

PROJECT

METRO LINE U3 MUNICH OLYMPIAPARK HORIZONTAL JET GROUTING IN TUNNEL



PROJECT NAME

Metro Linie 3 Munich Olympiapark

CLIENT

Underground Works Department of the city of Munich (Germany)

ENGINEER

Undegr.Works Dept. Munich

GENERAL CONTRACTOR

Joint Venture ZÜBLIN AG,
and Max. BÖGL AG

SPECIALIST CONTRACTOR

RODIO GmbH

CONTRACT VALUE

EURO 2.5 Mio CHF 3.8 Mio

BEGINNING OF WORKS

MAY 2002

END OF WORKS

MAY 2003

■ JOB DESCRIPTION

RODIO has performed here 13 jet grouting umbrellas each with 59 sub-horizontal columns d. 70 cm (44 along the crown of the tunnel and 15 inside the core of the front). Each jet grouting column has a drill length of 15 m and a jet length of 14 m. The excavation length under the jet grouting umbrella is of 12 m. The excavation of the double track tunnel with an area of 120 m² occurred in full face. The jet grouting treatment was performed inside the quaternary layer of Munich Underground made of loose sandy gravels intercalated by thin silty lenses. Following this method, the high-pressure cement grout jet that cuts the soil, is coated by an air jet to increase its action radius. Every hole is surveyed with inclinometer. The max. drill depth achieves 48 m.

■ WORK QUANTITIES

770 sub-horizontal Jet Grouting Columns with a diameter of 70 cm
Total length of jet grouting columns: 11.200 m,
9.300 m³ injected Cement Grout, Total cem. consumption: 7.000 ton

■ MAIN EQUIPMENT

1 Special drill rig for tunnels SR510 with a 22 m long mast.
1 Full automatic mixing plant RODIO IM20
1 High pressure pump MP7 CIMA with a 400 HP Diesel Motor
Full automatic recording of drilling and jet grouting parameters by means of LT3 LUTZ System.



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Horizontal Jet Grouting



PROJECT

METRO LINE U3 MUNICH OLYMPIAPARK HORIZONTAL JET GROUTING IN TUNNEL



Special tunnel drill rig
RODIO SR 510 inside
the start shaft



Special tunnel drill rig
RODIO SR 510 inside
the start shaft



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Horizontal
Jet Grouting