

TECHNICAL DATASHEET

SITA ACCIAIO CE 1 steel wedge anchor for cracked and non-cracked concrete

EN
rev. 01/2015
p. 1/5

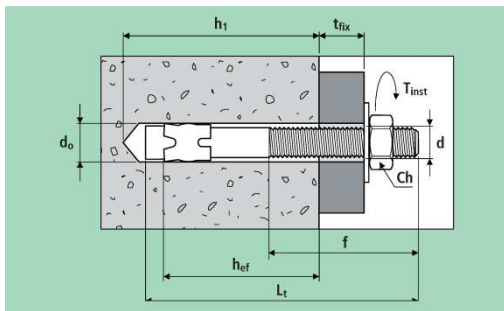


Certificates

ETA-10/0076 Approval according to ETAG 001-5 for non-cracked and cracked concrete (Option 1), Fire Resistance 120 min

Use

certified use	specific use
non-cracked concrete	natural stone
cracked concrete	



d = anchor diameter
L_t = anchor length
t_{fix} = fixable thickness
f = thread length
d₀ = hole diameter
h₁ = minimum hole depth
h_{nom} = overall embedment depth
h_{ef} = effective anchorage depth
d_f = hole diameter in fixture
Ch = spanner
T_{inst} = tightening torque

SITA Zinc-plated steel anchor CE1

complete with preassembled nut and washer

art.	descr.	d mm	L _t mm	f mm	d ₀ mm	t _{fix} mm	h ₁ mm	h _{nom} mm	h _{ef} mm	d _f mm	Ch mm	T _{inst} Nm
TTSK05	S1K872/10	8	72	32	8	10	60	50	45	9	13	20
TTSK06	S1K892/30		92	52		30						
TTSK17	S1K8112/50		112	72		50						
TTSK170	S1K8147/85		147	107		85						
TTSK09	S1K1092/10	10	92	47	10	10	75	68	60	12	17	35
TTSK081	S1K10112/30		112	67		30						
TTSK18	S1K10132/50		132	87		50						
TTSK082	S1K10162/80		162	115		80						
TTSK10	S1K12103/5	12	103	53	12	5	90	81	70	14	19	50
TTSK11	S1K12118/20		118	68		20						
TTSK19	S1K12128/30		128	78		30						
TTSK190	S1K12148/50		148	98		50						
TTSK12	S1K12163/65		163	113		65						
TTSK23	S1K12178/80		178	115		80						
TTSK120	S1K16123/5	16	123	65	16	5	110	96	85	18	24	120
TTSK13	S1K16138/20		138	80		20						
60109	S1K16148/30		148	90		30						
TTSK20	S1K16168/50		168	110		50						
TTSK135	S1K16178/60		178	115		60						

TECHNICAL DATASHEET

SITA ACCIAIO CE 1 steel wedge anchor for cracked and non-cracked concrete

EN
rev. 01/2015
p. 2/5

Materials

part	material	coating
body	cold forged steel EN 10263-2	white zinc plating $\geq 5 \mu\text{m}$ EN ISO 4042
clip	cold rolled steel strip EN 10147	hot dip galvanizing EN 10147
nut	steel grade 8 (DIN 934, EN ISO 4032)	white zinc plating $\geq 5 \mu\text{m}$ EN ISO 4042
washer	steel (DIN 125, EN ISO 7089)	

