



S-KA+



S-KAK+



S-KAH+



S-KAH+
HCR

High-performance through bolts for fixing in non-cracked and cracked concrete

VERSIONS

- S-KA+, Steel, zinc plated
- S-KAK+, Steel, hot dip galvanized
- S-KAH+, Stainless steel, A4
- S-KAH+ HCR, Stainless Steel, HCR

PRODUCT DESCRIPTION

- Premium quality torque-controlled expansion anchors for pre-, push-through and distance installations.
- When torque is applied the expansion clip expands developing frictional grip with the drill hole walls.
- Anchor size and max. fixture thicknesses marked on the body. Anchor length letter code marked on the bolt head.
- M10 and M12 have two different anchorage depths.

BASE MATERIALS

- **Approved for:**
Cracked concrete, Non-cracked concrete
- **Also suitable for:**
Natural stone

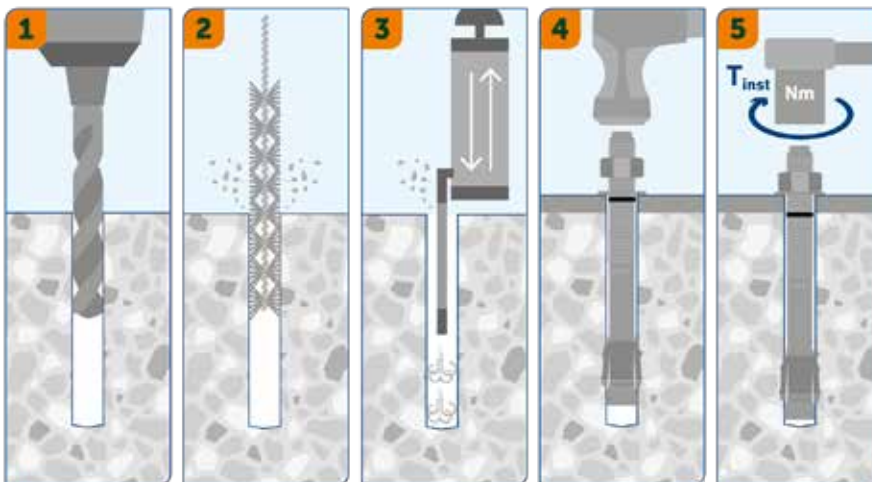
- The use of S-KA setting tool makes serial installation safer and quicker.
- Seismic performance category C1/C2 for S-KA+ and S-KAH+.
- ZP for dry indoor use; HDG for dry and humid indoor use, outdoor rural inland areas only; A4 for indoor, outdoor and industrial use; HCR for extremely corrosive conditions.

APPROVALS



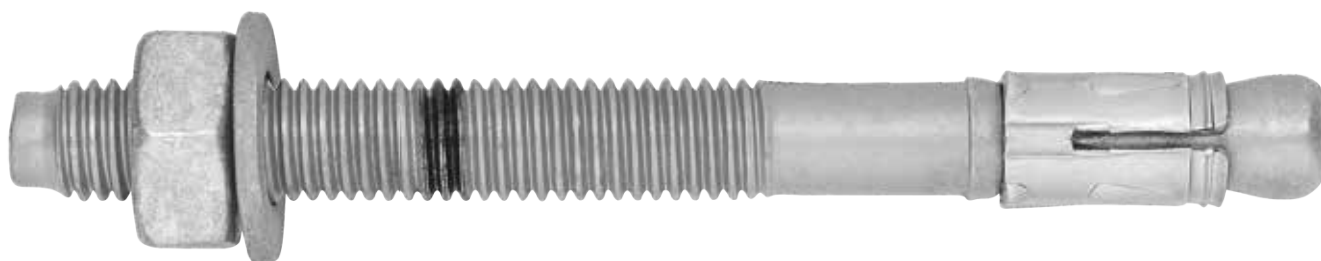
APPLICATIONS

- Steel structures
- Column base plates
- Seatings
- Barriers
- Cable racks
- Handrails
- Ladders
- Façade systems

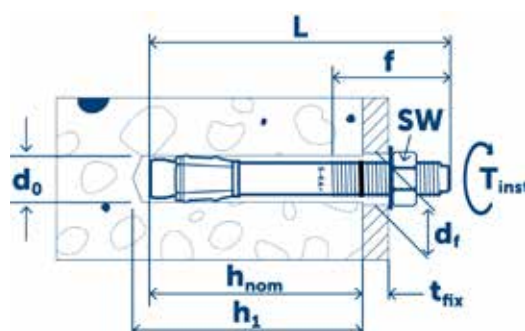


INSTALLATION



1. Drill a hole according to the product data.
- 2.-3. Clean the hole using a brush and blow-out pump.
4. Install anchor with a hammer or a setting tool.
5. Tighten the anchor to the specified installation torque.



