

Sika AnchorFix[®]-2020

DICHIARAZIONE DI PRESTAZIONE

No. 51274697

1	CODICE DI IDENTIFICAZIONE UNICO DEL PRODOTTO-TIPO:	51274697
2	USI PREVISTI	Sistema di ancoraggio chimico per utilizzo in calcestruzzo fessurato e non
3	FABBRICANTE:	Sika Services AG Tüffenwies 16 8064 Zürich Switzerland
5	MANDATARIO:	
	SISTEMI DI VVCP:	System 1
6b	DOCUMENTO DI VALUTAZIONE EUROPEA:	EAD 330499-01-0601:2018 Ancoraggi in adesione per uso in calcestruzzo
	Valutazione Tecnica europea:	ETA 22/0893 del 07/01/2023
	Organismi di valutazione tecnica:	TECHNICKY A ZKUSEBNI USTAV STAVEBNI PRAHA s.p.
	Organismi notificati:	1020

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7 PRESTAZIONI DICHIARATE

Caratteristiche Essenziali	Prestazioni	AVCP	Norma tecnica Armonizzata
Resistenza caratteristica a carichi di trazione (carichi statici e quasi statici)	Annessi da C 1 a C 4	System 1	
Resistenza caratteristica a carichi di taglio (carichi statici e quasi statici)	Annessi C 5, C 6	System 1	
Deformazione sotto carichi a breve e lungo termine	Annesso C 7	System 1	EAD 330499-01-0601:2018
Resistenza caratteristica per categorie di prestazione sismica C1 e C2	Annessi da C 8 a C 10	System 1	Ancoraggi in adesione per uso in calcestruzzo
Igiene, salute e ambiente (BWR3)	NPD	System 1	
Aspetti generali relativi all' idoneità d'uso	Durabilità e funzionamento in servizio sono assicurati solo se soddisfatti gli usi previsti da norma in accordo all Annesso B 1.	System 1	

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Annex B1

Specifications of intended use

Anchorage subject to:

- Static and quasi-static load.
- Seismic actions category C1 (max w = 0,5 mm): threaded rod size M10, M12, M16, M20, M24
- Seismic actions category C2 (max w = 0,8 mm): threaded rod size M12, M16, M20

Base materials

- Uncracked concrete.
- Cracked and uncracked concrete for threaded rod size M10, M12, M16, M20, M24
- Reinforced or unreinforced normal weight concrete of strength class C20/25 at minimum and C50/60 at maximum according EN 206:2013.

Temperature range:

- -40°C to +80°C (max. short. term temperature +80°C and max. long term temperature +50°C)

Use conditions (Environmental conditions)

- (X1) Structures subject to dry internal conditions (zinc coated steel, stainless steel, high corrosion resistance steel).
- (X2) Structures subject to external atmospheric exposure (including industrial and marine environment) and to permanently damp internal condition, if no particular aggressive conditions exist (stainless steel A4, high corrosion resistant steel).
- (X3) Structures subject to external atmospheric exposure and to permanently damp internal condition, if other particular aggressive conditions exist (high corrosion resistant steel).

Note: Particular aggressive conditions are e.g. permanent, alternating immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor swimming pools or atmosphere with extreme chemical pollution (e.g. in desulphurization plants or road tunnels where de-icing materials are used).

Concrete conditions:

- I1 – installation in dry or wet (water saturated) concrete and use in service in dry or wet concrete.
- I2 – installation in water-filled (not sea water) and use in service in dry or wet concrete

Design:

- The anchorages are designed in accordance with the EN 1992-4 under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings.
- Anchorages under seismic actions (cracked concrete) have to be designed in accordance with EN 1992-4.

Installation:

- Hole drilling by hammer drill mode.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.

Installation direction:

- D3 – downward and horizontal and upwards (e.g. overhead) installation

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Annex C1

Table C1: Design method EN 1992-4 Characteristic values of resistance to tension load of threaded rod

Steel failure – Characteristic resistance											
Size			M8	M10	M12	M16	M20	M24	M27	M30	
Steel grade 4.6	NRk,s	[kN]	15	23	34	63	98	141	184	224	
Partial safety factor	γMs	[-]	2,0								
Steel grade 5.8	NRk,s	[kN]	18	29	42	79	123	177	230	281	
Partial safety factor	γMs	[-]	1,5								
Steel grade 8.8	NRk,s	[kN]	29	46	67	126	196	282	367	449	
Partial safety factor	γMs	[-]	1,5								
Steel grade 10.9	NRk,s	[kN]	37	58	84	157	245	353	459	561	
Partial safety factor	γMs	[-]	1,3								
Stainless steel grade A2-70, A4-70	NRk,s	[kN]	26	41	59	110	172	247	321	393	
Partial safety factor	γMs	[-]	1,8								
Stainless steel grade A4-80	NRk,s	[kN]	29	46	67	126	196	282	367	449	
Partial safety factor	γMs	[-]	1,6								
Stainless steel grade 1.4529	NRk,s	[kN]	26	41	59	110	172	247	321	393	
Partial safety factor	γMs	[-]	1,5								
Stainless steel grade 1.4565	NRk,s	[kN]	26	41	59	110	172	247	321	393	
Partial safety factor	γMs	[-]	1,8								
Combined pullout and concrete cone failure in concrete C20/25											
Size			M8	M10	M12	M16	M20	M24	M27	M30	
Characteristic bond resistance in uncracked concrete for a working life of 50 years and 100 years											
Dry and wet concrete	τ _{Rk,ucr}	[N/mm ²]	11	10	9,5	9,0	8,5	8,0	6,5	5,5	
Installation safety factor	γ _{inst}	[-]	1,2							1,4	
Flooded hole	τ _{Rk,ucr}	[N/mm ²]	9,0	8,0	7,5	7,0	7,0	6,0			
Installation safety factor	γ _{inst}	[-]	1,4								
Factor for uncracked concrete 50/60	ψ _c	[-]	1								
Size			M10	M12	M16	M20	M24				
Characteristic bond resistance in cracked concrete for a working life of 50 years											
Dry and wet concrete	τ _{Rk,cr}	[N/mm ²]	5,5	5,5	5,5	5,0	5,0				
Installation safety factor	γ _{inst}	[-]	1,2								
Flooded hole	τ _{Rk,cr}	[N/mm ²]	5,5	5,5	5,5	5,0	5,0				
Installation safety factor	γ _{inst}	[-]	1,4								
Characteristic bond resistance in cracked concrete for a working life of 100 years											
Dry and wet concrete	τ _{Rk,cr}	[N/mm ²]	4,0	4,0	4,0	3,5	3,5				
Installation safety factor	γ _{inst}	[-]	1,2								
Flooded hole	τ _{Rk,cr}	[N/mm ²]	4,0	4,0	4,0	3,5	3,5				
Installation safety factor	γ _{inst}	[-]	1,4								
Factor for influence of sustained load for a working life 50 years	ψ ⁰ _{sus}	[-]					0,73				
Factor for cracked concrete	C30/37 C40/50 C50/60	ψ _c	[-]				1,12 1,23 1,30				
Concrete cone failure											
Factor for concrete cone failure for uncracked concrete	k _{ucr,N}		[-]				11				
Factor for concrete cone failure for cracked concrete	k _{cr,N}		[-]				7,7				
Edge distance	c _{cr,N}	[mm]									1,5h _{ef}
Splitting failure											
Size			M8	M10	M12	M16	M20	M24	M27	M30	
Edge distance	c _{cr,sp}	[mm]					1,5h _{ef}				
Spacing	s _{cr,sp}	[mm]					3,0h _{ef}				

