

# Concrete screw BTS



## Advantages



BTS B, hex-head  
- zinc flake coating  
- stainless steel A4



BTS ST, countersunk head  
- zinc plated  
- stainless steel A4

- Approved for cracked and non-cracked concrete
- High loads combined with an easy application (the use of a suitable impact wrench is recommended)
- Variable, because of three setting depths
- The BTS may be adjusted
- Big range, also in stainless steel and different head shapes available
- The BTS is also ideal for temporary fixings as it can be removed completely
- Zinc flake coating (ZnAl) for improved corrosion resistance and higher application security

## Suitable building materials

### Very suitable



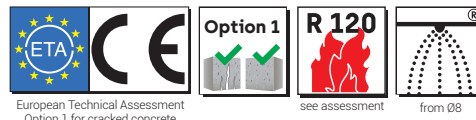
- Concrete



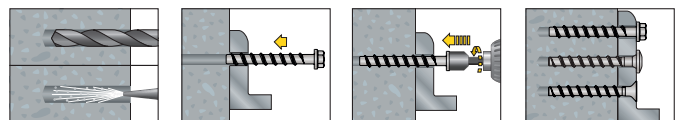
### Suitable to a limited extent

- Dense natural stone

## Approvals and certificates

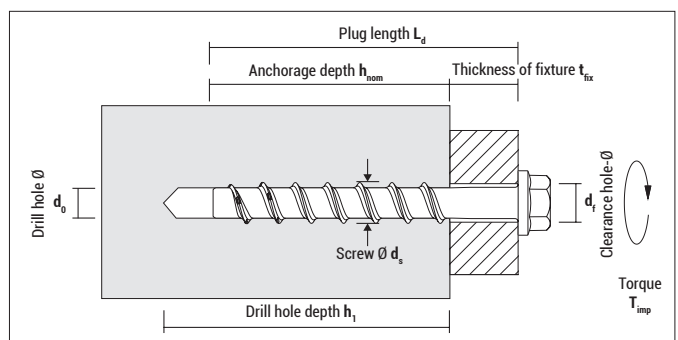


## Mounting



BTS 8: Impact wrench max. 300 Nm  
BTS 10: Impact wrench max. 400 Nm  
BTS 14: Impact wrench max. 650 Nm

The BTS may be adjusted up to two times for max. 10 mm in order to use shims  
- for details see assessment.



## Concrete screw BTS



**BTS B, zinc flake coating** with hex-head and integral washer (washer-Ø: BTS 8: Ø 16,2 mm; BTS 10: Ø 20,0 mm; BTS 14: Ø 30,0 mm)

