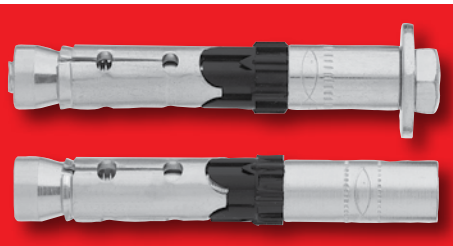
fischer
High-performance anchor FH II

Attractive, strong and intelligent.

ETA
CE
ETA-07/0025
ETAG 001-2
Option 1 for cracked concrete

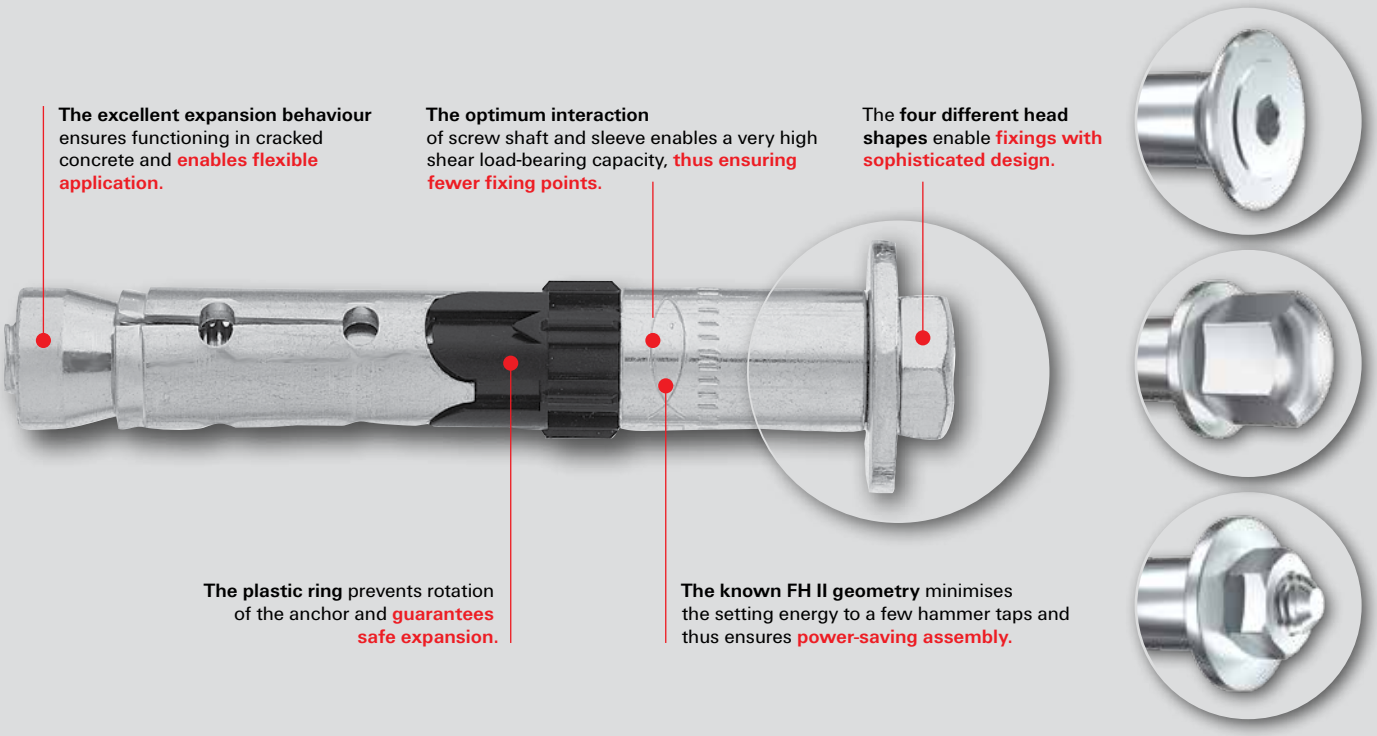
Fire resistance classification
R 120
Sizes of anchors see examination report

ICC ES
ESR-2691
See ICC-ES Evaluation Report at www.ic-es.org
Inspection agency: AA-707



fischer
innovative solutions

High-performance anchor FH II – the push-through anchor for fixings with a sophisticated design.



Attractive and strong.

- 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 base material.