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Annex C2

Table C2: Design method EN 1992-4

Characteristic values of resistance to tension load of threaded rod for Sika AnchorFix®-2020 Arctic with installation temperature < -10°C

Combined pullout and concrete cone failure in concrete C20/25										
Size			M8	M10	M12	M16	M20	M24	M27	M30
Characteristic bond resistance in uncracked concrete for a working life of 50 years and 100 years										
Dry and wet concrete	$\tau_{Rk,u}$	[N/mm]	11,	10,0	9,5	9,0	8,5	7,5	6,5	5,5
Installation safety factor	γ_{inst}	[-]	1,2						1,4	
Flooded hole	$\tau_{Rk,u}$	[N/mm]	8,5	8,0	7,5	7,0	6,5	6,0		
Installation safety factor	γ_{inst}	[-]	1,4							
Factor for uncracked concrete 50/60	ψ_c	[-]	1							
Size			M10	M12	M16	M20	M24			
Characteristic bond resistance in cracked concrete for a working life of 50 years										
Dry and wet concrete	$\tau_{Rk,c}$	[N/mm]	5,5	5,5	5,5	5,0	5,0			
Installation safety factor	γ_{inst}	[-]	1,2							
Flooded hole	$\tau_{Rk,c}$	[N/mm]	5,5	5,5	5,5	5,0	5,0			
Installation safety factor	γ_{inst}	[-]	1,4							
Characteristic bond resistance in cracked concrete for a working life of 100 years										
Dry and wet concrete	$\tau_{Rk,c}$	[N/mm]	3,5	3,5	3,5	3,5	3,5			
Installation safety factor	γ_{inst}	[-]	1,2							
Flooded hole	$\tau_{Rk,c}$	[N/mm]	3,5	3,5	3,5	3,5	3,5			
Installation safety factor	γ_{inst}	[-]	1,4							
Factor for influence of sustained load for a working life 50 years	$\psi_{0,su}$	[-]	0,7							
Factor for cracked concrete										
	C30/3					1,1				
	C40/5	ψ_c				1,2				
	C50/6					1,3				

Concrete cone failure

See Annex C1

Splitting failure

See Annex C1

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Annex C3

Table C3: Design method EN 1992-4
Characteristic values of resistance to tension load of rebar

Steel failure – Characteristic resistance									
Size			Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Rebar BSt 500 S	$N_{Rk,s}$	[kN]	28	43	62	111	173	270	442
Partial safety factor	γ_{Ms}	[-]	1,4						

Combined pullout and concrete cone failure in uncracked concrete C20/25									
Size			Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Characteristic bond resistance in uncracked concrete for a working life of 50 years and 100 years									
Dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm ²]	12,0	10,0	10,0	9,0	9,0	9,0	5,5
Installation safety factor	γ_{inst}	[-]	1,2						
Flooded hole	$\tau_{Rk,ucr}$	[N/mm ²]	12,0	10,0	10,0	9,0	9,0	9,0	5,5
Installation safety factor	γ_{inst}	[-]	1,4						
Factor for influence of sustained load for a working life 50 years	$\psi_{0,sus}$	[-]	0,73						
Factor for concrete C50/60	ψ_c	[-]	1						

Concrete cone failure									
Factor for concrete cone failure	$k_{ucr,N}$	[-]	11						
Edge distance	$c_{cr,N}$	[mm]	1,5 h_{ef}						

Splitting failure									
Size			Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Edge distance	$c_{cr,sp}$	[mm]	1,5 h_{ef}						
Spacing	$s_{cr,sp}$	[mm]	3,0 h_{ef}						

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Annex C4

Table C4: Design method EN 1992-4 Characteristic values of resistance to tension load of rebar for Sika AnchorFix®-2020 Arctic with installation temperature < -10°C

Steel failure – Characteristic resistance
See Annex C 3

Combined pullout and concrete cone failure in uncracked concrete C20/25									
Size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32	
Characteristic bond resistance in uncracked concrete for a working life of 50 years and 100 years									
Dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm ²]	11,0	9,5	9,5	9,0	8,5	8,5	5,5
Installation safety factor	γ_{inst}	[-]	1,2						
Flooded hole	$\tau_{Rk,ucr}$	[N/mm ²]	11,0	9,5	9,5	9,0	8,5	8,5	5,5
Installation safety factor	γ_{inst}	[-]	1,4						
Factor for influence of sustained load for a working life 50 years	ψ_{sus}^0	[-]	0,73						
Factor for concrete C50/60	ψ_c	[-]	1						

Concrete cone failure
See Annex C 3

Splitting failure
See Annex C 3

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Annex C5

Table C5: Design method EN 1992-4 Characteristic values of resistance to shear load of threaded rod

