

IZJAVA O LASTNOSTIH  
DoP Nr. MKT-123 - sl

1. Enotna identifikacijska oznaka tipa proizvoda: **MKT Schwerlastanker SZ**
2. Tip, serijska ali zaporedna številka ali kateri koli drug element, na podlagi katerega je mogoče prepozнатi gradbene proizvode, v skladu s členom 11(4):

**ETA-02/0030, dodatek A2**  
**Serijska številka je odtisnjena na nalepki ali embalaži**

3. Predvidena uporaba ali predvidene vrste uporabe gradbenega proizvoda v skladu z veljavno harmonizirano tehnično specifikacijo, kot jih predvideva proizvajalec:

<b>generični tip</b>	Navor nadzoruje širitev sidra (tip ohišje)
<b>za uporabo v</b>	Beton z razpokami in brez razpok C20/25 - C50/60 (EN 206)
<b>opcija / kategorija</b>	1
<b>obremenitev</b>	Statično ali skoraj statično: alle Größen seismic, kategorija C1 + C2, - velikosti: SZ-B (12/M8, 15/M10, 18/M12, 24/M16, 24/M16L, 28/M20, 32/M24) SZ-S (12/M8, 15/M10, 18/M12, 24/M16, 24/M16L, 28/M20, 32/M24) SZ-SK (12/M8, 15/M10, 18/M12)
<b>Material</b>	<u>pocinkano jeklo:</u> samo pod pogoji suhe notranjosti - velikosti: SZ-B (10/M6, 12/M8, 15/M10, 18/M12, 24/M16, 24/M16L, 28/M20, 32/M24) SZ-S (10/M6, 12/M8, 15/M10, 18/M12, 24/M16, 24/M16L, 28/M20, 32/M24) SZ-SK (10/M6, 12/M8, 15/M10, 18/M12) <u>nerjaveče jeklo (oznaka A4):</u> notranja in zunanjna uporaba brez posebnih agresivnih pogojev - velikosti: SZ-B (12/M8, 15/M10, 18/M12, 24/M16) SZ-S (12/M8, 15/M10, 18/M12, 24/M16) SZ-SK (12/M8, 15/M10, 18/M12)
<b>temperaturno območje</b>	--

4. Ime, registrirano trgovsko ime ali registrirana blagovna znamka in naslov proizvajalca v skladu s členom 11(5):

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

5. Po potrebi ime ali naslov pooblaščenega zastopnika, katerega pooblastilo zajema naloge, opredeljene v členu 12(2): --
6. Sistem ali sistemi ocenjevanja in preverjanja nespremenljivosti lastnosti gradbenega proizvoda, kot je določeno v Prilogi V: **Sistem 1**
7. Za izjavo o lastnostih glede gradbenega proizvoda, za katerega velja harmoniziran standard:  
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8. Za izjavo o lastnostih glede gradbenega proizvoda, za katerega je bila izdana evropska tehnična ocena:

**Deutsches Institut für Bautechnik, Berlin**

izdal:

**ETA-02/0030**

na podlagi

**EAD 330232-00-0601**

Prijavljeni proizvod certifikacijski organ 1343-CPR je treba uvesti v sistem 1:

- i) določitve tipa proizvoda na podlagi preskušanja tipa (vključno z vzorčenjem), izračuna tipa, vrednosti iz preglednice ali opisne dokumentacije proizvoda;
- ii) začetnega pregleda proizvodnega obrata in tovarniške kontrole proizvodnje;
- iii) stalnega nadzora, ocenjevanja in vrednotenja tovarniške kontrole proizvodnje.

