

Heavy-duty expansion anchor CE7

- CE option 7
- Certified use for cracked and uncracked concrete from C20/25 up to C50/60 grading
- Suitable for dense materials
- Complete with nut and washer
- Long thread
- A2 stainless steel expansion nut (AB7 extra-long)
- Electrogalvanized carbon steel
- Through fastening
- Torque-controlled expansion

AB7 STANDARD



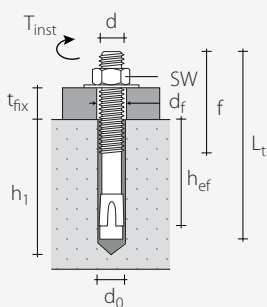
code	d = d ₀ [mm]	L _t [mm]	t _{fix} [mm]	f [mm]	h _{1,min} [mm]	h _{ef} [mm]	d _f [mm]	SW [mm]	T _{inst} [Nm]	pcs/box
FE210730	10	70	3	29	60	42	12	17	35	50
FE210735	12	100	23	48	70	50	14	19	60	50
FE210740		120	28 / 43*	68	85 / 70*	65 / 50*	14	19	60	20
FE210745	16	145	23	80	110	84	18	24	120	15
FE210750		220	98	155	110	84	18	24	120	10
FE210755	20	170	23	102	135	103	22	30	240	5

* Double insertion mode: standard / reduced depth

AB7 EXTRALONG



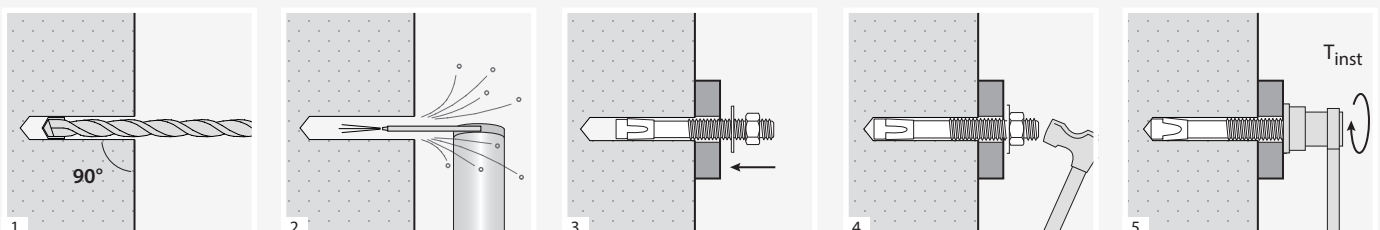
code	d = d ₀ [mm]	L _t [mm]	t _{fix} [mm]	f [mm]	h _{1,min} [mm]	h _{ef} [mm]	d _f [mm]	SW [mm]	T _{inst} [Nm]	pcs/box
FE210500	16	300	185	120	120	75,8	18	24	100	5
FE210495		400	245	120	120	75,8	18	24	100	5



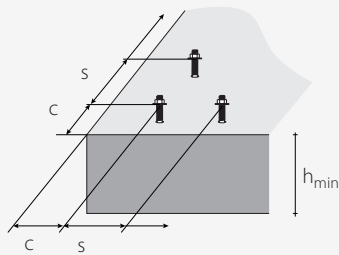
d = screw diameter
d₀ = anchor diameter = hole diameter in the concrete support
L_t = anchor length
t_{fix} = maximum fixing thickness
f = thread length

h₁ = minimum hole depth
h_{ef} = effective anchor depth
d_f = maximum hole diameter in the element to be fastened
SW = wrench size
T_{inst} = tightening torque

ASSEMBLING



INSTALLATION



		AB7 STANDARD					AB7 EXTRALONG
Spacing and minimum distances		M10	M12x100	M12x120 ⁽³⁾	M16	M20	M16
Minimum spacing	s_{min} [mm]	70	85	85	110	135	96
Minimum edge distance	c_{min} [mm]	70	85	85	110	135	128
Minimum thickness of the concrete support	h_{min} [mm]	100	100	130 / 100	168	206	200

Spacing and minimum distances		M10	M12x100	M12x120 ⁽³⁾	M16	M20	M16
Critical spacing	$s_{cr,N}^{(4)}$ [mm]	126	150	195 / 150	252	309	270
	$s_{cr,sp}^{(5)}$ [mm]	168	200	260 / 200	336	412	270
Critical edge distance	$c_{cr,N}^{(4)}$ [mm]	63	75	98 / 75	126	155	135
	$c_{cr,sp}^{(5)}$ [mm]	84	100	130 / 100	168	206	135

For spacing and distances smaller than the critical ones, strength values have to be reduced depending on the installation parameters.

STATIC VALUES

Valid for a single anchor in C20/25 grade concrete when spacing and edge-distance are not limiting parameters.

CHARACTERISTIC VALUES

		UNCRACKED CONCRETE			
		TENSION ⁽¹⁾		SHEAR ⁽²⁾	
		$N_{Rk,p}$ [kN]	γ_{Mp}	$V_{Rk,s} / V_{Rk,cp}$ [kN]	$\gamma_{Ms,Mc}$
AB7 STANDARD	M10	12,0	1,5	13,7	1,5
	M12x100	16,0	1,5	17,8	1,5
	M12x120 ⁽³⁾	25,0 / 16,0	1,8 / 1,5	20,6 / 17,8	1,25 / 1,5
	M16	35,0	1,8	38,3	1,25
	M20	50,0	1,8	56,3	1,25
AB7 EXTRALONG	M16	25,0	1,8	13,5	1,25

increment factor for $N_{Rk,p}$		
ψ_c	C30/37	1,22
	C40/50	1,41
	C50/60	1,55

ADMISSIBLE VALUES (recommended)

		UNCRACKED CONCRETE	
		TENSION	SHEAR
		N_{rec} [kN]	V_{rec} [kN]
AB7 STANDARD	M10	5,7	6,5
	M12x100	7,6	8,5
	M12x120 ⁽³⁾	9,9 / 7,6	11,8 / 8,5
	M16	13,9	21,9
	M20	19,8	32,2
AB7 EXTRALONG	M16	9,9	7,7

GENERAL PRINCIPLES

- Characteristic values according to ETA and in accordance with the design method A (ETAG001).
- Design values can be obtained from characteristic values as follows:

$$R_d = \frac{R_k}{\gamma_m}$$

Coefficients γ_m are listed in the table in accordance with the product certificates.

- Admissible values (recommended) are evaluated based on the characteristic values by applying the material safety factors γ_m according to ETA and a further partial factor for external actions $\gamma_f = 1,4$.
- For the calculation of anchors with reduced spacing, or too close to the edge, please refer to ETA. Similarly, in case of fastening on concrete-supports with a better-grade or limited thickness please see ETA.

NOTES

- ⁽¹⁾ Pull-out failure mode.
- ⁽²⁾ Variable failure mode (steel failure or pry-out failure)
- ⁽³⁾ Values provided in the table refer to the two possible anchoring depths (standard/reduced)
- ⁽⁴⁾ Concrete cone failure mode.
- ⁽⁵⁾ Splitting failure mode.