

BARACO/M FM753 CRACK 3DG M8xL M10xL M12xL M16xL



ETA-09/0056 - 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 dry internal conditions or with temporary condensation.

MATERIAL & FINISH

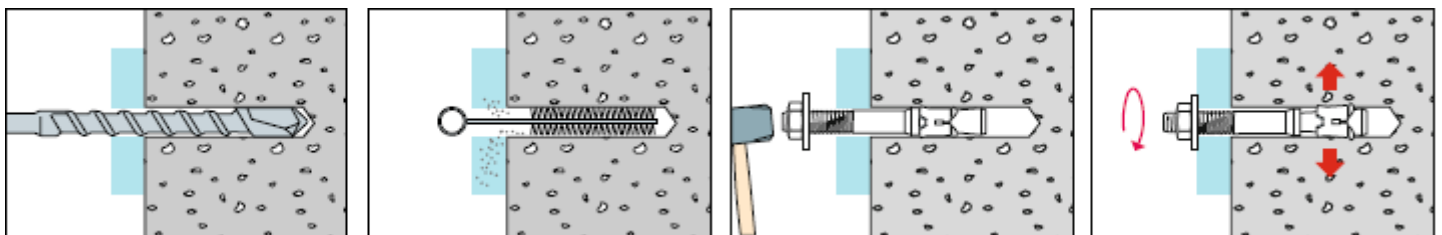
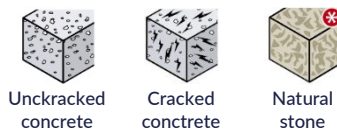
Material:

- Bolt: steel class 9.8. Hexagonal nut: steel class 8 according to DIN 934. Washer: steel according to DIN 125/1.
- Expansion sleeve : Austenitic stainless steel A4-70 (AISI 316) - 1.4401 according to NF EN 10088/2.

Coating:

- Zinc electrolytic without chrome VI (with brilliant finish).
- Thickness 3DG $\geq 8 \mu\text{m}$ according to ISO 4042.

INSTALLATION



* On-site testing

Additional products:

- Drill bits SDS+ $\varnothing 8$, $\varnothing 10$, $\varnothing 12$ and $\varnothing 16$ mm (See anchor booklet)
- Brushes (code: 344 856)

Recommended tools:

- Hammer drill power tool MILWAUKEE HD28 HX (code: 322 100)
- Hammer drill MILWAUKEE PLH 20 (code: 322 102) or PH26 X (code: 322 104)

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
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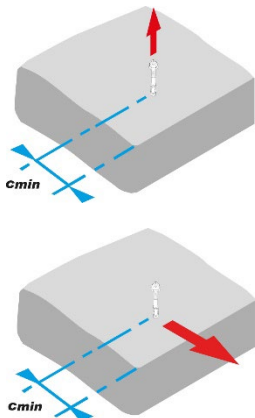

PERFORMANCES

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 3DG M8 to M16: E.T.A. n° 09/0056
- 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^(#) in uncracked concrete:

BARACO FM753 CRACK 3DG 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_{Rec}	(daN)	357	429	476	762	952	952	1404	1666
			N_{Rd}	(daN)	500	600	667	1067	1333	1333	1966	2333
		Shear load	V_{Rec}	(daN)	464	614	731	1152	879	1609	2512	3162
			V_{Rd}	(daN)	650	860	1024	1613	1230	2253	3517	4427

BARACO FM753 CRACK 3DG 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)	51	50	100	60	100	70	120	85
		Tensile load	N_{Rec}	(daN)	357	429	476	762	879	952	1257	1386
			N_{Rd}	(daN)	500	600	667	1067	1230	1333	1760	1940
		Shear load	V_{Rec}	(daN)	281	290	593	398	792	520	1092	729
V_{Rd}	(daN)		394	406	830	557	1109	728	1529	1020		

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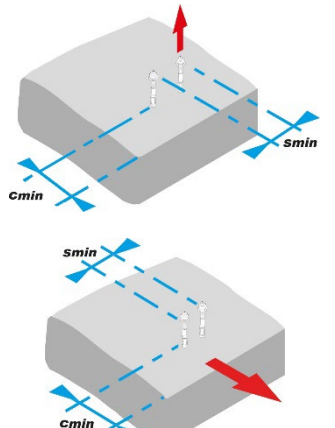