in izdal: Potrdilo o nespremenljivosti lastnosti 1343-CPR-M 550-9/08.14

9. Navedena lastnost:

Bistvene značilnosti	Metoda ocenjevanja	Lastnost		Harmonizirane tehnične specifikacije
		pocinkano jeklo	nerjaveče jeklo A4	
charakteristická únosnosť v tahu	FprEN 1992-4 & TR 055	dodatek C1, C2	dodatek C1, C3	EAD 330232-00-0601
charakteristická únosnosť v šmyku	FprEN 1992-4 & TR 055	dodatek C4	dodatek C5	
charakteristická únosnosť v seizmične obremenitve	FprEN 1992-4 & TR 055	dodatek C6	dodatek C7	
odstopanja v dovoljenih mejah uporabnosti	FprEN 1992-4 & TR 055	dodatek C9	dodatek C10	
charakteristická únosnosť v fire izpostavljenost	FprEN 1992-4 & TR 055	dodatek C8	dodatek C8	

Zahteve, ki jih izpolnjuje produkt, kadar se je v skladu s členoma 37 in 38 uporabila specifična tehnična dokumentacija: --

10. Lastnosti proizvoda, navedenega v točki 1 in 2, so v skladu z navedenimi lastnostmi iz točke 9.

Za izdajo te izjave o lastnostih je odgovoren izključno proizvajalec, naveden v točki 4:

Podpis za in v imenu proizvajalca:

*Stefan Weustenhagen*  
**Stefan Weustenhagen**  
(General Manager)  
**Weilerbach, 27.02.2018**

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



**Table C1:** Characteristic values for **tension load, cracked concrete**, static or quasi-static action, **steel zinc plated**

Anchor size		10/M6	12/M8	15/M10	18/M12	24/M16	24/ M16L	28/M20	32/M24
Installation safety factor	$\gamma_{\text{inst}}$	[ - ]					1,0		
<b>Steel failure</b>									
Characteristic resistance	$N_{Rk,s}$	[kN]	16	29	46	67	126	126	196
Partial safety factor	$\gamma_{Ms}$	[ - ]					1,5		282
<b>Pull-out failure</b>									
Characteristic resistance in cracked concrete C20/25	$N_{Rk,p}$	[kN]	5	12	16	1)	1)	1)	1)
Increasing factor for $N_{Rk,p}$	$\psi_c$	[ - ]				$\left(\frac{f_{ck}}{20}\right)^{0,5}$			
<b>Concrete cone failure</b>									
Effective anchorage depth	$h_{\text{ef}}$	[mm]	50	60	71	80	100	115	125
Factor $k_1 =$		$k_{cr,N}$	[ - ]			7,7			150

<sup>1)</sup> Pull-out is not decisive

**Table C2:** Characteristic values for **tension load, cracked concrete**, static or quasi-static action, **stainless steel A4**

Anchor size		12/M8	15/M10	18/M12	24/M16
Installation safety factor	$\gamma_{\text{inst}}$	[ - ]			1,0
<b>Steel failure</b>					
<b>SZ-B</b>					
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60
Partial safety factor	$\gamma_{Ms}$	[ - ]			1,5
<b>SZ-S and SZ-SK</b>					
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60
Partial safety factor	$\gamma_{Ms}$	[ - ]			1,87
<b>Pull-out failure</b>					
Characteristic resistance in cracked concrete C20/25	$N_{Rk,p}$	[kN]	9	16	1)
Increasing factor for $N_{Rk,p}$	$\psi_c$	[ - ]		$\left(\frac{f_{ck}}{20}\right)^{0,5}$	
<b>Concrete cone failure</b>					
Effective anchorage depth	$h_{\text{ef}}$	[mm]	60	71	80
Factor $k_1 =$		$k_{cr,N}$	[ - ]		7,7

<sup>1)</sup> Pull-out is not decisive

### Highload Anchor SZ

**Performance**  
Characteristic values for **tension load, cracked concrete**, static or quasi-static action

### Annex C1

**Table C3:** Characteristic values for **tension load, uncracked concrete**, static or quasi-static action, **steel zinc plated**

