



Declaration of Performance

No. DEA990060

Expandet Throughbolt EXG II (Zinc plated)

Intended use or uses of the construction product according to ETAG 001 parts 1 and 2

Generic type		Torque controlled expansion anchor (Bolt type)
Base material		Un-cracked concrete C20/25 to C50/60 acc. to EN 206-1:2003
A	Material	Zinc plated carbon steel
	Durability	Internal dry conditions
Loading		static, quasi-static
Fire Reaction		A1 according to EN13501-1
ETA - 10/0180 issued by		DEUTSCHES INSTITUT FÜR BAUTECHNIK (DIBt)
On the basis of		ETAG 001
Certificate of Conformity 0756-CPD-0346 issued by		Technische Universität Darmstadt Institut für Massivbau
Under System		1

Declared performances according to ETAG 001 parts 1 and 2

Essential Characteristics			Performance													
Installation parameters																
d	Diameter of anchor bolt or thread	[mm]	M6		M8		M10		M12		M16		M20			
h_{eff}	Effective anchorage depth	[mm]	40	30	44	35	48	42	65	50	82	64	100	78		
d_0	Nominal diameter of drill bit	[mm]	6		8		10		12		16		20			
d_{fix}	Diameter of clearance hole in the fixture	[mm]	7		9		12		14		18		22			
h_{nom}	Minimum installation depth	[mm]	49	39	56	47	62	56	82	67	102	84	121	99		
h_{min}	Minimum thickness of the concrete member	[mm]	100	80	100	80	100	100	130	100	170	130	200	160		
T_{inst}	Nominal torque moment	[Nm]	8		15		30		50		100		200			
s_{min}	Minimum spacing	[mm]	35		40		55		75	100	90	100	105	140		
	for $c \geq$	Edge distance	35		40		55		75	100	90	100	105	140		
c_{min}	Minimum edge distance	[mm]	40		45		65		90	100	105	100	125	140		
	for $s \geq$	Anchor spacing	40		45		65		90	100	105	100	125	140		
Tension Steel failure mode																
$N_{Rk,s}$	Tension Steel characteristic failure	[kN]	8,7		15,3		26,0		35,0		65,0		107,0			
$\gamma_{m,sN}$	Partial safety factor for tension steel failure	[-]	1,5								1,6					
Pull-out failure mode																
$N_{Rk,p,ucr}$	Tension characteristic load in un-cracked	[kN]	9	6	12	1 ¹⁾	16	1 ¹⁾	1 ¹⁾	1 ¹⁾	1 ¹⁾	1 ¹⁾	1 ¹⁾	1 ¹⁾	1 ¹⁾	
γ_2	Partial safety factor	[-]	1,0													
ψ_c C30/37	Increasing factor for concrete C30/37	[-]	1,22													
ψ_c C40/50	Increasing factor for concrete C40/50	[-]	1,41													
ψ_c C50/60	Increasing factor for concrete C50/60	[-]	1,55													
¹⁾ Pullout is not decisive																
Concrete Cone failure mode																
$s_{cr,N}$	Critical spacing	[mm]	120	90	132	105	144	126	195	150	246	192	300	234		
$c_{cr,N}$	Critical edge distance	[mm]	60	45	66	52,5	72	63	97,5	75	123	96	150	117		
γ_2	Partial safety factor	[-]	1,0													
Splitting failure mode																
$s_{cr,sp}$	Critical spacing (splitting)	[mm]	160	180	220	210	240	230	330	240	410	320	500	400		
$c_{cr,sp}$	Critical edge distance(splitting)	[mm]	80	90	110	105	120	115	165	120	205	160	250	200		
γ_2	Partial safety factor	[-]	1,0													



