

**Declaration of Performance  
DoP CH-en**



1. Product type: Mechanical anchor CH, sleeve type

2. Identification

Code	∅ Sleeve diameter [mm]	M – Metric [mm]	L – Length [mm]	t <sub>fix</sub> – Fixture thickness [mm]
ACHT08C	8	M6	45	5
ACHT08L	8	M6	60	20
ACHT10C	10	M8	60	5
ACHT10L	10	M8	80	27
ACHT12C	12	M10	70	5
ACHT12L	12	M10	100	32
ACHT16C	16	M12	80	5
ACHT16L	16	M12	110	37
ACHT20C	20	M16	110	15
ACHT8808C	8	M6	45	5
ACHT8808L	8	M6	60	20
ACHT8810C	10	M8	60	5
ACHT8810L	10	M8	80	27
ACHT8812C	12	M10	70	5
ACHT8812L	12	M10	100	32
ACHT8816C	16	M12	80	5
ACHT8816L	16	M12	110	37
ACHT8820C	20	M16	110	15
ACHTPL08C	8	M6	45	5
ACHTPL08L	8	M6	60	20
ACHTPL10C	10	M8	60	5
ACHTPL10L	10	M8	80	27
ACHTPL12C	12	M10	70	5
ACHTPL12L	12	M10	100	32
ACHINB08C	8	M6	45	5
ACHINB08L	8	M6	60	20
ACHINB10C	10	M8	60	5
ACHINB10L	10	M8	80	27
ACHINN08C	8	M6	45	5
ACHINN08L	8	M6	60	20
ACHINN10C	10	M8	60	5
ACHINN10L	10	M8	80	27

3. Intended use

Generic type

Torque controlled sleeve type anchor made of steelm, zinc-plated for structural applications in concrete

Base material

Concrete C20/25 to C50/60 according to EN 206-1:2008

Material:

Steel made, zinc-plated  $\geq 5 \mu\text{m}$  ISO 4042 A2

Durability:

Internal dry conditions

Loads:

Static, quasi static loads

- Fire resistance: Non declared performance
- Assumed working life: 50 years
4. Manufacturer Index Fixing Systems. Técnicas Expansivas S.L.  
Segador, 13  
26006 Logroño, La Rioja, ESPAÑA
5. Authorised representative No applicable
6. System of assessment of performance 1
7. Harmonised standard: No applicable
8. European technical assessment  
Tech. assessment body: IETcc; Instituto Eduardo Torroja de ciencias de la construcción. Organismo notificado 1219.  
Issued: ETA 18/0018  
On the basis of: EAD 330232-00-0601  
Performed: Determination of product type, initial inspection of the manufacturing plant and continuous surveillance of FPC  
Under system: 1  
Issued: Certificado CE 1219-CPR-0193
9. Declared performance: Structural applications in non-cracked concrete.

Installation parameters			Performances				
			Ø8 M6	Ø10 M8	Ø12 M10	Ø16 M12	Ø20 M16
$d_0$	Nominal diameter of drill bit:	[mm]	8	10	12	16	20
$d_f$	Fixture clearance hole diameter $\leq$	[mm]	9	12	14	18	22
$T_{inst}$	Nominal installation torque:	[mm]	10	20	35	50	140
L	Total anchor length:	[mm]	45   60	60   80	70   100	80   110	110
$h_{min}$	Minimum thickness of concrete member:	[mm]	100	100	100	110	145
$h_1$	Depth of drilled hole $\geq$	[mm]	45	60	75	80	105
$h_{nom}$	Overall anchor embedment depth in concrete $\geq$	[mm]	39	51	65	70	92
$h_{ef}$	Effective anchorage depth:	[mm]	30	40	48	55	72
$t_{fix}$	Thickness of fixture $\leq$	[mm]	5   20	5   27	5   32	5   37	15
$s_{min}$	Minimum allowable spacing:	[mm]	41	54	65	74	97
$c_{min}$	Minimum allowable edge distance:	[mm]	41	54	65	74	97

