



Declaration of Performance No. 0756-CPD-0215

Heavy Duty Anchor (Torque controlled expansion anchor made of zinc coated steel)
 JCP Construction Products,
 Unit 14 Teddington Business Park, Station Rd, Teddington, Middlesex TW11 9BQ
 Telephone +44 (0)208 943 1800

Intended use or uses of the products according to ETAG 001 Parts 1 and 2	
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 and seismic
Fire Resistance	120mins
Fire Reaction	ETAG 001 Annex C Option 1
ETA 08/0169 issued by	
	DIBt
On the basis of	
	ETAG 001
Certificate of Conformity 0756-CPD-0215 issued by	
	Technische Universität Darmstadt
Under system	
	1

Declared performances according to ETAG 001 Parts 1 and 2									
Essential Characteristics			Performance						
			M6	M8	M10	M12	M16	M20	
Installation parameters									
d_o	Nominal diameter of drill bit	[mm]	10	12	15	18	24	28	
d_f	Fixture clearance hole	[mm]	12	14	17	20	26	31	
h_{ef}	Effective anchorage depth	[mm]	50	60	71	80	100	125	
h_1	Depth of drill hole to deepest point	[mm]	65	80	95	105	130	160	
h_{min}	Minimum thickness of concrete member	[mm]	100	120	140	160	200	250	
T_{inst}	Nominal torque moment	[mm]	15(10)	30(25)	50(55)	80(70)	160	280	
Figures (-) are for SLSK anchors									
S_{min}	Minimum spacing	[mm]	50	60	70	80	100	125	
	for $C \geq$ Edge distance	[mm]	80	100	120	160	180	300	
C_{min}	Minimum edged distance	[mm]	50	60	70	80	100	180	
	for $S \geq$ Anchor spacing	[mm]	100	120	175	200	220	540	
Tensile Steel failure									
$N_{Rk,s}$	Characteristic tensile steel failure	[kN]	16	29	46	67	126	196	
$\gamma_{M,s}$	Partial safety factor	[-]	1.5						
Pull-out failure									
$NRk_{p,cr}$	Characteristic tensile resistance in cracked concrete C20/25	[kN]	5	12	16	25	36	50	
$NRk_{p,ucr}$	Characteristic tensile resistance in non-cracked concrete C20/25	[kN]	18	20	30	35	50	72	
$\gamma_{M,p}$	Partial safety factor (Includes γ_2)	[-]	1.5						
$\Psi_{CC30/37}$	Increasing factor for concrete C30/37	[-]	1.22						
$\Psi_{CC40/50}$	Increasing factor for concrete C40/50	[-]	1.41						
$\Psi_{CC50/60}$	Increasing factor for concrete C50/60	[-]	1.55						
Splitting failure (The highest resistance of Case 1 and Case 2 may be used)									
Case 1									
N^oRk_{sp}	Characteristic Resistance in C20/25 concrete	[kN]	9	12	20	30	40	(1)	
$S_{cr,sp}$	Critical spacing (Splitting)	[mm]	150	180	213	240	300	375	
$C_{cr,sp}$	Critical edge distance (Splitting)	[mm]	75	90	106.5	120	150	188	
Case 2									
$S_{cr,sp}$	Critical spacing (Splitting)	[mm]	250	300	355	400	500	625	
$C_{cr,sp}$	Critical edge distance (Splitting)	[mm]	125	150	177.5	200	250	313	

