



TOIMIVUSDEKLARATSIOON

No: DoP-170568 [ET]

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Tootetüübi kordumatu identifitseerimiskood:

Nail Anchor ENA 6 / ENA 8 / ENA-K / ENA-M / ENA-O

Tootja:

ESSVE Produkter AB

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Euroopa tehniline hinnang (ETA)	Mõõdud & Materjal	Artikli number
ETA-17/0568 (2017-08-10)	ENA-K Zinc plated	Kõik tootegrupi artiklid omavad ETA sertifikaati.
	ENA-K A4	Kõik tootegrupi artiklid omavad ETA sertifikaati.
	ENA-M Zinc plated	Kõik tootegrupi artiklid omavad ETA sertifikaati.

Euroopa tehniline hinnang (ETA)	Kavandatud kasutusala(d)	Betooni kvaliteet
ETA-17/0568 (2017-08-10)	Anchors (multiple use) for use in non-structural applications under static or quasi-static actions, in redundant systems, in cracked or non-cracked concrete.	Reinforced or unreinforced normal weight concrete according to EN 206-1:2000. <ul style="list-style-type: none">Solid concrete C12/15 to C50/60

Euroopa tehniline hinnang (ETA)	Toimivuse püsivuse hindamise ja kontrolli süsteem (AVCP)	Euroopa hindamisdokument	Tehnilise hindamise asutus (TAB)	Teavitatud asutus(ed) (NB)
ETA-17/0568 (2017-08-10)	2+	ETAG 001 Part 6, (2011-01)	DEUTSCHES INSTITUT FÜR BAUTECHNIK (DiBt)	1343 (FPC)



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Euroopa tehniline hinnang (ETA)	Põhiomadused	Toimivus
ETA-17/0568 (2017-08-10)	Characteristic resistance	Table C1
	Reaction to fire	Class A1
	Resistance to fire	Table C2

Eespool kirjeldatud toote toimivus vastab deklareeritud toimivusele. Käesolev toimivusdeklaratsioon on välja antud kooskõlas määrusega (EL) nr 305/2011 eespool nimetatud tootja ainuvastutusel.

Tootja poolt ja nimel allkirjastanud:

Viktor Bukowski

Product Developer/Technical expert – Fasteners

Kista ~~2017-08-21~~, revised 2018-10-09¹

¹Table with article numbers



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Table C1 - Characteristic and design resistance for a fixing point ¹⁾, design method C

Anchor types			ENA 6	ENA 8 ENA-K ENA-M	ENA-O	ENA 6	ENA 8 ENA-K ENA-M	ENA-O
Effective anchorage depth	$h_{ef} \geq$	[mm]	25			30		
Partial safety factor for any direction	γ_M	-	1,5					
Optimized for maximum load								
Characteristic resistance C12/15	F_{Rk}	[kN]	3,0	3,0 ⁴⁾	1,5	4,0	4,0 ⁴⁾	1,5
Characteristic resistance C20/25 to C50/60			4,5	4,5 ⁴⁾		5,9	5,9 ⁴⁾	
Design resistance C12/15	F_{Rd}	[kN]	2,0	2,0 ⁴⁾	1,0	2,7	2,7 ⁴⁾	1,0
Design resistance C20/25 to C50/60			3,0	3,0 ⁴⁾		3,9	3,9 ⁴⁾	
Respective spacing between fixing points ^{1) 2)}	s_{cr}	[mm]	100					
	for $c_{cr} \geq$		200					
Respective edge distance ²⁾	c_{cr}	[mm]	100					
	for $s_{cr} \geq$		200					
Optimized for minimum edge distance								
Characteristic resistance C12/15	F_{Rk}	[kN]	1,5	1,5 ⁴⁾	1,5	2,0	2,0 ⁴⁾	1,5
Characteristic resistance C20/25 to C50/60			2,0	2,0 ⁴⁾		2,5	2,5 ⁴⁾	
Design resistance C12/15	F_{Rd}	[kN]	1,0	1,0 ⁴⁾	1,0	1,3	1,3 ⁴⁾	1,0
Design resistance C20/25 to C50/60			1,3	1,3 ⁴⁾		1,7	1,7 ⁴⁾	
Respective spacing between fixing points ¹⁾	c_{cr}	[mm]	50					
	for $s_{cr} \geq$		100					
Shear load with lever arm								
Characteristic resistance, steel zinc plated	$M^0_{Rk,s}$	[Nm]	9,2	12,7	³⁾	9,2	12,7	³⁾
Characteristic resistance, stainless steel A4/HCR			9,2	13,5	³⁾	9,2	13,5	³⁾
Partial safety factor	γ_{Ms}	-	1,25					

