

PROHLÁŠENÍ O VLASTNOSTECH**DoP-23/0732**

1. Jedinečný identifikační kód typu produktu: DEKFIX hybridní chemická kotva
2. Předpokládané použití: Lepená kotva pro beton bez trhlin a s trhlinami
3. Výrobce: RAWLPLUG S.A., ul. Kwidzyńska 6, 51-416 Wrocław, Polska
4. Systém(y) posuzování a ověřování : Systém 1
5. Evropský dokument pro posuzování: EAD 330499-01-0601
6. Evropské technické posouzení: ETA-23/0732
Notifikovaná osoba nebo subjekt: 1488 INSTYTUT TECHNIKI BUDOWLANEJ (ITB)
Číslo certifikátu: 1488-CPR-0945/W
7. Deklarované vlastnosti:

Mechanická odolnost a stabilita (BWR 1)

Základní požadavky	Technická specifikace
Charakteristická odolnost pro statické a kvazi - statické zatížení, vytažení	viz příloha tabulky C1 až 15
Charakteristická odolnost pro seismické kategorie C1,C2, vytažení	viz příloha tabulky C14 až 16

Hygiena, zdraví a životní prostředí (BWR 3)

Základní požadavky	Specifikace
Bez stanovení	



Table Cl: Characteristic resistance under tension load for threaded rod in uncracked concrete

Size			M10	M12	M16	M20	M24	M30
Steel failure								
Steel failure with threaded rod grade 5.8								
Characteristic resistance	Rks		29	42	78	122	176	280
Partial safe factor ¹⁾	M _s							
Steel failure with threaded rod grade 8.8								
Characteristic resistance			29	46	67	125	196	448
Partial safe factor ¹⁾	M _s							
Steel failure with threaded rod grade 10.9								
Characteristic resistance	NRks		36	58	84	157	245	561
Partial safe factor ¹⁾	M _s							
Steel failure with threaded rod grade 12.9								
Characteristic resistance			43	69	101	188	294	673
Partial safety factor ¹⁾	M _s					1,40		
Steel failure with stainless steel threaded rod A4-70								
Characteristic resistance	Rks		25	40	59	109	171	392
Partial safe factor ¹⁾	M _s					1,87		
Steel failure with stainless steel threaded rod A4-80								
Characteristic resistance	Rks		29	46	67	125	196	448
Partial safe factor ¹⁾	M _s							
Steel failure with high corrosion resistant steel grade 70								
Characteristic resistance			25	40	59	109	171	392
Partial safe factor ¹⁾	M _s							
Steel failure with ultra-high strength steel threaded rod grade 14.8								
Characteristic resistance					118	219	343	785
Partial safety factor ¹⁾	M _s							
Steel failure with ultra-high strength steel threaded rod grade 15.8								
Characteristic resistance	NRks		54	87	126	235	367	841
Partial safe factor ¹⁾	M _s							
Steel failure with ultra-high strength steel threaded rod grade 16.8								
Characteristic resistance	NRks		58	92	134,9	251	392	897
Partial safe factor ¹⁾	M _s				-I			
Combined pull-out and concrete cone failure in uncracked concrete C20/25 for a working life of 50 years								
Characteristic bond resistance								
Temperature range I: 24 ^o C / 40 ^o C		[N/mm ²]	16,0	15,0	15,0	13,0	10,0	10,0
Temperature range II: 50 ^o C / 80 ^o C		[N/mm ²]	16,0	15,0	15,0	13,0	10,0	10,0
Temperature range III: 80 ^o C / 120 ^o C		[N/mm ²]						
Increasing factor		C30/37						
		C40/50				1,07		
		C50/60						
Sustained load factor		⁰				0,72		
		24 ^o C / 40 ^o C				0,72		
		50 ^o C / 80 ^o C				0,72		
	⁰					0,61		
	_{sus}	80C / 120 ^o C						
Combined pull-out and concrete cone failure in uncracked concrete C20/25 for a working life of 100 years								

