

Declaration of Performance DoP MTH-en



1. Product type: MTH Cloverfix anchor

2. Identification:

Product code with DIN 125 washer	Product code with DIN 9021 washer	Metric	Length [mm]	Outer diameter [mm]	Fixture thickness [mm]		
					h_{ef} standard DIN 125	h_{ef} standard DIN 9021 / DIN 440	h_{ef} reduced
AH06LLL	AH2106LLL	M6	3 last digits of product code	6	L-58	L-58	--
AH08LLL	AH2108LLL	M8		8	L-70	L-71	L-57
AH10LLL	AH2110LLL	M10		10	L-80	L-80	L-67
AH12LLL	AH2112LLL	M12		12	L-92	L-94	L-77
AH14LLL	AH2114LLL	M14		14	L-108	L-108	--
AH16LLL	AH2116LLL	M16		16	L-123	L-124	--
AH20LLL	AH2120LLL	M20		20	L-147	L-149	--

3. Intended use:

Generic type:	Torque controlled anchor sleeve type
Base material:	Non cracked concrete C20/25 to C50/60 according to EN 206-1.
Material:	Made of steel, zinc plated ISO 4042 A2K
Durability:	Internal dry conditions
Loading:	Static, quasi static loads
Fire resistance:	Non declared performance
Assumed working life:	50 years

4. Manufacturer: Cloverfix Fixing Systems. Técnicas Expansivas S.L.
Río Escalón, 1
26006 Logroño, La Rioja, SPAIN

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.
issued:	Notified body 1219.
on the basis of:	ETA 05/0242
performed:	ETAG 001, partes 1 y 2
under system:	Determination of product type, initial inspection of the manufacturing plant and continuous surveillance of FPC
and issued:	1 Certificate CE 1219-CPR-0006

9. Declared performances:

Essential characteristics for standard embedment depth			Performance							Technical specification
			M6	M8	M10	M12	M14	M16	M20	
Installation parameters										ETAG001 p1/2
d_o	Nominal diameter of drill bit:	[mm]	6	8	10	12	14	16	20	
h_{ef}	Effective standard embedment depth:	[mm]	40	48	55	65	75	84	103	
d_f	Fixture clearance hole diameter:	[mm]	7	9	12	14	16	18	22	
T_{inst}	Nominal installation torque:	[Nm]	7	20	35	60	90	120	240	
h_1	Depth of drilled hole:	[mm]	55	65	75	85	100	110	135	
h_{nom}	Minimum installation depth:	[mm]	49.5	59.5	66.5	77	91	103.5	125	
h_{min}	Min. thickness of concrete member:	[mm]	100	100	110	130	150	168	206	
s_{min}	Minimum spacing:	[mm]	50	65	70	85	100	110	135	
c_{min}	Minimum edge distance:	[mm]	50	65	70	85	100	110	135	
Tension load: steel failure										ETAG001 p1/2
$N_{Rk,s}$	Tension steel character. resistance:	[kN]	7.7	16.4	25.6	35.4	51.7	65.0	104.4	
γ_{Ms}	Partial safety factor:	[-]	1.40	1.40	1.40	1.43	1.43	1.43	1.47	
Tension load: concrete cone or splitting failure in concrete										ETAG001 p1/2
$N_{Rk,p}$	Tension characteristic resistance in concrete C20/25:	[kN]	No decisivo	12	16	25	30	35	50	
γ_{Mp}	Partial safety factor: ¹⁾	[-]	--	1.5	1.8	1.8	1.8	1.8	1.8	
Ψ_c	C30/37	[-]	1.22	1.22	1.22	1.22	1.22	1.22	1.22	
Ψ_c	C40/50	[-]	1.41	1.41	1.41	1.41	1.41	1.41	1.41	
Ψ_c	C50/60	[-]	1.55	1.55	1.55	1.55	1.55	1.55	1.55	
Tension load: concrete cone or splitting failure in concrete										ETAG001 p1/2
$s_{cr,N}$	Critical spacing:	[mm]	120	144	165	195	225	252	309	
$s_{cr,sp}$	Critical spacing (splitting):	[mm]	160	192	220	260	300	336	412	
$c_{cr,N}$	Critical edge distance:	[mm]	60	72	83	98	113	126	155	
$c_{cr,sp}$	Critical edge distance (splitting):	[mm]	80	95	110	130	150	168	206	
γ_{Mc}	Partial safety factor: ¹⁾	[-]	1.5	1.5	1.8	1.8	1.8	1.8	1.8	
Displacements under tension loads										ETAG001 p1/2
N	Tension service load	[kN]	2.8	5.0	6.0	9.3	10.7	16.0	17.0	
δ_{N0}	Displacements under tension loads	[mm]	0.70	1.12	1.07	1.32	1.82	2.38	3.56	
$\delta_{N\infty}$	Displacements under tension loads	[mm]	1.47	2.34	2.24	2.77	3.82	4.99	7.47	
Shear load: steel failure										ETAG001 p1/2
$V_{Rk,s}$	Shear steel characteristic resistance:	[kN]	5.1	9.3	14.7	20.6	28.1	38.4	56.3	
$M^0_{Rk,s}$	Characteristic bending moment::	[Nm]	7.7	19.1	38.1	64.1	102.2	163.1	298.5	
γ_{Ms}	Partial safety factor:	[-]	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
Shear load: concrete pryout failure										ETAG001 p1/2
K	K factor:	[-]	1	1	1	2	2	2	2	
γ_{Mpr}	Partial safety factor:	[-]	1.5	1.5	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]	40	48	55	65	75	84	103	
d_{nom}	Outside anchor diameter:	[mm]	6	8	10	12	14	16	20	
γ_{Mc}	Partial safety factor:	[-]	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Displacements under shear loads										ETAG001 p1/2
V	Service shear load:	[kN]	2.9	5.3	8.4	11.8	16.0	21.9	32.1	
δ_{V0}	Short term displacement under shear loads:	[mm]	0.65	2.80	1.75	2.45	2.78	3.53	4.13	
$\delta_{V\infty}$	Long term displacement under shear loads:	[mm]	0.98	4.20	2.63	3.68	4.16	5.29	6.19	

