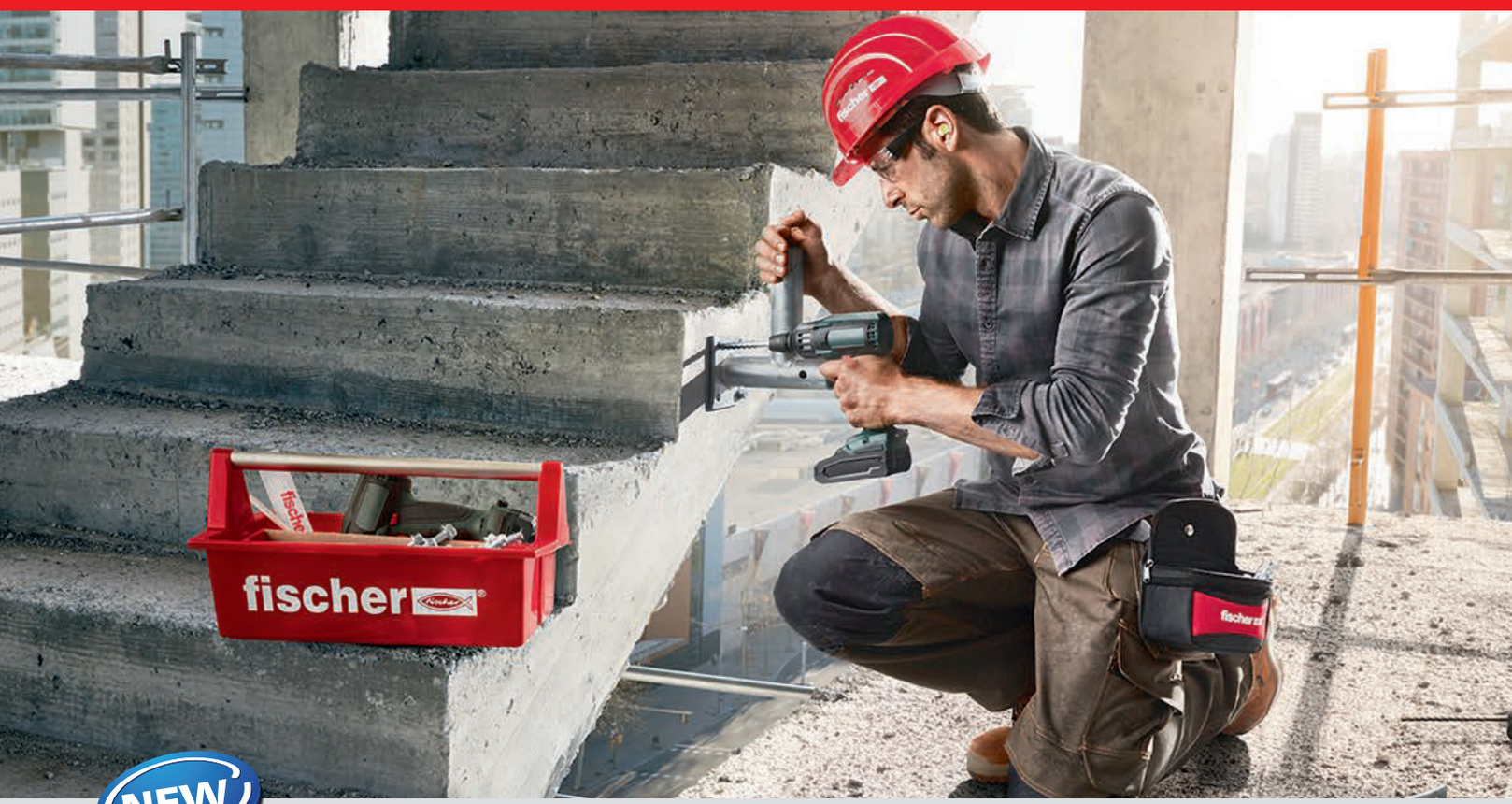
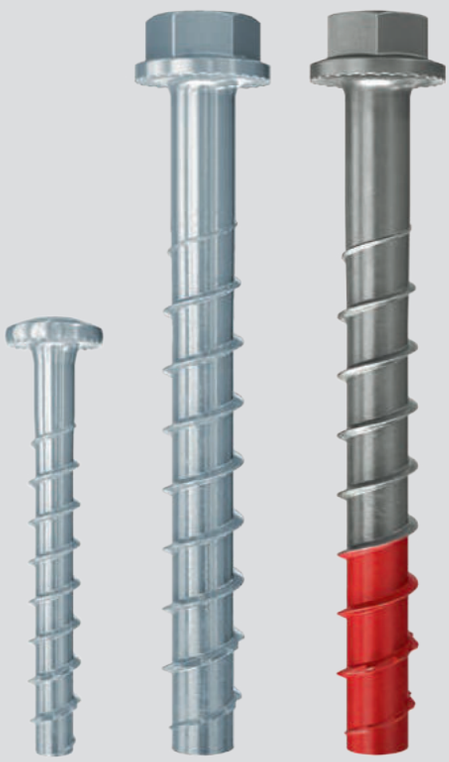


NEW

fischer concrete screw ULTRACUT FBS II

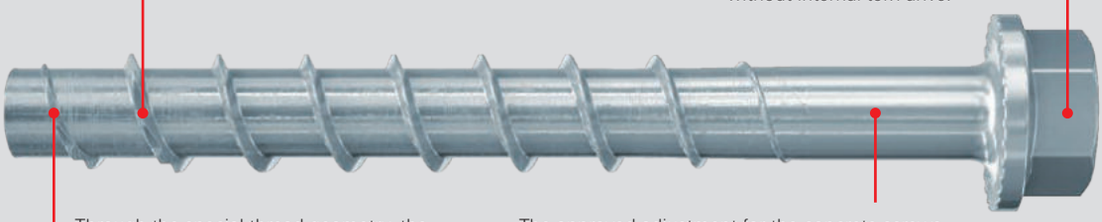
The high-performance concrete screw for absolute installation ease



fischer
innovative solutions

fischer ULTRACUT FBS II 8,10,12 and 14 zinc-plated steel

The high-performance concrete screw for absolute installation ease

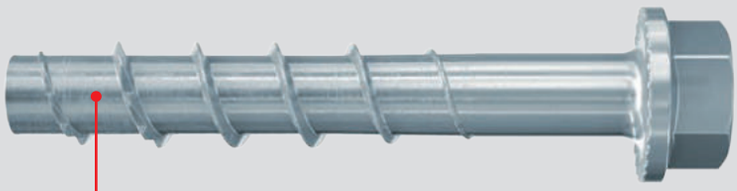


Unique saw-tooth geometry **cuts quickly into the concrete** – also in multiple use and reinforced concrete.

The ULTRACUT FBS II is available in different head designs. **Countersunk and hexagonal head** with and without internal torx drive.

Through the special thread geometry, the screw flanks cut deeply into the concrete and allow **higher loads.** This **saves costs** because less anchor points and smaller base plates are required.

The approved adjustment for the concrete screws allows the screw to be unscrewed twice for a total length of 20 mm, to place maximum 10 mm **packing below the base plate head or to align the attached part, and then to tighten the screw again.**



The short ULTRACUT FBS II, with a reduced embedment depth, allows for **a short drill hole depth, fast installation and less reinforcement hits** which makes it an efficient choice for many applications.

The ribs under the head prevent accidental loosening of the anchor making the system **more secure.**

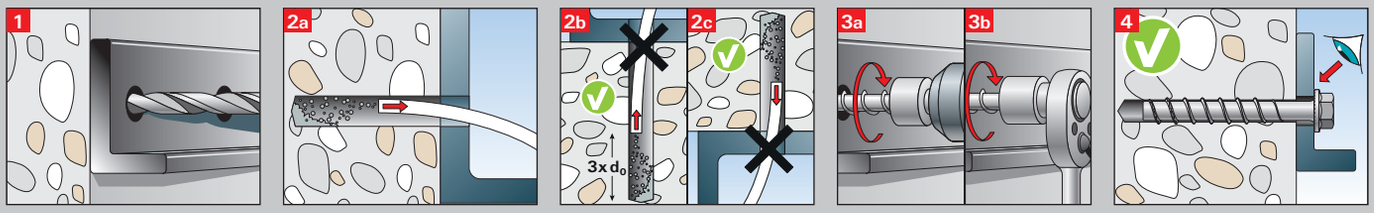
Functionality

- The ULTRACUT FBS II is recommended for the push-through installation.
- The screw is installed correctly when the screw head sits flush on the fixture and cannot be screwed in deeper (visual setting control).
- Drill holes do not need to be cleaned during vertical installation (ceiling and floor). For floor fixings the hole must be drilled 3x drill hole diameter deeper.
- We recommend using a tangential impact screwdriver with a suitable impact screwdriver socket or an internal torx drive.
- The assessment document also covers the use of hollow drills with automatic drill hole cleaning and the use of diamond drilling holes.

