



EKSPLOATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr: DoP-170EKD [LV]

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Unikālais izstrādājuma tipa identifikācijas numurs:

Iegremdēts enkurs (Drop-in Anchor) ESSVE EKD / EKD-K

Ražotājs:

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| Eiropas tehniskais novērtējums (ETA) | Izmērs & Materiāls | Pants numurs |
|--------------------------------------|-------------------------------------|--|
| ETA-17/0548 (2017-08-10) | M6 to M20 Zinc plated / A4 / HCR | 123583, 123585, 123587, 123589, 123591, 123593, 123595, 123597, 123599, 123601, 123603, 123605, 123607, 123609, 123611, 123613, 123615, 123617 |
| ETA-17/0567 (2017-08-10) | M6 to M16 Zinc plated / A4 / HCR | 123583, 123585, 123587, 123589, 123591, 123595, 123597, 123599, 123601, 123603, 123605, 123609, 123611, 123613, 123615, 123617 |

| Eiropas tehniskais novērtējums (ETA) | Paredzētais izmantojums | Betona kvalitāte |
|--------------------------------------|---|---|
| ETA-17/0548 (2017-08-10) | Anchor(s) for use in structural applications under static or quasi-static actions in non-cracked concrete. | Reinforced or unreinforced normal weight concrete according to EN 206-1:2000. <ul style="list-style-type: none">• Strength classes C20/25 to C50/60 according to EN 206-1:2000 |
| ETA-17/0567 (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 C20/25 to C50/60• Precast pre-stressed hollow core slabs C30/37 to C50/60 |

| Eiropas tehniskais novērtējums (ETA) | Ekspluatācijas īpašību noteikšanas novērtējuma un pārbaudes (AVCP) sistēma | Eiropas novērtējuma dokuments | Tehniskā novērtējuma iestāde (TAB) | Paziņotā(-ās) iestāde(-es) (NB) |
|--------------------------------------|--|-------------------------------|--|---------------------------------|
| ETA-17/0548 (2017-08-10) | 1 | EAD 330232-00-0601, (2016-10) | DEUTSCHES INSTITUT FÜR BAUTECHNIK (DiBt) | 1343 (FPC) |
| ETA-17/0567 (2017-08-10) | 2+ | ETAG 001 Part 6, (2011-01) | DEUTSCHES INSTITUT FÜR BAUTECHNIK (DiBt) | 1343 (FPC) |



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| Eiropas tehniskais novērtējums (ETA) | Izmērs & Materiāls | Esmīnās karakteristikos | Ekspluatācijas savybēs |
|--------------------------------------|-------------------------------------|--|-------------------------------|
| ETA-17/0548 (2017-08-10) | M6 to M20 Zinc plated / A4 / HCR | Characteristic resistance for tension and shear loads as well as bending moments in concrete | ETA 17/0548 Table C1 to C4 |
| | | Edge distances and spacing | ETA 17/0548 Table C1 & C2 |
| | | Displacements under tension and shear loads | ETA 17/0548 Table C5 & C6 |
| | | Reaction to fire | Class A1 |
| | | Resistance to fire | No Performance Declared (NPD) |
| ETA-17/0567 (2017-08-10) | M6 to M16 Zinc plated / A4 / HCR | Characteristic values for static and quasi-static actions | ETA-17/0567 Table C1 to C3 |
| | | Reaction to fire | Class A1 |
| | | Resistance to fire | ETA-17/0567 Table C4 & C5 |

Iepriekš norādītā izstrādājuma ekspluatācijas īpašības atbilst deklarēto ekspluatācijas īpašību kopumam. Šī ekspluatācijas īpašību deklarācija izdota saskaņā ar Regulu (ES) Nr. 305/2011, un par to ir atbildīgs vienīgi iepriekš norādītais ražotājs.