S-KAK+, Steel, hot dip galvanized








TECHNICAL DATA

Type	Code	Approval	Length	 ϕ	Min. hole depth	Max. fixture thickness	Thread		
		ETA	L mm	d_0 mm	h_1 mm	t_{fix} mm	f mm		
8/10	9640003310	•	75	8	60	10	35	50	250
8/30	9640003312	•	95	8	60	30	55	50	250
8/50	9640003314	•	115	8	60	50	75	40	200
8/85	9640003316	•	150	8	60	85	110	40	200
10/10/-	9640003323	•	72	10	55	10	27	40	200
10/30/10	9640003325	•	92	10	55/75	30/10	47	40	200
10/40/20	9640003326	•	102	10	55/75	40/20	57	25	125
10/50/30	9640003327	•	112	10	55/75	50/30	67	25	125
10/70/50	9640003329	•	132	10	55/75	70/50	87	25	125
10/100/80	9640003331	•	162	10	55/75	100/80	115	25	125
12/10/-	9640003338	•	88	12	70	10	38	20	100
12/25/5	9640003340	•	103	12	70/90	25/5	53	20	100
12/40/20	9640003342	•	118	12	70/50	40/20	68	20	100
12/50/30	9640003343	•	128	12	70/50	50/30	78	20	100
12/70/50	9640003345	•	148	12	70/50	70/50	98	20	100
12/85/65	9640003346	•	163	12	70/50	85/65	113	20	100
12/100/80	9640003347	•	178	12	70/50	100/80	115	20	100
16/5	9640003357	•	123	16	110	5	65	10	50
16/20	9640003359	•	138	16	110	20	80	10	50
16/50	9640003362	•	168	16	110	50	110	10	50
16/60	9640003363	•	178	16	110	60	115	10	50

Visit sormat.com for more information.

PERFORMANCE DATA

S-KAK+, Steel, hot dip galvanized

Type	 \varnothing	Hole in fixture \varnothing	Nominal setting depth	Width across flats	Installation torque	Recommended loads kN		Recommended loads kN	
						tension / shear	Non-cracked concrete C20/25	tension / shear	Cracked concrete C20/25
	d_0 mm	d_f mm	h_{nom} mm	SW mm	T_{inst} Nm				
8/10	8	9	53	13	15	5,2	7,2	4,0	5,7
8/30	8	9	53	13	15	5,2	7,2	4,0	5,7
8/50	8	9	53	13	15	5,2	7,2	4,0	5,7
8/85	8	9	53	13	15	5,2	7,2	4,0	5,7
10/10/-	10	12	48	17	30	5,7	6,1	4,3	4,3
10/30/10	10	12	68	17	30	9,0	10,5	5,7	10,5
10/30/10	10	12	48	17	30	5,7	6,1	4,3	4,3
10/40/20	10	12	68	17	30	9,0	10,5	5,7	10,5
10/40/20	10	12	48	17	30	5,7	6,1	4,3	4,3
10/50/30	10	12	68	17	30	9,0	10,5	5,7	10,5
10/50/30	10	12	48	17	30	5,7	6,1	4,3	4,3
10/70/50	10	12	68	17	30	9,0	10,5	5,7	10,5
10/70/50	10	12	48	17	30	5,7	6,1	4,3	4,3
10/100/80	10	12	68	17	30	9,0	10,5	5,7	10,5
10/100/80	10	12	48	17	30	5,7	6,1	4,3	4,3
12/10/-	12	14	61	19	60	8,5	8,5	6,1	6,1
12/25/5	12	14	81	19	60	11,9	16,4	7,6	16,4
12/25/5	12	14	61	19	60	8,5	8,5	6,1	6,1
12/40/20	12	14	81	19	60	11,9	16,4	7,6	16,4
12/40/20	12	14	61	19	60	8,5	8,5	6,1	6,1
12/50/30	12	14	81	19	60	11,9	16,4	7,6	16,4
12/50/30	12	14	61	19	60	8,5	8,5	6,1	6,1
12/70/50	12	14	81	19	60	11,9	16,4	7,6	16,4
12/70/50	12	14	61	19	60	8,5	8,5	6,1	6,1
12/85/65	12	14	81	19	60	11,9	16,4	7,6	16,4
12/85/65	12	14	61	19	60	8,5	8,5	6,1	6,1
12/100/80	12	14	81	19	60	11,9	16,4	7,6	16,4
12/100/80	12	14	61	19	60	8,5	8,5	6,1	6,1
16/5	16	18	97	24	110	17,1	30,9	11,4	26,9
16/20	16	18	97	24	110	17,1	30,9	11,4	26,9
16/50	16	18	97	24	110	17,1	30,9	11,4	26,9
16/60	16	18	97	24	110	17,1	30,9	11,4	26,9

The highest recommended loads (kN) for a single anchor. Visit sormat.com for European Technical Assessment ETA-16/0934

Load values include the resistances' partial safety factors as per approvals and a partial safety factor on the action of $\gamma_c = 1.4$. Load values apply for a rebar spacing $s \geq 15$ cm or alternatively for a rebar spacing $s \geq 10$ cm in combination with a rebar diameter of $d_s \leq 10$ mm. Concrete is considered non-cracked when the value of tension within the concrete is $\sigma_t + \sigma_s \leq 0$. In the absence of detailed verification $\sigma_R = 3$ N/mm² can be assumed (σ_t equals the tension within the concrete as a result of external loads, forces on anchor included; σ_s equals the tension coming from shrinkage or creep of the concrete, as well as displacements of supports or temperature variations). Shear load values apply for an anchor without influence of a concrete edge. For shear loads close to an edge ($c \leq 10 \times h_{ep}$), concrete edge failure has to be checked as per EOTA TR 055. Visit sormat.com for more information.



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