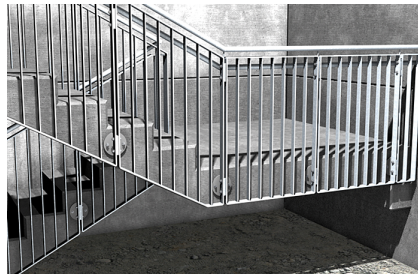
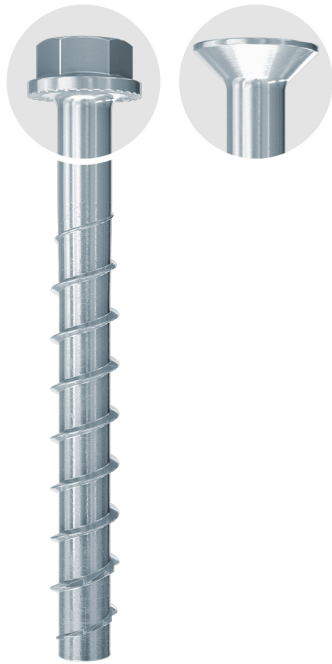


Nagy teljesítményű betoncsavar egyszerű szerelhetőséggel



TÍPUSOK

- cinkkel galvanizált acél

ÉPÍTANYAGOK

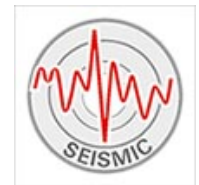
Engedélyezett:

- Repedéses és repedésmentes beton C20/25-től C50/60-ig

Továbbá alkalmazható:

- Beton C12/15
- Tömör építőanyagok
- Tömör szerkezetű falazat

ENGEDÉLYEK



ELNYÖK

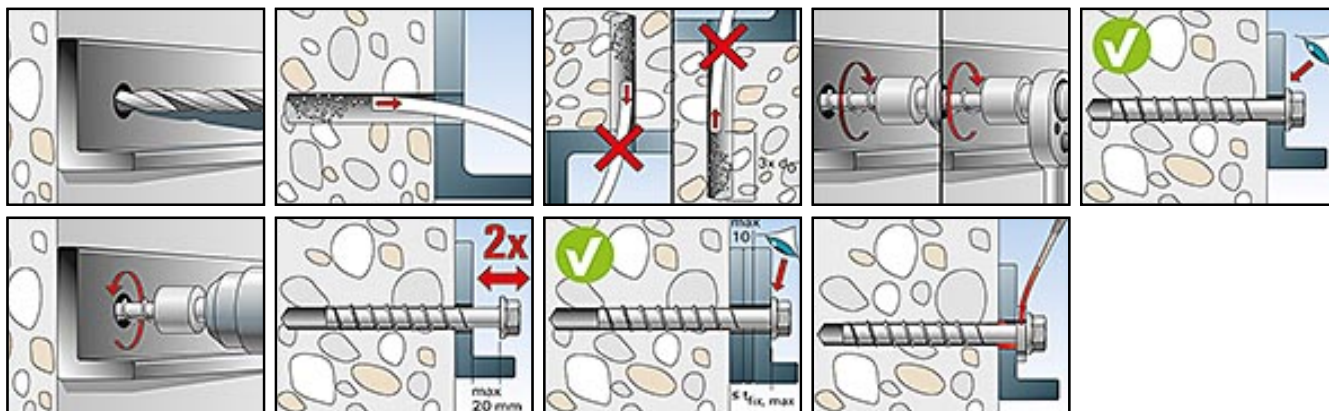
- Három rögzítési mélységével az Ultracut FBS II lehetővé teszi, hogy ugyanazt a csavart különböző vastagságú rögzítendő tárgyakhoz alkalmazzuk.
- Az egyedülálló fűrészfogas geometriai kialakítás gyorsan vág bele az építőanyagba.
- Mennyezeti szerelés esetén a furatot nem szükséges tisztítani, illetve aljzatnál abban az esetben, ha üreges, porelszívós fűrészszárat használunk.
- Feszítésmentes rögzítésének köszönhetően kisebb perem- és tengelytávolságok lehetségesek mint a feszítődübeleknél.
- Az ETA engedély szabályozza a rögzítést repedéses és repedésmentes betonba történő szerelés esetén. A szeizmikus engedély C1 és C2 kategóriája biztosítja, hogy a csavar megfeleljen a legszigorúbb szeizmikus követelményeknek.
- Az engedély lehetőséget ad a betoncsavar visszalazítására két alkalommal.
- Nemzeti engedélyk szabályozzák a többszöri használatot.

