

Danube Bridge Sinzing (Germany)



Project description

The deck support bearings of the Danube Bridge in Sinzing were observed to suffer unusually fast abrasion of their PTFE sliding discs, requiring disc replacement after just five years of service.

As a bridge bearing specialist, mageba was requested in 2007 to assess the problem and recommend a solution. It was suspected that the deck movements were higher than could be lastingly withstood by PTFE, and that the solution might therefore lie in the use of ROBO®SLIDE, a high-grade alternative to PTFE that offers far higher durability.

To support the approach, it was necessary to understand the deck's movements.

mageba scope

It was decided to make use of modern structural health monitoring (SHM) technology to evaluate the exact movements of the bridge deck during a two-week period. The short-term nature of the project made a ROBO®CONTROL "Portable" SHM system ideal for this purpose.

A clear correlation between movement and temperature was established, with extrapolation of the recorded data indicating accumulated sliding distances of approximately 2.5 km per year. It could be concluded that these movements were the primary cause of the wear problem, and that the use of ROBO®SLIDE instead of PTFE would significantly prolong the life of the bearings – confirming the proposed solution.

Highlights & Facts

mageba products:

Type:	ROBO®CONTROL SHM system ("Portable")
Measuring:	Displacement, strain, inclination, temperature
Installation:	2008

Structure:

City:	Sinzing
Country:	Germany
Type:	Highway bridge with continuous steel deck
Length:	1 km

Rapid wear of PTFE sliding discs of the bridge deck's support bearings required explanation



A longitudinal movement measuring sensor as installed at one of the deck's support bearings



Strain measurement on one of the bridge deck's steel members

