

Declaration of Performance

No. **DPGEB1001 v2**

1. Unique identification code of the product-type: **GX-L Nylon**

2. Intended uses:

Intended use of the construction product according to ETA 16/0597					
Generic type:	Plastic anchor for multiple use in concrete and masonry for non-structural applications				
Anchorage subject to:	Static and quasi-static loads Multiple fixing for non-structural applications				
Base materials:	Use category a: reinforced or unreinforced normal weight concrete, cracked or non-cracked, with strength class \geq C12/15, according to EN 206:2000				
	Use category b: solid masonry				
		type	size [mm]	min. density ρ [kg/dm³]	min. compr. strength f_b [N/mm²]
	b1 - clay masonry	EN 771-1	247/118/73	2,1	20
	b2 - calcium silicate masonry	EN 771-2	240/114/71	1,9	30
	Use category c: hollow or perforated masonry				
		type	size [mm]	min. density ρ [kg/dm³]	min. compr. strength f_b [N/mm²]
	c1 - clay masonry	doppio UNI	120/250/120	0,91	15
	c2 - clay masonry	Optibrick PV	560/200/274	0,60	7,5
	c3 - clay masonry	HLZ 12	240/115/113	0,90	12
	c4 - calcium silicate masonry	KSL-R 8DF	250/240/238	1,3	15
Mortar strength class of the masonry \geq M 2,5 according to EN 998-2-2010					
For other base materials of use categories a, b, c the anchor resistance may be determined by job site tests according to Annex B of ETAG 020					
Service temperature range:	-20 °C to +40 °C (max. short term temperature +40 °C, max. long term temperature +24 °C)				
Environmental conditions:	<ul style="list-style-type: none"> - specific screw made of zinc plated or hot dip galvanized steel dry internal conditions, or structures subject to external atmospheric exposure, if the area of the head of the screw is protected against moisture and driving rain after mounting of the fixing unit in such way that intrusion of moisture into the anchor shaft is prevented - specific screw made of stainless steel dry internal conditions or exposure in permanently damp internal conditions or external atmospheric exposure including industrial and marine environment if no particular aggressive conditions exist 				
Reaction to fire:	Anchorage satisfy requirements for Class A1				
Resistance to fire:	F90 (GX-L 10 in concrete)				
Installation:	Installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters on job site Minimum temperature during installation: 0 °C				

3. Manufacturer: **G&B Fissaggi S.r.l.** C.so Savona 22, Villastellone (TO), Italia

5. System of AVCP: 2+

6b.

European Assessment Document: ETAG 020, edition 2012, used as EAD

European Technical Assessment: ETA-12/0261

Technical Assessment Body: Centre Scientifique et Technique du Bâtiment

Notified body: 0679 Centre Scientifique et Technique du Bâtiment

7. Declared performances:

Declared performances according to ETAG 020:2012, ETA ETA-12/0261 (Design method ETAG 020 Annex C)

Anchor diameter			8	10	
Essential Characteristics			Performance		
Installation parameters					
d	Nominal diameter of plug		[mm]	8	10
d _s	Nominal diameter of screw		[mm]	5.5	7.0
d ₀	Nominal diameter of drill bit		[mm]	8	10
d _{fix}	Maximum diameter of clearance hole in the fixture		[mm]	8.5	10.5
h _{ef}	Effective anchorage depth		[mm]	70	70
h _{nom}	Minimum installation depth		[mm]	70	70
h ₁	Minimum depth of the drilling hole		[mm]	80	80
Installation parameters in concrete					
h _{min}	Minimum thickness of the concrete member		[mm]	100	100
s _{min}	Minimum spacing	concrete C12/15	[mm]	70	85
		concrete ≥ C16/20	[mm]	50	60
c _{min}	Minimum edge distance	concrete C12/15	[mm]	70	70
		concrete ≥ C16/20	[mm]	50	50
Installation parameters in masonry					
h _{min}	Minimum thickness of member	b1 masonry	[mm]	115	
		b2 masonry	[mm]	115	
		c1 masonry	[mm]	115	
		c2 masonry	[mm]	200	
		c3 masonry	[mm]	115	
		c4 masonry	[mm]	240	
s _{min}	Minimum spacing for single anchor		[mm]	250	
s _{1,min}	Minimum spacing for anchor group, perpendicular to edge		[mm]	200	
s _{2,min}	Minimum spacing for anchor group, parallel to edge		[mm]	400	
c _{min}	Minimum edge distance		[mm]	100	
Screw resistance for use in concrete and masonry – galvanised steel					
N _{Rk,s}	Characteristic tension resistance of screw		[kN]	9.6	12.8
γ _{Ms,N}	Partial safety factor for tension		[-]	1.50	1.49
N _{Rk,s}	Characteristic shear resistance of screw		[kN]	4.8	6.4
γ _{Ms,V}	Partial safety factor for shear		[-]	1.25	1.50
M _{Rk,s}	Characteristic bending resistance of screw		[Nm]	5.6	10.7
γ _{MsM}	Partial safety factor for bending		[-]	1.25	1.50
Screw resistance for use in concrete and masonry – stainless steel					
N _{Rk,s}	Characteristic tension resistance of screw		[kN]	6.0	12.3
γ _{Ms,N}	Partial safety factor for tension		[-]	2.86	2.86

