



DECLARATION OF PERFORMANCES
N° MARCOVISFMX5 01B EN

According to RPC 305/2011/EU



LR ETANCO SAS

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1 – Product identification :

FM-X5

2 – Intended use :

Plastic anchor for multiple use for non-structural applications, diameters Ø8 and Ø10

3 - Manufacturer :

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

4 – Authorized representative :

Not allowed

5 – Systems of assessment (Annex V) :

System 2+

6a/b – Harmonised standard / European assessment document :

Standard / EAD	Notified body	Report
ETAG020	ZAG notified body nb 1404	ETA-13/0180 of 15/11/2017
ETAG020	ZAG notified body nb 1404	1404-CPR-2257

7 – Declared performances :

See annex

8 – Appropriate technical documentation and/or specific technical documentation :

Not allowed

The performance of the product identified above is consistent with the reported performance. In accordance with Regulation (EU) No. 305/2011, this performance statement is made under the sole responsibility of the manufacturer mentioned above.

Manufacturer's representation signatures: Le Pecq – 25/08/2020

Function	Name	Sign
Technical director	Philippe Tolleret	
Quality manager	Frédéric Lucas	

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Annex

Intended use :

Generic type and intended use of the product	Plastic anchor for multiple use for non-structural applications, diameters Ø8 and Ø10
For use in	Cracked an un-cracked Concrete (Minimum C12/15 according to EN 206-1:2003) Solid and Hollow masonries
Option / category	ETAG 020 category A – B – C – D + TR 020 for FM-X5 Ø10
Loading	Multiple use for non-structural applications (static or quasi-static load)
Material	Sleeve : Polyamide PA 6 according to ISO 1874 Screw : Steel class 5.8-Ø6 and class 6.8-Ø7, electro-galvanized $\geq 5 \mu\text{m}$ according to EN ISO 4042 : Dry internal conditions only Screw : 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 class and resistance	A1 according to EN 13501-1 for metal screw F90 for FM-X5 Ø10 in the admissible load $[F_{rk} / (\gamma_M \cdot \gamma_F)]$ is $\leq 0,8 \text{ kN}$

Declared performances :

Essential characteristics – ETAG 020 categories A – B – C – D			Performance	
Installation parameters			Ø8	Ø10
d ₀	Nominal diameter of drill bit	[mm]	8	10
h _{nom}	Minimum installation depth	[mm]	70	70
s _{min}	Minimum spacing (concrete C12/15)	[mm]	80	80
c _{min}	Minimum edge distance (concrete C12/15)	[mm]	80	80
c _{cr,N}	Characteristic edge distance (concrete C12/15)	[mm]	140	140
h _{min}	Minimum thickness (concrete C12/15)	[mm]	100	100
s _{min}	Minimum spacing (concrete C16/20)	[mm]	60	60
c _{min}	Minimum edge distance (concrete C16/20)	[mm]	60	60
c _{cr,N}	Characteristic edge distance (concrete C16/20)	[mm]	100	100
h _{min}	Minimum thickness (concrete C16/20)	[mm]	100	100
s _{min}	Minimum spacing for single anchor (masonry)	[mm]	250	250
s _{1min}	Spacing perpendicular to free edge for anchor group (masonry)	[mm]	200	200
s _{2min}	Spacing parallel to free edge for anchor group (masonry)	[mm]	400	400
c _{min}	Minimum edge distance (masonry)	[mm]	100	100
h _{min}	Minimum thickness (masonry)	[mm]	≥ 106 – see under	
Characteristic bending resistance screw in concrete, masonry and autoclaved aerated concrete (AAC)				
M _{Rk,s}	Characteristic bending resistance (galvanized steel)	[kN]	8,6	16,8
M _{Rk,s}	Characteristic bending resistance (stainless steel)	[kN]	13,6	24,8
γ _M ¹⁾	Partial safety factor (galvanized steel)	[-]	1,25	
γ _M ¹⁾	Partial safety factor (stainless steel)	[-]	1,56	
Characteristic tension resistance failure of screw for use in concrete				
N _{Rk,s}	Tension steel characteristic failure (galvanized steel)	[kN]	11,0	18,1
N _{Rk,s}	Tension steel characteristic failure (stainless steel)	[kN]	16,5	25,0
γ _{ms} ¹⁾	Partial safety factor (galvanized steel)	[-]	1,5	
γ _{ms} ¹⁾	Partial safety factor (stainless steel)	[-]	1,9	