¹⁾ A fixing point is defined as:

- Single anchor,
- Double anchor group with a minimum spacing s of $50 \text{ mm} \leq s < s_{cr}$ or
- Quadruple anchor group with a minimum spacing s of $50 \text{ mm} \leq s < s_{cr}$

If the spacing in a fixing point is greater than or equal to the respective spacing in this table, the characteristic resistances apply to every single anchor.

²⁾ Intermediate values can be linearly interpolated.

³⁾ Proof against failure due to shear load with lever arm is not required.

⁴⁾ When applying a shear load to anchor version ENA-M, shear load with lever arm must be proven.



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Table C2 - Characteristic resistance for a fixing point ¹⁾ under fire exposure in concrete C20/25 to C50/60, design method C

Fire resistance class		ENA 6 ENA 8	ENA-K	ENA-M ³⁾	ENA-O	ENA 6 ENA 8	ENA-K	ENA-M ³⁾	ENA-O	
Effective anchorage depth	$h_{ef} \geq$ [mm]	25				30				
Load in any direction										
R 30	Characteristic resistance, steel zinc plated	$F_{Rk,fi}$ [kN]	0,6	0,6	0,6	0,2	0,9	0,9	0,8	-
R 60			0,6	0,6	0,6	0,2	0,7	0,8	0,7	-
R 90			0,5	0,6	0,6	0,1	0,5	0,6	0,6	-
R120			0,4	0,5	0,5	0,1	0,4	0,5	0,6	-
R 30	Characteristic resistance, stainless steel A4 / HCR	$F_{Rk,fi}$ [kN]	0,6	0,6	0,6	0,2	0,9	0,9	0,8	0,2
R 60			0,6	0,6	0,6	0,2	0,9	0,9	0,7	0,2
R 90			0,5	0,6	0,6	0,1	0,9	0,9	0,6	0,1
R120			0,4	0,5	0,5	0,1	0,7	0,7	0,6	0,1
R 30 – R 120	Edge distance	$c_{cr,fi}$ [mm]	50							
	Spacing	$s_{cr,fi}$ [mm]	100							
Shear load with lever arm										
R 30	Characteristic resistance, steel zinc plated	$M^0_{Rk,fi}$ [Nm]	0,7	1,0	0,7	²⁾	0,7	1,0	0,7	-
R 60			0,5	0,8	0,7	²⁾	0,5	0,8	0,7	-
R 90			0,4	0,5	0,6	²⁾	0,4	0,5	0,6	-
R120			0,3	0,4	0,5	²⁾	0,3	0,4	0,5	-
R 30	Characteristic resistance, stainless steel A4 / HCR	$M^0_{Rk,fi}$ [Nm]	1,4	2,1	0,7	²⁾	1,4	2,1	0,7	²⁾
R 60			1,1	1,5	0,7	²⁾	1,1	1,5	0,7	²⁾
R 90			0,7	1,0	0,6	²⁾	0,7	1,0	0,6	²⁾
R120			0,5	0,7	0,5	²⁾	0,5	0,7	0,5	²⁾
If the fire attack is from more than one side, the edge distance shall be ≥ 300 mm.										

¹⁾ A fixing point is defined as:

- Single anchor,
- Double anchor group with a minimum spacing s of $50 \text{ mm} \leq s < s_{cr}$ or
- Quadruple anchor group with a minimum spacing s of $50 \text{ mm} \leq s < s_{cr}$

If the spacing in a fixing point is greater than or equal to the respective spacing in this table, the characteristic resistances apply to every single anchor.

²⁾ Proof against failure due to shear load with lever arm is not required.

³⁾ Only in connection with threaded rods M8, M10 or M12 minimum strength class 5.8. When applying shear load to this anchor version, shear load with lever arm must be proven.