1) In absence of other national regulations

Essential characteristics for reduced embedment depth			Performance							Technical specification
			M6	M8 ²⁾	M10	M12	M14	M16	M20	
Installation parameters										ETAG001 p1/2
d _o	Nominal diameter of drill bit:	[mm]	---	8	10	12	--	--	--	
h _{ef}	Effective reduced embedment depth:	[mm]	--	35	42	50	--	--	--	
d _f	Fixture clearance hole diameter:	[mm]	--	9	12	14	--	--	--	
T _{inst}	Nominal installation torque:	[Nm]	--	20	35	60	--	--	--	
h ₁	Depth of drilled hole:	[mm]	--	50	60	70	--	--	--	
h _{nom}	Minimum installation depth:	[mm]	--	46.5	53.5	62	--	--	--	
h _{min}	Min. thickness of concrete member:	[mm]	--	100	100	100	--	--	--	
s _{min}	Minimum spacing:	[mm]	--	65	70	85	--	--	--	
c _{min}	Minimum edge distance:	[mm]	--	65	70	85	--	--	--	
Tension load: steel failure										ETAG001 p1/2
N _{Rk,s}	Tension steel character. resistance:	[kN]	--	16.4	25.6	35.4	--	--	--	
γ _{Ms}	Partial safety factor:	[-]	--	1.40	1.40	1.43	--	--	--	
Tension load: concrete cone or splitting failure in concrete										ETAG001 p1/2
N _{Rk,p}	Tension characteristic resistance in concrete C20/25:	[kN]	--	9	12	16	--	--	--	
γ _{Mp}	Partial safety factor: ¹⁾	[-]	--	1.5	1.5	1.5	--	--	--	
ψ _c	C30/37	[-]	--	1.22	1.22	1.22	--	--	--	
ψ _c	C40/50	[-]	--	1.41	1.41	1.41	--	--	--	
ψ _c	C50/60	[-]	--	1.55	1.55	1.55	--	--	--	
Tension load: concrete cone or splitting failure in concrete										ETAG001 p1/2
s _{cr,N}	Critical spacing:	[mm]	--	105	126	150	--	--	--	
s _{cr,sp}	Critical spacing (splitting):	[mm]	--	140	168	200	--	--	--	
c _{cr,N}	Critical edge distance:	[mm]	--	53	63	75	--	--	--	
c _{cr,sp}	Critical edge distance (splitting):	[mm]	--	70	84	100	--	--	--	
γ _{Mc}	Partial safety factor: ¹⁾	[-]	--	1.5	1.5	1.5	--	--	--	
Displacements under tension loads										ETAG001 p1/2
N	Tension service load	[kN]	--	4.2	5,7	7.6	--	--	--	
δ _{N0}	Displacements under tension loads	[mm]	--	0.20	0.13	0.06	--	--	--	
δ _{N∞}	Displacements under tension loads	[mm]	--	1.78	1.78	1.78	--	--	--	
Shear load: steel failure										ETAG001 p1/2
V _{Rk,s}	Shear steel characteristic resistance:	[kN]	--	9.3	14.7	20.6	--	--	--	
M ⁰ _{Rk,s}	Characteristic bending moment:	[Nm]	--	19.1	38.1	64.1	--	--	--	
γ _{Ms}	Partial safety factor:	[-]	--	1.25	1.25	1.25	--	--	--	
Shear load: concrete pryout failure										ETAG001 p1/2
K	K factor:	[-]	--	1	1	1	--	--	--	
γ _{Mpr}	Partial safety factor:	[-]	--	1.5	1.5	1.5	--	--	--	
Shear load: concrete edge failure										ETAG001 p1/2
l _f	Effective anchorage depth under shear loads:	[mm]	--	35	42	50	--	--	--	
d _{nom}	Outside anchor diameter:	[mm]	--	8	10	12	--	--	--	
γ _{Mc}	Partial safety factor:	[-]	--	1.5	1.5	1.5	--	--	--	
Displacements under shear loads										ETAG001 p1/2
V	Service shear load:	[kN]	--	5.3	8.4	11.8	--	--	--	
δ _{V0}	Short term displacement under shear loads:	[mm]	--	0.59	1.22	1.10	--	--	--	
δ _{V∞}	Long term displacement under shear loads:	[mm]	--	0.89	1.83	1.65	--	--	--	

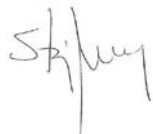
1) In absence of other national regulations

2) Use restricted to anchoring of structural components which are statically indeterminate

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:



Santiago Reig. Technical manager
Logroño, 20.03.2018