

## BARACO/M FM753 CRACK SS A4 - M8xL M10xL M12xL M16xL



ETA-10/0293 - Opt. 1  
EAD 330232-01-0601

### PRODUCT DEFINITION

- Torque-controlled expansion metal safety anchor.
- 2 installation depths:  
RED = Reduced / STD = Standard
- Supplied assembled with washer and nut.

### SCOPE OF APPLICATION

- Anchor for use in cracked and uncracked concrete (C20/25 to C50/60 according to EN 206:2013+A1:2016)
- Applications for heavy duty, static, quasi-static, seismic and with fire resistance.
- Structure subjected to external or internal conditions without particular aggressive condition.

### MATERIAL & FINISH

#### Material:

- Bolt and expansion sleeve: Austenitic stainless steel A4-70 (AISI 316L) according to NF EN 10088/3 and NF EN 10088/2.
- Hexagonal nut: Austenitic stainless steel A4-80 according to DIN 934.
- Washer: Austenitic stainless steel A4 according to DIN 125/1 (normal) or DIN 9021 (large).

### INSTALLATION



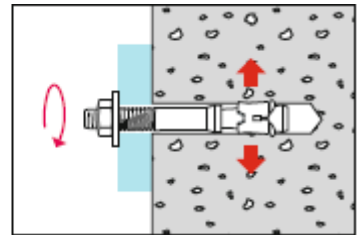
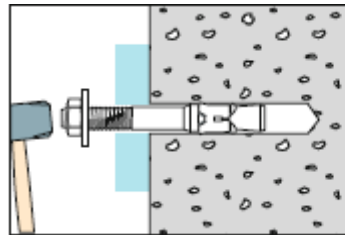
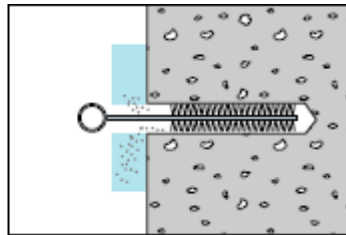
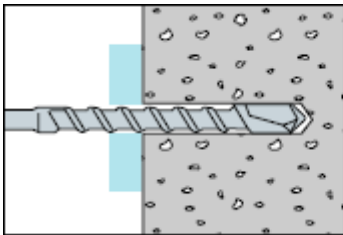
Uncracked  
concrete



Cracked  
concrete



Natural  
stone



\* On-site testing

#### Additional products:

- Drill bits SDS+ Ø8, Ø10, Ø12 and Ø16 mm (See anchor booklet)
- Brushes (code: 344 856)

#### Recommended tools:

- Hammer drill power tool MILWAUKEE M28 CHPX-502C (code: 322 030)
- Hammer drill MILWAUKEE PH26 T (code: 324 781)

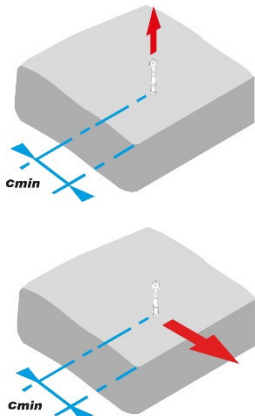

## PERFORMANCES

Technical data according to ETA:

- The technical data allowing the precise calculation of BARACO FM753 3DG anchor are available in the European Technical Assessment of this anchor. To obtain the European Technical Assessment or for precise calculation, one may use SPECIF Anchors software or contact our Anchor Department.
- BARACO FM753 CRACK SS A4 M8 to M16: E.T.A. n° 10/0293
- In this Technical Data Sheet, one will find hereafter some instances of pre-calculated loads according to this ETA allowing assess the main performance of the anchors.

Tensile load and shear load for single anchor calculated according to EN 1992-4:2018<sup>(#)</sup> in uncracked concrete:

BARACO FM753 CRACK STAINLESS STEEL A4 UNCRACKED CONCRETE – LARGE SPACING AND EDGE DISTANCE				M8		M10		M12		M16		
(drilling with percussion)				$h_{nom}$	(mm)	RED	STD	RED	STD	RED	STD	
	 Uncracked concrete C20/25	Tensile load	$N_{Rd}$	(daN)	467	667	600	1067	1067	1467	2616	
			$N_{Rec}$	(daN)	334	476	429	762	762	1048	1191	1869
		Shear load	$V_{Rd}$	(daN)	650	1091	1502	1877	1938	2423	3517	4800
			$V_{Rec}$	(daN)	464	779	1073	1341	1384	1731	2512	3429