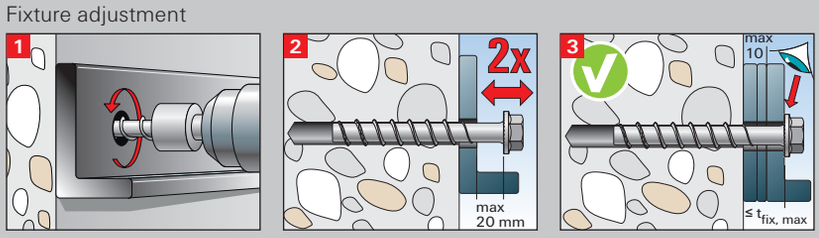
Your advantages at a glance

- With up to 3 embedment depths, the ULTRACUT FBS II allows for the same screw to be used for different component thicknesses.
- Expansion-free anchoring (undercut) allows for lowest edge- and axial spacings.
- The assessment (ETA Option 1) covers the use of single-point anchors in cracked and non-cracked concrete.
- The performance categories seismic C1 and C2 ensures that the strictest of safety standards and earthquake specifications can be fulfilled.
- The countersunk head is suitable for visually appealing installations.
- The checking gauge allows for reuse in temporary fixings (e.g. inclined supports) covered by the approval.

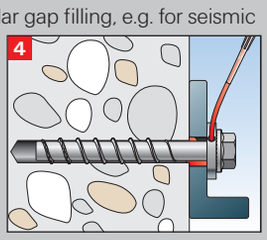
Installation



Fixture adjustment



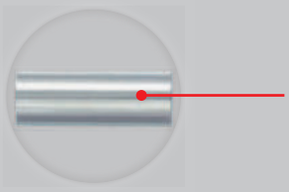
Annular gap filling, e.g. for seismic



Reusability

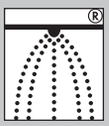
Temporary fixings and reusability in green concrete according to Z-21.8 - 2049 (valid for diameter 8 — 14, also in low-strength concrete).

The checking gauge must be pushed over the thread of the ULTRACUT FBS II every time before installation. As soon as the screw end protrudes through the sleeve, the thread is too worn and is no longer approved for use. The concrete screw must always be checked for visible damage (e.g. corrosion) and replaced, if necessary.



The checking gauge, available separately, allows the outer diameter of the thread to be checked prior to the screw being reused; this complies with **the approval for multiple use.**

Approvals

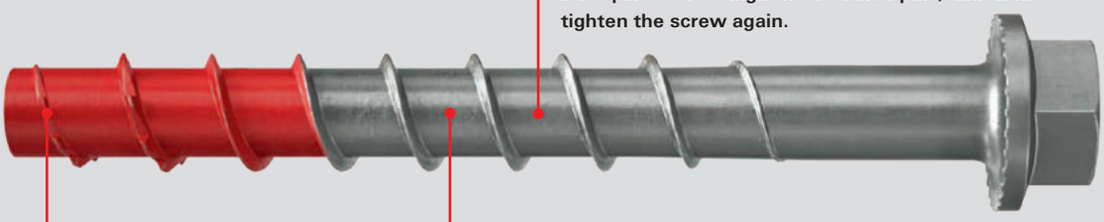


Building materials

fischer ULTRACUT FBS II 8, 10 and 12 A4 stainless steel

The high-performance concrete screw for absolute installation ease in outdoor areas

NEW

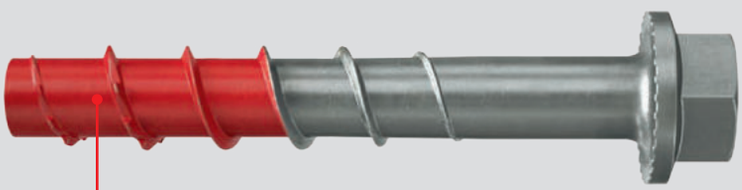


The approved adjustment for the concrete screws allows the screw to be unscrewed twice for a total length of 20 mm, to place maximum 10 mm **packing below the base plates or to align the attached part, and then to tighten the screw again.**

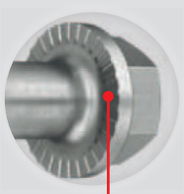
Unique saw-tooth geometry **cuts quickly into the concrete – also in reinforced concrete.**

The three embedment depths, allow for using the ULTRACUT FBS II A4 in many different applications and **enable a high flexibility.**

Countersunk design allows a **flush installation.**



The short ULTRACUT FBS II A4, with a reduced embedment in depth, allows for **a short drill hole depth, fast installation and less reinforcement hits.**



The ribs under the head prevent accidental loosening of the anchor making the system **more secure.**

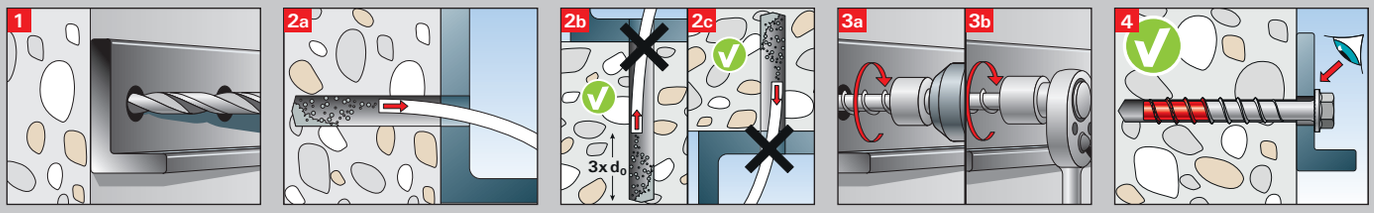
Functionality

- The ULTRACUT FBS II A4 is recommended for the push-through installation.
- The screw is installed correctly when the screw head sits flush on the fixture and cannot be screwed in deeper (visual setting control).
- Drill holes do not need to be cleaned during vertical installation (ceiling and floor). For floor fixings the hole must be drilled 3x drill hole diameter deeper.
- We recommend using a tangential impact screwdriver with a suitable impact screwdriver socket or an internal torx drive.

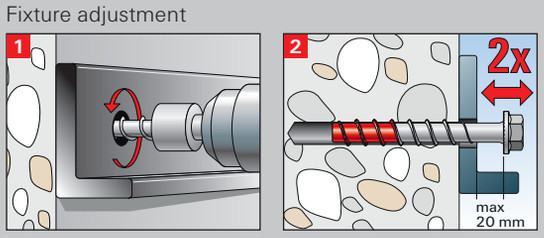
Your advantages at a glance

- The specially hardened red tip provides faster and more secure installation.
- The stainless steel concrete screw guarantees a high level of corrosion resistance especially for wet conditions and in outdoor areas.
- The performance categories seismic C1 and C2 ensure that the strictest of safety standards are fulfilled (also for high earthquake specifications).
- The concrete screw ULTRACUT FBS II A4 can also be used in masonry.
- Using diamant and hollow drills the concrete screw ULTRACUT FBS II offers a fast and secure fixing.

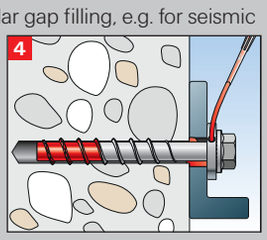
Installation



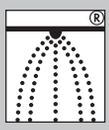
Fixture adjustment



Annular gap filling, e.g. for seismic



Approvals



Building materials

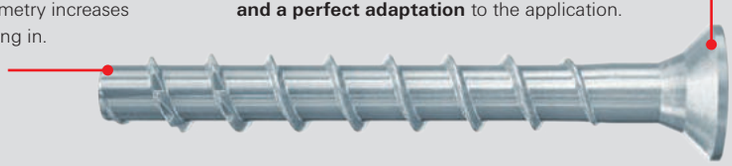
fischer ULTRACUT FBS II 6 zinc-plated steel

The high-performance concrete screw for absolute installation ease

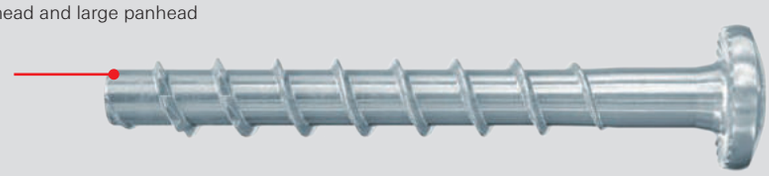
NEW

Concrete screw ULTRACUT FBS II 6 SK
The special double angle on the under-head geometry increases the stability of the concrete screw during screwing in.

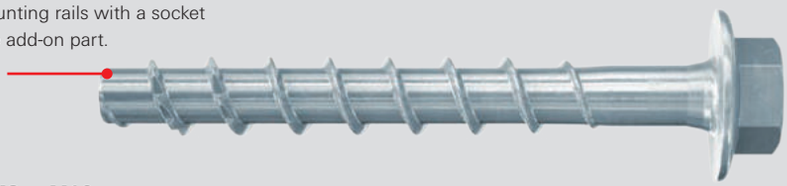
Different head designs offer a **maximum of flexibility and a perfect adaptation** to the application.



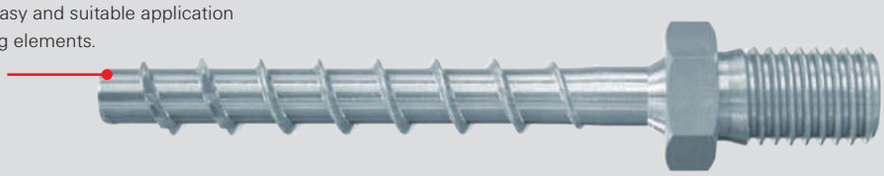
Concrete screw ULTRACUT FBS II 6 P / LP
The design of the concrete screw with panhead and large panhead allows for aesthetic installation.



