

Concrete screw ULTRACUT FBS II 8-14

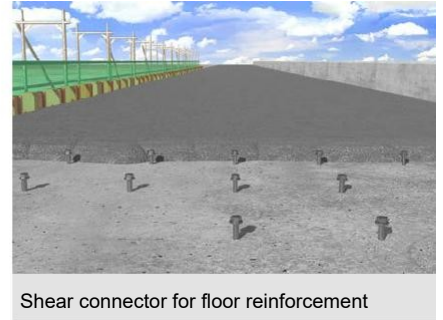
High performance concrete screws in galvanized steel, certified for installation in the C2 seismic zone and as a shear connector for the reinforcement of concrete and latero-cement floors and structures.



-
-
- cracked concrete
- C50/60



Inclined supports



Shear connector for floor reinforcement

galvanized steel

Approved for:

C20/25 to C50/60 concrete,

Non-cracked concrete C20/25 to

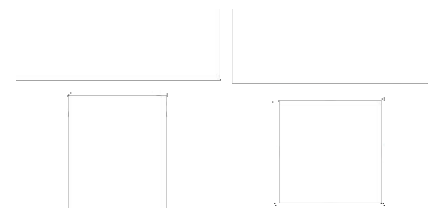
Also suitable for:

- Concrete C12/15
- Brickwork
- Aerated concrete, autoclaved
- Natural stone with compact structure

ETA-20/0321
EAD 332347-00-0601

For cracked concrete

Connector for strengthening of existing concrete structures by concrete overlay



ADVANTAGES

Up to three screw depths certified for maximum flexibility in the load and thickness of the object to be fixed.

The special saw tooth geometry allows you to quickly thread the concrete.

Anchorage does not cause stress in the support material (operation of the undercut), ensuring the minimum possible wheelbases and distances from the edge.

ETA certification allows cracked concrete applications not fissured and by categories of seismic performance C1 and C2.

ETA certification allows the adjustment of the application 2 times, loosening the screw for concrete (max 20 mm) to insert a thickness (max 10 mm) and/or align the base plate.

German type approval allows reuse of the screw for anchorages

temporary (e.g. buildings with

formwork) through the cylinder fup control.

ETA certification allows use of the US version with hexagonal head as a shear connector for reinforcement

APPLICATIONS

Reinforcement of concrete floors and structures

- or latero-cement (US version only)
- Steel construction
- Shelving

Shock protection barriers

- Base plates
- Metal profiles
- Facades
- Scale
- Railing

- Erase
- Balustrade
- Dividing elements
- Protective elements
- Temporary anchorage of construction equipment

- Props for formwork

OPERATION

ULTRACUT FBS II is suitable for through installation.

When the installation is ceiling or floor is not required any hole cleaning. For holes in the floor the installer must make a hole more 3 times the diameter.

For optimal installation is recommended the use of a suitable pulse screwdriver with inserts hexagonal or torx suitable for the application tangential impulses.

The screw is installed correctly when the head of the screw rests on the object to be fixed (visual adjustment).


Reuse for temporary fasteners is allowed only if the screw for concrete does not pass through the FUP control cylinder.

For applications in the Seismic performance C2 fill the annular space between the stem of the screw FBS II US and the hole of the object to be fixed con le resine FIS V, FIS EM Plus, FIS EB or FIS SB, using the FFD Seismic Kit. **For** FBS II US screw applications such as

Shear connector is recommended

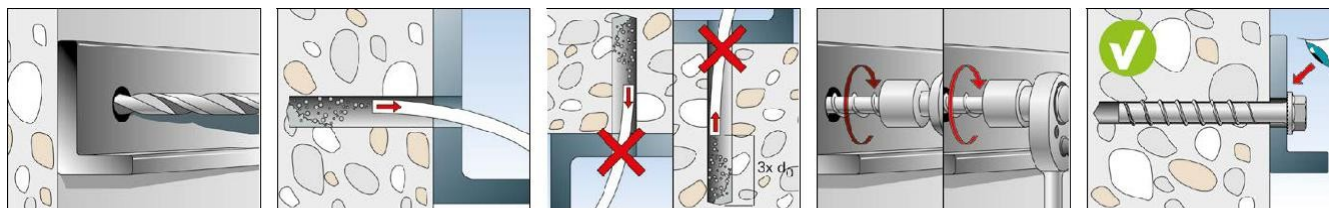
and the consolidation of floors and
structures
concrete and latero-cement.

the use of the SC-ST installation tool.