Steel failure without lever arm										
Size			M8	M10	M12	M16	M20	M24	M27	M30
Steel grade 4.6	$V_{Rk,s}$	[kN]	7	12	17	31	49	71	92	112
Partial safety factor	γ_{Ms}	[-]	1,67							
Steel grade 5.8	$V_{Rk,s}$	[kN]	9	15	21	39	61	88	115	140
Partial safety factor	γ_{Ms}	[-]	1,25							
Steel grade 8.8	$V_{Rk,s}$	[kN]	15	23	34	63	98	141	184	224
Partial safety factor	γ_{Ms}	[-]	1,25							
Steel grade 10.9	$V_{Rk,s}$	[kN]	18	29	42	79	123	177	230	281
Partial safety factor	γ_{Ms}	[-]	1,5							
Stainless steel grade A2-70, A4-70	$V_{Rk,s}$	[kN]	13	20	30	55	86	124	161	196
Partial safety factor	γ_{Ms}	[-]	1,56							
Stainless steel grade A4-80	$V_{Rk,s}$	[kN]	15	23	34	63	98	141	184	224
Partial safety factor	γ_{Ms}	[-]	1,33							
Stainless steel grade 1.4529	$V_{Rk,s}$	[kN]	13	20	30	55	86	124	161	196
Partial safety factor	γ_{Ms}	[-]	1,25							
Stainless steel grade 1.4565	$V_{Rk,s}$	[kN]	13	20	30	55	86	124	161	196
Partial safety factor	γ_{Ms}	[-]	1,56							
Characteristic resistance of group of fasteners										
Ductility factor $k_7 = 1,0$ for steel with rupture elongation $A_5 > 8\%$										

Steel failure with lever arm										
Size			M8	M10	M12	M16	M20	M24	M27	M30
Steel grade 4.6	$M^o_{Rk,s}$	[N.m]	15	30	52	133	260	449	666	900
Partial safety factor	γ_{Ms}	[-]	1,67							
Steel grade 5.8	$M^o_{Rk,s}$	[N.m]	19	37	66	166	325	561	832	1125
Partial safety factor	γ_{Ms}	[-]	1,25							
Steel grade 8.8	$M^o_{Rk,s}$	[N.m]	30	60	105	266	519	898	1332	1799
Partial safety factor	γ_{Ms}	[-]	1,25							
Steel grade 10.9	$M^o_{Rk,s}$	[N.m]	37	75	131	333	649	1123	1664	2249
Partial safety factor	γ_{Ms}	[-]	1,50							
Stainless steel grade A2-70, A4-70	$M^o_{Rk,s}$	[N.m]	26	52	92	233	454	786	1165	1574
Partial safety factor	γ_{Ms}	[-]	1,56							
Stainless steel grade A4-80	$M^o_{Rk,s}$	[N.m]	30	60	105	266	519	898	1332	1799
Partial safety factor	γ_{Ms}	[-]	1,33							
Stainless steel grade 1.4529	$M^o_{Rk,s}$	[N.m]	26	52	92	233	454	786	1165	1574
Partial safety factor	γ_{Ms}	[-]	1,25							
Stainless steel grade 1.4565	$M^o_{Rk,s}$	[N.m]	26	52	92	233	454	786	1165	1574
Partial safety factor	γ_{Ms}	[-]	1,56							
Concrete pry-out failure										
Factor for resistance to pry-out failure k_8 [-]										
2										

Concrete edge failure										
Size			M8	M10	M12	M16	M20	M24	M27	M30
Outside diameter of fastener	d_{nom}	[mm]	8	10	12	16	20	24	27	30
Effective length of fastener	l_f	[mm]	min (hef, 8 d_{nom})							

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Annex C6

Table C6: Design method EN 1992-4 Characteristic values of resistance to shear load of rebar

Steel failure without lever arm								
Size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Rebar BSt 500 S	$V_{Rk,s}$ [kN]	14	22	31	55	86	135	221
Partial safety factor	γ_{Ms} [-]	1,5						
Characteristic resistance of group of fasteners								
Ductility factor $k_7 = 1,0$ for steel with rupture elongation $A_5 > 8\%$								
Steel failure with lever arm								
Size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Rebar BSt 500 S	$M^o_{Rk,s}$ [N.m]	33	65	112	265	518	1013	2122
Partial safety factor	γ_{Ms} [-]	1,5						
Concrete pry-out failure								
Factor for resistance to pry-out failure	k_8 [-]	2						
Concrete edge failure								
Size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Outside diameter of fastener	[mm]	8	10	12	16	20	25	32
Effective length of fastener	l_f [mm]	min (hef, 8 dnom)						

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Annex C7

Table C7: Displacement of threaded rod under tension and shear load

Size		M8	M10	M12	M16	M20	M24	M27	M30
Tension load									
Uncracked concrete									
δ_{N0}	[mm/kN]	0,05	0,04	0,03	0,02	0,02	0,02	0,01	0,01
$\delta_{N\infty}$	[mm/kN]	0,11	0,09	0,06	0,04	0,03	0,02	0,02	0,02
Cracked concrete									
δ_{N0}	[mm/kN]		0,08	0,09	0,05	0,03	0,02		
$\delta_{N\infty}$	[mm/kN]		0,51	0,32	0,18	0,13	0,11		
Shear load									
δ_{V0}	[mm/kN]	0,48	0,30	0,20	0,11	0,10	0,08	0,06	0,05
$\delta_{V\infty}$	[mm/kN]	0,72	0,45	0,30	0,17	0,14	0,12	0,10	0,08

Annex C8

Table C8: Displacement of rebar under tension and shear load

Size		$\varnothing 8$	$\varnothing 10$	$\varnothing 12$	$\varnothing 16$	$\varnothing 20$	$\varnothing 25$	$\varnothing 32$
Tension load								
Uncracked concrete								
δ_{N0}	[mm/kN]	0,04	0,03	0,02	0,02	0,01	0,01	0,01
$\delta_{N\infty}$	[mm/kN]	0,09	0,07	0,05	0,03	0,02	0,01	0,01
Shear load								
δ_{V0}	[mm/kN]	0,05	0,04	0,03	0,02	0,01	0,01	0,01
$\delta_{V\infty}$	[mm/kN]	0,08	0,06	0,05	0,03	0,02	0,01	0,01

