

## TECHNICAL DATASHEET

**SITA ACCIAIO CE 7 GBK** steel wedge anchor for non-cracked concrete

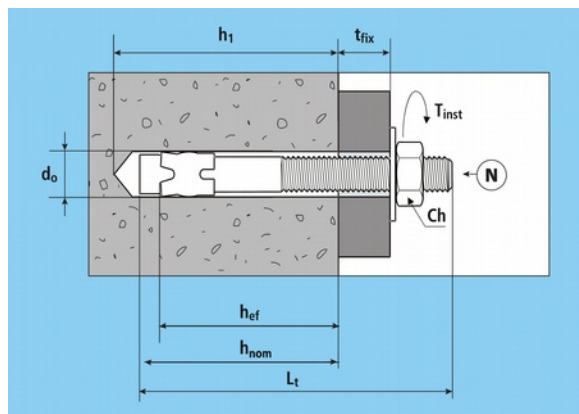
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## Certificates

ETA-17/0237      Certification for use on non-cracked concrete (Option 7)

## Use

<b>certified use</b>	<b>specific use</b>
non-cracked concrete	natural stone



- $d_0$  = hole diameter = anchor diameter
- $L_t$  = anchor length
- $t_{fix}$  = fixable thickness
- $f$  = thread length
- $h_1$  = 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
- $N$  = marking on head for length identification

## SITA Acciaio CE7 GBK

zinc plated, with pre-assembled nut and washer ISO 7089 (DIN 125)

art.	descr.	size	d <sub>0</sub> mm	L <sub>t</sub> mm	t <sub>fix</sub> mm	N	h <sub>1</sub> mm	h <sub>nom</sub> mm	h <sub>ef</sub> mm	d <sub>f</sub> mm	T <sub>inst</sub> Nm	Ch mm
60322	GBK865/7	M8X65	8	65	7	A	60	50	45	10	20	13
60323	GBK875/17	M8X75		75	17	B						
60324	GBK895/37	M8X95		95	37	E						
60325	GBK8115/57	M8X115		115	57	H						
60326	GBK1075/10	M10X75	10	75	10	B	65	55	50	12	35	17
60327	GBK1090/25	M10X90		90	25	D						
60328	GBK10100/35	M10X100		100	35	F						
60329	GBK10120/55	M10X120		120	55	I						
60330	GBK10150/85	M10X150		150	85	N						
60331	GBK10170/105	M10X170		170	105	P						
60348	GBK1290/8	M12X90	12	90	8	D	80	70	60	14	55	19
60332	GBK12100/18	M12X100		100	18	F						
60333	GBK12110/28	M12X110		110	28	G						
60334	GBK12120/38	M12X120		120	38	I						
60335	GBK12140/58	M12X140		140	58	L						
60336	GBK12160/78	M12X160		160	78	O						
60337	GBK12180/98	M12X180		180	98	Q						
60341	GBK16125/10	M16X125	16	125	10	J	110	100	85	18	100	24
60342	GBK16145/30	M16X145		145	30	M						
60343	GBK16170/55	M16X170		170	55	P						
60349	GBK16200/85	M16X200		200	85	R						
60344	GBK16220/105	M16X220		220	105	S						

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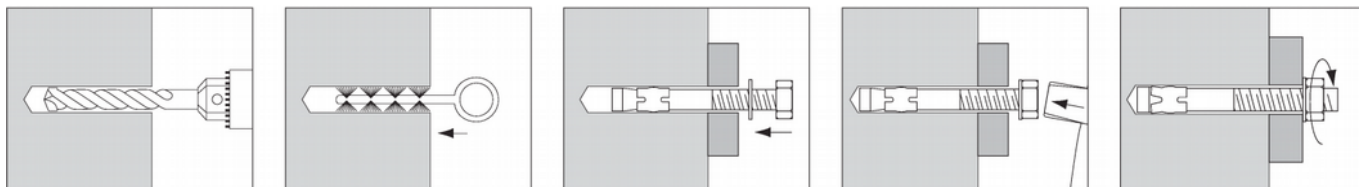
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art.	descr.	size	d <sub>0</sub> mm	L <sub>t</sub> mm	t <sub>fix</sub> mm	N	h <sub>1</sub> mm	h <sub>nom</sub> mm	h <sub>ef</sub> mm	d <sub>f</sub> mm	T <sub>inst</sub> Nm	Ch mm
60350	GBK20150/15	M20X150	20	150	15	N	125	115	100	22	150	30
60345	GBK20170/35	M20X170		170	35	P						
60346	GBK20220/85	M20X220		220	85	S						
60347	GBK20270/135	M20X270		270	135	U						

