G&B Fissaggi S.r.l.
C.so Savona 22
10029 Villastellone (TO), Italia
tel. +39 011 9619433 - fax +39 011 9619382
www.gebfissaggi.com - info@gebfissaggi.com

Declaration of Performance

No. **DPGEB1009** v4

1. Unique identification code of the product-type: **Gebofix EPO PLUS RE**

2. Intended uses:

Intended use of the construction product according to ETA 17/0347	
Generic type	Bonded injection type anchor for use in non-cracked and cracked concrete
Anchorages subject to	Static and quasi-static loads: threaded rod M8, M10, M12, M16, M20, M24, M27, M30 reinforcing bar Ø8, Ø10, Ø12, Ø16, Ø20, Ø25, Ø32 Seismic actions for Performance Category C2 (max w = 0.8 mm): threaded rod M12, M16, M20, steel with rupture elongation $A_5 \geq 19$ %
Base materials	- Reinforced or unreinforced normal weight concrete according to EN 206:2013 - Strength class C20/25 to C50/60 according to EN 206:2013 - Non-cracked concrete threaded rod M8, M10, M12, M16, M20, M24, M27, M30 reinforcing bar Ø8, Ø10, Ø12, Ø16, Ø20, Ø25, Ø32 - Cracked concrete threaded rod M12, M16, M20, M24, M27, M30 reinforcing bar Ø12, Ø16, Ø20, Ø25, Ø32
Service temperature range	T1: -40 °C to +40 °C (max. short term temperature +40 °C and max. long term temperature +24 °C) T3a: -40 °C to +60 °C (max. short term temperature +60 °C and max. long term temperature +43 °C) T3b: -40 °C to +72 °C (max. short term temperature +72 °C and max. long term temperature +43 °C)
Environmental conditions	- X1: Structures subject to dry internal conditions zinc plated or hot-dip galvanised steel class 4.6, 5.8 or 8.8 stainless steel A2-70, A4-70 or A4-80 high corrosion resistant steel - X2: Structures subject to external atmospheric exposure (including industrial and marine environment) and to permanently damp internal condition, if no particular aggressive conditions exist stainless steel A2-70, A4-70 or A4-80 high corrosion resistant steel - X3: Structures subject to external atmospheric exposure and to permanently damp internal condition, if other particular aggressive conditions exist high corrosion resistant steel Note: Particular aggressive conditions are e.g. permanent, alternating immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor swimming pools or atmosphere with extreme chemical pollution (e.g. in desulphurization plants or road tunnels where de-icing materials are used)
Concrete conditions	I1: installation in dry or wet (water saturated) concrete and use in service in dry or wet concrete I2: installation in water-filled (not sea water) and use in service in dry or wet concrete
Installation	Perforation by hammer drilling Installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters on job site Installation direction: D3 - downward and horizontal and upwards (e.g. overhead) installation

Intended use of the construction product according to ETA 17/0347	
Design	Anchorages designed in accordance with EN 1992-4 or EOTA Technical Report TR 055 under the responsibility of an engineer experienced in anchorages and concrete work. Verifiable calculation notes and drawings prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings. Anchorages under seismic actions (cracked concrete) have to be designed in accordance with EN 1992-4.

Intended use of the construction product according to ETA 17/0368	
Generic type	Injection system for post-installed connections of reinforcing bars in existing structures
Anchorages subject to	Static and quasi-static loads: reinforcing bar Ø8, Ø10, Ø12, Ø14, Ø16, Ø20, Ø25, Ø28, Ø32, Ø40
Base materials	- Reinforced or unreinforced normal weight concrete according to EN 206-1:2000-12 - Strength class C12/15 to C50/60 according to EN 206-1:2000-12 - Non-carbonated concrete - Maximum chloride content 0.40% (CL 0.40) according to EN 206-1:2000-12
Service temperature range	-40 °C to +80 °C (max. short term temperature +80 °C and max. long term temperature +50 °C)
Installation	Dry or wet concrete. Installation in flooded holes is not allowed. Hole drilling by hammer drill, compressed air drill mode or diamond core drilling. The installation of post-installed rebars shall be done only by suitable trained installer and under supervision on site. The conditions under which an installer may be considered as suitable trained and the conditions for supervision on site are up to the Member States in which the installation is done. Check the position of the existing rebars.
Design	Anchorages designed under the responsibility of an engineer experienced in anchorages and concrete work. Verifiable calculation notes and drawings prepared taking account of the forces to be transmitted. Design according to EN 1992-1-1:2004 The position of the reinforcement in the existing structure shall be determined on the basis of the construction documentation and taken into account when designing.