Anchor diameter				8	10	
Essential Characteristics				Performance		
$N_{Rk,s}$	Characteristic shear resistance of screw		[kN]	3.0	6.2	
$\gamma_{Ms,V}$	Partial safety factor for shear		[-]	2.38	2.38	
$M_{Rk,s}$	Characteristic bending resistance of screw		[Nm]	3.5	10.3	
γ_{MsM}	Partial safety factor for bending		[-]	2.38	2.38	
Pull-out failure mode in concrete						
$N_{Rk,p}$	Characteristic tension resistance	concrete C12/15	[mm]	1.2	2.0	
		concrete \geq C16/20	[mm]	2.0	3.0	
γ_{Mp}	Partial safety factor		[-]	1.8	1.8	
$C_{Cr,N}$	Critical edge distance	concrete C12/15	[mm]	100	140	
		concrete \geq C16/20	[mm]	70	100	
Characteristic resistance in masonry for tension, shear or combined tension and shear loading						
F_{rk}	Characteristic resistance	b1 masonry	$f_b \geq 75$	[kN]	3.5	4.0
			$f_b \geq 20$	[kN]	1.5	1.2
		b2 masonry		[kN]	1.5	2.5
		c1 masonry		[kN]	0.5	0.75
		c2 masonry		[kN]	0.3	0.5
		c3 masonry		[kN]	0.5	0.9
		c4 masonry		[kN]	0.5	1.2
γ_{Mm}	Partial safety factor		[-]	2.5		
Displacement on concrete						
N	Service tension load		[kN]	0.79	1.19	
δ_{N0}	Short term displacement under tension load		[mm]	0.46	0.35	
$\delta_{N\infty}$	Long term displacement under tension load		[mm]	0.21	0.47	
V	Service shear load		[kN]	1.14	1.71	
δ_{V0}	Short term displacement under shear load		[mm]	0.74	1.57	
$\delta_{V\infty}$	Long term displacement under shear load		[mm]	1.11	2.35	
Displacement on b1 masonry						
F	Service load		[kN]	1.00	1.14	
δ_{N0}	Short term displacement under tension load		[mm]	0.20	0.39	
$\delta_{N\infty}$	Long term displacement under tension load		[mm]	0.40	0.78	
δ_{V0}	Short term displacement under shear load		[mm]	0.83	0.95	
$\delta_{V\infty}$	Long term displacement under shear load		[mm]	1.25	1.43	
Displacement on b2 masonry						
F	Service load		[kN]	0.43	0.71	
δ_{N0}	Short term displacement under tension load		[mm]	0.17	0.13	
$\delta_{N\infty}$	Long term displacement under tension load		[mm]	0.34	0.26	
δ_{V0}	Short term displacement under shear load		[mm]	0.35	0.59	
$\delta_{V\infty}$	Long term displacement under shear load		[mm]	0.54	0.88	
Displacement on c1 masonry						
F	Service load		[kN]	0.14	0.21	
δ_{N0}	Short term displacement under tension load		[mm]	0.15	0.11	
$\delta_{N\infty}$	Long term displacement under tension load		[mm]	0.30	0.22	
δ_{V0}	Short term displacement under shear load		[mm]	0.12	0.18	

Anchor diameter			8	10
Essential Characteristics			Performance	
$\delta_{V\infty}$	Long term displacement under shear load	[mm]	0.18	0.27
<i>Displacement on c2 masonry</i>				
F	Service load	[kN]	0.09	0.14
δ_{N0}	Short term displacement under tension load	[mm]	0.09	0.10
$\delta_{N\infty}$	Long term displacement under tension load	[mm]	0.18	0.20
δ_{V0}	Short term displacement under shear load	[mm]	0.07	0.12
$\delta_{V\infty}$	Long term displacement under shear load	[mm]	0.11	0.18
<i>Displacement on c3 masonry</i>				
F	Service load	[kN]	0.14	0.26
δ_{N0}	Short term displacement under tension load	[mm]	0.10	0.27
$\delta_{N\infty}$	Long term displacement under tension load	[mm]	0.20	0.54
δ_{V0}	Short term displacement under shear load	[mm]	0.12	0.22
$\delta_{V\infty}$	Long term displacement under shear load	[mm]	0.18	0.33
<i>Displacement on c4 masonry</i>				
F	Service load	[kN]	0.14	0.34
δ_{N0}	Short term displacement under tension load	[mm]	0.13	0.15
$\delta_{N\infty}$	Long term displacement under tension load	[mm]	0.26	0.30
δ_{V0}	Short term displacement under shear load	[mm]	0.12	0.29
$\delta_{V\infty}$	Long term displacement under shear load	[mm]	0.18	0.43

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Andrea Maggioni, General manager

Villastellone, 10 October 2016


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