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BARACO FM753 CRACK 3DG UNCRACKED CONCRETE – MINI SPACING					M8		M10		M12		M16		
(drilling with percussion)				h_{nom}	(mm)	RED	STD	RED	STD	RED	STD	RED	STD
 <p>Uncracked concrete C20/25</p>	Spacing	S_{min}	(mm)	102	50	180	60	200	70	120	80		
	Tensile load	N_{Rec}	(daN)	357	429	476	746	900	952	1036	1254		
		N_{Rd}	(daN)	500	600	667	1045	1260	1333	1450	1755		
	Shear load	V_{Rec}	(daN)	464	491	593	922	879	1288	2017	2443		
		V_{Rd}	(daN)	650	688	830	1291	1230	1803	2824	3421		

BARACO FM753 CRACK 3DG 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
 <p>Uncracked concrete C20/25</p>	Edge distance	C_{min}	(mm)	51	50	100	60	100	70	120	85		
	Spacing	S_{min}	(mm)	102	75	180	120	200	150	120	170		
	Tensile load	N_{Rec}	(daN)	342	380	607	521	720	677	892	879		
		N_{Rd}	(daN)	479	532	850	730	1008	948	1249	1230		
	Shear load	V_{Rec}	(daN)	235	310	593	332	660	446	1040	607		
		V_{Rd}	(daN)	329	434	830	465	924	624	1456	850		

(#) $N_{Rec} = N_{Rd} / \gamma_{Mc}$ 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 – γ_{Mc} : Partial safety factor

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

BARACO FM753 CRACK 3DG 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_{Rec}	(daN)	71	286	214	571	309	762	921	952
			N_{Rd}	(daN)	100	400	300	800	433	1067	1290	1333
		Shear load	V_{Rec}	(daN)	325	545	512	1152	615	1609	1759	3162
			V_{Rd}	(daN)	455	763	717	1613	861	2253	2462	4427

BARACO FM753 CRACK 3DG 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)	51	50	100	60	100	70	120	85
		Tensile load	N_{Rec}	(daN)	71	286	214	571	309	762	921	952
			N_{Rd}	(daN)	100	400	300	800	433	1067	1290	1333
		Shear load	V_{Rec}	(daN)	199	205	529	282	561	369	774	516
			V_{Rd}	(daN)	279	287	740	395	785	516	1083	722

BARACO FM753 CRACK 3DG UNCRACKED CONCRETE - MINI SPACING				M8		M10		M12		M16		
(drilling with percussion)				h_{nom}	(mm)	RED	STD	RED	STD	RED	STD	
	 Cracked concrete C20/25	Spacing	S_{min}	(mm)	102	50	180	60	200	70	120	80
		Tensile load	N_{Rec}	(daN)	71	286	214	507	309	661	707	854
			N_{Rd}	(daN)	100	400	300	710	433	925	990	1195
		Shear load	V_{Rec}	(daN)	325	370	415	922	615	1288	1412	1710
			V_{Rd}	(daN)	455	518	581	1291	861	1803	1977	2394

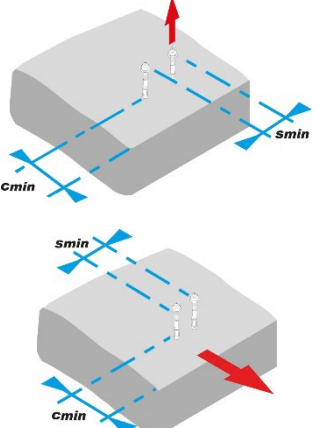

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BARACO FM753 CRACK 3DG UNCRACKED CONCRETE – MINI SPACING AND EDGE DISTANCE					M8		M10		M12		M16	
(drilling with percussion)			h_{nom}	(mm)	RED	STD	RED	STD	RED	STD	RED	STD
	 Cracked concrete C20/25	Edge distance	C_{min}	(mm)	51	50	100	60	100	70	120	85
		Spacing	S_{min}	(mm)	102	75	180	120	200	150	120	170
		Tensile load	N_{Rec}	(daN)	71	286	214	382	309	482	707	632
			N_{Rd}	(daN)	100	400	300	535	433	675	990	885
		Shear load	V_{Rec}	(daN)	166	154	415	235	468	316	516	430
			V_{Rd}	(daN)	233	216	581	329	655	442	722	602

(#) $N_{Rec} = N_{Rd} / \gamma_{Mc}$ 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 – γ_{Mc} : Partial safety factor

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

BARACO FM753 CRACK 3DG				M8		M10		M12		M16		
			h_{nom}	(mm)	RED	STD	RED	STD	RED	STD	RED	STD
Minimum authorized edge distance	Edge distance	C_{min}	(mm)	51	50	100	60	100	70	120	85	
	Spacing	$S \geq$	(mm)	102	75	180	120	200	150	120	170	
Minimum authorized spacing	Spacing	S_{min}	(mm)	102	50	180	60	200	70	120	80	
	Edge distance	$C \geq$	(mm)	51	65	100	80	100	90	120	120	

