

# AB7



## HEAVY DUTY EXPANSION ANCHOR CE7

- CE option 7 for uncracked concrete
- Electrogalvanized carbon steel
- Complete with nut and washer
- Long thread
- Extra-long multiway expansion clamp
- Suitable for dense materials
- Through fastening
- Torque-controlled expansion



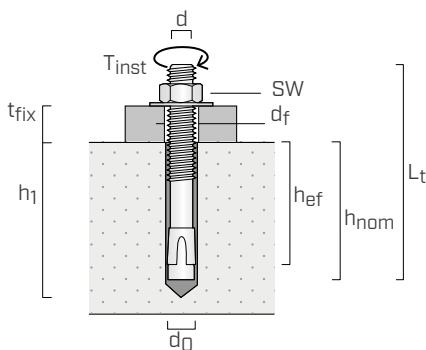
## CODES AND DIMENSIONS

### AB7 STANDARD washer ISO 7089

CODE	d = d <sub>0</sub> [mm]	L <sub>t</sub> [mm]	t <sub>fix</sub> [mm]	h <sub>1,min</sub> [mm]	h <sub>nom</sub> [mm]	h <sub>ef</sub> [mm]	d <sub>f</sub> [mm]	SW [mm]	T <sub>inst</sub> [Nm]	pcs
AB71075	10	75	10	65	55	50	12	17	35	50
AB712100	12	100	18	80	70	60	14	19	55	50
AB712120		120	38	80	70	60	14	19	55	20
AB716145	16	145	30	110	100	85	18	24	100	15
AB716220		220	105	110	100	85	18	24	100	10
AB720170	20	170	35	125	115	100	22	30	150	5

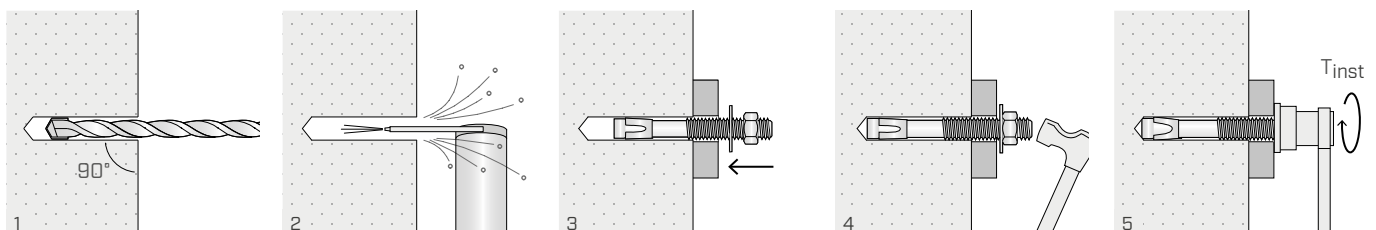
### AB7 EXTRALONG large size washer ISO 7093

CODE	d = d <sub>0</sub> [mm]	L <sub>t</sub> [mm]	t <sub>fix</sub> [mm]	h <sub>1,min</sub> [mm]	h <sub>nom</sub> [mm]	h <sub>ef</sub> [mm]	d <sub>f</sub> [mm]	SW [mm]	T <sub>inst</sub> [Nm]	pcs
AB716300	16	300	185	110	100	85	18	24	100	5
AB716400		400	245	110	100	85	18	24	100	5

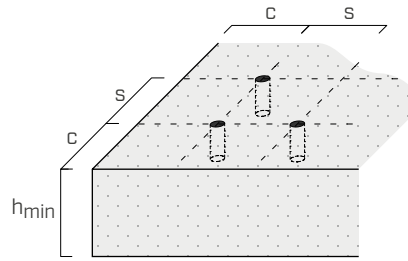


- d** anchor diameter
- d<sub>0</sub>** hole diameter in the concrete support
- L<sub>t</sub>** anchor length
- t<sub>fix</sub>** maximum fastening thickness
- h<sub>1</sub>** minimum hole depth
- h<sub>nom</sub>** nominal anchoring depth
- h<sub>ef</sub>** effective anchor depth
- d<sub>f</sub>** maximum hole diameter in the element to be fastened
- SW** wrench size
- T<sub>inst</sub>** tightening torque

## ASSEMBLY



## INSTALLATION



		AB7			
Spacing and minimum distances		M10	M12	M16	M20
Minimum spacing	$s_{min}$ [mm]	68	81	115	135
Minimum edge distance	$c_{min}$ [mm]	68	81	115	135
Minimum thickness of concrete support	$h_{min}$ [mm]	100	120	170	200
Spacing and critical distances		M10	M12	M16	M20
Critical spacing	$s_{cr,N}^{(1)}$ [mm]	150	180	255	300
	$s_{cr,sp}^{(2)}$ [mm]	250	300	425	500
Critical edge distance	$c_{cr,N}^{(1)}$ [mm]	75	90	128	150
	$c_{cr,sp}^{(2)}$ [mm]	125	150	213	250

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

rod	UNCRACKED CONCRETE			
	tension <sup>(3)</sup>		shear <sup>(4)</sup>	
	$N_{RK,p}$ [kN]	$\gamma_{Mp}$	$V_{RK,s}$ [kN]	$\gamma_{Ms}$
M10	12,0	1,8	14,5	1,25
M12	16,0	1,8	21,1	1,25
M16	16,0	1,8	39,3	1,25
M20	30,0	1,5	58,8	1,25

incremental factor for $N_{RK,p}^{(5)}$		
$\psi_c$	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.
- (5) Tensile-strength increment factor (excluding steel failure).

### GENERAL PRINCIPLES:

- Characteristic values according to ETA-17/0237.
- The design values are obtained from the characteristic values as follows:  
 $R_d = R_k / \gamma_M$ .  
Coefficients  $\gamma_M$  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.