

Metro line B - Extension towards Oullins

Underground structures

2005 - 2011



FRANCE - Lyon

Client

SYTRAL

Project manager

EGIS Rail

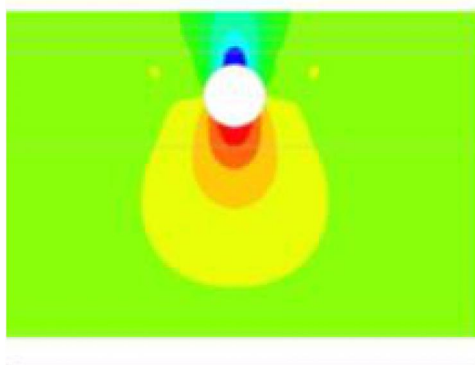
Project owner

SYTRAL

Miscellaneous

Tunnel 1700 m long;
excavation diameter is
9,5 m,

Excavation in: Alluvium,
Molasses, Granite,
Mud-pressure boring
machine



Description of the project

The works for the extension of metro line B at Oullins station started in July 2009. They were due to be finished by the end of 2013. The project consists in the excavation of a single tube tunnel 1.7 km long, requiring the underground crossing of the Rhône river. The single tube will enable two-way traffic flow.

This tunnel is bored by a group of contractors lead by Chantiers Modernes (Vinci group). The excavation itself started in September 2010 using a TBM with 9.5 m of diameter, allowing the creation of a tunnel with 8.35 m interior diameter. The tunnel is bore 17 m below the Rhône river bed (at the deepest point), i.e. 35 m below Rhône river water level, in soils made of alluvium and molasses. On march 2nd 2011, the TBM reached the Oullins-station, after a 5-month excavation. Beyond the line terminus, the TBM has also bored a 300 m tunnel in granite for station facilities.

Description of the mission

Terrasol got involved in different phases of the project :

- In 2005, in the frame of the preliminary studies for Sytral with Setec TPI,
- In 2008, for assistance to a group of companies during the call for tenders phase,
- In the frame of detailed design : finite element calculations using CESAR-LCPC software. Evaluation of surface settlements for 12 calculation profiles, including five monitored sections with parametric studies relating to confining pressure, and back-analyses,
- During the works : participation of Alain Guilloux to the experts committee set up by the group Vinci / Spie