BARACO FM753 CRACK STAINLESS STEEL A4 UNCRACKED CONCRETE – MINI EDGE DISTANCE				M8		M10		M12		M16		
(drilling with percussion)				$h_{nom}$	(mm)	RED	STD	RED	STD	RED	STD	
	 Uncracked concrete C20/25	Edge distance	$C_{min}$	(mm)	60	50	50	50	60	60	80	70
		Tensile load	$N_{Rd}$	(daN)	467	573	573	777	981	1039	1498	1739
			$N_{Rec}$	(daN)	334	409	409	555	701	742	1070	1242
		Shear load	$V_{Rd}$	(daN)	492	406	406	438	558	595	892	794
$V_{Rec}$	(daN)		351	290	290	323	399	425	637	567		

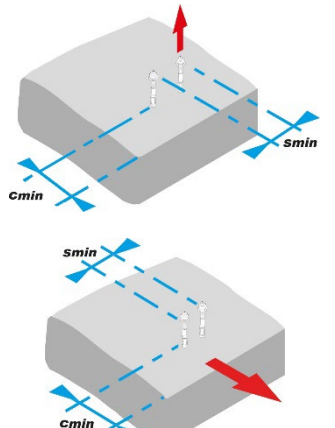

(#)  $N_{Rec} = N_{Rd} / \gamma_{Mc}$  and  $V_{Rec} = V_{Rd} / \gamma_{Mc}$  with  $\gamma_{Mc} = 1,4$

$N_{Rec}$ : Recommended load or service load –  $N_{Rd}$ : Ultimate load or design load –  $V_{Rec}$ : Recommended load or service load –  $V_{Rd}$ : Ultimate load or design load –  $\gamma_{Mc}$ : Partial safety factor

Registration date: 2023/05/23 – Revision B

LR ETANCO is associate member of:

BARACO FM753 CRACK STAINLESS STEEL A4 UNCRACKED CONCRETE – MINI SPACING					M8		M10		M12		M16		
(drilling with percussion)			$h_{nom}$	(mm)	RED	STD	RED	STD	RED	STD	RED	STD	
		Uncracked concrete C20/25	Spacing	$S_{min}$	(mm)	60	50	80	55	60	60	100	70
			Tensile load	$N_{Rd}$	(daN)	467	667	600	995	977	1280	1324	1663
				$N_{Rec}$	(daN)	334	476	429	711	698	914	945	1188
			Shear load	$V_{Rd}$	(daN)	488	735	1255	1877	954	2423	2647	3325
				$V_{Rec}$	(daN)	348	525	896	1341	681	1731	1890	2375

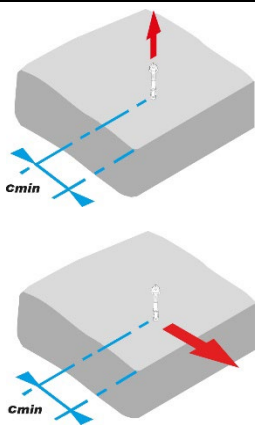

BARACO FM753 CRACK STAINLESS STEEL A4 UNCRACKED CONCRETE – MINI SPACING AND EDGE DISTANCE					M8		M10		M12		M16		
(drilling with percussion)			$h_{nom}$	(mm)	RED	STD	RED	STD	RED	STD	RED	STD	
		Uncracked concrete C20/25	Edge distance	$C_{min}$	(mm)	60	50	50	50	60	60	80	70
			Spacing	$S_{min}$	(mm)	60	50	110	110	120	120	160	130
			Tensile load	$N_{Rd}$	(daN)	467	382	550	626	868	809	1354	1308
				$N_{Rec}$	(daN)	334	273	393	447	620	578	967	934
			Shear load	$V_{Rd}$	(daN)	328	271	352	380	465	496	744	643
				$V_{Rec}$	(daN)	234	193	251	271	332	354	531	459

(#)  $N_{Rec} = N_{Rd} / \gamma_{Mc}$  and  $V_{Rec} = V_{Rd} / \gamma_{Mc}$  with  $\gamma_{Mc} = 1,4$