Paraksts ražotāja vārdā:

Viktor Bukowski
Product Developer/Technical expert – Fasteners

Kista 2017-08-17



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ETA 17/0548 Table C1 - Characteristic values for tension loads, zinc plated steel

| Anchor size | | | M6x30 ¹⁾ | M8x30 ¹⁾ | M8x40 | M10x30 ¹⁾ | M10x40 | M12x50 | M12x80 | M16x65 / M16x80 | M20x80 |
|---|-----------------|------|--|---------------------|-------|----------------------|--------|--------|--------|--------------------|--------|
| Installation safety factor | γ_{inst} | [-] | 1,2 | | | | | | | | |
| Steel failure | | | | | | | | | | | |
| Characteristic resistance Steel 4.6 | $N_{Rk,s}$ | [kN] | 8,0 | 14,6 | 23,2 | | 33,7 | | 62,8 | 98,0 | |
| Partial safety factor | γ_{Ms} | [-] | 2,0 | | | | | | | | |
| Characteristic resistance Steel 5.6 | $N_{Rk,s}$ | [kN] | 10,0 | 18,3 | 18,0 | 20,2 | 42,1 | | 78,3 | 122,4 | |
| Partial safety factor | γ_{Ms} | [-] | 2,0 | | 1,5 | | 2,0 | | | | |
| Characteristic resistance Steel 5.8 | $N_{Rk,s}$ | [kN] | 10,0 | 17,6 | 18,3 | 18,0 | 20,2 | 40,2 | 42,1 | 67,1 | 106,4 |
| Partial safety factor | γ_{Ms} | [-] | 1,5 | | | | | | 1,6 | | |
| Characteristic resistance Steel 8.8 | $N_{Rk,s}$ | [kN] | 15,0 | 17,6 | 19,9 | 18,0 | 20,2 | 40,2 | 43,0 | 67,1 | 106,4 |
| Partial safety factor | γ_{Ms} | [-] | 1,5 | | | | | | 1,6 | | |
| Pull-out failure | | | | | | | | | | | |
| Characteristic resistance in concrete C20/25 | $N_{Rk,p}$ | [kN] | 2) | 2) | 9 | 2) | 2) | 2) | 2) | 2) | 2) |
| Splitting | | | | | | | | | | | |
| Characteristic resistance in concrete C20/25 | $N^0_{Rk,sp}$ | [kN] | 8,1 | 8,1 | 9,0 | 8,1 | 12,4 | 17,4 | 25,8 | 35,2 | |
| Edge distance | $c_{cr,sp}$ | [mm] | 95 | 95 | 95 | 115 | 135 | 165 | 200 | 260 | |
| Increasing factor for $N_{Rk,p}$ and $N^0_{Rk,sp}$ | ψ_C | [-] | $\left(\frac{f_{ck}}{20}\right)^{0,3}$ | | | | | | | | |
| Concrete cone failure | | | | | | | | | | | |
| Effective anchorage depth | h_{ef} | [mm] | 30 | 30 | 40 | 30 | 40 | 50 | 65 | 80 | |
| Edge distance | $c_{cr,N}$ | [mm] | 1,5 h_{ef} | | | | | | | | |
| Factor for k_1 | $k_{ucr,N}$ | [-] | 11,0 | | | | | | | | |

¹⁾ Use restricted to anchoring of structural components statically indeterminate

²⁾ Pull-out is not decisive.



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ETA 17/0548 Table C2 - Characteristic values for tension loads, stainless steel A4, HCR

| Anchor size | | M6x30 ¹⁾ | M8x30 ¹⁾ | M8x40 | M10x40 | M12x50 M12x80 | M16x65 M16x80 | M20x80 |
|--|-----------------|---------------------|---------------------|--|--------|------------------|------------------|--------|
| Installation safety factor | γ_{inst} | [-] | | 1,0 | | | | |
| Steel failure | | | | | | | | |
| Characteristic resistance (property class 70) | $N_{Rk,s}$ | [kN] | 14,1 | 23,3 | 29,4 | 50,2 | 83,8 | 133,0 |
| Characteristic resistance (property class 80) | $N_{Rk,s}$ | [kN] | 17,5 | 23,3 | 29,4 | 50,2 | 83,8 | 133,0 |
| Partial safety factor | γ_{Ms} | [-] | | 1,87 | | | | |
| Pull-out failure | | | | | | | | |
| Characteristic resistance in concrete C20/25 | $N_{Rk,p}$ | [kN] | 2) | 2) | 9 | 2) | 2) | 2) |
| Splitting failure | | | | | | | | |
| Characteristic resistance in concrete C20/25 | $N^0_{Rk,sp}$ | [kN] | 8,1 | 8,1 | 9,0 | 12,4 | 17,4 | 25,8 |
| Edge distance | $c_{cr,sp}$ | [mm] | 80 | 95 | 95 | 135 | 165 | 200 |
| Increasing factor for $N_{Rk,p}$ and $N^0_{Rk,sp}$ | ψ_C | [-] | | $\left(\frac{f_{ck}}{20}\right)^{0,5}$ | | | | |
| Concrete cone failure | | | | | | | | |
| Effective anchorage depth | h_{ef} | [mm] | 30 ³⁾ | 30 | 40 | 40 | 50 | 65 |
| Edge distance | $c_{cr,N}$ | [mm] | 1,5 h_{ef} | | | | | |
| Factor for k_1 | $k_{ucr,N}$ | [-] | | 11,0 | | | | |

