

VYHLÁSENIE O PARAMETROCH
DoP č. MKT-123 - sk

1. Jedinečný identifikačný kód typu výrobku: **MKT ťažká kotva SZ**
2. Typ, číslo výrobnej dávky alebo sériové číslo, alebo akýkoľvek iný prvok umožňujúci identifikáciu stavebného výrobku, ako sa vyžaduje podľa článku 11 ods. 4:

ETA-02/0030, príloha A2
číslo šarže: vid' obal výrobku

3. Zamýšľané použitia stavebného výrobku, ktoré uvádza výrobca, v súlade s uplatniteľnou harmonizovanou technickou špecifikáciou:

typ	oceľová expanzná kotva s kontrolovaným uťahovacím momentom (puzdrový typ)
použitie	trhlinový a netrhlinový betón C20/25 - C50/60 (EN 206)
úroveň / kategória	1
zaťaženie	statické alebo kvázi statické: všetkých veľkostí seizmické, kategória C1 + C2, - rozmery: 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)
materiál	<u>pozinkovaná oceľ:</u> len v suchom prostredí v interiéri: - rozmery: 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>nehrdzavejúca oceľ (A4):</u> v interiéri alebo exteriéri bez mimoriadnych agresívnych podmienok - rozmery: 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)
teplotný rozsah (ak je to relevantné)	--

4. Meno, registrované obchodné meno alebo registrovaná ochranná známka a kontaktná adresa výrobcu, ako sa vyžaduje podľa článku 11 ods. 5:

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5. V prípade potreby meno a kontaktná adresa splnomocneného zástupcu, ktorého splnomocnenie zahŕňa úlohy vymedzené v článku 12 ods. 2: --
6. Systém alebo systémy posudzovania a overovania nemennosti parametrov stavebného výrobku, ako sa uvádzajú v prílohe V: **Systéme 1**
7. V prípade vyhlásenia o parametroch týkajúceho sa stavebného výrobku, na ktorý sa vzťahuje harmonizovaná norma: --

8. V prípade vyhlásenia o parametroch týkajúceho sa stavebného výrobku, na ktorý bolo vypracované európske technické posúdenie:

Deutsches Institut für Bautechnik, Berlin

vydal:

ETA-02/0030

na základe:

EAD 330232-00-0601

vykonal notifikovaný orgán certifikácie výrobkov 1343-CPR v systéme: 1

- i) určenie typu výrobku na základe typovej skúšky (vrátane odberu vzoriek), typového výpočtu a z tabuľkových hodnôt alebo podkladov o výrobkoch;
- ii) počiatočnú inšpekciu továrne a kontrolu výroby;
- iii) priebežný dohľad, posudzovanie a hodnotenie systému riadenia kvality

a vydal: Certifikát o nemennosti parametrov 1343-CPR-M 550-9/08.14

9. Deklarované parametre:

podstatné vlastnosti	návrhová metóda	prevedenie		harmonizovaná technická špecifikácia
		pozinkovaná oceľ	nehrdzavejúca oceľ A4	
charakteristická únosnosť pri zaťažení v ťahu	FprEN 1992-4 & TR 055	príloha C1, C2	príloha C1, C3	EAD 330232-00-0601
charakteristická únosnosť pri zaťažení v šmyku	FprEN 1992-4 & TR 055	príloha C4	príloha C5	
charakteristická únosnosť pri seizmickom zaťažení	FprEN 1992-4 & TR 055	príloha C6	príloha C7	
posun v stave používania	FprEN 1992-4 & TR 055	príloha C9	príloha C10	
charakteristická únosnosť s požiarou odolnosťou	FprEN 1992-4 & TR 055	príloha C8	príloha C8	

Ak sa použila špecifická technická dokumentácia podľa článkov 37 alebo 38, požiadavky, ktoré výrobok spĺňa: --

10. Parametre výrobku uvedené v bodoch 1 a 2 sú v zhode s deklarovateľnými parametrami v bode 9. Toto vyhlásenie o parametroch sa vydáva na výhradnú zodpovednosť výrobcu uvedeného v bode 4.