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Annex C9

Table C9: Seismic performance category C1

Size			M10	M12	M16	M20	M24
Tension load							
Steel failure							
Characteristic resistance grade 4.6	NRk,s,C1	[kN]	23	34	63	98	141
Partial safety factor	γMs	[-]	2,00				
Characteristic resistance grade 5.8	NRk,s,C1	[kN]	29	42	79	123	177
Partial safety factor	γMs	[-]	1,50				
Characteristic resistance grade 8.8	NRk,s,C1	[kN]	46	67	126	196	282
Partial safety factor	γMs	[-]	1,50				
Characteristic resistance grade 10.9	NRk,s,C1	[kN]	58	84	157	245	353
Partial safety factor	γMs	[-]	1,33				
Characteristic resistance A2-70, A4-70	NRk,s,C1	[kN]	41	59	110	172	247
Partial safety factor	γMs	[-]	1,87				
Characteristic resistance A4-80	NRk,s,C1	[kN]	46	67	126	196	282
Partial safety factor	γMs	[-]	1,60				
Characteristic resistance 1.4529	NRk,s,C1	[kN]	41	59	110	172	247
Partial safety factor	γMs	[-]	1,50				
Characteristic resistance 1.4565	NRk,s,C1	[kN]	41	59	110	172	247
Partial safety factor	γMs	[-]	1,87				
Characteristic resistance to pull-out for a working life of 50 years							
Dry, wet concrete and flooded hole	τRk,C1	[N/mm ²]	5,5	5,5	5,5	4,2	5,0
Characteristic resistance to pull-out for a working life of 100 years							
Dry, wet concrete and flooded hole	τRk,C1	[N/mm ²]	3,8	3,8	4,0	2,6	3,8
Installation safety factor – Dry and wet concrete	γinst	[-]	1,2				
Installation safety factor – Flooded hole	γinst	[-]	1,4				
Shear load							
Steel failure without lever arm							
Characteristic resistance grade 4.6	VRk,s,C1	[kN]	7	10	23	30	40
Partial safety factor	γMs	[-]	1,67				
Characteristic resistance grade 5.8	VRk,s,C1	[kN]	9	13	28	38	51
Partial safety factor	γMs	[-]	1,25				
Characteristic resistance grade 8.8	VRk,s,C1	[kN]	14	21	45	61	81
Partial safety factor	γMs	[-]	1,25				
Characteristic resistance grade 10.9	VRk,s,C1	[kN]	18	26	56	76	101
Partial safety factor	γMs	[-]	1,50				
Characteristic resistance A2-70, A4-70	VRk,s,C1	[kN]	12	18	39	53	71
Partial safety factor	γMs	[-]	1,56				
Characteristic resistance A4-80	VRk,s,C1	[kN]	14	21	45	61	81
Partial safety factor	γMs	[-]	1,33				
Characteristic resistance 1.4529	VRk,s,C1	[kN]	12	18	39	53	71
Partial safety factor	γMs	[-]	1,25				
Characteristic resistance 1.4565	VRk,s,C1	[kN]	12	18	39	53	71
Partial safety factor	γMs	[-]	1,56				
Characteristic shear load resistance VRk,s,eq in the Table C7 shall be multiplied by following reduction factor for hot-dip galvanized commercial standard rods							
Reduction factor for hot-dip galvanized rods	αv,h-dg,c1	[-]	0,57	0,56	0,49	0,56	0,61
Factor for annular gap	αgap	[-]	0,5				

The anchor shall be used with minimum rupture elongation after fracture A5 equal to 19%.

Note: Rebars are not qualified for seismic design

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Annex C10

Table C10: Seismic performance category C2

Size			M12	M16	M20
Tension load					
Steel failure					
Characteristic resistance grade 4.6	NRk,s,C2	[kN]	34	63	98
Partial safety factor	γMs	[-]	2,00		
Characteristic resistance grade 5.8	NRk,s,C2	[kN]	42	79	123
Partial safety factor	γMs	[-]	1,50		
Characteristic resistance grade 8.8	NRk,s,C2	[kN]	67	126	196
Partial safety factor	γMs	[-]	1,50		
Characteristic resistance grade 10.9	NRk,s,C2	[kN]	84	157	245
Partial safety factor	γMs	[-]	1,33		
Characteristic resistance A2-70, A4-70	NRk,s,C2	[kN]	59	110	172
Partial safety factor	γMs	[-]	1,87		
Characteristic resistance A4-80	NRk,s,C2	[kN]	67	126	196
Partial safety factor	γMs	[-]	1,60		
Characteristic resistance 1.4529	NRk,s,C2	[kN]	59	110	172
Partial safety factor	γMs	[-]	1,50		
Characteristic resistance 1.4565	NRk,s,C2	[kN]	59	110	172
Partial safety factor	γMs	[-]	1,87		
Characteristic resistance to pull-out for a working life of 50 years					
Dry, wet concrete and flooded hole	τRk,C2	[N/mm ²]	1,2	1,4	1,6
Characteristic resistance to pull-out for a working life of 100 years					
Dry, wet concrete and flooded hole	τRk,C2	[N/mm ²]	0,8	1,0	1,0
Installation safety factor – Dry and wet concrete	γinst	[-]	1,2		
Installation safety factor – Flooded hole	γinst	[-]	1,4		
Shear load					
Steel failure without lever arm					
Characteristic resistance grade 4.6	VRk,s,C2	[kN]	13	18	28
Partial safety factor	γMs	[-]	1,67		
Characteristic resistance grade 5.8	VRk,s,C2	[kN]	16	22	35
Partial safety factor	γMs	[-]	1,25		
Characteristic resistance grade 8.8	VRk,s,C2	[kN]	25	36	56
Partial safety factor	γMs	[-]	1,25		
Characteristic resistance grade 10.9	VRk,s,C2	[kN]	32	45	70
Partial safety factor	γMs	[-]	1,50		
Characteristic resistance A2-70, A4-70	VRk,s,C2	[kN]	22	31	49
Partial safety factor	γMs	[-]	1,56		
Characteristic resistance A4-80	VRk,s,C2	[kN]	25	36	56
Partial safety factor	γMs	[-]	1,33		
Characteristic resistance 1.4529	VRk,s,C2	[kN]	22	31	49
Partial safety factor	γMs	[-]	1,25		
Characteristic resistance 1.4565	VRk,s,C2	[kN]	22	31	49
Partial safety factor	γMs	[-]	1,56		
Characteristic shear load resistance VRk,s,eq in the Table C8 shall be multiplied by following reduction factor for hot-dip galvanized commercial standard rods					
Reduction factor for hot-dip galvanized rods	αv,h-dg,c2	[-]	0,46	0,61	0,61
Factor for annular gap	αgap	[-]	0,5		

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8 DOCUMENTAZIONE TECNICA APPROPRIATA E/O DOCUMENTAZIONE TECNICA SPECIFICA

La prestazione del prodotto sopra identificato è conforme all'insieme delle prestazioni dichiarate. La presente dichiarazione di responsabilità viene emessa, in conformità al regolamento (UE) n. 305/2011, sotto la sola responsabilità del fabbricante sopra identificato.

