

Declaration of Performance

No. draft

1. Unique identification code of the product-type: **GETO Plus CE1**

2. Intended uses:

Intended use of the construction product according to ETA-17/0983	
Anchorage subject to:	Static and quasi-static loads, fire exposure
Base materials:	Cracked and non-cracked, reinforced or unreinforced normal weight concrete C20/25 to C50/60 according to EN 206:2013+A1:2016
Environmental conditions:	Dry internal conditions
Reaction to fire:	Anchorage satisfy requirements for Class A1
Resistance to fire:	F120
Installation:	Installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters on job site

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

5. System of AVCP: 1

6b.

European Assessment Document: EAD 330232-00-0601 edition October 2016

European Technical Assessment: ETA-17/0983

Technical Assessment Body: ZAG LJUBLJANA

Notified body: 0809 VTT Expert Services Oy

7. Declared performances:

Declared performances according to EAD 330232-00-0601:10-2016, ETA-17/0983 (Design method CEN/TS 1992-4-4, TR 055:12-2016, TR 020:05-2004)

Anchor size			7.5 hole 6	10 hole 8	12 hole 10
Essential characteristics			Performance		
<i>Installation parameters</i>					
d_0	Nominal diameter of drill bit	[mm]	6	8	10
d_{th}	Outer diameter of thread	[mm]	7.45	9.90	11.9
d_f	Diameter of clearance hole in the fixture	[mm]	9	12	14
h_{ef}	Effective anchorage depth	[mm]	42.5	48.5	61.5
h_{nom}	Overall installation depth	[mm]	55	65	85
h_1	Minimum hole depth	[mm]	65	75	95
h_{min}	Minimum thickness of the concrete member	[mm]	100	110	125
T_{inst}	Required installation torque	[Nm]	14	40	90
T_{SD}	Max. installation torque for impact screw driver	[Nm]	90	200	500
s_{min}	Minimum spacing	[mm]	35	50	50
c_{min}	Minimum edge distance	[mm]	35	50	50
<i>Tension steel failure mode</i>					
$N_{Rk,s}$	Characteristic tension resistance of steel	[kN]	19.1	33.5	54.3
$\gamma_{M,s}$	Partial safety factor	[-]	1.5		

Anchor size			7.5 hole 6	10 hole 8	12 hole 10
Essential characteristics			Performance		
<i>Pull-out failure mode</i>					
$N_{Rk,p,ucr}$	Tension characteristic resistance in non-cracked concrete C20/25	[kN]	6	8	19
$N_{Rk,p,cr}$	Tension characteristic resistance in cracked concrete C20/25	[kN]	3	7	7
$\Psi_{c,C25/30}$	Increasing factor for cracked concrete C25/30	[-]	1.01	1.00	1.06
$\Psi_{c,C30/37}$	Increasing factor for cracked concrete C30/37	[-]	1.03	1.00	1.14
$\Psi_{c,C35/45}$	Increasing factor for cracked concrete C35/45	[-]	1.06	1.00	1.22
$\Psi_{c,C40/50}$	Increasing factor for cracked concrete C40/50	[-]	1.07	1.00	1.26
$\Psi_{c,C45/55}$	Increasing factor for cracked concrete C45/55	[-]	1.09	1.00	1.31
$\Psi_{c,C50/60}$	Increasing factor for cracked concrete C50/60	[-]	1.10	1.00	1.35
γ_{Mp}	Partial safety factor	[-]	1.8		
<i>Concrete cone failure mode</i>					
$S_{cr,N}$	Critical spacing	[mm]	128	146	184
$C_{cr,N}$	Critical edge distance	[mm]	64	73	92
$\gamma_{M,c}$	Partial safety factor	[-]	1.8		
<i>Splitting failure mode</i>					
$S_{cr,sp}$	Critical spacing (splitting)	[mm]	128	146	184
$C_{cr,sp}$	Critical edge distance (splitting)	[mm]	64	73	92
$\gamma_{M,sp}$	Partial safety factor	[-]	1.8		
<i>Displacement on tension load, non-cracked concrete C20/25</i>					
N	Service tension load	[kN]	2.4	3.2	7.5
δ_{N0}	Short term displacement under tension load	[mm]	0.04	0.01	0.04
$\delta_{N\infty}$	Long term displacement under tension load	[mm]	0.60	0.52	0.61
<i>Displacement on tension load, non-cracked concrete C50/60</i>					
N	Service tension load	[kN]	2.6	3.2	10
δ_{N0}	Short term displacement under tension load	[mm]	0.01	0.02	0.07
$\delta_{N\infty}$	Long term displacement under tension load	[mm]	0.60	0.52	0.61
<i>Displacement on tension load, cracked concrete C20/25</i>					
N	Service tension load	[kN]	1.2	1.6	2.8
δ_{N0}	Short term displacement under tension load	[mm]	0.06	0.08	0.08
$\delta_{N\infty}$	Long term displacement under tension load	[mm]	0.60	0.52	0.61
<i>Displacement on tension load, cracked concrete C50/60</i>					
N	Service tension load	[kN]	1.3	1.6	3.7
δ_{N0}	Short term displacement under tension load	[mm]	0.04	0.04	0.09
$\delta_{N\infty}$	Long term displacement under tension load	[mm]	0.60	0.52	0.61
<i>Shear steel failure mode without lever arm</i>					
$V_{Rk,s}$	Characteristic shear resistance of steel	[kN]	9.8	14.2	29.1
$\gamma_{M,s}$	Partial safety factor	[-]	1.25		
k_2	Factor for ductility	[-]	0.8		
<i>Shear steel failure mode with lever arm</i>					
$M^0_{Rk,s}$	Characteristic bending resistance of steel	[Nm]	16	37	76
$\gamma_{M,s}$	Partial safety factor	[-]	1.25		