Approvals

ETA-07/0025
ETAG 001-2
Option 1 for cracked concrete

Fire resistance classification R 120
Sizes of anchors see examination report

ESR-2691

M8 – M12

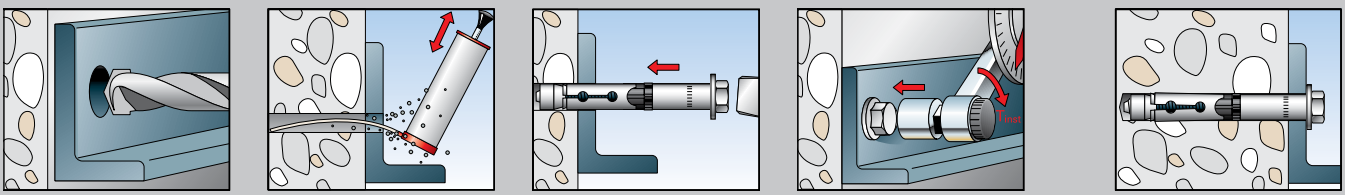
FM APPROVED from M10

EDELSTAHL Rostfrei

Your advantages at a glance

- The anchor design enables different head shapes for **fixing points with a sophisticated design.**
- The ideal interaction between the screw shaft and sleeve enables a **high shear load-bearing capacity.** This means that **fewer fixing points are** needed.
- The **European Technical Approvals** guarantee **maximum safety** and **highest performance.**
- The optimised geometry **reduces the setting energy** thus ensuring **power-saving installation.**
- The detachable screw connection enables **surface-flush removal.**

Installation



Create the drill hole through the fixture.

Clean drill hole (e.g. blow out twice).

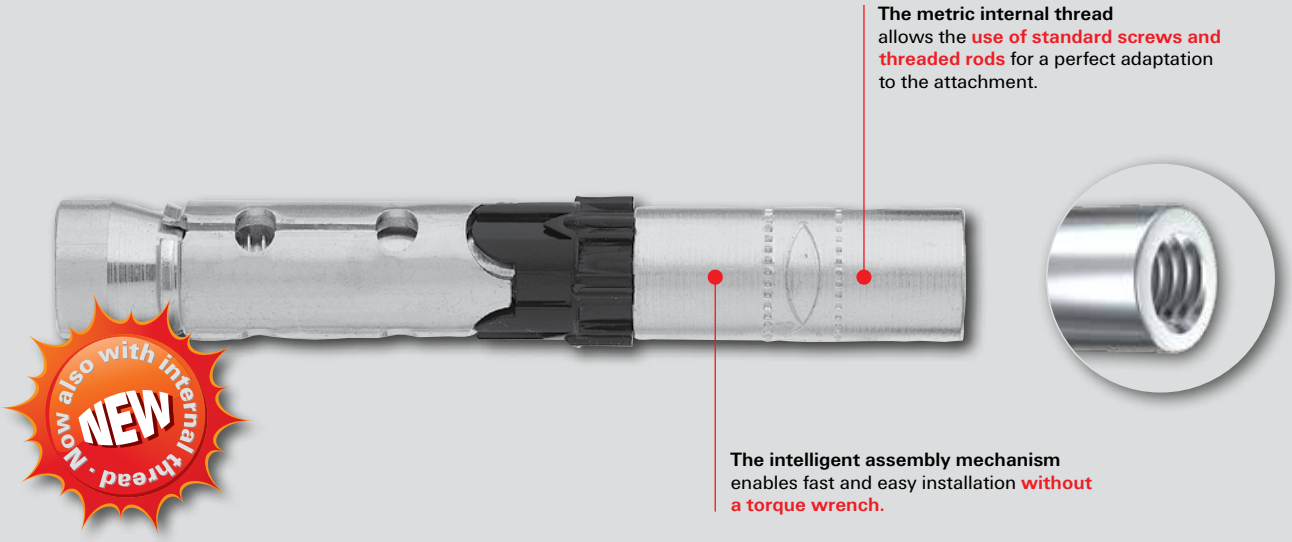
Place the anchor through the fixture into the drill hole.

Apply installation torque.

Done!

High-performance anchor FH II-I – the intelligent internal thread anchor with installation advantage in cracked concrete.

New – can be mounted without torque wrench.



Intelligent and strong.

