One of the largest concrete bridge in Poland – crack detection

NERVE
nerve-sensors.com

EpsilonRebar: Case Study

EpsilonRebars had been chosen for this project as the best solution dedicated to crack detection and estimation of their width changes. Four sensors were installed in the pylon's horizontal beam, supporting the deck slab. In this case, a near-to-surface installation method was applied (grooves) to provide appropriate integration of EpsilonRebars with the existing concrete and to create natural protection against the environmental impacts.
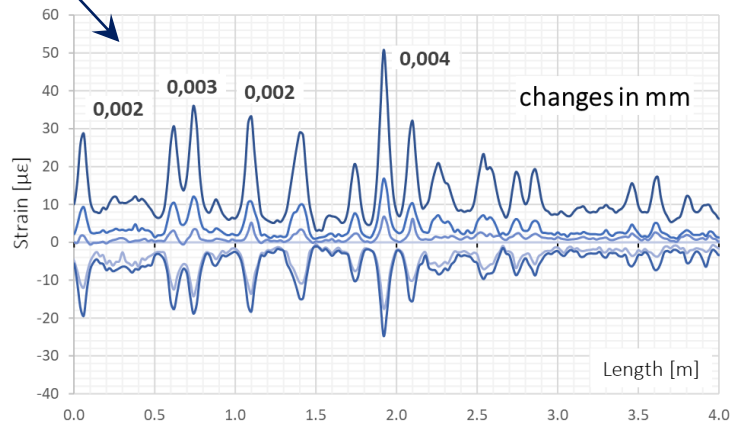

Benefits of application

- Easy and effective **installation within the existing concrete structure**
- Reliable and objective data supporting the experts for **optimal decision making**
- Detection of **all cracks** formed during years of bridge operation
- **Real-time estimation of crack widths** and changes under traffic loads

Example results

EpsilonRebars integrated with the bridge pylon allowed for detailed analysis of cracks' patterns along the supporting beam. It was also possible to observe real-time changes in widths, despite being extremely small – see example data in the plot below. Analysis of such tiny events was possible only thanks to the appropriate mechanical properties of the Nerve-Sensors and their perfect bonding with the surrounding concrete.

⊕ **15 200** measurement points

📏 **152 m** of sensing path

4 x EpsilonRebar

⏱ **short** & **long-term**

🤝 project **partner**:

Zespół Badawczo - Projektowy
MOSTY-WROCŁAW s.c.