

Concrete screw **BTS, BTS M**



Product advantages

BTS:

▶ **Concrete screw BTS with Option 1 for a wide variety of heavy-duty applications**

The BTS is suitable for a wide variety of fixing applications due to the approval in cracked and non-cracked concrete.

▶ **Fire resistance class R 120**

For even more safety in case of fire.

▶ **Usage under seismic action (C1)**

BTS can be used in seismic areas.

▶ **Variable**

Because of three setting depths and adjustability

▶ **High loads combined with an easy application**

Use an impact wrench for a fast installation.

▶ **Extensive range**

Thanks to various head designs, materials, diameters and lengths.

BTS M:

▶ **German approval for temporary construction site facilities**

Suitable for the use in fresh concrete (cracked and non-cracked) and for outdoor applications like inclined supports, guardrails and scaffoldings.

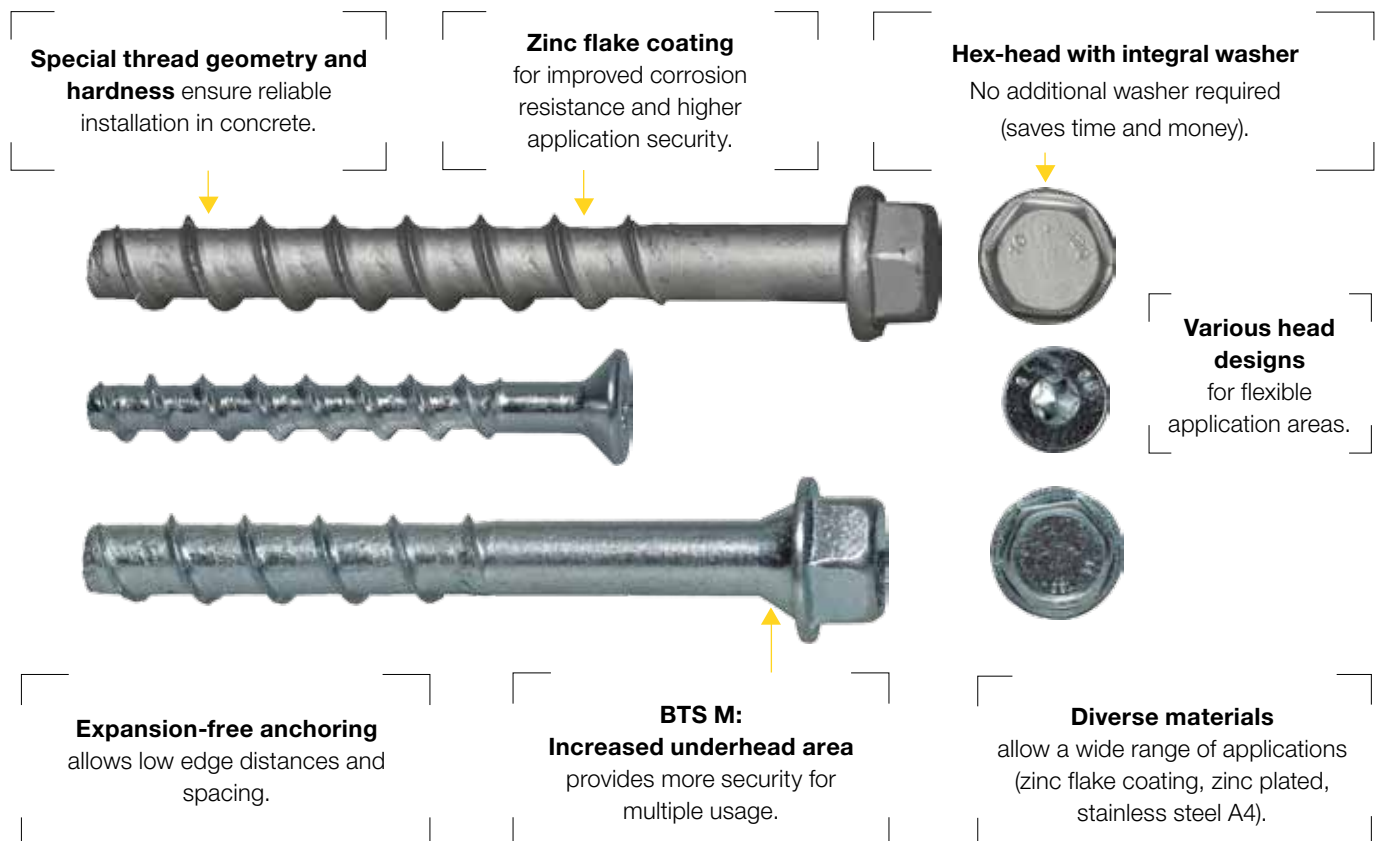
▶ **Reusable**

Special concrete screw BTS M is used especially for temporary fixings and can be reused several times.


