



# Bridge Rion – Antirion / Harilaos Trikoupis Bridge

## World's largest cable-stayed bridge

### MAURER Swivel Joist Expansion Joints with "Fuse Box"



#### Figures and Facts

<b>Location:</b>	Patra / Greece
<b>Owner:</b>	Republic of Greece
<b>Concessionaire:</b>	Gefyra SA / 35 years
<b>Contractor:</b>	Kinopraxia Gefyra SA
<b>Design:</b>	Ingérop, Domi 3-span cable-stayed bridge
<b>Consultant:</b>	FaberMaunsell, Buckland & Taylor
<b>Total investment costs:</b>	750 million Euros, Contributed by the The Republic of Greece (40 %), the European Investment Bank (50%), the share-holders of the Gefyra SA (10 %)
<b>Utilisation:</b>	Roadway crossing
<b>Total Bridge Length:</b>	2.880 m
<b>Width of superstructure:</b>	27,20 m
<b>Main spans:</b>	3 x 560 m
<b>Considered load cases:</b>	<ul style="list-style-type: none"> <li>• Earthquake magnitude 7</li> <li>• Impact of 180.000 tons tanker at 18 knots</li> <li>• High wind events up to 250 km/h</li> </ul>

#### Involvement of Maurer Soehne

Supply and installation of **54,40 m**  
2 x 27,20 m) **MAURER Swivel Joist**  
**Expansion joints** with seismic Fuse Box  
system (**MAURER DSE 2480 F**)

**Movement capacity:**  
5.010mm in longitudinal direction,  
5.200mm in transverse direction.

**Remarks:**  
Even after major seismic attack and the  
release of the fuse box system, the joints  
can be used by emergency vehicles - the  
life link character of the bridge can be  
maintained.



Fig. 1, 2: Installation of the Rion-Antirion expansion joint

The high seismic activity of the region requires an expansion joint system that can accommodate very high movement values at high velocities. The joint consists of 25 strip seals which can accommodate a movement of 2.500 mm in ULS-case. Each major seismic movement exceeding this value will be accommodated by the Fuse-Box system. Special failure-engineered braking areas will trigger off and provide the additionally required

movement capacity. In case of a Fuse-Box-release, only minor damages in the asphaltic layer will occur which can be retrofitted with relatively low efforts as the joint itself or the connected structural elements are not damaged. Even more important is that the bridge can be crossed directly after the seismic impact at least by emergency vehicles – that way guaranteeing the life-link-character of the bridge.

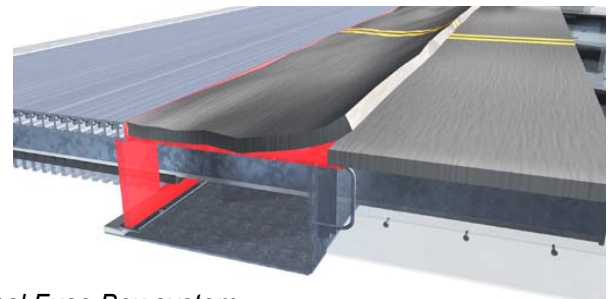


Fig. 3, 4: Release of the longitudinal Fuse Box system

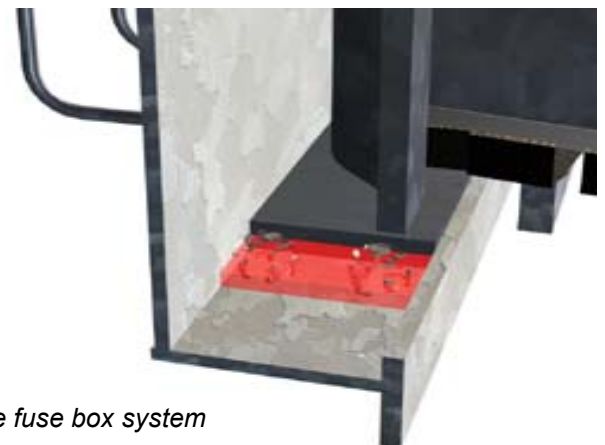
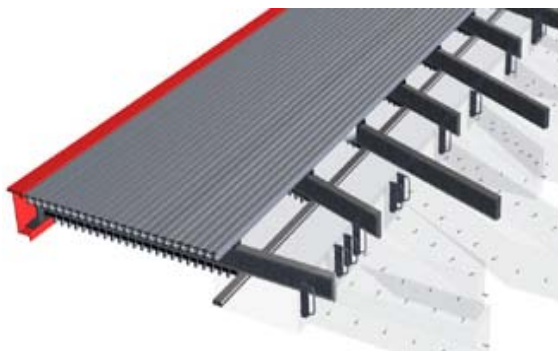


Fig. 5, 6: Release of the transverse fuse box system