

**friulsider****Declaration of Performance****FM753**

Throughbolt anchor made of zinc plated steel

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

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

d <sup>1)</sup>	L <sup>2)</sup> [mm]	t <sub>fix</sub> <sup>3)</sup> [mm]	Marking	ID	Cod.
M6	65	15	FM-L 6/15	B	75320b06065
	85	35	FM-L 6/35	C	75320b06085
	100	50	FM-L 6/50	D	75320b06100
M8	65	7	FM-L 8/7	B	75320b08065
	75	15	FM-L 8/15	C	75320b08075
	90	30	FM-L 8/30	D	75320b08090
	115	55	FM-L 8/55	E	75320b08115
	135	75	FM-L 8/75	F	75320b08135
	165	105	FM-L 8/105	G	75320b08165
M10	75	5	FM-L 10/5	B	75320b10075
	90	20	FM-L 10/20	C	75320b10090
	100	30	FM-L 10/30	I	75320b10100
	120	50	FM-L 10/50	D	75320b10120
	145	75	FM-L 10/75	E	75320b10145
M12	170	100	FM-L 10/100	F	75320b10170
	100	10	FM-L 12/10	B	75320b12100
	110	20	FM-L 12/20	C	75320b12110
	120	30	FM-L 12/30	I	75320b12120
	135	45	FM-L 12/45	D	75320b12135
	160	70	FM-L 12/70	E	75320b12160
M14	185	100	FM-L 12/100	F	75320b12185
	100	3	FM-L 14/3	A	75320b14100
	110	10	FM-L 14/10	B	75320b14110
	130	30	FM-L 14/30	C	75320b14130
	150	50	FM-L 14/50	D	75320b14150
	170	70	FM-L 14/70	E	75320b14170
M16	200	100	FM-L 14/100	F	75320b14200
	125	10	FM-S 16/10	A	75320b16125
	145	30	FM-S 16/30	B	75320b16145
	175	60	FM-S 16/60	C	75320b16175
	215	100	FM-S 16/100	D	75320b16215

<sup>1)</sup> Nominal diameter of thread; <sup>2)</sup> Length of anchor; <sup>3)</sup> 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
Material	Steel zinc coated 5µm according to EN ISO 4042 (cl. 5.8 min. according to EN ISO 898-1)
Durability	Internal dry conditions
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 (UD) - 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 <sup>[TAB]</sup>	1	<b>ETA-01/0014</b>	<b>ETAG001 p.1-2</b>
Constancy of Performance & FPC	CSTB nr.0679 <sup>[NB]</sup>	1	0679-CPR-0016	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
<b>Fabrizio Fasan</b> Sales Manager		San Giovanni al Natisone, 08-06-2017

