

## Grouting Instruction VL4 FIRST GROUT FAN

Tunnel	VL4 (W=6,9-H=6,9)
Instruction N°	572-584

Instructed by:	I MARTINEZ
Instruction date:	29-02-2016

Chainage	1+295,3
Total Inflow face	
Total Inflow Probe hole	
Water pressure measured	

	HOLES 1-15	16-21
N° of Grout holes	15	6
Grout holes length (m)	24	24
Grout hole angle ref Tunnel axis	15	0

Position of Grout holes 1st grout round:

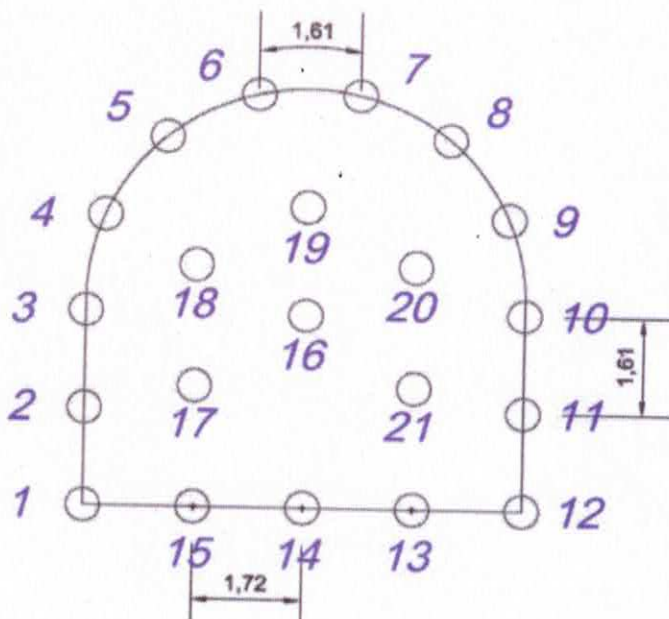
Mark additional holes with x and number

Erase holes not to be used

1-DRILL HOLES 1 TO 15 WITH ANGLE 15° IN ORDER:  
6, 7, 5, 8, 4, 9, 3, 10, 2, 11, 1, 12, 15, 13, 14 AND  
GROUT

2- DRILL HOLES IN ORDER: 17, 21, 18, 20, 19, 16  
PARALLEL TO THE TUNNEL AND GROUT.

THE PACKER SHOULD BE INSTALLED BETWEEN 1,5  
AND 3,0 M (DEPENDING OF ROCK MASS  
CONDITION, REF LEAKAGE)



Design Mix (Type A,B,C, D or E)	A
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WCR	0.65
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Closure criteria

Pmax	25*
Vmax (l/m borehole)	85
GIN	1000

\*IF GROUNDWATER PRESSURE IS  
HIGHER THAN 10 BAR THEN APPLY  
GROUT PRESSURE OF 2,5 TIMES  
GROUNDWATER PRESSURE

## NOTES:

- 1-DRILL GROUTING HOLES TO THE FULL DEPTH AS INSTRUCTED, EVEN WITH SIGNIFICANT DISCHARGE (>2.5 l/sec)
- 2- THE MAXIMUM INCREASE OF GROUTING PRESSURE SHALL BE NOT MORE THAN 2,5 BAR PER MINUTE.
- 3- DRY HOLE SHALL NOT BE REDRILLED OR REGROUTED.

STRABAG

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