Anchor size		10/M6	12/M8	15/M10	18/M12	24/M16	24/ M16L	28/M20	32/M24	
Installation safety factor	$\gamma_{\text{inst}}$	[ $\cdot$ ]					1,0			
<b>Steel failure</b>										
Characteristic resistance	$N_{Rk,s}$	[kN]	16	29	46	67	126	126	196	282
Partial safety factor	$\gamma_{Ms}$	[ $\cdot$ ]					1,5			
<b>Pull-out failure</b>										
Characteristic resistance in uncracked concrete C20/25	$N_{Rk,p}$	[kN]	1)	20	1)	1)	1)	1)	1)	1)
Increasing factor for $N_{Rk,p}$	$\psi_c$	[ $\cdot$ ]				$\left(\frac{f_{ck}}{20}\right)^{0,5}$				
<b>Splitting failure</b> (The higher resistance of case 1 and case 2 may be applied)										
Case 1										
Characteristic resistance in uncracked concrete C20/25	$N_{Rk,sp}^0$	[kN]	12	16	25	30	40	70	50	70
Edge distance	$c_{cr,sp}$	[mm]					1,5 $h_{\text{ef}}$			
Increasing factor for $N_{Rk,sp}^0$	$\psi_c$	[ $\cdot$ ]				$\left(\frac{f_{ck}}{20}\right)^{0,5}$				
Case 2										
Characteristic resistance in uncracked concrete	$N_{Rk,sp}^0$	[kN]				min ( $N_{Rk,p}$ ; $N_{Rk,c}^0$ )				
Edge distance	$c_{cr,sp}$	[mm]			2,5 $h_{\text{ef}}$		1,5 $h_{\text{ef}}$	2,5 $h_{\text{ef}}$	2 $h_{\text{ef}}$	
<b>Concrete cone failure</b>										
Effective Anchorage depth	$h_{\text{ef}}$	[mm]	50	60	71	80	100	115	125	150
Edge distance	$c_{cr,N}$	[mm]					1,5 $h_{\text{ef}}$			
Factor $k_1 =$	$k_{ucr,N}$	[ $\cdot$ ]				11,0				

<sup>1)</sup> Pull-out is not decisive

### Highload Anchor SZ

#### Performance

Characteristic values for **tension load, uncracked concrete**, static or quasi-static action, **steel zinc plated**

#### Annex C2

**Table C4:** Characteristic values for **tension load, uncracked concrete**, static or quasi-static action, **stainless steel A4**

Anchor size		12/M8	15/M10	18/M12	24/M16
Installation safety factor	$\gamma_{\text{inst}}$	[ - ]		1,0	
<b>Steel failure</b>					
<b>SZ-B</b>					
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60
Partial safety factor	$\gamma_{Ms}$	[ - ]		1,5	
<b>SZ-S and SZ-SK</b>					
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60
Partial safety factor	$\gamma_{Ms}$	[ - ]		1,87	
<b>Pull-out failure</b>					
Characteristic resistance in uncracked concrete C20/25	$N_{Rk,p}$	[kN]	16	25	35
Increasing factor for $N_{Rk,p}$	$\psi_c$	[ - ]		$\left(\frac{f_{ck}}{20}\right)^{0,5}$	
<b>Splitting failure</b>					
Edge distance	$c_{cr,sp}$	[mm]	180	235	265
<b>Concrete cone failure</b>					
Effective anchorage depth	$h_{ef}$	[mm]	60	71	80
Edge distance	$c_{cr,N}$	[mm]		1,5 $h_{ef}$	
Factor $k_1 =$	$k_{ucr,N}$	[ - ]		11,0	

<sup>1)</sup> Pull-out is not decisive.

#### Highload Anchor SZ

#### Performance

Characteristic values for **tension loads, uncracked concrete**, static or quasi-static action, **stainless steel A4**

