

A472 FIDDLER'S ELBOW VIADUCT, WALES - MULTI-ELEMENT EXPANSION JOINT REPLACEMENT



Project Brief

Design, manufacture and replacement of 8 no. Ekspan WSG multi-element expansion joints.

Project Team

Client: Merthyr Tydfil County Borough Council
Main Contractor: Alun Griffiths (Contractors) Ltd.
Sub Contractor: USL Ekspan

Background Information

Fiddler's Elbow Viaduct carries the A472 over the River Taff linking the A470 Trunk Road at Abercynon Roundabout with the A4054 at Fiddler's Elbow Roundabout. The viaduct, one of the region's busiest road bridges, is one of the main arterial routes linking the nearby County Boroughs of Merthyr Tydfil, Rhondda Cynon Taf and Caerphilly.

Surveys and investigations carried out in 2014 identified the need for essential permanent remedial works on the bridge expansion joints. These joints, with over thirty years of wear and tear, were now past their useful life and needed replacing, to safeguard the bridge's long-term future.

Alun Griffiths Contractors were responsible for undertaking the £2m scheme of works - part of the Council's wider investment programme for major improvements on Highways and Structures, and the Transport Infrastructure.

USL Ekspan's Workscope

Alun Griffiths Contractors appointed USL Ekspan to remove the existing expansion joints and install 8 no. USL Ekspan WSG multi-element expansion joints - 4 on the south deck carriageway and 4 on the north deck carriageway. Each joint (WSG160, WSG880 and WSG800) was 10.6 metres long.

USL Ekspan completed a survey of the existing joints and deck arrangement to ensure measurements taken of the joint gaps, levels and slopes matched the as-built drawings for correct manufacture of the new multi-element expansion joints. The installation of the joints was undertaken in two phases (4 no. per phase) using 2 teams of USL Ekspan operatives working simultaneously on 2 no. joints as associated ground works were carried out by other sub-contractors.

This project involved; design and manufacture of 8 no. multi-element joints; hydro-demolition and lifting to facilitate joint removal; installation of new joints to existing steel structure; and additional re-enforcement and concrete re-instatement.

Precise planning and effective co-ordination throughout were key to successfully completing this project ahead of schedule with minimum disruption to motorists.



Old expansion joint showing excessive wear



Expansion joint lifted into position



New installed multi-element expansion joint

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