

FinBolt Gen2™ M20 w/packer and exp. shell PC-Coat



FinBolt™ Gen.2 with integrated packer and expansion sleeve in PC-Coat ensures tightness and prevents water intrusion. The bolt can also be used as a traditional combination bolt. It is used for sealing water-carrying boreholes while the expansion sleeve is used for immediate work safety. The bolt is grouted for permanent safety. The new FinBolt™ 2nd generation with steel tube ensures a higher level of reliability, work safety, waterproofing and safety for correct grouting.

Stock programme:

M20x3000 M20x6000
M20x4000
M20x5000 Other lengths on request.

Technical information: Material: B500NC iht. NS3576-3:2012;

Threaded length: 2xM20x150mm (cold rolled thread). ISO metric thread profile acc. to ISO 68-1.

Weight: 3,5-4,0 kg/m (rebar only). Key grip nut acc. to ISO 4032.

Dimension:	Tension area A_s Thread-stem	Yield Strength R_{eH}	Tensile Strength R_m	Ductility A_{gt}
M20x2.5 – Ø20	245- 314 mm ²	Min. 500 N/mm ²	Min. 600 N/mm ²	Min. 8%

Minimum load capacity:

End anchored:

$A_s \times R_{eH}$

Yield: 123 kN

$A_s \times R_m$

Tensile strength: 147 kN

Fully grouted:

Yield: 157 kN

Tensile strength: 186 kN

Recommended torque: 200 Nm. Minimum distance between underside edge of plate and over side of nut: min. 93 mm. See drawing below for more details and illustrations.

Corrosion protection/Pc-Coat

Hot-dip galvanization is carried out in compliance with NS-EN-ISO 1461 and epoxy powder coating in compliance with NS-EN 13438. Regarding coating thickness and further information, please see Document Q/PTC-T19A – Specification for Pc-Coat – SVV/JBV. Please also refer to the Pc-Coat Product Data Sheet and accompanying FDV documentation.

Grouting:

Typical water/cement mixture ratios are 0.3-0.4, and injection pressure is 10-25 bars.

For injection under higher pressure, we recommend following the instructions provided by the injection supplier. However, previous experiences indicate that a normal water/cement mixture ratio is around 0.6 or compensated with SP-substances according to the cement supplier's recommendations. The bolt can withstand up to 60 bars.

Safety / HSE:

When grouting/injecting under high pressure, it is essential to take necessary safety precautions. Never stand in front of the bolt during high pressure operations!

Always use the required safety equipment such as gloves, goggles, and helmet during installation and grouting/injection processes.

Recommended borehole:

Borehole diameter: Ø48mm

Note: Worn-out Ø48mm drill bits may have a smaller diameter and make the installation challenging.

Borehole depth: Bolt length + 100-150mm

Accessories:

Spherical plate

Long nut pipe

Grout nozzle

Hose pinch-off pliers for grout pipe

Installation guide:

The borehole diameter shall be Ø48 mm. The borehole depth should be 100 mm longer than the length of the bolt. Ensure that the hole is thoroughly flushed free of sand and gravel.

1. Mount the spherical plate by sliding it onto the bolt until it reaches the grout head.
2. Install the bolt into the borehole. Make sure that the spherical plate is against the rock surface before tightening it.
3. Tighten the bolt by turning the nut, using an impact wrench. While tightening the bolt, press it against the rock with the impact wrench to prevent rotation. The correct tightening torque is 200 Nm. Note that in soft rock conditions, the tightening torque must be adjusted for each case. When

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you set the appropriate tightening torque, the gasket seals the borehole. This ensures that the gasket functions as intended.

4. Fill the bolt with grout (a cement-based injection material) through the threaded pipe using the injection tool. The bolt is fully filled with grout when it flows out from the air outlet hose.
5. When the grout starts to flow out of the air outlet nozzle, it should be used hose pinch-off pliers to close the flow of grout.
6. If the bolt is used for injecting into cracks and fissures in the surrounding rock, the grouting process should continue until the desired pressure is achieved, with a maximum of 60 Bar.
7. After reaching the desired pressure the injection pipe should be closed or shut off by using the hose pinch-off pliers.
8. Detach the injection tool from the bolt and proceed to the next bolt.

