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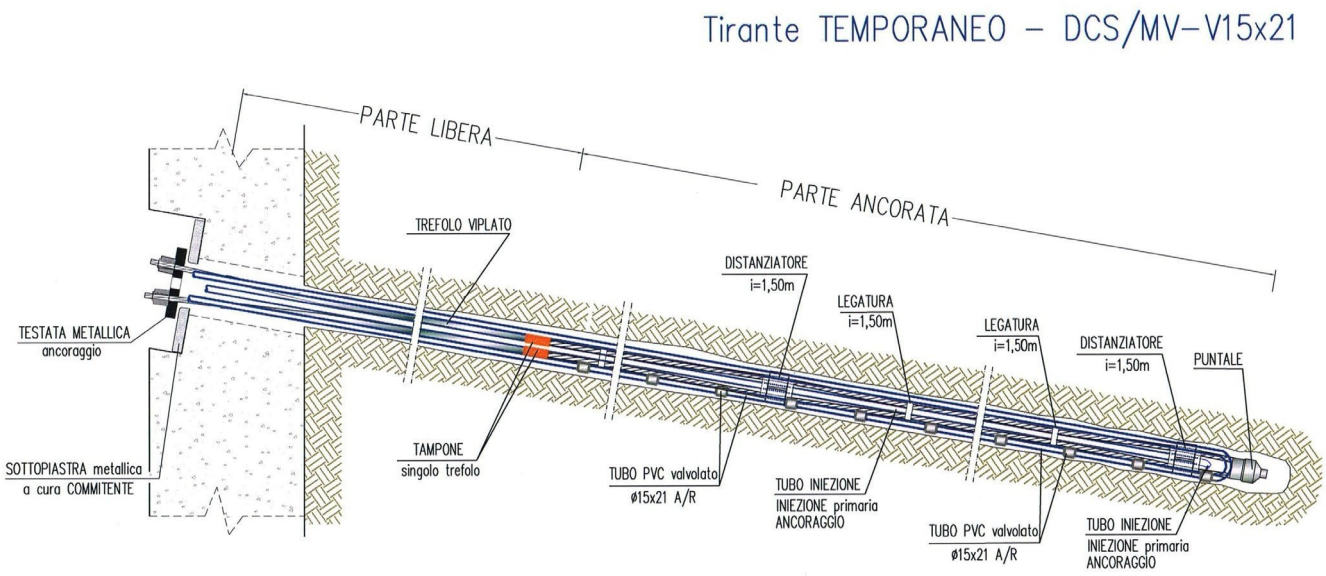
TEMPORARY ANCHOR DCS/MV-V15x21



Encoding, classification, and static function :

Tie rod for geotechnics, **active** type**, temporary,** conforming to UNI EN 1537:2013, suitable for installation by

high-pressure cementing operations (pmax=55bar), particularly suitable for **loose soils**.

Assembly type :

- *Metal reinforcement* → 0.6" strands of stabilized harmonic steel type c.a.p., according to UNI EN10138.
- *strand number* → no. 2-8.
- *maximum operating pull* → 300-1200 kN
- *Cementation mode* → high-pressure injection (**pmax=55bar**), repeated (**I.R.**) carried out by hole mouth
- *anchor stretch protection* → unprotected
- *free tract protection* → unprotected
- single *strand protection* → single st*randing*
- *separation free stretch/anchor stretch* → separation pads for single strand
- single *lock protection* → single lock cover (polyolefin-based synthetic polymer)
- *protection tested anchorage* → CAP protection (polyolefin-based synthetic polymer)

Assembly mode :

Protection of the free part is achieved by impregnation of the strands by suitable anti-corrosive product (grease), after opening the individual strands and subsequent monoplating of the strands themselves using ϕ16.5x19.5mm polyethylene pipe.

In order to increase the adhesion of the reinforcement in the cemented anchorage section (foundation portion)

the bundle of strands is configured with the prescribed 'sinusoidal' pattern, alternating sections of 'tying' (by means of metal ties) with the placement of specific spacers, arranged at spacing of no more than
1.50 ml.

The end of the tie rod has a ferrule (polyolefin-based synthetic polymer) to facilitate insertion of the tie rod into the drill hole.

The ferrule is installed, covering the strands, with metal strapping and tape.

The separation between the free part and the foundation part of the tie rod consists of individual pads made, strand by strand, with the use of specific sealing product (called 'z-strip') and adhesive tape, which prevents the cement mixture from seeping inside the viples.

Inside the borehole, in the anchorage section, the correct positioning of the tie rod is ensured through the use of the specific 'spacers/centers' (made of polyolefin-based synthetic polymer) arranged with maximum spacing i=1.50ml, the installation of which ensures the correct minimum overburden expected.

The first-stage injection, is performed, at medium-low pressure ($p_{max=10bar}$), through a ϕ16x20mm polyethylene tube, arranged within the strand bundle, passing through the holes of the spacers and with the end placed about 10cm from the bottom tip.

To enable the subsequent repeated injection (I.R.), under pressure (**pmax=55bar**), of the anchor bulb is placed (by taping), externally to the bundle of strands, a pvc pipe, ϕ15x21mm, equipped with 'manchettes' valves at the full length of the anchor stretch.

The pipe is equipped with injection valves (i=33-150cm), arranged according to the design and execution requirements provided by the Construction Designer, and a 'blind return', with

plug, at the borehole mouth.

The above tube is used to carry out repeated injection at high pressure, after primary injection has been carried out at low pressures through the ϕ16x20mm tube mentioned in the previous point.

After a few hours for the primary injection mixture to mature, 'post-injection' is performed operating from the mouth, at high pressure ($p_{max=55bar}$) and injecting cementitious mixture, with the purpose of creating sbulbling on the previously made cementitious liner and improving the adhesion effect at the interface with the soil.

After each injection step is finished, the tube can be 'flushed' (by removing the cap of the blind mouth-return element) in order to be able to repeat the high-pressure injection operation several times, if necessary/expected.

Tie rods are complete with metal header plates, of appropriate size and varying according to the number of strands planned, as well as clamping systems (monotube) for stringing them.

At the request of the Client's Technical Representative, all available underplate and/or overplate protection devices suitable to ensure greater durability and reliability of the installed element, in contact with the ground, with any percolating water in the wall and/or rising from the borehole interface as well as exposed to external weathering, can be provided and arranged as a supplement.

In the present case are available :

- ➔ mooth sheaths for free stretch protection
- ➔ ingle-reflection covers.
- ➔ Variable section centralizers
- ➔ ver-plate protection device → CAP protection.
- ➔ **Underplate protection device → tube Packing**