



Declaration of Performance

FM753 A4

Throughbolt anchor made of stainless steel INOX A4



1. Identification of the product: **FM753 A4**

2. Identification code (art. 11.4), for the batch or serial number see packaging:

d ¹⁾	L ²⁾ [mm]	t _{fix} ³⁾ [mm]	Marking	ID	Cod.
M8	65	7	FM 8/7 A4	B	75320008065
	75	15	FM 8/15 A4	C	75320008075
	90	30	FM 8/30 A4	D	75320008090
	115	55	FM 8/55 A4	E	75320008115
	135	75	FM 8/75 A4	F	75320008135
	165	105	FM 8/105 A4	G	75320008165
M10	75	5	FM 10/5 A4	B	75320010075
	90	20	FM 10/20 A4	C	75320010090
	120	50	FM 10/50 A4	D	75320010120
	145	75	FM 10/75 A4	E	75320010145
M12	170	100	FM 10/100 A4	F	75320010170
	100	10	FM 12/10 A4	B	75320012100
	110	20	FM 12/20 A4	C	75320012110
	135	45	FM 12/45 A4	D	75320012135
M16	160	70	FM 12/70 A4	E	75320012160
	185	100	FM 12/100 A4	F	75320012185
	125	10	FM 16/10 A4	A	75320016125
	145	30	FM 16/30 A4	B	75320016145
M16	175	60	FM 16/60 A4	C	75320016175
	215	100	FM 16/100 A4	D	75320016215

¹⁾ Nominal diameter of thread; ²⁾ Length of anchor; ³⁾ Thickness fixture max.

3. Intended use:

Generic type	Torque controlled expansion anchor throughbolt type
Base material	Un-cracked concrete C20/25 to C50/60 acc. to EN 206-1:2003
Material	Stainless steel AISI316 (bolt cl. A4 70 acc. to EN ISO 3506-1)
Durability	Internal dry conditions and external atmospheric exposure (including industrial and marine environment) or exposure in permanently damp internal conditions; if no particular aggressive conditions exist.
Loading	Static and quasi-static
Fire Resistance	NPD
Fire Reaction	A1 according to EN 13501-1

4. Manufacturer (art. 11.5): **Friulsider SpA via trieste,1 - 33048 San Giovanni al Natisone (Udine) - Italy**

5. Authorised Representative (art. 12.2): **Not Relevant**

6. System of Assessment AVCP (annex V): **System 1**

7/8. Harmonised Specification & Notified Body:	Name of Body	System of Assessment	Reference	EAD / hEN Document
Technical Specification	CSTB [TAB]	1	ETA-01/0009	ETAG001 p.1-2
Constancy of Performance & FPC	CSTB nr.0679 [NB]	1	0679-CPR-0015	ETAG001 p.1

9. Declared Performance: **See Annex**

10. The performance of the product identified in points 1 and 2 is in conformity with declared performance in point 9.

This declaration of performance is issued under the sole responsibility of Friulsider SpA.

Signed for and behalf of the manufacturer by:

Name and functions	Signature	Place and date of issue
Fabrizio Fasan Sales Manager		San Giovanni al Natisone, 24-10-2016

ANNEX

Declared Performances acc. to ETA-01/0009 - ETAG001 p.1 and 2

Design Method ETAG001-Annex C or CEN/TS 1992-4

ESSENTIAL CHARACTERISTICS		PERFORMANCE			
Installation parameters		M8	M10	M12	M16
d_0	Nominal diameter of drill bit [mm]	8	10	12	16
h_{nom}	Minimum installation depth [mm]	48	59	71	96
h_{ef}	Effective anchorage depth [mm]	40	50	60	85
h_{min}	Minimum thickness of the concrete member [mm]	100	100	120	170
T_{inst}	Nominal torque moment [Nm]	15	25	50	100
s_{min}	Minimum spacing [mm]	60	75	90	130
c_{min}	Minimum edge distance [mm]	60	75	90	130
TENSION Steel failure					
$N_{Rk,s}$	Tension Steel characteristic failure [kN]	17,2	28,0	39,5	81,0
$\gamma_{ms,N}^{1)}$	Partial safety factor for tension steel failure [-]	1,59			
Pull-out failure		M8	M10	M12	M16
$N_{Rk,p,ucr}$	Tension characteristic load in un-cracked concrete C20/25 [kN]	7,5	12	23,3 ²⁾	35
γ_2	Partial safety factor [-]	1,0			
$\gamma_{mc}^{1)}$	Partial safety factor [-]	1,5			
$\Psi_c C30/37$	Increasing factor for concrete C30/37 [-]	1,17	1,22		
$\Psi_c C40/50$	Increasing factor for concrete C40/50 [-]	1,32	1,41		
$\Psi_c C50/60$	Increasing factor for concrete C50/60 [-]	1,42	1,55		
Concrete cone failure and Splitting failure					
K_{ucr}	Factor for un-cracked concrete rif. CEN/TS 1992-4-4 §. 6.2.1. 4 [-]	10,1			
$s_{cr,N}$	Critical spacing [mm]	120	150	180	255
$c_{cr,N}$	Critical edge distance [mm]	60	75	90	130
$s_{cr,sp}$	Critical spacing (splitting) [mm]	240	300	360	510
$c_{cr,sp}$	Critical edge distance(splitting) [mm]	120	150	180	255
$\gamma_{mc} = \gamma_{msp}^{1)}$	Partial safety factor [-]	1,5			
Displacement on Tension Load					
N_{ucr}	Service tension load in un-cracked concrete [kN]	3,6	5,7	11,1	16,7
$\delta_{N0,ucr}$	Short term displacement under tension load [mm]	0,1	0,2	0,3	1,2
$\delta_{N\infty,ucr}$	Long term displacement under tension load [mm]	1,6	1,6	1,6	1,6
SHEAR Steel failure		M8	M10	M12	M16
$V_{Rk,s}$	Shear Steel characteristic failure [kN]	11,9	18,9	27,4	51,0
K_2	Ductility factor acc.to CEN/TS 1992-4-5 Section § 6.3.2.1 [-]	0,8			
$M_{Rk,s}^0$	Bending Moment characteristic failure [Nm]	24	49	85	216
$\gamma_{ms,V}^{1)}$	Partial safety factor for shear steel failure [-]	1,33			
Shear Concrete Pry-out failure					
k	Factor equation (5.6) of ETAG, Annex C, § 5.2.3.3 [-]	1,0	2,0		
k_3	Factor equation (16) of CEN/TS 1992-4-4, § 6.2.2.3 [-]	1,0	2,0		
$\gamma_{mc}^{1)}$	Partial safety factor [-]	1,5			
Shear Concrete Edge failure					
l_{ef}	Effective anchorage length [mm]	40	50	60	85
d_{nom}	Nominal diameter of anchor [mm]	8	10	12	16
$\gamma_{mc}^{1)}$	Partial safety factor [-]	1,5			
Displacement on Shear Load		M8	M10	M12	M16
V	Service shear load in concrete [kN]	6,4	10,1	14,8	27,5
δ_{V0}	Short term displacement under shear load [mm]	1,5	2,1	2,2	2,4
$\delta_{V\infty}$	Long term displacement under shear load [mm]	2,0	2,6	2,7	3,0

¹⁾ In absence of other national regulations;²⁾ Pull-out failure not decisive.