

Grouting Instruction L1 FIRST GROUT FAN

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|----------------|-------------------|
| Tunnel | L1 (W=8,2-H=8,65) |
| Instruction N° | 572-584 |

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|-------------------------|-------|
| Chainage | 0+350 |
| Total Inflow face | |
| Total Inflow Probe hole | |
| Water pressure measured | |

Mark additional holes with x and number

Erase holes not to be used

1-DRILL HOLES 1 TO 13 WITH ANGLE 15° IN ORDER:
7, 8, 6, 9, 5, 10, 4, 11, 3, 12, 2, 13, 1, 14, 18, 15,
17, 16 AND GROUT

2- DRILL HOLES IN ORDER: 20, 23, 21, 22, 19
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 |
|-----|------|

Closure criteria

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

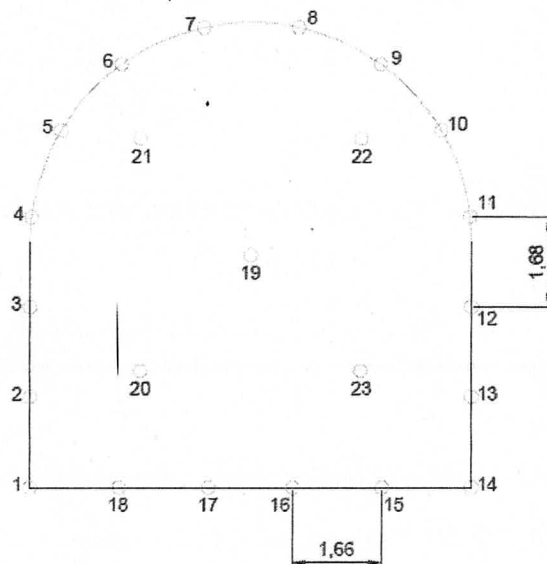
*IT THE WATER PRESSURE IS HIGHER
THAN 10 BAR, THEN APPLY A GROUT
PRESSURE OF 2.5 TIMES THE
GROUNDWATER PRESSURE.

| | |
|-------------------|------------|
| Instructed by: | I MARTINEZ |
| Instruction date: | 07-02-2016 |

HOLES 1-18 19-23

| | | |
|----------------------------------|----|----|
| N° of Grout holes | 18 | 5 |
| Grout holes length (m) | 24 | 24 |
| Grout hole angle ref Tunnel axis | 15 | 0 |

Position of Grout holes 1st grout round:



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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Name Signature
Subjected to possible comments.

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Name

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