mageba

Yeongjong Grand Bridge (South Korea)

Project description

The Yeongjong Grand Bridge is 4,420 m long, and consists of three different structural components: a suspension bridge (550 m), a truss bridge (2,250 m), and a steel box bridge (1,620 m).

The structure features double decks to carry a six-lane highway on the upper deck, and a four-lane highway with dual railway lines on the lower deck.

The suspension bridge itself is a 3-dimensional self-anchored structure. The shape of the cables and the stiffened girders have been designed to symbolize the eaves of a traditional Korean Kiwa House.

mageba scope

For this structure mageba's TENSA® MODULAR LR8 joints with a movement capacity of 640 mm were chosen to be installed due to the proven elastic control system of this joint type. In total 8 joints were delivered which can ensure kinematic behavior, and prevents damage from constraint forces, which could act on the structure due to the combined lower deck (railway tracks and road lanes). The installed modular expansion joints can accommodate movements in every direction, and rotations about every axis.

This ensures safety for traffic and train. In 2023, after more than two decades of service, under extremely heavy traffic and subjected to the harsh marine environment, the driving surface of the joints deteriorated from steel corrosion thus needed to be replaced.

To do this a new innovative method was used, which involved replacing the surface beams only, since the joints were still in good condition.

Highlights & Facts

mageba Products:

Type:	TENSA®MODULAR LR8 joints
Installation:	2000/2023

Structure:

City:	Incheon
Country:	South Korea
Built:	2000
Type:	Self-anchored suspension bridge
Length:	4,420 m
Owner:	The New Airport Hiway Co., Ltd.
Engineer:	Yooshin Engineering Corporation & CHODAI CO., LTD.

The bridge is located in the city of Incheon, South Korea

View of the bridge gap following renewal of the edge beams and removal of the old centerbeams
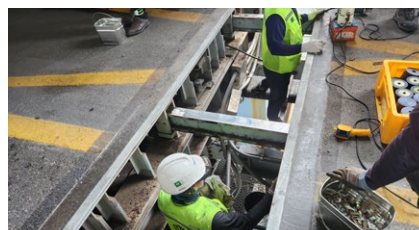
New centerbeams are being installed and connected to the support bars beneath