$N_{Rec}$ : Recommended load or service load –  $N_{Rd}$ : Ultimate load or design load –  $V_{Rec}$ : Recommended load or service load –  $V_{Rd}$ : Ultimate load or design load –  $\gamma_{Mc}$ : Partial safety factor

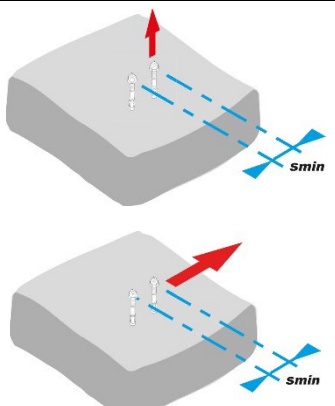

Tensile load and shear load for single anchor calculated according to EN 1992-4:2018<sup>(#)</sup> in cracked concrete:

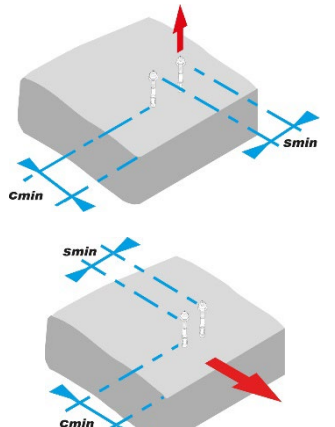

BARACO FM753 CRACK STAINLESS STEEL A4 UNCRACKED CONCRETE - LARGE SPACING AND EDGE DISTANCE				M8		M10		M12		M16		
(drilling with percussion)				$h_{nom}$	(mm)	RED	STD	RED	STD	RED	STD	
	 Cracked concrete C20/25	Tensile load	$N_{Rd}$	(daN)	300	433	467	667	861	867	1067	1733
			$N_{Rec}$	(daN)	214	309	334	476	615	619	762	1238
		Shear load	$V_{Rd}$	(daN)	455	763	1162	1877	1722	2423	2462	3662
			$V_{Rec}$	(daN)	325	545	830	1341	1230	1731	1759	2616

BARACO FM753 CRACK STAINLESS STEEL A4 UNCRACKED CONCRETE - MINI EDGE DISTANCE				M8		M10		M12		M16		
(drilling with percussion)				$h_{nom}$	(mm)	RED	STD	RED	STD	RED	STD	
	 Cracked concrete C20/25	Edge distance	$C_{min}$	(mm)	60	50	50	50	60	60	80	70
		Tensile load	$N_{Rd}$	(daN)	300	433	467	667	708	867	1048	1314
			$N_{Rec}$	(daN)	214	309	334	476	506	619	749	939
		Shear load	$V_{Rd}$	(daN)	349	287	288	310	395	422	632	562
$V_{Rec}$	(daN)		249	205	206	221	282	301	451	401		

(#)  $N_{Rec} = N_{Rd} / \gamma_{Mc}$  and  $V_{Rec} = V_{Rd} / \gamma_{Mc}$  with  $\gamma_{Mc} = 1,4$

$N_{Rec}$ : Recommended load or service load -  $N_{Rd}$ : Ultimate load or design load -  $V_{Rec}$ : Recommended load or service load -  $V_{Rd}$ : Ultimate load or design load -  $\gamma_{Mc}$ : Partial safety factor

BARACO FM753 CRACK STAINLESS STEEL A4 UNCRACKED CONCRETE – MINI SPACING				M8		M10		M12		M16			
(drilling with percussion)			$h_{nom}$	(mm)	RED	STD	RED	STD	RED	STD	RED	STD	
		Cracked concrete C20/25	Spacing	$S_{min}$	(mm)	60	50	80	55	60	60	100	70
			Tensile load	$N_{Rd}$	(daN)	300	433	440	667	684	867	927	1164
				$N_{Rec}$	(daN)	214	309	314	476	488	619	662	831
			Shear load	$V_{Rd}$	(daN)	362	515	879	528	684	1792	1853	2328
				$V_{Rec}$	(daN)	258	368	628	264	488	896	1323	1663