ALKALMAZÁSOK

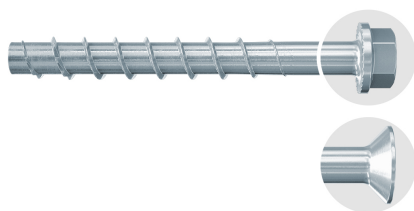
- Védőkoriátok
- Konzolok/alaplapok
- Fémprofil
- Polcrendszerek
- Védőkoriátok
- Eredmények / gerenda rögzítések
- Ideiglenes rögzítés, pl. építési területen
- Zsaluzások

MKÖDÉSE

- Az ULTRACUT FBS II betoncsavar átmenőszerelemmel alkalmazható.
- Függőleges szerelés esetén a furatot nem szükséges tisztítani (mennyezet és aljzat). Aljzatnál azonban a furatot 3 fúróátmérővel mélyebbre kell fúrni.
- Ütvecsavarozógép használata javasolt speciális Torx behajtóheggyel.
- A csavar szerelése helyes, ha a csavarfej felfekszik a rögzítendő tárgyon (szemrevételezés).



MSZAKI ADATOK



Betoncsavar ULTRACUT FBS II 8-14

Termék megnevezése	Cikkszám	ETA engedély	DIBt-engedély	Furatátmérő d_0 [mm]	Min. furatmélység átmenőszerelemnél h_2 [mm]	Csavar $d_s \times l_s$ [mm]	Behajtás
ULTRACUT FBS II 8x55 5/- US TX	536851	■	●	8	65	10 x 55	TX40/SW13