- The FH II is suitable for pre-positioned installation.
- The internal thread bolt is turned when mounting with a hexagonal wrench. The cone is pulled into the expansion sleeve and expands it against the drill hole wall. At the same time, the anchor is pulled together by compressing the black, plastic ring. There is a safe gap to the concrete surface (see image 4).
- The anchor complies with the approvals when the safe gap is 3–5 mm.
- Alternatively, installation torque T_{inst} can also be applied.

Approvals

ETA-07/0025
ETAG 001-2
Option 1 for cracked concrete

Fire resistance classification
R 120
Sizes of anchors see examination report

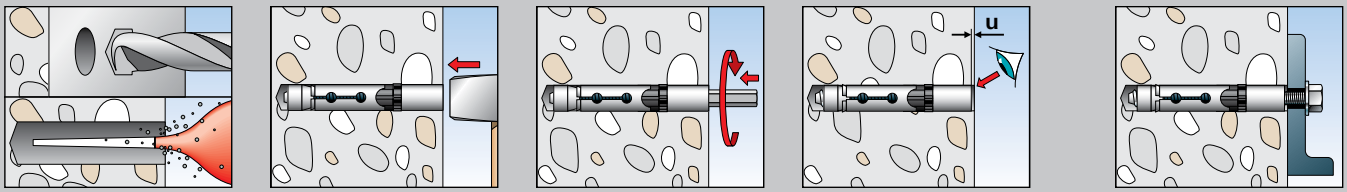
M8 – M12

EDELSTAHL Rostfrei

Your advantages at a glance

- The FH II-I enables **fast, displacement-controlled expansion** with a hexagonal wrench.
- The visual setting control enables an **approval-conform setting procedure, even without a torque wrench.** NEW
- The metric internal thread allows the **use of standard screws and threaded rods** for a perfect adaptation to the attachment.
- The FH II-I enables **surface-flush removal of the attachment** and **reuse of the undamaged fixing point** (optimum flexibility).
- The FH II-I also offers all advantages of the FH II.

Installation



Create drill hole and clean (e.g. blow out twice).

Set the anchor flush to the concrete surface.

Tighten the anchor with the hexagonal wrench.

The anchor must be tightened to 3–5 mm to the concrete surface.

Mount the attachment using the screw or thread rod. Done!

Applications.

FH II: The push-through anchor for fixings with different characters.

Hexagonal head (type S)

- For fixing points with a slight projection of the screw head
- For simple and discreet fixings

Countersunk head (type SK)

- Surface flush fixing points
- Low risk of injury
- Inconspicuous fixing
- Can be combined with standard theft protection for hexagon sockets

Nuts and threaded bolts (type B)

- The practical fastening point: Attachments can be mounted and dismantled
- For technical fixings

Cap nut (type H)

- For fixing points with a large projection of the screw head
- For stable and robust fixings

Applications:

- Railings, stairs, brackets, steel structures, ladders, cable lines, machines, gates, façades, grating and much more

FH II-I: The internal thread anchor for optimum flexibility.

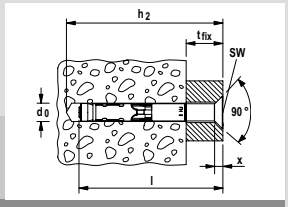
Internal thread (type I)

- Surface-flush dismantling of the attachment and reuse of the undamaged fixing point
- For temporary fixings

Applications:

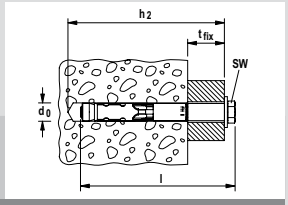
- Steel structures, railings, brackets, ladders, cable lines, machines, stairs, pipelines, ventilation pipes, sprinkler systems and much more.

Range.



