



Image courtesy of Taziker Industrial Ltd

AGGRESSIVE ENVIRONMENT BRIDGE PROTECTION FROM DEVON TO CORNWALL

The Royal Albert Bridge is one of legendary engineer Isambard Kingdom Brunel's most famous creations. A railway bridge spanning the River Tamar between Devon and Cornwall, it boasts a unique design featuring two 139 m lenticular iron trusses positioned 30 m above the water.

Completed in 1859 and opened by Prince Albert, it now stands as a monument to its creator and still carries trains between the two counties across its 666.8 m span. The bridge stands in an aggressive environment with relatively high levels of humidity and salinity from the tidal river below. Network Rail required a 25 years' anti-corrosive paint protection system.

BASED ON THE PROTECTION AFFORDED ON OTHER MAJOR BRIDGE PROTECTION SCHEMES INCLUDING THE FORTH AND TAY RAIL BRIDGES, NETWORK RAIL SPECIFIED A GLASS FLAKE EPOXY SYSTEM. THE PRINCIPAL CONTRACTOR, TAZIKER INDUSTRIAL LTD SELECTED SHERWIN-WILLIAMS AS ITS PAINT SUPPLIER.

CLIENT:
Network Rail

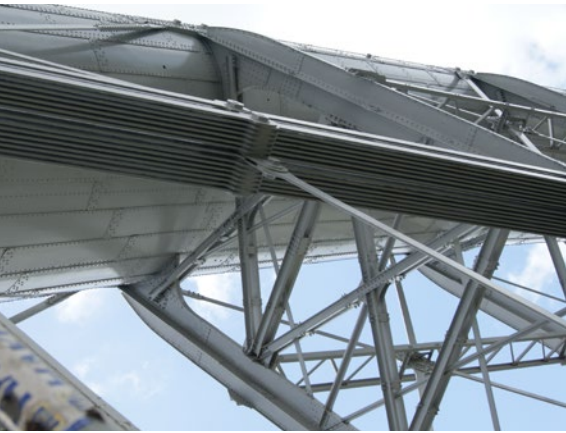
STRUCTURAL ENGINEERS:
Taziker Industrial Ltd

STEEL FABRICATION:
AECOM

FROM SPEC TO PROTECT
protectiveemea.sherwin-williams.com

**SHERWIN
WILLIAMS®**

ROYAL ALBERT BRIDGE, DEVON TO CORNWALL



SOLUTION

The existing paintwork was totally removed by abrasive blast-cleaning to Sa2½ surface standard (BS EN ISO 8501-1).

The coating system comprised Macropoxy™ L674 Epoxy Blast Primer at 50 um Minimum Dry Film Thickness (MDFT), Macropoxy C123 Glass Flake Epoxy at 400 um MDFT and Acrolon™ C137V2 Acrylic Urethane Finish at 50 um MDFT. A stripe coat of Macropoxy C123 Glass Flake Epoxy was applied at 250 um MDFT between the first and second coats to all rivets, sharp edges and joints, etc. A total minimum dry film thickness of 500 um was applied.

The system eliminates the need for ongoing maintenance, significantly reducing environmental impact, saving on expensive maintenance costs and extending asset life. This three coat system provides excellent adhesion and anti-corrosion properties and acts as a powerful barrier against the harsh weather conditions in this aggressive marine environment.

Benefits to the asset owner of adopting this three coat system to the bridge and highways sector comes in terms of labour costs, lower energy usage and volumes of paint required. In addition, the higher volume solids coatings means that fewer volatile organic compounds (VOCs) are emitted during the process.

SUBSTRATE

Cast and wrought iron.

REQUIREMENTS

25 years protection against high humidity and salinity levels.

AREA COATED

50,000 m².

FEATURED PRODUCTS

- Macropoxy L674 Epoxy Blast Primer
- Macropoxy C123 Glass Flake Epoxy
- Acrolon C137V2 Acrylic Urethane Finish.

THE SHERWIN-WILLIAMS DIFFERENCE

Sherwin-Williams Protective & Marine delivers world-class industry subject matter expertise, unparalleled technical and specification service, and unmatched regional commercial team support to our customers around the globe. Our broad portfolio of high-performance coatings and systems that excel at combating corrosion helps customers achieve smarter, time-tested asset protection. We serve a wide array of markets across our rapidly growing international distribution footprint, including oil and gas, water and wastewater, bridge and highway, steel fabrication, flooring, food and beverage, rail and power, marine and passive fire protection.

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