



MTRC 601 HANG HAU STATION & TUNNELS

SCOPE OF WORKS: Rock Grouting works for Tunnel Entrance

MAIN CONTRACTOR :

Dragages and Travaux Publics

EMPLOYER :

MTRC

CONTRACT VALUE ::

1.2 M HK \$

STAFF :

V.DOJET

S.DECAUX

Alan Sin Tat Lung (Grouting Foreman) + 10 p

GROUT MIXES USED :

B/C/W 35/350/870 kgs per m³

Soft gel : 200 kgs Silicate, 25 kgs Sodium Bicarbonate

800 lts of water for setting time of 45 mn

MAIN EQUIPMENT :

1 percussive rig CMV with Odex DHH

115mm Odex casing and accessories

1 grouting frame Domine with pumps PH 2 x 5

Grouting recorders, grouting reel

Single and Double Petrometallic packers

QUANTITIES :

38 drilled holes

489.87 lm drilled, incl. 136.73 m in rock

480.87 lm of TAM installed (incl. 207.28 lm of plain pipe)

180 157 lts of B/C grout

70 911 lts of chemical grout (soft gel)

416 lm of Y 32 rebars installed inside TAM

PROGRAMME ::

August to October 2000

PURPOSE OF THE WORKS

The liaison between MTRC contracts 601 and 611 had to be done through a tunnel section, starting at bay E 13 A, chainage 1010.

To facilitate excavation at the tunnel entrance, a preliminary soil reinforcement treatment has been done:

- improvement of the soil characteristics above the future tunnel excavation, mainly in rock fill and weathered rock
- improvement of the watertightness of the rockhead

Photos showing excavation in rock upon grouting completion, with no water outflow
TAM are clearly identified



WORKS DONE FOR SOIL AND ROCK TREATMENT

Treatment consisted in :

- multistage grouting using “ Tubes a Manchettes” inside fill and weathered rock
- enhancement of the cohesion for the grouted curtain by sealing reinforcement bars inside the TAM

Drilling performed with CMV rig operating Odex DHH

Multistage grouting performed with B/C grout in 2 to 3 phases followed by chemical “soft gel ” grouting

Tremie grouting of the TAM upon completion of grout curtain and installation of rebars

