

Steinbach Viaduct (Germany)

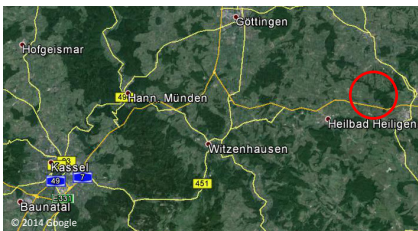


Project description

The Steinbach Viaduct in central Germany carries the A38 autobahn across the Steinbach Valley. It has a length of 372 m, with spans of between 54 m and 78 m, and a maximum height of 35 m. Its construction was completed in 2002, with expansion joints installed at both ends.

However, the bridge was not opened to traffic until several years later, in its first years carrying only the construction traffic involved in the construction of the motorway at either side. Due to the potential effects of the heavy construction traffic on the structure's slim deck, it was decided to install an automated SHM system to monitor the traffic and its effects.

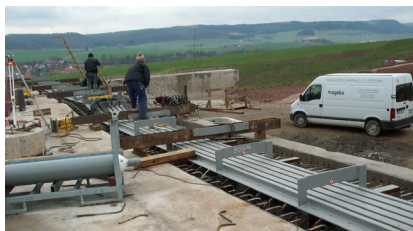
The viaduct is located in central Germany, near the city of Kassel.



mageba scope

At the time of the bridge's construction, TENSA®MODULAR expansion joints were installed in its deck – a 5-gap (LR5) joint at one abutment and a 6-gap (LR6) joint at the other. Several years later, a temporary ROBO®CONTROL monitoring system was installed, to monitor autobahn construction traffic. In addition to displacements, inclinations and strains, the high-tech system was designed to measure structure vibrations at frequencies of 100 Hz. This enabled vehicle weights and speeds to be deduced by comparing the resulting vibrations with those of vehicles of known weight and speed as recorded during system calibration. As a result, overloading of the bridge could be ruled out, enabling the owner to have full confidence in the bridge's long-term performance.

Installation of a TENSA®MODULAR expansion joint on the bridge in 2002.



Highlights & facts

mageba products:

Type: TENSA®MODULAR expansion joints, ROBO®CONTROL monitoring system
Installation: 2002 (expansion joints), 2005 (SHM system)

Structure:

Country: Germany
Completed: 2002
Type: Box girder bridge
Length: 372 m
Designer: Leonhardt, Andrä & Partner

The central computer of the ROBO®CONTROL monitoring system, installed in 2005.