August 5, 2021 - This version cancels and replaces the previous ones. **fischer**  1

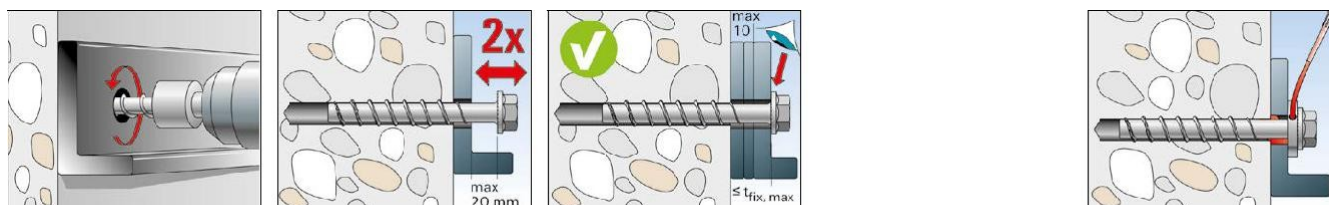
Concrete screw ULTRACUT FBS II 8-14

INSTALLATION



ADJUSTMENT OF THE OBJECT TO BE FIXED

CATEGORY OF SEISMIC PERFORMANCE C2 WITH



ULTRACUT FBS II US



ULTRACUT FBS II US- hexagonal head
with integrated washer

FBS II 12x210 150/135/110 US

558225 1)

2

fischer 

	steel	galvanized	Certification
	Art. No., no.	ETA	
Product	gvz		
FBS II 8x55 5/- US TX	536851	■	
FBS II 8x70 20/5 US TX	536852	■	
FBS II 8x80 30/15 US TX	536853	■	
FBS II 8x90 40/25 US TX	536854 1)	■	
FBS II 8x100 50/35 US TX	536855 1)	■	
FBS II 8x110 60/45 US TX	536856 1)	■	
FBS II 8x130 80/65 US TX	536857 1)	■	
FBS II 8x150 100/85 US TX	558219 1)	■	
FBS II 8x170 120/105 US TX	558220 1)	■	
FBS II 8x190 140/125 US TX	558221 1)	■	
FBS II 10x60 5/-/- US	536858	■	
FBS II 10x70 15/5/- US	536859	■	
FBS II 10x80 25/15/- US	536860	■	
FBS II 10x90 35/25/5 US	536861	■	
FBS II 10x100 45/35/15 US	536862 1)	■	
FBS II 10x120 65/55/35 US	536863 1)	■	
FBS II 10x140 85/75/55 US	536864 1)	■	
FBS II 10x160 105/95/75 US	536865 1)	■	
FBS II 10x200 145/135/115 US	536866 1)	■	
FBS II 10x230 175/165/145 US	536867 1)	■	
FBS II 10x260 205/195/175 US	536868 1)	■	
FBS II 10x280 225/215/195 US	558222 1)	■	
FBS II 12x70 10/-/- US	536869	■	
FBS II 12x85 25/10/- US	536870	■	
FBS II 12x110 50/35/10 US	536871 1)	■	
FBS II 12x130 70/55/30 US	536872 1)	■	
FBS II 12x150 90/75/50 US	536873 1)	■	
FBS II 12x170 110/95/70 US	558223 1)	■	
FBS II 12x190 130/115/90 US	558224 1)	■	

