Bolt anchor FBN II

The cost-efficient fixing for flexible use in non-cracked concrete

VERSIONS
- zinc-plated steel
- stainless steel
- hot-dip galvanised steel

BUILDING MATERIALS
Approved for:
- Concrete C20/25 to C50/60, non-cracked
Also suitable for:
- Concrete C12/15
- Natural stone with dense structure

APPLICATIONS
- Steel constructions
- Guard rails
- Consoles
- Ladders
- Cable trays
- Machines
- Staircases
- Gates
- Façades

ADVANTAGES
- The standard anchorage depth achieves the maximum load-bearing capacities. Thus fewer fixing points and smaller anchor plates are required.
- The reduced anchorage depth reduces the drill hole depth. This minimises the amount of time needed for installation whilst increasing flexibility.
- The long thread balances component tolerances and allows for stand-off installations, thus increasing flexibility.
- Few hammer blows and the minimal torque slippage allow for a noticeably simpler installation.
- The drive-in pin protects the thread from damage, and thus ensures a faster installation and dismantling of the attachment.

FUNCTIONING
- The FBN II is suitable for pre-positioned and push-through installation; also suitable for stand-off installation under certain conditions.
- Prior to installation, place the hexagon nut in the optimal position (the drive-in pin projects by approx. 3 mm out of the hexagon nut).
- When applying the torque, the cone bolt is pulled into the expansion clip and expands it against the drill hole wall.
- The head embossing offers a simple control of the anchoring.
- In the case of series installation, we recommend using the FABS bolt anchor setting tool.

### TECHNICAL DATA

**Bolt anchor FBN II**

**Galvanized**

<table>
<thead>
<tr>
<th>Article name</th>
<th>Art.-No.</th>
<th>ETA-approval</th>
<th>Drill hole diameter $d_0$ [mm]</th>
<th>Anchor length $l$ [mm]</th>
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## Bolt anchor FBN II

**High performance steel anchors**

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### Bolt anchor FBN II

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<th>Art.-No.</th>
<th>Drill hole diameter</th>
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Bolt anchor FBN II

**Highest permissible loads for a single anchor\(^1\) in concrete C20/25\(^4\)**

For the design the complete approval ETA - 07/0211 has to be considered.

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<th>Min. effective anchorage depth h(^{\text{e,\text{min}}}_{\text{c}}) [mm]</th>
<th>Max. effective anchorage depth h(^{\text{e,\text{max}}}_{\text{c}}) [mm]</th>
<th>Min. member thickness h(^{\text{m}}) [mm]</th>
<th>Installation torque T(^{\text{inst}}) [Nm]</th>
<th>Permissible tensile load (N^{\text{perm}}) [kN]</th>
<th>Permissible shear load (V^{\text{perm}}) [kN]</th>
<th>Min. spacing (s^{\text{min}}) [mm]</th>
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For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

5) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

The anchorage depths smaller than 40 mm are only allowed for multiple use for non-structural applications.

**LOADS**

Bolt anchor FBN II A4

**Highest permissible loads for a single anchor\(^1\) in concrete C20/25\(^4\)**

For the design the complete approval ETA - 07/0211 has to be considered.

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<th>Min. member thickness h(^{\text{m}}) [mm]</th>
<th>Installation torque T(^{\text{inst}}) [Nm]</th>
<th>Permissible tensile load (N^{\text{perm}}) [kN]</th>
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The anchorage depths smaller than 40 mm are only allowed for multiple use for non-structural applications.

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\(^1\) The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions \(\gamma_L = 1.4\) are considered. As an single anchor counts e.g. an anchor with a spacing \(s \geq 3 \times h^{\text{ef}}\) and an edge distance \(c \geq 1.5 \times h^{\text{ef}}\). Accurate data see approval.

\(^5\) Minimum possible axial spacings resp. edge distance while reducing the permissible load.