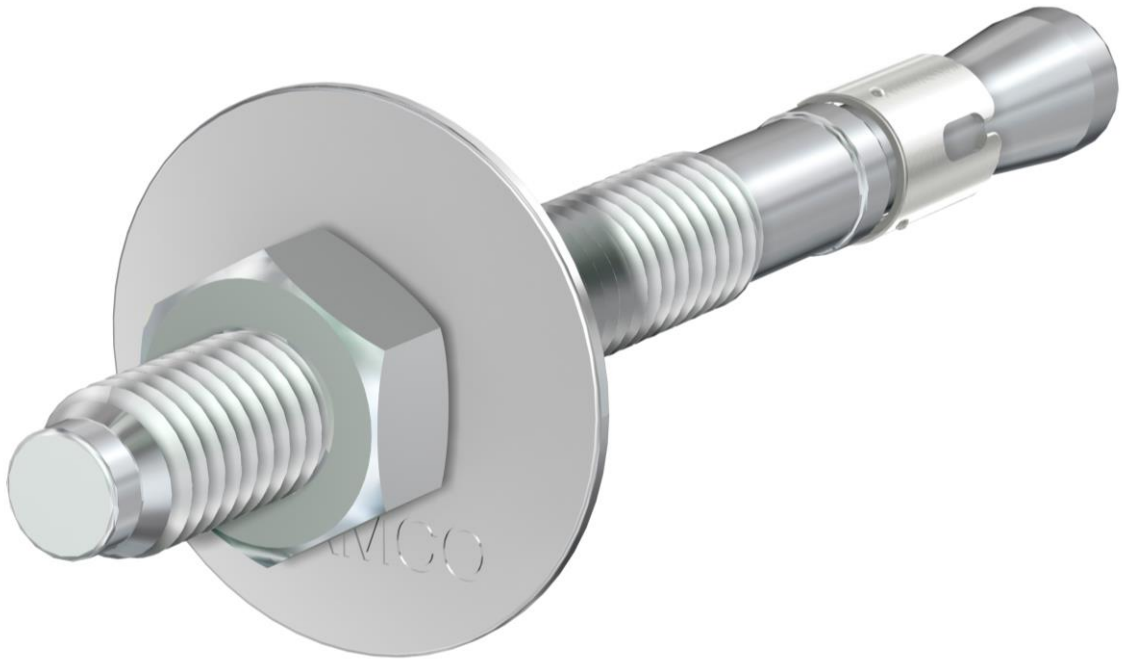
Declaration of Performance

FlamcoFix AS wedge anchors

In accordance with ETA 05/0242
DoP no. CE 1219-CPR-0006



Flamco B.V.
P.O. Box 502
3750 GM Bunschoten – The Netherlands

Amersfoortseweg 9
3751 LJ Bunschoten – The Netherlands
T +31 33 299 75 00
F +31 33 298 64 45
E info@flamcogroup.com

Date
November 12, 2018

Article codes
82035
82036
82037

Flamco

Declaration of Performance
DoP MTH-en

INDEX FIXING SYSTEMS

1. Product type: MTH 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-122	L-124	L-103
AH20LLL	AH2120LLL	M20		20	L-147	L-149	L-121

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: Index Fixing Systems. Técnicas Expansivas S.L.
Segador, 13
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. Notified body 1219.
issued:	ETA 05/0242
on the basis of:	EAD 33032-00-0601
performed:	Determination of product type, initial inspection of the manufacturing plant and continuous surveillance of FPC
under system:	1
and issued:	Certificate CE 1219-CPR-0006

9. Declared performances:

aalberts

Flamco

Essential characteristics for standard embedment depth			Performance							Technical specification
			M6	M8	M10	M12	M14	M16	M20	
Installation parameters										ETA 05/0242
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]	35	40	50	70	80	90	135	
c_{min}	Minimum edge distance:	[mm]	35	40	50	70	80	90	135	
Tension load: steel failure										ETA 05/0242
$N_{Rk,s}$	Tension steel character. resistance:	[kN]	7.4	13.0	23.7	33.3	49.1	60.1	99.5	
γ_{Ms}	Partial safety factor:	[-]	1.40	1.40	1.40	1.40	1.40	1.40	1.40	
Tension load: concrete cone or splitting failure in concrete										ETA 05/0242
$N_{Rk,p}$	Tension characteristic resistance in concrete C20/25:	[kN]	Not decisive	Not decisive	19	Not decisive	Not decisive	Not decisive	Not decisive	
γ_{Mp}	Partial safety factor [1]	[-]	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
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										ETA 05/0242
$s_{cr,N}$	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										ETA 05/0242
N	Tension service load	[kN]	3.8	6.6	9.0	12.6	15.6	18.5	25.1	
δ_{N0}	Displacements under tension loads	[mm]	0.4	0.7	1.0	1.2	1.3	1.9	2.2	
$\delta_{N\infty}$	Displacements under tension loads	[mm]	1.8	2.1	2.4	2.6	2.7	3.3	3.8	
Shear load: steel failure										ETA 05/0242
$V_{Rk,s}$	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										ETA 05/0242
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										ETA 05/0242
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										ETA 05/0242
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

