

Horizontal Jet Grouting



PROJECT

METRO LINE U2 TABORSTRASSE VIENNA



PROJECT NAME

Extension of the Vienna Metro line U2 at the Taborstrasse Station

CLIENT

Wiener Linien Ges.m.b.H.

ENGINEER

Engineering JV U2/2 Taborstrasse: WBI, IGT, Verbundplan

GENERAL CONTRACTOR

Joint Venture U2/2 Taborstrasse Wien
Östu-Stettin GmbH, Wayss & Freytag Ingenieurbau AG,
G. Hinteregger & Söhne Bau Ges.m.b.H.

SPECIALIST CONTRACTOR

DSV Joint Venture U2/2
RODIO Geotechnik AG
RODIO GmbH Spezialtiefbau

CONTRACT VALUE

EURO 7.6 Mio CHF 11.7 Mio

BEGINNING OF WORKS

October 2004

END OF WORKS

October 2005

■ JOB DESCRIPTION

Due to the presence of water bearing layers, the soil surrounding the full face excavation of the twin tunnels had to be consolidated and waterproofed by means of sub-horizontal umbrellas of jet grouting columns and also by fan shaped cut-offs of columns installed from ground level. A particular difficulty has been the reduced overburden of only 12 m of the tunnels passing underneath high buildings with deep foundations. The treatment allowed the withstanding of local water pressures of up to 0.7 bars in the zone of excavation. In order to minimize the possible settlements, a complex volume measuring system to control the balance between injected grout and the evacuated spoil had been set up. The complex geology around the tunnel with frequent alternation of silts, fine sands and coarse gravels with boulders had been another hard trial for the good success of the project.

■ WORK QUANTITIES

Total of 25'900 Jetmeter. Jet grouting umbrellas with 27-35 Columns each. Column diameter: \varnothing 0.6 m; drill length 15 m; Jet length 12.5-14 m; Length of excavation: 12 m. Up to 9 Core Columns with a drill length of 15 m and a jet length of 14 m. Execution of impervious cut-offs at the end of the umbrellas made of 52-86 Jet Grouting Columns each having a drill length of 15 m and a jet length of 3 m.

■ MAIN EQUIPMENT

2 Special Tunnel drill rigs RODIO SR510
1 Full automatic mixing plant Obermann MPR800
1 High pressure triplex Pump Metax MP7
Automatic recording of drilling and jetting parameters by means of LUTZ CL88 and LT3 systems.



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SINCE 1921

Horizontal
Jet Grouting

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Exposed jet grouting column



Tunnel drill rig
RODIO SR510



Placement of wooden plug



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