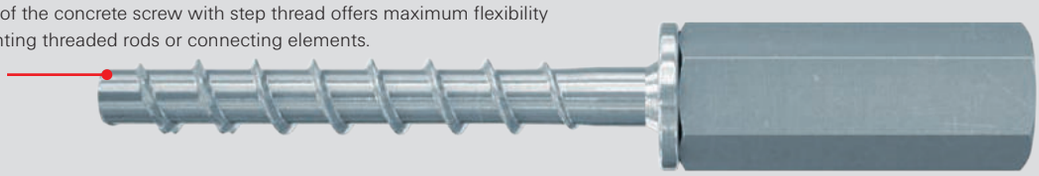
Concrete screw ULTRACUT FBS II 6 US
The special head geometry for use in mounting rails with a socket (SW10) enables simple installation of the add-on part.



Concrete screw ULTRACUT FBS II 6 M8 or M10
The hanger bolt enables the easy and suitable application of pipe clamps and connecting elements.



Concrete screw ULTRACUT FBS II 6 M8/M10 I
The design of the concrete screw with step thread offers maximum flexibility when mounting threaded rods or connecting elements.



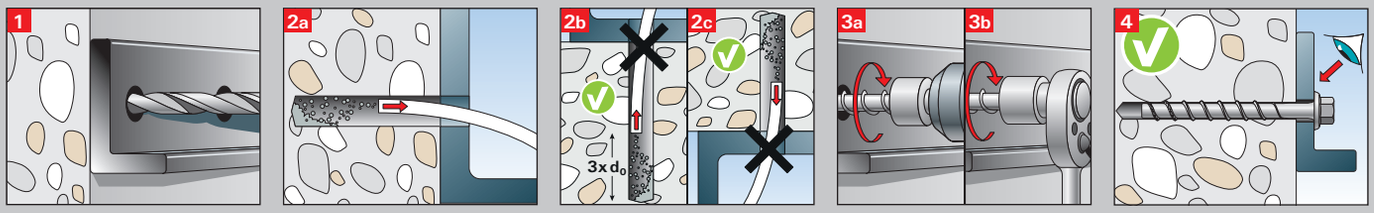
Functionality

- The ULTRACUT FBS II 6 is recommended for the push-through and pre-positioned installation.
- We recommend using a tangential impact screwdriver with a suitable impact screwdriver socket or an internal torx drive.
- Drill holes do not need to be cleaned during vertical installation (ceiling and floor). For floor fixing the hole must be drilled 3x drill hole diameter deeper.
- The screw is installed correctly when the screw head sits flush on the fixture and cannot be screwed in deeper (visual setting control).

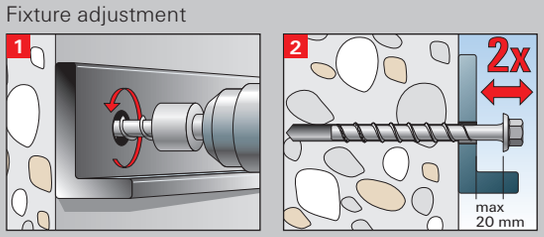
Your advantages at a glance

- The special ratio between flank and shaft diameter allows for a deep and fast cutting into the concrete.
- The ETA assessment option 1 includes the use in cracked and non-cracked concrete for highest safety requirements.
- The ULTRACUT FBS II 6 is approved for multiple use of non-load bearing systems and thereby ideal for the installation of pipe routes, cable trays and prestressed hollow concrete ceilings.
- The first diameter 6 mm concrete screw with an ETA assessment for the C1 seismic performance category for additional safety standards.
- The approved adjustment for the concrete screws allows the screw to be unscrewed twice for a total length of 20 mm, to place maximum 10 mm packing below the screw head or to align the attached part, and then to tighten the screw again.

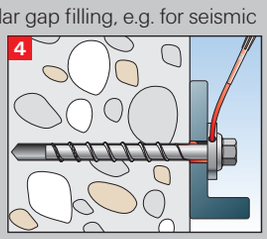
Installation



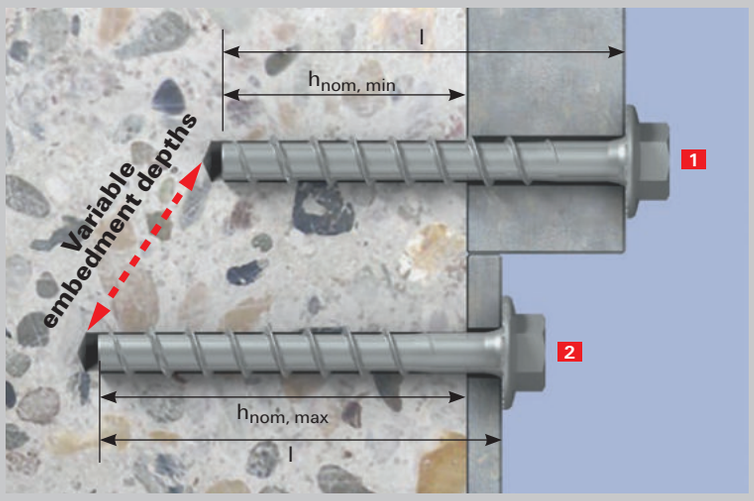
Fixture adjustment



Annular gap filling, e.g. for seismic



Variable embedment depths - Enables a flexible adaptation to the loads



1 Fast installation due to minimum embedment depth
e.g. FBS II 6x60/5 US
Minimum embedment depth is 40 mm
Permissible tensile load at $h_{nom, min}$ 40 mm is 1,2 kN
Permissible shear load at $h_{nom, min}$ 40 mm is 4,3 kN

2 Maximum load due to maximum embedment depth
e.g. FBS II 6x60/5 US
Minimum embedment depth is 55 mm
Permissible tensile load at $h_{nom, max}$ 55 mm is 2,4 kN
Permissible shear load at $h_{nom, max}$ 55 mm is 6,3 kN

Approvals

ETA-15/0352
EAD 330011-00-0601
Option 1 for cracked concrete
seismic performance category C1

ETA-18/0242
EAD 330747-00-0601
Multiple use for non-structural applications in concrete

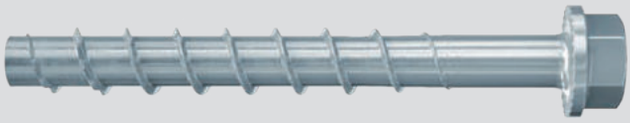
Feuerwider-standsklasse R 120
Dübelgrößen siehe Prüfbericht

SEISMIC C1

Building materials

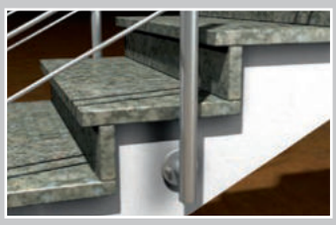
Applications

fischer ULTRACUT FBS II 8,10,12 and 14 zinc-plated steel



Metal construction

Railings



- For maximum loads and minimal edge and axial spacings in cracked concrete.

e. g. ULTRACUT FBS II 10x95 SK

Shelving systems

- For the anchoring of impact protection for high shear forces.

e. g. ULTRACUT FBS II 14x125 US

Brackets / base plates

- For maximum loads in cracked concrete.

e. g. ULTRACUT FBS II 12x110 US

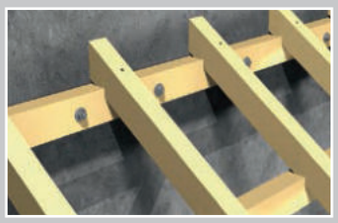
Timber work

Step/rise anchorage

- Ideal for very large fixing thicknesses.
- Ideal for adjustment after installation.

e. g. ULTRACUT FBS II 10x230 US + washer

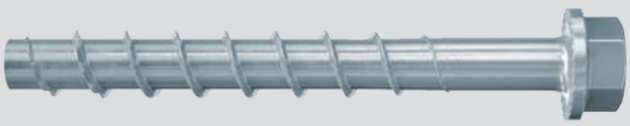
Beam anchorage



- For the perfect transmission of force between the screw and the step / beam.

e. g. ULTRACUT FBS II 10x200 US + washer

fischer ULTRACUT FBS II 8,10,12 and 14 zinc-plated steel



Formwork construction / site facilities

Inclined supports

- Reuseable
- For the temporary anchoring of inclined supports or formwork props.

e. g. ULTRACUT FBS II 14x125 US

Site facilities in tunnels

- Reuseable
- For the temporary anchoring of supply lines in tunnels.

e. g. ULTRACUT FBS II 10x120 US

Sanitary / heating / electrics

Pipelines

- For the anchoring of heavy pipelines.

e. g. ULTRACUT FBS II 10x90 US

Cable trays

- For fast anchoring in a push through installation method.
- For maximum loads with fire approval.

e. g. ULTRACUT FBS II 8x70 US

Air conditioner

- Version with integral washer and additional internal torx drive for a perfect installation with tight mounting rails.

e. g. ULTRACUT FBS II 8x90 US TX

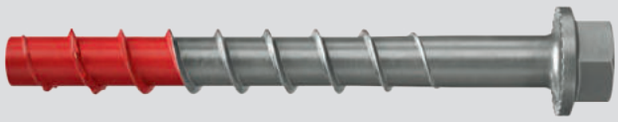
Diamond drill

- Fixing of diamond drill machines.