Characteristic bond resistance									
Temperature range I: 24°C / 40 °C		[N/mm ²]	15,0	15,0	14,0	13,0	10,0		
Temperature range II: 50 °C / 80 °C		[N/mm ²]	15,0	15,0	14,0	13,0	10,0		
Increasing factor		C30/37							
		C40/50	1,07						
		C50/60							

Table CI (continuation)

Size			MIO	M12	M16	M20	M24	M30
Concrete cone failure in uncracked concrete								
Factor for uncracked concrete		$c_{cr,N}$				1,1,0		
Edge distance		$c_{ucr,N}$		[mm]		• hef		
Spacing		$s_{ucr,N}$		[mm]		hef		
Splitting failure								
Edge distance		$c_{cr,sp}$ for h_{min}				• hef		1,5 • hef
		$c_{cr,sp}$ for $h_{min} < h^2 < 2 \cdot hef$ ($c_{cr,sp}$ from linear interpolation)		[mm]				
		$c_{cr,sp}$ for $h^2 \geq 2 \cdot hef$				c _{cr,N}		
Spacing		$s_{cr,sp}$		[mm]		c _{cr,sp}		
Installation factor for combined pull-out, concrete cone and splitting failure								
Installation factor for in use category II	standard cleaning	γ_{inst}						
	special cleaning							
Installation factor for in use category 12	standard cleaning					1,0		
	special cleaning					1,0		

¹⁾ In the absence of other national regulation. ²⁾ h — concrete member thickness.

Table C2: Characteristic resistance under tension loads for threaded rod in cracked concrete

Size			M10	M12	M16	M20	M24	M30	
Steel failure									
Steel failure with threaded rod grade 5.8									
Characteristic resistance	NRks		18	29	42	78	122	176	280
Partial safety factor γ_s)	M_s								
Steel failure with threaded rod grade 8.8									
Characteristic resistance			29	46	67	125	196	282	448
Partial safety factor γ_s)	M_s	-							
Steel failure with threaded rod grade 10.9									
Characteristic resistance	Rks		36	58	84	157	245	353	561
Partial safety factor γ_s)	M_s								
Steel failure with threaded rod grade 12.9									
Characteristic resistance	NRks		43	69	101	188	294	423	673
Partial safety factor γ_s)	M_s								
Steel failure with stainless steel threaded rod A4-70									
Characteristic resistance			25	40	59	109	171	247	392
Partial safety factor γ_s)	M_s					1,87			
Steel failure with stainless steel threaded rod A4-80									
Characteristic resistance	NRks		29	46	67	125	196	282	448
Partial safety factor γ_s)	M_s								
Steel failure with high corrosion resistant steel grade 70									
Characteristic resistance	Rks		25	40	59	109	171	247	392
Partial safety factor γ_s)	M_s								
Steel failure with ultra-high strength steel threaded rod grade 14.8									
Characteristic resistance	NRks		51	81	118	219	343	494	785
Partial safety factor γ_s)	M_s								
Steel failure with ultra-high strength steel threaded rod grade 15.8									
Characteristic resistance	NRks		54	87	126	235	367	529	841
Partial safety factor γ_s)	M_s								
Steel failure with ultra-high strength steel threaded rod grade 16.8									
Characteristic resistance			58	92	134,9	251	392	564	897
Partial safety factor γ_s)	M_s								
Combined pull-out and concrete cone failure in cracked concrete C20/25 for a working life of 50 years									
Characteristic bond resistance									
Temperature range I: 24 °C / 40 °C		[N/mm ²]	10,0	11,0	11,0				
Temperature range II: 50 °C / 80 °C		[N/mm ²]	10,0	11,0	11,0				
Temperature range III: 80 °C / 120 °C		[N/mm ²]							
Increasing factor		C30/37				1,04			
		C40/50				1,07			
		C50/60							
Sustained load factor		$\sigma_{24C / 40^{\circ}C}$				0,72			
		$\sigma_{50^{\circ}C / 80^{\circ}C}$				0,72			
		$\sigma_{80^{\circ}C / 120^{\circ}C}$				0,61			