**SITA Acciaio CE7 GBK – extralong sizes**

zinc plated, with pre-assembled nut and washer ISO 7093 (DIN 9021)

art.	descr.	size	d <sub>0</sub> mm	L <sub>t</sub> mm	t <sub>fix</sub> mm	N	h <sub>1</sub> mm	h <sub>nom</sub> mm	h <sub>ef</sub> mm	d <sub>f</sub> mm	T <sub>inst</sub> Nm	Ch mm
60135	GBK12200/118	M12X200	12	200	118	R	80	70	60	14	55	19
60136	GBK12220/138	M12X220		220	138	S						
60137	GBK12240/158	M12X240		240	158	T						
60138	GBK12280/198	M12X280		280	198	V						
60139	GBK12300/218	M12X300		300	218	W						
60140	GBK12360/278	M12X360		360	278	Y						
60141	GBK16240/125	M16X240	16	240	125	T	110	100	85	18	100	24
60142	GBK16280/165	M16X280		280	165	V						
60143	GBK16300/185	M16X300		300	185	W						
60144	GBK16400/285	M16X400		400	285	Z						

**Installation**

**Materials**

part	material	coating
body	Carbon steel (f <sub>uk</sub> ≥ 500 MPa M8÷M16; ≥ 480 MPa M20)	white zinc plating ≥ 5 µm ISO 4042
clip	Carbon steel	
nut	ISO 898-2 carbon steel class 8	
washer	ISO 7089 (DIN 125) or 7093 (DIN 2021)	

**Setting parameters**

size		M8	M10	M12	M16	M20
minimum spacing	s <sub>min</sub> mm	61	68	81	115	135
minimum edge distance	c <sub>min</sub> mm	61	68	81	115	135
minimum thickness of base material	h <sub>min</sub> mm	100	100	120	170	200

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**Strength data**

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

**Characteristic resistance (kN)**

size		M8	M10	M12	M16	M20
tension	$N_{Rk}$	9.0	12.0	16.0	16.0	30.0
shear	$V_{Rk}$	9.2	14.5	21.1	39.3	58.8

**Design resistance (kN)**

size		M8	M10	M12	M16	M20
tension	$N_{Rd}$	5.0	6.7	8.9	8.9	20.0
shear	$V_{Rd}$	7.4	11.6	16.9	31.4	47.0

**Recommended load (kN)**

size		M8	M10	M12	M16	M20
tension	$N_{rec}$	3.6	4.8	6.3	6.3	14.3
shear	$V_{rec}$	5.3	8.3	12.1	22.5	33.6

 1 kN  $\approx$  100 kg

steel failure

Characteristic resistances  $N_{Rk}$  and  $V_{Rk}$  derive from parameters certified in European Technical Assessment (ETA) Design resistances  $N_{Rd}$  e  $V_{Rd}$  include partial safety factors on strengths. Recommended values  $N_{rec}$  and  $V_{rec}$  include the further 1.4 safety factor.

For the design of fixing with reduced spacing, near the edge or on concrete with increased resistance or reduced thickness refer to ETA or to Declaration of Performance DPGEB1004 and use Design Method A outlined in Annex C of ETAG 001 (issued by EOTA) or CEN/TS 1992-4:2009 or FprEN 1992-4:2016. One can also calculate and verify the fixings made with SITA ACCIAIO CE 7 GBK by means of *G&B Calculation Program* available on the website www.gebfissaggi.com.

**Data for design**
**Critical spacing and distances**

size		M8	M10	M12	M16	M20
critical spacing	$s_{cr,N}$ mm	135	150	180	255	300
	$s_{cr,sp}$ mm	225	250	300	425	500
critical edge distance	$c_{cr,N}$ mm	68	75	90	128	150
	$c_{cr,sp}$ mm	113	125	150	213	250

**Increasing factors for tension resistance (excluding steel failure)**

$\Psi_c$	C30/37	1,22
	C40/50	1,41
	C50/60	1,55