High-performance anchor FH II-SK (countersunk head)

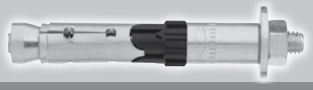
Model	Galvanised steel	A4 stainless steel	Approval		Drill diameter	Min. drill hole depth for push-through installation	Anchor length	Max. effect. length	Thread	Width across nut (hexagon socket)	Diameter of countersunk head	Depth of counter bore	Packaging
			ETA	ICC	d_0	h_2	l	t_{fix}			D	x	
	Art. no.	Art. no.			mm	mm	mm	mm	M	SW	mm	mm	Quantity
FH II 10/15 SK	503136	–	■		10	70	65	15	M6	4	18	5	50
FH II 10/25 SK	503137	–	■		10	80	75	25	M6	4	18	5	50
FH II 10/50 SK	503138	–	■		10	105	100	50	M6	4	18	5	50
FH II 12/15 SK	044917	510931	■		12	95	90	15	M8	5	22	5.8	25
FH II 12/25 SK	044918	–	■		12	105	100	25	M8	5	22	5.8	25
FH II 12/30 SK	–	510932	■		12	110	105	30	M8	5	22	5.8	25
FH II 12/50 SK	044919	510933	■		12	130	125	50	M8	5	22	5.8	25
FH II 15/15 SK	044920	510934	■	▲	15	105	100	15	M10	6	25	5.8	25
FH II 15/25 SK	044921	–	■	▲	15	115	110	25	M10	6	25	5.8	25
FH II 15/50 SK	044922	–	■	▲	15	140	135	50	M10	6	25	5.8	25
FH II 18/15 SK	044923	–	■	▲	18	120	115	15	M12	8	32	8	20
FH II 18/25 SK	044924	–	■	▲	18	130	125	25	M12	8	32	8	20
FH II 18/30 SK	–	510935	■		18	135	130	30	M12	8	25	8	20
FH II 18/50 SK	044925	–	■	▲	18	155	150	50	M12	8	32	8	20

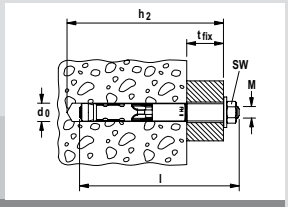


High-performance anchor FH II-S (hexagon)

Model	Galvanised steel	A4 stainless steel	Approval		Drill diameter	Min. drill hole depth for push-through installation	Anchor length	Max. effect. length	Thread	Width across nut	Packaging
			ETA	ICC	d_0	h_2	l	t_{fix}			
	Art. no.	Art. no.			mm	mm	mm	mm	M	SW	Quantity
FH II 10/10 S	503133	510923	■		10	65	70	10	M6	10	50
FH II 10/25 S	503134	510924	■		10	80	85	25	M6	10	50
FH II 10/50 S	503135	–	■		10	105	110	50	M6	10	50
FH II 12/10 S	044884	510925	■	▲	12	90	90	10	M8	13	50
FH II 12/25 S	044885	510926	■	▲	12	105	105	25	M8	13	50
FH II 12/50 S	044886	–	■	▲	12	130	130	50	M8	13	25
FH II 15/10 S	044887	510927	■	▲	15	100	106	10	M10	17	25
FH II 15/25 S	044888	510928	■	▲	15	115	121	26	M10	17	25
FH II 15/50 S	044889	–	■	▲	15	140	146	50	M10	17	25
FH II 18/10 S	046847	–	■	▲	18	115	118	10	M12	19	20
FH II 18/25 S	044894	510929	■	▲	18	130	132	25	M12	19	20
FH II 18/50 S	044896	–	■	▲	18	155	157	50	M12	19	20
FH II 24/25 S	044898	502711	■	▲	24	150	160	25	M16	24	10
FH II 24/50 S	044900	–	■	▲	24	175	185	50	M16	24	10
FH II 28/30 S	044901	–	■	▲	28	185	192	30	M20	30	4
FH II 28/60 S	044902	–	■	▲	28	215	222	60	M20	30	4
FH II 32/30 S	044903	–	■	▲	32	210	215	30	M24	36	4
FH II 32/60 S	044904	–	■	▲	32	240	245	60	M24	36	4

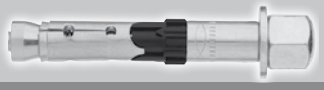
Range.