Combined pull-out and concrete cone failure in cracked concrete C20/25 for a working life of 100 years

Characteristic bond resistance

Temperature range I: 24 °C / 40 °C	TRk,ucr, 100	[N/mm2]		10,0	10,5				
Temperature range II: 50 °C / 80 °C	TRk,ucr, 100	[N/mm2]		10,0	10,5				
Increasing factor		C30/37							
		C40/50	1,07						
		C50/60							

Table C2 (continuation)

Size			M10	M12	M16	M20	M24	M30	
Concrete cone failure in cracked concrete									
Factor for cracked concrete		$k_{cr,N}$							
Edge distance		$c_{cr,N}$	mm					$\bullet \cdot h_{ef}$	
Spacing		$s_{cr,N}$	mm					$\bullet \cdot h_{ef}$	
Splitting failure									
Edge distance		$c_{cr,sp}$ for $h_{min} < 2 \cdot h_{ef}$ ($c_{cr,sp}$ from linear interpolation)	[mm]					$1,5 \cdot h_{ef}$	
		$c_{cr,sp}$ for $h^2 \geq 2 \cdot h_{ef}$							
Spacing		$s_{cr,sp}$	[mm]					$c_{cr,N}$	
Installation factor for combined pull-out, concrete cone and splitting failure									
Installation factor for in use category II	standard cleaning	γ_{inst}	[-1]					1,0	
	special cleaning							1,0	
Installation factor for in use category 12	standard cleaning								
	special cleaning								1,0

¹⁾ In the absence of other national regulation. ²⁾ h — concrete member thickness.

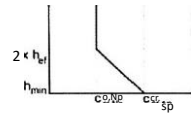


Table C3. Characteristic resistance under tension load for rod with inner thread in uncracked concrete

Size			/Ø10	Ø12	M10/ Ø16	M12/ Ø16	M16/ Ø24
Steel failure							
Steel failure with rod with inner thread rade 5.8							
Characteristic resistance	NRks		10	18	29	42	78
Partial safety factor ¹⁾	M _s						
Steel failure with rod with inner thread rade 8.8							
Characteristic resistance			16	29	46	67	125
Partial safety factor ¹⁾	M _s						
Steel failure with stainless steel rod with inner thread threaded rod A4-70							
Characteristic resistance	NRks		14	25	40	59	109
Partial safe factor ¹⁾	M _s				1,87		
Steel failure with stainless steel rod with inner thread A4-80							
Characteristic resistance			16	29	46	67	125
Partial safe factor l)	M _s						
Steel failure with hi h corrosion resistant steel rade 70							
Characteristic resistance	NRks		14	25	40	59	109
Partial safe factor ¹⁾	M _s				1,87		
Combined ull-out and concrete cone failure in uncracked concrete C20/25 for a workin life of 50 ears							
Temperature range I: 24 ^o C / 40 ^o C		[N/mm2]	11,0	14,0	11,0	11,0	
Temperature range II: 50 ^o C / 80 ^o C		[N/mm2]	11,0	14,0	11,0	11,0	
Temperature range III: 80 ^o C / 120 ^o C		[N/mm2]					
Increasing factor		C30/37					
		C40/50		1,07			1,00
		C50/60					
Sustained load factor		240C/400C			0,72		
		500C/800C			0,72		
	_{sus}	^o 80 ^o C / 120C			0,61		
Combined ull-out and concrete cone failure in uncracked concrete C20/25 for a workin life of 100 ears							
Temperature range I: 24 ^o C / 40 ^o C	TRk,ucr, 100	[N/mm2]	10,0	13,0	10,0	11,0	
Temperature range II: 50 ^o C / 80 ^o C	tRk, 100	[N/mm2]	10,0	13,0	10,0	11,0	
Increasing factor		C30/37					
		C40/50					
		C50/60					

Table C4: Characteristic resistance under tension loads for rod with inner thread in cracked concrete

