... eine starke Verbindung

VYHLÁSENIE O PARAMETROCH

DoP č.: **MKT-1.3-200_sk**

✧ **Jedinečný identifikačný kód typu výrobku:** **Skrutka do betónu BSZ**

✧ **Zamýšľané použitie/použitia:** Skrutka do betónu pre viacbodové upevnenie len pre nenosné konštrukcie, viď príloha / Annex B

✧ **Výrobca:** MKT Metall-Kunststoff-Technik GmbH & Co.KG
Auf dem Immel 2
67685 Weilerbach

✧ **Systém(-y) posudzovania a overovania nemennosti parametrov:** 2+

✧ **Európsky hodnotiaci dokument:** **EAD 330747-00-0601**
Európske technické posúdenie: **ETA-16/0439, 07.08.2019**
Orgán technického posudzovania: DIBt, Berlin
Notifikovaný(-é) subjekt(-y): NB 2873 – Technische Universität Darmstadt

✧ **Deklarované parametre:**

Podstatné vlastnosti	Parametre
Bezpečnosť v prípade požiaru (BWR 2)	
Správanie pri požiari	Trieda A1
Požiarna odolnosť	Príloha / Annex C3
Bezpečnosť pri používaní (BWR 4)	
Charakteristická únosnosť v ťahu (statické a kvázi-statické)	Príloha / Annex C1
Charakteristická únosnosť v šmyku (statické a kvázi-statické)	Príloha / Annex C1
Charakteristická odolnosť pre všetky smery zaťaženia a všetky typy porúch pre zjednodušenú konštrukciu	Príloha / Annex C2
Trvanlivosť	Príloha / Annex B1

Uvedené parametre výrobku sú v zhode so súborom deklarovaných parametrov. Toto vyhlásenie o parametroch sa v súlade s nariadením (EÚ) č. 305/2011 vydáva na výhradnú zodpovednosť uvedeného výrobcu.

Podpísal(-a) za a v mene výrobcu:

Stefan Weustenhagen
(Generálny riaditeľ)
Weilerbach, 01.01.2021

p.p.
Dipl.-Ing. Detlef Bigalke
(Vedúci vývoja produktov)

Originál tohto vyhlásenia o vykonaní bol napísaný v nemčine. V prípade odchýlok v preklade platí nemecká verzia.

Specifications of Intended use

Concrete screw BSZ		BSZ 5	BSZ 6
Anchorages subject to	**Redundant non-structural systems** according to EN 1992-4:2018	✓	✓
	Static or quasi-static loads	✓	✓
	Fire exposure in solid concrete	-	✓
Base material	Cracked or uncracked concrete	✓	✓
	Compacted, reinforced or unreinforced concrete (without fibres) according to EN 206:2013	✓	✓
	Strength classes according to EN 206:2013: C20/25 to C50/60	✓	✓
	Precast pre-stressed hollow core slabs: C30/37 to C50/60	-	✓

Use conditions (Environmental conditions):

- Structures subject to dry internal conditions
  (zinc plated steel, stainless steel or high corrosion resistant steel).
- Structures subject to external atmospheric exposure including industrial and marine environment or exposure to permanently damp internal condition, if no particular aggressive conditions exist
  (stainless steel or high corrosion resistant steel).
- Structures subject to external atmospheric exposure and to permanently damp internal condition, if other particular aggressive conditions exist
  (high corrosion resistant steel)

  Note: Particular aggressive conditions are e.g. permanent, alternation immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor pools or atmosphere with extreme chemical pollution (e.g. in desulphurization plants or road tunnels where de-icing materials are used).

Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings (e.g. position of the anchor relative to reinforcement or to supports, etc.).
- Design method for anchorages acc. to EN 1992-4:2018 and EOTA Technical Report TR 055:
  - Anchorages in solid concrete: design method A
  - Anchorages in precast pre-stressed hollow core slabs: design method C
  - The design method for shear load also applies for the specified diameter d_f of the clearance hole in the fixture in Annex B2, Table B1.