Termék megnevezése	Cikkszám	ETA engedély	DIBt-engedély	Furatátmérő d_0 [mm]	Min. furatmélység átmenőszerelésnél h_2 [mm]	Csavar $d_s \times l_s$ [mm]	Behajtás
ULTRACUT FBS II 8x70 20/5 US TX	536852	■	●	8	80	10 x 70	TX40/SW13
ULTRACUT FBS II 8x80 30/15 US TX	536853	■	●	8	90	10 x 80	TX40/SW13
ULTRACUT FBS II 8x90 40/25 US TX	536854	■	●	8	100	10 x 90	TX40/SW13
ULTRACUT FBS II 8x100 50/35 US TX	536855	■	●	8	110	10 x 100	TX40/SW13
ULTRACUT FBS II 8x110 60/45 US TX	536856	■	●	8	120	10 x 110	TX40/SW13
ULTRACUT FBS II 8x130 80/65 US TX	536857	■	●	8	140	10 x 130	TX40/SW13
ULTRACUT FBS II 10x60 5/-/- US	536858	■	●	10	70	12 x 60	SW 15
ULTRACUT FBS II 10x70 15/5/- US	536859	■	●	10	80	12 x 70	SW 15
ULTRACUT FBS II 10x80 25/15/- US	536860	■	●	10	90	12 x 80	SW 15
ULTRACUT FBS II 10x90 35/25/5 US	536861	■	●	10	100	12 x 90	SW 15
ULTRACUT FBS II 10x100 45/35/15 US	536862	■	●	10	110	12 x 100	SW 15
ULTRACUT FBS II 10x120 65/55/35 US	536863	■	●	10	130	12 x 120	SW 15
ULTRACUT FBS II 10x140 85/75/55 US	536864	■	●	10	150	12 x 140	SW 15
ULTRACUT FBS II 10x160 105/95/75 US	536865	■	●	10	170	12 x 160	SW 15
ULTRACUT FBS II 10x200 145/135/115 US	536866	■	●	10	210	12 x 200	SW 15
ULTRACUT FBS II 10x230 175/165/145 US	536867	■	●	10	240	12 x 230	SW 15
ULTRACUT FBS II 10x260 205/195/175 US	536868	■	●	10	270	12 x 260	SW 15
ULTRACUT FBS II 12x70 10/-/- US	536869	■	●	12	80	14 x 70	SW 17
ULTRACUT FBS II 12x85 25/10/- US	536870	■	●	12	95	14 x 85	SW 17
ULTRACUT FBS II 12x110 50/35/10 US	536871	■	●	12	120	14 x 110	SW 17
ULTRACUT FBS II 12x130 70/55/30 US	536872	■	●	12	140	14 x 130	SW 17
ULTRACUT FBS II 12x150 90/75/50 US	536873	■	●	12	160	14 x 150	SW 17
ULTRACUT FBS II 14x75 10/-/- US	536874	■	●	14	90	16 x 75	SW 21
ULTRACUT FBS II 14x95 30/10/- US	536875	■	●	14	110	16 x 95	SW 21
ULTRACUT FBS II 14x100 35/15/- US	536876	■	●	14	115	16 x 100	SW 21
ULTRACUT FBS II 14x125 60/40/10 US	536877	■	●	14	140	16 x 125	SW 21
ULTRACUT FBS II 14x150 85/65/35 US	536878	■	●	14	165	16 x 150	SW 21
ULTRACUT FBS II 8x60 10/- SK	536880	■	●	8	70	10 x 60	TX40
ULTRACUT FBS II 8x80 30/15 SK	536881	■	●	8	90	10 x 80	TX40
ULTRACUT FBS II 8x90 40/25 SK	536882	■	●	8	100	10 x 90	TX40
ULTRACUT FBS II 10x65 10/-/- SK	536884	■	●	10	75	12 x 65	TX50
ULTRACUT FBS II 10x80 25/15/- SK	536885	■	●	10	90	12 x 80	TX50
ULTRACUT FBS II 10x95 40/30/10 SK	536886	■	●	10	105	12 x 95	TX50
ULTRACUT FBS II 10x100 45/35/15 SK	536887	■	●	10	110	12 x 100	TX50
ULTRACUT FBS II 10x120 65/55/35 SK	536888	■	●	10	130	12 x 120	TX50

LOADS

Concrete screw with hexagon head and washer FBS II US and counter sunk head FBS II SK

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) 8)}										Minimum spacings while reducing the load	
Type	Material fixing element	Minimum member thickness h_{min} [mm]	Screw-in depth h_{nom} [mm]	Installation torque $T_{imp,max}$ ⁴⁾ [Nm]	Permissible tensile load N_{perm} ⁵⁾ [kN]	Permissible shear load V_{perm} ⁵⁾ [kN]	Required edge distance (with one edge) for		Required spacing for Max. Load s [mm]	Min. spacing s_{min} ^{6) 7)} [mm]	Min. edge distance c_{min} ^{6) 7)} [mm]
							Max. tension load c [mm]	Max. shear load c [mm]			
FBS II 8 x 50	gvz	100	50	600	2,9	4,3	40	90	120	35	35
FBS II 8 x 65	gvz	120	65	600	5,7	9,0	85	180	160	35	35
FBS II 10 x 55	gvz	100	55	650	4,3	4,8	70	100	130	40	40
FBS II 10 x 65	gvz	120	65	650	5,7	12,5	90	250	155	40	40
FBS II 10 x 85	gvz	140	85	650	9,6	16,6	130	305	205	40	40
FBS II 12 x 60	gvz	110	60	650	5,5	11,0	90	230	140	50	50
FBS II 12 x 75	gvz	130	75	650	8,0	15,2	115	290	180	50	50
FBS II 12 x 100	gvz	150	100	650	12,5	20,3	150	355	245	50	50
FBS II 14 x 65	gvz	120	65	650	6,1	12,1	100	235	150	60	60
FBS II 14 x 85	gvz	140	85	650	9,4	18,8	130	340	200	60	60
FBS II 14 x 115	gvz	180	115	650	15,4	29,4	175	465	280	60	60

For the design the complete assessment ETA-15/0352 has to be considered.⁸⁾

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. For further allowable drill methods see ETA-15/0352.