Size			/ø10	ø12	M10/ ø16	M12/ ø16	M16/ ø24
Steel failure							
Steel failure with rod with inner thread rade 5.8							
Characteristic resistance	NRks		10	18	29	42	78
Partial safe factor ¹⁾	M _s						
Steel failure with rod with inner thread rade 8.8							
Characteristic resistance			16	29	46	67	125
Partial safety factor ¹⁾	M _s						
Steel failure with stainless steel rod with inner thread A4-70							
Characteristic resistance	NRks		14	25	40	59	109
Partial safe factor ¹⁾	M _s						
Steel failure with stainless steel rod with inner thread rod A4-80							
Characteristic resistance	NRks		16	29	46	67	125
Partial safe factor ¹⁾	M _s						
Steel failure with hi h corrosion resistant steel rade 70							
Characteristic resistance	NRks		14	25	40	59	109
Partial safety factor ¹⁾	Y _M s				1,87		
Combined pull-out and concrete cone failure in cracked concrete C20/25 for a working life of 50 years							
Temperature range I: 24°C / 40 °C		[N/mm ²]	10,0	10,0			
Temperature range II: 50°C / 80°C		[N/mm ²]	10,0	10,0			
Temperature range III: 80 °C / 120 °C		[N/mm ²]					
Increasing factor		C30/37	1,04				
		C40/50					
		C50/60					
Sustained load factor		240C/400C	0,72				
		500C/800C	0,72				
		⁰ / 120 C	0,61				
Combined pull-out and concrete cone failure in cracked concrete C20/25 for a working life of 100 years							
Temperature range I: 24°C / 40 °C	TR _{k,cr,100}	[N/mm ²]					
Temperature range II: 50 °C / 80 °C	TR _{k,cr,100}	[N/mm ²]					
Increasing factor		C30/37					
		C40/50					
		C50/60					

Table C5: Characteristic resistance under tension load for rebar in uncracked concrete

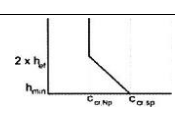
Size			ø10	ø12	ø14	ø16	ø20	ø25	ø32
Steel failure with rebar									
Characteristic resistance	NRk,s		As3) • fuk4)						
Partial safety factor 1)	γMs		1, 40						
Combined pull-out and concrete cone failure in uncracked concrete C20/25 for a working life of 50 years									
Temperature range I: 24 °C / 40 °C		[N/mm2]	13,0	14,0	14,0	13,0	13,0	10,0	
Temperature range II: 50 °C / 80 °C		[N/mm2]	13,0	14,0	14,0	13,0	13,0	10,0	
Temperature range III: 80 °C / 120 °C		[N/mm2]							
Increasing factor		C30/37	1, 04						
		C40/50	1,07						
		C50/60							
Sustained load factor		240C/400C	0,72						
		500C/800C	0,72						
	sus	/ 120 °C	0,61						
Combined pull-out and concrete cone failure in uncracked concrete C20/25 for a working life of 100 years									
Temperature range I: 24 °C / 40 °C		[N/mm2]	12,0	14,0	14,0	12,0	12,0	10,0	
Temperature range II: 50 °C / 80 °C		[N/mm2]	12,0	14,0	14,0	12,0	12,0	10,0	
Increasing factor		C30/37							
		C40/50							
		C50/60							
Concrete cone failure in uncracked concrete									
Factor for non-cracked concrete	kucr,N		11,0						
Edge distance	Cucr,N	[mm]	1,5 • hef						
Spacing	Sucr,N	[mm]	3,0 • hef						
S luttin failure									
Edge distance	C cr,sp for hm,n	[mm]	• hef						1,5 • hef
	Ccr sp for h _{min} < h ²⁾ < 2 • hef (ccr,sp from linear interpolation)								
	ccr,sp for h ²⁾ ≥ 2 • hef		ccr,N						
Spacing	scr,sp	[mm]	cr,sp						
Installation factor for combined pull-out, concrete cone and s luttin failure									
Installation factor for use category II	standard cleaning	γinst	1,0						
	special cleaning		1,0						
Installation factor for use category 12	standard cleaning								
	special cleaning		1,0						

1) In the absence of other national regulation.