Podpísal za a v mene výrobcu:


Stefan Weustenhagen
 (General Manager)
Weilerbach, 27.02.2018

i.V. 
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	γ_{inst}	[-]	1,0							
Steel failure										
Characteristic resistance	$N_{Rk,s}$	[kN]	16	29	46	67	126	126	196	282
Partial safety factor	γ_{Ms}	[-]	1,5							
Pull-out failure										
Characteristic resistance in cracked concrete C20/25	$N_{Rk,p}$	[kN]	5	12	16	1)	1)	1)	1)	1)
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]	50	60	71	80	100	115	125	150
Factor $k_1 =$	$k_{cr,N}$	[-]	7,7							

1) 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	γ_{inst}	[-]	1,0			
Steel failure						
SZ-B						
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60	110
Partial safety factor	γ_{Ms}	[-]	1,5			
SZ-S and SZ-SK						
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60	110
Partial safety factor	γ_{Ms}	[-]	1,87			
Pull-out failure						
Characteristic resistance in cracked concrete C20/25	$N_{Rk,p}$	[kN]	9	16	1)	1)
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]	60	71	80	100
Factor $k_1 =$	$k_{cr,N}$	[-]	7,7			

1) 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	γ_{inst} [-]	1,0							
Steel failure									
Characteristic resistance	$N_{Rk,s}$ [kN]	16	29	46	67	126	126	196	282
Partial safety factor	γ_{Ms} [-]	1,5							
Pull-out failure									
Characteristic resistance in uncracked concrete C20/25	$N_{Rk,p}$ [kN]	1)	20	1)	1)	1)	1)	1)	1)
Increasing factor for $N_{Rk,p}$	ψ_C [-]	$\left(\frac{f_{ck}}{20}\right)^{0,5}$							
Splitting failure (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	70
Edge distance	$c_{cr,sp}$ [mm]	1,5 h_{ef}							
Increasing factor for $N^0_{Rk,sp}$	ψ_C [-]	$\left(\frac{f_{ck}}{20}\right)^{0,5}$							
Case 2									
Characteristic resistance in uncracked concrete	$N^0_{Rk,sp}$ [kN]	$\min(N_{Rk,p}; N^0_{Rk,c})$							
Edge distance	$c_{cr,sp}$ [mm]	2,5 h_{ef}					1,5 h_{ef}	2,5 h_{ef}	2 h_{ef}
Concrete cone failure									
Effective Anchorage depth	h_{ef} [mm]	50	60	71	80	100	115	125	150
Edge distance	$c_{cr,N}$ [mm]	1,5 h_{ef}							
Factor $k_1 =$	$k_{ucr,N}$ [-]	11,0							

¹⁾ 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	γ_{inst}	[-]	1,0			
Steel failure						
SZ-B						
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60	110
Partial safety factor	γ_{Ms}	[-]	1,5			
SZ-S and SZ-SK						
Characteristic resistance	$N_{Rk,s}$	[kN]	26	41	60	110
Partial safety factor	γ_{Ms}	[-]	1,87			
Pull-out failure						
Characteristic resistance in uncracked concrete C20/25	$N_{Rk,p}$	[kN]	16	25	35	1)
Increasing factor for $N_{Rk,p}$	ψ_C	[-]	$\left(\frac{f_{ck}}{20}\right)^{0,5}$			
Splitting failure						
Edge distance	$C_{cr,sp}$	[mm]	180	235	265	300
Concrete cone failure						
Effective anchorage depth	h_{ef}	[mm]	60	71	80	100
Edge distance	$C_{cr,N}$	[mm]	1,5 h_{ef}			
Factor $k_1 =$	$k_{ucr,N}$	[-]	11,0			

