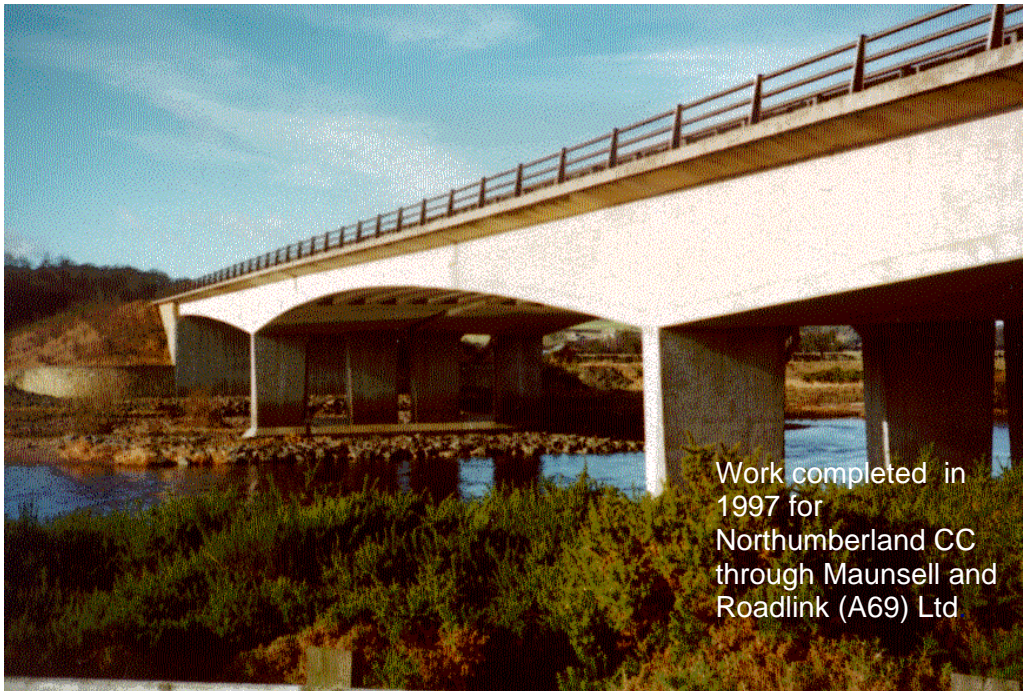


PT Bridge Tendon Load Measurement



Work completed in 1997 for Northumberland CC through Maunsell and Roadlink (A69) Ltd

Strain gauges with 1.6mm diameter, 1mm deep hole drilled in tendon



Constantius Bridge carries the A69 Trunk Road over the River Tyne near Hexham, Northumberland. The structure comprises post-tensioned cellular box section end spans and cantilevers with a suspended beam/ slab central span.

As part of a Special Inspection of the structure in accordance with BA 50/93, STRAINSTALL UK Ltd. used the centre hole method of stress relief to determine the in-situ load in selected tendons. The testing was completed over two days with access provided from a mobile underbridge platform.

The following key information was provided in a concise report by STRAINSTALL UK Ltd:

- Review of tendon type and dimensions
- Numerical value of load in each of 7 no tendons. Accompanying drawing identified locations of tests
- Comparison of in-situ tendon load against yield load and ultimate load (using library of tendon manufacturers' data)
- Confirmation that measured tendon loads are within range 55% to 80% of yield load

Strainstall's team of experienced engineers operate from offices in Cowes, Bath and Aberdeen (UK) and Tønsberg (Norway).

The World of Load Measurement and Stress Analysis



- “Centre hole” strain relief drilling technique
- Calculation of tendon load from measurement of surface strain relief

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