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

5. System of AVCP: 1

6b.
European Assessment Document: EAD 330499-00-0601
European Technical Assessment: ETA 17/0347
Technical Assessment Body: TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Notified body: 1020 TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.

European Assessment Document: ETAG 001 Part 1 and Part 5, edition 2013, used as EAD
European Technical Assessment: ETA 17/0368
Technical Assessment Body: TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Notified body: 1020 TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.

7. Declared performances:

Declared performances according to EAD 330499-00-0601, ETA 17/0347 (Design method EN 1992-4, Technical Report TR 055)

Mechanical resistance and stability (Basic Work Requirement / BWR 1)

Threaded rod diameter					**M8**	**M10**	**M12**	**M16**	**M20**	**M24**	**M27**	**M30**
Essential characteristics					**Performance**							
Installation parameters												
d	Nominal diameter of bar			[mm]	8	10	12	16	20	24	27	30
d_0	Hole diameter			[mm]	10	12	14	18	22	26	30	35
d_b	Diameter of steel brush			[mm]	11	14	15	22	24	31	31	38
$h_{ef,min}$	Minimum effective anchorage depth			[mm]	60	60	70	80	90	96	108	120
$h_{ef,max}$	Maximum effective anchorage depth			[mm]	160	200	240	320	400	480	540	600
h_1	Depth of the drilling hole			[mm]	h_{ef}							
h_{min}	Minimum thickness of the concrete member			[mm]	h_{ef} + 30 ≥ 100			h_{ef} + $2d_0$				
d_{fix}	Diameter of clearance hole in the fixture			[mm]	9	12	14	18	22	26	30	33
T_{inst}	Maximum installation torque			[Nm]	10	20	40	80	120	160	180	200
t_{fix}	Thickness of fixture			[mm]	0 to 1500							
s_{min}	Minimum spacing			[mm]	max (h_{ef}/2; 5d)							
c_{min}	Minimum edge distance			[mm]	max (h_{ef}/2; 5d)							
Tension steel failure mode												
$N_{Rk,s}$	Characteristic tension resistance of steel, static loads			[kN]	$A_s \cdot f_{uk}$							
$N_{Rk,s,eq,C2}$	Characteristic tension resistance of steel, seismic actions cat. C2	class 4.6		[kN]	NPD		34	63	98	NPD		
		class 5.8		[kN]	NPD		42	78	122	NPD		
		class 8.8		[kN]	NPD		67	125	196	NPD		
		A2, A4 and HCR stainless steel		[kN]	NPD		59	110	171	NPD		
Combined pull-out and concrete failure mode												
Characteristic bond resistance												
non-cracked concrete	temp. T1	dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm²]	15	15	15	12	12	12	11	9.5
		flooded holes	$\tau_{Rk,ucr}$	[N/mm²]	15	14	13	10	9.5	8.5	7.5	7.0
	temp. T3a	dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm²]	9.5	9.5	9.0	8.5	8.0	7.5	7.5	7.5
		flooded holes	$\tau_{Rk,ucr}$	[N/mm²]	9.5	9.5	9.0	8.5	7.5	7.0	6.5	6.0
	temp. T3b	dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm²]	8.5	8.5	8.0	7.5	7.0	7.0	6.5	6.5
		flooded holes	$\tau_{Rk,ucr}$	[N/mm²]	8.5	8.5	8.0	7.5	7.0	6.0	5.5	5.5