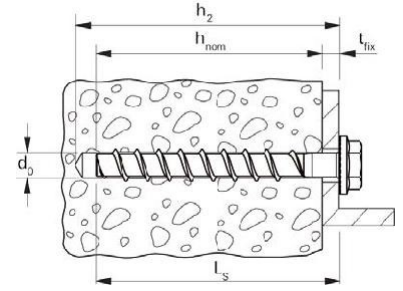
Certification	Diameter foro	Prof. foro min-in	est. vite x Lung. vite	Depth Advice.	Depth Advice.	Depth Advice.	Key of tightening/ Footprint	Packaging
				with thickness	with thickness	with thickness		
seismic	d0	h2	and X Ls	fixable nom1/ tfix	fixable nom2/ tfix	fixable nom3/ tfix		
[*]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[pz]
			10x5				T40/	
-	8	65	5	50/5	—	—	SW13	50
			10x7				T40/	
C1	8	80	0	50/20	—	65/5	SW13	50
			10x8				T40/	
C2	8	90	0	50/30	—	65/15	SW13	50
			10x9				T40/	
C2	8	100	0	50/40	—	65/25	SW13	50
			10x1				T40/	
C2	8	110	00	50/50	—	65/35	SW13	50
			10x1				T40/	
C2	8	120	10	50/60	—	65/45	SW13	50
			10x1				T40/	
C2	8	140	30	50/80	—	65/65	SW13	50
			10x1				T40/	
C2	8	160	50	50/10	—	65/85	SW13	50
			10x1				65/10	
C2	8	180	70	50/12	—	5	SW13	50
			10x1				65/12	
C2	8	200	90	50/14	—	5	SW13	20
			12x6					
-	10	70	0	55/5	—	—	SW 15	50
			12x7					
-	10	80	0	55/15	65/5	—	SW 15	50
			12x8					
-	10	90	0	55/25	65/15	—	SW 15	50
			12x9					
C1	10	100	0	55/35	65/25	85/5	SW 15	50
			12x1					
C2	10	110	00	55/45	65/35	85/15	SW 15	50
			12x1					
C2	10	130	20	55/65	65/55	85/35	SW 15	50
			12x1					
C2	10	150	40	55/85	65/75	85/55	SW 15	50
			12x1					
C2	10	170	60	55/10	65/95	85/75	SW 15	50
			12x2					
C2	10	210	00	55/14	65/13	85/11	SW 15	20
			12x2					
C2	10	240	30	55/17	65/16	85/14	SW 15	20
			12x2					
C2	10	270	60	55/20	65/19	85/17	SW 15	20
			12x2					
C2	10	290	80	55/22	65/21	85/19	SW 15	20
			14x7					
-	12	80	0	60/10	—	—	SW 17	20
			14x8					
-	12	95	5	60/25	75/10	—	SW 17	20
			14x1					
C1	12	120	10	60/50	75/35	100/1	SW 17	20
			14x1					
C2	12	140	30	60/70	75/55	100/3	SW 17	20
			14x1					
C2	12	160	50	60/90	75/75	100/5	SW 17	20
			14x1					
C2	12	180	70	60/11	75/95	100/7	SW 17	20
			14x1					
C2	12	200	90	60/13	75/11	100/9	SW 17	20
			14x2					
C2	12	220	10	60/15	75/13	100/1	SW 17	20
			10					

Concrete screw ULTRACUT FBS II 8-14

ULTRACUT FBS II US



ULTRACUT FBS II US- hexagonal head with integrated washer



	steel galvanized	Certifi- clearing seismic	Diameter foro	Prof. foro min-in stable passerby	est. vite x Lung. vite and X Ls	Depth Advice. with thickness fixable	Depth Advice. with thickness fixable	Depth Advice. with thickness fixable	Key of tightening/ Footprint	Packaging	
	Art. No, no. gvz	ETA	[*]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[pz]	
Product											
FBS II 14x75 10/-/- US	536874	■	—	14	90	16x75	65/10	—/—	SW 21	20	
FBS II 14x95 30/10/- US	536875	■	—	14	110	16x95	65/30	85/10	SW 21	20	
FBS II 14x100 35/15/- US	536876	■	—	14	115	16x100	65/35	85/15	SW 21	20	
FBS II 14x125 60/40/10 US	536877 1)	■	C1	14	140	16x125	65/60	85/40	115/110	SW 21	10
FBS II 14x150 85/65/35 US	536878 1)	■	C2	14	165	16x150	65/85	85/65	115/35	SW 21	10
FBS II 14x180 115/95/65 US	558226 1)	■	C2	14	190	16x180	65/115	85/95	115/65	SW 21	10
FBS II 14x210 145/125/95 US	558227 1)	■	C2	14	220	16x210	65/145	85/125	115/95	SW 21	10
FBS II 14x240 175/155/125 US	558228 1)	■	C2	14	250	16x240	65/175	85/155	115/125	SW 21	10

* FBS II screws have C1 seismic performance if the insertion depth provided by ETA-15/0352 is respected (65 mm for FBS II 8, 85 mm for FBS II 10, 100 mm for FBS II 12, 115 mm for FBS II 14). By adding the washer FFD the screws pass to seismic performance category C2. In this case the thickness of the washer FFD must be considered in the calculation of the thickness fixable in order to respect the expected insertion depth. 1) CE certified screw as shear connector for the reinforcement of concrete and latero-cement floors and structures.

FBS US ULTRACUT CONNECTORS TOOL



SC-ST- For installation of ULTRACUT screws FBS II US as shear connectors for slabs concrete-concrete workers

Product	Art. No	Tool holder	Height setting connector [mm]	Suitable for	Packaging [pz]
Setting tool SC-ST 8	557872	Square 1/2"	40	FBS II US 8	1
Setting tool SC-ST 10	557874	Square 1/2"	40	FBS II US 10	1

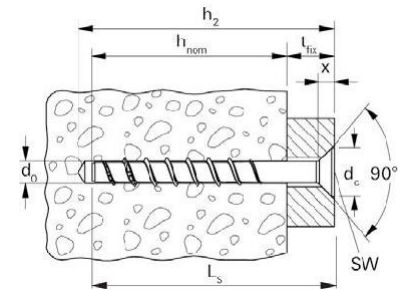
For SC-ST instruments diameter 12 and 14 mm, please contact the fischer technical office.