Installation:

- Making of drill hole by hammer drilling or vacuum drill bit.
- Anchor installation carried out by appropriately qualified personal and under the responsibility of the person responsible for technical matters on site
- After installation further turning of the anchor is not possible. The head of the anchor is supported on the fixture and is not damaged.

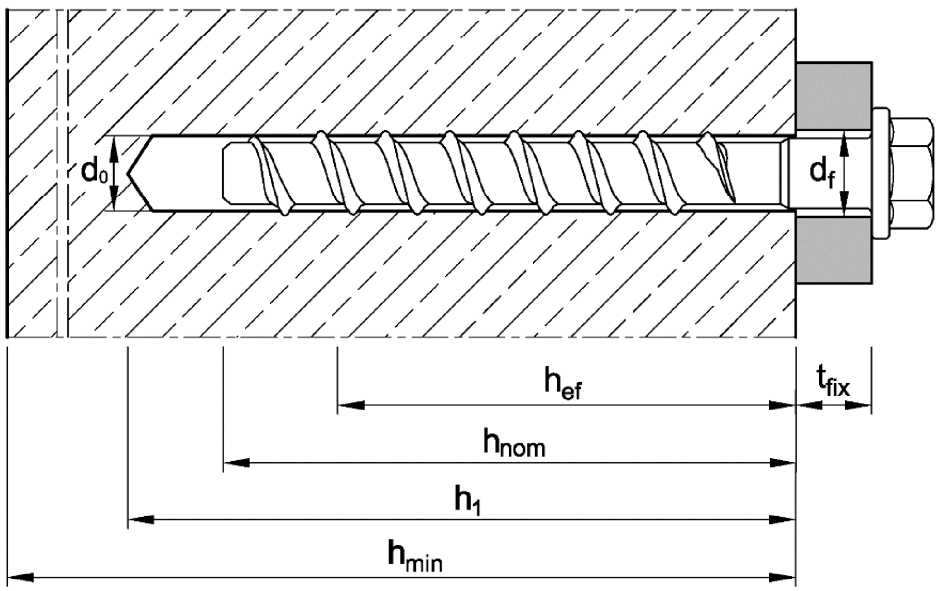
Table B1: Installation parameters

Anchor size			BSZ 5	BSZ 6	
Nominal embedment depth	h_{nom}	[mm]	35	35	55
Nominal drill bit diameter	d_0	[mm]	5	6	
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	5,4	6,4	
Effective anchorage depth	h_{ef}	[mm]	27	27	44
Depth of drill hole	$h_1 \geq$	[mm]	40	40	60
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	7	8	
Max. Installation torque for screws with metric connection thread	$T_{inst} \leq$	[Nm]	8	10	
Tangential impact screw driver [1)]	$T_{imp,max}$	[Nm]	110	160	

[1)] Installation with tangential impact screw driver, with maximum power output $T_{imp,max}$ acc. to manufacturers instructions is possible

Table B2: **Minimum thickness of member, minimum edge distance and minimum spacing** for anchorages in solid concrete

Anchor size			BSZ 5	BSZ 6	
Nominal embedment depth	h_{nom}	[mm]	35	35	55
Minimum thickness of member	h_{min}	[mm]	80	80	100
Minimum edge distance	c_{min}	[mm]	35	35	40
Minimum spacing	s_{min}	[mm]	35	35	40



