

# Martigny Highway Bridge (Switzerland)



## Project description

The highway bridge P51/P52 is on the Swiss A21 highway, crossing a road and a railway line where the highway bypasses the city of Martigny. In 2011, the bridge was extensively rehabilitated, with the work including seismic upgrading of the structure in order to ensure the bridge's structural stability in the event of an earthquake. To achieve this, the responsible engineers decided to install seismic isolation devices at three central piers. Seismic isolators reduce the effect on a structure of a violent ground movement by shifting the natural period of the structure to a non-critical value and reducing the forces transmitted to the structure.

## mageba scope

The seismic isolators were required to increase the structure's natural period to 6 seconds. In addition, each isolator had to fulfil the following performance requirements: Maximum vertical load under service conditions of 3,810 kN; lateral stiffness of 1,640 kN/m; maximum seismic displacement capacity of +/- 220mm; and damping capacity of 16%.

Following an advanced dynamic analysis of the structure, mageba LASTO®HDRBs (high-density rubber bearings) were selected, and designed in accordance with the European Standard EN 15129:2009 with a diameter of 450mm.

## Highlights & facts

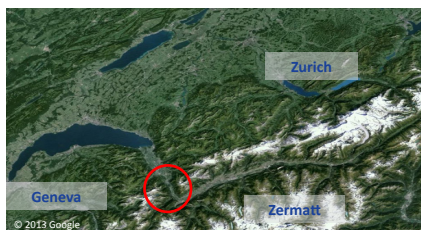
### mageba products:

Type: LASTO®HDRB seismic Isolators  
Units: 6  
Diameter: 450 mm  
Period: 6 s  
Damping: 16 %  
Installation: 2011

### Structure:

City: Martigny  
Country: Switzerland  
Type: Highway Bridge  
Renovated: 2011

The bridge is located in the city of Martigny in southern Switzerland.



A LASTO®HDRB seismic isolator after installation in the highway bridge.



LASTO®HDRB seismic isolators are durable and low-maintenance, facilitating easy inspections.