ULTRACUT FBS II SK



ULTRACUT FBS II SK- countersunk head

	X [mm]	dc [mm]
ULTRACUT FBS II 8	6	20
ULTRACUT FBS II 10	7	23



	steel galvanized	Certifi- clearin g seismic	Diameter foro	Prof. foro min-in stable passerby	est. vite x Lung. vite and X Ls	Depth Advice. with thickness fixable	Depth Advice. with thickness fixable	Depth Advice. with thickness fixable	Key of tightening/ Footprint	Packaging	
	Art. No, no. gvz	ETA	[*]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[pz]	
Product											
FBS II 8x60 10/- SK	536880	■	—	d0	h2	10x60	50/10	—/—	TX40	50	
FBS II 8x80 30/15 SK	536881	■	—	8	70	10x80	50/30	—/—	TX40	50	
FBS II 8x90 40/25 SK	536882	■	—	8	90	10x90	50/40	—/—	TX40	50	
FBS II 8x100 50/35 SK	558229	■	—	8	100	10x100	50/50	—/—	TX40	50	
FBS II 8x110 60/45 SK	558230	■	C1	8	90	10x80	50/30	—/—	65/15	TX40	50
FBS II 8x120 70/55 SK	558231	■	C1	8	100	10x90	50/40	—/—	65/25	TX40	50
FBS II 8x140 90/75 SK	558232	■	C1	8	110	10x100	50/50	—/—	65/35	TX40	50

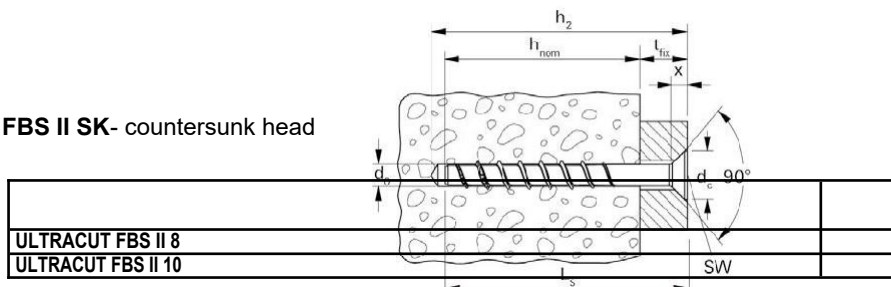
		12	10x	50/6		65/4				
C1	8	0	110	0	--	5	TX40	50		
C1	8	0	13	10x	50/7					
			120	0	--	5	TX40	50		
		15	10x	50/9		65/7				
C1	8	0	140	0	--	5	TX40	50		

Concrete screw ULTRACUT FBS II 8-14

ULTRACUT FBS II SK



ULTRACUT FBS II SK- countersunk head



Product	steel galvanize	Certification	Certifi- clearing seismic	Diameter foro	Prof. foro min-in stable passerby	est. vite x Lung. vite and X LS	Depth Advice. with thickness fixable	Depth Advice. with thickness fixable	Depth Advice. with thickness fixable	Key of tightening/ Footprint	Packaging
	d										
Product	gvz		[*]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[pz]
FBS II 8x160 110/95 SK	558233	■									
FBS II 8x180 130/115 SK	558234	■	C1	8	170	10x160	50/110	—/—	65/95	TX40	50
FBS II 8x200 150/135 SK	558235	■	C1	8	190	10x180	50/130	—/—	65/115	TX40	20
FBS II 10x65 10/-/- SK	536884	■	C1	8	210	10x200	50/150	—/—	65/135	TX40	20
FBS II 10x80 25/15/- SK	536885	■	—	10	75	12x65	55/10	—/—	—/—	TX50	50
FBS II 10x95 40/30/10 SK	536886	■	—	10	90	12x80	55/25	65/15	—/—	TX50	50
FBS II 10x100 45/35/15 SK	536887	■	C1	10	105	12x95	55/40	65/30	85/10	TX50	50
FBS II 10x120 65/55/35 SK	536888	■	C1	10	110	12x100	55/45	65/35	85/15	TX50	50
FBS II 10x140 85/75/55 SK	558236	■	C1	10	130	12x120	55/65	65/55	85/35	TX50	50
FBS II 10x160 105/95/75 SK	558237	■	C1	10	150	12x140	55/85	65/75	85/55	TX50	50
FBS II 10x180 125/115/95 SK	558238	■	C1	10	170	12x160	55/105	65/95	85/75	TX50	50
			C1	10	190	12x180	55/125	65/115	85/95	TX50	20

*FBS II SK screws have C1 seismic performance if the insertion depth provided by ETA-15/0352 is respected (65 mm for FBS II 8, 85 mm for FBS II 10).

