... eine starke Verbindung

DECLARATION OF PERFORMANCE
DoP No. MKT-720 - en

1. Unique identification code of the product-type: **MKT Concrete Screw BSZ**

2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):
ETA-16/0439, Annex A3
Batch number: see packaging of the product.

3. Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:

generic type	concrete screw
for use in	cracked or uncracked concrete C20/25 - C50/60 (EN 206), for multiple use for non-structural applications in concrete and prestressed hollow core slabs
option	ETAG 001-06
loading	static or quasi-static
material	galvanised steel or steel with zinc flake coating: dry internal conditions only covered sizes: BSZ 5, BSZ 6 stainless steel (marking A4): internal and external use without particular aggressive conditions covered sizes: BSZ 5, BSZ 6 highly corrosion resistant steel (marking HCR): internal and external use with particular aggressive conditions covered sizes: BSZ 5, BSZ 6
temperature range (if applicable)	--

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):
MKT Metall-Kunststoff-Technik GmbH & Co. KG
Auf dem Immel 2
D - 67685 Weilerbach

5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2): --

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V: **System 2+**

7. In case of the declaration of performance concerning a construction product covered by a harmonised standard: --

8. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Deutsches Institut für Bautechnik, Berlin

issued

ETA-16/0439

on the basis of

ETAG 001-6

The notified body 1343-CPR performed under system 2+:

(i) initial inspection of the manufacturing plant and of factory production control;
(ii) continuous surveillance, assessment and evaluation of factory production control.

and issued: Certificate of constancy of performance 1343-CPR-M 550-12

9. Declared performance:

Essential Characteristics	**Design Method**	**Performance**	**Harmonized Technical Specification**
characteristic resistance for tension	ETAG 001, Annex C CEN/TS 1992-4	Annex C1	ETAG 001
characteristic resistance for shear	ETAG 001, Annex C CEN/TS 1992-4	Annex C1	
Characteristic resistance in precast prestressed hollow core slabs	ETAG 001, Annex C	Annex C2	
characteristic resistance under fire exposure	TR 020 CEN/TS 1992-4	Annex C3	

Where pursuant to Article 37 or 38 in the Specific Technical Documentation has been used, the requirements with which the product complies: --

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9.

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Stefan Weustenhagen
(General Manager)
Weilerbach, 08.08.2016

i.V.

Dipl.-Ing. Detlef Bigalke
(Head of product development)

Table C1: Characteristic values for **tension loads**

Anchor size				**BSZ 5**	**BSZ 6**	
Nominal embedment depth		h_{nom}	[mm]	35	35	55
Installation safety factor		$\gamma_2 = \gamma_{inst}$	[-]	1,2	1,2	1,0
Steel failure						
Characteristic tension resistance		$N_{Rk,s}$	[kN]	8,7	14,0	
Pull-out						
Characteristic resistance in cracked and uncracked concrete C20/25		$N_{Rk,p}$	[kN]	1,5	1,5	7,5
Increasing factor for $N_{Rk,p}$ for concrete strength > C20/25		Ψ_C	[-]	$\left(\frac{f_{ck,cube}}{25}\right)^{0,5}$		
Concrete cone failure						
Effective anchorage depth		h_{ef}	[mm]	27	27	44
Spacing (Edge distance)		$s_{cr,N}$ ($c_{cr,N}$)	[mm]	3 h_{ef} (1,5 h_{ef})		
Factor for concrete (according CEN/TS 1992-4)	cracked	k_{cr}	[-]	7,2		
	uncracked	k_{ucr}	[-]	10,1		
Splitting						
Spacing		$s_{cr,sp}$	[mm]	120	120	160
Edge distance		$c_{cr,sp}$	[mm]	60	60	80

Table C2: Characteristic values for **shear loads**

Anchor size			**BSZ 5**	**BSZ 6**	
Nominal embedment depth	h_{nom}	[mm]	35	35	55
Installation safety factor	$\gamma_2 = \gamma_{inst}$	[-]	1,0	1,0	
Steel failure without lever arm					
Characteristic shear resistance	$V_{Rk,s}$	[kN]	4,4	7,0	
Factor of ductility acc. to CEN/TS 1992-4	k_2	[-]	0,8	0,8	
Steel failure with lever arm					
Characteristic bending moment	$M^0_{Rk.s}$	[Nm]	5,3	10,9	
Concrete pry-out failure					
Factor k acc. to ETAG 001, Annex C or k_3 acc. to CEN/TS 1992-4	$k_{(3)}$	[-]	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	

Concrete Screw BSZ

Performance
Characteristic values for **tension and shear loads**

Annex C1

Table C3: Characteristic values of resistance in **precast prestressed hollow core slabs** C30/37 to C50/60

Anchor size			**BSZ 6**		
Installation safety factor	$\gamma_2 = \gamma_{inst}$	[-]	1,2		
Flange thickness	**d_b**	**[mm]**	**≥ 25**	**≥ 30**	**≥ 35**
Characteristic resistance for all directions	F_{Rk}	[kN]	1	2	3
Characteristic bending moment	$M^0_{Rk,s}$	[Nm]	10,9		
Edge distance	$c_{cr} = c_{min}$	[mm]	100		
Spacing	$s_{cr} = s_{min}$	[mm]	100		

Table C4: Characteristic values of resistance under **fire exposure** [1)]

Anchor size				**BSZ 6**			
				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 moment	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}			

[1)] The values are not for use in precast prestressed hollow core slabs

The characteristic resistance for pull-out, concrete cone failure, concrete pry-out and concrete edge failure shall be calculated according to TR 020 / CEN/TS 1992-4.