Type d <sub>0</sub> - L <sub>d</sub>	Art-No	d <sub>s</sub> x L <sub>d</sub> [mm]	h <sub>1</sub> ≥ [mm]	h <sub>nom</sub> ≥ [mm]	t <sub>fix</sub> ≤ [mm]	Recess		€/100 pcs	[pcs]	[pcs]
8-50/-	9ZG850BTSB	10,6x50	55 / - / -	45 / - / -	5 / - / -	SW 13	●		50	250
8-70/5	9ZG870BTSB	10,6x70	55 / 65 / 75	45 / 55 / 65	25 / 15 / 5	SW 13	●		50	250
8-80/15	9ZG880BTSB	10,6x80	55 / 65 / 75	45 / 55 / 65	35 / 25 / 15	SW 13	●		50	250
8-90/25	9ZG890BTSB	10,6x90	55 / 65 / 75	45 / 55 / 65	45 / 35 / 25	SW 13	●		50	250
8-100/35	9ZG8100BTSB	10,6x100	55 / 65 / 75	45 / 55 / 65	55 / 45 / 35	SW 13	●		50	250
8-120/55	9ZG8120BTSB	10,6x120	55 / 65 / 75	45 / 55 / 65	75 / 65 / 55	SW 13	●		50	250
10-60/-	9ZG1060BTSB	12,6x60	65 / - / -	55 / - / -	5 / - / -	SW 15	●		50	250
10-70/-	9ZG1070BTSB	12,6x70	65 / - / -	55 / - / -	15 / - / -	SW 15	●		40	200
10-80/-	9ZG1080BTSB	12,6x80	65 / 85 / -	55 / 57 / -	25 / 5 / -	SW 15	●		40	200
10-90/5	9ZG1090BTSB	12,6x90	65 / 85 / 95	55 / 75 / 85	35 / 15 / 5	SW 15	●		40	200
10-100/15	9ZG10100BTSB	12,6x100	65 / 85 / 95	55 / 75 / 85	45 / 25 / 15	SW 15	●		40	200
10-120/35	9ZG10120BTSB	12,6x120	65 / 85 / 95	55 / 75 / 85	65 / 45 / 35	SW 15	●		40	200
10-140/55	9ZG10140BTSB	12,6x140	65 / 85 / 95	55 / 75 / 85	85 / 65 / 55	SW 15	●		30	150
10-160/75	9ZG10160BTSB	12,6x160	65 / 85 / 95	55 / 75 / 85	105 / 85 / 75	SW 15	●		30	150
10-180/95*	9ZG10180BTSB	12,6x180	65 / 85 / 95	55 / 75 / 85	125 / 105 / 95	SW 15	●		20	100
10-200/115*	9ZG10200BTSB	12,6x200	65 / 85 / 95	55 / 75 / 85	145 / 125 / 115	SW 15	●		20	80
10-240/155*	9ZG10240BTSB	12,6x240	65 / 85 / 95	55 / 75 / 85	185 / 165 / 155	SW 15	●		20	80
10-280/195*	9ZG10280BTSB	12,6x280	65 / 85 / 95	55 / 75 / 85	225 / 205 / 195	SW 15	●		20	80
14-80/-	9ZG1480BTSB	16,6x80	85 / - / -	75 / - / -	5 / - / -	SW 21	●		20	100
14-110/-	9ZG14110BTSB	16,6x110	85 / 110 / -	75 / 100 / -	35 / 10 / -	SW 21	●		20	100

\* with large washer according to ISO 7094 (DIN 440) for woodworking (included in packing, outer Ø = 44 mm)



**BTS B, stainless steel A4** with hex-head and integral washer (washer-Ø: BTS 8: Ø 16,2 mm; BTS 10: Ø 20,0 mm)



Type d <sub>0</sub> - L <sub>d</sub>	Art-No	d <sub>s</sub> x L <sub>d</sub> [mm]	h <sub>1</sub> ≥ [mm]	h <sub>nom</sub> ≥ [mm]	t <sub>fix</sub> ≤ [mm]	Recess		€/100 pcs	[pcs]	[pcs]
8-80/15	9X880BTSB	10,6x80	55 / 65 / 75	45 / 55 / 65	35 / 25 / 15	SW 13	●		50	250
10-90/5	9X1090BTSB	12,6x90	65 / 85 / 95	55 / 75 / 85	35 / 15 / 5	SW 15	●		40	200
10-100/15	9X10100BTSB	12,6x100	65 / 85 / 95	55 / 75 / 85	45 / 25 / 15	SW 15	●		40	200

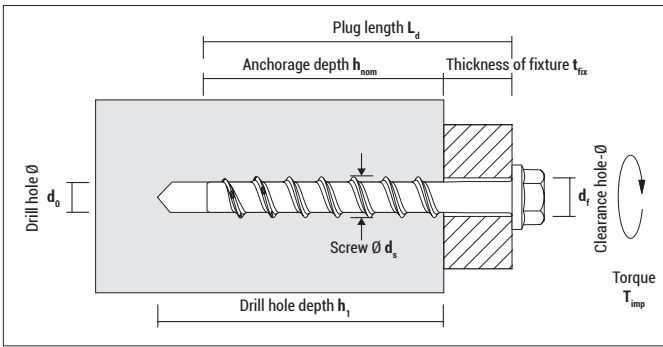
\* with large washer according to ISO 7094 (DIN 440) for woodworking (included in packing, outer Ø = 44 mm)