#### Annex C3

**Table C5:** Characteristic values of **shear load**, static or quasi-static action,  
**steel zinc plated**

Anchor size		10/M6	12/M8	15/M10	18/M12	24/M16	24/ M16L	28/M20	32/M24	
<b>Steel failure without lever arm</b>										
<b>SZ-B</b>										
Characteristic resistance	$V^0_{Rk,s}$	[kN]	16	25	36	63	91	91	122	200
Factor	$k_7$	[-]				1,0				
<b>SZ-S and SZ-SK</b>										
Characteristic resistance	$V^0_{Rk,s}$	[kN]	18	30	48	73	126	126	150	200
Factor	$k_7$	[-]				1,0				
Partial safety factor	$\gamma_{Ms}$	[-]				1,25				
<b>Steel failure with lever arm</b>										
Characteristic resistance	$M^0_{Rk,s}$	[Nm]	12	30	60	105	266	266	519	898
Partial safety factor	$\gamma_{Ms}$	[-]				1,25				
<b>Concrete pry-out failure</b>										
Factor	$k_8$	[-]	1,8				2,0			
<b>Concrete edge failure</b>										
Effective length of anchor in shear loading	$l_f$	[mm]	50	60	71	80	100	115	125	150
Outside diameter of anchor	$d_{nom}$	[mm]	10	12	15	18	24	24	28	32

#### Highload Anchor SZ

##### Performance

Characteristic values for **shear load**, static or quasi-static action,  
**steel zinc plated**

##### Annex C4

**Table C6:** Characteristic values for **shear load**, static or quasi-static action,  
**stainless steel A4**

Anchor size		12/M8	15/M10	18/M12	24/M16
<b>Steel failure without lever arm</b>					
Characteristic resistance	$V^0_{Rk,s}$ [kN]	24	37	62	92
<b>SZ-B</b>					
Factor	$k_7$ [-]		1,0		
Partial safety factor	$\gamma_{Ms}$ [-]		1,25		
<b>SZ-S</b>					
Factor	$k_7$ [-]		1,0		
Partial safety factor	$\gamma_{Ms}$ [-]		1,36		
<b>SZ-SK</b>					
Factor	$k_7$ [-]		0,8		-
Partial safety factor	$\gamma_{Ms}$ [-]		1,36		-
<b>Steel failure with lever arm</b>					
Characteristic resistance	$M^0_{Rk,s}$ [Nm]	26	52	92	232
<b>SZ-B</b>					
Partial safety factor	$\gamma_{Ms}$ [-]		1,25		
<b>SZ-S and SZ-SK</b>					
Partial safety factor	$\gamma_{Ms}$ [-]		1,56		
<b>Concrete pry-out failure</b>					
Factor	$k_8$ [-]		2,0		
<b>Concrete edge failure</b>					
Effective length of anchor in shear loading	$l_f$ [mm]	60	71	80	100
Outside diameter of anchor	$d_{nom}$ [mm]	12	15	18	24

### Highload Anchor SZ

**Performance**  
Characteristic values for **shear load**, static or quasi-static action,  
**stainless steel A4**

**Annex C5**

**Table C7:** Characteristic values for seismic action, Category C1 and C2, steel zinc plated

Anchor size		12/M8	15/M10	18/M12	24/M16	24/M16L	28/M20	32/M24	
Tension load									
Installation safety factor	$\gamma_{inst}$	[ $\cdot$ ]			1,0				
<b>Steel failure</b>									
Characteristic tension resistance category <b>C1</b>	$N_{Rk,s,eq,C1}$	[kN]	29	46	67	126	126	196	280
Characteristic tension resistance category <b>C2</b>	$N_{Rk,s,eq,C2}$	[kN]	29	46	67	126	126	196	280
Partial safety factor	$\gamma_{Ms}$	[ $\cdot$ ]			1,5				
<b>Pull-out failure</b>									
Characteristic tension resistance category <b>C1</b>	$N_{Rk,p,eq,C1}$	[kN]	12	16	25	36	44,4	50,3	63,3
Characteristic tension resistance category <b>C2</b>	$N_{Rk,p,eq,C2}$	[kN]	5,4	16,4	22,6	29,0	41,2	43,6	63,3
<b>Shear load</b>									
<b>Steel failure without lever arm</b>									
<b>SZ-B</b>									
Characteristic shear resistance category <b>C1</b>	$V_{Rk,s,eq,C1}$	[kN]	18,0	27,1	43,4	51,9	51,9	96,4	160,1
Characteristic shear resistance category <b>C2</b>	$V_{Rk,s,eq,C2}$	[kN]	12,7	20,5	31,5	50,1	50,1	67,1	108,1
<b>SZ-S</b>									
Characteristic shear resistance category <b>C1</b>	$V_{Rk,s,eq,C1}$	[kN]	18,0	27,1	43,4	51,9	51,9	96,4	160,1
Characteristic shear resistance category <b>C2</b>	$V_{Rk,s,eq,C2}$	[kN]	12,7	20,5	31,5	69,3	69,3	67,1	108,1
<b>SZ-SK</b>									
Characteristic shear resistance category <b>C1</b>	$V_{Rk,s,eq,C1}$	[kN]	25,2	36,5	50,4	-	-	-	-
Characteristic shear resistance category <b>C2</b>	$V_{Rk,s,eq,C2}$	[kN]	19,2	29,3	39,4	-	-	-	-
Partial safety factor	$\gamma_{Ms}$	[ $\cdot$ ]			1,25				