e. g. ULTRACUT FBS II 12x150 US

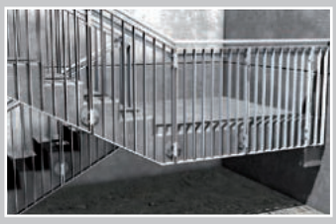
Applications

fischer ULTRACUT FBS II 8, 10 and 12 A4 stainless steel



Metal construction and outdoor applications

Railings



- For maximum loads and minimum edge/axial spacing in cracked concrete.

e. g. ULTRACUT FBS II 10x120 US A4

Brackets / base plates

- For maximum loads in cracked and non-cracked concrete in wet conditions.

e. g. ULTRACUT FBS II 12x110 US A4

Canopies

- For anchoring in wet conditions.

e. g. ULTRACUT FBS II 12x130 US A4

Stadium seating anchoring

- Perfect solution for seating anchoring in outdoor areas.

e. g. ULTRACUT FBS II 10x120 US A4

Balcony railings

- Secure and corrosion-resistant anchoring with the concrete screw ULTRACUT FBS II A4.

e. g. ULTRACUT FBS II 10x95 SK A4

Column footing

- Visually sophisticated installation in outdoor areas with the countersunk head.

e. g. ULTRACUT FBS II 10x100 SK A4

fischer ULTRACUT FBS II 6 zinc-plated steel

Sanitary, heating and electrical industry

Mounting channels

- Suited for the installation of mounting channels for anchoring pipelines or pipe trays.

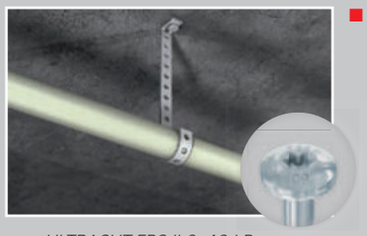
e. g. ULTRACUT FBS II 6x40 P

Suspended mounting channels

- With the aid of the M8/M10 hanger bolt, multiple and individual suspensions of e.g. ventilation ducts, pipelines and sprinkler systems can be installed.

e. g. ULTRACUT FBS II 6x55 M8/19

Perforated tapes



- With the help of the panhead version, different perforated tapes can be installed quickly and easily indoors.

e. g. ULTRACUT FBS II 6x40 LP

Prestressed hollow concrete ceilings

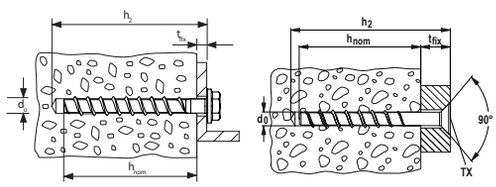
- From a mirror web thickness of 25 mm, pipes or air conditioners can be installed on prestressed hollow ceiling concrete.

e. g. ULTRACUT FBS II 6x35 M8/M10 I

Product range

ULTRACUT FBS II - US - hexagon head

ULTRACUT FBS II - SK - countersunk head

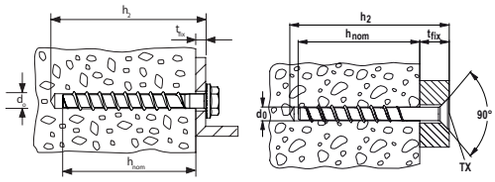


Concrete screw ULTRACUT FBS II

Item	Art.-No. zinc plated steel gvz	Approval ETA	Nominal drill-Ø d_0 [mm]	Minimum drill depth at push-through mode h_2 [mm]	Screws outer diameter x length [mm]	Screwing depth $h_{nom,1}$ [mm]	$t_{fix\,1}$ [mm]	$h_{nom,2}$ [mm]	$t_{fix\,3}$ [mm]	$h_{nom,3}$ [mm]	$t_{fix\,3}$ [mm]	Width across flat /internal torx drive [SW/TX]	Sales unit [pcs]
FBS II 8x55 5/- US TX	**536851**	■	8	65	10x55	50	5	-	-	-	-	13/40	50
FBS II 8x70 20/5 US TX	**536852**	■	8	80	10x70	50	20	-	-	65	5	13/40	50
FBS II 8x80 30/15 US TX	**536853**	■	8	90	10x80	50	30	-	-	65	15	13/40	50
FBS II 8x90 40/25 US TX	**536854**	■	8	100	10x90	50	40	-	-	65	25	13/40	50
FBS II 8x100 50/35 US TX	**536855**	■	8	110	10x100	50	50	-	-	65	35	13/40	50
FBS II 8x110 60/45 US TX	**536856**	■	8	120	10x110	50	60	-	-	65	45	13/40	50
FBS II 8x130 80/65 US TX	**536857**	■	8	140	10x130	50	80	-	-	65	65	13/40	50
FBS II 10x60 5/-/- US	**536858**	■	10	70	12x60	55	5	-	-	-	-	15	50
FBS II 10x70 15/5/- US	**536859**	■	10	80	12x70	55	15	65	5	-	-	15	50
FBS II 10x80 25/15/- US	**536860**	■	10	90	12x80	55	25	65	15	-	-	15	50
FBS II 10x90 35/25/5 US	**536861**	■	10	100	12x90	55	35	65	25	85	5	15	50
FBS II 10x100 45/35/15 US	**536862**	■	10	110	12x100	55	45	65	35	85	15	15	50
FBS II 10x120 65/55/35 US	**536863**	■	10	130	12x120	55	65	65	55	85	35	15	50
FBS II 10x140 85/75/55 US	**536864**	■	10	150	12x140	55	85	65	75	85	55	15	50
FBS II 10x160 105/95/75 US	**536865**	■	10	170	12x160	55	105	65	95	85	75	15	50
FBS II 10x200 145/135/115 US	**536866**	■	10	210	12x200	55	145	65	135	85	115	15	20
FBS II 10x230 175/165/145 US	**536867**	■	10	240	12x230	55	175	65	165	85	145	15	20
FBS II 10x260 205/195/175 US	**536868**	■	10	270	12x260	55	205	65	195	85	175	15	20
FBS II 12x70 10/-/- US	**536869**	■	12	80	14x70	60	10	-	-	-	-	17	20
FBS II 12x85 25/10/- US	**536870**	■	12	95	14x85	60	25	75	10	-	-	17	20
FBS II 12x110 50/35/10 US	**536871**	■	12	120	14x110	60	50	75	35	100	10	17	20
FBS II 12x130 70/55/30 US	**536872**	■	12	140	14x130	60	70	75	55	100	30	17	20
FBS II 12x150 90/75/50 US	**536873**	■	12	160	14x150	60	90	75	75	100	50	17	20
FBS II 14x75 10/-/- US	**536874**	■	14	90	16x75	65	10	-	-	-	-	21	20
FBS II 14x95 30/10/- US	**536875**	■	14	110	16x95	65	30	85	10	-	-	21	20
FBS II 14x100 35/15/- US	**536876**	■	14	115	16x100	65	35	85	15	-	-	21	20
FBS II 14x125 60/40/10 US	**536877**	■	14	140	16x125	65	60	85	40	115	10	21	10
FBS II 14x150 85/65/35 US	**536878**	■	14	165	16x150	65	85	85	65	115	35	21	10
FBS II 8x60 10/- SK	**536880**	■	8	70	10x60	50	10	-	-	-	-	40	50
FBS II 8x80 30/15 SK	**536881**	■	8	90	10x80	50	30	-	-	65	15	40	50
FBS II 8x90 40/25 SK	**536882**	■	8	100	10x90	50	40	-	-	65	25	40	50
FBS II 10x65 10/-/- SK	**536884**	■	10	75	12x65	55	10	-	-	-	-	50	50
FBS II 10x80 25/15/- SK	**536885**	■	10	90	12x80	55	25	65	15	-	-	50	50
FBS II 10x95 40/30/10 SK	**536886**	■	10	105	12x95	55	40	65	30	85	10	50	50
FBS II 10x100 45/35/15 SK	**536887**	■	10	110	12x100	55	45	65	35	85	15	50	50
FBS II 10x120 65/55/35 SK	**536888**	■	10	130	12x120	55	65	65	55	85	35	50	50