Anchor size			7.5 hole 6	10 hole 8	12 hole 10
Essential characteristics			Performance		
<i>Concrete pry-out failure mode</i>					
$k = k_3$	Concrete pry-out failure factor	[-]	1.0		2.0
$\gamma_{M,c}$	Partial safety factor	[-]	1.5		
<i>Concrete edge failure mode</i>					
l_{ef}	Effective length of anchor under shear loading	[mm]	42.5	48.5	61.5
d_{nom}	Outside diameter of anchor	[mm]	6	8	10
$\gamma_{M,c}$	Partial safety factor	[-]	1.5		
<i>Displacement on shear load, cracked and non-cracked concrete C20/25 to C50/60</i>					
V	Service shear load	[kN]	5.6	8.1	16.6
δ_{V0}	Short term displacement under shear load	[mm]	1.11	1.55	2.52
$\delta_{V\infty}$	Long term displacement under shear load	[mm]	1.66	2.33	3.78
<i>Fire Resistance – 30 minutes</i>					
$N_{Rk,s,fi,30}$	Tension steel characteristic resistance	[kN]	0.24	0.42	1.02
$N_{Rk,p,fi,30}$	Pull-out characteristic resistance	[kN]	0.75	1.00	1.75
$N_{Rk,c,fi,30}$	Concrete cone characteristic resistance	[kN]	2.12	2.95	5.34
$V_{Rk,s,fi,30}$	Shear steel characteristic resistance	[kN]	0.24	0.42	1.02
$M_{Rk,s,fi,30}^0$	Bending steel characteristic resistance	[Nm]	0.19	0.46	1.42
<i>Fire Resistance – 60 minutes</i>					
$N_{Rk,s,fi,60}$	Tension steel characteristic resistance	[kN]	0.22	0.38	0.88
$N_{Rk,p,fi,60}$	Pull-out characteristic resistance	[kN]	0.75	1.00	1.75
$N_{Rk,c,fi,60}$	Concrete cone characteristic resistance	[kN]	2.12	2.95	5.34
$V_{Rk,s,fi,60}$	Shear steel characteristic resistance	[kN]	0.22	0.38	0.88
$M_{Rk,s,fi,60}^0$	Bending steel characteristic resistance	[Nm]	0.18	0.41	1.23
<i>Fire Resistance – 90 minutes</i>					
$N_{Rk,s,fi,90}$	Tension steel characteristic resistance	[kN]	0.17	0.29	0.68
$N_{Rk,p,fi,90}$	Pull-out characteristic resistance	[kN]	0.75	1.00	1.75
$N_{Rk,c,fi,90}$	Concrete cone characteristic resistance	[kN]	2.12	2.95	5.34
$V_{Rk,s,fi,90}$	Shear steel characteristic resistance	[kN]	0.17	0.29	0.68
$M_{Rk,s,fi,90}^0$	Bending steel characteristic resistance	[Nm]	0.14	0.32	0.95
<i>Fire Resistance – 120 minutes</i>					
$N_{Rk,s,fi,120}$	Tension steel characteristic resistance	[kN]	0.12	0.21	0.54
$N_{Rk,p,fi,120}$	Pull-out characteristic resistance	[kN]	0.60	0.80	1.40
$N_{Rk,c,fi,120}$	Concrete cone characteristic resistance	[kN]	1.70	2.36	4.27
$V_{Rk,s,fi,120}$	Shear steel characteristic resistance	[kN]	0.12	0.21	0.54
$M_{Rk,s,fi,120}^0$	Bending steel characteristic resistance	[Nm]	0.10	0.23	0.76
<i>Spacing and edge distance under fire</i>					
$s_{cr,N,fi}$	Critical spacing	[mm]	$4 \cdot h_{ef}$		
s_{min}	Minimum spacing	[mm]	35	50	50
$c_{cr,N,fi}$	Critical edge distance	[mm]	$2 \cdot h_{ef}$		
c_{min}	Minimum edge distance (one side fire)	[mm]	$2 \cdot h_{ef}$		
c_{min}	Minimum edge distance (more than one side fire)	[mm]	max (300, $2 \cdot h_{ef}$)		



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:

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Villastellone,