#### Highload Anchor SZ

**Performance**  
Characteristic values for seismic action, steel zinc plated

**Annex C6**

**Table C8:** Characteristic values for **seismic action, Category C1 and C2, stainless steel A4**

Anchor size		12/M8	15/M10	18/M12	24/M16
<b>Tension load</b>					
Installation safety factor	$\gamma_{\text{inst}}$	[-]		1,0	
<b>Steel failure</b>					
Characteristic tension resistance, category <b>C1</b>	$N_{Rk,s,\text{eq},C1}$	[kN]	26	41	60
Characteristic tension resistance, category <b>C2</b>	$N_{Rk,s,\text{eq},C2}$	[kN]	26	41	60
Partial safety factor <b>SZ-B</b>	$\gamma_{Ms}$	[-]		1,5	
Partial safety factor <b>SZ-S and SZ-SK</b>	$\gamma_{Ms}$	[-]		1,87	
<b>Pull-out failure</b>					
Characteristic tension resistance, category <b>C1</b>	$N_{Rk,p,\text{eq},C1}$	[kN]	9	16	26
Characteristic tension resistance, category <b>C2</b>	$N_{Rk,p,\text{eq},C2}$	[kN]	4,8	16,5	24,8
<b>Shear load</b>					
<b>Steel failure without lever arm</b>					
<b>SZ-B</b>					
Characteristic shear resistance, category <b>C1</b>	$V_{Rk,s,\text{eq},C1}$	[kN]	9,6	13,3	25,4
Characteristic shear resistance, category <b>C2</b>	$V_{Rk,s,\text{eq},C2}$	[kN]	9,7	14,0	18,0
Partial safety factor	$\gamma_{Ms}$	[-]		1,25	
<b>SZ-S</b>					
Characteristic shear resistance, category <b>C1</b>	$V_{Rk,s,\text{eq},C1}$	[kN]	9,6	13,3	25,4
Characteristic shear resistance, category <b>C2</b>	$V_{Rk,s,\text{eq},C2}$	[kN]	9,7	14,0	18,0
Partial safety factor	$\gamma_{Ms}$	[-]		1,36	
<b>SZ-SK</b>					
Characteristic shear resistance, category <b>C1</b>	$V_{Rk,s,\text{eq},C1}$	[kN]	11,5	23,3	31,6
Characteristic shear resistance, category <b>C2</b>	$V_{Rk,s,\text{eq},C2}$	[kN]	10,8	17,4	15,4
Partial safety factor	$\gamma_{Ms}$	[-]		1,36	-