1) 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
Steel failure without lever arm										
SZ-B										
Characteristic resistance	$V^{0}_{Rk,s}$	[kN]	16	25	36	63	91	91	122	200
Factor	k_7	[-]	1,0							
SZ-S and SZ-SK										
Characteristic resistance	$V^{0}_{Rk,s}$	[kN]	18	30	48	73	126	126	150	200
Factor	k_7	[-]	1,0							
Partial safety factor	γ_{Ms}	[-]	1,25							
Steel failure with lever arm										
Characteristic resistance	$M^{0}_{Rk,s}$	[Nm]	12	30	60	105	266	266	519	898
Partial safety factor	γ_{Ms}	[-]	1,25							
Concrete pry-out failure										
Factor	k_8	[-]	1,8	2,0						
Concrete edge failure										
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
Steel failure without lever arm						
Characteristic resistance	$V_{Rk,s}^0$	[kN]	24	37	62	92
SZ-B						
Factor	k_7	[-]	1,0			
Partial safety factor	γ_{Ms}	[-]	1,25			
SZ-S						
Factor	k_7	[-]	1,0			
Partial safety factor	γ_{Ms}	[-]	1,36			
SZ-SK						
Factor	k_7	[-]	0,8			-
Partial safety factor	γ_{Ms}	[-]	1,36			-
Steel failure with lever arm						
Characteristic resistance	$M_{Rk,s}^0$	[Nm]	26	52	92	232
SZ-B						
Partial safety factor	γ_{Ms}	[-]	1,25			
SZ-S and SZ-SK						
Partial safety factor	γ_{Ms}	[-]	1,56			
Concrete pry-out failure						
Factor	k_8	[-]	2,0			
Concrete edge failure						
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	γ_{inst}	[-]	1,0						
Steel failure									
Characteristic tension resistance category C1	$N_{Rk,s,eq,C1}$	[kN]	29	46	67	126	126	196	280
Characteristic tension resistance category C2	$N_{Rk,s,eq,C2}$	[kN]	29	46	67	126	126	196	280
Partial safety factor	γ_{Ms}	[-]	1,5						
Pull-out failure									
Characteristic tension resistance category C1	$N_{Rk,p,eq,C1}$	[kN]	12	16	25	36	44,4	50,3	63,3
Characteristic tension resistance category C2	$N_{Rk,p,eq,C2}$	[kN]	5,4	16,4	22,6	29,0	41,2	43,6	63,3
Shear load									
Steel failure without lever arm									
SZ-B									
Characteristic shear resistance category C1	$V_{Rk,s,eq,C1}$	[kN]	18,0	27,1	43,4	51,9	51,9	96,4	160,1
Characteristic shear resistance category C2	$V_{Rk,s,eq,C2}$	[kN]	12,7	20,5	31,5	50,1	50,1	67,1	108,1
SZ-S									
Characteristic shear resistance category C1	$V_{Rk,s,eq,C1}$	[kN]	18,0	27,1	43,4	51,9	51,9	96,4	160,1
Characteristic shear resistance category C2	$V_{Rk,s,eq,C2}$	[kN]	12,7	20,5	31,5	69,3	69,3	67,1	108,1
SZ-SK									
Characteristic shear resistance category C1	$V_{Rk,s,eq,C1}$	[kN]	25,2	36,5	50,4	-	-	-	-
Characteristic shear resistance category C2	$V_{Rk,s,eq,C2}$	[kN]	19,2	29,3	39,4	-	-	-	-
Partial safety factor	γ_{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
Tension load						
Installation safety factor	γ_{inst}	[-]	1,0			
Steel failure						
Characteristic tension resistance, category C1	$N_{Rk,s,eq,C1}$	[kN]	26	41	60	110
Characteristic tension resistance, category C2	$N_{Rk,s,eq,C2}$	[kN]	26	41	60	110
Partial safety factor SZ-B	γ_{Ms}	[-]	1,5			
Partial safety factor SZ-S and SZ-SK	γ_{Ms}	[-]	1,87			
Pull-out failure						
Characteristic tension resistance, category C1	$N_{Rk,p,eq,C1}$	[kN]	9	16	26	36
Characteristic tension resistance, category C2	$N_{Rk,p,eq,C2}$	[kN]	4,8	16,5	24,8	44,5
Shear load						
Steel failure without lever arm						
SZ-B						
Characteristic shear resistance, category C1	$V_{Rk,s,eq,C1}$	[kN]	9,6	13,3	25,4	75,4
Characteristic shear resistance, category C2	$V_{Rk,s,eq,C2}$	[kN]	9,7	14,0	18,0	32,2
Partial safety factor	γ_{Ms}	[-]	1,25			
SZ-S						