ULTRACUT FBS II A4 - US - hexagonal head

ULTRACUT FBS II A4 - SK - countersunk head



Concrete screw ULTRACUT FBS II A4

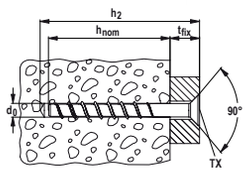
Item	Art.-No. stainless steel A4	Approval ETA	Nominal drill-Ø d_0 [mm]	Minimum drill depth at push-through mode h_2 [mm]	Screws outer diameter x length [mm]	Screwing depth $h_{nom,1}$ [mm]	$t_{fix\,1}$ [mm]	$h_{nom,2}$ [mm]	$t_{fix\,2}$ [mm]	$h_{nom,3}$ [mm]	$t_{fix\,3}$ [mm]	Width across flat /internal torx drive [SW/TX]	Sales unit [pcs]
FBS II 8x60 10/- US A4	**543565**	■	8	70	10x60	50	10	-	-	-	-	13	50
FBS II 8x70 20/5 US A4	**543566**	■	8	80	10x70	50	20	-	-	65	5	13	50
FBS II 8x80 30/15 US A4	**543567**	■	8	90	10x80	50	30	-	-	65	15	13	50
FBS II 8x90 40/25 US A4	**543568**	■	8	100	10x90	50	40	-	-	65	25	13	50
FBS II 10x60 5/-/- US A4	**543569**	■	10	70	12x60	55	5	-	-	-	-	15	50
FBS II 10x70 15/5/- US A4	**543570**	■	10	80	12x70	55	15	65	5	-	-	15	50
FBS II 10x80 25/15/- US A4	**543571**	■	10	90	12x80	55	25	65	15	-	-	15	50
FBS II 10x90 35/25/5 US A4	**543572**	■	10	100	12x90	55	35	65	25	85	5	15	50
FBS II 10x100 45/35/15 US A4	**543573**	■	10	110	12x100	55	45	65	35	85	15	15	50
FBS II 10x120 65/55/35 US A4	**543574**	■	10	130	12x120	55	65	65	55	85	35	15	50
FBS II 12x70 10/-/- US A4	**543575**	■	12	80	14x70	60	10	-	-	-	-	17	20
FBS II 12x85 25/10/- US A4	**543576**	■	12	95	14x85	60	25	75	10	-	-	17	20
FBS II 12x110 50/35/10 US A4	**543577**	■	12	120	14x110	60	50	75	35	100	10	17	20
FBS II 12x130 70/55/30 US A4	**543578**	■	12	140	14x130	60	70	75	55	100	30	17	20
FBS II 8x60 10/- SK A4	**543579**	■	8	70	10x60	50	10	-	-	-	-	T40	50
FBS II 8x80 30/15 SK A4	**543580**	■	8	90	10x80	50	30	-	-	65	15	T40	50
FBS II 8x90 40/25 SK A4	**543581**	■	8	100	10x90	50	40	-	-	65	25	T40	50
FBS II 10x65 10/-/- SK A4	**543582**	■	10	75	12x65	55	10	-	-	-	-	T50	50
FBS II 10x80 25/15/- SK A4	**543583**	■	10	90	12x80	55	25	65	15	-	-	T50	50
FBS II 10x95 40/30/10 SK A4	**543584**	■	10	105	12x95	55	40	65	30	85	10	T50	50
FBS II 10x100 45/35/15 SK A4	**543585**	■	10	110	12x100	55	45	65	35	85	15	T50	50
FBS II 10x120 65/55/35 SK A4	**543586**	■	10	130	12x120	55	65	65	55	85	35	T50	50

Product range

ULTRACUT FBS II 6 P
panhead

ULTRACUT FBS II 6 SK
countersunk head

ULTRACUT FBS II 6 US
hexagon head

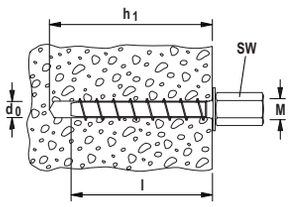


Concrete screw ULTRACUT FBS II 6

Item	Art.-No. zinc plated steel gvz	Approval ETA	Nominal drill-Ø d_0 [mm]	Minimum drill depth at push-through mode h_2 [mm]	Screws outer diameter x length [mm]	Variable screwing depth / Fix screwing depth: screwing depth $h_{nom,max} - h_{nom,min}$ [mm]	Variable screwing depth / Fix screwing depth: usable length $t_{fix,max} - t_{fix,min}$ [mm]	Width across flat /internal torx drive [SW/TX]	Sales unit [pcs]
FBS II 6x30/5 P	**546377**	■	6	40	7,5x30	25	Anchor length - h_{nom}	T30	100
FBS II 6x40/5 P	**546378**	■	6	50	7,5x40	35-25	Anchor length - h_{nom}	T30	100
FBS II 6x40/5 LP	**546379**	■	6	50	7,5x40	35-25	Anchor length - h_{nom}	T30	100
FBS II 6x60/5 P	**546380**	■	6	70	7,5x60	55-25	Anchor length - h_{nom}	T30	100
FBS II 6x80/25 P	**546381**	■	6	90	7,5x80	55-25	Anchor length - h_{nom}	T30	100
FBS II 6x30/5 SK	**546382**	■	6	40	7,5x30	25	Anchor length - h_{nom}	T30	100
FBS II 6x40/5 SK	**546383**	■	6	50	7,5x40	35-25	Anchor length - h_{nom}	T30	100
FBS II 6x60/5 SK	**546384**	■	6	70	7,5x60	55-25	Anchor length - h_{nom}	T30	100
FBS II 6x80/25 SK	**546385**	■	6	90	7,5x80	55-25	Anchor length - h_{nom}	T30	100
FBS II 6x100/45 SK	**546386**	■	6	110	7,5x100	55-25	Anchor length - h_{nom}	T30	100
FBS II 6x120/65 SK	**546387**	■	6	130	7,5x120	55-25	Anchor length - h_{nom}	T30	100
FBS II 6x140/85 SK	**546388**	■	6	150	7,5x140	55-25	Anchor length - h_{nom}	T30	100
FBS II 6x160/105 SK	**546389**	■	6	170	7,5x160	55-25	Anchor length - h_{nom}	T30	100
FBS II 6x40/5 US	**546390**	■	6	50	7,5x40	35-25	Anchor length - h_{nom}	SW 10	100
FBS II 6x60/5 US	**546391**	■	6	70	7,5x60	55-25	Anchor length - h_{nom}	SW 10	100
FBS II 6x80/25 US	**546392**	■	6	90	7,5x80	55-25	Anchor length - h_{nom}	SW 10	100
FBS II 6x100/45 US	**546393**	■	6	110	7,5x100	55-25	Anchor length - h_{nom}	SW 10	100
FBS II 6x120/65 US	**546394**	■	6	130	7,5x120	55-25	Anchor length - h_{nom}	SW 10	100

ULTRACUT FBS II 6 M8/19
hanger bolt

ULTRACUT FBS II 6 M8/M10
connection sleeve



Concrete screw ULTRACUT FBS II 6

Item	Art.-No. zinc plated steel gvz	Approval ETA	Nominal drill-Ø d_0 [mm]	Minimum drill depth at pre-positioned mode h_1 [mm]	Screws outer diameter x length [mm]	Screwing depth h_{nom} [mm]	Width across flat [SW]	Sales unit [pcs]
FBS II 6x25 M8/19	**546395**	■	6	35	7,5x25	25	SW 10	100
FBS II 6x35 M8/19	**546396**	■	6	45	7,5x35	35	SW 10	100
FBS II 6x55 M8/19	**546397**	■	6	65	7,5x55	55	SW 10	100
FBS II 6x35 M10/21	**546398**	■	6	45	7,5x35	35	SW 13	100
FBS II 6x55 M10/21	**546399**	■	6	65	7,5x55	55	SW 13	100
FBS II 6x35 M8/M10 I	**546400**	■	6	45	7,5x35	35	SW 13	100
FBS II 6x55 M8/M10 I	**546401**	■	6	65	7,5x55	55	SW 13	100

Additional assortment

Checking gauge FUP

Nut SW

Nut TX

FMB T40 Maxx Bit

Profi-Bit FPB T50 5/16"

Filling washer FFD

Washer U

Complement for ULTRACUT FBS II

Item	Art.-No.	Internal-Ø [mm]	External-Ø [mm]	Drive	Suitable for ULTRACUT FBS II [SW/TX]	Sales unit [pcs]
Checking gauge FUP 8	**537200**	9,9	-	-	FBS II 8	1
Checking gauge FUP 10	**537201**	12,0	-	-	FBS II 10	1
Checking gauge FUP 12	**537202**	13,0	-	-	FBS II 12	1
Checking gauge FUP 14	**537203**	15,0	-	-	FBS II 14	1
Nut SW 13	**538578**	-	-	1/2" / SW 13	FBS II 8	1
Nut SW 15	**538579**	-	-	1/2" / SW 15	FBS II 10	1
Nut SW 17	**538580**	-	-	1/2" / SW 17	FBS II 12	1
Nut SW 21	**538581**	-	-	1/2" / SW 21	FBS II 14	1
Nut TX40 [1]	**538575**	-	-	1/2" - 1/4"	FBS II 8 / FBS II 8 SK	1
Nut TX50 [2]	**538576**	-	-	1/2" - 5/16"	FBS II 10 / FBS II 10 SK	1
FMB T40 Maxx Bit W 5	**533159**	-	-	TX 40	FBS II 8 / FBS II 8 SK	5
FPB Profi-Bit T 50 5/16"	**538574**	-	-	TX 50	FBS II 10 SK	1
FFD 22x9x6	**547515**	9,0	22	-	FBS II 6	4
FFD 26x12x6	**538458**	12,0	26	-	FBS II 8	4
FFD 26x12x6 A4	**541986**	12,0	26	-	FBS II 8 A4	4
FFD 30x14x6	**538459**	14,0	30	-	FBS II 10 / FBS II 12	4
FFD 30x14x6 A4	**541987**	14,0	30	-	FBS II 10 A4 / FBS II 12 A4	4
FFD 38x19x7	**538460**	19,2	38	-	FBS II 14	4
Washer for FBS II 10	**520471**	13,5	44	-	FBS II 10	50

1) Suitable for FMB T40 Maxx Bit

2) Suitable for FPB Profi-Bit T50 5/16"

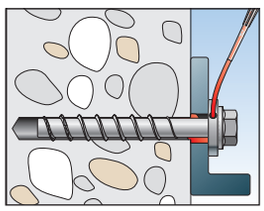
Filling disc for ULTRACUT FBS II / FBS II A4

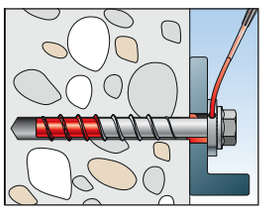
By using the backfilling disc, a backlash, e.g. in the case of shear forces, can be ruled out. For this purpose, the filling disc is placed on the concrete screw before installation (recess to the component).

