



Declaration of Performance nr.mp3evo

FM-MP3 evo

Torque controlled expansion anchor sleeve type made of galvanised steel

friulsider

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Intended use or uses of the construction product according to ETAG 001 p.1-2 and 6

Generic type	torque controlled expansion anchor sleeve type
Material	steel zinc coated acc. to EN ISO 4042 (bolt cl. 8.8 acc. to EN ISO 898-1)
Durability	internal dry conditions
Fire Reaction	A1 according to EN 13501-1
Base material	un-cracked concrete C20/25 to C50/60 acc. to EN 206-1:2003
Loading	static and quasi-static
Fire Resistance	NPD
ETA-09/0067 issued by	ZAG approval body
On the basis of	ETAG001 p.1-2
Certificate of Conformity 1404-CPD-1433 issued by	ZAG notified body nr.1404
Under System	1
Base material	cracked and un-cracked concrete C20/25 to C50/60 acc. to EN 206-1:2003
Loading	multiple use for non-structural applications (redundant)
Fire Resistance	F120
ETA-10/0074 issued by	ZAG approval body
On the basis of	ETAG001 p.1-6
Certificate of Conformity 1404-CPD-1602 issued by	ZAG notified body nr.1404
Under System	2+

Declared performances according to ETAG 001 p.1 and 2

Essential Characteristics		Performance			
Installation parameters		M6 ²⁾	M8	M10	M12
d ₀	Nominal diameter of drill bit [mm]	10	12	15	18
h _{nom}	Minimum installation depth [mm]	45	50	60	80
h _{ef}	Effective anchorage depth [mm]	36 ²⁾	43	50	69
h _{min}	Minimum thickness of the concrete member [mm]	100	100	100	140
T _{inst}	Nominal torque moment [Nm]	8	15	30	50
s _{min}	Minimum spacing [mm]	35	45	50	75
c _{min}	Minimum edge distance [mm]	35	45	50	75
Tension Steel failure mode					
N _{Rk,s}	Tension Steel characteristic failure (cl. 8.8) [kN]	16	29	46	67
γ _{m,sN} ¹⁾	Partial safety factor for tension steel failure [-]	1,5			
Pull-out failure mode					
N _{Rk,p,ucr}	Tension characteristic load in un-cracked concrete C20/25 [kN]	7,5 ²⁾	12	17,8 ³⁾	25
γ ₂	Partial safety factor [-]	1,0			
γ _{m,c} ¹⁾	Partial safety factor [-]	1,5			
s _{cr,N}	Critical spacing [mm]	108	129	150	207
c _{cr,N}	Critical edge distance [mm]	54	65	75	104
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 mode					
s _{cr,sp}	Critical spacing (splitting) [mm]	216	258	300	414
c _{cr,sp}	Critical edge distance (splitting) [mm]	108	129	150	207
γ _{m,c} ¹⁾	Partial safety factor [-]	1,5			
Displacement on Tension Load					
N _{ucr}	Service tension load in un-cracked concrete [kN]	3,6	5,7	8,5	11,9
δ _{NO,ucr}	Short term displacement under tension load [mm]	0,12	0,11	0,27	0,37
δ _{N∞,ucr}	Long term displacement under tension load [mm]	0,95	0,95	0,95	0,95

Shear Steel failure mode				M8	M10	M12	M16
$V_{Rk,s}$	Shear Steel characteristic failure	(cl. 8.8)	[kN]	6,4	14,4	23,2	33,2
$M_{Rk,s}^0$	Bending Moment characteristic failure	(cl. 8.8)	[Nm]	12	30	60	105
$\gamma_{m,sv}^{1)}$	Partial safety factor for shear steel failure		[-]	1,25			
Shear Concrete Pry-out and and Edge failure mode							
k	Factor equation (5.6) of ETAG, Annex C, § 5.2.3.3		[-]	1,0			2,0
l_{ef}	Effective anchorage length		[mm]	36	43	50	69
d_{nom}	Nominal diameter of anchor		[mm]	10	12	15	18
$\gamma_m^{1)}$	Partial safety factor ($\gamma_{m,c}=\gamma_{m,pr}$)		[-]	1,5			
Displacement on Shear Load							
V	Service shear load in concrete	(cl. 8.8)	[kN]	3,7	8,2	13,3	19,3
δ_{V0}	Short term displacement under shear load		[mm]	0,96	2,95	2,42	3,94
$\delta_{V\infty}$	Long term displacement under shear load		[mm]	1,40	4,42	3,63	5,91





¹⁾ In absence of other national regulations; ²⁾ Use restricted to anchoring of structural components statically indetermined; ³⁾ Pull-out failure not decisive.

