



Declaration of Performance No. 0756-CPR-0564

Throughbolt Option 1 (Torque controlled expansion anchor made of zinc coated steel)
 JCP Construction Products,
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Intended use or uses of the products according to EAD 330232-00-0601	
Generic type	Torque controlled expansion anchor
Base material	Cracked and Non-cracked concrete C20/25 to C50/60 acc. EN 206-2:2003
Batch Number	Marked on individual boxes
Material	Zinc plated carbon steel
Durability	Dry internal conditions
Loading	Static, quasi-static
Fire Resistance	120mins
Fire Reaction	ETAG 001 Annex C Option 1
ETA 13/0364 issued by	DIBt
On the basis of	EAD 330232-00-0601
Certificate of Conformity 1343-CPR-M 556-2/07.15 issued by	MPA Darmstadt
Under system	1

Declared performances according to EAD 330232-00-0601									
Essential Characteristics			Performance						
			M08	M10	70M12	M16	M20	M24	M27
Installation parameters									
d_o	Nominal diameter of drill bit	[mm]	8	10	12	16	20	24	28
d_f	Fixture clearance hole	[mm]	9	12	14	18	22	26	30
h_{ef}	Effective anchorage depth	[mm]	46	60	70	85	100	115	125
h_1	Depth of drill hole to deepest point	[mm]	60	75	90	110	125	145	160
h_{min}	Minimum thickness of concrete member	[mm]	100	120	140	170	200	230	250
T_{inst}	Nominal torque moment	[mm]	20	25	45	90	160	200	300
Cracked concrete									
S_{min}	Minimum spacing	[mm]	40	45	60	60	95	100	125
	for $C \geq$ Edge distance	[mm]	70	70	100	100	150	180	300
C_{min}	Minimum edged distance	[mm]	40	45	60	60	95	100	180
	for $S \geq$ Anchor spacing	[mm]	80	90	140	180	200	220	540
Non-Cracked concrete									
S_{min}	Minimum spacing	[mm]	40	45	60	65	90	100	125
	for $C \geq$ Edge distance	[mm]	80	70	120	120	180	180	300
C_{min}	Minimum edged distance	[mm]	50	50	75	80	130	100	180
	for $S \geq$ Anchor spacing	[mm]	100	100	150	150	240	220	540
Tensile Steel failure									
$N_{Rk,s}$	Characteristic tensile steel failure	[kN]	16	27	40	60	86	126	196
$\gamma_{M,s}$	Partial safety factor	[-]	1.53		1.5		1.6	1.5	
Pull-out failure									
$NR_{k,p,cr}$	Characteristic tensile load in cracked concrete C20/25	[kN]	5	9	16	25	(1)	(1)	(1)
$NR_{k,p,ucr}$	Characteristic tensile load in non-cracked concrete C20/25	[kN]	12	16	25	35	(1)	(1)	(1)
$\gamma_{M,p}$	Partial safety factor (Includes γ_2)	[-]	1.5						
$S_{cr,N}$	Critical spacing	[mm]	138	180	210	255	300	345	375
$C_{cr,N}$	Critical edge distance	[mm]	69	90	105	128	150	173	188
$\Psi_{c30/37}$	Increasing factor for concrete C30/37	[-]	1.22						
$\Psi_{c40/50}$	Increasing factor for concrete C40/50	[-]	1.41						
$\Psi_{c50/60}$	Increasing factor for concrete C50/60	[-]	1.55						