⁴⁾ Maximum allowable torque for installation with any tangential impact screw driver.

⁵⁾ For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see ETA-15/0352.

⁶⁾ Minimum possible axial spacings resp. edge distance while reducing the permissible load.

⁷⁾ Minimum possible spacing resp. edge distance while reducing the permissible load for the required minimum member thickness. The combination of minimum edge distance and minimum spacing is not possible. One of both values has to be increased acc. ETA-15/0352.

⁸⁾ The given loads refer to the European Technical Assessment ETA-15/0352, issue date 12/04/2016. Design of the loads according ETAG 001, Annex C, Method A (for static resp. quasi-static loads).

⁹⁾ 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 $w_k \sim 0,3\text{mm}$.

Nagyszilárdságú rögzítések/acéldübelek

LOADS

Concrete screw with hexagon head and washer FBS II US and counter sunk head FBS II SK

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 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	Max. Load	Max. Load			
		h_{min}	h_{nom}	$T_{imp,max}$	$N_{perm}^{5)}$	$V_{perm}^{5)}$	c	c	s_{cr}	s	$s_{min}^{6)7)}$	c_{min}	
		[mm]	[mm]	[Nm]	[kN]	[kN]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
FBS II 8 x 50	gvz	100	50	600	6,1	6,1	75	90	120	120	35	35	
FBS II 8 x 65	gvz	120	65	600	9,0	9,0	100	125	160	160	35	35	
FBS II 10 x 55	gvz	100	55	650	6,8	6,8	85	100	130	130	40	40	
FBS II 10 x 65	gvz	120	65	650	8,8	14,0	100	195	155	155	40	40	
FBS II 10 x 85	gvz	140	85	650	13,5	16,6	130	210	205	205	40	40	
FBS II 12 x 60	gvz	110	60	650	7,7	15,2	90	220	145	140	50	50	
FBS II 12 x 75	gvz	130	75	650	11,2	15,2	115	195	180	180	50	50	
FBS II 12 x 100	gvz	150	100	650	17,5	20,3	150	240	305	245	50	50	
FBS II 14 x 65	gvz	120	65	650	8,5	17,0	100	235	150	150	60	60	
FBS II 14 x 85	gvz	140	85	650	13,2	22,1	130	275	205	200	60	60	
FBS II 14 x 115	gvz	180	115	650	21,6	29,4	175	315	350	280	60	60	

For the design the complete assessment ETA-15/0352 has to be considered.⁸⁾

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. For further allowable drill methods see ETA-15/0352.

⁴⁾ Maximum allowable torque for installation with any tangential impact screw driver.

⁵⁾ For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see ETA-15/0352.

⁶⁾ Minimum possible axial spacings resp. edge distance while reducing the permissible load.

⁷⁾ Minimum possible spacing resp. edge distance while reducing the permissible load for the required minimum member thickness. The combination of minimum edge distance and minimum spacing may be possible. One of both values has to be increased acc. ETA-15/0352.

⁸⁾ The given loads refer to the European Technical Assessment ETA-15/0352, issue date 12/04/2016. Design of the loads according ETAG 001, Annex C, Method A (for static resp. quasi-static loads).

LOADS

Concrete screw ULTRACUT FBS II

Highest recommended loads ¹⁾³⁾ for each fixing point ⁴⁾⁵⁾⁶⁾⁷⁾ in solid brick masonry.