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Characteristic shear resistance failure of screw for use in concrete					
$V_{Rk,s}$	Shear steel characteristic failure (galvanized steel)	[kN]	5,5	9,0	
$V_{Rk,s}$	Shear steel characteristic failure (stainless steel)	[kN]	8,2	12,5	
$\gamma_{ms}^{1)}$	Partial safety factor (galvanized steel)	[-]	1,25		
$\gamma_{ms}^{1)}$	Partial safety factor (stainless steel)	[-]	1,56		
Pull-out failure (plastic sleeve) in concrete					
$N_{Rk,p}$	Tension characteristic load (concrete C12/15)	24°C ²⁾ / 40°C ³⁾	[kN]	1,5	2,5
$N_{Rk,p}$	Tension characteristic load (concrete C12/15)	50°C ²⁾ / 80°C ³⁾	[kN]	0,75	1,5
$N_{Rk,p}$	Tension characteristic load (concrete C16/20)	24°C ²⁾ / 40°C ³⁾	[kN]	2,5	3,5
$N_{Rk,p}$	Tension characteristic load (concrete C16/20)	50°C ²⁾ / 80°C ³⁾	[kN]	1,2	2,5
$\gamma_{m,c}^{1)}$	Partial safety factor	[-]	1,8		
Displacement under tension and shear loading in concrete					
N	Service tension load (concrete C16/20)	[kN]	1,0	1,4	
δ_{N0}	Short term displacement under tension load	[mm]	3,8	1,7	
$\delta_{N\infty}$	Long term displacement under tension load	[mm]	7,5	3,6	
V	Service shear load (concrete C16/20)	[kN]	1,0	1,4	
δ_{N0}	Short term displacement under shear load	[mm]	1,6	0,9	
$\delta_{N\infty}$	Long term displacement under shear load	[mm]	2,4	1,35	
Characteristic resistance in solid clay brick – $f_b \geq 43,8$ MPa – $\rho \geq 1,8$ kg/dm ³ – $h_{min} \geq 120$ mm					
F_{Rk}	Characteristic resistance for single anchor	24°C ²⁾ / 40°C ³⁾	[kN]	3,5	3,5
F_{Rk}	Characteristic resistance for single anchor	50°C ²⁾ / 80°C ³⁾	[kN]	2,0	2,5
$\gamma_{Mm}^{1)}$	Partial safety factor	[-]	2,5		
	Drill method	[-]	Hammer drilling		
Characteristic resistance in hollow clay brick – Bimattone – $f_b \geq 27,3$ MPa – $\rho \geq 0,9$ kg/dm ³ – $h_{min} \geq 120$ mm					
F_{Rk}	Characteristic resistance for single anchor	24°C ²⁾ / 40°C ³⁾	[kN]	1,5	1,5
F_{Rk}	Characteristic resistance for single anchor	50°C ²⁾ / 80°C ³⁾	[kN]	0,9	1,2
$\gamma_{Mm}^{1)}$	Partial safety factor		2,5		
	Drill method		Rotary drilling		
Characteristic resistance in hollow clay brick – Alveolater svizzero pesante – $f_b \geq 13,8$ MPa – $\rho \geq 0,9$ kg/dm ³ – $h_{min} \geq 250$ mm					
F_{Rk}	Characteristic resistance for single anchor	24°C ²⁾ / 40°C ³⁾	[kN]	1,5	1,5
F_{Rk}	Characteristic resistance for single anchor	50°C ²⁾ / 80°C ³⁾	[kN]	0,6	1,2
$\gamma_{Mm}^{1)}$	Partial safety factor		2,5		
	Drill method		Rotary drilling		
Characteristic resistance in hollow clay brick – Alveolater incastro 35 – $f_b \geq 10,9$ MPa – $\rho \geq 0,8$ kg/dm ³ – $h_{min} \geq 350$ mm					
F_{Rk}	Characteristic resistance for single anchor	24°C ²⁾ / 40°C ³⁾	[kN]	1,5	1,5
F_{Rk}	Characteristic resistance for single anchor	50°C ²⁾ / 80°C ³⁾	[kN]	0,75	1,2
$\gamma_{Mm}^{1)}$	Partial safety factor		2,5		
	Drill method		Rotary drilling		
Characteristic resistance in hollow clay brick – Blocco leggero – $f_b \geq 7$ MPa – $\rho \geq 0,5$ kg/dm ³ – $h_{min} \geq 120$ mm					
F_{Rk}	Characteristic resistance for single anchor	24°C ²⁾ / 40°C ³⁾	[kN]	0,9	0,9
F_{Rk}	Characteristic resistance for single anchor	50°C ²⁾ / 80°C ³⁾	[kN]	0,4	0,6
$\gamma_{Mm}^{1)}$	Partial safety factor		2,5		
	Drill method		Rotary drilling		
Characteristic resistance in hollow clay brick – Poroton – $f_b \geq 22$ MPa – $\rho \geq 0,9$ kg/dm ³ – $h_{min} \geq 250$ mm					
F_{Rk}	Characteristic resistance for single anchor	24°C ²⁾ / 40°C ³⁾	[kN]	1,5	2,0
F_{Rk}	Characteristic resistance for single anchor	50°C ²⁾ / 80°C ³⁾	[kN]	0,9	0,9
$\gamma_{Mm}^{1)}$	Partial safety factor		2,5		
	Drill method		Rotary drilling		
Characteristic resistance in hollow clay brick – Leopard BP cat. 1HD – $f_b \geq 30$ MPa – $\rho \geq 1,3$ kg/dm ³ – $h_{min} \geq 106$ mm					
F_{Rk}	Characteristic resistance for single anchor	24°C ²⁾ / 40°C ³⁾	[kN]	2,0	1,5
F_{Rk}	Characteristic resistance for single anchor	50°C ²⁾ / 80°C ³⁾	[kN]	0,9	0,9
$\gamma_{Mm}^{1)}$	Partial safety factor		2,5		



