Declaration of Performance
DoP MTP-G-en

1. Product type: MTP-G anchor

2. Identification:

Product code	Length L [mm]	Metric	Outer diameter [mm]	Fixture thickness [mm]
APG08LLL	3 last digits of product code	M8	8	L-66
APG10LLL		M10	10	L-80
APG12LLL		M12	12	L-96
APG16LLL		M16	16	L-117
APG20LLL		M20	20	L-138

3. Intended use:

Generic type:	Torque controlled anchor sleeve type
Base material:	Concrete C20/25 to C50/60 according to EN 206-1.
Material:	Made of steel, sherardised ISO EN 13811
Durability:	Internal dry conditions
Loading:	Static, quasi static loads
Fire resistance:	F120
Assumed working life:	50 years

4. Manufacturer:
Index Fixing Systems. Técnicas Expansivas S.L.
Segador, 13
26006 Logroño, La Rioja, SPAIN

5. Authorised representative: Not applicable

6. System of assessment of performance: 1

7. Harmonised standard: Not applicable

8. European technical assessment

Tech. assessment body:	IETcc: Instituto Eduardo Torroja de ciencias de la construcción. Notified body 1219.
issued:	ETA 12/0397
on the basis of:	ETAG 001, parts 1, 2, TR020.
performed:	Determination of product type, initial inspection of the manufacturing plant and continuous surveillance of FPC.
under system:	1
and issued:	Certificate 1219-CPR-0053

9. Declared performances:

Essential characteristics			Performance					Technical specification
			M8	M10	M12	M16	M20	
Installation parameters								ETAG001 p1/2
d_o	Nominal diameter of drill bit:	[mm]	8	10	12	16	20	
h_{ef}	Effective embedment depth:	[mm]	48	60	70	85	100	
d_f	Fixture clearance hole diameter:	[mm]	9	12	14	18	22	
T_{inst}	Nominal installation torque:	[Nm]	15	40	60	100	200	
h_1	Depth of drilled hole:	[mm]	60	75	85	105	125	
h_{nom}	Minimum installation depth:	[mm]	55	68	80	97	114	
h_{min}	Minimum thickness of concrete member:	[mm]	100	120	140	170	200	
s_{min}	Minimum spacing:	[mm]	50	60	70	128	150	
c_{min}	Minimum edge distance:	[mm]	50	60	70	128	150	
Tension load: steel failure								ETAG001 p1/2
$N_{Rk,s}$	Tension steel characteristic resistance:	[kN]	18.1	31.4	40.4	72.7	116.6	
γ_{Ms}	Partial safety factor:	[-]	1.5	1.5	1.5	1.5	1.5	
Tension load: pull-out failure in concrete								ETAG001 p1/2
$N_{Rk,p,\ ucr}$	Tension characteristic resistance in C20/25 uncracked concrete:	[kN]	9	16	30	35	50	
$N_{Rk,p,cr}$	Tension characteristic resistance in C20/25 cracked concrete:	[kN]	6	9	16	25	30	
γ_{Mp}	Partial safety factor: [1)]	[-]	1.8	1.5	1.5	1.5	1.5	
ψ_c	C30/37	[-]	1.22	1.16	1.22	1.22	1.16	
ψ_c	C40/45	[-]	1.41	1.31	1.41	1.41	1.31	
ψ_c	C50/60	[-]	1.55	1.41	1.55	1.55	1.41	
Tension load: concrete cone or splitting failure in concrete C20/25								ETAG001 p1/2
$s_{cr,N}$	Critical spacing:	[mm]	144	180	210	255	300	
$s_{cr,sp}$	Critical spacing (splitting):	[mm]	288	300	350	510	600	
$c_{cr,N}$	Critical edge distance:	[mm]	72	90	105	128	150	
$c_{cr,sp}$	Critical edge distance (splitting):	[mm]	144	150	175	255	300	
γ_{Mc}	Partial safety factor: [1)]	[-]	1.8	1.5	1.5	1.5	1.5	
Displacements under tension loads								ETAG001 p1/2
N	Service tension load in cracked and uncracked concrete C20/25 to C50/60:	[kN]	2.5	4.3	6.3	10.4	13.9	
δ_{N0}	Short term displacement under tension loads:	[mm]	1.0	1.1	0.9	1.5	1.2	
$\delta_{N\infty}$	Long term displacement under tension loads:	[mm]	1.9	1.9	1.9	1.9	1.9	
Shear load: steel failure								ETAG001 p1/2
$V_{Rk,s}$	Shear steel characteristic resistance:	[kN]	11.0	17.4	25.3	47.1	73.1	
$M^0_{Rk,s}$	Characteristic bending moment:	[Nm]	22.5	44.8	78.6	199.8	389.4	
γ_{Ms}	Partial safety factor:	[-]	1.25	1.25	1.25	1.25	1.25	
Shear load: concrete pryout failure								ETAG001 p1/2
K	K factor:	[-]	1	2	2	2	2	
γ_{Mpr}	Partial safety factor:	[-]	1.5	1.5	1.5	1.5	1.5	
Shear load: concrete edge failure								ETAG001 p1/2
l_f	Effective anchorage depth under shear loads:	[mm]	48	60	70	85	100	
d_{nom}	Outside anchor diameter:	[mm]	8	10	12	16	20	
γ_{Mc}	Partial safety factor:	[-]	1.5	1.5	1.5	1.5	1.5	
Displacements under shear loads								ETAG001,p1/2
V	Service shear load:	[kN]	4.9	6.8	8.5	15.1	24.6	
δ_{V0}	Short term displacement under shear loads:	[mm]	1.0	1.5	1.8	1.9	3.1	
$\delta_{V\infty}$	Long term displacement under shear loads:	[mm]	1.5	2.3	2.7	2.9	4.7	

