

CASE STUDY



QUEENSFERRY CROSSING, EDINBURGH - STRUCTURE FT01, INSTALLATION OF TF900 EXPANSION JOINTS



Job Brief

Supplied: Manufacture, supply and installation of 180 mtrs of Ekspan TF900 expansion joints

Project Team

Client: Transport Scotland
Main Contractor: Forth Crossing Bridge Constructors JV
Sub-Contractor: Ekspan
Start Date: January 2017
Completion Date: July 2017

Background Information

The Queensferry Crossing, Scotland's iconic 2.7km long 3-tower, cable-stayed bridge, was built as part of The Forth Replacement Crossing project, to replace the ageing Forth Road Bridge. The bridge, lying just a mile away from the Forth Road Bridge, is now the primary route between Edinburgh and Fife, carrying the M90 motorway across the Firth of Forth estuary.

The existing Forth Road Bridge, built in 1964, was notorious for suffering frequent delays, and operational and maintenance issues. Primarily as a result of heavy traffic congestion (far more than the bridge was originally designed to take) and adverse weather conditions - strong winds would often cause bridge closures for high-sided vehicles and sometimes to all traffic.

The £1.35 billion Queensferry Crossing (opened in August 2017) is a much stronger bridge made from the latest durable materials and equipped with modern weather/safety/traffic sensors and wind shields. The bridge will carry the vast bulk of traffic and is expected to remain open in all weathers, with easy maintenance access, whilst the original Forth Road Bridge will be retained as a route for walkers and cyclists.

Ekspan's Workscope

In addition to the bridge construction, The Forth Replacement Crossing project also included major motorway/approach road upgrades on either side of the crossing.

Ekspan were contracted by Forth Crossing Bridge Constructors JV to install Ekspan TF900 expansion joints on the North and South abutments of Structure FT01 approach roads to the Queensferry Crossing. The North joint was 112 metres in length and the South joint 68 metres. The TF900 joints were a design requirement that had to accommodate the heavy skew meet the longitudinal and transverse movement range required on both abutments.

Site works included breaking out the road surfaces and preparing the foundations for installing the joints, installations of TF900 sections, nosing mortar and application of antiskid coatings. The work phases for this project presented particular challenges with respect to weather conditions and the necessity to co-ordinate the works with other contractors in order to meet the official deadline for opening in August 2017.



Expansion joint installation



New installed TF900 expansion joint