Threaded rod diameter					**M8**	**M10**	**M12**	**M16**	**M20**	**M24**	**M27**	**M30**
Essential characteristics					**Performance**							
cracked concrete	temp. T1	dry and wet concrete	$\tau_{Rk,cr}$	[N/mm²]	NPD		7.5	6.5	6.0	5.5	5.5	5.5
		flooded holes	$\tau_{Rk,cr}$	[N/mm²]	NPD		7.5	6.0	5.0	4.5	4.0	4.0
	temp. T3a	dry and wet concrete	$\tau_{Rk,cr}$	[N/mm²]	NPD		4.5	4.0	3.5	3.5	3.5	3.5
		flooded holes	$\tau_{Rk,cr}$	[N/mm²]	NPD		4.5	4.0	3.5	3.5	3.5	3.5
	temp. T3b	dry and wet concrete	$\tau_{Rk,cr}$	[N/mm²]	NPD		4.0	3.5	3.0	3.0	3.0	3.0
		flooded holes	$\tau_{Rk,cr}$	[N/mm²]	NPD		4.0	3.5	3.0	3.0	3.0	3.0
seismic actions cat. C2	temp. T1	dry and wet concrete	$\tau_{Rk,cr,eq,C2}$	[N/mm²]	NPD		3,5	3,2	3,0	NPD		
		flooded holes	$\tau_{Rk,cr,eq,C2}$	[N/mm²]	NPD		3,5	3,2	3,0	NPD		
	temp. T3a	dry and wet concrete	$\tau_{Rk,cr,eq,C2}$	[N/mm²]	NPD		3,0	2,7	2,5	NPD		
		flooded holes	$\tau_{Rk,cr,eq,C2}$	[N/mm²]	NPD		3,0	2,7	2,5	NPD		
	temp. T3b	dry and wet concrete	$\tau_{Rk,cr,eq,C2}$	[N/mm²]	NPD		2,8	2,5	2,3	NPD		
		flooded holes	$\tau_{Rk,cr,eq,C2}$	[N/mm²]	NPD		2,8	2,5	2,3	NPD		
$\psi_{c,C30/37}$	Increasing factor for concrete C30/37			[-]	1.04							
$\psi_{c,C40/50}$	Increasing factor for concrete C40/50			[-]	1.07							
$\psi_{c,C50/60}$	Increasing factor for concrete C50/60			[-]	1.09							
Concrete cone failure mode												
k_1	Factor for design acc. to TR 055 in non-cracked concrete			[-]	10.1							
$k_{ucr,N}$	Factor for design acc. to EN 1992-4 in non-cracked concrete			[-]	11.0							
k_1	Factor for design acc. to TR 055 in cracked concrete			[-]	NPD		7.2					
$k_{cr,N}$	Factor for design acc. to EN 1992-4 in cracked concrete			[-]	NPD		7.7					
$c_{cr,N}$	Critical edge distance			[mm]	1.5 h_{ef}							
Splitting failure mode												
$s_{cr,sp}$	Critical spacing			[mm]	2 $c_{cr,sp}$							
$c_{cr,sp}$	Critical edge distance for $h/h_{ef} \geq 2.0$			[mm]	1.0 h_{ef}							
	Critical edge distance for $2.0 > h/h_{ef} > 1.3$			[mm]	4.6 h_{ef} - 1.8 h							
	Critical edge distance for $h/h_{ef} \leq 1.3$			[mm]	2.26 h_{ef}							
Installation safety factor												
γ_{inst}	Safety factor, dry and wet concrete			[-]	1.0							
	Safety factor, flooded holes			[-]	1.0							

