Declaration of Performance 1109-CPD-0079.2

valid from lot no 900000 to lot no ******

MCS-A Concrete Screw

Intended Use or Uses of the Construction Product According to ETAG 001 Parts 1 and 2	
Generic type	Metal anchor for use in concrete, concrete screw
Base material	cracked and non-cracked concrete C20/25 to C50/60 acc. to EN 206-1:2000-12
Material	Galvanized steel
Durability	internal dry conditions
Loading	static and quasi-static
Fire resistance	F120
Fire reaction	A1 according to EN13501-1
ETA - 11/0506 issued by	DIBt
On the basis of	ETAG 001 Part 3
Certificate of Conformity 1109-CPD-0079.2 issued by	IFBT
Under AVCP System	1

Declared Performances According to ETAG 001 Part 3							
Essential Characteristics				Performance			
				M8	M10	M12	M16
Installation Parameters							
d_0	Nominal diameter of drill bit		[mm]	6	8	10	14
h_{ef}	Effective anchorage depth		[mm]	48	56	64	85
h_{nom}	Anchor embedment depth		[mm]	60	70	80	110
h_{min}	Minimum thickness of the concrete member		[mm]	100	110	130	170
T_{inst}	Required torque		[Nm]	20	50	80	160
s_{min}	Minimum spacing		[mm]	45	50	60	80
for $c \geq$		for edge distance larger than	[mm]	45	50	60	80
c_{min}	Minimum edge distance		[mm]	45	50	60	80
for $s \geq$		for anchor spacing larger than	[mm]	45	50	60	80
Tension Steel Failure							
$N_{Rk,s}$	Characteristic resistance steel failure		[kN]	20	35	50	95
γ_{Ms} (includes γ_2)	Partial safety factor		[-]	1.5			
Pull-Out Failure							
$N_{Rk,p,cr}$	characteristic resistance in cracked concrete C20/25		[kN]	4	7.5	9	16
$N_{Rk,p,ucr}$	characteristic resistance in un-cracked concrete		[kN]	16	20	25	40
γ_{Ms} (includes γ_2)	Partial safety factor		[-]	2.1	1.8	2.1	2.1
$s_{cr,N}$	Critical spacing		[mm]	$3\ h_{ef}$			
$c_{cr,N}$	Critical edge distance		[mm]	$1.5\ h_{ef}$			
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			
Splitting Failure							
$s_{cr,sp}$	Critical spacing (splitting)		[mm]	160	175	195	255
$c_{cr,sp}$	Critical edge distance(splitting)		[mm]	80	85	95	130
Displacement under Tension Load							
N_{cr}	Service tension load in cracked concrete		[kN]	1.90	4.17	4.29	5.44
$\delta_{N0,cr}$	Short term displacement under tension load		[mm]	0.27	0.39	0.45	0.79
$\delta_{N\infty,cr}$	Long term displacement under tension load		[mm]	0.53	0.77	0.97	1.05

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N_{ucr}	Service tension load in un-cracked concrete	[kN]	7.62	8.89	11.90	13.61	
$\delta_{N0,ucr}$	Short term displacement under tension load	[mm]	0.76	0.74	0.63	0.74	
$\delta_{N\infty,ucr}$	Long term displacement under tension load	[mm]	0.29	0.34	0.23	0.41	
Shear Steel Failure							
$V_{Rk,s}$	characteristic resistance	[kN]	9.4	20.1	32.4	56.9	
$M^0_{Rk,s}$	Bending Moment characteristic failure (with lever arm)	[Nm]	19	44	83	216	
γ_{Ms} (includes γ_2)	Partial safety factor for shear steel failure	[-]	1.5				
Shear Concrete Edge Failure							
h_{ef}	Effective anchorage length	[mm]	48	56	64	85	
Concrete Pry-Out Failure							
k	Factor in equation (5.6) of ETAG Annex C, § 5.2.3.3	[-]	1.0		2.0		
Displacement under Shear Load							
V	Service shear load in concrete	[kN]	4.50	9.60	15.40	27.10	
δ_{V0}	Short term displacement under shear load	[mm]	0.94	1.47	1.87	3.00	
$\delta_{V\infty}$	Long term displacement under shear load	[mm]	1.41	2.20	2.81	4.50	
Fire Resistance (all directions)							
$N_{Rk,s,fi,30}$	For fire resistance duration = 30 minutes	[kN]	0.28	0.73	1.51	2.85	
$N_{Rk,s,fi,60}$	For fire resistance duration = 60 minutes	[kN]	0.25	0.64	1.13	2.14	
$N_{Rk,s,fi,90}$	For fire resistance duration = 90 minutes	[kN]	0.19	0.49	0.98	1.85	
$N_{Rk,s,fi,120}$	For fire resistance duration = 120 minutes	[kN]	0.14	0.39	0.75	1.43	

The above performances apply for the following article numbers:

d	Marking d_o/t_{fix}	Total Length $L = h_{nom} + t_{fix}$ [mm]	Fixing thickness t_{fix} [mm]	Art. No
M8	T-HXE 8/20	80	20	1340808
	T-HXE 8/40	100	40	1340810
	T-HXE 8/60	120	60	1340812
	T-HXE 8/80	140	80	1340814
	HXE 8/10	90	10	1360810
	HXE 8/40	120	40	1360812
	HXE 8/80	160	80	1360816
	T-HXE 8/10	70	10	1350808
	T-HXE 8/40	100	40	1350810
	T-HXE 8/80	140	80	1350814
M10	T-HXE 10/10	80	10	1341008
	T-HXE 10/30	100	30	1341010
	T-HXE 10/50	120	50	1341012
	T-HXE 10/70	140	70	1341014
	T-HXE 10/90	160	90	1341016
	HXE 10/10	105	10	1361010
	HXE 10/30	125	30	1361012
	T-HXE 10/90	160	90	1351016
M12	T-HXE 12/10	90	10	1341209
	T-HXE 12/30	110	30	1341211
	T-HXE 12/50	130	50	1341213
	T-HXE 12/70	150	70	1341215
	T-HXE 12/110	190	110	1341219
	T-HXE 12/130	210	130	1341221
	T-HXE 12/170	250	170	1341225
	T-HXE 12/210	290	210	1341229

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M16	T-HXE 16/20	130	20	1341613
	T-HXE 16/40	150	40	1341615
	T-HXE 16/70	180	70	1341618

The performances of the product identified by the above identification code are in conformity with the declared performance.

This declaration of performance is issued under the sole responsibility of Mungo AG.

Signed for and on behalf of the manufacturer by:

Name and Functions	Place and Date of Issue	Signature
Martin Teichmann Head of Engineering	Olten, 28.11.2014	M. Teichmann

Further Information:

Liability for printing errors is excluded. The full content of the corresponding ETA has to be observed.

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