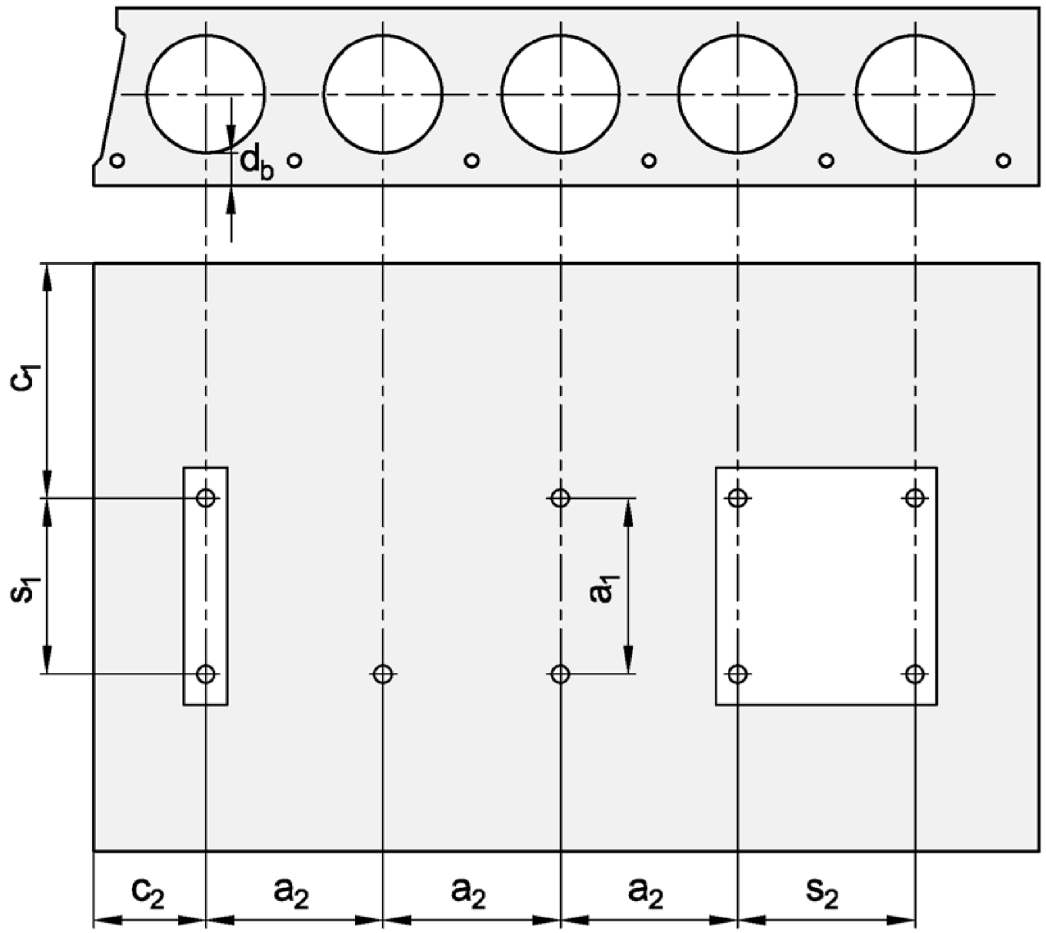
Concrete Screw BSZ

Intended use
Installation parameters
Minimum thickness of concrete member, minimum spacing and edge distance (solid concrete)

Annex B2

Table B3: Minimum edge distances and minimum spacing for anchorages in precast pre-stressed hollow core slabs

Anchor size			**BSZ 6**		
Flange thickness	d_b	**[mm]**	**≥ 25**	**≥ 30**	**≥ 35**
Minimum edge distance	c_{min}	[mm]	≥ 100 mm		
Minimum spacing	s_{min}	[mm]	≥ 100 mm		
Minimum distance between anchor groups	a_{min}	[mm]	≥ 100 mm		