Firmato a nome e per conto del fabbricante da:

Name : Federico Moroni
Function: PE Refurbishment
At Peschiera Borromeo
on 29 March 2023

Name : Salvatore Schirinzi
Function: General Manager
At Peschiera Borromeo
on 29 March 2023

Federico Moroni


Salvatore Schirinzi

End of information as required by Regulation (EU) No 305/2011

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ETICHETTA CE COMPLETA

	
23	
Sika Services AG, Zurich, Switzerland	
DoP No. 51274697	
Resistenza caratteristica a carichi di trazione (carichi statici e quasi statici)	Annessi da C 1 a C 4
Resistenza caratteristica a carichi di taglio (carichi statici e quasi statici)	Annessi C 5, C 6
Deformazione sotto carichi a breve e lungo termine	Annesso C 7
Resistenza caratteristica per categorie di prestazione sismica C1 e C2	Annessi da C 8 a C 10
Aspetti generali relativi all' idoneità d'uso	Durabilità e funzionamento in servizio sono assicurati solo se soddisfatti gli usi previsti da norma in accordo all Annesso B 1.

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Annex C1

Table C1: Design method EN 1992-4 Characteristic values of resistance to tension load of threaded rod

Steel failure – Characteristic resistance											
Size			M8	M10	M12	M16	M20	M24	M27	M30	
Steel grade 4.6	NRk,s	[kN]	15	23	34	63	98	141	184	224	
Partial safety factor	γMs	[-]	2,0								
Steel grade 5.8	NRk,s	[kN]	18	29	42	79	123	177	230	281	
Partial safety factor	γMs	[-]	1,5								
Steel grade 8.8	NRk,s	[kN]	29	46	67	126	196	282	367	449	
Partial safety factor	γMs	[-]	1,5								
Steel grade 10.9	NRk,s	[kN]	37	58	84	157	245	353	459	561	
Partial safety factor	γMs	[-]	1,3								
Stainless steel grade A2-70, A4-70	NRk,s	[kN]	26	41	59	110	172	247	321	393	
Partial safety factor	γMs	[-]	1,8								
Stainless steel grade A4-80	NRk,s	[kN]	29	46	67	126	196	282	367	449	
Partial safety factor	γMs	[-]	1,6								
Stainless steel grade 1.4529	NRk,s	[kN]	26	41	59	110	172	247	321	393	
Partial safety factor	γMs	[-]	1,5								
Stainless steel grade 1.4565	NRk,s	[kN]	26	41	59	110	172	247	321	393	
Partial safety factor	γMs	[-]	1,8								
Combined pullout and concrete cone failure in concrete C20/25											
Size			M8	M10	M12	M16	M20	M24	M27	M30	
Characteristic bond resistance in uncracked concrete for a working life of 50 years and 100 years											
Dry and wet concrete	τ _{Rk,ucr}	[N/mm ²]	11	10	9,5	9,0	8,5	8,0	6,5	5,5	
Installation safety factor	γ _{inst}	[-]	1,2							1,4	
Flooded hole	τ _{Rk,ucr}	[N/mm ²]	9,0	8,0	7,5	7,0	7,0	6,0			
Installation safety factor	γ _{inst}	[-]	1,4								
Factor for uncracked concrete 50/60	ψ _c	[-]	1								
Size			M10	M12	M16	M20	M24				
Characteristic bond resistance in cracked concrete for a working life of 50 years											
Dry and wet concrete	τ _{Rk,cr}	[N/mm ²]	5,5	5,5	5,5	5,0	5,0				
Installation safety factor	γ _{inst}	[-]	1,2								
Flooded hole	τ _{Rk,cr}	[N/mm ²]	5,5	5,5	5,5	5,0	5,0				
Installation safety factor	γ _{inst}	[-]	1,4								
Characteristic bond resistance in cracked concrete for a working life of 100 years											
Dry and wet concrete	τ _{Rk,cr}	[N/mm ²]	4,0	4,0	4,0	3,5	3,5				
Installation safety factor	γ _{inst}	[-]	1,2								
Flooded hole	τ _{Rk,cr}	[N/mm ²]	4,0	4,0	4,0	3,5	3,5				
Installation safety factor	γ _{inst}	[-]	1,4								
Factor for influence of sustained load for a working life 50 years	ψ ⁰ _{sus}	[-]					0,73				
Factor for cracked concrete	C30/37 C40/50 C50/60	ψ _c	[-]				1,12 1,23 1,30				
Concrete cone failure											
Factor for concrete cone failure for uncracked concrete	k _{ucr,N}		[-]				11				
Factor for concrete cone failure for cracked concrete	k _{cr,N}		[-]				7,7				
Edge distance	c _{cr,N}	[mm]	1,5h _{ef}								
Splitting failure											
Size			M8	M10	M12	M16	M20	M24	M27	M30	
Edge distance	c _{cr,sp}	[mm]	1,5h _{ef}								
Spacing	s _{cr,sp}	[mm]	3,0h _{ef}								

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Annex C2

Table C2: Design method EN 1992-4

Characteristic values of resistance to tension load of threaded rod for Sika AnchorFix®-2020 Arctic with installation temperature < -10°C