2) h — concrete member thickness.

3) Stressed cross section of the steel. 4) Acc. to EN 1992-1-1.

Table C6: Characteristic resistance under tension loads for rebar in cracked concrete

Size			Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
Steel failure with rebar								
Characteristic resistance			As3) • fuk4)					
Partial safety factor 1)	Ms							
Combined ull-out and concrete cone failure in cracked concrete C20/25 for a workin life of 50 ears								
Temperature range I: 24°C / 40 °C		[N/mm2]						
Temperature range II: 50°C / 80°C		[N/mm2]	8		10	10		6
Temperature range III: 80 °C / 120 °C		[N/mm2]	4,5	5	5	5	4	3 2
Increasing factor		C30/37						
		C40/50						
		C50/60						
Sustained load factor	γD0sus	240C/400C	0,72					
		500C/800C	0,72					
		80 °C / 1200C	0,61					
Combined pull-out and concrete cone failure in non-cracked concrete C20/25 for a working life of 100 years								
Tem erature ran e I: 24°C / 40 °C	tRk cr 100	[N/mm2]						
Temperature range II: 50°C / 80 °C	tRk,cr, 100	[N/mm2]			10	10		6
Increasing factor		C30/37	1 , 04					
		C40/50						
		C50/60						
Concrete cone failure in cracked concrete								
Factor for racked concrete	kcr N							
Ed e distance	Ccr N	mm	hef					
S acin	Scr N	mm						
Splitting failure								
Edge distance	for hmn	[mm]	1,5 • hef					
	Ccr,sp for hmn < h ²) < 2 • hef (ccr,sp from linear interpolation)							
	Ccr,sp for h ²) ≥ 2 • hef		Ccr,N					
Spacing	scr,sp	[mm]	cr,sp					
Installation factor for combined ull-out, concrete cone and s littin failure								
Installation factor for use category II ¹⁾	standard cleaning	Yinst	1,0					
	special cleaning		1,0					
Installation factor for use category 12 ¹⁾	standard cleaning	Yinst						
	special cleaning							

1) In the absence of other national regulation.

2) h — concrete member thickness.

3) Stressed cross section of the steel. 4) Acc. to EN 1992-1-1.

Table C7: Characteristic resistance under shear loads for threaded rod — steel failure without lever arm

Size			M10	M12	M16	M20	M24	M30
Steel failure with threaded rod grade 5.8								
Characteristic resistance			14	21	39	61	88	140
Factor considerin ductili								
Partial safe factor 1)	Ms							
Steel failure with threaded rod grade 8.8								
Characteristic resistance			15	23	34	63	98	141
Factor considerin ductili								
Partial safet factor l)	Ms							
Steel failure with threaded rod grade 10.9								
Characteristic resistance			18	29	42	78	122	176
Factor considerin ductilit								
Partial safety factor 1)	Ms							
Steel failure with threaded rod grade 12.9								
Characteristic resistance	VRk s		22	35	51	94	147	212
Factor considerin ductili								
Partial safe factor 1)	Ms							
Steel failure with stainless steel threaded rod A4-70								
Characteristic resistance			13	20	29	55	86	124
Factor considerin ductili								
Partial safe factor 1)	Ms		1,56					
Steel failure with stainless steel threaded rod A4-80								
Characteristic resistance			15	23	34	63	98	141
Factor considerin ductili								
Partial safe factor 1)	Ms		1,33					
Steel failure with high corrosion stainless steel grade 70								
Characteristic resistance			13	20	29	55	86	124
Factor considerin ductili								
Partial safet factor 1)	Ms							
Steel failure with ultra-high strength steel threaded rod grade 14.8								
Characteristic resistance			25	40	59	109	171	247
Factor considerin ductilit								
Partial safety factor 1)	Ms		1,50					
Steel failure with ultra-high strength steel threaded rod grade 15.8								
Characteristic resistance	VRk s		27	43	63	117	183	264
Factor considerin ductili	k7							
Partial safe factor 1)	Ms							
Steel failure with ultra-high strength steel threaded rod grade 16.8								
Characteristic resistance			29	46	67	125	196	282
Factor considerin ductili								

Partial safe factor 1)	Ms		
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¹⁾ In the absence of other national regulation.

