

## Grouting Instruction VL4 FIRST GROUT FAN

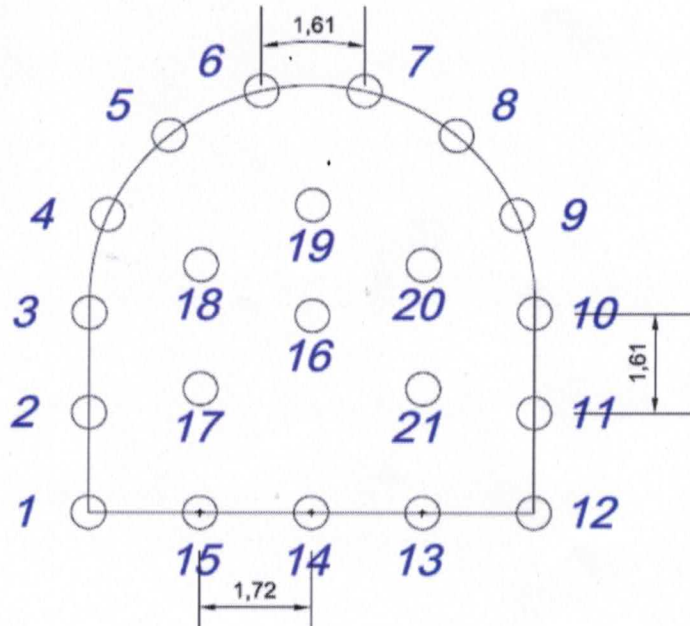
Tunnel	VL4 (W=6,9-H=6,9)
Instruction N°	572

Instructed by:	Andrés Topa P.
Instruction date:	14-01-16

Chainage	14159.3
Total Inflow face	-
Total Inflow Probe hole	3.2 L/s
Water pressure measured	8 Bar

	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°

PRIMARY ROUND: 2,8,14,6,12,4,10,15 AND GROUT

SECONDARY ROUND: 1,7,13,5,11,3,9 AND GROUT

2- DRILL HOLES IN ORDER: 17,19,21,18,20,16  
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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