CONTROL ACCESSORIES



FUP control cylinder

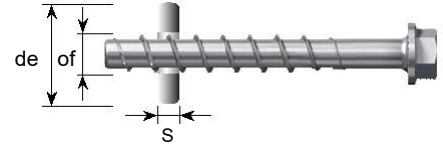
Product	Art. No	Inner diameter [mm]	Suitable for	Packaging [pz]
FUP 8 Control Cylinder Contact Now	537200	9,9	FBS II 8	1
FUP 10 Control Cylinder Contact Now	537201	12,0	FBS II 10	1
Control cylinder FUP 12	537202	13,9	FBS II 12	1
Control cylinder FUP 14	537203	15,6	FBS II 14	1

Concrete screw ULTRACUT FBS II 8-14

ACCESSORIES



Seismic kit FFD



Product	Steel galvanized	Inner diameter	MID-EXTERIOR	Thickness	Suitable for	Packaging
	Art. No	of [mm]	de [mm]	s [mm]		[pz]
FFD 26 x 12 x 6	538458	12	26	6	FBS II 8	4
FFD 30 x 14 x 6	538459	14	30	6	FBS II 10, FBS II 12	4
FFD 38 x 19 x 7	538460	19	38	7	FBS II 14	4

The FFD filling washer is used to fill the annular space between anchor plate and fixing system.

Without the filling of the annular space guaranteed by the FFD filling washer, the ULTRACUT FBS II US concrete screw has C1 seismic performance.

FFD must be used with the ULTRACUT FBS II US concrete screw when C2 seismic performance is required.

The FFD washer must be positioned between the plate and the washer supplied with the ULTRACUT FBS II US. The countersunk side of the FFD washer faces the anchor plate.

After tightening the fixation, inject the resin through the hole using the cannula included in the package.

Chemical injected anchors FIS V, FIS EB, FIS SB or FIS EM Plus can be used for filling.

The thickness of the washer FFD must be added to the thickness of the plate to be fixed in the calculation of the actual depth of insertion of the screw into the concrete.

For the seismic performance category C2, respect the minimum insertion depth as per ETA-15/0352 (65 mm for FBS II 8 US, 85 mm for FBS II 10 US, 100 mm for FBS II 12 US and 115 mm for FBS II 14 US).

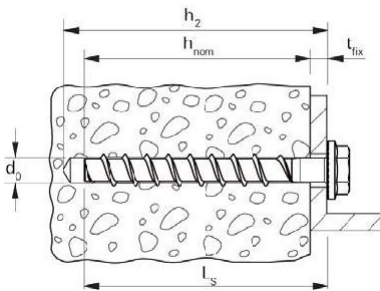


Wide washer for FBS II 10

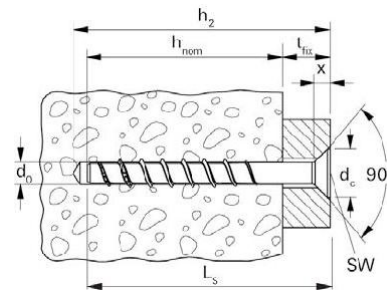
Product	Steel galvanized	Inner diameter	MID-EXTERIOR	Thickness	Suitable for	Packaging
	Art. No	of [mm]	de [mm]	s [mm]		[pz]
Washer for FBS II 10	520471	13,5	44	4	FBS II 10	50

INSTALLATION DATA - CONCRETE C20/25 - C50/60

Type US



Type SK



	X [mm]	dc [mm]
ULTRACUT FBS II 8	6	20
ULTRACUT FBS II 10	7	23

Concrete screw ULTRACUT FBS II		FBS II 8	FBS II 10	FBS II 12	FBS II 14
Hole diameter	d0 [mm]	8	10	12	14
Nominal depth of screwing	h1nom1 [mm]	50	55	60	65
	h1nom2 [mm]	-	65	75	85
	h1nom3 [mm]	65	85	100	115
Hole depth (through installation)	h2 [mm]	LS+10	LS+10	LS+10	LS+15
Hole diameter on object to be fixed	d1 [mm]	10,6 - 12	12,8 - 14	14,8 - 16	16,9 - 18
Max tightening torque for installation with concrete pulse screwdriver	tiimp, max [Nm]	600	650	650	650
Tightening wrench	SW	13	15	17	21
Footprint	Torx	T40 (SK and US)	T50 (SK)		