In the next step, the FBS II is screwed in until the filling disc rests against the anchor plate. Now the filling with one of the injection mortars FIS HB, FIS V, FIS SB or FIS EM Plus can be carried out through the lateral bore using the filling aid. The filling quantity depends on the thickness of the anchor plate and the size of the annular gap.

Typical fields of application

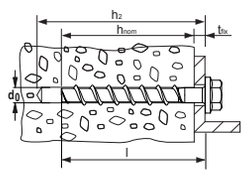
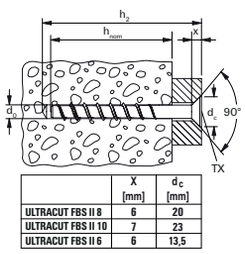
- Brackets
- Earthquake-approved anchorings





Installation parameters and loads

Installation parameters concrete C 20/25 - C50/60

ULTRACUT FBS II Concrete screw							
		8	**10**	**12**	**14**	**Type US**	**Type SK**
Drill hole diameter [mm]	d_0	8	10	12	14		
Nominal screw-in depth h_{nom} [mm]	h_{nom1}	50	55	60	65		
	h_{nom2}	-	65	75	85		
	h_{nom3}	65	85	100	115		
Drill hole depth (push-through installation) [mm]	$h_2 \geq$	l + 10	l + 10	l + 10	l + 15		
Clearance hole diameter [mm]	d_f	10,6 - 12	12,8 - 14	14,8 - 16	16,9 - 18		
Maximum torque for installation with impact screw driver in concrete	$T_{imp, max}$	600	650	650	650		
Width across flat	SW	13	15	17	21		
Drive	TX	40 (SK u. US)	TX 50 (SK)	–	–		

	X [mm]	d_c [mm]
ULTRACUT FBS II 8	6	20
ULTRACUT FBS II 10	7	23
ULTRACUT FBS II 6	6	13,5

Installation parameters masonry

Concrete screw ULTRACUT FBS II 8-14					
Base material	Compressive strength class [N/mm2]	Size	[mm]	8	10
		h_{nom}	[mm]	65	85
Solid clay brick (EN771-1)	≥ 12	T_{inst}	[Nm]	10	10
Solid sand-lime brick (EN771-2)	≥ 12	T_{inst}	[Nm]	15	15
Aerated concrete (EN771-4)	≥ 6	T_{inst}	[Nm]	5	10

Installation of concrete screws (use a cordless or cabled impact wrench)

Concrete Screw ULTRACUT FBS II 8-14	Recommended nominal torque of the tangential impact wrench zinc-plated steel*) [Nm]	Recommended nominal torque wrench of the tangential impact wrench A4*) [Nm]
FBS 8	600	450
FBS 10	650	450
FBS 12	650	650
FBS 14	650	-

*) The values apply to concrete strength of approx. 40N/mm², for other concrete strength classes the values may differ.
The conversion of nominal output into effective tightening torque varies from machine to machine - always therefore use torque control.

Loads

Concrete srew ULTRACUT FBS II zinc plated steel

Permissible loads of a single anchor in cracked normal concrete (concrete tension zone) of strength class C20/25 (~B25) [1) 2) 3) 10)]											Minimum spacings while reducing the load	
Type	Material fixing element	Minimum member thickness	Screw-in depth	Maximum installation torque	Installation torque	Permissible tensile load	Permissible shear load	Required edge distance (with one edge) for		Required spacing for	Min. spacing	Min. edge distance
		h_{min} [mm]	h_{nom} [mm]	T_{max} [Nm]	$T_{imp,max}$ [6)] [Nm]	N_{perm} [7)] [kN]	V_{perm} [7)] [kN]	Max. tension load c [mm]	Max. shear load c [mm]	Max. Load s_{cr} [mm]	s_{min} [8)] [mm]	c_{min} [8)] [mm]
FBS II 6x40 [5)]	gvz	80	40	10	450	1,2	4,3	35	110	100	35	35
FBS II 6x45 [5)]	gvz	90	45	10	450	1,7	4,3	35	105	110	35	35
FBS II 6x50 [5)]	gvz	90	50	10	450	1,9	4,3	35	100	120	35	35
FBS II 6x55 [5)]	gvz	100	55	10	450	2,4	6,3	35	145	135	35	35
FBS II 8x50	gvz	100	50	-	600	2,9	4,3	35	90	120	35	35
FBS II 8x65	gvz	120	65	-	600	5,7	9,0	70	180	160	35	35
FBS II 10x55	gvz	100	55	-	650	4,3	4,8	55	100	130	40	40
FBS II 10x65	gvz	120	65	-	650	5,7	12,5	70	250	155	40	40
FBS II 10x85	gvz	140	85	-	650	9,6	16,6	105	305	205	40	40
FBS II 12x60	gvz	110	60	-	650	5,5	11,0	70	230	145	50	50
FBS II 12x75	gvz	130	75	-	650	8,0	15,2	90	290	180	50	50
FBS II 12x100	gvz	150	100	-	650	12,5	20,3	125	355	245	50	50
FBS II 14x65	gvz	120	65	-	650	6,1	12,1	75	235	150	60	60
FBS II 14x85	gvz	140	85	-	650	9,4	18,8	100	340	205	60	60
FBS II 14x115	gvz	180	115	-	650	15,4	29,4	140	465	280	60	60

For the design the complete assessment ETA-15/0352 has to be considered.[9)]

1) The partial safety factors for material resistance as regulated in the ETA-15/0352 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 $s \geq 3 \cdot hef$ and an edge distance $c \geq 1,5 \cdot h_{ef}$. Accurate data see ETA-15/0352.
2) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.
3) Drill method hammer drilling resp. hollow drilling. For further allowable drill methods see ETA-15/0352.
4) The anchorage depths smaller than 40 mm are only allowed for single anchors as part of a multiple fixing of non-structural systems.
5) Diamond drilling not permitted.
6) Maximum allowable torque for installation with any tangential impact screw driver.
7) For combinations of tensile loads and shear loads or for shear loads with lever arm (bending moments) as well as reduced edge distances or spacings (anchor groups) we recommend to use our anchor design software C-FIX.
8) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
9) The given loads refer to the European Technical Assessment ETA-15/0352, issue date 30/10/2018. Design of the loads according ETAG 001, Annex C, Method A (for static resp. quasi-static loads).
10) A reinforcement in the concrete to prevent splitting is required. The width of the cracks has to be limited under consideration of the splitting forces at wk ~ 0,3 mm.

Concrete srew ULTRACUT FBS II zinc plated steel

Permissible loads of a single anchor in non-cracked normal concrete (concrete compression zone) of strength class C20/25 (~B25) [1) 2) 3)]											Minimum spacings while reducing the load	
Type	**Material fixing element**	**Minimum member thickness** h_{min} [mm]	**Screw-in depth** h_{nom} [mm]	**Maximum installation torque** T_{max} [Nm]	**Installation torque** $T_{imp,max}$ [6)] [Nm]	**Permissible tensile load** N_{perm} [7)] [kN]	**Permissible shear load** V_{perm} [7)] [kN]	**Required edge distance (with one edge) for** Max. tension load c [mm]	Max. shear load c [mm]	**Required spacing for** Max. Load s_{cr} [mm]	**Min. spacing** s_{min} [8)] [mm]	**Min. edge distance** c_{min} [8)] [mm]
FBS II 6x40 [5)]	gvz	80	40	10	450	3,8	4,3	40	75	100	35	35
FBS II 6x45 [5)]	gvz	90	45	10	450	4,8	4,3	50	70	110	35	35
FBS II 6x50 [5)]	gvz	90	50	10	450	5,7	4,3	55	70	120	35	35
FBS II 6x55 [5)]	gvz	100	55	10	450	6,4	6,3	60	100	135	35	35
FBS II 8x50	gvz	100	50	-	600	6,1	6,1	60	90	120	35	35
FBS II 8x65	gvz	120	65	-	600	9	9	80	125	160	35	35
FBS II 10x55	gvz	100	55	-	650	6,8	6,8	65	100	130	40	40
FBS II 10x65	gvz	120	65	-	650	8,8	14	80	195	155	40	40
FBS II 10x85	gvz	140	85	-	650	13,5	16,6	105	210	205	40	40
FBS II 12x60	gvz	110	60	-	650	7,7	15,2	70	220	145	50	50
FBS II 12x75	gvz	130	75	-	650	11,2	15,2	90	195	180	50	50
FBS II 12x100	gvz	150	100	-	650	17,5	20,3	125	240	245	50	50
FBS II 14x65	gvz	120	65	-	650	8,5	17,0	75	235	150	60	60
FBS II 14x85	gvz	140	85	-	650	13,2	22,1	100	275	205	60	60
FBS II 14x115	gvz	180	115	-	650	21,6	29,4	140	315	280	60	60

For the design the complete assessment ETA-15/0352 has to be considered.[9)]

1) The partial safety factors for material resistance as regulated in the ETA-15/0352 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 $s \geq 3 \cdot h_{ef}$ and an edge distance $c \geq 1,5 \cdot h_{ef}$. Accurate data see ETA-15/0352.
2) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.
3) Drill method hammer drilling resp. hollow drilling. For further allowable drill methods see ETA-15/0352.
4) The anchorage depths smaller than 40 mm are only allowed for single anchors as part of a multiple fixing of non-structural systems.
5) Diamond drilling not permitted.
6) Maximum allowable torque for installation with any tangential impact screw driver.
7) For combinations of tensile loads and shear loads or for shear loads with lever arm (bending moments) as well as reduced edge distances or spacings (anchor groups) we recommend to use our anchor design software C-FIX.
8) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
9) The given loads refer to the European Technical Assessment ETA-15/0352, issue date 30/10/2018. Design of the loads according ETAG 001, Annex C, Method A (for static resp. quasi-static loads).