BARACO FM753 CRACK STAINLESS STEEL A4 UNCRACKED CONCRETE – MINI SPACING AND EDGE DISTANCE				M8		M10		M12		M16			
(drilling with percussion)			$h_{nom}$	(mm)	RED	STD	RED	STD	RED	STD	RED	STD	
		Cracked concrete C20/25	Edge distance	$C_{min}$	(mm)	60	50	50	50	60	60	80	70
			Spacing	$S_{min}$	(mm)	60	50	110	110	120	120	160	130
			Tensile load	$N_{Rd}$	(daN)	300	396	467	579	627	735	948	916
				$N_{Rec}$	(daN)	214	283	334	414	448	525	677	654
			Shear load	$V_{Rd}$	(daN)	233	192	250	269	330	352	527	455
				$V_{Rec}$	(daN)	166	137	178	192	235	251	376	325

(#)  $N_{Rec} = N_{Rd} / \gamma_{Mc}$  and  $V_{Rec} = V_{Rd} / \gamma_{Mc}$  with  $\gamma_{Mc} = 1,4$

$N_{Rec}$ : Recommended load or service load -  $N_{Rd}$ : Ultimate load or design load -  $V_{Rec}$ : Recommended load or service load -  $V_{Rd}$ : Ultimate load or design load -  $\gamma_{Mc}$ : Partial safety factor

Minimum edge distance  $C_{min}$  and minimum spacing  $S_{min}$ :

BARACO FM753 CRACK STAINLESS STEEL A4				M8		M10		M12		M16		
			$h_{nom}$	(mm)	RED	STD	RED	STD	RED	STD	RED	STD
Minimum authorized edge distance	Edge distance	$C_{min}$	(mm)	60	50	50	50	60	60	80	70	
	Spacing	$S \geq$	(mm)	60	50	110	110	120	120	160	130	
Minimum authorized spacing	Spacing	$S_{min}$	(mm)	60	50	80	55	60	60	100	70	
	Edge distance	$C \geq$	(mm)	60	50	70	70	80	80	130	100	

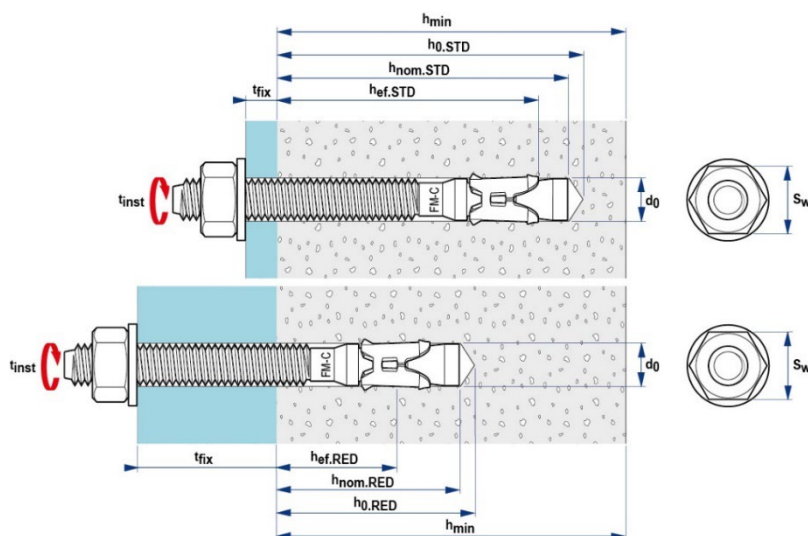
Bending moment (##):

BARACO FM753 CRACK STAINLESS STEEL A4				M8	M10	M12	M16
Concrete C20/25 to C50/60	Moment	M <sub>Rd</sub>	(N.m)	18,46	37,69	65,38	166,15
	Moment	M <sub>Rec</sub>	(N.m)	13,19	,26,92	46,70	118,68

(##)  $M_{Rec} = M_{Rd} / \gamma_{Mc}$  avec  $\gamma_{Mc} = 1,4$

M<sub>Rec</sub>: Recommended bending moment or service bending moment - M<sub>Rd</sub>: Ultimate bending moment or design bending moment -  $\gamma_{Mc}$ : Partial safety factor

