

Job Reference

River Derwent Bridge, Derby, UK



Project Description:

The Highways Agency's River Derwent Bridge is a major road bridge carrying the A38 over the river in Derby. A three-span reinforced concrete structure, its central deck is supported at half joints by deck sections cantilevered from its piers.

The Challenge:

High levels of chloride contamination had occurred, caused by leaking water from the deck drainage which had travelled over the half joints, along the cantilevered soffits and down the deck piers. As a result of the ingress of chloride-contaminated water, the severely deteriorated structure was suffering from corroded reinforcement and spalling concrete, particularly at the half joints and cantilever soffits. The bridge required large-scale structural concrete repairs, complicated by difficult site access.



The Solution

A cathodic protection system was developed using BASF's new EMACO® CP 60 Anode mortar, its first installation onto a bridge. The system used a low current through the bridge reinforcement to create a cathode and the EMACO® CP 60 cementitious overlay, which contains nickel fibres, was applied at a thickness of 10mm as the anode. Titanium strips served as the distribution network for a current of less than 20 milliamps delivered from a streetlighting electrical feeder pillar. The reversal of the 'electrical cell' protected the reinforcement at the joints and soffits from further corrosion.

BASF was able to offer a complete package of repair solutions in addition to EMACO® CP 60 ANODE: SHOTPATCH® 12, EMACO® S103 and NANOCRETE® R4 mortars were also supplied. A team approach giving support from the company's Technical, Sales and Customer Services departments ensured that materials were both delivered and applied on schedule to the satisfaction of all parties. Success on the project has since lead to BASF supplying several other prestigious Highways Agency projects

Other BASF Car Park References:

United Kingdom

River Derwent Bridge

R111 Midland Links

Europe

Apollo Bridge, Bratislava, Slovakia

North America

Hardy Toll Road Bridge, Texas, USA

Triboro Bridge, New York, USA

South America

Alencastro Bridge, Brazil

Salto Grande Bridge, Brazil

Middle East

Manifa Port Causeway, Saudi Arabia



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