

DECLARATION OF PERFORMANCE

N° BARACOCCA4 01A EN



LR ETANCO SAS

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1. Unique identification code of the product-type :

FM-753 CRACK A4

2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

ETA-10/0056

Batch number: see packaging of the product

3. Indented use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Generic type and intended use of the product	Torque controlled expansion anchor made of stainless steel, sizes M8, M10, M12 and M16
For use in	Cracked and un-cracked concrete (C20/25 to C50/60 according to EN 206-1:2003)
Option / category	ETAG 001 option 1 + TR 020
Loading	Static and quasi-static, fire resistance
Material	Stainless steel AISI316 grade A4-70 according to EN ISO 3506-1: 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.
Fire resistance and class	A1 according to EN 13501-1 F120

4. Name, registered trade name or registered trade mark and contract address of the manufacturer as required pursuant to Article 11(5):

FRIULSIDER S.p.A.
Via Trieste 1
33048 San Giovanni al Natisone (UD)
Italy

5. Where applicable name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12 (2):

Not relevant

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 1

7. In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8. In case of the declaration of performance concerning a construction product for which European Technical Assessment has been issued:

Z.A.G. approval body issued ETA-10/0293 on the basis of 'ETAG 001 part 2.
Z.A.G. notified body n°1404 issued according to system 1 the certificate of conformity n° 1404-CPD-1623

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9. Declared Performances:

Essential characteristics – ETAG 001 Annex C – TR 020			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]	54	67	81	97
h _{ef}	Effective anchorage depth	[mm]	48	60	72	86
h _{min}	Minimum thickness of the concrete member	[mm]	100	120	150	170
T _{inst}	Nominal torque moment	[Nm]	20	40	60	120
s _{min}	Minimum spacing	[mm]	50	55	60	70
for c ≥	Edge distance	[mm]	50	70	80	100
c _{min}	Minimum edge distance	[mm]	50	50	60	70
for s ≥	Anchor spacing	[mm]	50	110	120	130
Tension Steel failure mode						
N _{Rk,s}	Tension Steel characteristic failure	[kN]	21	34	49	88
γ _{m,sN} ¹⁾	Partial safety factor for tension steel failure	[-]	1,5			
Pull-out failure mode						
N _{Rk,p,cr}	Tension characteristic load in cracked concrete	[kN]	9	16	20	35
N _{Rk,p,ucr}	Tension characteristic load in un-cracked concrete	[kN]	5	9	12	25
γ ₂	Partial safety factor	[-]	1,0			
γ _{m,c} ¹⁾	Partial safety factor	[-]	1,5			
s _{cr,N}	Critical spacing	[mm]	144	180	220	260
c _{cr,N}	Critical edge distance	[mm]	72	90	110	130
ψ _c C30/37	Increasing factor	[-]	1,22			
ψ _c C40/50		[-]	1,41			
ψ _c C50/60		[-]	1,55			
Splitting failure mode						
s _{cr,sp}	Critical spacing (splitting)	[mm]	144	180	220	260
c _{cr,sp}	Critical edge distance(splitting)	[mm]	72	90	110	130
γ _{m,c} ¹⁾	Partial safety factor	[-]	1,5			
Displacement on Tension Load						
N _{cr}	Service tension load in cracked concrete C20/25	[kN]	2,4	4,3	5,7	11,9
δ _{N0,cr}	Short term displacement under tension load	[mm]	0,7	0,6	0,7	0,7
δ _{N∞,cr}	Long term displacement under tension load	[mm]	1,4	1,5	0,9	1,4
N _{ucr}	Service tension load in un-cracked concrete C20/25	[kN]	4,3	7,6	9,5	16,7
δ _{N0,ucr}	Short term displacement under tension load	[mm]	0,3	0,4	0,4	0,3
δ _{N∞,ucr}	Long term displacement under tension load	[mm]	1,4	1,5	0,9	1,4
Shear Steel failure mode						
V _{Rk,s}	Shear Steel characteristic failure	[kN]	11,9	18,8	27,4	51,0
M ⁰ _{Rk,s}	Bending Moment characteristic failure	[Nm]	24	49	85	216
γ _{m,sV} ¹⁾	Partial safety factor for shear steel failure	[-]	1,3			
Shear Concrete Pry-out 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]	48	60	72	86
d _{nom}	Nominal diameter of anchor	[mm]	8	10	12	16
γ _m ¹⁾	Partial safety factor (γ _{m,c} =γ _{m,pr})	[-]	1,5			
Displacement on Shear Load						
V	Service shear load in concrete	[kN]	6,5	10,4	15,1	28,0
δ _{V0}	Short term displacement under shear load	[mm]	0,8	0,9	1,2	2,5
δ _{V∞}	Long term displacement under shear load	[mm]	1,3	1,3	1,8	3,8

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Fire Resistance* (all direction)			M8	M10	M12	M16
N_{Rk,s,fi,30}	For fire resistance duration = 30 minutes	[kN]	0,5	1,1	1,8	3,3
N_{Rk,s,fi,60}	For fire resistance duration = 60 minutes	[kN]	0,4	0,9	1,5	2,7
N_{Rk,s,fi,90}	For fire resistance duration = 90 minutes	[kN]	0,3	0,7	1,2	2,2
N_{Rk,s,fi,120}	For fire resistance duration = 120 minutes	[kN]	0,3	0,6	1,0	1,8
V_{Rk,s,fi,30}	For fire resistance duration = 30 minutes	[kN]	0,7	1,5	2,5	4,7
V_{Rk,s,fi,60}	For fire resistance duration = 60 minutes	[kN]	0,6	1,2	2,1	3,9
V_{Rk,s,fi,90}	For fire resistance duration = 90 minutes	[kN]	0,4	0,9	1,7	3,1
V_{Rk,s,fi,120}	For fire resistance duration = 120 minutes	[kN]	0,4	0,8	1,4	2,5

** 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.

10. The performance of the product identified in points 1 and 2 is in conformity with declared performance in the point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and behalf of the manufacturer by:

Benoit Cheramy
Product Manager

Le Pecq – France, 2013-06-21