

Rebar anchor FRA with injection systems FIS EM Plus, FIS SB, FIS V Plus, FIS VS Plus LOW SPEED and FIS RC II in accordance with rebar theory

Design resistances and permissible loads¹⁾²⁾ of single, post-installed Rebar anchor in cracked or non-cracked normal concrete of the strength class C20/25³⁾.

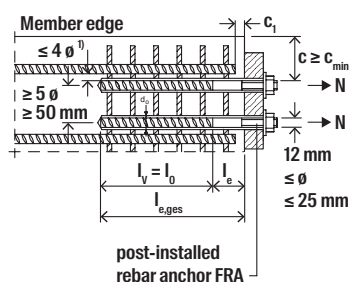
Type	Basic value for anchorage length $l_{b,reqd}$ ⁴⁾ [mm]	Maximum anchorage depth $l_{v,max}$ [mm]	Maximum embedment depth $l_{e,ges,max}$ [mm]	Maximum Installation torque T_{inst} [Nm]	Maximum design resistance for axial tension load $N_{Rd,s}$ ⁵⁾ [kN]	Maximum permissible tension load $N_{perm,s}$ ⁵⁾ [kN]
FRA 12/900 M12	567	800	900	≤ 50	49.2	35.1
FRA 16/1100 M16	756	1000	1100	≤ 100	87.4	62.4
FRA 20/1400 M20	945	1300	1400	≤ 150	136.6	97.6

For planning and design the complete European Technical Assessments ETA-17/1056 (FIS EM Plus), ETA-13/0651 (FIS SB), ETA-20/0728 (FIS V Plus resp. FIS VS Plus LOW SPEED) or ETA-22/0502 (FIS RC II) have to be considered. For determination of the installation parameters (minimum concrete cover distances, etc.) as well as required transverse reinforcement see EN 1992-1-1 and general installation rules of the assessments.

- ¹⁾ The partial safety factors for resistance taken from the European standard EN 1992-1-1 as well as a partial safety factor for action of $\gamma_t = 1.4$ are considered.
- ²⁾ With FIS EM Plus, FIS SB, FIS V Plus, FIS V Plus LOW SPEED and FIS RC II post-installed Rebar anchors are approved in dry or wet concrete with temperatures up to +50 °C (resp. short term up to +80 °C) and drill hole cleaning in accordance with ETA.
- ³⁾ The ETAs for FIS EM Plus, FIS SB, FIS V Plus, FIS V Plus LOW SPEED and FIS RC II permit post-installed rebar connections in concrete C12/15 up to C50/60. The above mentioned basic value for anchorage length changes depending on the relevant concrete strength class.
- ⁴⁾ Basic value of the anchorage length in accordance with EN 1992-1-1, section 8.4.3 for concrete strength class C20/25 and good bond conditions.
- ⁵⁾ For utilisation of the full steel capacity.

General rules of construction

- The Rebar anchor FRA is permitted to transfer tension loads in direction of the axis of the rebar only.
- l_v and l_0 is according to approval.
- According to approval it has to be proved that sufficient transverse reinforcement is available.



¹⁾ If the clear distance of the lapped bars is larger than $4 \times \varnothing$, EC2 must be applied.

- c Concrete cover of the post-installed rebar anchor
- c_1 Concrete cover of the front side of the existing rebar
- l_e Concrete cover above the welding
- c_{min} Minimum concrete cover acc. to approval
- \varnothing Diameter of the post-installed rebar anchor
- l_0 Lap length
- l_v Effective anchorage depth of the rebar anchor
- $l_{e,ges}$ Embedment depth of the rebar anchor
- d_0 Nominal drill diameter