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	Drill method		Rotary drilling
Characteristic resistance in hollow brick light weight concrete – BC 203 n° 26 – $f_b \geq 4 \text{ MPa}$ – $\rho \geq 0,95 \text{ kg/dm}^3$ – $h_{\min} \geq 200 \text{ mm}$			
F_{Rk}	Characteristic resistance for single anchor	$24^\circ\text{C}^{2)} / 40^\circ\text{C}^{3)}$	[kN] 0,75 0,6
F_{Rk}	Characteristic resistance for single anchor	$50^\circ\text{C}^{2)} / 80^\circ\text{C}^{3)}$	[kN] 0,3 0,6
$\gamma_{Mm}^{1)}$	Partial safety factor		2,5
	Drill method		Rotary drilling
Characteristic resistance in autoclaved aerated concrete – AAC – $f_b \geq 2,5 \text{ MPa}$ – $\rho \geq 0,5 \text{ kg/dm}^3$ – $h_{\min} \geq 200 \text{ mm}$			
F_{Rk}	Characteristic resistance for single anchor	$24^\circ\text{C}^{2)} / 40^\circ\text{C}^{3)}$	[kN] 0,6 0,6
F_{Rk}	Characteristic resistance for single anchor	$50^\circ\text{C}^{2)} / 80^\circ\text{C}^{3)}$	[kN] 0,6 0,5
$\gamma_{Mm}^{1)}$	Partial safety factor		2,0
	Drill method		Hammer drilling

¹⁾ In absence of other national regulations; ²⁾ Maximum long term temperature; ³⁾ Maximum short term temperature.