

YDEEVNEDEKLARATION  
DoP Nr. MKT-122 - dk

1. Varetypens unikke identifikationskode: **MKT Sværlastanker SZ**
2. Type-, parti- eller serienummer eller en anden form for angivelse, ved hjælp af hvilken byggevaren kan identificeres som krævet i henhold til artikel 11, stk. 4:

**ETA-02/0030, Annex A2**  
**Batch nummer: se pakningen**

3. Byggevarens tilsigtede anvendelse eller anvendelser i overensstemmelse med den gældende harmoniserede tekniske specifikation som påtænkt af fabrikanten:

<b>Produkttype</b>	Tilspændingsmoment kontrolleret ekspansionsanker (Hylse type)
<b>For anvendelse i</b>	revnet og ikke revnet beton
<b>Option</b>	1
<b>Belastning</b>	Statisk eller kvasi-statisk: alle størrelser seismiske, kategori C1 + C2: - Størrelser: SZ-B + SZ-S (12/M8, 15/M10, 18/M12, 24/M16, 24/M16L, 28/M20); SZ-SK (12/M8, 15/M10, 18/M12)
<b>Materiale</b>	<u>Stål galvaniseret:</u> Kun i tørre inde områder - Størrelser: SZ-B (10/M6, 12/M8, 15/M10, 18/M12, 24/M16, 24/M16L, 28/M20) SZ-S (10/M6, 12/M8, 15/M10, 18/M12, 24/M16, 24/M16L, 28/M20) SZ-SK (10/M6, 12/M8, 15/M10, 18/M12)  <u>Rustfri Stål (stemplet A4):</u> Til inde- og udeområder uden særlige aggressive påvirkninger - Størrelser: 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>Temperatur område</b>	--

4. Fabrikantens navn, registrerede firmabetejgnelse eller registrerede varemærke og kontaktadresse som krævet i henhold til artikel 11, stk. 5:

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

5. I givet fald navn og kontaktadresse på den bemyndigede repræsentant, hvis mandat omfatter opgaverne i artikel 12, stk. 2: --
6. Systemet eller systemerne til vurdering og kontrol af konstanten af byggevarens ydeevne, jf. bilag V::  
**System 1**
7. Hvis ydeevnedeklarationen vedrører en byggevare, der er omfattet af en harmoniseret standard: --

8. Hvis ydeevnedeklarationen vedrører en byggevare, for hvilken der er udstedt en europæisk teknisk vurdering:

**Deutsches Institut für Bautechnik, Berlin**

og udstedte:

**ETA-02/0030**

på grundlag af,

**EAD 330232-00-0601**

Det notificerede produktificeringsorgan 1343-CPR udførte kontrollen efter system 1:

- i) bestemmelse af varetypen på grundlag af typeprøvning (herunder stikprøveudtagning), typeberegning, tabelværdier eller deskriptiv dokumentation for byggevaren
- ii) indledende inspektion af fabriksanlæg og fabrikkens egen produktionskontrol
- iii) kontinuerlig overvågning, vurdering og evaluering af fabrikkens egen produktionskontrol

og udstedte:            attest for byggevarers ydeevnens konstans 1343-CPR-M 550-9

9. Deklareret ydeevne:

Karakteristiske kendetegn	Beregningsmetode	Ydeevne		Harmoniserede tekniske specifikationer
		Stål, galvaniseret	Rustfri Stål A4	
Karakteristisk modstand ved trækbelastning	FprEN 1992-4:2016 und TR 055	Annex C1, C2	Annex C1, C3	EAD 330232-00-0601
Karakteristisk modstand ved tværbelastning	FprEN 1992-4:2016 und TR 055	Annex C4	Annex C5	
Karakteristisk modstand ved seismiske påvirkninger	FprEN 1992-4:2016 und TR 055	Annex C6	Annex C7	
Forskydning i anvendelsestilstand	FprEN 1992-4:2016 und TR 055	Annex C9	Annex C10	
Karakteristisk modstand under brandpåvirkninger	FprEN 1992-4:2016 und TR 055	Annex C8	Annex C8	

Hvis der er anvendt specifik teknisk dokumentation i medfør af artikel 37 eller 38, de krav varen opfylder:

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10. Ydeevnen for den byggevare, der er anført i punkt 1 og 2, er i overensstemmelse med den deklarerede ydeevne i punkt 9.

Denne ydeevnedeklaration udstedes på eneansvar af den fabrikant, der er anført i punkt 4.