**BTS ST zinc plated** with countersunk head (Head-Ø: BTS ST 8: Ø 19,5 mm; BTS ST 10: Ø 21,5 mm)

Type d <sub>0</sub> - L <sub>d</sub>	Art-No	d <sub>s</sub> x L <sub>d</sub> [mm]	h <sub>1</sub> ≥ [mm]	h <sub>nom</sub> ≥ [mm]	t <sub>fix</sub> ≤ [mm]	Drive		€/100 pcs	[pcs]	[pcs]
8-80/15	9880BTSST	10,6x80	55 / 65 / 75	45 / 55 / 65	35 / 25 / 15	TX 40	●		50	250
10-90/5	91090BTSST	12,6x90	65 / 85 / 95	55 / 75 / 85	35 / 15 / 5	TX 50	●		40	200

Concrete screw BTS



**BTS ST stainless steel A4** with countersunk head (Head-Ø: BTS ST 8: Ø 19,5 mm; BTS ST 10: Ø 21,5 mm)



Type $d_0 - L_d$	Art-No	$d_s \times L_d$ [mm]	$h_1 \geq$ [mm]	$h_{nom} \geq$ [mm]	$t_{fix} \leq$ [mm]	Drive	ETA	€/ 100 pcs	[pcs]	[pcs]
8-80/15	9X880BTSST	10,6 x 80	55 / 65 / 75	45 / 55 / 65	35 / 25 / 15	TX 40	●		50	250
10-90/5	9X1090BTSST	12,6 x 90	65 / 85 / 95	55 / 75 / 85	35 / 15 / 5	TX 50	●		40	200

**Loads and installation parameters** (values are valid for BTS in carbon steel and stainless steel)

		BTS 8			BTS 10			BTS 14		
Drill hole Ø	$d_0$ [mm]	8			10			14		
Thread Ø	$d_s$ [mm]	10,6			12,6			16,6		
Ø of clearance hole in fixture	$d_r \leq$ [mm]	12			14			18		
Anchorage depth	$h_{nom}$ [mm]	45	55	65	55	75	85	75	100	115

Permissible tension load in cracked concrete<sup>1), 2), 3)</sup>

C20/25	$N_{per}$ [kN]	2,4	4,3	5,7	4,3	8,0	9,6	7,6	12,0	15,1
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Permissible tension load in non-cracked concrete<sup>1), 2), 3)</sup>

C20/25	$N_{per}$ [kN]	3,6	5,7	7,6	5,7	9,5	11,9	10,6	16,9	21,2
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Permissible shear load in cracked concrete

C20/25	$V_{per}$ [kN]	3,5	4,8	6,4	4,8	15,9	19,2	7,6	24,1	30,3
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Permissible shear load in non-cracked concrete

C20/25	$V_{per}$ [kN]	5,0	6,8	9,0	6,8	19,4	19,4	10,6	32,0	32,0
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Permissible bending moment

	$M_{per}$ [Nm]	15			32			106		
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Spacing and edge distance

Spacing <sup>4)</sup>	$S_{cr,N}$ [mm]	105	129	156	129	180	204	174	237	276
Edge distance <sup>4)</sup>	$C_{cr,N}$ [mm]	53	65	78	65	90	102	87	119	138
Minimum spacing <sup>4)</sup>	$S_{min}$ [mm]	40	50	50	50	50	50	50	70	70
Min. edge distance <sup>4)</sup>	$C_{min}$ [mm]	40	50	50	50	50	50	50	70	70
Min. thickness of structural part	$h_{min}$ [mm]	100	100	120	100	130	130	130	150	170

Max. installation torque for impact wrench	$T_{imp} \leq$ [Nm]	300			400			650		
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<sup>1)</sup> Permissible loads for single anchor without influence of spacing and edge distance.

<sup>2)</sup> Load figures include the resistances' partial safety factors as per ETA assessment and a partial factor on the action of  $\gamma_F = 1,4$ .

<sup>3)</sup> For higher concrete strengths up to C50/60 the values increase by max. 55% compared with C20/25.

<sup>4)</sup> If underrun the char. spacing or edge distance ( $C_{cr}$  or  $S_{cr}$ ) the loads must be reduced.  $h_{min}$ ,  $S_{min}$  and  $C_{min}$  must be observed.