DECLARATION OF PERFORMANCE
N° BARACOCC 01A EN

LR ETANCO SAS
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1. Unique identification code of the product-type :

FM-753 CRACK

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

ETA-09/0056
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 galvanized 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	**Steel class 8.8 according to EN ISO 898-1** **Zinc-plated steel according to EN ISO 4042 : Dry internal conditions only**
Fire resistance and class	**A1 according to EN 13501-1** **F120**

4. Name, registred trade name or registred 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:

CSTB approval body issued ETA-09/0056 on the basis of 'ETAG 001 part 2.
CSTB notified body n°0679 issued according to system 1 the certificate of conformity n° 0679-CPD-0418

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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	60	70	80
for c ≥	Edge distance	[mm]	65	80	90	120
c_{min}	Minimum edge distance	[mm]	50	60	70	85
for s ≥	Anchor spacing	[mm]	75	120	150	170
Tension Steel failure mode						
$N_{Rk,s}$	Tension Steel characteristic failure	[kN]	28 ,8	38,7	54,7	98,4
$\gamma_{m,sN}$ [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]	**6**	**12**	**16**	**20**
γ_2	Partial safety factor	[-]	1,0			
$\gamma_{m,c}$ [1)]	Partial safety factor	[-]	1,5			
$s_{cr,N}$	Critical spacing	[mm]	140	180	220	260
$c_{cr,N}$	Critical edge distance	[mm]	70	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]	290	360	430	520
$c_{cr,sp}$	Critical edge distance(splitting)	[mm]	145	180	215	260
$\gamma_{m,c}$ [1)]	Partial safety factor	[-]	1,5			
Displacement on Tension Load						
N_{cr}	Service tension load in cracked concrete C20/25	[kN]	**2,9**	**5,7**	**7,6**	**9,5**
$\delta_{N0,cr}$	Short term displacement under tension load	[mm]	1,4	1,2	0,9	0,6
$\delta_{N\infty,cr}$	Long term displacement under tension load	[mm]	1,4	1,5	1,3	0,6
N_{ucr}	Service tension load in un-cracked concrete C20/25	[kN]	**4,3**	**7,6**	**9,5**	**16,7**
$\delta_{N0,ucr}$	Short term displacement under tension load	[mm]	0,1	0,1	0,1	0,1
$\delta_{N\infty,ucr}$	Long term displacement under tension load	[mm]	0,5	0,5	0,5	0,5
Shear Steel failure mode						
$V_{Rk,s}$	Shear Steel characteristic failure	[kN]	**12,9**	**24,2**	**33,8**	**66,4**
$M^0_{Rk,s}$	Bending Moment characteristic failure	[Nm]	34	67	118	300
$\gamma_{m,sV}$ [1)]	Partial safety factor for shear steel failure	[-]	1,5			
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 ($\gamma_{m,c}=\gamma_{m,pr}$)	[-]	1,5			
Displacement on Shear Load						
V	Service shear load in concrete	[kN]	**6,2**	**11,4**	**16,2**	**31,4**
δ_{V0}	Short term displacement under shear load	[mm]	3,0	3,8	4,1	4,5
$\delta_{V\infty}$	Long term displacement under shear load	[mm]	4,1	5,1	5,5	6,1

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

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

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	