## ANNEX

Declared Performances acc. to ETA-01/0014 - ETAG001 p.1 and 2 Design method ETAG001-Annex C or CEN/TS 1992-4								
ESSENTIAL CHARACTERISTICS			PERFORMANCE					
Installation parameters			M6 <sup>2)</sup>	M8	M10	M12	M14	M16
<b>d<sub>0</sub></b>	Nominal diameter of drill bit	[mm]	6	8	10	12	14	16
<b>h<sub>nom</sub></b>	Minimum installation depth	[mm]	41	48	59	71	80	96
<b>h<sub>ef</sub></b>	Effective anchorage depth	[mm]	35 <sup>2)</sup>	40	50	60	70	85
<b>h<sub>min</sub></b>	Minimum thickness of the concrete member	[mm]	100	100	100	120	140	170
<b>T<sub>inst</sub></b>	Nominal torque moment	[Nm]	6	15	25	50	70	100
<b>s<sub>min</sub></b>	Minimum spacing	[mm]	50	60	75	90	105	130
<b>c<sub>min</sub></b>	Minimum edge distance	[mm]	50	60	75	90	105	130
TENSION Steel failure			M6 <sup>2)</sup>	M8	M10	M12	M14	M16
<b>N<sub>Rk,s</sub></b>	Tension Steel characteristic failure	[kN]	10,9	17,2	28,0	31,6	51,2	72,3
<b>γ<sub>ms,N</sub><sup>1)</sup></b>	Partial safety factor for tension steel failure	[-]	1,5	1,4	1,4	1,4	1,5	1,5
Pull-out failure								
<b>N<sub>Rk,p,ucr</sub></b>	Tension characteristic load in un-cracked concrete C20/25	[kN]	6 <sup>2)</sup>	9	12	20	25	35
<b>γ<sub>2</sub></b>	Partial safety factor	[-]		1,2			1,0	
<b>γ<sub>mc</sub><sup>1)</sup></b>	Partial safety factor	[-]		1,8			1,5	
<b>Ψ<sub>c C30/37</sub></b>	Increasing factor for concrete C30/37	[-]		1,17			1,22	
<b>Ψ<sub>c C40/50</sub></b>	Increasing factor for concrete C40/50	[-]		1,32			1,41	
<b>Ψ<sub>c C50/60</sub></b>	Increasing factor for concrete C50/60	[-]		1,42			1,55	
Concrete cone failure and Splitting failure								
<b>K<sub>ucr</sub></b>	Factor for un-cracked concrete rif. CEN/TS 1992-4-4 §. 6.2.1. 4	[-]				10,1		
<b>s<sub>cr,N</sub></b>	Critical spacing	[mm]	105	120	150	180	210	255
<b>c<sub>cr,N</sub></b>	Critical edge distance	[mm]	53	60	75	90	105	130
<b>s<sub>cr,sp</sub></b>	Critical spacing (splitting)	[mm]	210	240	300	360	420	510
<b>c<sub>cr,sp</sub></b>	Critical edge distance (splitting)	[mm]	105	120	150	180	210	255
<b>γ<sub>mc = γ<sub>m,sp</sub></sub><sup>1)</sup></b>	Partial safety factor	[-]		1,8			1,5	
Displacement on Tension Load			M6 <sup>2)</sup>	M8	M10	M12	M14	M16
<b>N<sub>ucr</sub></b>	Service tension load in un-cracked concrete	[kN]	2,4	3,6	4,8	9,5	11,9	16,7
<b>δ<sub>N0,ucr</sub></b>	Short term displacement under tension load	[mm]				0,1		
<b>δ<sub>N∞,ucr</sub></b>	Long term displacement under tension load	[mm]				1,6		
SHEAR Steel failure			M6	M8	M10	M12	M14	M16
<b>V<sub>Rk,s</sub></b>	Shear Steel characteristic failure	[kN]	6,0	9,1	14,8	18,4	32,1	42,3
<b>K<sub>2</sub></b>	Ductility factor acc.to CEN/TS 1992-4-5 Section § 6.3.2.1	[-]				0,8		
<b>M<sup>0</sup><sub>Rk,s</sub></b>	Bending Moment characteristic failure	[Nm]	12	24	49	68	121	193
<b>γ<sub>ms,V</sub><sup>1)</sup></b>	Partial safety factor for shear steel failure	[-]				1,5		
Shear Concrete Pry-out failure								
<b>k</b>	Factor equation (5.6) of ETAG, Annex C, § 5.2.3.3	[-]		1,0			2,0	
<b>k<sub>3</sub></b>	Factor equation (16) of CEN/TS 1992-4-4, § 6.2.2.3	[-]		1,0			2,0	
<b>γ<sub>mc</sub><sup>1)</sup></b>	Partial safety factor	[-]				1,5		
Shear Concrete Edge failure								
<b>l<sub>ef</sub></b>	Effective anchorage length	[mm]	35	40	50	60	70	85
<b>d<sub>nom</sub></b>	Nominal diameter of anchor	[mm]	6	8	10	12	14	16
<b>γ<sub>mc</sub><sup>1)</sup></b>	Partial safety factor	[-]				1,5		
Displacement on Shear Load			M6	M8	M10	M12	M14	M16
<b>V</b>	Service shear load in concrete	[kN]	2,9	4,3	7,0	8,8	15,3	20,1
<b>δ<sub>V0</sub></b>	Short term displacement under shear load	[mm]	1,5	1,5	2,1	2,2	2,4	2,4
<b>δ<sub>V∞</sub></b>	Long term displacement under shear load	[mm]	1,9	2,0	2,6	2,7	3,0	3,0

<sup>1)</sup> In absence of other national regulations;<sup>2)</sup> Use restricted to anchoring of structural components statically indetermined.