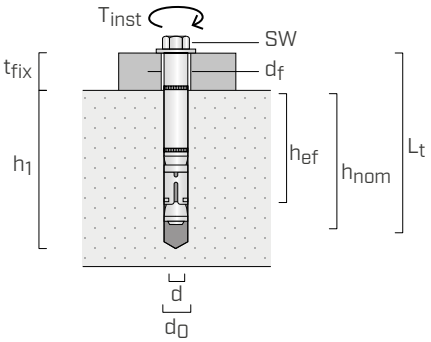
ABS

HEAVY-DUTY EXPANSION ANCHOR WITH CLAMP CE1

- CE option 1 for cracked and uncracked concrete
- Seismic performance category C1 and C2
- Electrogalvanized carbon steel
- Fire resistance R120
- 8.8 grade screw with hexagonal head and washer
- Suitable for dense materials
- Through fastening
- Torque-controlled expansion

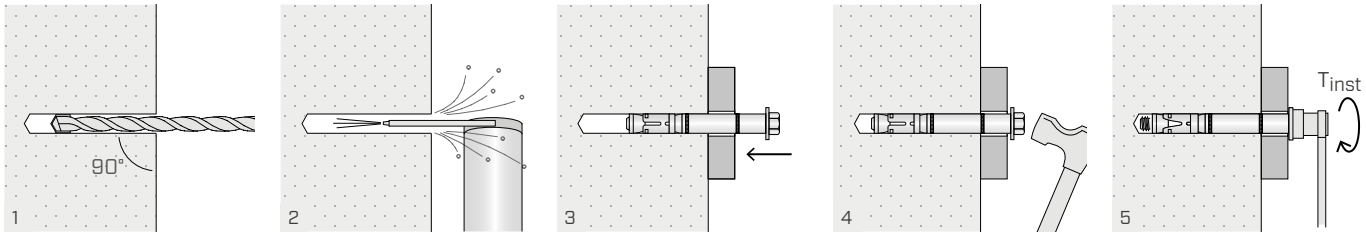
CODES AND DIMENSIONS

CODE	d_0 [mm]	L_t [mm]	d_{screw} [mm]	t_{fix} [mm]	$h_{1,min}$ [mm]	h_{nom} [mm]	h_{ef} [mm]	d_f [mm]	SW [mm]	T_{inst} [Nm]	pcs
ABS1070	**10**	**70**	M6	5	80	65	55	12	10	15	50
ABS10100		**100**	M6	35	80	65	55	12	10	15	50
ABS12100	**12**	**100**	M8	30	90	70	60	14	13	30	50
ABS12120		**120**	M8	50	90	70	60	14	13	30	25
ABS16120	**16**	**120**	M10	40	100	80	70	18	17	50	25
ABS16140		**140**	M10	60	100	80	70	18	17	50	20

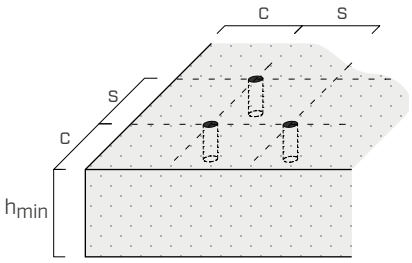


d_0	anchor diameter = hole diameter in the concrete support
d	screw diameter
L_t	anchor length
t_{fix}	maximum fastening thickness
h_1	minimum hole depth
h_{nom}	nominal anchoring depth
h_{ef}	effective anchor depth
d_f	maximum hole diameter in the element to be fastened
SW	wrench size
T_{inst}	tightening torque

ASSEMBLY



INSTALLATION



			ABS		
Spacing and minimum distances			**10/M6**	**12/M8**	**16/M10**
Minimum spacing	s_{min}	[mm]	55	110	80
	for c ≥	[mm]	110	145	120
Minimum edge distance	c_{min}	[mm]	70	100	90
	for s ≥	[mm]	110	160	175
Minimum thickness of concrete support	h_{min}	[mm]	110	120	140
Spacing and critical distances			**10/M6**	**12/M8**	**16/M10**
Critical spacing	$s_{cr,N}$ (1)	[mm]	165	180	210
	$s_{cr,sp}$ (2)	[mm]	220	320	240
Critical edge distance	$c_{cr,N}$ (1)	[mm]	85	90	105
	$c_{cr,sp}$ (2)	[mm]	110	160	120

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 thickened C20/25 grade concrete with a thin reinforcing layer when spacing and edge-distance are not limiting parameters.

CHARACTERISTIC VALUES

	UNCRACKED CONCRETE				CRACKED CONCRETE			
	tension (3)		**shear** (4)		**tension** (3)		**shear**	
	$N_{Rk,p}$ [kN]	γ_{Mp}	$V_{Rk,s}$ [kN]	γ_{Ms}	$N_{Rk,p}$ [kN]	γ_{Mp}	$V_{Rk,s/Rk,cp}$ [kN]	$\gamma_{Ms,Mc}$
10/M6	16,0	1,5	16,0	1,45	5	1,5	15,6 (5)	1,5
12/M8	16,0	1,5	25,0	1,45	6	1,5	25,0 (4)	1,45
16/M10	20,0	1,5	43,0	1,45	16	1,5	42,2 (5)	1,5

incremental factor for $N_{Rk,p}$ (6)		
Ψ_c	C30/37	1,22
	C40/50	1,41
	C50/60	1,55

NOTES:

(1) Breakage characteristics for formation of concrete cone for tensile loads.
(2) Splitting failure mode for tensile loads.
(3) Pull-out failure mode.
(4) Steel failure mode ($V_{Rk,s}$).
(5) Pry-out failure mode ($V_{Rk,cp}$).
(6) Tensile-strength increment factor (excluding steel failure).

GENERAL PRINCIPLES:

- Characteristic values according to ETA-11/0181.
- The design values are obtained from the characteristic values as follows: $R_d = R_k/\gamma_M$.
  Coefficients γ_M are listed in the table in accordance with the failure characteristics and product certificates.
- 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, limited thickness or a thick reinforcing layer please see ETA.
- When designing anchors under seismic load please refer to the ETA referral document and information in the EOTA Technical Report 045.
- For the calculation of anchors subjected to fire refer to the ETA and the Technical Report 020.