Concrete screw with hexagon head and washer ULTRACUT FBS II A4 US stainless steel

Permissible loads of a single anchor in cracked normal concrete (concrete tension zone) of strength class C20/25 (~B25) [1) 2) 3) 8)]										Minimum spacings while reducing the load	
Type	Material fixing element	Minimum member thickness	Screw-in depth	Installation torque	Permissible tensile load	Permissible shear load	Required edge distance (with one edge) for		Required spacing for	Min. spacing	Min. edge distance
							Max. tension load	Max. shear load			
		h_{min} [mm]	h_{nom} [mm]	$T_{imp,max}$ [4)] [Nm]	N_{perm} [5)] [kN]	V_{perm} [5)] [kN]	c [mm]	c [mm]	Max. Load s_{cr} [mm]	s_{min} [6)] [mm]	c_{min} [6)] [mm]
FBS II 8x50	A4	100	50	450	1,9	4,3	35	90	120	35	35
FBS II 8x65	A4	120	65	450	4,3	6,4	45	125	160	35	35
FBS II 10x55	A4	100	55	450	2,1	4,8	40	100	130	40	40
FBS II 10x65	A4	120	65	450	2,9	6,2	40	115	155	40	40
FBS II 10x85	A4	140	85	450	7,6	19,2	75	360	205	40	40
FBS II 12x60	A4	110	60	650	2,1	5,5	50	105	145	50	50
FBS II 12x75	A4	130	75	650	5,2	15,9	50	305	180	50	50
FBS II 12x100	A4	150	100	650	12,5	25,0	125	445	245	50	50

For the design the complete assessment ETA-17/0740 has to be considered. [7)]

1) The partial safety factors for material resistance as regulated in the ETA-17/0740 as well as a partial safety factor for load actions of $\gamma_F = 1,4$ are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq 3 \cdot h_{ef}$ and an edge distance $c \geq 1,5 \cdot h_{ef}$. Accurate data see ETA-17/0740.
2) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.
3) Drill method Hammer drilling resp. hollow drilling. For further allowable drill methods see ETA-17/0740.
4) Maximum allowable torque for installation with any tangential impact screw driver.
5) For combinations of tensile loads and shear loads or for shear loads with lever arm (bending moments) as well as reduced edge distances or spacings (anchor groups) we recommend to use our anchor design software C-FIX.
6) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
7) The given loads refer to the European Technical Assessment ETA-17/0740, issue date 23/10/2018. Design of the loads according TR055/ETAG 001, Annex C, Method A (for static resp. quasi-static loads).
8) A reinforcement in the concrete to prevent splitting is required. The width of the cracks has to be limited under consideration of the splitting forces at $w_k \sim 0,3$ mm.

Concrete screw with hexagon head and washer ULTRACUT FBS II A4 US stainless steel

Permissible loads of a single anchor in non-cracked normal concrete (concrete compression zone) of strength class C20/25 (~B25) [1) 2) 3)]										Minimum spacings while reducing the load	
Type	Material fixing element	Minimum member thickness	Screw-in depth	Installation torque	Permissible tensile load	Permissible shear load	Required edge distance (with one edge) for		Required spacing for	Min. spacing	Min. edge distance
							Max. tension load	Max. shear load			
		h_{min} [mm]	h_{nom} [mm]	$T_{imp,max}$ [4)] [Nm]	N_{perm} [5)] [kN]	V_{perm} [5)] [kN]	c [mm]	c [mm]	Max. Load s_{cr} [mm]	s_{min} [6)] [mm]	c_{min} [6)] [mm]
FBS II 8x50	A4	100	50	450	3,3	6,1	35	90	120	35	35
FBS II 8x65	A4	120	65	450	6,7	9,0	55	120	160	35	35
FBS II 10x55	A4	100	55	450	4,0	6,8	40	100	130	40	40
FBS II 10x65	A4	120	65	450	6,7	8,8	55	115	155	40	40
FBS II 10x85	A4	140	85	450	13,5	20,9	105	270	205	40	40
FBS II 12x60	A4	110	60	650	4,8	7,7	50	105	145	50	50
FBS II 12x75	A4	130	75	650	5,7	22,4	50	300	180	50	50
FBS II 12x100	A4	150	100	650	17,5	26,2	125	320	245	50	50

For the design the complete assessment ETA-17/0740 has to be considered. [7)]

1) The partial safety factors for material resistance as regulated in the ETA-17/0740 as well as a partial safety factor for load actions of $\gamma_F = 1,4$ are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq 3 \cdot h_{ef}$ and an edge distance $c \geq 1,5 \cdot h_{ef}$. Accurate data see ETA-17/0740.
2) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.
3) Drill method Hammer drilling resp. hollow drilling. For further allowable drill methods see ETA-17/0740.
4) Maximum allowable torque for installation with any tangential impact screw driver.
5) For combinations of tensile loads and shear loads or for shear loads with lever arm (bending moments) as well as reduced edge distances or spacings (anchor groups) we recommend to use our anchor design software C-FIX.
6) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
7) The given loads refer to the European Technical Assessment ETA-17/0740, issue date 23/10/2018. Design of the loads according TR055/ETAG 001, Annex C, Method A (for static resp. quasi-static loads).

Concrete screw with countersunk head ULTRACUT FBS II A4 SK stainless steel

Permissible loads of a single anchor in cracked normal concrete (concrete tension zone) of strength class C20/25 (~B25) [1) 2) 3) 8)]										Minimum spacings while reducing the load	
Type	Material fixing element	Minimum member thickness	Screw-in depth	Installation torque	Permissible tensile load	Permissible shear load	Required edge distance (with one edge) for		Required spacing for	Min. spacing	Min. edge distance
							Max. tension load	Max. shear load			
		h_{min} [mm]	h_{nom} [mm]	$T_{imp,max}$ [4)] [Nm]	N_{perm} [5)] [kN]	V_{perm} [5)] [kN]	c [mm]	c [mm]	Max. Load s_{cr} [mm]	s_{min} [6)] [mm]	c_{min} [6)] [mm]
FBS II 8x50	A4	100	50	450	1,9	4,3	35	90	120	35	35
FBS II 8x65	A4	120	65	450	4,3	6,4	45	125	160	35	35
FBS II 10x55	A4	100	55	450	2,1	4,8	40	100	130	40	40
FBS II 10x65	A4	120	65	450	2,9	6,2	40	115	155	40	40
FBS II 10x85	A4	140	85	450	7,6	19,2	75	360	205	40	40

For the design the complete assessment ETA-17/0740 has to be considered. [7)]

1) The partial safety factors for material resistance as regulated in the ETA-17/0740 as well as a partial safety factor for load actions of $\gamma_F = 1,4$ are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq 3 \cdot h_{ef}$ and an edge distance $c \geq 1,5 \cdot h_{ef}$. Accurate data see ETA-17/0740.
2) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.
3) Drill method hammer drilling. For further allowable drill methods see ETA-17/0740.
4) Maximum allowable torque for installation with any tangential impact screw driver.
5) For combinations of tensile loads and shear loads or for shear loads with lever arm (bending moments) as well as reduced edge distances or spacings (anchor groups) we recommend to use our anchor design software C-FIX.
6) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
7) The given loads refer to the European Technical Assessment ETA-17/0740, issue date 23/10/2018. Design of the loads according TR055/ETAG 001, Annex C, Method A (for static resp. quasi-static loads).
8) A reinforcement in the concrete to prevent splitting is required. The width of the cracks has to be limited under consideration of the splitting forces at $w_k \sim 0,3$ mm.

