

Coatzacoalcos immersed tunnel

Mexico



General

The Coatzacoalcos immersed tunnel has an approximate length of 830 metres and runs from the west (city of Coatzacoalcos) to the east (area of Allende) crossing the Rio Coatzacoalcos. The tunnel is a two by two lane road tunnel connecting the river banks of Coatzacoalcos.

The immersed tunnel consists of 6 elements, each with a length of 138 metres. Each tunnel element is built in 6 segments in a casting yard and tied together with permanent cables. A segment is poured in maximum three parts, the first part being the base slab, the second part is the inner walls and the third part the outer walls and roof slab in one continuous pour. Concrete casting is done with cooling pipes to reduce the risk of early age cracking. Segments are cast directly against each other. After inundation of the casting yard, located close to the alignment, the elements are towed out and immersed on to a leveled gravel bed. The immersed tunnel is located in a seismic zone and designed accordingly. There are cut and cover tunnels on both sides forming the entrance to the tunnel.

Design review

COWI is sub-consultant to Cal y Mayor who is consultant to the financial lenders to the concessionaries. COWI has taken on the task to review parts of the project related with the immersed tunnel.

The review focuses on three major areas: 1/ Concrete technology 2/ Construction engineering and 3/ Mechanical engineering. Based on project materials (i.e. drawings and specifications) and site visits, the review identifies areas of technical risk that may lead to financial risk for the bank on the project. The review was started after completion of the detailed design and continues during the start of construction.

Project period: 2006 - 2010
Client: Cal y Mayor y Asociados
Concessionaire: Concesionaria
Túnel de Coatzacoalcos

Services

- Review of Design and Construction

