

## Case Study

# Bidston Moss Railway Bridge



The Bidston Moss bridge carries the A554 road over the railway line between West Kirkby and Liverpool. The large bridge spans a number of rail tracks, with a local train service operating to Liverpool. The client required a long term, low maintenance solution to protect selected areas of the concrete bridge structure against further corrosion damage.

Location  
**Leasowe, Wirral, UK**

Client  
**Wirral Metropolitan Borough Council**

Completed  
**December 2015**

Structure  
**Bridge over railway**



## The Problem Identified

Chloride salts from the road above had been leaking through the longitudinal joint and onto the bridge abutments for a number of years. The chloride contamination had initiated some localised corrosion of the steel reinforcement with associated concrete delamination damage, and the client wished to protect the full length of the joint without intervention for a significant period.



## The Solution Developed

Following a technical assessment of the structure, localised corrosion protection was provided to both the abutments and the centre joint on the bridge to counter the aggressive chloride salt contamination for a 20 year period. A DuoGuard Hybrid anode system was applied along the longitudinal joint to locally protect against future corrosion damage. The system was designed such that all areas protected could be accessed from outside the rail possession area and thus could be monitored remotely. Similarly, DuoGuard anodes were installed onto the bridge abutments protecting areas outside concrete repairs. The bridge joint protection was designed to be undertaken in phases to fit with track possessions.



## The Benefits Provided

The DuoGuard Hybrid anode system provided a very localised and thus cost effective protection to the concrete joint and abutments. The designed system offers 20+ years of protection, and can be monitored but needs no maintenance of power supplies.

The DuoGuard system also offered the flexibility to fit in with the rail possessions and the straight-forward installation removed risk of potential time overruns.



View of abutment



DuoGuard™ Solution

## CPT Products Used



DuoGuard™  
350 & 500



MN15  
Reference  
Electrodes