Splitting for standard thickness of concrete member (The highest resistance of Case 1 and Case 2 may be used)										
$h_{std} \geq$	Standard thickness of concrete	[mm]	100	120	140	170	200	230	250	
Case 1										
$N^0_{Rk,sp}$	Characteristic Resistance in C20/25 concrete	[kN]	9	12	20	30	40	(1)	50	
$S_{cr,sp}$	Critical spacing (Splitting)	[mm]	240	270	420	540	600	660	1620	
$C_{cr,sp}$	Critical edge distance (Splitting)	[mm]	120	135	210	270	300	330	810	
Case 2										
$N^0_{Rk,sp}$	Characteristic Resistance in C20/25 concrete	[kN]	12	16	25	35	(1)	(1)	(1)	
$S_{cr,sp}$	Critical spacing (Splitting)	[mm]	184	240	280	340	440	345	375	
$C_{cr,sp}$	Critical edge distance (Splitting)	[mm]	92	120	140	170	220	173	188	
Splitting for minimum thickness of concrete member										
h_{min}	Minimum thickness of concrete	[mm]	80	100	120	140	-	-	-	
$N^0_{Rk,sp}$	Characteristic Resistance in C20/25 concrete	[kN]	12	16	25	35	-	-	-	
$S_{cr,sp}$	Critical spacing (Splitting)	[mm]	230	300	350	425	-	-	-	
$C_{cr,sp}$	Critical edge distance (Splitting)	[mm]	115	150	175	212.5	-	-	-	
Concrete cone failure										
h_{ef}	Effective anchorage depth	[mm]	46	60	70	85	100	115	125	
$S_{cr,N}$	Critical spacing	[mm]	138	180	210	255	300	345	375	
$C_{cr,N}$	Critical edge distance	[mm]	69	90	105	127.5	150	172.5	187.5	
Displacement under tensile loading										
N_{cr}	Service tensile loads in cracked concrete	[kN]	2.4	4.3	7.6	11.9	17.1	21.1	24.0	
$\delta N_{0,cr}$	Short term displacement under tensile loads	[mm]	0.6	1.0	0.4	1.0	0.9	0.7	0.9	
$\delta N_{\infty,cr}$	Long term displacement under tensile loads	[mm]	1.4	1.2	1.4	1.3	1.0	1.2	1.4	
$N_{u,cr}$	Service tensile loads in non-cracked concrete	[kN]	5.7	7.6	11.9	16.7	23.8	29.6	34.0	
$\delta N_{0,u,cr}$	Short term displacement under tensile loads	[mm]	0.4	0.5	0.7	0.3	0.4	0.5	0.3	
$\delta N_{\infty,u,cr}$	Long term displacement under tensile loads	[mm]	0.8	0.8	1.4	0.8	0.8	0.8	1.4	
Shear steel failure										
$V_{Rk,s}$	Characteristic shear steel failure	[kN]	15	22	30	60	69	114	169.4	
$M^0_{Rk,s}$	Characteristic bending moment	[Nm]	23	47	82	209	363	898	1331.5	
$\gamma_{m,sV}$	Partial safety factor	[-]	1.25				1.33	1.25		
Concrete pryout failure										
k	Factor in equation 95.6) ETAG 001 Annex C §5.2.3.3	[-]					2.0			
$\gamma_{M,cp}$	Partial safety factor	[-]					1.5			
Shear concrete edge failure										
l_{ef}	Effective anchorage length	[mm]	46	60	70	85	100	115	125	
Displacement on shear load										
V	Service shear load in cracked and non-cracked concrete	[kN]	8.6	12.6	17.1	34.3	36.8	64.9	96.8	
δV_0	Short term displacement under shear load	[mm]	2.3	2.2	2.2	4.0	1.8	3.5	3.6	
δV_{∞}	Long term displacement under shear load	[mm]	3.5	3.3	3.4	6.0	2.7	5.3	5.4	
Characteristic tensile fire resistance										
$N_{Rk,fi30}$	Fire resistance duration = 30 minutes	[kN]	1.3	2.2	3.2	6.0	9.0	11.0	12.6	
$N_{Rk,fi60}$	Fire resistance duration = 60 minutes	[kN]	1.1	1.8	2.8	5.2	8.2	11.0	12.6	
$N_{Rk,fi90}$	Fire resistance duration = 90 minutes	[kN]	0.8	1.4	2.4	4.4	6.9	10.0	12.6	
$N_{Rk,fi120}$	Fire resistance duration = 120 minutes	[kN]	0.7	1.2	2.2	4.0	6.3	9.1	11.8	
Characteristic shear fire resistance without lever arm										
$V_{Rk,fi30}$	Fire resistance duration = 30 minutes	[kN]	1.6	2.6	3.8	7.0	11.0	16.0	20.6	
$V_{Rk,fi60}$	Fire resistance duration = 60 minutes	[kN]	1.5	2.5	3.6	6.8	11.0	15.0	19.8	
$V_{Rk,fi90}$	Fire resistance duration = 90 minutes	[kN]	1.2	2.1	3.5	6.5	10.0	15.0	19.0	
$V_{Rk,fi120}$	Fire resistance duration = 120 minutes	[kN]	1.0	2.0	3.4	6.4	10.0	14.0	18.6	
Characteristic shear fire resistance with lever arm										
$V_{Rk,fi30}$	Fire resistance duration = 30 minutes	[kN]	1.7	3.3	5.9	15.0	29.0	50.0	75.0	
$V_{Rk,fi60}$	Fire resistance duration = 60 minutes	[kN]	1.6	3.2	5.6	14.0	28.0	48.0	72.0	
$V_{Rk,fi90}$	Fire resistance duration = 90 minutes	[kN]	1.2	2.7	5.4	14.0	27.0	47.0	69.0	
$V_{Rk,fi120}$	Fire resistance duration = 120 minutes	[kN]	1.1	2.5	5.3	13.0	26.0	46.0	68.0	

The previous performance data relates to the following product codes

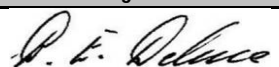
d	Marking d _o /L	L [mm]	t _{fix} [mm]	Product Code
M8	BZ08-10	75	10	ETA08075
	BZ08-30	95	30	ETA08095
	BZ08-50	115	50	ETA08115
M10	BZ10-10	90	10	ETA10090
	BZ10-30	110	30	ETA10110
	BZ10-50	130	50	ETA10130
M12	BZ12-15	110	15	ETA12110
	BZ12-30	125	30	ETA12125
	BZ12-65	160	65	ETA12160
	BZ12-85	180	85	ETA12180
M16	BZ16-15	135	15	ETA16135
	BZ16-50	170	50	ETA16170
	BZ16-80	200	80	ETA16200

Amendments	
ETAG changed to EAD	03/11/2017
CPD changed to CPR	03/11/2017
ETA Changed	03/11/2017
Cert of Conformity changed	03/11/2017

The performances of the product identified by the above product codes are in conformity with the declared performance

This Declaration of performance is issued under the sole responsibility of JCP Construction products

Signed for and on behalf of the manufacturers

Name and function	Place and date of issue	Signature
Brian Deluce	Teddington	
Technical Manager	03/11/2017	