



M1 Tinsley Viaduct

Sheffield, United Kingdom



Project

Tinsley Viaduct is a two-tier steel box girder road bridge which was the first of its kind in the UK. The bridge crosses the Don Valley between the split junction 34 of the M1 motorway. It spans the River Don, the Sheffield canal, as well as road and rail lines, with the upper tier carrying the M1 motorway and the lower tier the A631 road directly underneath.

The bridge is 1,033m long, approx 30m wide and 20m high from the top tier and includes a 50m span which is the longest of twenty.

The bridge was built in 1968 and cost around £6 million to build. At that time, there had been some high-profile failures of bridges of this type of construction, so further strengthening work was carried out to reinforce the bridge in 1983.

Due to new EU legislation regarding the carrying of 40-tonne vehicles, an additional strengthening and painting programme was undertaken in 2003. The bridge required a paint system that would last up to 20 years before another major maintenance would be required.

Sherwin-Williams was asked to supply anti-corrosion coatings systems that complied with Highways Agency standards.

Substrate: Steel blast cleaned to Sa2½.

Requirements: 20 years' external corrosion protection and anti-corrosive protection to the internal of the box girders.

Specification: External - Transgard™ TG111V2 (Zinc phosphate primer/buildcoat), Transgard™ TG112 (Epoxy MIO buildcoat), Transgard™ TG169 (Sheen acrylic urethane topcoat). Internal - M624, M625.

Area Coated: Approximately 155,000m² of external structural steelwork and 85,000m² of internal steelwork.

Customer: Interserve Industrial Services (applicator), Cleveland Bridge (Sub Contractor), Edmund Nuttall (Main Contractor), Owen Williams (Design Consultants), Highways Agency (Client).

System

Sherwin-Williams worked with Interserve to provide the best and most cost-effective system for this bridge and because of health and safety concerns supplied a special water-based paint that could be used in the confined spaces of the internal box girders.

Sherwin-Williams offered full specification/technical and practical advice from the early project stages and carried out regular site visits for the duration of the project to help ensure that the work was completed on time and to the satisfaction of all interested parties.

Product	Highways Agency item number	Product type
Transgard™ TG111V2	HA Item No. 111	Zinc phosphate primer/buildcoat
Transgard™ TG112	HA Item No. 112	Epoxy MIO buildcoat
Transgard™ TG169	HA Item No. 169	Sheen acrylic urethane topcoat

The coatings used for the internal box girders were Envirogard M624 water based epoxy anti-corrosive primer and Envirogard M625V2 water based epoxy undercoat/sheen finish.



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