Rock anchor spreader unit 20.0

Art.n° 581468000
Product description

The Rock-anchor spreader unit is used to make single-sided formwork anchoring points in concrete.

- It is strictly forbidden to use the spreader unit more than once, and to take the load off the anchoring points during use and then re-apply a load! (Except where using a "Suspension cone 15.0 with collar", and during the acceptance test.)
- When planning the anchoring point, remember that it is only permissible to subject it to tensile forces.
- The maximum period for which an anchoring point may in use is 6 months.

Items needed

Note:
Only use approved tie-rods!
After work is completed, the tie-rod can be re-used, while the "Rock anchor spreader unit" remains in the drilled hole.

To make an anchoring point, the following items are needed:

<table>
<thead>
<tr>
<th>Item</th>
<th>Designation</th>
<th>Art.n°</th>
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</thead>
<tbody>
<tr>
<td>(A)</td>
<td>Tie-rod 20.0 (length as required)</td>
<td></td>
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<tr>
<td>(B)</td>
<td>Rock-anchor spreader unit 20.0</td>
<td>581468000</td>
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<tr>
<td>(C)</td>
<td>Scaffold tube 48.3mm .....m</td>
<td>682001000</td>
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<tr>
<td>(D)</td>
<td>Tensioning instrument 300kN</td>
<td>581815000</td>
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<tr>
<td>(E)</td>
<td>Super-plate 20.0 B</td>
<td>581424000</td>
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</table>

Drilling the hole

- It is not permitted to use diamond tipped hollow core-drills (trepanning cutter). These cut through reinforcement steel in the concrete, leaving behind a smooth steel surface which causes slippage and deformation of the spreader segments. This prevents the rock-anchor from functioning as it should.

Installation

Make sure that you fit the Rock anchor spreader in the correct mounting position, as shown here.

1) Screw the tie-rod (length e.g. 750 mm) flush into the spreader cone of the Rock anchor spreader unit.
2) Push the Scaffold tube 48.3mm over the tie-rod and fix it with a Super-plate.
3) Push the assembled anchoring point all the way into the cleaned drilled hole, i.e. until it reaches the bottom of the hole.
4) Firmly tighten the Super-plate. This forces the segments to spread so that they bite into the walls of the drilled hole.
5) Remove the Super-plate and the Scaffold tube 48.3mm.
6) Tighten the anchorage point with the Tensioning instrument (see "Carrying out the acceptance test").
Carrying out the acceptance test

**WARNING**

➤ The load-bearing capacity of the anchoring point will depend upon how well the rock-anchor was fitted.
➤ The test-loading tests the load-bearing capacity of the anchoring point.
➤ If the material into which the rock-anchor has been fitted does not have sufficient bearing capacity, the tensioning instrument may suddenly loosen during the suitability test and/or acceptance test.
➤ For this reason, it is forbidden to stand beneath or behind the testing equipment.
➤ Secure the tensioning instrument so that it cannot drop.

➤ For the acceptance test, push the "Hollow-piston cylinder with pressure support" onto the tie-rod and mount the Super-plate 20.0 B.
➤ Apply the test force by operating the hand pump.

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Acceptance test

➤ Every anchoring point must undergo acceptance testing.
➤ The test load is 1.25 times the anchor force actually encountered.

Specimen calculation:
● Test load: $100 \text{ kN} \times 1.25 = 125 \text{ kN}$

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Re-tightening the tie-rod

➤ In this situation, the rock anchor is very sensitive to knocks.
➤ Detach the tensioning instrument.
➤ Re-tighten the tie-rod all the way in to the bottom of the drilled hole.

The anchoring point is now ready for use.

After use

➤ Unscrew the tie-rod and close off the anchoring point so that it cannot be re-used.

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Trial test to determine the permissible load, based on DIN 4125

Suitability test

➤ On every building site, test at least 3 anchors at a location where unfavourable results may be expected.
➤ Load these test anchor-points until they fail, but not to more than max. 220 kN.
➤ The permitted anchor force is determined from the load at failure with a safety factor of 1.5.

Permitted capacity of the tie-rod to DIN 18216:

| 150 kN |
| Specimen calculation: |
| ● Failure load: 160 kN |
| ● Permitted anchor force: $160 \text{ kN}/1.5 = 106.7 \text{ kN}$ |

➤ With reference to the permitted anchor force, space out the anchors and determine the anchor force actually encountered (e.g. 100 kN).
Testing truss for diagonal anchors 15.0/20.0

Is used for preparing an anchoring point at a 45° angle.

Art.n° 580514000

Positioning
➤ Align the notches of the testing truss to the guidelines (A).

Fixing the testing truss

Variant 1: using pegging-tubes
➤ Drill 2 holes, diagonally opposite one another, for the dimension of rock-anchor that is going to be used.

bic. Depth of drilled hole min. 5 cm

Variant 2: using a squared timber spacer
➤ Use a site-provided squared timber (F) as a spacer between the reinforcement (G) and the testing truss. Then drill the hole in the diagonal.

➤ The testing truss is now finally positioned. The procedure from now on is the same as for installing the Rock anchor spreader unit 20.0.