Concrete cone failure								
h_{ef}	Effective anchorage depth	[mm]	46	60	70	85	100	115
$S_{cr,N}$	Critical spacing	[mm]	138	180	210	255	300	345
$C_{cr,N}$	Critical edge distance	[mm]	69	90	105	127.5	150	172.5
$\gamma_{M,s}$	Partial safety factor	[-]	1.5					
Displacement under tensile loading								
N_{cr}	Service tensile loads in cracked concrete	[kN]	2.4	5.7	7.6	12.3	17.1	24.0
$\delta N_{0,cr}$	Short term displacement under tensile loads	[mm]	0.5	0.5	0.5	0.7	0.8	0.9
$\delta N_{\infty,cr}$	Long term displacement under tensile loads	[mm]	2.0	2.0	1.3	1.3	1.3	1.4
$N_{u,cr}$	Service tensile loads in non-cracked concrete	[kN]	8.5	9.5	14.3	17.2	24.0	34.0
$\delta N_{0,u,cr}$	Short term displacement under tensile loads	[mm]	0.8	1	1.1	1.1	1.1	0.3
$\delta N_{\infty,u,cr}$	Long term displacement under tensile loads	[mm]	3.4	3.4	1.7	1.7	1.7	1.4
Shear steel failure JHD								
$V_{Rk,s}$	Characteristic shear steel failure without lever arm	[kN]	16	25	36	63	91	122
$M_{Rk,s}^0$	Characteristic shear steel failure with lever arm	[Nm]	12	30	60	105	266	519
$\gamma_{m,sV}$	Partial safety factor	[-]	1.25					
Shear steel failure NHD and SLSK								
$V_{Rk,s}$	Characteristic shear steel failure without lever arm	[kN]	18	30	48	73	126	150
$M_{Rk,s}^0$	Characteristic shear steel failure with lever arm	[Nm]	12	30	60	105	266	519
$\gamma_{m,sV}$	Partial safety factor	[-]	1.25					
Concrete pryout failure								
k	Factor in equation 95.6) ETAG 001 Annex C §5.2.3.3	[-]	1.8	2.0				
$\gamma_{M,cp}$	Partial safety factor	[-]	1.5					
Shear concrete edge failure								
l_{ef}	Effective anchorage length	[mm]	50	60	71	80	100	125
Displacement on shear load JHD								
V	Service shear load in cracked and non-cracked concrete	[kN]	9.1	14.0	20.7	35.1	52.1	77.0
δV_0	Short term displacement under shear load	[mm]	2.5	2.1	2.7	3.0	5.1	4.3
δV_{∞}	Long term displacement under shear load	[mm]	3.8	3.1	4.1	4.5	7.6	6.5
Displacement on shear load NHD and SLSK								
V	Service shear load in cracked and non-cracked concrete	[kN]	10.1	17.1	27.5	41.5	72.0	77.0
δV_0	Short term displacement under shear load	[mm]	2.9	2.5	3.6	3.5	7.0	4.3
δV_{∞}	Long term displacement under shear load	[mm]	4.4	3.8	5.4	5.3	10.5	6.5
Characteristic tensile fire resistance								
$N_{Rk,fi30}$	Fire resistance duration = 30 minutes	[kN]	1.0	1.9	4.3	6.3	8.8	15.9
$N_{Rk,fi60}$	Fire resistance duration = 60 minutes	[kN]	0.8	1.5	3.2	4.6	8.6	13.5
$N_{Rk,fi90}$	Fire resistance duration = 90 minutes	[kN]	0.6	1.0	2.1	3.0	5.0	7.7
$N_{Rk,fi120}$	Fire resistance duration = 120 minutes	[kN]	0.4	0.8	1.5	2.0	3.1	4.9
Characteristic shear fire resistance without lever arm								
$V_{Rk,fi30}$	Fire resistance duration = 30 minutes	[kN]	1.0	1.9	4.3	6.3	11.6	18.3
$V_{Rk,fi60}$	Fire resistance duration = 60 minutes	[kN]	0.8	1.5	3.2	4.6	8.6	13.5
$V_{Rk,fi90}$	Fire resistance duration = 90 minutes	[kN]	0.6	1.0	2.1	3.0	5.0	7.7
$V_{Rk,fi120}$	Fire resistance duration = 120 minutes	[kN]	0.4	0.8	1.5	2.0	3.1	4.9
Characteristic shear fire resistance with lever arm								
$V_{Rk,fi30}$	Fire resistance duration = 30 minutes	[kN]	0.8	2.0	5.6	9.7	24.8	42.4
$V_{Rk,fi60}$	Fire resistance duration = 60 minutes	[kN]	0.6	1.5	4.1	7.2	18.3	29.8
$V_{Rk,fi90}$	Fire resistance duration = 90 minutes	[kN]	0.4	1.0	2.7	4.7	11.9	17.1
$V_{Rk,fi120}$	Fire resistance duration = 120 minutes	[kN]	0.3	0.8	1.9	3.1	6.6	10.7

The previous performance data relates to the following product codes

d	Marking	l _{fix} [mm]	Product Code		
			JHD	NHD	SLSK
M6	SZM6/10-10	10	JHD06-10		SLSK10/10
	SZM6/10-30	30	JHD06-25		SLSK10/25
	SZM6/10-50	50	JHD06-50		SLSK10/50
M8	SZM8/12-10	10	JHD08-10	NHD1010	SLSK12/10
	SZM8/12-25	25	JHD08-25		SLSK12/25
	SZM8/12-30	30		NHD0830	
	SZM8/12-50	50	JHD08-50	NHD0850	SLSK12/50
M10	SZM10/15-10	10	JHD10-10		SLSK15/10
	SZM10/15-15	15		NHD1015	
	SZM10/15-25	25	JHD10-25	NHD1025	SLSK15/25
	SZM10/15-45	45		NHD1045	
	SZM10/15-50	50	JHD10-50		SLSK15/50
M12	SZM12/18-10	10	JHD12-10	NHD1210	
	SZM12/18-15	15			SLSK18/15
	SZM12/18-20	20	JHD12-20	NHD1220	
	SZM12/18-40	40	JHD12-40	NHD1240	SLSK18/40
	SZM12/18-70	70	JHD12-70	NHD1270	
M16	SZM16/24-10	10	JHD16-10		
	SZM16/24-20	20		NHD1620	
	SZM16/24-25	25	JHD16-25		
	SZM16/24-50	50	JHD16-50	NHD1650	
M20	SZM20/28-25	25	JHD20-25		
	SZM20/28-50	50	JHD20-50		

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	1st July 2013	