Concrete screw ULTRACUT FBS II 8-14

INSTALLATION DATA - MASONRY

Concrete screw ULTRACUT FBS II 8-10				
Support type	Brick (EN771-1)	Solid brick in silicate Of calcium (EN771- 2)	Aerated concrete autoclaved (EN771-4)	Depth of anchorage
with compression resistance (N/mm ²)	>12	>12	>6	
				h_{nom} (mm)
	Tightening torque T_{inst} (Nm)	Tightening torque T_{inst} (Nm)	Tightening torque T_{inst} (Nm)	
FBS II 8	10	15	5	65
FBS II 10	10	15	10	85

INSTALLATION DATA - TEMPORARY FIXINGS⁴⁾

Hole diameter d ₀ /screw diameter	[mm]	8		10			12			14		
Nominal anchor depth [h _{nom}]	[mm]	50	65	55	65	85	60	75	100	65	85	115
Permissible loads N _{perm3} ¹⁾ for cracked and non-cracked concrete												
Concrete strength f _{ck,cube} 10 N/mm ²	[kN]	1,9	3,6	2,2	2,9	5,8	2,8	4,0	7,6	2,3	3,6	8,9
Concrete strength f _{ck,cube} 15 N/mm ²	[kN]	2,3	4,4	2,7	3,5	7,1	3,4	4,9	9,3	2,8	4,4	10,8
Concrete strength f _{ck,cube} 20 N/mm ²	[kN]	2,6	5,1	3,1	4,1	8,1	3,9	5,6	10,8	3,2	5,0	12,6
Concrete strength f _{ck,cube} 25 N/mm ²	[kN]	2,9	5,6	3,5	4,5	9,1	4,4	6,1	12,0	3,6	5,6	14,0
Minimum thickness of concrete support	[mm]	100	150	105	130	205	120	150	240	115	150	255
Minimum wheelbase 2)	[mm]	200	300	310	260	410	240	300	180	230	300	510
Distance from the minimum edge in carico ²⁾ direction)	[mm]	65	100	70	85	135	80	100	160	75	100	170
Distance from the minimum orthogonal edge to the e _{carico2)}	[mm]	100	150	105	130	205	120	150	240	115	150	255
Clamping torque with Timp pulse screwdriver, max	[Nm]	400	400	400	400	650	400	400	650	400	400	650
Torque with torque wrench Tmax	[Nm]	45	65	65	65	100	75	75	150	75	75	150

1) The partial safety factor for $\gamma_L = 1,4$ has been considered.

2) Minimum wheelbase and edge distance for single anchors.

3) Valid for pulling actions, cutting actions and oblique actions under any angle. Exception: forces acting perpendicular to the axis of anti-tipping struts.

4) For example, anti-tipping struts, fall arresters and scaffolding.

Concrete screw ULTRACUT FBS II 8-14

LOADS

Concrete screw with flanged hexagonal head FBS II US
Galvanized steel

Permissible loads for a single, non-cracked normal concrete anchor (compressed zone) with resistance class C20/25 (~B25) ^{1) 2) 3)}										Minimum wheelbase only	
										reducing the load	
Type	Material of the element fastening	Thickness min. support	Depth of screwing	Couple of tightening	Laden admissible traction	Laden admissible shear	Distance from the edge request (with a border) for		Wheelbase required	Wheelbase min.	Distance from min board.
	Steel galvanized						Action of traction max.	Action of cut max.	Max load.		
		h_{min}	h_{ef}	$T_{inst}^{6)}$	$N_{amm}^{7)}$	$V_{amm}^{7)}$	c	C	s_{cr}	$s_{min}^{8)}$	$c_{min}^{8)}$
		[mm]	[mm]	[Nm]	[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]
FBS II 8	gvz	100	50	600	5,9	5,9	60	100	120	35	35
		120	65		8,8	9,0	80	135	160		
FBS II 10	gvz	100	55	650	6,6	6,6	65	105	130	40	40
		130	65		8,5	14,0	80	210	155		
		140	85		13,1	16,6	105	235	205		
FBS II 12	gvz	110	60	650	7,5	15,1	70	245	145	50	50
		130	75		10,9	15,2	90	220	180		
		150	100		17,1	20,3	125	270	245		
FBS II 14	gvz	130	65	650	8,3	16,6	75	245	150	60	60
		140	85		12,8	22,1	100	310	205		
		180	116		21,0	29,4	140	355	280		

The European Technical Assessment ETA-15/0352.9 must be consulted for the design)

¹⁾ In the calculation of the permissible load, partial safety factors for the strength of the materials according to ETA-15/0352 and a partial safety coefficient for the load actions of $\gamma_L = 1,4$ were considered.

