

Project Profile - Coastal Structures

PROJECT

St Peter Port Docks, Guernsey

SUMMARY

Chloride protection of concrete encased steel columns

PRODUCTS

Cementitious Coating 851

CLIENT

Guernsey Harbours

CONTRACTOR

Concrete Repairs Limited

BACKGROUND ►

With a population of 65,000, Guernsey is one of the main Channel Islands situated off the coast of Normandy. The marine berths are in the capital of St Peter Port and are an essential part of the island's infrastructure. A detailed assessment of the quay structures was carried out to take into account new loading conditions and to extend the service life of the assets.

The assessment revealed that extensive repair work was required to the reinforced concrete and steel structures, as well as the design and installation of cathodic protection systems to enhance durability in the severe marine environment. The contract formed part of one of the largest marine repair and cathodic protection systems ever installed in Europe. On the structure protected with Flexcrete products, the steel columns are in a 10m tidal zone and additional chloride protection was required. The columns were initially protected with a 75mm thick overlay, but the client wanted to increase the protection and durability of the overlay to the steelwork.

THE SOLUTION ►

Cementitious Coating 851, a waterborne, cementitious modified, polymer coating, was selected due to its proven record in the marine industry and ability to provide exceptional waterproofing properties and effective protection against chloride attack. It rapidly cures to form a hard, highly alkaline coating, resisting positive and negative pressure under a 100 metre head. It is also approved under Regulation 31(4)(a) and is CE marked in accordance with BS EN 1504 Part 2, the pan European standard for concrete repair, as well as carrying British Board of Agrément (BBA) certification.

Rapid application of the coating was vital for this project due to the location of the steel columns in the tidal zone. **Cementitious Coating 851** was quickly applied using spray techniques at a thickness of 2mm, rapidly stabilising to resist wash-out on early immersion to produce a durable and hard-wearing protective coating. As **851** is water-based, it exhibits minimal hazard during application, releases no hazardous solvents and is non-toxic when cured.

This proved to be a highly successful project in a remote location. Flexcrete products have helped to ensure that the structure will achieve a design life of at least 25 years.



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