Declared performances according to ETAG 001 p.1, p.6 and TR020 (Fire Resistance*)							
Essential Characteristics				Performance			
All load directions				M6	M8	M10	M12
F_{Rk}^0	Characteristic load in concrete C20/25 to C50/60		[kN]	6	12	16	20
$\gamma_{m,0}^{1)}$	Partial safety factor		[-]	1,5			
F_{Rd}^0	Design load value in concrete C20/25 to C50/60		[kN]	4	8	10,6	13,3
F^0	Service load value in concrete C20/25 to C50/60		[kN]	2,9	5,7	7,6	9,5
s_{cr}	Critical spacing		[mm]	200	200	200	280
c_{cr}	Critical edge distance		[mm]	100	130	150	210
Shear load with							
$M_{Rk,s}^0$	Characteristic resistance	(cl. 8.8)	[Nm]	12	30	60	105
$\gamma_{m,s}^{1)}$	Partial safety factor		[-]	1,25			
Fire Resistance* (all load direction)							
$F_{Rk,s,fi,30}$	For fire resistance duration = 30 minutes		[kN]	0,2	0,4	0,9	1,7
$F_{Rk,s,fi,60}$	For fire resistance duration = 60 minutes		[kN]	0,2	0,3	0,8	1,3
$F_{Rk,s,fi,90}$	For fire resistance duration = 90 minutes		[kN]	0,1	0,3	0,6	1,1
$F_{Rk,s,fi,120}$	For fire resistance duration = 120 minutes		[kN]	0,1	0,2	0,5	0,8





¹⁾ In absence of other national regulations.









We inform you that Friulsider is classified in the EC 1907/2006 Reach Directive as a Downstream -user of substances. The product supplied does not contain substances classified as SVHC according to the Candidate List in a concentration equal or greater than 0.1% (weight / weight). Article 31 is not applicable to the present product.

The below performances apply for the following article numbers:

d	L ⁴⁾ [mm]	t _{fix} ⁵⁾ [mm]	Marking	Cod. FM-MP3 evo (only anchor)
M6	45	*	FM  MP3 M6 Ø10	73300b10045
M8	50	*	FM  MP3 M8 Ø12	73300b12050
M10	60	*	FM  MP3 M10 Ø15	73300b15060
M12	80	*	FM  MP3 M12 Ø18	73300b18080

* t_{fix} = L_{screw8.8} - L

d	L ⁴⁾ [mm]	t _{fix} ⁵⁾ [mm]	Marking	Cod. FM-MP3 evo
M6	45	5	FM  MP3 M6 Ø10	73301b10045
M8	50	10	FM  MP3 M8 Ø12	73301b12050
M10	60	20	FM  MP3 M10 Ø15	73301b15060
M12	80	20	FM  MP3 M12 Ø18	73301b18080

d	L ⁴⁾ [mm]	t _{fix} ⁵⁾ [mm]	Marking	Cod. FM-MP3 evo-LONG
M6	70	25	FM  MP3 M6 Ø10 	73310b10070
M8	75	25	FM  MP3 M8 Ø12 	73310b12075
M10	85	25	FM  MP3 M10 Ø15 	73310b15085
M12	105	25	FM  MP3 M12 Ø18 	73310b18105

⁴⁾ Length of anchor; ⁵⁾ Thickness fixture max of screw in use.

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 Friulsider SpA.

Signed for and behalf of the manufacturer by:

Name and functions	Place and date of issue	Signature
Eng.Vittorio Pilla General Director	San Giovanni al Natisone, 12-06-2013	