Threaded rod diameter				**M8**	**M10**	**M12**	**M16**	**M20**	**M24**	**M27**	**M30**
Essential characteristics				**Performance**							
Shear steel failure mode without lever arm											
$V_{Rk,s}$	Characteristic shear resistance of steel, static loads		[kN]	$0.5 \cdot A_s \cdot f_{uk}$							
$V_{Rk,s,eq,C2}$	Characteristic shear resistance of steel, seismic actions cat. C2	class 4.6	[kN]	NPD		13	18	28	NPD		
		class 5.8	[kN]	NPD		16	22	35	NPD		
		class 8.8	[kN]	NPD		25	36	56	NPD		
		reduction factor for hot-dip galvanized steel $\alpha_{v,hdg,C2}$	[-]	NPD		0,46	0,61	0,61	NPD		
		A2, A4 and HCR stainless steel	[kN]	NPD		22	31	49	NPD		
k_7	Ductility factor for groups of fasteners		[-]	1.0 for steel with rupture elongation $A_5 > 8$ %							
α_{gap}	Factor for annular gap, seismic actions cat. C2		[-]	0.5							
Shear steel failure mode with lever arm											
$M^0_{Rk,s}$	Characteristic bending resistance of steel, static loads		[Nm]	$1.2 \cdot W_{el} \cdot f_{uk}$							
Concrete pry-out failure mode											
k / k_3	Factor for resistance to pry-out failure		[mm]	2.0							
γ_{inst}	Installation safety factor		[-]	1.0							
Concrete edge failure mode											
d_{nom}	Outside diameter of anchor		[mm]	8	10	12	16	20	24	27	30
l_f	Effective length of anchor		[mm]	$\min(h_{ef}; 8\ d_{nom})$							
γ_{inst}	Installation safety factor		[-]	1.0							
Displacement on tension load, non-cracked concrete											
N	Service tension load		[kN]	11.9	14.3	19.0	23.8	35.7	35.7	45.2	45.2
δ_{N0}	Short term displacement under tension load		[mm]	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5
$\delta_{N\infty}$	Long term displacement under tension load		[mm]	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Displacement on tension load, cracked concrete											
N	Service tension load		[kN]	NPD		14.3	16.7	23.8	28.6	28.6	28.6
δ_{N0}	Short term displacement under tension load		[mm]	NPD		0.4	0.5	0.5	0.6	0.6	0.7
$\delta_{N\infty}$	Long term displacement under tension load		[mm]	NPD		2.0	2.0	2.0	2.0	2.0	2.0
Displacement on tension load, seismic actions cat. C2											
$\delta_{N,eq(DLS)}$	Damage Limitation State displacement		[mm]	NPD		0,20	0,40	0,77	NPD		
$\delta_{N,eq(ULS)}$	Ultimate Limit State displacement		[mm]	NPD		0,76	0,74	1,68	NPD		
Displacement on shear load, non-cracked and cracked concrete											
V	Service shear load		[kN]	3.5	5.5	8.0	15.0	23.3	33.6	43.7	53.4
δ_{V0}	Short term displacement under shear load		[mm]	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$\delta_{V\infty}$	Long term displacement under shear load		[mm]	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7

Threaded rod diameter			**M8**	**M10**	**M12**	**M16**	**M20**	**M24**	**M27**	**M30**
Essential characteristics			**Performance**							
Displacement on shear load, seismic actions cat. C2										
$\delta_{V,eq(DLS)}$	Damage Limitation State displacement	[mm]	NPD		5,29	4,12	4,94	NPD		
$\delta_{V,eq(ULS)}$	Ultimate Limit State displacement	[mm]	NPD		10,20	9,05	10,99	NPD		