Concrete screw with countersunk head ULTRACUT FBS II A4 SK stainless steel

Permissible loads of a single anchor in non-cracked normal concrete (concrete compression zone) of strength class C20/25 (~B25) [1) 2) 3)]										Minimum spacings while reducing the load	
Type	Material fixing element	Minimum member thickness	Screw-in depth	Installation torque	Permissible tensile load	Permissible shear load	Required edge distance (with one edge) for		Required spacing for	Min. spacing	Min. edge distance
							Max. tension load	Max. shear load			
		h_{min} [mm]	h_{nom} [mm]	$T_{imp,max}$ [4)] [Nm]	N_{perm} [5)] [kN]	V_{perm} [5)] [kN]	c [mm]	c [mm]	Max. Load s_{cr} [mm]	s_{min} [6)] [mm]	c_{min} [6)] [mm]
FBS II 8x50	A4	100	50	450	3,3	6,1	35	90	120	35	35
FBS II 8x65	A4	120	65	450	6,7	9,0	55	120	160	35	35
FBS II 10x55	A4	100	55	450	4,0	6,8	40	100	130	40	40
FBS II 10x65	A4	120	65	450	6,7	8,8	55	115	155	40	40
FBS II 10x85	A4	140	85	450	13,5	20,9	105	270	205	40	40

For the design the complete assessment ETA-17/0740 has to be considered. [7)]

1) The partial safety factors for material resistance as regulated in the ETA-17/0740 as well as a partial safety factor for load actions of $\gamma_F = 1,4$ are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq 3 \cdot h_{ef}$ and an edge distance $c \geq 1,5 \cdot h_{ef}$. Accurate data see ETA-17/0740.
2) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.
3) Drill method hammer drilling. For further allowable drill methods see ETA-17/0740.
4) Maximum allowable torque for installation with any tangential impact screw driver.
5) For combinations of tensile loads and shear loads or for shear loads with lever arm (bending moments) as well as reduced edge distances or spacings (anchor groups) we recommend to use our anchor design software C-FIX.
6) Minimum possible axial spacings resp. edge distance while reducing the permissible load.
7) The given loads refer to the European Technical Assessment ETA-17/0740, issue date 23/10/2018. Design of the loads according TR055/ETAG 001, Annex C, Method A (for static resp. quasi-static loads).

Concrete srew ULTRACUT FBS II 8-14

Highest recommended loads [1) 3)] for a single anchor, resp. a fixing point [4) 5) 6)] in solid brick masonry.					
Base material	Compressive strength [N/mm2]	**Type**		**ULTRACUT**	
		Size		**FBS II 8**	**FBS II 10**
		Anchoring depth h_{nom}	[mm]	65	85
Solid clay brick [9)] (EN771-1)	≥ 12	F_{rec} [2)3)]	[kN]	1,1	1,4
≥ 240x113x115 mm	≥ 20	F_{rec} [2)3)7)]	[kN]	1,6	1,6
Solid sand-lime brick [9)] (EN771-2)	≥ 12	F_{rec} [2)3)7)]	[kN]	1,2	1,2
≥ 240x71x115 mm	≥ 20	F_{rec} [2)3)7)]	[kN]	1,2	1,2
Aerated concrete (EN771-4) ≥ 499x249x120 mm	≥ 6	F_{rec} [2)3)]	[kN]	0,7	0,9
Minimum spacing within anchor groups of 2 or 4 anchors		s_{min}	[mm]	80	
Minimum spacing between single anchors, resp. anchor groups		s_{min}	[mm]	80	
Minimum distance to the horizontal joint		$c_{min,v}$ [8)]	[mm]	20	
Minimum distance to the vertical joint		$c_{min,h}$ [8)]	[mm]	40	
Minimum distance to the free edge		$c_{min,free\ edge}$ [8)]	[mm]	200	
Tightening torque [10)]	Solid clay brick [9)]	T_{ighten}	[Nm]	10	
	Solid sandlime brick [9)]			15	
	Aerated concrete			5	

1) An appropriate safety factor is considered.
2) The given loads apply to the given brick measures for masonry with superimposed load. Bigger brick sizes are minimum equal in case of the loads.
3) The loads only apply to multiple fixings of non-load-bearing systems and are valid for tensile load, shear load and oblique load under any angle.
4) On-site screw testing is recommended to validate technical data. If the joints are not visible 100% anchor testing is recommended due to the screws are only working in the bricks and not in the mortar joints.
5) A fixing point can be a single anchor, 2 anchors or 4 anchors with a minimum spacing smin. Anchor groups of 4 anchors are arranged in rectangular disposition.
6) The fixing points have to be arranged in this way that there will be always maximum one fixing point arranged in one brick.
7) Brick pull-out is decisive.
8) The values cmin,v and cmin,h are only valid if the mortar joints are filled proper. Otherwise the joints has to be considered as free edges and cmin,free is decisive. Minimum mortar strenght is M2.5
9) The values are valid for unperforated solid bricks.
10) The screw is screwed in with a cordless screwdriver, an impact screwdriver or by hand. The screwing process must be finished immediately when the screw head is in contact with the assembled object. The specified tightening torque must then be applied with a torque wrench.

Concrete screw ULTRACUT FBS II 6 zinc plated steel

Highest permissible loads for a single anchor1) for multiple use for non-structural applications in cracked concrete C20/25 to C50/60.											
Type	**Material fixing element**	**Screw-in depth**	**Min. member thickness**	**Installation torque**	**Permissible tensile load**	**Permissible shear load**	**Required edge distance (with one edge) for**		**Required spacing for**	**Min. spacing**	**Min. edge distance**
							Max. tension load	**Max. shear load**			
		h_{nom} [mm]	h_{min} [mm]	$T_{inst,\ max}$ [Nm]	N_{perm} [3)] [kN]	V_{perm} [3)] [kN]	**c** [mm]	**c** [mm]	**Max. Last s** [mm]	s_{min} [2)] [mm]	c_{min} [2)] [mm]
FBS II 6	**gvz**	25	80	≤ 5	0.7	1.8	35	50	60	35	35
FBS II 6	**gvz**	30	80	≤ 5	1.2	2.3	35	55	70	35	35
FBS II 6	**gvz**	35	80	≤ 5	1.7	4.3	35	100	100	35	35
FBS II 6	**gvz**	40	80	≤ 10	2.4	4.3	35	105	110	35	35
FBS II 6	**gvz**	45	90	≤ 10	2.9	4.3	40	110	115	35	35
FBS II 6	**gvz**	50	90	≤ 10	3.6	4.3	50	115	120	35	35
FBS II 6	**gvz**	55	100	≤ 10	4.0	6.3	50	145	135	35	35

For the design the complete assessment ETA-18/0242, issued 30.10.2018 has to be considered.

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

Concrete screw ULTRACUT FBS II 6 zinc plated

Highest permissible loads for a single anchor[1] for multiple use for non-structural applications in non-cracked concrete C20/25 to C50/60.

Type	Material fixing element	Screw-in depth	Min. member thickness	Installation torque	Permissible tensile load	Permissible shear load	Required edge distance (with one edge) for		Required spacing for	Min. spacing	Min. edge distance
							Max. tension load	Max. shear load			
		h_{nom}	h_{min}	$T_{inst, max}$	N_{zul} [3]	V_{zul} [3]	c	c	Max. Last s	s_{min} [2]	c_{min} [2]
		[mm]	[mm]	[Nm]	[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]
FBS II 6	**gvz**	25	80	≤ 5	1.4	2.3	35	45	60	35	35
FBS II 6	**gvz**	30	80	≤ 5	2.4	2.3	35	45	70	35	35
FBS II 6	**gvz**	35	80	≤ 5	3.1	4.3	40	70	100	35	35
FBS II 6	**gvz**	40	80	≤ 10	3.8	4.3	55	70	110	35	35
FBS II 6	**gvz**	45	90	≤ 10	4.8	4.3	65	75	115	35	35
FBS II 6	**gvz**	50	90	≤ 10	5.7	4.3	75	75	120	35	35
FBS II 6	**gvz**	55	100	≤ 10	6.4	6.3	80	100	135	35	35

For the design the complete assessment ETA-18/0242, issued 30.10.2018 has to be considered.

1) The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of γ_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 assessment.
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 assessment.

Concrete screw ULTRACUT FBS II 6 zinc plated

Highest permissible loads[1] for a single anchor for multiple use for non-structural applications in pre-stressed hollow core slabs[4]

Type				FBS II 6						
Nominal embedment depth			h_{nom}	**25**	**30**	**35**	**40**	**45**	**50**	**55**
Permissible load in the respective bottom flange thickness Frec[3]										
≥ 25 mm			[kN]	0,23	0,47	0,47	0,47	0,47	0,47	0,47
≥ 30 mm			[kN]	1,64	1,64	1,64	1,64	1,64	1,64	1,64
≥ 35 mm			[kN]	1,64	1,88	2,11	2,35	2,58	2,82	3,05
≥ 40 mm			[kN]	1,64	2,35	2,58	2,82	3,29	3,52	3,76
≥ 50 mm			[kN]	1,64	2,58	3,29	3,76	4,46	5,16	5,63
Installation torque		**$T_{inst, max}$**	[Nm]	5	5	10	10	10	10	10
Min. spacing		**s_1, s_2[2]**	[mm]	100	100	100	100	100	100	100
Min. edge distance		**c_1, c_2[2]**	[mm]	100	100	100	100	100	100	100

For the design the complete assessment ETA-18/0242, issued 30.10.2018 has to be considered.

1) The required partial safety factors for material resistance as well as a partial safety factor for load actions of γL = 1,4 are considered.
2) Minimum possible axial spacings resp. edge distance. For further measures see assessment.
3) Valid for tensile load, shear load and oblique load under any angle.
4) Concrete strength class C30/37 up to C50/60.

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