

Seoul–Busan High Speed Railroad (South Korea)



Project description

The Gyeongbu KTX (Korea Train Express) between Seoul and Busan is South Korea's first high speed electric railway line and connects the north and south part of the country. Travellers from Seoul now reach Busan within less than 3 hours.

The high speed railway line has a total length of 423.8 km. Four new stations have been constructed to accommodate increased traffic between the regions and are set to open in conjunction with the new line.

Top speed for trains in regular service currently lies at 305 km/h (190 mph), though the infrastructure is designed to reach speeds of 350 km/h (217 mph).

mageba scope

mageba supplied two RESTON®SA hydraulic dampers, each with a force capacity of 1,500 kN and allowing movements of ±100 mm (seismic design displacement ±30 mm). The dampers were designed according to the equation $F = CV^\alpha$, with $C=2,950 \text{ kNm/s}$, $V=0.259 \text{ m/s}$ and $\alpha = 0.5/0.4$.

As this type of bearings are velocity-dependent devices, they primarily consist of a piston in a fluid-filled cylinder. Moreover, they allow free movements of a structure during service conditions, but control displacements and dissipate energy during sudden movements caused, for example, by earthquakes or exceptional traffic forces.

Highlights & facts

mageba products:

Type: RESTON®SA hydraulic dampers
Installation: 2016

Structure:

City: Daejeon
Country: South Korea
Type: High speed railway bridge
Completion: 2004
Refurbishment: 2016
Length: 423.8 km
Owner: Korea Rail Network Authority
Contractor: Reflesh Construction
Architect: Korea Infrastructure Safety Corporation

The Gyeongbu KTX enables travellers to reach anywhere in the country within three hours



Installation of a RESTON®SA damper on the left side of the construction



Illustration of the use of hydraulic dampers for energy dissipation in case of an earthquake