1) In absence of other national regulations

Fire resistance. Applicable technical specification: EOTA Technical Report 020

Reaction to fire		M8	M10	M12	M16	M20
Reaction to fire	[--]	Class A1				

Fire resistance duration = 30 minutes			M8	M10	M12	M16	M20
Tension loads steel failure							
$N_{Rk,s,fi,30}$	Characteristic resistance	[kN]	0,4	0,9	1,7	3,1	4,9
Pull-out failure							
$N_{Rk,p,fi,30}$	Character. resistance in concrete C20/25 to C50/60	[kN]	1,3	2,3	3,0	6,3	7,5
Concrete cone failure ***							
$N_{Rk,c,fi,30}$	Character. resistance in concrete C20/25 to C50/60	[kN]	1,5	3,2	5,6	11,2	17,6
Shear loads steel failure without lever arm							
$V_{Rk,s,fi,30}$	Characteristic resistance	[kN]	0,4	0,9	1,7	3,1	4,9
Shear loads steel failure with lever arm							
$M_{Rk,s,fi,30}$	Characteristic bending resistance	[Nm]	0,6	1,8	4,1	9,7	18,8

Fire resistance duration = 60 minutes			M8	M10	M12	M16	M20
Tension loads steel failure							
$N_{Rk,s,fi,60}$	Characteristic resistance	[kN]	0,3	0,8	1,3	2,4	3,7
Pull-out failure							
$N_{Rk,p,fi,60}$	Character. resistance in concrete C20/25 to C50/60	[kN]	1,3	2,3	3,0	6,3	7,5
Concrete cone failure *)**							
$N_{Rk,c,fi,60}$	Character. resistance in concrete C20/25 to C50/60	[kN]	1,5	3,2	5,6	11,2	17,6
Steel failure without lever arm							
$V_{Rk,s,fi,60}$	Characteristic resistance	[kN]	0,3	0,8	1,3	2,4	3,7
Steel failure with lever arm							
$M_{Rk,s,fi,60}$	Characteristic bending resistance	[Nm]	0,5	1,5	3,1	7,2	14,1

Fire resistance duration = 90 minutes			M8	M10	M12	M16	M20
Tension loads steel failure							
$N_{Rk,s,fi,90}$	Characteristic resistance	[kN]	0,3	0,6	1,1	2,0	3,2
Pull-out failure							
$N_{Rk,p,fi,90}$	Character. resistance in concrete C20/25 to C50/60	[kN]	1,3	2,3	3,0	6,3	7,5
Concrete cone failure*)**							
$N_{Rk,c,fi,90}$	Character. resistance in concrete C20/25 to C50/60	[kN]	1,5	3,2	5,6	11,2	17,6
Steel failure without lever arm							
$V_{Rk,s,fi,90}$	Characteristic resistance	[kN]	0,3	0,6	1,1	2,0	3,2
Steel failure with lever arm							
$M_{Rk,s,fi,90}$	Characteristic bending resistance	[Nm]	0,4	1,3	2,6	6,3	12,3

Fire resistance duration = 120 minutes			M8	M10	M12	M16	M20
Tension loads steel failure							
$N_{Rk,s,fi,120}$	Characteristic resistance	[kN]	0,2	0,5	0,8	1,6	2,5
Pull-out failure							
$N_{Rk,p,fi,120}$	Character. resistance in concrete C20/25 to C50/60	[kN]	1,0	1,8	2,4	5,0	6,0
Concrete cone failure*)**							
$N_{Rk,c,fi,120}$	Character. resistance in concrete C20/25 to C50/60	[kN]	1,2	2,6	4,5	8,9	14,0
Steel failure without lever arm							
$V_{Rk,s,fi,120}$	Characteristic resistance	[kN]	0,2	0,5	0,8	1,6	2,5
Steel failure with lever arm							
$M_{Rk,s,fi,120}$	Characteristic bending resistance	[Nm]	0,3	0,9	2,0	4,8	9,4

Spacing and minimum edge distance			M8	M10	M12	M16	M20
$S_{cr,N}$	Spacing	[mm]	192	240	280	340	400
S_{min}	Minimum spacing	[mm]	50	60	70	128	150
$C_{cr,N}$	Edge distance	[mm]	96	120	140	170	200
C_{min}	Minimum edge distance (one side fire)	[mm]	96	120	140	170	200
C_{min}	Minimum edge distance (two sides fire)	[mm]	300	300	300	300	300
γ_{Msp}	Partial safety factor**)	[-]	1.0	1.0	1.0	1.0	1.0

**) In absence of other national regulations

*******) As a rule, splitting failure can be neglected when cracked concrete and reinforcement is assumed.

Concrete pry-out failure		M8	M10	M12	M16	M20
K factor	[--]	1,0	2,0	2,0	2,0	2,0
In Eq. (5.6) of ETAG 001 Annex C, 5.2.2.3, these values of k factor and the relevant values of $N_{Rk,c,fi}$ given in the above tables have to be considered in the design.						

Concrete edge failure
The characteristic resistance $V^0_{RK,c,fi}$ in C20/25 to C50/60 concrete is determined by: $V^0_{RK,c,fi} = 0,25 \times V^0_{RK,c}$ (≤ R90) and $V^0_{RK,c,fi} = 0,20 \times V^0_{RK,c}$ (R120) With $V^0_{RK,c}$ initial value of the characteristic resistance in cracked concrete C20/25 under normal temperature according to ETAG 001, Annex C, 5.2.3.4.

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performanc in point 9.

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4
Signed on behalf of the manufacturer by:

Santiago Reig. Technical manager
Logroño, 30.08.2014