²⁾ For concrete strength classes up to C50/60 higher permissible load values can be obtained.

³⁾ Roto-percussion, roto-percussion with hollow tip or with core drilling. For more details on drilling methods see ETA-15/0352.

⁴⁾ Anchor depth less than 40 mm is only permitted for multiple non-structural applications.

⁵⁾ Drilling with no core drilling.

⁶⁾ Maximum permissible tightening torque for installation with any tangential pulse screwdriver.

⁷⁾ For combinations of traction actions, cutting actions, bending moments such as distance from the edge and wheelbases (anchor group) see ETA-15/0352.

⁸⁾ Minimum wheelbases and edge distances can only be used by reducing the permissible load.

⁹⁾ The load values refer to the European Technical Assessment ETA-15/0352, with release date 05/10/2020. Load determination according to TR055/ETA calculation method for mechanical anchors (for static and quasi-static loads).

Permissible loads for a single anchor made of normal cracked concrete (taut zone) with resistance class C20/25 (~B25) ^{1) 2) 3) 7)}										Minimum wheelbase only	
										reducing the load	
Type	Material of the element fastening	Thickness min. support	Depth of anchoring effective	Couple of tightening	Laden admissible traction	Laden admissible shear	Distance from the edge request (with a border) for		Wheelbase required	Wheelbase min.	Distance from min board.
	Steel galvanized						Action of traction max.	Action of cut max.	Max load.		
		h_{min}	h_{ef}	$T_{inst}^{6)}$	$N_{amm}^{7)}$	$V_{amm}^{7)}$	c	C	s_{cr}	$s_{min}^{8)}$	$c_{min}^{8)}$
		[mm]	[mm]	[Nm]	[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]
FBS II 8	gvz	100	50	600	2,9	4,1	35	95	120	35	35
		120	65		5,7	9,0	75	200	160		
FBS II 10	gvz	100	55	650	4,3	4,6	60	105	130	40	40
		130	65		5,7	11,9	75	255	155		
		140	85		9,2	16,6	105	340	205		
		110	60		5,3	10,6	70	240	145		

FBS II 12	gvz	130	75	650	7,6	15,2	90	320	180	50	50
		150	100		12,0	20,3	125	395	245		
FBS II 14	gvz	130	65	650	5,8	11,6	75	245	150	60	60
		140	85		9,0	18,0	100	360	205		
		180	116		14,7	29,4	140	520	280		

The European Technical Assessment ETA-15/0352.9 must be consulted for the design)

- 1) In the calculation of the permissible load, partial safety factors for the strength of the materials according to ETA-15/0352 and a partial safety coefficient for the load actions of $\gamma_L = 1,4$ were considered.
- 2) For concrete strength classes up to C50/60 higher permissible load values can be obtained.
- 3) Roto-percussion, roto-percussion with hollow tip or with core drilling. For more details on drilling methods see ETA-15/0352.
- 4) Anchor depth less than 40 mm is only permitted for multiple non-structural applications.
- 5) Drilling with no core drilling.
- 6) Maximum permissible tightening torque for installation with any tangential pulse screwdriver.
- 7) For combinations of traction actions, cutting actions, bending moments such as distance from the edge and wheelbases (anchor group) see ETA-15/0352.
- 8) Minimum wheelbases and edge distances can only be used by reducing the permissible load.
- 9) The load values refer to the European Technical Assessment ETA-15/0352, with release date 05/10/2020. Load determination according to TR055/ETA calculation method for mechanical anchors (for static and quasi-static loads).
- 10) Reinforcement reinforcement in concrete is required to prevent cracking. The width of the cracks should be limited to $w_k \sim 0,3$ mm.

fischer



August 5, 2021 - This version cancels and replaces the previous ones.

