



SIKA AT WORK

ALMOND VALLEY BRIDGE LIVINGSTON, EDINBURGH

REFURBISHMENT: Sika® Galvashield XP and Sika® Galvashield CC anodes

BUILDING TRUST



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ROAD BRIDGE SAVED FROM DECAY THANKS TO SIKA'S SACRIFICIAL ANODES.

When it comes to the management and maintenance of major concrete structures such as [roads and bridges](#), preventative measures are preferable to repair works – saving substantial costs and time to complete, thereby minimising disruption to users.

This was the case for Almond Valley Bridge, a twin-deck structure located in Livingston near Edinburgh. The 900m-long bridge, which contains three traffic lanes within each deck, was subject to an independent 10-year survey to detect linear polarisation within the reinforced concrete.

Tests revealed high levels of chloride which, if left untreated, would have resulted in corrosion sites on the steel rebar. This would have led to the concrete surface becoming cracked and spalled, thus affecting the bridge's structural integrity. [Sika's Galvashield® XP](#) and [CC anodes](#) provided the simple and easy-to-install solution.

Time was of the essence to stop further corrosion, the effects of which would have become visible without treatment and would require extensive concrete break-out & replacement if a traditional approach was adapted. This would have involved taking the concrete back to the rebar including removing structurally sound chloride contaminated concrete, then replacing with a suitable repair mortar.

The Sika solution

[Sika Galvashield sacrificial anodes](#) are quickly and easily installed into concrete to control corrosion activity and prevent the new formation of corrosion sites on reinforced concrete structures. When correctly installed Sika® Galvashield® XP and CC anodes corrode preferentially to the surrounding steel, providing galvanic corrosion prevention and control to the adjacent reinforcement.

For the Almond Valley Bridge project, a total of 2,800 anodes were installed. The bridge's height, approximately 40 metres from the ground, presented on-site teams with a potentially challenging repairs programme.

The affected carriageway remained closed whilst installation of the corrosion management was carried out, hence the need for a rapid, easy-to-install solution. With CC anodes there is no requirement to break-out the chloride contaminated concrete, which creates dust and debris being released into the atmosphere plus reduces the workers time being exposed to percussive tools which can cause hand transmitted vibration health issues. The process simply involves drilling a small hole and inserting the anode into the concrete.

A small amount of mortar is used to cover the hole. The [Sika® Galvashield® CC anodes](#) were installed at 400mm intervals along the bridge's soffits and columns.

Alasdair Beaton, Managing Director of Chemcem Scotland, said: "The CC anode system was ideal for the Almond Valley project, as we needed to prevent further corrosive activity within the concrete whilst minimizing carriageway closure times and disruption to motorists.

"The system's easy-to-install properties were a real benefit to our on-site teams who were working at height. It also meant we were able to keep project costs to a minimum. Thanks to Sika® Galvashield® anodes, we were able to limit the time spent on site; so much so, we completed the repairs programme eight days ahead of the eight-week deadline. This really is a superb system – it's good for the environment and extends the life of the structure without the need for a costly maintenance or repair programme."

The easy-to-install Sika Galvashield anodes system not only ensured the preventative works programme was completed eight days ahead of the agreed two-month timeframe, it will provide long-term protection against potential damage caused by corrosion, ensuring this fine structure will continue to provide daily access for thousands of vehicles for many years to come.

For further information call 0800 112 3865