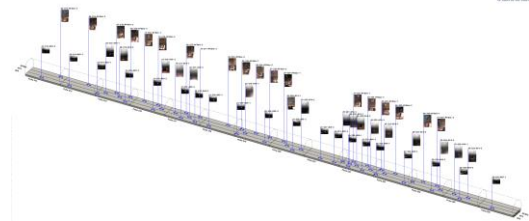


Mont-Blanc Tunnel, France-Italy

osmos

Integrated safety for structures



Location of LIRIS Optical Strands on the slab underface



LIRIS Optical Strand on the slab underface



LIRIS Optical Strand on the slab underface



LIRIS Optical Strand on the slab underface



Monitoring a strategic international traffic work

Client

ATMB, Mont-Blanc Highways and Tunnel Authority

Structure

11.6 km long road tunnel, opened in 1965. Single-tube tunnel in reinforced concrete. Diameter: 8.6 m. 5000 vehicles / day (1 500 trucks) The deck of the road rests on a prestressed concrete slab, with hollow boxes below it, on elastomer bearings. These hollow boxes are used as ventilation and technical corridor purposes

Context

This slab shows noticeable visual disorders: Concrete expansion, spalling, material fallings and corrosion of rebars. Concrete shows also a very high chloride rate.

Client's needs

The client wishes to check the structural integrity of the slab with a mechanical behaviour analysis, with the effects of road traffic and aging.

Instrumentation installed

- 55 LIRIS Autonomous Optical Strands

LIRIS Optical Strands are installed longitudinally on the slab underface, under the road lanes, in 2 lanes below each lane. A length of 100 m is thus covered.

Results

Deformations recorded on the slab show, until now, a stability of static behaviour and a repeatability of dynamic events (Amplitudes, reversibility).

Client benefits

The client can ensure the continuity of road traffic inside the tunnel, while controlling the risk which could arise from a degradation of the structural condition of the slab below road lanes.