aalberts

Essential characteristics for reduced embedment depth			Performance							Technical specification
			M6	M8 [2]	M10	M12	M14	M16	M20	
Installation parameters										ETA 05/0242
d_o	Nominal diameter of drill bit:	[mm]	---	8	10	12	--	16	20	
h_{ef}	Effective reduced embedment depth:	[mm]	--	35	42	50	--	65	78	
d_f	Fixture clearance hole diameter:	[mm]	--	9	12	14	--	18	22	
T_{inst}	Nominal installation torque:	[Nm]	--	20	35	60	--	120	240	
h_1	Depth of drilled hole:	[mm]	--	50	60	70	--	90	107	
h_{nom}	Minimum installation depth:	[mm]	--	46.5	53.5	62	--	84.5	97	
h_{min}	Min. thickness of concrete member:	[mm]	--	100	100	100	--	130	450	
s_{min}	Minimum spacing:	[mm]	--	40	50	70	--	90	135	
c_{min}	Minimum edge distance:	[mm]	--	40	50	70	--	90	135	
Tension load: steel failure										ETA 05/0242
$N_{Rk,s}$	Tension steel character. resistance:	[kN]	--	13.0	23.7	33.3	--	60.1	99.5	
γ_{Ms}	Partial safety factor:	[-]	--	1.40	1.40	1.40	--	1.40	1.40	
Tension load: concrete cone or splitting failure in concrete										ETA 05/0242
$N_{Rk,p}$	Tension characteristic resistance in concrete C20/25:	[kN]	--	10	Not decisive	Not decisive	--	Not decisive	Not decisive	
γ_{Mp}	Partial safety factor: [1]	[-]	--	1.5	1.5	1.5	--	1.5	1.5	
ψ_c	C30/37	[-]	--	1.22	1.22	1.22	--	1.22	1.22	
ψ_c	C40/50	[-]	--	1.41	1.41	1.41	--	1.41	1.41	
ψ_c	C50/60	[-]	--	1.55	1.55	1.55	--	1.55	1.55	
Tension load: concrete cone or splitting failure in concrete										ETA 05/0242
$s_{cr,N}$	Critical spacing:	[mm]	--	105	126	150	--	195	225	
$s_{cr,sp}$	Critical spacing (splitting):	[mm]	--	140	168	200	--	260	300	
$c_{cr,N}$	Critical edge distance:	[mm]	--	53	63	75	--	98	113	
$c_{cr,sp}$	Critical edge distance (splitting):	[mm]	--	70	84	100	--	130	150	
γ_{Mc}	Partial safety factor: [1]	[-]	--	1.5	1.5	1.5	--	1.5	1.5	
Displacements under tension loads										ETA 05/0242
N	Tension service load	[kN]	--	4.8	6.5	8.5	--	12.6	15.6	
δ_{N0}	Displacements under tension loads	[mm]	--	0.3	0.6	1.0	--	1.6	1.9	
$\delta_{N\infty}$	Displacements under tension loads	[mm]	--	1.4	1.7	2.1	--	2.7	3.0	
Shear load: steel failure										ETA 05/0242
$V_{Rk,s}$	Shear steel characteristic resistance:	[kN]	--	9.3	14.7	20.6	--	38.4	56.3	
$M^0_{Rk,s}$	Characteristic bending moment:	[Nm]	--	19.1	38.1	64.1	--	163.1	298.5	
γ_{Ms}	Partial safety factor:	[-]	--	1.25	1.25	1.25	--	1.25	1.25	
Shear load: concrete pryout failure										ETA 05/0242
K	K factor:	[-]	--	1	1	1	--	2	2	
γ_{Mpr}	Partial safety factor:	[-]	--	1.5	1.5	1.5	--	1.5	1.5	
Shear load: concrete edge failure										ETA 05/0242
l_f	Effective anchorage depth under shear loads:	[mm]	--	35	42	50	--	65	75	
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										ETA 05/0242
V	Service shear load:	[kN]	--	5.3	8.4	11.8	--	21.9	32.1	
δ_{V0}	Short term displacement under shear loads:	[mm]	--	0.59	1.22	1.10	--	3.10	3.40	
$\delta_{V\infty}$	Long term displacement under shear loads:	[mm]	--	0.89	1.83	1.65	--	4.60	5.10	

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, 01.07.2018