Characteristic shear resistance, category C1	$V_{Rk,s,eq,C1}$	[kN]	9,6	13,3	25,4	75,4
Characteristic shear resistance, category C2	$V_{Rk,s,eq,C2}$	[kN]	9,7	14,0	18,0	32,2
Partial safety factor	γ_{Ms}	[-]	1,36			
SZ-SK						
Characteristic shear resistance, category C1	$V_{Rk,s,eq,C1}$	[kN]	11,5	23,3	31,6	-
Characteristic shear resistance, category C2	$V_{Rk,s,eq,C2}$	[kN]	10,8	17,4	15,4	-
Partial safety factor	γ_{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	
Tension load										
Steel failure										
Steel zinc plated										
Characteristic resistance	R30	$N_{Rk,s,fi}$ [kN]	1,0	1,9	4,3	6,3	11,6	18,3	26,3	
	R60		0,8	1,5	3,2	4,6	8,6	13,5	19,5	
	R90		0,6	1,0	2,1	3,0	5,0	7,7	12,6	
	R120		0,4	0,8	1,5	2,0	3,1	4,9	9,2	
Stainless steel A4										
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	-	-	-
Shear load										
Steel failure without lever arm										
Steel zinc plated										
Characteristic resistance	R30	$V_{Rk,s,fi}$ [kN]	1,0	1,9	4,3	6,3	11,6	18,3	26,3	
	R60		0,8	1,5	3,2	4,6	8,6	13,5	19,5	
	R90		0,6	1,0	2,1	3,0	5,0	7,7	12,6	
	R120		0,4	0,8	1,5	2,0	3,1	4,9	9,2	
Stainless steel A4										
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	-	-	-
Steel failure with lever arm										
Steel zinc plated										
Characteristic resistance	R30	$M^0_{Rk,s,fi}$ [Nm]	0,8	2,0	5,6	9,7	24,8	42,4	83,6	
	R60		0,6	1,5	4,1	7,2	18,3	29,8	61,9	
	R90		0,4	1,0	2,7	4,7	11,9	17,1	40,1	
	R120		0,3	0,8	1,9	3,1	6,6	10,7	29,2	
Stainless steel A4										
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	32/ M24	
Tension load										
Tension load in cracked concrete	N	[kN]	2,4	5,7	7,6	12,3	17,1	21,1	24	26,2
Displacement	δ_{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	δ_{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	
Seismic action C2										
Displacement for DLS	$\delta_{N,eq}$ (DLS)	[mm]	-	3,3	3,0	5,0	3,0	3,0	4,0	5,3
Displacement for ULS	$\delta_{N,eq}$ (ULS)	[mm]	-	12,2	11,3	16,0	9,2	9,2	13,8	12,4
Shear load										
SZ-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	δ_{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
Seismic action C2										
Displacement for DLS	$\delta_{V,eq}$ (DLS)	[mm]	-	2,3	3,1	3,0	2,6	2,6	1,6	6,1
Displacement for ULS	$\delta_{V,eq}$ (ULS)	[mm]	-	4,8	6,4	6,1	6,6	6,6	4,8	9,5
SZ-S										
Shear load in cracked and uncracked concrete	V	[kN]	10,1	17,1	27,5	41,5	72	72	77	86,6
Displacement	δ_{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
Seismic action C2										
Displacement for DLS	$\delta_{V,eq}$ (DLS)	[mm]	-	2,3	3,1	3,0	3,3	3,3	1,6	6,1
Displacement for ULS	$\delta_{V,eq}$ (ULS)	[mm]	-	4,8	6,4	6,1	8,2	8,2	4,8	9,5
SZ-SK										
Shear load in cracked and uncracked concrete	V	[kN]	10,1	17,1	27,5	41,5	-	-	-	-
Displacement	δ_{V0}	[mm]	2,9	2,5	3,6	3,5	-	-	-	-
	$\delta_{V\infty}$	[mm]	4,4	3,8	5,4	5,3	-	-	-	-
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
Tension load						
Tension load in cracked concrete	N	[kN]	4,3	7,6	12,1	17,0
Displacement	δ_{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	δ_{N0}	[mm]	0,2	0,3	1,2	1,5
	$\delta_{N\infty}$	[mm]	1,1	1,1	1,1	1,1
Seismic action C2						
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
Shear load						
Shear load in cracked concrete	V	[kN]	13,9	21,1	34,7	50,8
Displacement	δ_{V0}	[mm]	3,4	4,9	4,8	6,7
	$\delta_{V\infty}$	[mm]	5,1	7,4	7,1	10,1
Seismic action C2						
SZ-B, SZ-S						
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
SZ-SK						
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