SITA Stainless steel anchor CE1

AISI 316 (A4), complete with preassembled nut and washer

art.	descr.	d mm	L _t mm	f mm	d ₀ mm	t _{fix} mm	h ₁ mm	h _{nom} mm	h _{ef} mm	d _f mm	Ch mm	T _{inst} Nm
96001	SI1K872/10	8	72	32	8	10	60	50	45	9	13	20
96002	SI1K892/30		92	52		30						
96003	SI1K8112/50		112	72		50						
96004	SI1K1092/10	10	92	47	10	10	75	68	60	12	17	35
96024	SI1K10102/2		102	57		20						
96005	SI1K10112/30		112	67		30						
96006	SI1K10132/50		132	87		50						
96025	SI1K12103/5	12	103	53	12	5	90	81	70	14	19	70
96007	SI1K12118/20		118	68		20						
96008	SI1K12128/30		128	78		30						
96026	SI1K12148/50		148	98		50						
96009	SI1K12163/65		163	113		65						
96010	SI1K16123/5	16	123	65	16	5	110	96	85	18	24	120
96027	SI1K16138/20		138	80		20						
96011	SI1K16168/50		168	110		50						

Materials

part	material	coating
body	cold forged stainless steel EN 10088-3 W 1.4578	-
clip	cold rolled stainless steel strip EN 10088-2	
nut	stainless steel grade 80 (DIN 934, EN ISO 4032)	
washer	stainless steel (DIN 125, EN ISO 7089)	

TECHNICAL DATASHEET

SITA ACCIAIO CE 1 steel wedge anchor for cracked and non-cracked concrete

EN
rev. 01/2015
p. 3/5

SITA HDG steel anchor CE1

Hot-Dip Galvanized, complete with preassembled nut and washer

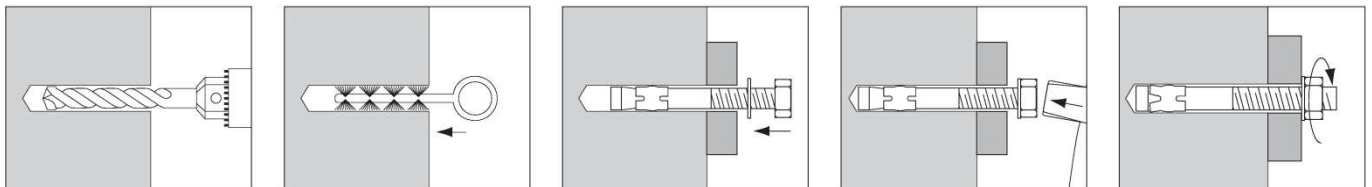
art.	descr.	d mm	L _t mm	f mm	d ₀ mm	t _{fix} mm	h ₁ mm	h _{nom} mm	h _{ef} mm	d _f mm	Ch mm	T _{inst} Nm
TTSKHDG01 ¹	SI1K1062/3 ¹	10	62	26	10	3	50	40	30	12	17	30
TTSKHDG02	SI1K1092/10		92	47		10						35
TTSKHDG03	SI1K10112/30		112	67		30						35
TTSKHDG04	SI1K10132/50		132	87		50						35
TTSKHDG05	SI1K12103/5	12	103	53	12	5	90	81	70	14	19	50
TTSKHDG06	SI1K12128/30		128	78		30						
TTSKHDG07	SI1K16123/5	16	123	65	16	5	110	96	85	18	24	120
TTSKHDG08	SI1K16138/20		138	80		20						
TTSKHDG09 ¹	SI1K20170/20 ¹	20	170	55	20	20	135	125	110	22	30	240
TTSKHDG10 ¹	SI1K20220/70 ¹		220	55		70						

¹ not included in CE certification, recommended for non-cracked concrete only

Materials

part	material	coating
body	cold forged steel EN 10263-2	hot dip galvanizing EN ISO 10684
clip	cold rolled steel strip EN 10147	hot dip galvanizing EN 10147
nut	steel grade 8 (DIN 934, EN ISO 4032)	hot dip galvanizing EN ISO 10684
washer	steel (DIN 125, EN ISO 7089)	

Installation



Setting parameters

size		M8	M10	M12	M16	M10x62 ¹	M20 ¹
minimum spacing	s _{min} mm	50	55	60	70	200	400
	with c ≥ c mm	50	80	90	120	150	300
minimum edge distance	c _{min} mm	50	80	55	85	150	300
	with s ≥ s mm	50	50	145	150	200	400
minimum thickness of base material	h _{min} mm	100	120	140	170	65	180

¹ not included in CE certification, recommended for non-cracked concrete only

Strength data

Valid for a single anchor, isolated and far from the edges, on a thick concrete member of class C20/25.