¹⁾ Use restricted to anchoring of structural components statically indeterminate

²⁾ Pull-out is not decisive.



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ETA 17/0548 Table C3 - Characteristic values for *shear loads, zinc plated steel*

| Anchor size | | M6x30 ¹⁾ | M8x30 ¹⁾ | M8x40 | M10x30 ¹⁾ | M10x40 | M12x50 | M12x80 | M16x65 M16x80 | M20x80 | |
|---|---------------|---------------------|---------------------|-------|----------------------|--------|--------|--------|------------------|--------|----|
| Steel failure without lever arm | | | | | | | | | | | |
| Characteristic resistance Steel 4.6 | $V_{Rk,s}$ | [kN] | 4,0 | 7,3 | 11,6 | 9,6 | 16,8 | | 31,3 | 49,0 | |
| Partial safety factor | γ_{Ms} | [-] | 1,67 | | | | | | | | |
| Characteristic resistance Steel 5.6 | $V_{Rk,s}$ | [kN] | 5,0 | 9,1 | 10,1 | 9,6 | 21,1 | | 39,2 | 61,2 | |
| Partial safety factor | γ_{Ms} | [-] | 1,67 | | 1,25 | 1,67 | | | | | |
| Characteristic resistance Steel 5.8 | $V_{Rk,s}$ | [kN] | 5,0 | 6,9 | 10,1 | 7,2 | 19,4 | 21,1 | 33,5 | 53,2 | |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | | | | 1,33 | | |
| Characteristic resistance Steel 8.8 | $V_{Rk,s}$ | [kN] | 5,0 | 6,9 | 10,1 | 7,2 | 19,4 | 21,5 | 33,5 | 53,2 | |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | | | | 1,33 | | |
| Factor of ductility | k_7 | [-] | 1,0 | | | | | | | | |
| Steel failure with lever arm | | | | | | | | | | | |
| Characteristic resistance Steel 4.6 | $M^0_{Rk,s}$ | [Nm] | 6,1 | 15 | 30 | 30 | 52 | | 133 | 259 | |
| Partial safety factor | γ_{Ms} | [-] | 1,67 | | | | | | | | |
| Characteristic resistance Steel 5.6 | $M^0_{Rk,s}$ | [Nm] | 7,6 | 19 | 37 | 37 | 65 | | 166 | 324 | |
| Partial safety factor | γ_{Ms} | [-] | 1,67 | | | | | | | | |
| Characteristic resistance Steel 5.8 | $M^0_{Rk,s}$ | [Nm] | 7,6 | 19 | 37 | 37 | 65 | | 166 | 324 | |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | | | | | | |
| Characteristic resistance Steel 8.8 | $M^0_{Rk,s}$ | [Nm] | 12 | 30 | 59 | 60 | 105 | | 266 | 519 | |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | | | | | | |
| Factor of ductility | k_7 | [-] | 1,0 | | | | | | | | |
| Concrete pry-out failure | | | | | | | | | | | |
| Factor | k_8 | [-] | 1,0 | | | | 1,5 | | 2,0 | | |
| Concrete edge failure | | | | | | | | | | | |
| Effective length of anchor under shear loading | l_f | [mm] | 30 | 30 | 40 | 30 | 40 | 50 | | 65 | 80 |
| Outside diameter of anchor | d_{nom} | [mm] | 8 | 10 | 10 | 12 | 12 | 15 | | 20 | 25 |

