

London Bridge Railway Station

Case study 2015

Focus products: Intercrete® 4801, Intercrete® 4820

Client: Crossrail Ltd

Contractor: Costain

Summary: Enhancing concrete durability and extending design life

Background

London Bridge station, built in the 1830's, is one of the oldest railway stations in the world. Located South East of London Bridge on the River Thames, it is the fourth busiest station in UK, bringing some 50 million passengers into the capital each year.

A £400m redevelopment of the station is being carried out, involving the provision of a new concourse at street level and improving the entrance and exit points to ease access. The aim is to help enhance the capital's infrastructure, improve the journeys of thousands of passengers who pass through the station every day and to increase passenger capacity to 75 million passengers annually.

The work is said by Network Rail to be the most ambitious redevelopment of any London station in a generation and one of the most technically demanding projects ever undertaken on the UK railway.

The solution

The amount of fresh concrete being cast is high volume and Intercrete products were used to enhance the concrete finish and increase the durability of the construction. Intercrete 4801, an advanced, waterproof, low density, class R3 structural mortar, was specified and has helped contribute to rapid construction - a critical factor as the station is remaining open and fully operational throughout the works.

Intercrete 4801 is pre-packaged, only requiring the addition of clean water on-site, to give an easily trowellable mortar with application thicknesses up to 80mm. It develops exceptional bond strength, excellent tensile and abrasion resistance, high diffusion resistance to acid gases and chloride ions and low permeability to water, even at 10 bar pressure. The ability to apply Intercrete products to green concrete also led to the selection of Intercrete 4820 for application to the concrete where a fair faced finish was required. Intercrete 4820 is an engineering quality fairing coat which can be used in thin screed applications to level concrete surfaces and to reinstate cover, whilst providing an anti-carbonation finish.

Like Intercrete 4801, 4820 is also non-toxic when cured and releases no hazardous solvents or heavy odours during application, a critical consideration for a high profile project such as this in the public arena. Intercrete 4820 is suitable as an exposed finish without needing further protection or coating. For this project, it was important that the fairing coat matched the existing colour of the freshly cast concrete so it was specified in white.

