Fatigue of bridge deck slabs strengthened with reinforced UHPFRC (AGB2008/005)

Ermüdung von Fahrbahnplatten verstärkt mit Stahl-UHFB (AGB2008/005)

Funding: National (Switzerland)
Duration: Jun 2009 - Jun 2012
Status: Complete

Background & policy context:

With the occurrence of higher and more frequent axle loads on roads, in particular bridge deck slabs are more severely solicitated by fatigue loading. To avoid heavy interventions for strengthening of deck slabs, an improved building material is used, namely Ultra High Performance Fibre Reinforced Concrete with reinforcing bars (=reinforced UHPFRC), by adding a thin (3 to 5cm) layer on top of the deck slab such as to restore the required fatigue resistance and load carrying capacity.

Strengthening of bridge deck slabs using reinforced UHPFRC is a relatively gentle intervention since the bridge dead load is not increased. Also there is a potential inherent with this novel construction method to limit the duration of the working site and thus to reduce the user costs

Objectives:

The objective of the project is to investigate the fatigue behaviour of composite sections made of reinforced UHPFRC and reinforced concrete to deduce rules for the dimensioning of the reinforced UHPFRC layer and the corresponding fatigue safety verification.

Parent Programmes:
ARAMIS - ARAMIS information system

Institute type: Public institution
Institute name: Swiss Government: State Secretariat for Education and Research
Funding type: Public (national/regional/local)

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**STRIA Roadmaps:** Vehicle design and manufacturing, Infrastructure

**Transport mode:** Road transport

**Transport sectors:** Passenger transport, Freight transport

**Geo-spatial type:** Other