Concrete screw ULTRACUT FBS II 8-14

Concrete screw with flat countersunk head FBS II SK

Galvanized steel

Permissible loads for a single, non-cracked normal concrete anchor (compressed zone) with resistance class C20/25 (~B25) ^{1) 2) 3)}										Minimum wheelbase only	
										reducing the load	
Type	Material of the element fastening	Thickness min. support	Depth of screwing	Couple of tightening	Laden admissible traction	Laden admissible shear	Distance from the edge request (with a border) for		Wheelbase required	Wheelbase min.	Distance from min board.
	Steel galvanized						Action of traction max.	Action of cut max.	Max load.		
		h_{min}	h_{ef}	$T_{inst}^{6)}$	$N_{amm}^{7)}$	$V_{amm}^{7)}$	C	c	S_{cr}^9	$s_{min}^8)$	$c_{min}^8)$
		[mm]	[mm]	[Nm]	[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]
FBS II 8x50	gvz	100	50	600	5,9	5,9	60	100	120	35	35
FBS II 8x65		120	65	600	8,8	9,0	80	135	160	35	35
FBS II 10x55	gvz	100	55	650	6,6	6,6	65	105	130	40	40
FBS II 10x65		120	65	650	8,5	14,0	80	215	155	40	40
FBS II 10x85		140	85	650	13,1	16,6	105	235	205	40	40

The European Technical Assessment ETA-15/0352.9 must be consulted for the design)

- ¹⁾ In the calculation of the permissible load, partial safety factors for the strength of the materials according to ETA-15/0352 and a partial safety coefficient for the load actions of $\gamma_L = 1,4$ were considered.
- ²⁾ For concrete strength classes up to C50/60 higher permissible load values can be obtained.
- ³⁾ Roto-percussion, roto-percussion with hollow tip or with core drilling. For more details on drilling methods see ETA-15/0352.
- ⁴⁾ Anchor depth less than 40 mm is only permitted for multiple non-structural applications.
- ⁵⁾ Drilling with no core drilling.
- ⁶⁾ Maximum permissible tightening torque for installation with any tangential pulse screwdriver.
- ⁷⁾ For combinations of traction actions, cutting actions, bending moments such as distance from the edge and wheelbases (anchor group) see ETA-15/0352.
- ⁸⁾ Minimum wheelbases and edge distances can only be used by reducing the permissible load.
- ⁹⁾ The load values refer to the European Technical Assessment ETA-15/0352, with release date 05/10/2020. Load determination according to TR055/ETA calculation method for mechanical anchors (for static and quasi-static loads).

Permissible loads for a single anchor in normal cracked concrete (taut zone) with resistance class C20/25 (~B25)										Minimum wheelbase only	
										reducing the load	
Type	Material of the element fastening	Thickness min. support	Depth of screwing	Couple of tightening	Laden admissible traction	Laden admissible shear	Distance from the edge request (with a border) for		Wheelbase required	Wheelbase min.	Distance from min board.
	Steel galvanized						Action of traction max.	Action of cut max.	Max load.		
		h_{min}	h_{ef}	$T_{inst}^{6)}$	$N_{amm}^{7)}$	$V_{amm}^{7)}$	C	c	S_{cr}^9	$s_{min}^8)$	$c_{min}^8)$
		[mm]	[mm]	[Nm]	[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]
FBS II 8x50	gvz	100	50	600	2,9	4,1	35	95	120	35	35
FBS II 8x65		120	65	600	5,7	9,0	75	200	160	35	35
FBS II 10x55	gvz	100	55	650	4,3	4,6	60	105	130	40	40
FBS II 10x65		120	65	650	5,7	11,9	75	265	155	40	40
FBS II 10x85		140	85	650	9,2	16,6	105	340	205	40	40

The European Technical Assessment ETA-15/0352.9 must be consulted for the design)

- ¹⁾ In the calculation of the permissible load, partial safety factors for the strength of the materials according to ETA-15/0352 and a partial safety coefficient for the load actions of $\gamma_L = 1,4$ were considered.
- ²⁾ For concrete strength classes up to C50/60 higher permissible load values can be obtained.
- ³⁾ Roto-percussion, roto-percussion with hollow tip or with core drilling. For more details on drilling methods see ETA-15/0352.
- ⁴⁾ Anchor depth less than 40 mm is only permitted for multiple non-structural applications.
- ⁵⁾ Drilling with no core drilling.
- ⁶⁾ Maximum permissible tightening torque for installation with any tangential pulse screwdriver.
- ⁷⁾ For combinations of traction actions, cutting actions, bending moments such as distance from the edge and wheelbases (anchor group) see ETA-15/0352.
- ⁸⁾ Minimum wheelbases and edge distances can only be used by reducing the permissible load.
- ⁹⁾ The load values refer to the European Technical Assessment ETA-15/0352, with release date 05/10/2020. Load determination according to TR055/ETA calculation method for mechanical anchors (for static and quasi-static loads).
- ¹⁰⁾ Reinforcement reinforcement in concrete is required to prevent cracking. The width of the cracks should be limited to $w_k \sim 0,3$ mm.