#### Highload Anchor SZ

**Performance**  
Characteristic values for **seismic action, stainless steel A4**

**Annex C7**

**Table C9:** Characteristic values under **fire exposure** in cracked and uncracked concrete  
C20/25 to C50/60

Anchor size		10/M6	12/M8	15/M10	18/M12	24/M16	24/ M16L	28/M20	32/M24
<b>Tension load</b>									
<b>Steel failure</b>									
<b>Steel zinc plated</b>									
Characteristic resistance	R30 R60 R90 R120	N <sub>Rk,s,fi</sub> [kN]	1,0 0,8 0,6 0,4	1,9 1,5 1,0 0,8	4,3 3,2 2,1 1,5	6,3 4,6 3,0 2,0	11,6 8,6 5,0 3,1	18,3 13,5 7,7 4,9	26,3 19,5 12,6 9,2
<b>Stainless steel A4</b>									
Characteristic resistance	R30 R60 R90 R120	N <sub>Rk,s,fi</sub> [kN]	- - - -	6,1 4,4 2,6 1,8	10,2 7,3 4,3 2,8	15,7 11,1 6,4 4,1	29,2 20,6 12,0 7,7	- - - -	- - - -
<b>Shear load</b>									
<b>Steel failure without lever arm</b>									
<b>Steel zinc plated</b>									
Characteristic resistance	R30 R60 R90 R120	V <sub>Rk,s,fi</sub> [kN]	1,0 0,8 0,6 0,4	1,9 1,5 1,0 0,8	4,3 3,2 2,1 1,5	6,3 4,6 3,0 2,0	11,6 8,6 5,0 3,1	18,3 13,5 7,7 4,9	26,3 19,5 12,6 9,2
<b>Stainless steel A4</b>									
Characteristic resistance	R30 R60 R90 R120	V <sub>Rk,s,fi</sub> [kN]	- - - -	14,3 11,1 7,9 6,3	22,7 17,6 12,6 10,0	32,8 25,5 18,3 14,6	61,0 47,5 34,0 27,2	- - - -	- - - -
<b>Steel failure with lever arm</b>									
<b>Steel zinc plated</b>									
Characteristic resistance	R30 R60 R90 R120	M <sup>0</sup> <sub>Rk,s,fi</sub> [Nm]	0,8 0,6 0,4 0,3	2,0 1,5 1,0 0,8	5,6 4,1 2,7 1,9	9,7 7,2 4,7 3,1	24,8 18,3 11,9 6,6	42,4 29,8 17,1 10,7	83,6 61,9 40,1 29,2
<b>Stainless steel A4</b>									
Characteristic resistance	R30 R60 R90 R120	M <sup>0</sup> <sub>Rk,s,fi</sub> [Nm]	- - - -	6,2 4,5 2,7 1,8	13,2 9,4 5,6 3,6	24,4 17,2 10,0 6,4	61,8 43,6 25,3 16,2	- - - -	- - - -

If pull-out is not decisive in equation D.4 and D.5, FprEN 1992-4:2016 N<sub>Rk,p</sub> must be replaced by N<sup>0</sup><sub>Rk,c</sub>.