Table C8: Characteristic resistance under shear loads for threaded rod — steel failure with lever arm

Size			M10	M12	M16	M20	M24	M30	
Steel failure with threaded rod grade 5.8									
Characteristic resistance	R _{ks}	Nm	19	37	65	166	324	561	1124
Partial safety factor ¹⁾	M _s								
Steel failure with threaded rod grade 8.8									
Characteristic resistance		Nm	30	60	105	266	519	898	1799
Partial safe factor l)	M _s								
Steel failure with threaded rod grade 10.9									
Characteristic resistance		Nm	37	75	131	333	649	1123	2249
Partial safe factor ¹⁾	M _s								
Steel failure with threaded rod grade 12.9									
Characteristic resistance	R _{ks}		45	90	157	400	779	1347	2698
Partial safe factor ¹⁾	M _s								
Steel failure with stainless steel threaded rod A4-70									
Characteristic resistance		Nm	26	52	92	233	454	786	1574
Partial safe factor 1)	M _s								
Steel failure with stainless steel threaded rod A4-80									
Characteristic resistance	MOR _{ks}	Nm	30	60	105	266	519	898	1799
Partial safe factor ¹⁾	M _s					1,33			
Steel failure with high corrosion resistant steel grade 70									
Characteristic resistance		Nm	26	52	92	233	454	786	1574
Partial safe factor 1)	M _s					1,56			
Steel failure with ultra-high strength steel threaded rod grade 14.8									
Characteristic resistance		Nm	52	104	183	466	908	1571	3148
Partial safe factor 1)	M _s					1,50			
Steel failure with ultra-high strength steel threaded rod grade 15.8									
Characteristic resistance		Nm	56	112	196	499	973	1683	3373
Partial safe factor 1)	M _s								
Steel failure with ultra-high strength steel threaded rod grade 16.8									
Characteristic resistance		Nm	59	119	209	532	1038	1796	3598
Partial safety factor 1)	M _s								

¹⁾ In the absence of other national regulation.

Table C9: Characteristic resistance under shear loads — pry out and concrete edge failure for threaded rod

Size		M10	M12	M16	M20	M24	M30		
Pry out failure									
Factor		[-1]		2					
Concrete edge failure									
Outside diameter of anchor	d_{nom}	[mm]	8	10	12	16	20	24	30
Effective length of anchor under shear loading			If = hef and 12 d_{nom}					If = hef and (8 d_{nom} ; 300 mm)	

Table C10: Characteristic resistance under shear loads for rod with inner thread — steel failure without lever arm

Size				/ø10	ø12	M10/ ø16	M12/ ø16	M16/ ø24
Steel failure with rod with inner thread grade 5.8								
Characteristic resistance						14,5	21,1	39,3
Factor considering ductility								
Partial safety factor ¹⁾	Ms							
Steel failure with rod with inner thread grade 8.8								
Characteristic resistance					14,6	23,2	33,7	62,8
Factor considering ductility								
Partial safety factor ¹⁾	Ms							
Steel failure with stainless steel for rod with inner thread A4-70								
Characteristic resistance					12,8	20,3	29,5	55,0
Factor considering ductility	k7							
Partial safety factor ¹⁾	Ms							
Steel failure with stainless steel for rod with inner thread A4-80								
Characteristic resistance					14,6	23,2	33,7	62,8
Factor considering ductility								
Partial safety factor ¹⁾	Ms							
Steel failure with high corrosion stainless steel grade 70								
Characteristic resistance					12,8	20,3	29,5	55,0
Factor considering ductility	k7							
Partial safety factor ¹⁾	Ms							

¹⁾ In the absence of other national regulation.

