

The push-through anchor for fixings with sophisticated design in cracked concrete



VERSIONS

- zinc-plated steel

BUILDING MATERIALS

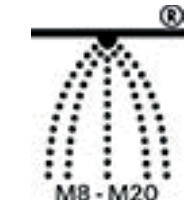
Approved for:

- Concrete C20/25 to C50/60, cracked
- Concrete C20/25 to C50/60, non-cracked

Also suitable for:

- Concrete C12/15
- Natural stone with dense structure

APPROVALS



ADVANTAGES

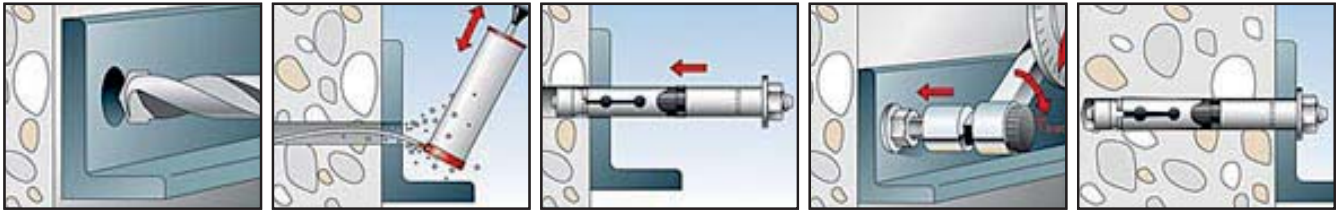
- The anchor construction allows for wide-ranging head shapes for fixing points with sophisticated design.
- The ideal interaction of screw shank and sleeve allows for a high shear load. Thus fewer fixing points are required.
- The international approvals guarantees maximum safety and the best performance. These approvals even cover use in earthquake zones (seismic).
- The optimised geometry reduces the energy required for installation.

APPLICATIONS

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

FUNCTIONING

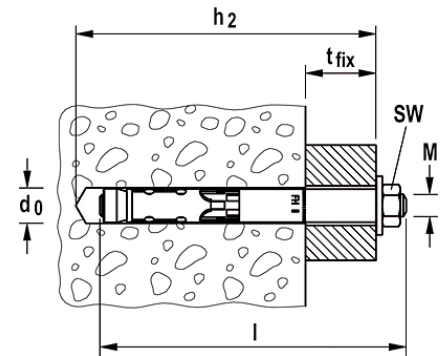
- The FH II is suitable for push-through installation.
- When applying the torque, the cone is pulled into the expansion sleeve and expands it against the drill hole wall.
- The black plastic ring prevents rotation when tightening the anchor, and acts as a crumple zone to take the torque slippage so that the fixture is pulled onto the anchor base.
- Available head shapes for flexible design solutions: Countersunk head (type SK), hexagon head (type S), bolt version with nut and washer (type B) and cap nut (type H).



TECHNICAL DATA



High performance anchor FH II-B



Article name	Art.-No.	ETA-approval	ICC-approval	Drill hole diameter d_0 [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]
FH II 10/10 B	503142	■		10	70	10
FH II 10/25 B	503143	■		10	85	25
FH II 10/50 B	503144	■		10	110	50
FH II 12/10 B	048773	■	▲	12	95	10
FH II 12/100 B	046832	■	▲	12	185	100
FH II 12/25 B	048774	■	▲	12	110	25
FH II 12/50 B	048775	■	▲	12	135	50
FH II 15/10 B	048776	■	▲	15	110	10
FH II 15/100 B	046835	■	▲	15	200	100
FH II 15/25 B	048777	■	▲	15	125	25
FH II 15/50 B	048778	■	▲	15	150	50
FH II 18/100 B	046841	■	▲	18	215	100
FH II 18/25 B	048779	■	▲	18	140	25
FH II 18/50 B	048780	■	▲	18	165	50
FH II 24/100 B	046842	■	▲	24	242	100
FH II 24/25 B	048886	■	▲	24	167	25
FH II 24/50 B	048887	■	▲	24	192	50
FH II 28/100 B	506630	■	▲	28	271	100
FH II 28/30 B	047547	■	▲	28	199	30
FH II 28/60 B	047548	■	▲	28	229	60
FH II 32/30 B	047549	■	▲	32	231	30
FH II 32/60 B	047550	■	▲	32	261	60

LOADS

High performance anchor FH II - B

Highest permissible loads for a single anchor¹⁾ in concrete C20/25⁴⁾

For the design the complete approval ETA - 07/0025 has to be considered.

Type	Effective anchorage depth h_{ef} [mm]	Min. member thickness h_{min} [mm]	Installation torque T_{inst} [Nm]	Cracked concrete				Non-cracked concrete			
				Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance
				$N_{perm}^{3)}$ [kN]	$V_{perm}^{3)}$ [kN]	$s_{min}^{2)}$ [mm]	$c_{min}^{2)}$ [mm]	$N_{perm}^{3)}$ [kN]	$V_{perm}^{3)}$ [kN]	$s_{min}^{2)}$ [mm]	$c_{min}^{2)}$ [mm]
FH II 10 B	40	80	10,0	3,6	4,3	40	40	6,1	6,1	40	40
FH II 12 B	60	120	17,5	5,7	15,4	50	50	11,2	15,4	60	60
FH II 15 B	70	140	38,0	7,6	20,1	60	60	14,1	23,4	70	70
FH II 18 B	80	160	80,0	11,9	24,5	70	70	17,2	34,4	80	80
FH II 24 B	100	200	120,0	17,1	34,3	80	80	24,0	48,1	100	100
FH II 28 B	125	250	180,0	24,0	47,9	100	100	33,6	67,2	120	120
FH II 32 B	150	300	200,0	31,5	63,0	120	120	44,2	88,4	160	180

¹⁾ The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of $\gamma_L = 1,4$ are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$ and an edge distance $c \geq 1,5 \times h_{ef}$. Accurate data see approval.

²⁾ Minimum possible axial spacings resp. edge distance while reducing the permissible load.

³⁾ For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

⁴⁾ For higher concrete strength classes up to C50/60 higher permissible loads may be possible.