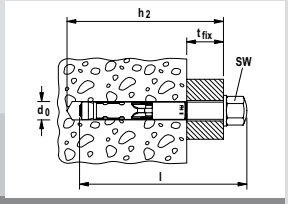




High-performance anchor FH II-B (bolts and nuts)

Model	Galvanised steel	Approval		Drill diameter	Min. drill hole depth for push-through installation	Anchor length	Max. effect. length	Thread	Width across nut	Packaging
	Art. no.	ETA	ICC	d_0 mm	h_2 mm	l mm	t_{fix} mm	M	SW	Quantity
FH II 10/10 B	503142	■		10	65	70	10	M6	10	50
FH II 10/25 B	503143	■		10	80	85	25	M6	10	50
FH II 10/50 B	503144	■		10	105	110	50	M6	10	50
FH II 12/10 B	048773	■	▲	12	90	95	10	M8	13	50
FH II 12/25 B	048774	■	▲	12	105	110	25	M8	13	50
FH II 12/50 B	048775	■	▲	12	130	135	50	M8	13	25
FH II 12/100 B	046832	■	▲	12	180	185	100	M8	13	25
FH II 15/10 B	048776	■	▲	15	100	110	10	M10	17	25
FH II 15/25 B	048777	■	▲	15	115	125	25	M10	17	25
FH II 15/50 B	048778	■	▲	15	140	150	50	M10	17	25
FH II 15/100 B	046835	■	▲	15	190	200	100	M10	17	20
FH II 18/25 B	048779	■	▲	18	130	140	25	M12	19	20
FH II 18/50 B	048780	■	▲	18	155	165	50	M12	19	20
FH II 18/100 B	046841	■	▲	18	205	215	100	M12	19	10
FH II 24/25 B	048886	■	▲	24	150	167	25	M16	24	10
FH II 24/50 B	048887	■	▲	24	175	192	50	M16	24	10
FH II 24/100 B	046842	■	▲	24	225	242	100	M16	24	5
FH II 28/30 B	047547	■	▲	28	185	198	30	M20	30	4
FH II 28/60 B	047548	■	▲	28	215	228	60	M20	30	4
FH II 28/100 B	506630	■	▲	28	255	268	100	M20	30	4
FH II 32/30 B	047549	■	▲	32	210	231	30	M24	36	4
FH II 32/60 B	047550	■	▲	32	240	261	60	M24	36	4



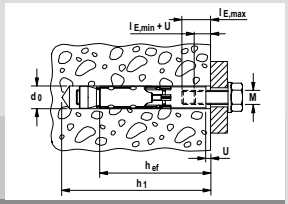


High-performance anchor FH II-H (cap nut)

Model	Galvanised steel	Approval		Drill diameter	Min. drill hole depth for push-through installation	Anchor length	Max. effect. length	Thread	Width across nut	Packaging
	Art. no.	ETA	ICC	d_0 mm	h_2 mm	l mm	t_{fix} mm	M	SW	Quantity
FH II 10/10 H	503139	■		10	65	75	10	M6	13	50
FH II 10/25 H	503140	■		10	80	90	25	M6	13	50
FH II 10/50 H	503141	■		10	105	115	50	M6	13	50
FH II 12/10 H	044905	■		12	90	100	10	M8	17	50
FH II 12/25 H	044906	■		12	105	115	25	M8	17	50
FH II 12/50 H	044907	■		12	130	140	50	M8	17	25
FH II 15/10 H	044908	■	▲	15	100	115	10	M10	17	25
FH II 15/25 H	044909	■	▲	15	115	130	25	M10	17	25
FH II 15/50 H	044910	■	▲	15	140	155	50	M10	17	25
FH II 18/25 H	044915	■	▲	18	130	145	25	M12	19	20
FH II 18/50 H	044916	■	▲	18	155	170	50	M12	19	20

Range, loads.

Incl. hexagonal bolt in each package



High-performance anchor FH II-I (internal thread)

Model	Galvanised steel	A4 stainless steel	Approval	Drill diameter	Min. drill hole depth for pre-positioned installation	Anchor length	Safe gap	Min. screw depth	Max. screw depth	Thread	Torque	Drive	Packaging
				d_0	h_0	l	u	$l_{E,min}$	$l_{E,max}$		T_{inst}		
	Art. no.	Art. no.	ETA	mm	mm	mm	mm	mm	mm	M	[Nm]	SW	Quantity
FH II 12/M6 I	**520358**	520360	■	12	85	77.5	3-5	11 + U	25	M6	15	6	25
FH II 12/M8 I	**520359**	520361	■	12	85	77.5	3-5	13 + U	25	M8	15	8	25
FH II 15/M10 I	**519014**	519018	■	15	95	90	3-5	10 + U	25	M10	25	6	25
FH II 15/M12 I	**519015**	519019	■	15	95	90	3-5	12 + U	25	M12	25	8	20

Loads.

