



PROJECT NAME

Twin Metro tunnel crossing under the main building of the Central Station of Leipzig in Germany.

CLIENT

German Railway Company DB represented by DEGES GmbH

ENGINEER

Ingenieurgesellschaft VEPRO-FANGER Berlin

GENERAL CONTRACTOR

Consortium City-Tunnel Los C Wayss&Freytag AG, STRABAG AG

SPECIALIST CONTRACTOR

Consortium Freezing CTL
RODIO GmbH Spezialtiefbau
ZÜBLIN SPT GmbH
INSOND Ges.mbH

CONTRACT VALUE

EURO 9.0 Mio CHF 13.5 Mio

BEGINNING OF WORKS

APRIL 2007

END OF WORKS

DICEMBER 2009

■ JOB DESCRIPTION

Two 80 m long, up to 3,0 m thick and 20 m deep frozen walls are growing below the main building of the central station of Leipzig by using soil freezing technique. Due to the dimensions of the structures and the much extended maintenance time (more than 9 months) the so called indirect method (brine freezing) has been chosen. The thermometer and freezing pipes have been installed from two small pilot tunnels with an inside diameter of 2,40 m. The tunnels are located 4 to 5 meters below water level. All drillings have been performed by using blow-out preventer (BOP) to avoid uncontrolled spooling of soil under water pressure. The soil consists mainly of sand and gravel of the quaternary period. The frozen structure partially enters the lower impervious tertiary layer.

■ WORK QUANTITIES

1.200 drill holes 2 to 15 m long. Total drilled length: 9.350 m
Total volume of frozen ground: 16.400 m³
1.100 freezing pipes,
114 thermometer chains with a total of 840 measuring points

■ MAIN EQUIPMENT

2 Drill rigs BERETTA T43 installed on movable star shaped beams
1 Mixing and grouting plant
3 Freezing Plants ARCTOS, freezing power of 380 kW each at -35 °C
Recording of drilling parameters by means of LUTZ LT3 system.



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Ground Freezing



PROJECT

CITY TUNNEL LEIPZIG



Drill rig inside the pilot tunnel



Brine distribution circuit inside the pilot tunnel



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