¹⁾ Use restricted to anchoring of structural components statically indeterminate



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ETA 17/0548 Table C4 - Characteristic values for *shear loads, stainless steel A4, HCR*

| Anchor size | | | M6x30 ¹⁾ | M8x30 ¹⁾ | M8x40 | M10x40 | M12x50 M12x80 | M16x65 M16x80 | M20x80 |
|---|---------------|------|---------------------|---------------------|-------|--------|------------------|------------------|--------|
| Steel failure without lever arm | | | | | | | | | |
| Characteristic resistance (property class 70) | $V_{Rk,s}$ | [kN] | 7,0 | 10,6 | | 13,4 | 25,1 | 41,9 | 66,5 |
| Characteristic resistance (property class 80) | $V_{Rk,s}$ | [kN] | 8,7 | 10,6 | | 13,4 | 25,1 | 41,9 | 66,5 |
| Partial safety factor | γ_{Ms} | [-] | 1,56 | | | | | | |
| Factor of ductility | k_7 | [-] | 1,0 | | | | | | |
| Steel failure with lever arm | | | | | | | | | |
| Characteristic resistance (property class 70) | $M^0_{Rk,s}$ | [Nm] | 11 | 26 | | 52 | 92 | 233 | 454 |
| Partial safety factor | γ_{Ms} | [-] | 1,56 | | | | | | |
| Characteristic resistance (property class 80) | $M^0_{Rk,s}$ | [Nm] | 12 | 30 | | 60 | 105 | 266 | 519 |
| Partial safety factor | γ_{Ms} | [-] | 1,33 | | | | | | |
| Factor of ductility | k_7 | [-] | 1,0 | | | | | | |
| Concrete pry-out failure | | | | | | | | | |
| Factor | k_8 | [-] | 1,0 | 1,7 | | 1,7 | | 2,0 | |
| Concrete edge failure | | | | | | | | | |
| Effective length of anchor under shear loading | l_f | [mm] | 30 | 30 | 40 | 40 | 50 | 65 | 80 |
| Outside diameter of anchor | d_{nom} | [mm] | 8 | 10 | 10 | 12 | 15 | 20 | 25 |

¹⁾ Use restricted to anchoring of structural components statically indeterminate



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ETA 17/0548 Table C5 - Displacements under tension loads

| Anchor size | | | M6x30 | M8x30 | M8x40 | M10x30 | M10x40 | M12x50 M12x80 | M16x65 M16x80 | M20x80 |
|--------------------------------------|--------------------|------|-------|-------|-------|--------|--------|------------------|------------------|--------|
| Steel zinc plated | | | | | | | | | | |
| Tension load in non-cracked concrete | N | [kN] | 3 | 3 | 3,6 | 3,3 | 4,8 | 6,4 | 10 | 14,8 |
| Displacement | δ_{N0} | [mm] | 0,24 | | | | | | | |
| | $\delta_{N\infty}$ | [mm] | 0,36 | | | | | | | |
| Stainless steel A4 / HCR | | | | | | | | | | |
| Tension load in non-cracked concrete | N | [kN] | 4 | 4 | 4,3 | - | 6,1 | 8,5 | 12,6 | 17,2 |
| Displacement | δ_{N0} | [mm] | 0,12 | | | | | | | |
| | $\delta_{N\infty}$ | [mm] | 0,24 | | | | | | | |

ETA 17/0548 Table C6 - Displacements under shear loads

| Anchor size | | | M6x30 | M8x30 | M8x40 | M10x30 | M10x40 | M12x50 M12x80 | M16x65 M16x80 | M20x80 |
|------------------------------------|--------------------|------|-------|-------|-------|--------|--------|------------------|------------------|--------|
| Steel zinc plated | | | | | | | | | | |
| Shear load in non-cracked concrete | V | [kN] | 2 | 4 | 4 | 5,7 | 4,0 | 11,3 | 18,8 | 32,2 |
| Displacement | δ_{V0} | [mm] | 0,9 | 0,9 | 1,0 | 1,5 | 0,6 | 1,2 | 1,2 | 1,6 |
| | $\delta_{V\infty}$ | [mm] | 1,3 | 1,3 | 1,5 | 2,3 | 0,9 | 1,9 | 1,9 | 2,4 |
| Stainless steel A4 / HCR | | | | | | | | | | |
| Shear load in non-cracked concrete | V | [kN] | 3,5 | 5,2 | 5,2 | - | 6,5 | 11,5 | 19,2 | 30,4 |
| Displacement | δ_{V0} | [mm] | 1,9 | 1,1 | 0,7 | - | 1,0 | 1,7 | 2,4 | 2,6 |
| | $\delta_{V\infty}$ | [mm] | 2,8 | 1,6 | 1,0 | - | 1,5 | 2,6 | 3,6 | 3,8 |



