

Case Study

Rion Antirion Bridge

Shell Bitumen - supplies bitumen for the world's largest stayed girder bridge in the world – the Rion-Antirion Bridge, Greece



The Rio-Antirion Bridge of is one of modern day's most complex civil engineering projects. At 2252m, it is the longest stayed girder bridge in the world, exceeding the Golden Gate Bridge in San Francisco, USA (1966m), the Normandy Bridge in France (1700m) and the Bridge of Tatara in Japan (1480 m).

A Feat of Civil Engineering

For over 100 years, the Greek Government had harboured a vision of crossing the 3km Corinthe Gulf Strait to connect the Peloponnese with continental Greece, thereby facilitating communication with Italy via the ports of Patras and Igoumenitsa and beyond into the rest of Europe.

The longest stayed girder bridge in the world

Critical Success Factors:	- Proven track record - Hard wearing and crack resistant product - Technical expertise
Application:	Modified Bitumen to roadway
Product family:	Bitumen
Product grade:	Shell Cariphalte
Client:	Greek Government
Contractor:	Gefyra S.A.
Project Engineer:	Fabermaunsell



Shell Bitumen

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The vision remained a dream for many years, as the physical features of the strait presented an exceptional combination of adverse conditions with considerable technical challenges for the construction team:

- the bridge had to span a stretch of water of some 2500m
- water depth up to 65m
- absence of stiff seabed subsoil
- strong seismic activity
- possible tectonic movements

Shell was a key player in the team that made the dream a reality. As exclusive supplier of bitumen for this landmark project, Shell provided xxx quantity of Shell Cariphalte, a modified bitumen.

Shell rises to the challenge

Shell Hellas signed an exclusive agreement to provide bitumen with Koinopraxia Gefyra, the joint-venture (53% VINCI Large Construction Projects) responsible for the construction of bridge. The Shell Cariphalte range of modified bitumen was selected to cover the surface of the bridge and the two viaducts. <More details required.>

The Rio-Antirion Bridge of is one of modern day's most complex civil engineering projects. At 2,252m, it is the longest stayed girder bridge in the world.

Cariphalte is a high performance binder developed by Shell to meet the need for enhanced road performance in terms of resistance to rutting, cracking, stripping and ageing.

Formulated from carefully-chosen combinations of bitumen and thermoplastic elastomers, it is designed for the most rigorous road conditions and longer road life.

Shell Cariphalte - world class product for a world market

With 30 years of experience in the modified bitumen sector, Shell was the first company to add chemical additives to asphalt in order to improve its characteristics.

Cariphalte has a proven track record around the globe and was the binder used to pave the new Sepang International Formula One circuit in Malaysia. As well as various airports; Oslo (Norway), Frankfurt (Germany), St. Angelo (Northern Ireland), Schiphol (Netherlands), London Heathrow (UK).

A world record breaker

The project team has beaten four world records with the construction of this bridge:

- Longest bridge stayed girder with continuous apron (2252m)
- Bridge with the deepest foundations (65m below sea level)
- Capacity to resist earthquakes, higher than 7 on the Richter scale
- Broadest bridge in the world (27.2m)

Gateway to Europe

This bridge is owned for 35 years by the consortium "Gefyra S.A." consisting of VINCI (majority shareholder) and five Greek companies of BTP.

- Toll
- Number of users
- Impact on the economy

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