Reinforcing bar diameter					**Ø8**	**Ø10**	**Ø12**	**Ø16**	**Ø20**	**Ø25**	**Ø32**
Essential characteristics					**Performance**						
Installation parameters											
d	Nominal diameter of bar			[mm]	8	10	12	16	20	25	32
d_0	Hole diameter			[mm]	12	14	16	20	24	32	37
d_b	Diameter of steel brush			[mm]	12	14	18	22	27	35	43
$h_{ef,min}$	Minimum effective anchorage depth			[mm]	60	60	70	80	90	100	128
$h_{ef,max}$	Maximum effective anchorage depth			[mm]	160	200	240	320	400	500	640
h_1	Depth of the drilling hole			[mm]	h_{ef}						
h_{min}	Minimum thickness of the concrete member			[mm]	h_{ef} + 30 ≥ 100			h_{ef} + 2d_0			
s_{min}	Minimum spacing			[mm]	max(h_{ef}/2; 40)				max(h_{ef}/2; 50)		max(h_{ef}/2; 70)
c_{min}	Minimum edge distance			[mm]	max(h_{ef}/2; 40)				max(h_{ef}/2; 50)		max(h_{ef}/2; 70)
Tension steel failure mode											
$N_{Rk,s}$	Characteristic tension resistance of steel			[kN]	$A_s \cdot f_{uk}$						
Combined pull-out and concrete failure mode											
Characteristic bond resistance											
non-cracked concrete	temp. T1	dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm²]	13	13	13	12	12	11	8.0
		flooded holes	$\tau_{Rk,ucr}$	[N/mm²]	13	13	11	9.5	8.5	7.5	6.0
	temp. T3a	dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm²]	8.5	8.5	8.0	7.5	7.0	7.0	6.5
		flooded holes	$\tau_{Rk,ucr}$	[N/mm²]	8.5	8.5	8.0	7.5	7.0	6.0	5.0
	temp. T3b	dry and wet concrete	$\tau_{Rk,ucr}$	[N/mm²]	7.5	7.5	7.5	7.0	6.5	6.0	6.0
		flooded holes	$\tau_{Rk,ucr}$	[N/mm²]	7.5	7.5	7.5	7.0	6.0	5.5	4.5
cracked concrete	temp. T1	dry and wet concrete	$\tau_{Rk,cr}$	[N/mm²]	NPD		7.5	6.5	6.0	5.5	5.5
		dry and wet concrete	$\tau_{Rk,cr}$	[N/mm²]	NPD		7.5	6.0	5.0	4.5	4.0
	temp. T3a	dry and wet concrete	$\tau_{Rk,cr}$	[N/mm²]	NPD		4.5	4.0	3.5	3.5	3.5
		dry and wet concrete	$\tau_{Rk,cr}$	[N/mm²]	NPD		4.5	4.0	3.5	3.5	3.0
	temp. T3b	dry and wet concrete	$\tau_{Rk,cr}$	[N/mm²]	NPD		4.0	3.5	3.0	3.0	3.0
		dry and wet concrete	$\tau_{Rk,cr}$	[N/mm²]	NPD		4.0	3.5	3.0	3.0	3.0
$\psi_{c,C30/37}$	Increasing factor for concrete C30/37			[-]	1.04						
$\psi_{c,C40/50}$	Increasing factor for concrete C40/50			[-]	1.07						
$\psi_{c,C50/60}$	Increasing factor for concrete C50/60			[-]	1.09						

Reinforcing bar diameter			**Ø8**	**Ø10**	**Ø12**	**Ø16**	**Ø20**	**Ø25**	**Ø32**
Essential characteristics			**Performance**						
Concrete cone failure mode									
k_1	Factor for design acc. to TR 055 in non-cracked concrete	[-]	10.1						
$k_{ucr,N}$	Factor for design acc. to EN 1992-4 in non-cracked concrete	[-]	11.0						
k_1	Factor for design acc. to TR 055 in cracked concrete	[-]	NPD		7.2				
$k_{cr,N}$	Factor for design acc. to EN 1992-4 in cracked concrete	[-]	NPD		7.7				
$c_{cr,N}$	Critical edge distance	[mm]	1.5 h_{ef}						
Splitting failure mode									
$s_{cr,sp}$	Critical spacing	[mm]	2 $c_{cr,sp}$						
$c_{cr,sp}$	Critical edge distance for $h/h_{ef} \geq 2.0$	[mm]	1.0 h_{ef}						
	Critical edge distance for $2.0 > h/h_{ef} > 1.3$	[mm]	4.6 h_{ef} - 1.8 h						
	Critical edge distance for $h/h_{ef} \leq 1.3$	[mm]	2.26 h_{ef}						
Installation safety factor									
γ_{inst}	Safety factor, dry and wet concrete	[-]	1.0						
	Safety factor, flooded holes	[-]	1.2						
Shear steel failure mode without lever arm									
$V_{Rk,s}$	Characteristic shear resistance of steel	[kN]	0.50 · A_s · f_{uk}						
k_7	Ductility factor for groups of fasteners	[-]	1.0 for steel with rupture elongation $A_5 > 8$ %						
Shear steel failure mode with lever arm									
$M^0_{Rk,s}$	Characteristic bending resistance of steel	[Nm]	1.2 · W_{el} · f_{uk}						
Concrete pry-out failure mode									
k / k_3	Factor for resistance to pry-out failure	[mm]	2.0						
γ_{inst}	Installation safety factor	[-]	1.0						
Concrete edge failure mode									
d_{nom}	Outside diameter of anchor	[mm]	8	10	12	16	20	25	32
l_f	Effective length of anchor	[mm]	min(h_{ef}; 8 d_{nom})						
γ_{inst}	Installation safety factor	[-]	1,0						
Displacement on tension load, non-cracked concrete									
N	Service tension load	[kN]	7.6	11.9	16.7	28.6	35.7	45.2	66.7
δ_{N0}	Short term displacement under tension load	[mm]	0.3	0.3	0.4	0.4	0.4	0.5	0.5
$\delta_{N\infty}$	Long term displacement under tension load	[mm]	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Displacement on tension load, cracked concrete									
N	Service tension load	[kN]	NPD		11.9	19.0	23.8	28.6	35.7
δ_{N0}	Short term displacement under tension load	[mm]	NPD		0.4	0.5	0.5	0.6	0.6
$\delta_{N\infty}$	Long term displacement under tension load	[mm]	NPD		2.0	2.0	2.0	2.0	2.0