Table C11 : Characteristic resistance under shear loads for rod with inner thread - steel failure with lever arm

Size			/Ø10	Ø12	M10/ Ø16	M12/ Ø16	M16/ Ø24
Steel failure with rod with inner thread grade 5.8							
Characteristic resistance		Nm		18,7	37,4	65,5	166,5
Partial safety factor ¹⁾	M _s						
Steel failure with rod with inner thread grade 8.8							
Characteristic resistance			12,2	30,0	59,8	104,8	266,4
Partial safety factor ¹⁾	M _s				1,25		
Steel failure with stainless steel for rod with inner thread A4-70							
Characteristic resistance		Nm	10,7	26,2	52,3	91,7	233,1
Partial safety factor ¹⁾	M _s						
Steel failure with stainless steel for rod with inner thread A4-80							
Characteristic resistance	R _{ks}	Nm	12,2	30,0	59,8	104,8	266,4
Partial safety factor ¹⁾	M _s						
Steel failure with high corrosion resistant steel grade 70							
Characteristic resistance		Nm	10,7	26,2	52,3	91,7	233,1
Partial safety factor ¹⁾	M _s						

¹⁾ In the absence of other national regulation.

Table C12: Characteristic resistance under shear loads — pry out and concrete edge failure for rod with inner thread

Size			Ø12	M10/ Ø16	M12/ Ø16	M16/ Ø24
Pry out failure						
Factor				2		
Concrete edge failure						
Outside diameter of anchor	d _{nom}	[mm]	10	12	16	16
Effective length of anchor under shear loading		[mm]	l _f = h _{ef} and 12 d _{nom}			

Table C13: Characteristic resistance under shear loads for rebar — steel failure without lever arm

Size			Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
Steel failure with rebar									
Characteristic resistance			• As ²⁾ • f _{uk} ³⁾						
Factor considering ductility									
Partial safety factor ¹⁾	Y _{M5}								

¹⁾ In the absence of other national regulation.

²⁾ Stressed cross section of the steel

element. ³⁾ Acc. to EN 1992-1-1.

Table C14: Characteristic resistance under shear loads for rebar — steel failure with lever arm

Size				Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
Steel failure with rebar									
Characteristic resistance	R _{k,s}	[Nm]	1,2 • Wel 2) • f _{uk} ³⁾						
Partial safety factor I)	Y _{M5}								

¹⁾ In the absence of other national regulation.

²⁾ Elastic section modulus calculated from the stressed cross section of steel

element. ³⁾ Acc. to EN 1992-1-1.

Table C 15: Characteristic resistance under shear loads — pry out and concrete edge failure for rebar

Size			Ø12	Ø14	Ø16		Ø25	Ø32		
Pry out failure										
Factor			2							
Concrete edge failure										
Outside diameter of anchor	d _{nom}		8	10	12	14	16	20	25	32
Effective length of anchor under shear loading	l _f		l _f = hef and 12 d _{nom}						l _f = hef and max d _{nom} (300 mm)	

Table C16: Displacement under tension loads — threaded rod

Size			MB	M10	M12	M16	M20	M24	M30
Characteristic displacement in uncracked concrete C20/25 to C50/60 under tension loads									
Displacement ¹⁾	öN0	[mm]							
		[mm]							
Characteristic displacement in cracked concrete C20/25 to C50/60 under tension loads									
Displacement ¹⁾	öN0	[mm]							
		[mm]	2	2	2	2	2	2	2
¹⁾ These values are suitable for each temperature range and categories specified in Annex BI Calculation of the displacement: $\delta_{N0} = \text{bro-factor} \cdot N$; $\delta_N = \text{Not-factor } N$; (N — applied tension load)									

Vlastnosti výše uvedeného výrobku jsou ve shodě se souborem deklarovaných vlastností. Toto prohlášení o vlastnostech se vydává v souladu s nařízením (EU) č. 305/2011 na výhradní odpovědnost výrobce uvedeného výše.

Tomasz Walczak
Wrocław, 2023

DYREKTOR ADMINISTRACYJNY

 Tomasz Walczak