Underskrevet for fabrikanten og på dennes vegne af:

  
**Stefan Weustenhagen**  
(CEO)

**Weilerbach, 22.08.2017**

i.V.   
**Dipl.-Ing. Detlef Bigalke**  
(Chef for Produktudvikling)



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

Anchor size			10/M6	12/M8	15/M10	18/M12	24/M16	24/M16L	28/M20	
Installation safety factor	$\gamma_{inst}$	[-]	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							
<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	$h_{ef}$	[mm]	50	60	71	80	100	115	125	
Factor for $k_1$	$k_{cr,N}$	[-]	7,7							

1) Pull-out is not decisive.

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

Anchor size			12/M8	15/M10	18/M12	24/M16
Installation safety factor	$\gamma_{inst}$	[-]	1,0			
<b>Steel failure</b>						
<b>SZ-B</b>						
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60	110
Partial safety factor	$\gamma_{Ms}$	[-]	1,5			
<b>SZ-S and SZ-SK</b>						
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60	110
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)	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	$h_{ef}$	[mm]	60	71	80	100
Factor for $k_1$	$k_{cr,N}$	[-]	7,7			

1) Pull-out is not decisive.

### Highload Anchor SZ

#### Performance

Characteristic values for **tension load** in **cracked concrete** under static or quasi-static action

**Annex C1**

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

Anchor size			10/M6	12/M8	15/M10	18/M12	24/M16	24/M16L	28/M20
Installation safety factor	$\gamma_{inst}$	[-]	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						
<b>Pull-out failure</b>									
Characteristic resistance in uncracked concrete C20/25	$N_{Rk,p}$	[kN]	1) <sup>1)</sup>	20	1) <sup>1)</sup>	1) <sup>1)</sup>	1) <sup>1)</sup>	1) <sup>1)</sup>	1) <sup>1)</sup>
<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	$N^0_{Rk,sp}$	[kN]	12	16	25	30	40	70	50
Edge distance	$C_{cr,sp}$	[mm]	1,5 $h_{ef}$						
Case 2									
Characteristic resistance in uncracked concrete C20/25	$N^0_{Rk,sp}$	[kN]	17,4	20,0	29,4	35,2	49,2	60,7	68,8
Edge distance	$C_{cr,sp}$	[mm]	2,5 $h_{ef}$					1,5 $h_{ef}$	2,5 $h_{ef}$
Increasing factor for $N_{Rk,p}$ and $N^0_{Rk,sp}$	$\psi_C$	[-]	$\left(\frac{f_{ck}}{20}\right)^{0,5}$						
<b>Concrete cone failure</b>									
Effective Anchorage depth	$h_{ef}$	[mm]	50	60	71	80	100	115	125
Edge distance	$C_{cr,N}$	[mm]	1,5 $h_{ef}$						
Factor for $k_1$	$k_{ucr,N}$	[-]	11,0						

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

### Highload Anchor SZ

#### Performance

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

**Annex C2**

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

<b>Anchor size</b>			<b>12/M8</b>	<b>15/M10</b>	<b>18/M12</b>	<b>24/M16</b>
Installation safety factor	$\gamma_{inst}$	[-]	1,0			
<b>Steel failure</b>						
<b>SZ-B</b>						
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60	110
Partial safety factor	$\gamma_{Ms}$	[-]	1,5			
<b>SZ-S and SZ-SK</b>						
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60	110
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	1)
<b>Splitting failure</b>						
Characteristic resistance in uncracked concrete C20/25	$N^0_{Rk,sp}$	[kN]	16	25	35	49,2
Edge distance	$c_{cr,sp}$	[mm]	180	235	265	300
Increasing factor for $N_{Rk,p}$ and $N^0_{Rk,sp}$	$\psi_C$	[-]	$\left(\frac{f_{ck}}{20}\right)^{0,5}$			
<b>Concrete cone failure</b>						
Effective anchorage depth	$h_{ef}$	[mm]	60	71	80	100
Edge distance	$c_{cr,N}$	[mm]	1,5 $h_{ef}$			
Factor for $k_1$	$k_{ucr,N}$	[-]	11,0			

1) Pull-out is not decisive.

### Highload Anchor SZ

#### Performance

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

**Annex C3**

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

Anchor size			10/M6	12/M8	15/M10	18/M12	24/M16	24/M16L	28/M20
<b>Steel failure without lever arm</b>									
<b>SZ-B</b>									
Characteristic resistance	$V_{Rk,s}$	[kN]	16	25	36	63	91	91	122
Factor	$k_7$	[-]	1,0						
<b>SZ-S</b>									
Characteristic resistance	$V_{Rk,s}$	[kN]	18	30	48	73	126	126	150
Factor	$k_7$	[-]	1,0						
<b>SZ-SK</b>									
Characteristic resistance	$V_{Rk,s}$	[kN]	18	30	48	73	126	126	150
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
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
Outside diameter of anchor	$d_{nom}$	[mm]	10	12	15	18	24	24	28