Reinforcing bar diameter			**Ø8**	**Ø10**	**Ø12**	**Ø16**	**Ø20**	**Ø25**	**Ø32**
Essential characteristics			**Performance**						
Displacement on shear load, non-cracked and cracked concrete									
V	Service shear load	[kN]	6.6	10.3	14.8	26.3	41.1	64.3	105.3
δ_{V0}	Short term displacement under shear load	[mm]	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$\delta_{V\infty}$	Long term displacement under shear load	[mm]	3.7	3.7	3.7	3.7	3.7	3.7	3.7

Hygiene, health and environment (Basic Work Requirement / BWR 3)

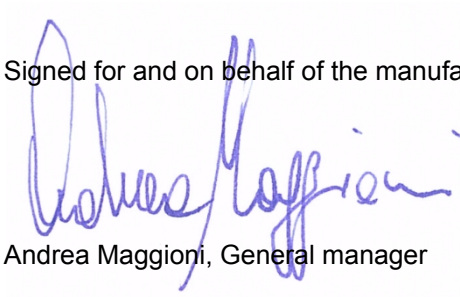
No Performance Determined

Declared performances according to ETAG 001:2013 Part 1 and Part 5, ETA 17/0368 (Design method EN 1992-1-1:2004)

Reinforcing bar diameter				**Ø8**	**Ø10**	**Ø12**	**Ø14**	**Ø16**	**Ø20**	**Ø25**	**Ø28**	**Ø32**	**Ø40**
Essential Characteristics				**Performance**									
Installation parameters													
d_s	Nominal diameter of bar		[mm]	8	10	12	14	16	20	25	28	32	40
d_0	Nominal diameter of drill bit		[mm]	12	14	16	18	20	25	32	35	40	55
min c	Minimum concrete cover	hammer drilling	[mm]	$30 + 0.06 \cdot l_v \geq 2 \cdot d_s$									
		compressed air drilling	[mm]	$50 + 0.08 \cdot l_v$									
		diamond core drilling	[mm]	$50 + 0.08 \cdot l_v$									
$l_{b,min}$	Minimum anchorage length for good bond conditions		[mm]	113	142	170	198	227	284	354	397	454	851
$l_{0,min}$	Minimum lap length for good bond conditions		[mm]	200	200	200	210	240	300	375	420	480	900
l_{max}	Maximum installation length for good bond conditions		[mm]	400	500	600	700	800	1000	1000	1000	1000	1000
Bond resistance													
f_{bd}	Design ultimate bond resistance for hammer drilling methods and good conditions	C12/15	[N/mm²]	1.6									1.5
		C16/20	[N/mm²]	2.0									1.8
		C20/25	[N/mm²]	2.3									2.1
		C25/30	[N/mm²]	2.7									2.1
		C30/37	[N/mm²]	3.0									2.1
		C35/45	[N/mm²]	3.4									2.1
		C40/50	[N/mm²]	3.7									2.1
		C45/55	[N/mm²]	4.0								3.7	2.1
		C50/60	[N/mm²]	4.3								3.7	2.1
f_{bd}	Design ultimate bond resistance for diamond core drilling methods and good conditions	C12/15	[N/mm²]	1.6									1.5
		C16/20	[N/mm²]	2.0									1.8
		C20/25	[N/mm²]	2.3									2.1
		C25/30	[N/mm²]	2.7									2.1
		C30/37	[N/mm²]	3.0									2.1
		C35/45	[N/mm²]	3.4									2.1
		C40/50	[N/mm²]	3.7								3.4	2.1
		C45/55	[N/mm²]	4.0								3.4	2.1
		C50/60	[N/mm²]	4.3								3.4	2.1

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, 27 August 2018