

SKR - SKS CE



SCREW ANCHOR FOR CONCRETE CE1

- CE option 1 for cracked and uncracked concrete.
- Seismic performance category C1 (M10-M16) and C2 (M12-M16).
- Electrogalvanized carbon steel.
- Self-locking knurled under-head (SKR CE).
- Fire resistance R120.
- Through fastener.
- No fastener expansion.



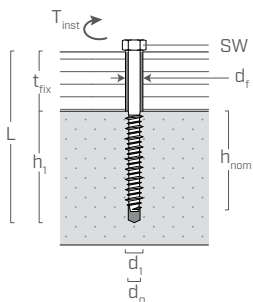
CODES AND DIMENSIONS

SKR CE hexagonal head with mock washer

CODE	d_1 [mm]	L [mm]	t_{fix} [mm]	$h_{1,min}$ [mm]	h_{nom} [mm]	h_{ef} [mm]	d_0 cls [mm]	d_f [mm]	SW [mm]	T_{inst} [Nm]	pcs.
SKR8100CE	8	100	40	75	60	48	6	9	10	20	50
SKR1080CE	10	80	10	85	70	56	8	12	13	50	50
SKR10100CE	10	100	30	85	70	56	8	12	13	50	25
SKR10120CE	10	120	50	85	70	56	8	12	13	50	25
SKR12110CE	12	110	30	100	80	64	10	14	15	80	25
SKR12150CE	12	150	70	100	80	64	10	14	15	80	25
SKR12210CE	12	210	130	100	80	64	10	14	15	80	20
SKR12250CE	12	250	170	100	80	64	10	14	15	80	15
SKR12290CE	12	290	210	100	80	64	10	14	15	80	15
SKR16130CE	16	130	20	140	110	85	14	18	21	160	10

SKS CE countersunk flat head

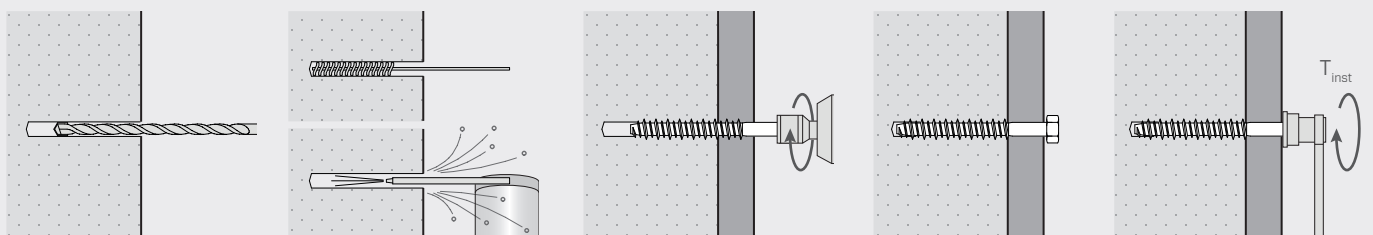
CODE	d_1 [mm]	L [mm]	t_{fix} [mm]	$h_{1,min}$ [mm]	h_{nom} [mm]	h_{ef} [mm]	d_0 cls [mm]	d_f [mm]	TX [mm]	T_{inst} [Nm]	pcs.
SKS75100CE	8	100	40	75	60	48	6	9	TX30	20	50
SKS10100CE	10	100	30	85	70	56	8	12	TX40	50	50



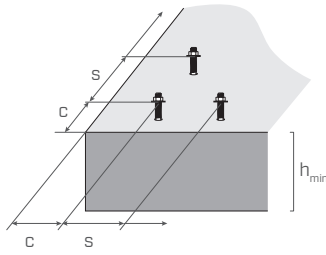
d_1 = external diameter of anchor
 L = anchor length
 t_{fix} = maximum fixing thickness
 h_1 = minimum hole depth
 h_{nom} = nominal anchoring depth

d_0 = hole diameter in the concrete support
 d_f = maximum hole diameter in the element to be fastened
 SW = wrench size
 T_{inst} = tightening torque

ASSEMBLING



INSTALLATION



			SKR CE / SKS CE			
Spacing and minimum distances			8	10	12	16
Minimum spacing	S_{min}	[mm]	45	50	60	80
Minimum edge distance	C_{min}	[mm]	45	50	60	80
Minimum thickness of the concrete support	h_{min}	[mm]	100	110	130	170
Spacing and critical distances			8	10	12	16
Critical spacing	$S_{cr,N}^{(4)}$	[mm]	144	168	192	255
	$S_{cr,sp}^{(5)}$	[mm]	160	175	195	255
Critical edge distance	$C_{cr,N}^{(4)}$	[mm]	72	84	96	128
	$C_{cr,sp}^{(5)}$	[mm]	80	85	95	130

For spacing and distances smaller than the critical ones, strength values will 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 ⁽¹⁾		SHEAR ⁽²⁾				TENSION ⁽¹⁾		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]	γ _{Ms,Mc}			
SKR CE	8	16	2,1	9,4	1,5	SKR CE	8	4	2,1	9,4 ⁽²⁾	1,5	increment factor for N _{Rk,p} ⁽⁶⁾		
	10	20	1,8	20,1	1,5		10	7,5	1,8	15,1 ⁽³⁾	1,5			
	12	25	2,1	32,4	1,5		12	9	2,1	32,4 ⁽²⁾	1,5			
	16	40	2,1	56,9	1,5		16	16	2,1	56,4 ⁽³⁾	1,5			
SKS CE	8	16	2,1	9,4	1,5	SKS CE	8	4	2,1	9,4 ⁽²⁾	1,5	ψ _c	C30/37	1,22
	10	20	1,8	20,1	1,5		10	7,5	1,8	20,1 ⁽²⁾	1,5	C40/50	1,41	
												C50/60	1,58	

ADMISSIBLE VALUES [recommended]

		UNCRACKED CONCRETE		CRACKED CONCRETE	
		TENSION	SHEAR	TENSION	SHEAR
		N_{rec} [kN]	V_{rec} [kN]	N_{rec} [kN]	V_{rec} [kN]
SKR CE	8	5,4	4,5	8	1,4
	10	7,9	9,6	10	3,0
	12	8,5	15,4	12	3,1
	16	13,6	27,1	16	5,4
SKS CE	8	5,4	4,5	8	1,4
	10	7,9	9,6	10	3,0

GENERAL PRINCIPLES:

- Characteristic values according to ETA-11/0336.
- Design values can be obtained from 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.
- 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, 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.

NOTES:

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