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ETA 17/0567 Table C1 - Characteristic resistance for $h_{ef} \geq 30$ mm in solid concrete slabs

| Anchor size | | | M6x30 | M8x30 | M8x40 | M10x30 | M10x40 | M12x50 | M16x65 |
|---|----------------------------|------|-------|-------|-------|--------|--------|--------|--------|
| Load in any direction | | | | | | | | | |
| Characteristic resistance in concrete C20/25 to C50/60 | F_{Rk}^0 | [kN] | 3 | 5 | 6 | 6 | 6 | 6 | 16 |
| Partial safety factor | γ_M | [-] | 1,8 | 2,16 | | 2,1 | 2,16 | 1,8 | 1,8 |
| Spacing | s_{cr} | [mm] | 130 | 180 | 210 | 230 | 170 | 170 | 400 |
| Edge distance | c_{cr} | [mm] | 65 | 90 | 105 | 115 | 85 | 85 | 200 |
| Shear load with lever arm, Steel zinc plated | | | | | | | | | |
| Characteristic resistance (Steel 4.6) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 6,1 | 15 | 15 | 30 | 30 | 52 | 133 |
| Partial safety factor | γ_{Ms} | [-] | 1,67 | | | | | | |
| Characteristic resistance (Steel 4.8) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 6,1 | 15 | 15 | 30 | 30 | 52 | 133 |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | | | | |
| Characteristic resistance (Steel 5.6) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 7,6 | 19 | 19 | 37 | 37 | 65 | 166 |
| Partial safety factor | γ_{Ms} | [-] | 1,67 | | | | | | |
| Characteristic resistance (Steel 5.8) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 7,6 | 19 | 19 | 37 | 37 | 65 | 166 |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | | | | |
| Characteristic resistance (Steel 8.8) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 12 | 30 | 30 | 59 | 60 | 105 | 266 |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | | | | |
| Shear load with lever arm, Stainless steel A4 / HCR | | | | | | | | | |
| Characteristic resistance (Property class 70) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 11 | 26 | 26 | - | 52 | 92 | 233 |
| Partial safety factor | γ_{Ms} | [-] | 1,56 | | | | | | |
| Characteristic resistance (Property class 80) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 12 | 30 | 30 | - | 60 | 105 | 266 |
| Partial safety factor | γ_{Ms} | [-] | 1,33 | | | | | | |

¹⁾ Characteristic bending moment $M_{Rk,s}^0$ for equation (5.5) in ETAG 001, Annex C or for equation (14) in CEN/TS 1992-4-4



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ETA 17/0567 Table C2 - Characteristic resistance for $h_{ef} = 25$ mm in solid concrete slabs

| Anchor size | | | M6x25 | M8x25 | M10x25 | M12x25 |
|--|----------------------------|------|-------|-------|--------|--------|
| Load in any direction | | | | | | |
| Characteristic resistance in concrete C12/15 and C16/20 | F_{Rk}^0 | [kN] | 2,5 | 2,5 | 3,5 | 3,5 |
| Characteristic resistance in concrete C20/25 to C50/60 | F_{Rk}^0 | [kN] | 3,5 | 4,0 | 4,5 | 4,5 |
| Partial safety factor | γ_M | [-] | 1,5 | | | |
| Spacing | s_{cr} | [mm] | 75 | 75 | 75 | 75 |
| Edge distance | c_{cr} | [mm] | 38 | 38 | 38 | 38 |
| Shear load with lever arm | | | | | | |
| Characteristic resistance (Steel 4.6) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 6,1 | 15 | 30 | 52 |
| Partial safety factor | γ_{Ms} | [-] | 1,67 | | | |
| Characteristic resistance (Steel 4.8) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 6,1 | 15 | 30 | 52 |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | |
| Characteristic resistance (Steel 5.6) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 7,6 | 19 | 37 | 65 |
| Partial safety factor | γ_{Ms} | [-] | 1,67 | | | |
| Characteristic resistance (Steel 5.8) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 7,6 | 19 | 37 | 65 |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | |
| Characteristic resistance (Steel 8.8) | $M_{Rk,s}^0$ ¹⁾ | [Nm] | 12 | 30 | 60 | 105 |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | |

