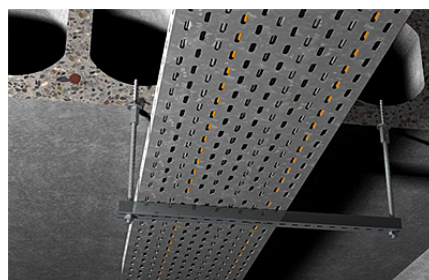
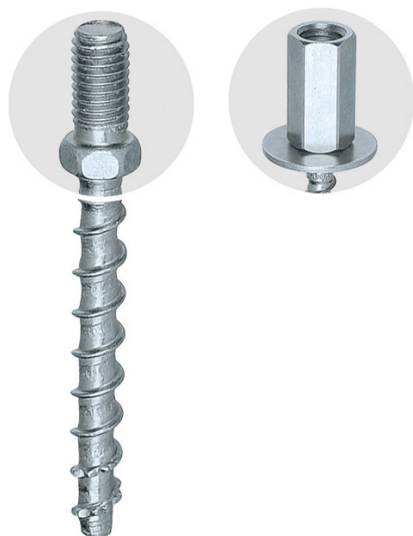


The versatile screw solution for fast and simple installation



VERSIONS

- zinc-plated steel

BUILDING MATERIALS

Approved for:

- Concrete C20/25 to C50/60, cracked, for the multiple fixings of non-load-bearing systems
- Pre-stressed concrete hollow slabs C30/37 to C50/60

Also suitable for:

- Concrete C12/15
- Natural stone with dense structure

APPROVALS



ADVANTAGES

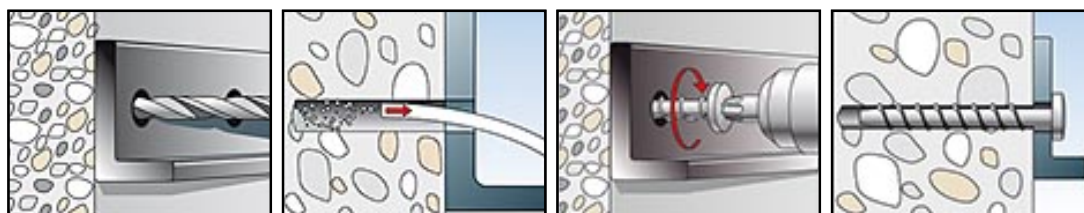
- The FBS 6 with two different screw-in depths offers maximum flexibility.
- The small drill hole depth and reduced screw-in depth noticeably speeds up and facilitates assembly.
- The short FBS 6 version (reduced screw-in depth) is the fast and economic choice for a large number of applications.
- The head types M8 with external thread and M8/M10 I type with stepped internal thread provide for a broad variety of applications.
- The FBS 6 is approved for multi-point fixings of non-load-bearing systems and is now also approved for applications in prestressed concrete hollow ceilings.

APPLICATIONS

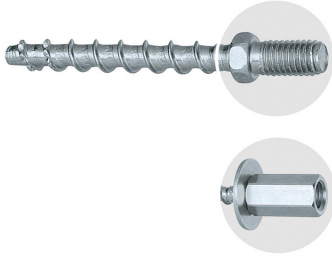
- Suspension for individual pipes
- Rail anchoring
- Suspended mounting rails
- Ventilation ducts
- Cable trays
- Punched tapes
- Temporary anchors
- Prestressed concrete hollow core ceilings

FUNCTIONING

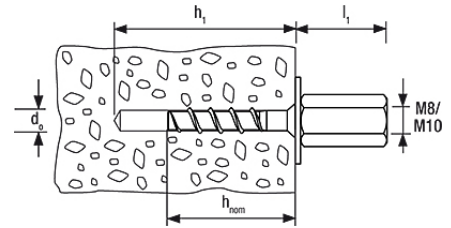
- FBS type M8 and type M8/M10 I are suited for pre-positioned assembly.
- When the concrete screw is screwed into the drill hole, the thread flanks cut into the concrete in a positive locking manner.
- It is best installed using a tangential impact wrench with a socket or bits suited for this type of wrench.



