

# Vertical Jet Grouting



PROJECT

## GOTTHARD ALPTRANSIT CENERI TUNNEL LOT 761 CAMORINO JET GROUTING SLAB



### PROJECT NAME

Alptransit Project Ceneri Tunnel, underpass of the cantonal road under the new Gotthard railway line

### CLIENT

Alp Transit San Gottardo SA

### ENGINEER

Consortium of Engineers of the Magadino Plan

### GENERAL CONTRACTOR

Mancini & Marti SA

### SPECIALIST CONTRACTOR

RODIO Geotechnik AG

### CONTRACT VALUE

EURO 3,13 Mio CHF 4,70 Mio

### BEGINNING OF WORKS

December 2009

### END OF WORKS

December 2011 (expected)

### ■ JOB DESCRIPTION

Scope of the work is the realisation of a bottom slab by means of vertical secant jet grouting columns with the scope of watertightening and strutting of an excavation pit for the undercrossing of the new Gotthard railway line just before the north portal of the Ceneri Tunnel. The site is located in Camorino in the south Swiss canton of Tessin. The soil consists mainly of fine silty sands alternate to fine sandy gravels. The maximum drill depth is approx. 12 meters while the average thickness of the slab is 1,0 to 3,6 meters. The vertical confinement of the excavation pit is made of strutted sheet piles walls. In order to obtain the planned diameter of jet grouting columns of 1,80 m the double jet grouting system Rodinjet-2@ System was chosen. This system consists in cutting and mixing the soil by means of a high pressure cement grout jet, surrounded by a crown of compressed air.

### ■ WORK QUANTITIES

In total 7.120 m of vertically oriented overlapping columns (4.800 pieces) each having a diameter of 180 cm have been executed.

### ■ MAIN EQUIPMENT

1 vertical drill rig Casagrande C8 Super with long mast

1 full automatic mixing plant Metax JM-30

1 Jet Grouting triple pumps Techniwell TW400

Automatic recording of drilling and jet grouting parameters by means of LUTZ CL88 and LT3 systems



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SINCE 1921

Vertical  
Jet Grouting

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LOT 761 CAMORINO JET GROUTING SLAB**



Casagrande C8 super  
drill rig on Lot 761



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