**Highload Anchor SZ**

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

**Annex C4**

**Table C6:** Characteristic values for **shear load** under 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	$V_{Rk,s}$	[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>						
Factor	$k_7$	[-]	1,0			
Partial safety factor	$\gamma_{Ms}$	[-]	1,25			
<b>SZ-S</b>						
Factor	$k_7$	[-]	1,0			
Partial safety factor	$\gamma_{Ms}$	[-]	1,56			
<b>SZ-SK</b>						
Factor	$k_7$	[-]	0,8			
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** under 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
<b>Tension load</b>								
Installation safety factor	$\gamma_{inst}$	[-]	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
Characteristic tension resistance category <b>C2</b>	$N_{Rk,s,eq,C2}$	[kN]	29	46	67	126	126	196
Partial safety factor	$\gamma_{Ms}$	[-]	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
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
<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
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
<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
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
<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	$\gamma_{Ms}$	[-]	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	$\gamma_{inst}$	[-]	1,0			
<b>Steel failure</b>						
Characteristic tension resistance, category <b>C1</b>	$N_{Rk,s,eq,C1}$	[kN]	26	41	60	110
Characteristic tension resistance, category <b>C2</b>	$N_{Rk,s,eq,C2}$	[kN]	26	41	60	110
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>	$N_{Rk,p,eq,C1}$	[kN]	9	16	26	36
Characteristic tension resistance, category <b>C2</b>	$N_{Rk,p,eq,C2}$	[kN]	4,8	16,5	24,8	44,5
<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]	9,6	13,3	25,4	75,4
Characteristic shear resistance, category <b>C2</b>	$V_{Rk,s,eq,C2}$	[kN]	9,7	14,0	18,0	32,2
Partial safety factor	$\gamma_{Ms}$	[-]	1,25			
<b>SZ-S</b>						
Characteristic shear resistance, category <b>C1</b>	$V_{Rk,s,eq,C1}$	[kN]	9,6	13,3	25,4	75,4
Characteristic shear resistance, category <b>C2</b>	$V_{Rk,s,eq,C2}$	[kN]	9,7	14,0	18,0	32,2
Partial safety factor	$\gamma_{Ms}$	[-]	1,36			
<b>SZ-SK</b>						
Characteristic shear resistance, category <b>C1</b>	$V_{Rk,s,eq,C1}$	[kN]	11,5	23,3	31,6	-
Characteristic shear resistance, category <b>C2</b>	$V_{Rk,s,eq,C2}$	[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	
<b>Tension load</b>									
<b>Steel failure</b>									
<b>Steel zinc plated</b>									
Characteristic resistance	R30	$N_{Rk,s,fi}$	[kN]	1,0	1,9	4,3	6,3	11,6	18,3
	R60			0,8	1,5	3,2	4,6	8,6	13,5
	R90			0,6	1,0	2,1	3,0	5,0	7,7
	R120			0,4	0,8	1,5	2,0	3,1	4,9
<b>Stainless steel A4</b>									
Characteristic resistance	R30	$N_{Rk,s,fi}$	[kN]	-	6,1	10,2	15,7	29,2	-
	R60			-	4,4	7,3	11,1	20,6	-
	R90			-	2,6	4,3	6,4	12,0	-
	R120			-	1,8	2,8	4,1	7,7	-
<b>Shear load</b>									
<b>Steel failure without lever arm</b>									
<b>Steel zinc plated</b>									
Characteristic resistance	R30	$V_{Rk,s,fi}$	[kN]	1,0	1,9	4,3	6,3	11,6	18,3
	R60			0,8	1,5	3,2	4,6	8,6	13,5
	R90			0,6	1,0	2,1	3,0	5,0	7,7
	R120			0,4	0,8	1,5	2,0	3,1	4,9
<b>Stainless steel A4</b>									
Characteristic resistance	R30	$V_{Rk,s,fi}$	[kN]	-	14,3	22,7	32,8	61,0	-
	R60			-	11,1	17,6	25,5	47,5	-
	R90			-	7,9	12,6	18,3	34,0	-
	R120			-	6,3	10,0	14,6	27,2	-
<b>Steel failure with lever arm</b>									
<b>Steel zinc plated</b>									
Characteristic resistance	R30	$M^0_{Rk,s,fi}$	[Nm]	0,8	2,0	5,6	9,7	24,8	42,4
	R60			0,6	1,5	4,1	7,2	18,3	29,8
	R90			0,4	1,0	2,7	4,7	11,9	17,1
	R120			0,3	0,8	1,9	3,1	6,6	10,7
<b>Stainless steel A4</b>									
Characteristic resistance	R30	$M^0_{Rk,s,fi}$	[Nm]	-	6,2	13,2	24,4	61,8	-
	R60			-	4,5	9,4	17,2	43,6	-
	R90			-	2,7	5,6	10,0	25,3	-
	R120			-	1,8	3,6	6,4	16,2	-

If pull-out is not decisive in equation D.4 and D.5, FprEN 1992-4:2016  $N_{Rk,p}$  must be replaced by  $N^0_{Rk,c}$ .

