

Sika at Work



Radès-La Goulette Bridge – Construction Project, Tunisia





Radès-La Goulette Bridge

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Project

The grand Tunis region is divided into southern and northern areas by the Tunis lake canal, and the traffic between the two areas depends on either routes passing through the urban area of Tunis or ferryboats connecting Rades and La Goulette ports. The ferryboats however are limited in service, frequency, and capacity and most of the south-north traffic concentrates on the routes passing through the urban area of Tunis, causing traffic congestion and environmental deterioration in the city.

In the future, as the economic activities in this region will be developed, the tourist demand will be increased and it is preferred to relieve the traffic congestion and improve the environment in the urban area of Tunis.

Against such a background, the road related projects based on the ninth National Development Plan (1997-2001) aim at mitigating the traffic congestion in this area. This project is also considered as an important link connecting the south-east and north-west areas of the metropolitan area.

Requirements

The project is to construct an extra customized bridge as an important portion of the metropolitan ring road crossing the Tunis Lake Canal and connecting the southern and northern areas of the Grand Tunis region to connect Rades on the north side and La Goulette on the south side. The project is the first of its kind in Tunisia and in the whole African continent. It was inaugurated by The President of the Tunisian Republic on the 21st of March 2009.

The concrete structure is divided into three spans measuring respectively 70, 120 and 70 meters. The bridge deck, placed at 20 meters above sea level, is held by two piers with a height of 45 meters. With a width of 23.5 meters, is divided into two channels measuring 3.5 meters each, two lanes of emergency each measuring two meters and a back fill measuring 2.5 meters.

Two access structures have been built: the interchange north consists of caissons sunk multiple curves on a hanger and the south bridge consists of precast prestressed beams. The interchange, which connects the bridge and the expressway Tunis-La Goulette has four bridges and several ramps and it is the most expensive project because it represents 42% of the overall cost and necessity of filling the 25 acres Lake (400 000 sq embankments).





Sika Solution

Sika® Viscocrete® 5400 F:

Superplasticizer used for piles, footing and pier. Solution: Slum test 18 cm after 2 hours. Mechanic resistance required is after 28 days/ 35 MPA

Sika® Viscocrete® Tempo 12:

Superplasticizer used for bridge deck and segment. Solution: Slum test 15 cm after 1h. Mechanic resistance required is to 27 MPA after 48 h.

SikaGrout®-212:

Prestressing anchorage block at the level of bearing machines.

Sika® Anchorfix®-3:

Repairing prefabricated piles. Repair surface concrete, bridge deck, and beam.

Sikadur®-30 colle:

Anchorage of steel bars.



Project Details

Country: Tunisia

Town: Radès-La Goulette

Utility: Road Bridge

Type: Cable stay's Bridge

Length: 260 m

Width: 23.5 m

Height: 20 m

Material: Concrete

Time of work: From 2004 to 2009

Cost of the project: 141 million TND, the equivalent to 74 million Euro. The project is mainly financed by the JBIC (Japanese bank) and Tunisia.

Project Participants

Architects/ Main consulting engineers: Tunisian and Japanese design offices.

Client: Ministry of Equipment and Housing, Directorate General of Highways.

Consulting engineer:

- Nippon Koei
- Pacific Consultant International (PCI)
- Central Company for Land Equipment

Main Contractors: Japanese Companies (TAISEI and KAJIMA) as long as Tunisian ones. Egyptian companies (Arab contractors). French companies (VSL for Cable Stays).

Sika Business Unit Manager Concrete: Karim Rieu

Sika Technical commercial Concrete: Mohamed Ali Zouaghi

Many French design offices contributed in the project such as SITES SAS for monitoring and instrumentation.



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