Type			ULTRACUT	
			FBS II 8	FBS II 10
Screw-in depth	h_{nom}	[mm]	65	85
Anchorage in masonry				
Recommended loads in solid clay brick (EN771-1) $\geq 240 \times 113 \times 115$ mm	$\geq 12^{2)}$	[kN]	1,1	1,4
	$\geq 20^{2)8)}$	[kN]	1,6	1,6
Recommended loads in solid sand-lime brick (EN771-2) $\geq 240 \times 71 \times 115$ mm	$\geq 12^{2)8)}$	[kN]	1,2	1,2
	$\geq 20^{2)8)}$	[kN]	1,2	1,2
Recommended loads in aerated concrete (EN771-4) $\geq 499 \times 100 \times 100$ mm	$\geq 6^{2)}$	[kN]	0,7	0,9
Minimum spacing within anchor groups of 2 or 4 anchors	s_{min}	[mm]	80	
Minimum distance to the horizontal joint	$c_{min,v}$	[mm]	20	
Minimum distance to the vertical joint	$c_{min,h}$	[mm]	40	
Minimum distance to the free edge	$c_{min,free}$	[mm]	200	

¹⁾ An appropriate safety factor is considered.

²⁾ The given loads apply to the given brick measures. For bigger sizes higher recommended loads may be possible. In this case please contact our technical department for further advice.

³⁾ 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 joints.

⁵⁾ The given data are valid for multiple fixings of non-structural applications.

⁶⁾ A fixing point can be a single anchor, 2 anchors or 4 anchors with a minimum spacing s_{min} . Anchor groups of 4 anchors are arranged in rectangular disposition.

⁷⁾ The fixing points have to be arranged in this way that there will be always maximum one fixing point arranged in one brick.

⁸⁾ Brick pull-out is decisive.

LOADS

Highest permissible loads¹⁾ for a single anchor for use as a temporary fixing of site equipment⁴⁾

Type	Screw-in depth	Min. member thickness	Max. torque-moment with impact screw driver	Max. torque-moment with standard torque wrench	Permissible loads for tension, shear and oblique load under any angle for cracked and non-cracked concrete depending to the concrete cube compressive strength $f_{ck,cube}$				Min. spacing	Min. edge distance oblique to the shear load direction	Min. edge distance rectangular to the shear load direction
					$\geq 10 \text{ N/mm}^2$	$\geq 15 \text{ N/mm}^2$	$\geq 20 \text{ N/mm}^2$	$\geq 25 \text{ N/mm}^2$			
					$F_{perm}^{3)}$	$F_{perm}^{3)}$	$F_{perm}^{3)}$	$F_{perm}^{3)}$			
FBS II 8	50	100	400	45	1,9	2,3	2,6	2,9	200	65	100
	65	150	400	65	3,6	4,4	5,1	5,6	300	100	150
FBS II 10	55	105	400	65	2,2	2,7	3,1	3,5	210	70	105
	65	130	400	65	2,9	3,5	4,1	4,5	260	85	130
	85	205	650	100	5,8	7,1	8,1	9,1	410	135	205
FBS II 12	60	120	400	75	2,8	3,4	3,9	4,4	240	80	120
	75	150	400	75	4,0	4,9	5,6	6,4	300	100	150
	100	240	650	150	7,6	9,3	10,8	12,0	480	160	240
FBS II 14	65	115	400	75	2,3	2,8	3,2	3,6	230	75	115
	85	150	400	75	3,6	4,4	5,0	5,6	300	100	150
	115	255	650	150	8,9	10,9	12,6	14,0	510	170	255

For the design the complete approval Z-21.8-2049 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 $\gamma_L = 1.4$ are considered. Only single anchors are covered by the approval.

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

³⁾ Valid for tensile load, shear load and oblique load under any angle.

⁴⁾ E.g. braces for formwork, fall protection and scaffolding.

⁵⁾ According the approval thinner member thickness is possible while reducing the loads (see approval).