Combined pullout and concrete cone failure in concrete C20/25										
Size			M8	M10	M12	M16	M20	M24	M27	M30
Characteristic bond resistance in uncracked concrete for a working life of 50 years and 100 years										
Dry and wet concrete	$\tau_{Rk,u}$	[N/mm]	11,	10,0	9,5	9,0	8,5	7,5	6,5	5,5
Installation safety factor	γ_{inst}	[-]	1,2						1,4	
Flooded hole	$\tau_{Rk,u}$	[N/mm]	8,5	8,0	7,5	7,0	6,5	6,0		
Installation safety factor	γ_{inst}	[-]	1,4							
Factor for uncracked concrete 50/60	ψ_c	[-]	1							
Size			M10	M12	M16	M20	M24			
Characteristic bond resistance in cracked concrete for a working life of 50 years										
Dry and wet concrete	$\tau_{Rk,c}$	[N/mm]	5,5	5,5	5,5	5,0	5,0			
Installation safety factor	γ_{inst}	[-]	1,2							
Flooded hole	$\tau_{Rk,c}$	[N/mm]	5,5	5,5	5,5	5,0	5,0			
Installation safety factor	γ_{inst}	[-]	1,4							
Characteristic bond resistance in cracked concrete for a working life of 100 years										
Dry and wet concrete	$\tau_{Rk,c}$	[N/mm]	3,5	3,5	3,5	3,5	3,5			
Installation safety factor	γ_{inst}	[-]	1,2							
Flooded hole	$\tau_{Rk,c}$	[N/mm]	3,5	3,5	3,5	3,5	3,5			
Installation safety factor	γ_{inst}	[-]	1,4							
Factor for influence of sustained load for a working life 50 years	$\psi_{0,su}$	[-]	0,7							
Factor for cracked concrete										
	C30/3					1,1				
	C40/5	ψ_c				1,2				
	C50/6					1,3				

Concrete cone failure

See Annex C1

Splitting failure

See Annex C1

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Annex C3

Table C3: Design method EN 1992-4
Characteristic values of resistance to tension load of rebar

Steel failure – Characteristic resistance									
Size			Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Rebar BSt 500 S	$N_{Rk,s}$	[kN]	28	43	62	111	173	270	442
Partial safety factor	γ_{Ms}	[-]	1,4						

Combined pullout and concrete cone failure in uncracked concrete C20/25									
Size			Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Characteristic bond resistance in uncracked concrete for a working life of 50 years and 100 years									
Dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm ²]	12,0	10,0	10,0	9,0	9,0	9,0	5,5
Installation safety factor	γ_{inst}	[-]	1,2						
Flooded hole	$\tau_{Rk,ucr}$	[N/mm ²]	12,0	10,0	10,0	9,0	9,0	9,0	5,5
Installation safety factor	γ_{inst}	[-]	1,4						
Factor for influence of sustained load for a working life 50 years	$\psi_{0,sus}$	[-]	0,73						
Factor for concrete C50/60	ψ_c	[-]	1						

Concrete cone failure									
Factor for concrete cone failure	$k_{ucr,N}$	[-]	11						
Edge distance	$c_{cr,N}$	[mm]	1,5 h_{ef}						

Splitting failure									
Size			Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Edge distance	$c_{cr,sp}$	[mm]	1,5 h_{ef}						
Spacing	$s_{cr,sp}$	[mm]	3,0 h_{ef}						

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Annex C4

Table C4: Design method EN 1992-4 Characteristic values of resistance to tension load of rebar for Sika AnchorFix®-2020 Arctic with installation temperature < -10°C

Steel failure – Characteristic resistance
See Annex C 3

Combined pullout and concrete cone failure in uncracked concrete C20/25										
Size			Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32	
Characteristic bond resistance in uncracked concrete for a working life of 50 years and 100 years										
Dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm ²]	11,0	9,5	9,5	9,0	8,5	8,5	5,5	
Installation safety factor	γ_{inst}	[-]	1,2							
Flooded hole	$\tau_{Rk,ucr}$	[N/mm ²]	11,0	9,5	9,5	9,0	8,5	8,5	5,5	
Installation safety factor	γ_{inst}	[-]	1,4							
Factor for influence of sustained load for a working life 50 years	ψ_{sus}^0	[-]	0,73							
Factor for concrete C50/60	ψ_c	[-]	1							

Concrete cone failure
See Annex C 3

Splitting failure
See Annex C 3

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Annex C5

Table C5: Design method EN 1992-4 Characteristic values of resistance to shear load of threaded rod

Steel failure without lever arm										
Size			M8	M10	M12	M16	M20	M24	M27	M30
Steel grade 4.6	$V_{Rk,s}$	[kN]	7	12	17	31	49	71	92	112
Partial safety factor	γ_{Ms}	[-]	1,67							
Steel grade 5.8	$V_{Rk,s}$	[kN]	9	15	21	39	61	88	115	140
Partial safety factor	γ_{Ms}	[-]	1,25							
Steel grade 8.8	$V_{Rk,s}$	[kN]	15	23	34	63	98	141	184	224
Partial safety factor	γ_{Ms}	[-]	1,25							
Steel grade 10.9	$V_{Rk,s}$	[kN]	18	29	42	79	123	177	230	281
Partial safety factor	γ_{Ms}	[-]	1,5							
Stainless steel grade A2-70, A4-70	$V_{Rk,s}$	[kN]	13	20	30	55	86	124	161	196
Partial safety factor	γ_{Ms}	[-]	1,56							
Stainless steel grade A4-80	$V_{Rk,s}$	[kN]	15	23	34	63	98	141	184	224
Partial safety factor	γ_{Ms}	[-]	1,33							
Stainless steel grade 1.4529	$V_{Rk,s}$	[kN]	13	20	30	55	86	124	161	196
Partial safety factor	γ_{Ms}	[-]	1,25							
Stainless steel grade 1.4565	$V_{Rk,s}$	[kN]	13	20	30	55	86	124	161	196
Partial safety factor	γ_{Ms}	[-]	1,56							
Characteristic resistance of group of fasteners										
Ductility factor $k_7 = 1,0$ for steel with rupture elongation A5 > 8%										

Steel failure with lever arm										
Size			M8	M10	M12	M16	M20	M24	M27	M30
Steel grade 4.6	$M^o_{Rk,s}$	[N.m]	15	30	52	133	260	449	666	900
Partial safety factor	γ_{Ms}	[-]	1,67							
Steel grade 5.8	$M^o_{Rk,s}$	[N.m]	19	37	66	166	325	561	832	1125
Partial safety factor	γ_{Ms}	[-]	1,25							
Steel grade 8.8	$M^o_{Rk,s}$	[N.m]	30	60	105	266	519	898	1332	1799
Partial safety factor	γ_{Ms}	[-]	1,25							
Steel grade 10.9	$M^o_{Rk,s}$	[N.m]	37	75	131	333	649	1123	1664	2249
Partial safety factor	γ_{Ms}	[-]	1,50							
Stainless steel grade A2-70, A4-70	$M^o_{Rk,s}$	[N.m]	26	52	92	233	454	786	1165	1574
Partial safety factor	γ_{Ms}	[-]	1,56							
Stainless steel grade A4-80	$M^o_{Rk,s}$	[N.m]	30	60	105	266	519	898	1332	1799
Partial safety factor	γ_{Ms}	[-]	1,33							
Stainless steel grade 1.4529	$M^o_{Rk,s}$	[N.m]	26	52	92	233	454	786	1165	1574
Partial safety factor	γ_{Ms}	[-]	1,25							
Stainless steel grade 1.4565	$M^o_{Rk,s}$	[N.m]	26	52	92	233	454	786	1165	1574
Partial safety factor	γ_{Ms}	[-]	1,56							
Concrete pry-out failure										
Factor for resistance to pry-out failure k_8 [-]										
2										