○ Non-cracked concrete

Characteristic resistance

size		M8	M10	M12	M16	
tension	N _{Rk} kN	9	16	20	35	
	shear	zinc-plated and HDG	V _{Rk} kN	10	18	23
stainless steel		V _{Rk} kN	11	17	25	47

TECHNICAL DATASHEET
SITA ACCIAIO CE 1 steel wedge anchor for cracked and non-cracked concrete

 EN
 rev. 01/2015
 p. 4/5

Design resistance

size			M8	M10	M12	M16
tension		N_{Rd} kN	5.0	8.9	11.1	23.3
shear	zinc-plated and HDG	V_{Rd} kN	6.7	12.0	15.3	29.3
	stainless steel	V_{Rd} kN	7.3	11.3	16.7	31.3

Recommended load

size			M8	M10	M12	M16	M10x62 ¹	M20 ¹
tension		N_{rec} kN	3.6	6.3	7.9	16.7	2.2	13.9
shear	zinc-plated and HDG	V_{rec} kN	4.8	8.6	11.0	21.0	3.3	13.9
	stainless steel	V_{rec} kN	5.2	8.1	11.9	22.4	-	-

¹ not included in CE certification, recommended for non-cracked concrete only

 1 kN \approx 100 kg

steel failure

 o **Cracked concrete**
Characteristic resistance

size			M8	M10	M12	M16
tension		N_{Rk} kN	5	9	12	20
shear	zinc-plated and HDG	V_{Rk} kN	10	18	23	44
	stainless steel	V_{Rk} kN	10.9	17	25	47

Design resistance

size			M8	M10	M12	M16
tension		N_{Rd} kN	2.8	5.0	6.7	13.3
shear	zinc-plated and HDG	V_{Rd} kN	6.7	12.0	15.3	29.3
	stainless steel	V_{Rd} kN	7.2	11.3	16.7	31.3

Recommended load

size			M8	M10	M12	M16
tension		N_{rec} kN	2.0	3.6	4.8	9.5
shear	zinc-plated and HDG	V_{rec} kN	4.8	8.6	11.0	21.0
	stainless steel	V_{rec} kN	5.2	8.1	11.9	22.4

 1 kN \approx 100 kg

steel failure

 Characteristic resistances N_{Rk} e V_{Rk} derive from values certified in ETA-10/0076. Design resistances N_{Rd} e V_{Rd} include partial safety factors on resistances for each size. Recommended loads N_{rec} e V_{rec} include the further safety factor 1.4.

For the design of anchors with reduced spacing, with reduced edge distance, or for fixing on concrete with higher strength or with reduced thickness, refer to European Technical Approval ETA-10/0076 and use Design Method A outlined in Annex C of ETAG 001 (issued by EOTA).

For the design of anchors under fire exposure refer to European Technical Approval ETA-10/0076 and Technical Report TR 020 issued by EOTA.

Data for design
Critical spacing and distances

size			M8	M10	M12	M16
critical spacing	$S_{cr,N}$ mm		135	180	210	255
	$S_{cr,sp}$ mm		180	240	280	340
critical edge distance	$C_{cr,N}$ mm		68	90	105	128
	$C_{cr,sp}$ mm		90	120	140	170

TECHNICAL DATASHEET

SITA ACCIAIO CE 1 steel wedge anchor for cracked and non-cracked concrete

EN
rev. 01/2015
p. 5/5

Increasing factors for tension resistance (excluding steel failure)

Ψ_c	C25/30	1,04
	C30/37	1,10
	C35/45	1,16
	C40/50	1,20
	C45/55	1,24
	C50/60	1,28