

DECLARATION OF PERFORMANCE
DoP No. MKT-161 - en

1. Unique identification code of the product-type: **MKT Highload Anchor SLZ**
2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

ETA-09/0342, Annex A2

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	torque controlled expansion anchor (sleeve type)
for use in	cracked and uncracked concrete, C20/25 - C50/60 (EN 206)
Option	1
Loading	static or quasi-static
Material	<u>zinc plated steel:</u> dry internal conditions only covered sizes: SLZ-S (14 M10) SLZ-B (14 M10)
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 1**
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:

issued **Deutsches Institut für Bautechnik, Berlin**
ETA-09/0342
on the basis of **EAD 330232-00-0601**

The notified body 1343-CPR performed under system 1:

- (i) determination of the product type on the basis of type testing (including sampling), type calculation, tabulated values or descriptive documentation of the product;
- (ii) initial inspection of the manufacturing plant and of factory production control;
- (iii) continuous surveillance, assessment and evaluation of factory production control

and issued: Certificate of constancy of performance 1343-CPR-M550-23/08.14

9. Declared performance:

Essential characteristics	Design method	Performance	Harmonized technical specification
characteristic resistance for tension	FprEN 1992-4 and TR 055	Annex C1	EAD 330232-00-0601
characteristic resistance for shear	FprEN 1992-4 and TR 055	Annex C2	
displacement for serviceability limit state	FprEN 1992-4 and TR 055	Annex C1 and C2	
characteristic resistance under fire exposure	FprEN 1992-4 and TR 055	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, 01.03.2018

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



Table C1: Characteristic values for tension loads

Anchor size			14/M10
Installation safety factor	γ_{inst}	[-]	1,0
Steel failure			
Characteristic resistance	$N_{RK,s}$	[kN]	46
Partial safety factor	γ_{Ms}	[-]	1,5
Pull-out failure			
Characteristic resistance in cracked concrete C20/25	$N_{RK,p}$	[kN]	12
Characteristic resistance in uncracked concrete C20/25	$N_{RK,p}$	[kN]	20
Increasing factors for $N_{RK,p}$	ψ_C	[-]	$\left(\frac{f_{ck}}{20}\right)^{0,5}$
Concrete cone failure			
Effective Anchorage depth	h_{ef}	[mm]	65
Spacing	$s_{cr,N}$	[mm]	3 h_{ef}
Edge distance	$c_{cr,N}$	[mm]	1,5 h_{ef}
Factor k_1 for cracked concrete	$k_{cr,N}$	[-]	7,7
Factor k_1 for uncracked concrete	$k_{ucr,N}$	[-]	11,0
Splitting failure			
Characteristic resistance in uncracked concrete	$N^0_{RK,sp}$	[kN]	$\min [N_{RK,p}; N^0_{RK,c}]$
Spacing	$s_{cr,sp}$	[mm]	390
Edge distance	$c_{cr,sp}$	[mm]	195

Table C2: Displacements under tension loads

Anchor size			14/M10
Tension load in cracked concrete	N	[kN]	5,7
Displacement	δ_{N0}	[mm]	0,8
	$\delta_{N\infty}$	[mm]	1,5
Tension load in uncracked concrete	N	[kN]	9,5
Displacement	δ_{N0}	[mm]	0,3
	$\delta_{N\infty}$	[mm]	1,2

Highload Anchor SLZ**Performance**Characteristic values and displacements under **tension load****Annex C1**

Table C3: Characteristic values for shear loads

Anchor size			14/M10
Steel failure without lever arm			
Characteristic resistance, fixture mounted on distance sleeve with $t_{\text{fix}} \leq 75$ mm	$V_{\text{RK},s}^0$	[kN]	32,8
Characteristic resistance, fixture mounted on distance sleeve with $t_{\text{fix}} > 75$ mm	$V_{\text{RK},s}^0$	[kN]	23,2
Factor	k_7	[-]	1,0
Partial safety factor	γ_{Ms}	[-]	1,25
Steel failure with lever arm			
Characteristic resistance	$M_{\text{RK},s}^0$	[Nm]	60
Partial safety factor	γ_{Ms}	[-]	1,25
Concrete pry-out failure			
Factor	k_8	[-]	2,0
Concrete edge failure			
Effective length of anchor in shear loading	l_f	[mm]	65
Outside diameter of anchor	d_{nom}	[mm]	14

Table C4: Displacements under shear loads

Anchor size			14/M10
Shear load in non-cracked concrete	V	[kN]	13,2
Displacement	δ_{V0}	[mm]	2,2
	$\delta_{V\infty}$	[mm]	3,3

Highload Anchor SLZ

Performance
 Characteristic values and displacements under **shear load**

Annex C2

Table C5: Characteristic values under fire exposure in concrete C20/25 to C50/60

Anchor size			14/M10	
Tension load				
Steel failure				
Characteristic resistance	R30	$N_{Rk,s,fi}$	[kN]	0,9
	R60			0,8
	R90			0,6
	R120			0,5
Shear load				
Steel failure without lever arm				
Characteristic resistance	R30	$V_{Rk,s,fi}$	[kN]	0,9
	R60			0,8
	R90			0,6
	R120			0,5
Steel failure with lever arm				
Characteristic resistance	R30	$M^0_{Rk,s,fi}$	[Nm]	1,1
	R60			1,0
	R90			0,7
	R120			0,6

Highload Anchor SLZ

Performance
Characteristic values under fire exposure

Annex C3