Concrete edge failure										
Size			M8	M10	M12	M16	M20	M24	M27	M30
Outside diameter of fastener	d_{nom}	[mm]	8	10	12	16	20	24	27	30
Effective length of fastener	l_f	[mm]	min (hef, 8 d_{nom})							

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Annex C6

Table C6: Design method EN 1992-4 Characteristic values of resistance to shear load of rebar

Steel failure without lever arm								
Size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Rebar BSt 500 S	$V_{Rk,s}$ [kN]	14	22	31	55	86	135	221
Partial safety factor	γ_{Ms} [-]	1,5						
Characteristic resistance of group of fasteners								
Ductility factor $k_7 = 1,0$ for steel with rupture elongation $A_5 > 8\%$								
Steel failure with lever arm								
Size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Rebar BSt 500 S	$M^o_{Rk,s}$ [N.m]	33	65	112	265	518	1013	2122
Partial safety factor	γ_{Ms} [-]	1,5						
Concrete pry-out failure								
Factor for resistance to pry-out failure	k_8 [-]	2						
Concrete edge failure								
Size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
Outside diameter of fastener	[mm]	8	10	12	16	20	25	32
Effective length of fastener	l_f [mm]	min (hef, 8 dnom)						

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Annex C7

Table C7: Displacement of threaded rod under tension and shear load

Size		M8	M10	M12	M16	M20	M24	M27	M30
Tension load									
Uncracked concrete									
δ_{N0}	[mm/kN]	0,05	0,04	0,03	0,02	0,02	0,02	0,01	0,01
$\delta_{N\infty}$	[mm/kN]	0,11	0,09	0,06	0,04	0,03	0,02	0,02	0,02
Cracked concrete									
δ_{N0}	[mm/kN]		0,08	0,09	0,05	0,03	0,02		
$\delta_{N\infty}$	[mm/kN]		0,51	0,32	0,18	0,13	0,11		
Shear load									
δ_{V0}	[mm/kN]	0,48	0,30	0,20	0,11	0,10	0,08	0,06	0,05
$\delta_{V\infty}$	[mm/kN]	0,72	0,45	0,30	0,17	0,14	0,12	0,10	0,08

Annex C8

Table C8: Displacement of rebar under tension and shear load

Size		$\varnothing 8$	$\varnothing 10$	$\varnothing 12$	$\varnothing 16$	$\varnothing 20$	$\varnothing 25$	$\varnothing 32$
Tension load								
Uncracked concrete								
δ_{N0}	[mm/kN]	0,04	0,03	0,02	0,02	0,01	0,01	0,01
$\delta_{N\infty}$	[mm/kN]	0,09	0,07	0,05	0,03	0,02	0,01	0,01
Shear load								
δ_{V0}	[mm/kN]	0,05	0,04	0,03	0,02	0,01	0,01	0,01
$\delta_{V\infty}$	[mm/kN]	0,08	0,06	0,05	0,03	0,02	0,01	0,01

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Annex C9

Table C9: Seismic performance category C1

Size			M10	M12	M16	M20	M24
Tension load							
Steel failure							
Characteristic resistance grade 4.6	NRk,s,C1	[kN]	23	34	63	98	141
Partial safety factor	γMs	[-]	2,00				
Characteristic resistance grade 5.8	NRk,s,C1	[kN]	29	42	79	123	177
Partial safety factor	γMs	[-]	1,50				
Characteristic resistance grade 8.8	NRk,s,C1	[kN]	46	67	126	196	282
Partial safety factor	γMs	[-]	1,50				
Characteristic resistance grade 10.9	NRk,s,C1	[kN]	58	84	157	245	353
Partial safety factor	γMs	[-]	1,33				
Characteristic resistance A2-70, A4-70	NRk,s,C1	[kN]	41	59	110	172	247
Partial safety factor	γMs	[-]	1,87				
Characteristic resistance A4-80	NRk,s,C1	[kN]	46	67	126	196	282
Partial safety factor	γMs	[-]	1,60				
Characteristic resistance 1.4529	NRk,s,C1	[kN]	41	59	110	172	247
Partial safety factor	γMs	[-]	1,50				
Characteristic resistance 1.4565	NRk,s,C1	[kN]	41	59	110	172	247
Partial safety factor	γMs	[-]	1,87				
Characteristic resistance to pull-out for a working life of 50 years							
Dry, wet concrete and flooded hole	τRk,C1	[N/mm ²]	5,5	5,5	5,5	4,2	5,0
Characteristic resistance to pull-out for a working life of 100 years							
Dry, wet concrete and flooded hole	τRk,C1	[N/mm ²]	3,8	3,8	4,0	2,6	3,8
Installation safety factor – Dry and wet concrete	γinst	[-]	1,2				
Installation safety factor – Flooded hole	γinst	[-]	1,4				
Shear load							
Steel failure without lever arm							
Characteristic resistance grade 4.6	VRk,s,C1	[kN]	7	10	23	30	40
Partial safety factor	γMs	[-]	1,67				
Characteristic resistance grade 5.8	VRk,s,C1	[kN]	9	13	28	38	51
Partial safety factor	γMs	[-]	1,25				
Characteristic resistance grade 8.8	VRk,s,C1	[kN]	14	21	45	61	81
Partial safety factor	γMs	[-]	1,25				
Characteristic resistance grade 10.9	VRk,s,C1	[kN]	18	26	56	76	101
Partial safety factor	γMs	[-]	1,50				
Characteristic resistance A2-70, A4-70	VRk,s,C1	[kN]	12	18	39	53	71
Partial safety factor	γMs	[-]	1,56				
Characteristic resistance A4-80	VRk,s,C1	[kN]	14	21	45	61	81
Partial safety factor	γMs	[-]	1,33				
Characteristic resistance 1.4529	VRk,s,C1	[kN]	12	18	39	53	71
Partial safety factor	γMs	[-]	1,25				
Characteristic resistance 1.4565	VRk,s,C1	[kN]	12	18	39	53	71
Partial safety factor	γMs	[-]	1,56				
Characteristic shear load resistance VRk,s,eq in the Table C7 shall be multiplied by following reduction factor for hot-dip galvanized commercial standard rods							
Reduction factor for hot-dip galvanized rods	αv,h-dg,c1	[-]	0,57	0,56	0,49	0,56	0,61
Factor for annular gap	αgap	[-]	0,5				

The anchor shall be used with minimum rupture elongation after fracture A5 equal to 19%.