c_1, c_2 Edge distance

s_1, s_2 Spacing

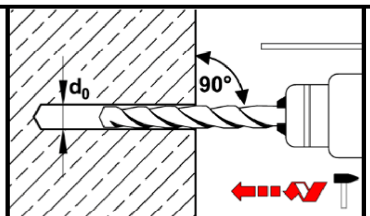
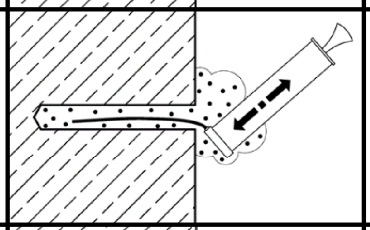
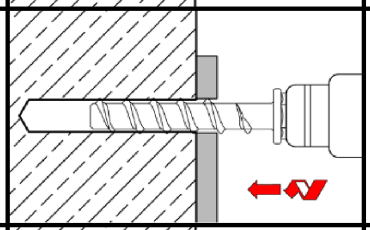
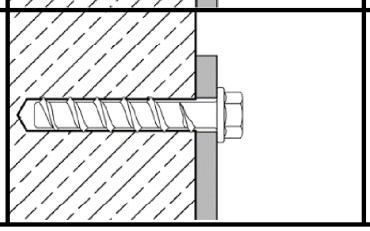
a_1, a_2 Distance between anchor groups

Concrete Screw BSZ

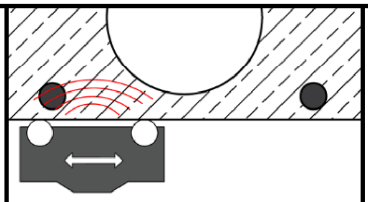
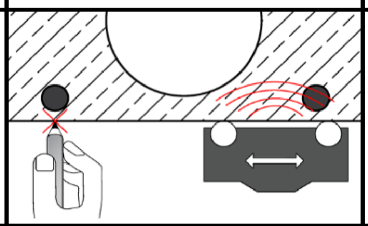
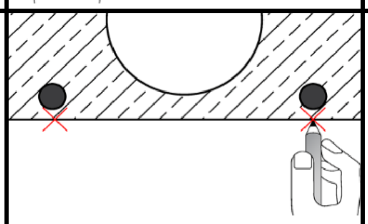
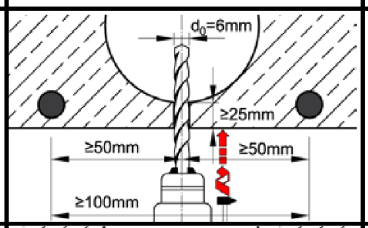
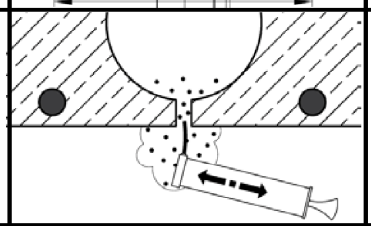
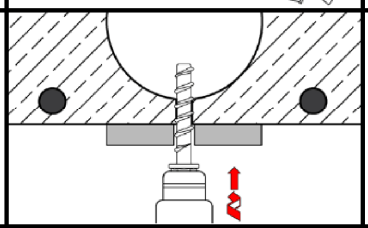
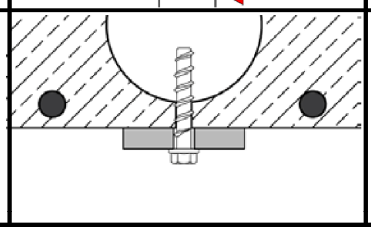
Intended use
Installation parameters (precast pre-stressed hollow core slabs)

Annex B3

Installation instructions for anchorages in solid concrete slabs

1		Drill hole perpendicular to concrete surface. Using a suction drill, continue with step 3.
2		Blow out dust or alternatively vacuum clean down to the bottom of the hole.
3		Screw in concrete screw, e.g. with tangential impact screw driver or torque wrench.
4		After installation, the head of the anchor is supported on the fixture must be undamaged.

Installation instructions for anchorages in precast pre-stressed hollow core slabs

1		Search for position of pre-stressing steel.
2		Mark position and search for the next position of pre-stressed steel.
3		Mark second position of pre-stressed steel.
4		Drill hole taking into account the installation parameters and distances. Using a suction drill, continue with step 6.
5		Blow out dust or alternatively vacuum drill hole.
6		Screw in concrete screw, e.g. with tangential impact screw driver or torque wrench.
7		After installation, the head of the anchor is supported on the fixture and must be undamaged.