### Highload Anchor SZ

**Performance**  
Characteristic values under **fire exposure**

**Annex C8**

**Table C10:** Displacements under tension and shear load, **steel zinc plated**

Anchor size		10/ M6	12/ M8	15/ M10	18/ M12	24/ M16	24 /M16L	28/ M20	32/ M24	
<b>Tension load</b>										
Tension load in cracked concrete	N	[kN]	2,4	5,7	7,6	12,3	17,1	21,1	24	26,2
Displacement	$\delta_{N0}$	[mm]	0,5	0,5	0,5	0,7	0,8	0,7	0,9	1,4
	$\delta_{N\infty}$	[mm]	2,0	2,0	1,3	1,3	1,3	1,3	1,4	1,9
Tension load in uncracked concrete	N	[kN]	8,5	9,5	14,3	17,2	24	29,6	34	43
Displacement	$\delta_{N0}$	[mm]	0,8	1,0		1,1		1,3	0,3	0,7
	$\delta_{N\infty}$	[mm]	3,4			1,7		2,3	1,4	0,7
<b>Seismic action C2</b>										
Displacement for DLS	$\delta_{N,\text{eq}}(\text{DLS})$	[mm]	-	3,3	3,0	5,0	3,0	3,0	4,0	5,3
Displacement for ULS	$\delta_{N,\text{eq}}(\text{ULS})$	[mm]	-	12,2	11,3	16,0	9,2	9,2	13,8	12,4
<b>Shear load</b>										
<b>SZ-B</b>										
Shear load in cracked and uncracked concrete	V	[kN]	9,1	14	20,7	35,1	52,1	52,1	77	86,6
Displacement	$\delta_{V0}$	[mm]	2,5	2,1	2,7	3,0	5,1	5,1	4,3	10,5
	$\delta_{V\infty}$	[mm]	3,8	3,1	4,1	4,5	7,6	7,6	6,5	15,8
<b>Seismic action C2</b>										
Displacement for DLS	$\delta_{V,\text{eq}}(\text{DLS})$	[mm]	-	2,3	3,1	3,0	2,6	2,6	1,6	6,1
Displacement for ULS	$\delta_{V,\text{eq}}(\text{ULS})$	[mm]	-	4,8	6,4	6,1	6,6	6,6	4,8	9,5
<b>SZ-S</b>										
Shear load in cracked and uncracked concrete	V	[kN]	10,1	17,1	27,5	41,5	72	72	77	86,6
Displacement	$\delta_{V0}$	[mm]	2,9	2,5	3,6	3,5	7,0	7,0	4,3	10,5
	$\delta_{V\infty}$	[mm]	4,4	3,8	5,4	5,3	10,5	10,5	6,5	15,8
<b>Seismic action C2</b>										
Displacement for DLS	$\delta_{V,\text{eq}}(\text{DLS})$	[mm]	-	2,3	3,1	3,0	3,3	3,3	1,6	6,1
Displacement for ULS	$\delta_{V,\text{eq}}(\text{ULS})$	[mm]	-	4,8	6,4	6,1	8,2	8,2	4,8	9,5
<b>SZ-SK</b>										
Shear load in cracked and uncracked concrete	V	[kN]	10,1	17,1	27,5	41,5	-	-	-	-
Displacement	$\delta_{V0}$	[mm]	2,9	2,5	3,6	3,5	-	-	-	-
	$\delta_{V\infty}$	[mm]	4,4	3,8	5,4	5,3	-	-	-	-
<b>Seismic action C2</b>										
Displacement for DLS	$\delta_{V,\text{eq}}(\text{DLS})$	[mm]	-	3,1	3,9	3,9	-	-	-	-
Displacement for ULS	$\delta_{V,\text{eq}}(\text{ULS})$	[mm]	-	10,2	11,8	13,0	-	-	-	-

## Highload Anchor SZ

## Performance

Displacements under tension and shear load. **steel zinc plated**

## **Annex C9**

**Table C11:** Displacements under tension and shear load, **stainless steel A4**

Anchor size		12/M8	15/M10	18/M12	24/M16
<b>Tension load</b>					
Tension load in cracked concrete	N	[kN]	4,3	7,6	12,1
Displacement	$\delta_{N0}$	[mm]	0,5	0,5	1,3
	$\delta_{N\infty}$	[mm]	1,2	1,6	1,8
Tension load in uncracked concrete	N	[kN]	7,6	11,9	16,7
Displacement	$\delta_{N0}$	[mm]	0,2	0,3	1,2
	$\delta_{N\infty}$	[mm]	1,1	1,1	1,1
Seismic action C2					
Displacement for DLS	$\delta_{N,eq}(DLS)$	[mm]	4,7	4,5	4,3
Displacement for ULS	$\delta_{N,eq}(ULS)$	[mm]	13,3	12,7	9,7
<b>Shear load</b>					
Shear load in cracked concrete	V	[kN]	13,9	21,1	34,7
Displacement	$\delta_{V0}$	[mm]	3,4	4,9	4,8
	$\delta_{V\infty}$	[mm]	5,1	7,4	7,1
Seismic action C2					
<b>SZ-B, SZ-S</b>					
Displacement for DLS	$\delta_{V,eq}(DLS)$	[mm]	2,8	3,1	2,6
Displacement for ULS	$\delta_{V,eq}(ULS)$	[mm]	5,6	5,8	5,0
<b>SZ-SK</b>					
Displacement for DLS	$\delta_{V,eq}(DLS)$	[mm]	2,5	2,8	2,9
Displacement for ULS	$\delta_{V,eq}(ULS)$	[mm]	5,8	5,9	6,9

#### Highload Anchor SZ

**Performance**  
Displacements under tension and shear load, **stainless steel A4**

**Annex C10**