Characteristic resistances under tension loads			Performances				
			Ø8 M6 <sup>4)</sup>	Ø10 M8	Ø12 M10	Ø16 M12	Ø20 M16
<b>STEEL FAILURE</b>							
$N_{Rk,s}$	Characteristic resistance class 5.6:	[kN]	10.05	18.30	29.00	42.15	78.50
$\gamma_{M,s}$	Partial safety factor class 5.6:	[-]	2.00				
$N_{Rk,s}$	Characteristic resistance class 6.8:	[kN]	12.06	21.96	34.80	50.58	94.20
$\gamma_{M,s}$	Partial safety factor class 6.8:	[-]	1.50				
$N_{Rk,s}$	Characteristic resistance class 8.8:	[kN]	16.08	29.28	46.40	67.44	125.60
$\gamma_{M,s}$	Partial safety factor class 8.8:	[-]	1.50				
$N_{Rk,s}$	Characteristic resistance class 10.9:	[kN]	20.10	36.60	58.00	84.30	157.00
$\gamma_{M,s}$	Partial safety factor class 10.9:	[-]	1.50				
<b>PULL OUT FAILURE</b>							
$N_{Rk,p}$	Characteristic resistance in C20/25 uncracked concrete:	[kN]	5.5	10.0	--- <sup>3)</sup>	--- <sup>3)</sup>	--- <sup>3)</sup>
$\gamma_{ins}^{1)}$ $\gamma_2^{2)}$	Installation safety factor:	[-]	1.0	1.0	1.2	1.2	1.0
$\Psi_c$	Increasing factors for $N_{Rk,c}^0$ :	C30/37	1.22				
$\Psi_c$	Increasing factors for $N_{Rk,c}^0$ :	C40/50	1.41				
$\Psi_c$	Increasing factors for $N_{Rk,c}^0$ :	C50/60	1.55				
<b>CONCRETE CONE FAILURE AND SPLITTING FAILURE</b>							
$h_{ef}$	Effective anchorage depth:	[mm]	30	40	48	55	72
$k_{ucr,N}^{1)}$	Factor for uncracked concrete:	[-]	11,0				
$k_1^{2)}$	Factor for uncracked concrete:	[-]	10.1				
$\gamma_{ins}^{1)}$ $\gamma_2^{2)}$	Installation safety factor:	[-]	1.0	1.0	1.2	1.2	1.2
$s_{cr,N}$	Concrete cone failure:	[mm]	90	120	144	165	216
$c_{cr,N}$	Concrete cone failure:	[mm]	45	60	72	83	108
$s_{cr,sp}$	Splitting failure:	[mm]	150	200	240	275	360
$c_{cr,sp}$	Splitting failure:	[mm]	75	100	120	138	180
<sup>1)</sup> Parameter relevant only for design according to FprEN 1992-4 <sup>2)</sup> Parameter relevant only for design according to ETAG 001, Annex C <sup>3)</sup> Pull out not decisive <sup>4)</sup> Use restricted to anchoring of structural components which are statically indeterminate							
<b>Displacements under tension loads</b>							
$N$	Tension service load in non-cracked concrete:	[kN]	2.6	4.7	6.7	8.2	14.7
$\delta_{V0}$	Displacement	[mm]	1.8	1.9	2.3	1.8	1.7
$\delta_{V\infty}$	Displacement	[mm]	2.5	2.6	3.0	2.5	2.4

Characteristic resistances under shear loads			Performances				
			Ø8 M6 <sup>4)</sup>	Ø10 M8	Ø12 M10	Ø16 M12	Ø20 M16
<b>FALLO DEL ACERO SIN BRAZO DE PALANCA</b>							
$V_{Rk,s}$	Characteristic resistance class 5.6:	[kN]	5.03	9.15	14.50	21.08	39.25
$\gamma_{M,s}$	Partial safety factor class 5.6:	[-]	1.67				
$V_{Rk,s}$	Characteristic resistance class 6.8:	[kN]	6.03	10.98	17.40	25.29	47.10
$\gamma_{M,s}$	Partial safety factor class 6.8:	[-]	1.25				
$V_{Rk,s}$	Characteristic resistance class 8.8:	[kN]	8.04	14.64	23.20	33.72	62.80
$\gamma_{M,s}$	Partial safety factor class 8.8:	[-]	1.25				
$V_{Rk,s}$	Characteristic resistance class 10.9:	[kN]	10.05	18.30	29.00	42.15	78.50
$\gamma_{M,s}$	Partial safety factor class 10.9:	[-]	1.50				
$k_7^{1)}$	Characteristic resistance class 5.6:		1.0				
<b>FALLO DEL ACERO CON BRAZO DE PALANCA</b>							
$M_{Rk,s}^0$	Characteristic bending moment 5.6:	[Nm]	7.63	18.75	37.41	65.55	166.61
$\gamma_{M,s}$	Partial safety factor 5.6:	[-]	1.67				
$M_{Rk,s}^0$	Characteristic bending moment 6.8:	[Nm]	9.16	22.50	44.89	78.66	199.93
$\gamma_{M,s}$	Partial safety factor 6.8:	[-]	1.25				
$M_{Rk,s}^0$	Characteristic bending moment 8.8:	[Nm]	12.21	30.00	59.86	104.88	266.57
$\gamma_{M,s}$	Partial safety factor 8.8:	[-]	1.25				
$M_{Rk,s}^0$	Characteristic bending moment 10.9	[Nm]	15.26	37.51	74.82	131.10	333.22
$\gamma_{M,s}$	Partial safety factor 10.9:	[-]	1.5				
<b>CONCRETE PRYOUT FAILURE</b>							
$k_8^{1)}$ $k^{2)}$	Factor k:	[-]	1.0	1.0	1.0	1.0	2.0
$\gamma_{ins}^{1)}$ $\gamma_2^{2)}$	Installation safety factor:	[-]	1,0				
<b>CONCRETE EDGE FAILURE</b>							
$l_f$	Effective length of anchor:	[mm]	30	40	48	55	72
$d_{nom}$	Outside diameter of anchor:	[mm]	8	10	12	16	20
$\gamma_{ins}^{1)}$ $\gamma_2^{2)}$	Installation safety factor:	[-]	1.0				
1) Parameter relevant only for design according to FprEN 1992-4 2) Parameter relevant only for design according to ETAG 001, Annex C 3) Use restricted to anchoring of structural components which are statically indeterminate							
<b>Displacements under shear loads</b>							
N	Shear service load in non-cracked concrete:	[kN]	3.5	6.3	9.9	14.5	26.9
$\delta_{V0}$	Displacement	[mm]	1.9	2.8	2.8	2.9	3.8
$\delta_{V\infty}$	Displacement	[mm]	2.9	3.8	4.2	4.4	6.7

- 10.** The performance of the product identified in points 1 and 2 is in conformity with the declared performance 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:

A handwritten signature in black ink, appearing to read 'S. Reig', written in a cursive style.

Santiago Reig. Technical manager  
Logroño, 01.07.2018