Concrete Screw BSZ

Intended use
Installation instructions (precast pre-stressed hollow core slabs)

Annex B5

Table C1: Characteristic values for anchorages in solid concrete

Anchor size				**BSZ 5**	**BSZ 6**	
Nominal embedment depth		h_{nom}	[mm]	35	35	55
Tension load						
Installation factor		γ_{inst}	[-]	1,2	1,0	
Steel failure						
Characteristic resistance		$N_{Rk,s}$	[kN]	8,7	14,0	
Partial factor		$\gamma_{Ms,N}$	[-]	1,5	1,5	
Pull-out						
Characteristic resistance in cracked and uncracked concrete C20/25		$N_{Rk,p}$	[kN]	1,5	3,0	7,5
Increasing factor for $N_{Rk,p}$		Ψ_C	[-]	$\left(\frac{f_{ck}}{20}\right)^{0,5}$		
Concrete cone failure						
Effective anchorage depth		h_{ef}	[mm]	27	27	44
Spacing		$s_{cr,N}$	[mm]	3 h_{ef}		
Edge distance		$c_{cr,N}$	[mm]	1,5 h_{ef}		
Factor k_1 for concrete	cracked	$k_{cr,N}$	[-]	7,7		
	uncracked	$k_{ucr,N}$	[-]	11,0		
Splitting						
Spacing		$s_{cr,sp}$	[mm]	120	120	160
Edge distance		$c_{cr,sp}$	[mm]	60	60	80
Shear load						
Installation factor		γ_{inst}	[-]	1,0	1,0	
Steel failure without lever arm						
Characteristic resistance		$V^0_{Rk,s}$	[kN]	4,4	7,0	
Partial factor		$\gamma_{Ms,V}$	[-]	1,25	1,25	
Ductility factor		k_7	[-]	0,8	0,8	
Steel failure with lever arm						
Characteristic bending resistance		$M^0_{Rk,s}$	[Nm]	5,3	10,9	
Concrete pry-out failure						
Pry-out factor		k_8	[-]	1,0	1,0	
Concrete edge failure						
Effective length of anchor		$l_f = h_{ef}$	[mm]	27	27	44
Outside diameter of anchor		d_{nom}	[mm]	5	6	

Table C2: Characteristic values of resistance in **precast pre-stressed hollow core slabs** C30/37 to C50/60

Anchor size			**BSZ 6**		
Flange thickness	**d_b**	**[mm]**	**≥ 25**	**≥ 30**	**≥ 35**
Characteristic resistance for all directions	F_{Rk}	[kN]	1	2	3
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	10,9		
Edge distance	$c_{cr} = c_{min}$	[mm]	100		
Spacing	$s_{cr} = s_{min}$	[mm]	100		
Partial factor	γ_M	[-]	1,5		
Installation factor	γ_{inst}	[-]	1,0		

Table C3: Characteristic values of resistance under **fire exposure** for anchorages in solid concrete

Anchor size				**BSZ 6**			
Material				**Steel, zinc plated**		**Stainless steel A4 / HCR**	
Nominal embedment depth		h_{nom}	[mm]	35	55	35	55
Steel failure (tension and shear resistance)							
Characteristic resistance	R30	$N_{Rk,s,fi}$ = $V_{Rk,s,fi}$	[kN]	0,9		1,2	
	R60			0,8		1,2	
	R90			0,6		1,2	
	R120			0,4		0,8	
Steel failure with lever arm							
Characteristic bending resistance	R30	$M^0_{Rk,s,fi}$	[Nm]	0,7		0,9	
	R60			0,6		0,9	
	R90			0,5		0,9	
	R120			0,3		0,6	
Spacing		$s_{cr,fi}$	[mm]	4 h_{ef}			
Edge distance		$c_{cr,fi}$	[mm]	2 h_{ef}			
The anchorage depth has to be increased for wet concrete by at least 30 mm compared to the given values							

The characteristic resistance for pull-out, concrete cone failure, concrete pry-out and concrete edge failure shall be calculated according to EN 1992-4:2018.