TECHNICAL DATA



Concrete screw FBS 6 M



galvanized

Type	Art.-No.	ETA-approval	Drill hole diameter d_0 [mm]	Min. drill hole depth for pre- positioned installation h_1 [mm]	Projection length l_1 [mm]	Screw-in depth $h_{nom, stand.} /$ $h_{nom, red.}$ [mm]	Drive
FBS 6 x 35 M8/M10 I	523912	■	6	45	26.5	- / 35	SW 13
FBS 6 x 55 M8/M10 I	066950	■	6	65	26.5	55 / -	SW 13
FBS 6 x 35 M8/19	523913	■	6	45	19	- / 35	SW 10
FBS 6 x 55 M8/19	066949	■	6	65	19	55 / -	SW 10

LOADS

Concrete screw FBS 6

Highest permissible loads for a single anchor¹⁾ for multiple use for non-structural applications in concrete C20/25 up to C50/60. For the design the complete approval ETA - 11/0093 has to be considered.

Type	Reduced embedment depth	Standard embedment depth	Minimum member thickness	Torque moment	Cracked and non-cracked concrete			
	$h_{nom, red}$ [mm]	$h_{nom, sta}$ [mm]	h_{min} [mm]	$T_{inst, max}$ [Nm]	Permissible tensile load $N_{perm}^{3)}$ [kN]	Permissible shear load $V_{perm}^{3)}$ [kN]	Min. spacing $s_{min}^{2)}$ [mm]	Min. edge distance $c_{min}^{2)}$ [mm]
FBS 6	35	-	80	≤ 10	0,6	2,4	35	35
FBS 6	-	55	100	≤ 10	3,6	3,3	40	40

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

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

³⁾ For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see approval.

LOADS

Concrete screw FBS 6

Highest permissible loads¹⁾ for a single anchor for multiple use for non-structural applications in pre-stressed hollow core slabs⁴⁾. For the design the complete approval ETA - 11/0093 has to be considered.

Type	Bottom flange thickness	Minimum embedment depth	Torque moment	Pre-stressed hollow core slabs		
	[mm]	h_{nom} [mm]	$T_{inst, max}$ [Nm]	Permissible load $F_{perm}^{3)}$ [kN]	Min. spacing $s_1, s_2^{2)}$ [mm]	Min. edge distance $c_1, c_2^{2)}$ [mm]
FBS 6	≥ 25	35	≤ 10	0,4	100	100
	≥ 30	35	≤ 10	0,8	100	100
	≥ 35	35	≤ 10	1,2	100	100

¹⁾ The partial safety factors for material resistance as regulated in the approval as well as a partial safety factor for load actions of $\gamma_L = 1,4$ are considered.

²⁾ Minimum possible axial spacings resp. edge distance. For further measures see approval.

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

⁴⁾ Concrete strength class C30/37 up to C50/60.

LOADS

Concrete screw FBS

Highest recommended loads¹⁾ for each fixing point^{5) 6)} in solid brick masonry.

Type			FBS 6	
Minimum member thickness	h _{min}	[mm]	115	
Embedment depth	h _{nom}	[mm]	55	
Minimum spacing within anchor groups of 2 or 4 anchors	s _{min} ²⁾	[mm]	60	
Minimum edge distance	c _{min} ²⁾	[mm]	200	
Minimum distance to the horizontal joint	s _{min} ⊥	[mm]	20	
Minimum distance to the vertical joint	s _{min}	[mm]	40	
Minimum distance between anchor groups	a	[mm]	7)	
Minimum brick dimensions		[mm]	240x115x113	
Recommended total load for a single anchor resp. anchor group F _{rec} ³⁾⁶⁾				
Solid brick Mz ⁴⁾	f _{ck} ≥ 12 N /mm ²	F _{emp} f ³⁾	[kN]	0,85
Solid sand-lime brick KS ⁴⁾	f _{ck} ≥ 12 N /mm ²	F _{emp} o ³⁾	[kN]	0,66

¹⁾ An appropriate safety factor is considered.

²⁾ Smallest possible spacing resp. edge distance without reducing the recommended load.

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

⁴⁾ Solid bricks acc. EN 771-1 resp. EN 772-2.

⁵⁾ The given data are valid for multiple fixings of non-structural applications. If the joints are not visible 100% anchor testing is recommended.

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.