EXPANDET®



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Declared performances according to ETAG 001 parts 1 and 2															
Essential Characteristics			Performance												
d	Diameter of anchor bolt or thread	[mm]	M6	M8	M10	M12	M16	M20							
Displacement on Tension loads															
N _{ucr}	Service tension load in un-cracked concrete	[kN]	4,3	2,9	5,8	5,0	7,6	6,5	11,9	8,5	16,7	12,3	23,8	16,6	
δ _{NO,ucr}	Short term displacement under tension	[mm]	0,4	0,3	0,5	0,4	0,5	0,4	0,5	0,4	0,5	0,4	0,5	0,4	
δ _{N∞,ucr}	Long term displacement under tension load	[mm]	0,7	0,6	2,7	1,8	2,7	1,8	2,7	1,8	2,7	1,8	2,7	1,8	
Shear steel failure mode															
V _{Rk,s}	Shear Steel characteristic failure	[kN]	5	5	11	11	17	17	25	25	44	44	69	69	
M ⁰ _{Rk,s}	Bending Moment characteristic failure	[Nm]	9	9	23	23	45	45	78	78	156	186	363	363	
γ _{m,sV}	Partial safety factor for shear steel failure	[-]	1,25									1,33			
Shear Concrete Pryout failure mode															
k	Factor for concrete pryout failure	[-]	1,0							2,0	1,0	2,0			
γ ₂	Partial safety factor	[-]	1,0												
Shear Concrete edge failure mode															
l _f	Effective length of anchor under shear loading	[mm]	40	30	44	35	48	42	65	50	82	64	100	78	
d _{nom}	Outside diameter of anchor	[mm]	6		8		10		12		16		20		
γ ₂	Partial safety factor	[-]	1,0												
Displacement on Shear Load															
V	Service shear load in	[kN]	2,9	2,9	6,3	6,3	9,7	9,7	14,3	14,3	23,6	23,6	37	37	
δ _{V0}	Short term displacement under shear load	[mm]	1,2	1,2	1,5	1,5	1,6	1,6	2,6	2,6	3,1	3,1	4,4	4,4	
δ _{V∞}	Long term displacement under shear load	[mm]	2,4	2,4	2,2	2,2	2,4	2,4	3,9	3,9	4,6	4,6	6,6	6,6	

The above performances apply for the following article numbers:

Article Number	Dimension	d x l	t _{fix} (Standard h _{ef})	t _{fix} (Reduced h _{ef})	Article Number	Dimension	d x l	t _{fix} (Standard h _{ef})	t _{fix} (Reduced h _{ef})
		(mm)	(mm)	(mm)			(mm)	(mm)	(mm)
0706067EG	M6	M6 x 67	10	20	0712110EG	M12	M12 x 110	15	30
0706097EG		M6 x 97	40	50	0712125EG		M12 x 125	30	45
0708060EG	M8	M8 x 60	-	4	0712145EG		M12 x 145	50	65
0708075EG		M8 x 75	10	19	0712160EG		M12 x 160	65	80
0708095EG		M8 x 95	30	39	0712180EG		M12 x 180	85	100
0708110EG		M8 x 110	45	54	0712200EG		M12 x 200	105	120
0708165EG		M8 x 165	100	109	0712240EG		M12 x 240	145	160
0710090EG	M10	M10 x 90	15	21	0716115EG	M16	M16 x 115	-	13
0710105EG		M10 x 105	30	36	0716130EG		M16 x 130	10	28
0710120EG		M10 x 120	45	51	0716150EG		M16 x 150	30	48
0710145EG		M10 x 145	70	76	0716180EG		M16 x 180	60	78
0710175EG		M10 x 175	100	106	0716220EG		M16 x 220	100	118
0710215EG		M10 x 215	140	146	0716250EG		M16 x 250	130	148
					0716285EG		M16 x 285	165	183
					0716320EG		M16 x 320	200	218
	M20				0720180EG	M20	M20 x 180	35	57
					0720205EG		M20 x 205	60	82



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The performance of the product identified above is in conformity with the set of declared performance/s.

This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of Expandet Screw Anchors A/S by:

Place and date of issue: Græsted, 15/07/2014

Peter van der Wel, Managing Director