## DIMENSIONS & CODES



BARACO FM753 CRACK SS A4	d (mm)	l (mm)	d <sub>0</sub> (mm)	t <sub>fix</sub> RED (mm)	h <sub>nom</sub> RED (mm)	h <sub>0</sub> RED (mm)	h <sub>min</sub> RED (mm)	t <sub>fix</sub> STD (mm)	h <sub>nom</sub> STD (mm)	h <sub>0</sub> STD (mm)	h <sub>min</sub> STD (mm)	d <sub>f</sub> (mm)	S <sub>w</sub> (mm)	T <sub>inst</sub> (N.m)	M <sub>i</sub>	Code
M8x68	8	68	8	18	40	56	80	4	54	70	100	9	13	20	A	344 282
M8x75		75		24				10							B	344 284
M8x90		90		39				25							C	344 286
M8x115		115		64				50							D	344 288
M8x135		135		84				70							E	344 290
M8x165		165		114				100							F	344 292
M10x90	10	90	10	30	47	60	100	10	67	80	120	12	17	40	A	344 294
M10x105		105		45				25							B	344 296
M10x115		115		55				35							C	344 298
M10x135		135		75				55							D	344 302
M10x155		155		95				75							E	344 306
M10x185		185		125				105							F	344 308
M12x110	12	110	12	30	61	80	120	10	81	100	144	14	19	60	A	344 310
M12x120		120		40				20							B	344 312
M12x145		145		65				45							C	344 314
M12x170		170		90				70							D	344 316
M12x200		200		120				100							E	344 318
M16x130	16	130	16	30	77	95	150	10	97	115	172	18	24	120	A	344 320
M16x150		150		50				30							B	344 322
M16x185		185		80				60							C	344 324
M16x220		220		120				100							D	344 326

d: screw diameter - t<sub>fix</sub>: fixture thickness - l: anchor length - d<sub>0</sub>: hole diameter - h<sub>0</sub>: minimum hole depth - h<sub>ef</sub>: effective anchorage depth - h<sub>min</sub>: minimum support thickness - d<sub>f</sub>: hole diameter of fixing element - S<sub>w</sub>: wrench - T<sub>inst</sub>: torque - M<sub>i</sub>: identification mark / product length

Registration date: 2023/05/23 - Revision B

LR ETANCO is associate member of:



LR ETANCO - Parc les Érables - Bât. 1 - 66 Route de Sartrouville

78231 Le Pecq Cedex - France - [www.etanco.eu](http://www.etanco.eu)

Tel: +33 (0)1 34 80 52 00 - [commercial.france@etanco.fr](mailto:commercial.france@etanco.fr)

## CONFORMITY

- European Technical Assessment: E.T.A. n° 10/0293 (M8 à M16) option 1 according to EAD 330232-00-0601.
- CE certification according to system 1: n° 1404-CPR-2550 issued by the ZAG.
- Seismic performance grades: C1 and C2 ( Dimensioning according to EN 1992-4 for STD anchors only).
- Fire resistance: 120 minutes (Dimensioning according to EN 1992-4).
- Fire class: Euroclasse A1 according to EN 13501-1.
- LR ETANCO recommends that you carry out field tests to evaluate the behaviour of the anchor in a support material whose characteristics are not know.

## MARKING & LABELLING

On packaging:

- BARACO FM753 CRACK STAINLESS STEEL A4 + Ø x Length + CODE.

On product:

- FM-C A4 + Ø / t<sub>fix</sub> STD + M<sub>i</sub>

## QUALITY CONTROL

- ISO 9001 certified quality management system according to the certificate in force.

## NOTA

These products are intended for professional installers landlords whose the related service includes supply and installation. In accordance with rules and normative regulation, it's their responsibility to check that the use of these products is in conformity to themselves needs and their customers. They have to insure as well the adequacy of this material with their real operating conditions. The company excludes any guarantee for the use that does not respect these conditions. His responsibility is limited to the strict compliance with the specifications stipulated on the customer's purchase order. The guarantee is limited to the replacement of defective parts acknowledged by the Company's technical service, without workforce costs and travel expenses. It excludes material damage or physical injury and others direct or indirect damages, material or immaterial, which may result from defective parts including installation that not complying with the use for which they are designed and produced.

Registration date: 2023/05/23 – Revision B

LR ETANCO is associate member of:



LR ETANCO - Parc les Érables - Bât. 1 - 66 Route de Sartrouville

78231 Le Pecq Cedex - France - [www.etanco.eu](http://www.etanco.eu)

Tel: +33 (0)1 34 80 52 00 – [commercial.france@etanco.fr](mailto:commercial.france@etanco.fr)