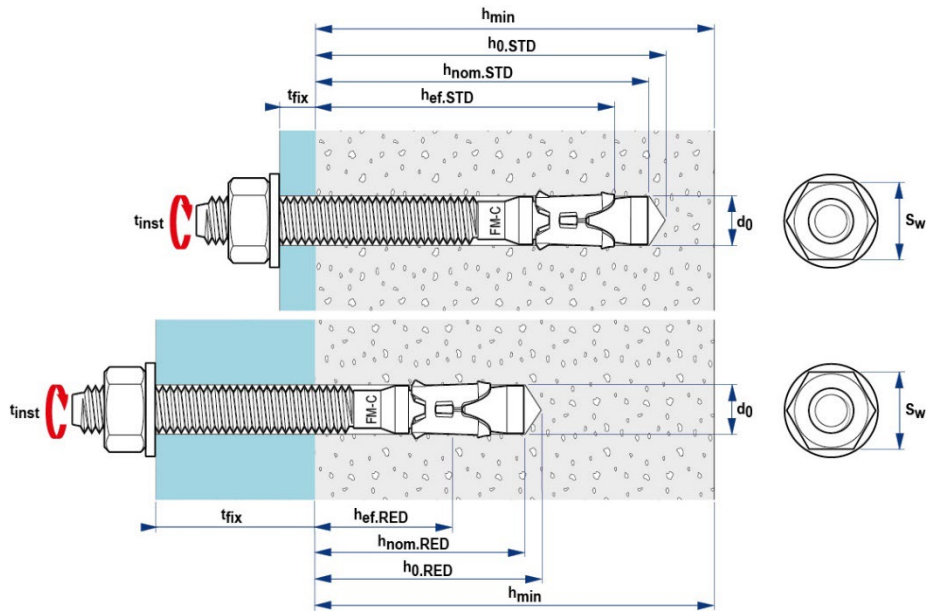
Bending moment (##):

BARACO FM753 CRACK 3DG				M8		M10		M12		M16	
Concrete C20/25 to C50/60	Moment	M_{Rec}	(N.m)	15,9	31,9	56,1	142,4				
	Moment	M_{Rd}	(N.m)	22,3	44,6	78,5	199,4				

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

M_{Rec} : Recommended bending moment or service bending moment – M_{Rd} : Ultimate bending moment or design bending moment – γ_{Mc} : Partial safety factor

DIMENSIONS & CODES



BARACO FM753 CRACK 3DG	d (mm)	l (mm)	d ₀ (mm)	t _{fix} RED (mm)	h _{nom} RED (mm)	h ₀ RED (mm)	h _{min} RED (mm)	t _{fix} STD (mm)	h _{nom} STD (mm)	h ₀ STD (mm)	h _{min} STD (mm)	d _f (mm)	S _w (mm)	T _{inst} (N.m)	M _i	Code
M8x68	8	68	8	18	40	56	80	4	54	70	100	9	13	20	A	344 088
M8x75		24		10				B							344 090	
M8x90		39		25				C							344 092	
M8x115		64		50				D							344 094	
M8x135		84		70				E							344 096	
M8x165		114		100				F							344 198	
M10x90	10	90	10	30	47	60	100	10	67	80	120	12	17	40	A	344 100
M10x105		45		25				B							344 102	
M10x115		55		35				C							344 104	
M10x135		75		55				D							344 106	
M10x155		95		75				E							344 108	
M10x185		125		105				F							344 110	
M12x110	12	110	12	30	61	80	120	10	81	100	144	14	19	60	A	344 112
M12x120		40		20				B							344 114	
M12x145		65		45				C							344 116	
M12x170		90		70				D							344 118	
M12x200		120		100				E							344 122	
M16x130	16	130	16	30	77	95	150	10	97	115	172	18	24	120	A	344 124
M16x150		50		30				B							344 126	
M16x185		80		60				C							344 128	
M16x220		120		100				D							344 130	

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d: screw diameter - t_{fix} : fixture thickness - l: anchor length - d_o : hole diameter - h_o : minimum hole depth - h_{ef} : effective anchorage depth - h_{min} : minimum support thickness - d_f : hole diameter of fixing element - S_w : wrench - T_{inst} : torque - M_i : identification mark / product length

CONFORMITY

- European Technical Assessment: E.T.A. n° 09/0056 (M8 à M16) option 1 according to EAD 330232-00-0601
- CE certification according to system 1: n° 0679-CPR-0418 issued by the CSTB
- Seismic performance grades: C1 et C2
- 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 3DG + \emptyset x Length + CODE.

On product:

- FM-C + \emptyset / t_{fix} STD + M_i

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.

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