High performance anchor FH II - S

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	Min. member thickness	Installation torque	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance
	h_{ef} [mm]	h_{min} [mm]	T_{inst} [Nm]	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 S	40	80	10	3.6	4.3	40	40	6.1	6.1	40	40
FH II 12 S	60	120	22.5	5.7	15.9	50	50	11.2	18.9	60	60
FH II 15 S	70	140	40	7.6	20.1	60	60	14.1	28.2	70	70
FH II 18 S	80	160	80	11.9	24.5	70	70	17.2	34.4	80	80
FH II 24 S	100	200	160	17.1	34.3	80	80	24	48.1	100	100
FH II 28 S	125	250	180	24	47.9	100	100	33.6	67.2	120	120
FH II 32 S	150	300	200	31.5	63	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.

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	Min. member thickness	Installation torque	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance	Permissible tensile load	Permissible shear load	Min. spacing	Min. edge distance
	h_{ef} [mm]	h_{min} [mm]	T_{inst} [Nm]	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 SK	40	80	10	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	7.6	20.1	60	60	14.1	28.2	70	70
FH II 18 SK	80	160	80	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.

Loads.

High performance anchor FH II - H

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 H	40	80	10	3.6	4.3	40	40	6.1	6.1	40	40
FH II 12 H	60	120	22.5	5.7	15.4	50	50	11.2	15.4	60	60
FH II 15 H	70	140	40	7.6	20.1	60	60	14.1	23.4	70	70
FH II 18 H	80	160	80	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.

High performance anchor FH II - B

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 B	40	80	10	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	7.6	20.1	60	60	14.1	23.4	70	70
FH II 18 B	80	160	80	11.9	24.5	70	70	17.2	34.4	80	80
FH II 24 B	100	200	120	17.1	34.3	80	80	24	48.1	100	100
FH II 28 B	125	250	180	24	47.9	100	100	33.6	67.2	120	120
FH II 32 B	150	300	200	31.5	63	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.

High performance anchor FH II - S A4

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 S A4	40	80	15	3.6	4.3	40	40	6.1	6.1	40	40
FH II 12 S A4	60	120	25	5.7	15.9	50	50	9.5	16	60	60
FH II 15 S A4	70	140	40	7.6	20.1	60	60	14.1	24.6	70	70
FH II 18 S A4	80	160	100	11.9	24.5	70	70	17.2	34.4	80	80
FH II 24 S A4	100	200	160	17.1	34.3	80	80	24	48.1	100	100

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.

High performance anchor FH II - SK A4

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 12 SK A4	60	120	25	5.7	15.9	50	50	9.5	16	60	60
FH II 15 SK A4	70	140	40	7.6	20.1	60	60	14.1	24.6	70	70
FH II 18 SK A4	80	160	100	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.

High performance anchor FH II - I (screw property class 8.8[5])

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 12/M6 I	60	125	15	4.3	4.6	50	50	7.6	4.6	60	60
FH II 12/M8 I	60	125	15	4.3	8	50	50	9.5	8	60	60
FH II 15/M10 I	70	150	25	5.7	13.1	60	60	14.1	13.1	70	70
FH II 15/M12 I	70	150	25	5.7	13.7	60	60	14.1	13.7	70	70

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 $c \geq 1{,}5 \times h_{ef}$.
2) Minimum possible axial spacings resp. edge distance while reducing the permissible load. The combination of the given min. spacing and min. edge distance is not possible.
One of them has to be increased according approval.
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.
5) Values for further screw property classes acc. approval.

High performance anchor FH II - I A4 (screw property class A4-70[5])

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 12/M6 I A4	60	125	15	4.3	3.2	50	50	5.3	3.2	60	60
FH II 12/M8 I A4	60	125	15	4.3	6	50	50	9.5	6	60	60
FH II 15/M10 I A4	70	150	25	5.7	9.2	60	60	14.1	9.2	70	70
FH II 15/M12 I A4	70	150	25	5.7	13.7	60	60	14.1	13.7	70	70

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 $c \geq 1{,}5 \times h_{ef}$.
2) Minimum possible axial spacings resp. edge distance while reducing the permissible load. The combination of the given min. spacing and min. edge distance is not possible.
One of them has to be increased according approval.
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.
5) Values for further screw property classes acc. approval.

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