of the waterproofing membrane was very demanding. The tunnels are under constant attack from chloride ions in the sea water of the harbour, which without 100% effective waterproofing would reduce the alkalinity of the protective concrete, encouraging rapid corrosion.

### Application Tolerances

The application of the waterproofing membrane had to be tolerant of the high temperatures and humidities which can occur in Hong Kong. Firstly, the concrete and steel substrates were primed with Stirling Lloyd's PA1 and ZED S94 primers respectively, to enhance **Integritank®**'s anti-corrosive and bonding properties to the substrate in this climate.

**Integritank®**'s speed of application was also very important on a project of this magnitude, with it's short overcoating times and rapid application, enabling contract progression. Just 20 minutes after the first coat of **Integritank®** was applied, the second colour-coded coat was able to be sprayed. As a result, applicators Astel were able to complete 1000m<sup>2</sup> per day, finishing ahead of the project's tight schedule.

### Suitability Through Durability

As the project proceeded, the membrane on the exposed walls of the tunnel sections was subject to impact from aggregate during backfill operations. However, the **Integritank®** membrane is durable enough to withstand such activities.

Years after the successful submersion and opening of the tunnel, **Integritank®** continues to exceed the expectations of the client, providing effective waterproofing to one of Hong Kong's most vital communications links. ■



Membrane application - 1st coat to exterior of tunnel sections



Floating of tunnel sections in casting yard



Completed tunnel

products in action

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