



SIKA AT WORK

THE BAHCE-NURDAG RAILWAY TUNNEL, TURKEY

PRODUCTS FOR TBM: Sika® Stabilizer-1513 TBM

BUILDING TRUST



THE BAHCE-NURDAG RAILWAY TUNNEL



PROJECT DESCRIPTION

Gaziantep province, in Southeastern Turkey, is an important center of agriculture and trade divided into nine districts. With a population of nearly 1.7 million, the province is overhauling its public transportation with a rail line between the town of Bahçe and the Nurdağı district. The Bahce-Nurdag Railway Tunnel will consist of two parallel 10.1 km (6.3 mi) tunnels, excavated by both drill and blast (2.9 km/1.8 mi) and TBM (7.2 km/4.5 mi).

The complex geology of the region is affected by the East Anatolian Fault zone, making ground conditions unpredictable. Mixed ground conditions prevail on the project, and range from interbedded sand-stone, quartzite, and mudstone to highly weathered shale and dolomitic limestone. High water ingress is predicted with several springs directly overhead.

TBM DESCRIPTION

The customized Single Shield TBM was designed with Difficult Ground Solutions (DGS). Closure gates and an emergency sealing system effectively seal off high-pressure intrusions of water. The system reduces or eliminates the amount of mud or water that can pass through the

machine and gives the crew time to safely grout off the water inflows. During such an event the machine would be stopped until water inflows are reduced to the point that the TBM could begin excavation once again.

PRODUCT DESCRIPTION

Sika supported this Project with Sika® Stabilizer-1513 TBM (namely AR-513) which is a foaming agent for excavation in mixed ground and for rock conditions. It has been developed locally to reduce possible wear of the cutting wheel / tools and lowering the dust during excavation.

This foaming agent produces a stable foam and is injected during tunneling operations to condition the ground to be excavated and protecting the steel structure of the cutting wheel and trying to extend the lifetime of the cutting tools.

PROJECT PARTICIPANTS

Owner:	Turkish State Railways (TCDD)
Client:	General Directorate of the Infrastructural Investment
Construction:	Intekar Yapi Turizm Elektrik Insaat San. ve Tic. Ltd
Supplier:	Sika Turkey

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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