¹⁾ Characteristic bending moment $M_{Rk,s}^0$ for equation (5.5) in ETAG 001, Annex C or for equation (14) in CEN/TS 1992-4-4



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ETA 17/0567 Table C3 - Characteristic resistance for $h_{ef} = 25$ mm in precast pre-stressed hollow core slabs

| Anchor size | | | M6x25 | M8x25 | M10x25 | M12x25 |
|--|-------------------|------|------------------------------|-------|--------|--------|
| Load in any direction | | | | | | |
| Flange thickness | d_b | [mm] | ≥ 35 (30) ¹⁾ | | | |
| Characteristic resistance in precast pre-stressed hollow core slabs C30/37 to C50/60 | F_{Rk} | [kN] | 3,5 | 4,0 | 4,5 | 4,5 |
| Partial safety factor | γ_M | [-] | 1,5 | | | |
| Spacing | s_{cr} | [mm] | 200 | | | |
| Edge distance | c_{cr} | [mm] | 150 | | | |
| Shear load with lever arm | | | | | | |
| Characteristic resistance (Steel 4.6) | $M_{Rk,s}^{0,2)}$ | [Nm] | 6,1 | 15 | 30 | 52 |
| Partial safety factor | γ_{Ms} | [-] | 1,67 | | | |
| Characteristic resistance (Steel 4.8) | $M_{Rk,s}^{0,2)}$ | [Nm] | 6,1 | 15 | 30 | 52 |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | |
| Characteristic resistance (Steel 5.6) | $M_{Rk,s}^{0,2)}$ | [Nm] | 7,6 | 19 | 37 | 65 |
| Partial safety factor | γ_{Ms} | [-] | 1,67 | | | |
| Characteristic resistance (Steel 5.8) | $M_{Rk,s}^{0,2)}$ | [Nm] | 7,6 | 19 | 37 | 65 |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | |
| Characteristic resistance (Steel 8.8) | $M_{Rk,s}^{0,2)}$ | [Nm] | 12 | 30 | 60 | 105 |
| Partial safety factor | γ_{Ms} | [-] | 1,25 | | | |

¹⁾ The anchor may be set in a flange thickness of 30 mm with identical characteristic loads, if the borehole cuts no hollow core.

²⁾ Characteristic bending moment $M_{Rk,s}^{0,2)}$ for equation (5.5) in ETAG 001, Annex C or for equation (14) in CEN/TS 1992-4-4



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ETA 17/0567 Table C4 - Characteristic values under fire exposure in solid concrete slabs C20/25 to C50/60 for $h_{ef} \geq 30$ mm