### 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
<b>Tension load</b>									
Tension load in cracked concrete	N	[kN]	2,4	5,7	7,6	12,3	17,1	21,1	24
Displacement	$\delta_{N0}$	[mm]	0,5	0,5	0,5	0,7	0,8	0,7	0,9
	$\delta_{N\infty}$	[mm]	2,0	2,0	1,3	1,3	1,3	1,3	1,4
Tension load in uncracked concrete	N	[kN]	8,5	9,5	14,3	17,2	24	29,6	34
Displacement	$\delta_{N0}$	[mm]	0,8	1,0	1,1		1,3		0,3
	$\delta_{N\infty}$	[mm]	3,4		1,7		2,3		1,4
Seismic action C2									
Displacement for DLS	$\delta_{N,eq}$ (DLS)	[mm]	-	3,3	3,0	5,0	3,0	3,0	4,0
Displacement for ULS	$\delta_{N,eq}$ (ULS)	[mm]	-	12,2	11,3	16,0	9,2	9,2	13,8
<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
Displacement	$\delta_{V0}$	[mm]	2,5	2,1	2,7	3,0	5,1	5,1	4,3
	$\delta_{V\infty}$	[mm]	3,8	3,1	4,1	4,5	7,6	7,6	6,5
Seismic action C2									
Displacement for DLS	$\delta_{V,eq}$ (DLS)	[mm]	-	2,3	3,1	3,0	2,6	2,6	1,6
Displacement for ULS	$\delta_{V,eq}$ (ULS)	[mm]	-	4,8	6,4	6,1	6,6	6,6	4,8
<b>SZ-S</b>									
Shear load in cracked and uncracked concrete	V	[kN]	10,1	17,1	27,5	41,5	72	72	77
Displacement	$\delta_{V0}$	[mm]	2,9	2,5	3,6	3,5	7,0	7,0	4,3
	$\delta_{V\infty}$	[mm]	4,4	3,8	5,4	5,3	10,5	10,5	6,5
Seismic action C2									
Displacement for DLS	$\delta_{V,eq}$ (DLS)	[mm]	-	2,3	3,1	3,0	3,3	3,3	1,6
Displacement for ULS	$\delta_{V,eq}$ (ULS)	[mm]	-	4,8	6,4	6,1	8,2	8,2	4,8
<b>SZ-SK</b>									
Shear load in cracked and uncracked concrete	V	[kN]	10,1	17,1	27,5	41,5	72	72	77
Displacement	$\delta_{V0}$	[mm]	2,9	2,5	3,6	3,5	7,0	7,0	4,3
	$\delta_{V\infty}$	[mm]	4,4	3,8	5,4	5,3	10,5	10,5	6,5
Seismic action C2									
Displacement for DLS	$\delta_{V,eq}$ (DLS)	[mm]	-	3,1	3,9	3,9	-	-	-
Displacement for ULS	$\delta_{V,eq}$ (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	17,0
Displacement	$\delta_{N0}$	[mm]	0,5	0,5	1,3	0,5
	$\delta_{N\infty}$	[mm]	1,2	1,6	1,8	1,6
Tension load in uncracked concrete	N	[kN]	7,6	11,9	16,7	24,1
Displacement	$\delta_{N0}$	[mm]	0,2	0,3	1,2	1,5
	$\delta_{N\infty}$	[mm]	1,1	-	-	-
<b>Seismic action C2</b>						
Displacement for DLS	$\delta_{N,eq(DLS)}$	[mm]	4,7	4,5	4,3	4,9
Displacement for ULS	$\delta_{N,eq(ULS)}$	[mm]	13,3	12,7	9,7	10,1
<b>Shear load</b>						
Shear load in cracked concrete	V	[kN]	13,9	21,1	34,7	50,8
Displacement	$\delta_{V0}$	[mm]	3,4	4,9	4,8	6,7
	$\delta_{V\infty}$	[mm]	5,1	7,4	7,1	10,1
<b>Seismic action C2</b>						
<b>SZ-B, SZ-S</b>						
Displacement for DLS	$\delta_{V,eq(DLS)}$	[mm]	2,8	3,1	2,6	3,3
Displacement for ULS	$\delta_{V,eq(ULS)}$	[mm]	5,6	5,8	5,0	6,9
<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**