Note: Rebars are not qualified for seismic design

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Annex C10

Table C10: Seismic performance category C2

Size			M12	M16	M20
Tension load					
Steel failure					
Characteristic resistance grade 4.6	NRk,s,C2	[kN]	34	63	98
Partial safety factor	γMs	[-]	2,00		
Characteristic resistance grade 5.8	NRk,s,C2	[kN]	42	79	123
Partial safety factor	γMs	[-]	1,50		
Characteristic resistance grade 8.8	NRk,s,C2	[kN]	67	126	196
Partial safety factor	γMs	[-]	1,50		
Characteristic resistance grade 10.9	NRk,s,C2	[kN]	84	157	245
Partial safety factor	γMs	[-]	1,33		
Characteristic resistance A2-70, A4-70	NRk,s,C2	[kN]	59	110	172
Partial safety factor	γMs	[-]	1,87		
Characteristic resistance A4-80	NRk,s,C2	[kN]	67	126	196
Partial safety factor	γMs	[-]	1,60		
Characteristic resistance 1.4529	NRk,s,C2	[kN]	59	110	172
Partial safety factor	γMs	[-]	1,50		
Characteristic resistance 1.4565	NRk,s,C2	[kN]	59	110	172
Partial safety factor	γMs	[-]	1,87		
Characteristic resistance to pull-out for a working life of 50 years					
Dry, wet concrete and flooded hole	τRk,C2	[N/mm ²]	1,2	1,4	1,6
Characteristic resistance to pull-out for a working life of 100 years					
Dry, wet concrete and flooded hole	τRk,C2	[N/mm ²]	0,8	1,0	1,0
Installation safety factor – Dry and wet concrete	γinst	[-]	1,2		
Installation safety factor – Flooded hole	γinst	[-]	1,4		
Shear load					
Steel failure without lever arm					
Characteristic resistance grade 4.6	VRk,s,C2	[kN]	13	18	28
Partial safety factor	γMs	[-]	1,67		
Characteristic resistance grade 5.8	VRk,s,C2	[kN]	16	22	35
Partial safety factor	γMs	[-]	1,25		
Characteristic resistance grade 8.8	VRk,s,C2	[kN]	25	36	56
Partial safety factor	γMs	[-]	1,25		
Characteristic resistance grade 10.9	VRk,s,C2	[kN]	32	45	70
Partial safety factor	γMs	[-]	1,50		
Characteristic resistance A2-70, A4-70	VRk,s,C2	[kN]	22	31	49
Partial safety factor	γMs	[-]	1,56		
Characteristic resistance A4-80	VRk,s,C2	[kN]	25	36	56
Partial safety factor	γMs	[-]	1,33		
Characteristic resistance 1.4529	VRk,s,C2	[kN]	22	31	49
Partial safety factor	γMs	[-]	1,25		
Characteristic resistance 1.4565	VRk,s,C2	[kN]	22	31	49
Partial safety factor	γMs	[-]	1,56		
Characteristic shear load resistance VRk,s,eq in the Table C8 shall be multiplied by following reduction factor for hot-dip galvanized commercial standard rods					
Reduction factor for hot-dip galvanized rods	αv,h-dg,c2	[-]	0,46	0,61	0,61
Factor for annular gap	αgap	[-]	0,5		

Dichiarazione di Prestazione

Sika AnchorFix®-2020

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2023.02, ver. 1

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EAD 330499-01-0601:2018 Bonded fasteners for use in concrete
Notified Body 1020
Bonded injection type anchor for use in cracked and uncracked concrete

<http://dop.sika.com>

MARCATURA CE DA INSERIRE SULL'ETICHETTA DEL PRODOTTO

 23
Sika Services AG, Zurich, Switzerland
DoP No. 51274697
For details see accompanying documentation
EAD 330499-01-0601:2018 Bonded fasteners for use in concrete
Notified Body 1020
Bonded injection type anchor for use in cracked and uncracked concrete

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ECOLOGY, HEALTH AND SAFETY INFORMATION (REACH)

Per informazioni e consigli sulla manipolazione, sullo stoccaggio e sullo smaltimento sicuro di prodotti chimici, chi fa uso dei prodotti deve consultare la versione più recente della Scheda di sicurezza (SDS) che riporta le informazioni sulle caratteristiche fisiche, ecologiche e tossicologiche dei prodotti, insieme ad altre informazioni sulla sicurezza.

NOTE LEGALI

Le informazioni e, in particolare, le istruzioni relative all'applicazione e all'uso finale dei prodotti Sika sono fornite in buona fede in base alle conoscenze ed all'esperienza attuale di Sika sui prodotti a condizione che gli stessi vengano adeguatamente immagazzinati, movimentati ed utilizzati in condizioni normali ed osservando le raccomandazioni di Sika. In pratica, le differenze di materiale, substrati e reali condizioni del luogo sono tali da non permettere una garanzia per la commerciabilità o l'idoneità per uno scopo particolare, allo stesso modo nessuna responsabilità può emergere da queste informazioni, da qualsiasi raccomandazione scritta o da ogni altra consulenza prestata. L'utente del prodotto deve testarne l'idoneità per l'uso e lo scopo intesi. Sika si riserva il diritto di modificare le proprietà dei suoi prodotti. Devono essere rispettati i diritti di proprietà di terzi. Tutti gli ordini vengono accettati alle nostre vigenti condizioni di vendita e consegna. Gli utilizzatori devono fare sempre riferimento alla versione più recente della locale scheda dati relativa al prodotto in questione, le cui copie verranno fornite su richiesta.

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