

Project:
West Island Line

Location:
Hong Kong

Project completed:
2014

Owner/s:
MTR Corporation Limited

Applicator/Contractor:
Gammon – Nishimatsu JV

Market sector:
Underground construction

Products used & amounts:
MasterSeal 345 – 10 tons

Hong Kong West Island Line

Waterproofing for challenging subsurface soil condition



Our reference in Hong Kong (China): Hong Kong West Island Line

The background

Master Builders Solutions Hong Kong has been awarded a contract to supply waterproofing products for the 3 km underground tunnel linking the newly added MTR stations from Sheung Wan to Sai Ying Pun, the University of Hong Kong and Kennedy Town. The construction work is part of the West Island Line extension project initiated by the MTR Corporation Limited.

The challenge

Gammon-Nishimatsu WIL Joint Venture, the project contractor, decided to “freeze” the soil following the spray concrete process, to overcome the soft soil conditions in the area, which could hamper their construction work. However, the soft soil engineering they undertook resulted in a temperature drop in the shotcrete, to -3 degree Celsius. As a result, the shotcrete surface temperature is cold and moisture coming from condensation. The temperature of the affected area had to be maintained at 20 degree Celsius to ensure the shotcrete surface was dry enough for the successful application of MasterSeal 345, a waterproofing membrane for concrete.

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Hong Kong West Island Line



Photo: Application of shotcrete in the tunnel



Photo: Underground tunnel of Hong Kong West Island Line

Our reference in Hong Kong (China): Hong Kong West Island Line

Our solution

The underground construction team was called in to tackle the technical issue. It was resolved with the placement of PVC canvas sheets, to isolate the area earmarked for treatment. To ensure the required temperature level for the sprayed concrete, jet heater guns and ventilation fans were also used. Eventually, the shotcrete surface dried up and was ready for waterproofing application. Considerable savings in time and manpower were achieved due to the remedial work, much to the client's satisfaction.

The customer's benefit

- Time saving – 4 days for apply MasterSeal 345 instead 2 weeks for PVC membrane
- Manpower saving – 3 workers instead of 8 workers for application work
- Easy application – Only one spray machine for apply MasterSeal 345 instead a large platform, tools and PVC membrane applicator.
- Easy to repair – Easy to find the leak crack because of the full bonding system.

Projects facts at a glance

- First application of MasterSeal 345 on ground freeze area
- Master Builders Solutions Hong Kong will continue to provide waterproofing solutions and technical support for the product's second phase which will commence in November 2015

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Further information is available at:

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