| Anchor size | | | | M6x30 | M8x30 | M8x40 | M10x30 | M10x40 | M12x50 | M16x65 | |
|---------------------------------------|--|---------------------------|---------------|-------|-------|-------|--------|--------|--------|--------|-----|
| Fire resistance class | | Load in any direction | | | | | | | | | |
| Steel 4.6 | R 30 | Characteristic resistance | $F_{Rk,fi}^0$ | [kN] | 0,4 | 0,6 | 0,6 | 0,9 | 0,9 | 1,5 | 3,1 |
| | R 60 | | | [kN] | 0,35 | 0,6 | 0,6 | 0,8 | 0,8 | 1,3 | 2,4 |
| | R 90 | | | [kN] | 0,30 | 0,6 | 0,6 | 0,6 | 0,6 | 1,1 | 2,0 |
| | R 120 | | | [kN] | 0,25 | 0,5 | 0,5 | 0,5 | 0,5 | 0,8 | 1,6 |
| Steel 4.8 | R 30 | Characteristic resistance | $F_{Rk,fi}^0$ | [kN] | 0,4 | 0,9 | 1,1 | 0,9 | 1,5 | 1,5 | 4,0 |
| | R 60 | | | [kN] | 0,35 | 0,9 | 0,9 | 0,9 | 1,5 | 1,5 | 4,0 |
| | R 90 | | | [kN] | 0,3 | 0,6 | 0,6 | 0,9 | 1,1 | 1,5 | 3,0 |
| | R 120 | | | [kN] | 0,3 | 0,5 | 0,5 | 0,7 | 0,9 | 1,2 | 2,4 |
| Steel ≥ 5.6 | R 30 | Characteristic resistance | $F_{Rk,fi}^0$ | [kN] | 0,8 | 0,9 | 1,5 | 0,9 | 1,5 | 1,5 | 4,0 |
| | R 60 | | | [kN] | 0,8 | 0,9 | 1,5 | 0,9 | 1,5 | 1,5 | 4,0 |
| | R 90 | | | [kN] | 0,4 | 0,9 | 0,9 | 0,9 | 1,5 | 1,5 | 3,7 |
| | R 120 | | | [kN] | 0,3 | 0,5 | 0,5 | 0,7 | 1,0 | 1,2 | 2,4 |
| A4 / HCR | R 30 | Characteristic resistance | $F_{Rk,fi}^0$ | [kN] | 0,8 | 0,9 | 1,5 | - | 1,5 | 1,5 | 4,0 |
| | R 60 | | | [kN] | 0,8 | 0,9 | 1,5 | - | 1,5 | 1,5 | 4,0 |
| | R 90 | | | [kN] | 0,4 | 0,9 | 0,9 | - | 1,5 | 1,5 | 3,7 |
| | R 120 | | | [kN] | 0,3 | 0,5 | 0,5 | - | 1,0 | 1,2 | 2,4 |
| Partial safety factor $\gamma_{M,fi}$ | | | [-] | 1,0 | | | | | | | |
| Steel zinc plated | | | | | | | | | | | |
| R 30 – R 120 | Spacing $s_{cr,fi}$ | | [mm] | 130 | 180 | 210 | 170 | 170 | 200 | 400 | |
| | Edge distance $c_{cr,fi}$ | | [mm] | 65 | 90 | 105 | 85 | 85 | 100 | 200 | |
| | If the fire attack is from more than one side, the edge distance shall be ≥ 300 mm. | | | | | | | | | | |
| Stainless steel A4, HCR | | | | | | | | | | | |
| R 30 – R 120 | Spacing $s_{cr,fi}$ | | [mm] | 130 | 180 | 210 | - | 170 | 200 | 400 | |
| | Edge distance $c_{cr,fi}$ | | [mm] | 65 | 90 | 105 | - | 85 | 100 | 200 | |
| | If the fire attack is from more than one side, the edge distance shall be ≥ 300 mm. | | | | | | | | | | |

ETA 17/0567 Table C5 - Characteristic values under fire exposure in solid concrete slabs C20/25 to C50/60 for $h_{ef} = 25$ mm

| Anchor size | | | | M6x25 | M8x25 | M10x25 | M12x25 | |
|---------------------------------------|--|---------------------------|---------------|-------|-------|--------|--------|-----|
| Fire resistance class | | Load in any direction | | | | | | |
| Steel ≥ 4.6 | R 30 | Characteristic resistance | $F_{Rk,fi}^0$ | [kN] | 0,4 | 0,6 | 0,6 | 0,6 |
| | R 60 | | | [kN] | 0,35 | 0,6 | 0,6 | 0,6 |
| | R 90 | | | [kN] | 0,30 | 0,6 | 0,6 | 0,6 |
| | R 120 | | | [kN] | 0,25 | 0,5 | 0,5 | 0,5 |
| Partial safety factor $\gamma_{M,fi}$ | | | [-] | 1,0 | | | | |
| R 30 – R 120 | Spacing $s_{cr,fi}$ | | [mm] | 100 | 100 | 100 | 100 | |
| | Edge distance $c_{cr,fi}$ | | [mm] | 50 | 50 | 50 | 50 | |
| | If the fire attack is from more than one side, the edge distance shall be ≥ 300 mm. | | | | | | | |