

Instrumentation

Load Testing of Bridge Structures

When a bridge fails its assessment for 40 tonne vehicles one of the available options is supplementary load testing. This procedure can identify hidden strengths in the structure, arising from a variety of sources, that may help avoid the need to conduct costly and disruptive strengthening works.

The main elements of such a test involve :-

- theoretical analysis
- instrumentation
- monitoring during application of load
- analysis of results

A combined team from Gifford & Partners and Sandberg can offer the necessary expertise and services providing as much of the total package as suits any individual client.

The theoretical analysis will determine the anticipated behaviour under any proposed loading regime and is likely to determine the optimum selection and position of instrumentation as well as providing the basis for appraisal of results. Careful planning is crucial if the test is to achieve a constructive solution.

Instrumentation is likely to involve a combination of strain, deflection and temperature measuring sensors positioned to suit appraisal of the structure's performance in respect of critical stress and deflection criteria.

Loads may be applied using kentledge, laden lorries or a rolling load according to the specific circumstances and the need to limit disruption.

The procedure adopted for supplementary load testing follows the guidelines published by the ICE National Steering Committee.

The joint team would be pleased to advise on any aspect.



Havelock Bridge set up to monitor the passing of a 90 tonne load



Strain and deflection monitoring as a train crosses a bridge

To discuss your needs please contact
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