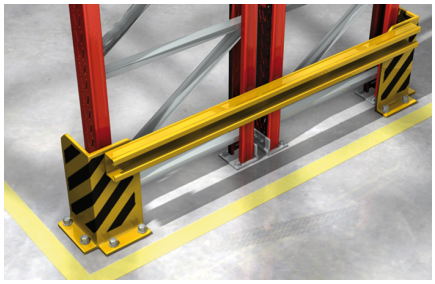
The push-through anchor for fixings with sophisticated design in cracked concrete



VERSIONS

- zinc-plated steel
- stainless 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

ETA-07/0025
ETAG 001
Option 1 for cracked concrete
seismic performance category C1

ICC ES ESR-2691

Fire resistance classification R 120

Rost frei INOX STAINLESS STEEL

M8 - M20

FM APPROVED from M10

SEISMIC

ADVANTAGES

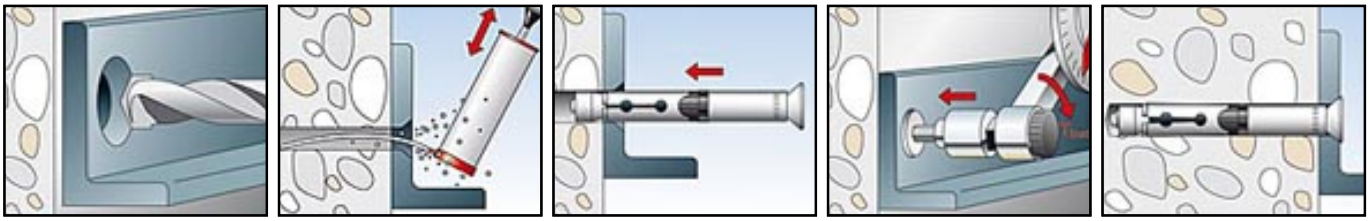
- The anchor construction allows for wide-ranging head shapes for fixing points with sophisticated design.
- The ideal interaction of screw shank and sleeve allows for a high shear load. Thus fewer fixing points are required.
- The international approvals guarantees maximum safety and the best performance. 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

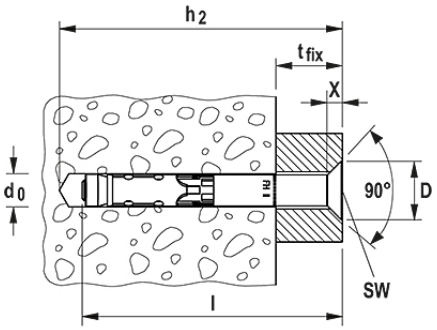
FUNCTIONING

- 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-SK



	X [mm]	ØD [mm]
FH II 10/... SK	5,0	19,5
FH II 12/... SK	5,8	22
FH II 15/... SK	5,8	25
FH II 18/... SK	8,0	32

galvanized

Type	Art.-No.	ETA-approval	ICC-approval	Drill hole diameter d_0 [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]
FH II 10/15 SK	503136	■		10	65	15
FH II 10/25 SK	503137	■		10	75	25
FH II 10/50 SK	503138	■		10	100	50
FH II 12/15 SK	044917	■		12	90	15
FH II 12/25 SK	044918	■		12	100	25
FH II 12/50 SK	044919	■		12	125	50
FH II 15/15 SK	044920	■	▲	15	100	15
FH II 15/25 SK	044921	■	▲	15	110	25
FH II 15/50 SK	044922	■	▲	15	135	50
FH II 18/15 SK	044923	■	▲	18	115	15
FH II 18/25 SK	044924	■	▲	18	125	25
FH II 18/50 SK	044925	■	▲	18	150	50

stainless steel A4

Type	Art.-No.	ETA-approval	ICC-approval	Drill hole diameter d_0 [mm]	Anchor length l [mm]	Max. fixture thickness t_{fix} [mm]
FH II 12/15 SK A4	**510931**	■		12	90	15
FH II 12/30 SK A4	**510932**	■		12	105	30
FH II 12/50 SK A4	**510933**	■		12	125	50
FH II 15/15 SK A4	**510934**	■		15	100	15
FH II 18/30 SK A4	**510935**	■		18	130	30

LOADS

High performance anchor FH II - SK

Highest permissible loads for a single anchor[1] in concrete C20/25[4]

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

				Cracked concrete				Non-cracked concrete			
Type	**Effective anchorage depth h_{ef} [mm]**	**Min. member thickness h_{min} [mm]**	**Installation torque T_{inst} [Nm]**	**Permissible tensile load N_{perm}[3] [kN]**	**Permissible shear load V_{perm}[3] [kN]**	**Min. spacing s_{min}[2] [mm]**	**Min. edge distance c_{min}[2] [mm]**	**Permissible tensile load N_{perm}[3] [kN]**	**Permissible shear load V_{perm}[3] [kN]**	**Min. spacing s_{min}[2] [mm]**	**Min. edge distance c_{min}[2] [mm]**
FH II 10 SK	40	80	10,0	3,6	4,3	40	40	6,1	6,1	40	40
FH II 12 SK	60	120	22,5	5,7	15,9	50	50	11,2	18,9	60	60
FH II 15 SK	70	140	40,0	7,6	20,1	60	60	14,1	28,2	70	70
FH II 18 SK	80	160	80,0	11,9	24,5	70	70	17,2	34,4	80	80

[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.

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FH II 12 SK A4	60	120	25,0	5,7	15,9	50	50	9,5	16,0	60	60
FH II 15 SK A4	70	140	40,0	7,6	20,1	60	60	14,1	24,6	70	70
FH II 18 SK A4	80	160	100,0	11,9	24,5	70	70	17,2	34,4	80	80

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