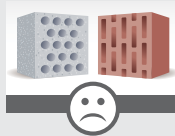
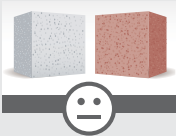

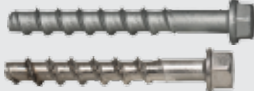







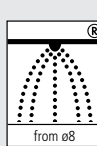

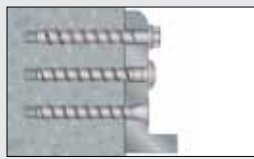
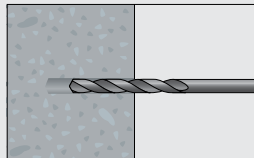
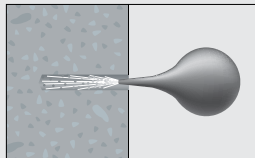
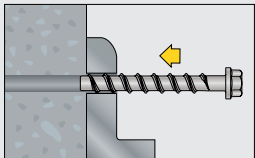
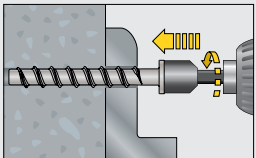
▶ **One tube gauge included in every box**



With the supplied tube gauge you can check the reusability (The BTS M may only be reused if max. 3 threads can penetrate into the tube gauge).



Concrete screw BTS

Profile				
Suitable building materials				
Category	Concrete screw for application in cracked and non-cracked concrete			Concrete screw for temp. construction site facilities
Assortment	BTS B: Zinc flake coating and stainless steel A4 	BTS ST: Zinc plated and stainless steel A4 	TSM B: Zinc plated 	BTS M: Zinc plated 
Sizes	6, 8, 10, 14			14
Approvals and certificates	BTS B 8, 10, 14; BTS ST 8, 10; TSM 6      <p>European Technical Approval Option 1 for cracked concrete</p>			BTS M 14 
Typical applications	 BTS in concrete (Metal construction)	Suitable for through-mounting fixings such as: <ul style="list-style-type: none"> ▶ Fences ▶ Cable trays ▶ Attaching steel structures ▶ Cantilevers ▶ Profiles ▶ Racks ▶ Temporary constructions ▶ Railings 		BTS M: <ul style="list-style-type: none"> ▶ (Inclined) supports ▶ Guardrails ▶ Site facilities
Mounting	 1. Drill hole	 2. Clean hole	 3. Push BTS through the fixture into the hole	 4. Apply required setting torque (impact wrench)



Cable trays, pipe installations



Railings, banisters



BTS M: Inclined supports / site facilities

Range



BTS B with hex-head and integral washer (Head Ø: TSM 6: Ø 15,0 mm; BTS 8: Ø 16,2 mm; BTS 10: Ø 20,0 mm; BTS 14: Ø 30,0 mm)									Packing	
Type	Art-No ZnAl-coating	Art-No A4	d_0 [mm]	$h_1 \geq$ [mm]	$h_{nom} \geq$ [mm]	L [mm]	$t_{fix} \leq$ [mm]	Drive	 [pcs]	 [pcs]
6-60/5	9660TSM	-	6	60	55	60	5	SW 13	100	-
8-50/-	9ZG850BTSB	-	8	55/65/75	45/55/65	50	5/-/-	SW 13	50	250
8-70/5	9ZG870BTSB	-	8	55/65/75	45/55/65	70	25/15/5	SW 13	50	250
8-80/15	9ZG880BTSB	9X880BTSB	8	55/65/75	45/55/65	80	35/25/15	SW 13	50	250
8-90/25	9ZG890BTSB	-	8	55/65/75	45/55/65	90	45/35/25	SW 13	50	250
10-60/-	9ZG1060BTSB	-	10	65/85/95	55/75/85	60	5/-/-	SW 15	50	250
10-90/5	9ZG1090BTSB	9X1090BTSB	10	65/85/95	55/75/85	90	35/15/5	SW 15	40	200
10-100/15	9ZG10100BTSB	9X10100BTSB	10	65/85/95	55/75/85	100	45/25/15	SW 15	40	200
10-120/35	9ZG10120BTSB	-	10	65/85/95	55/75/85	120	65/45/35	SW 15	40	200
10-140/55	9ZG10140BTSB	-	10	65/85/95	55/75/85	140	85/65/55	SW 15	30	150
10-160/75	9ZG10160BTSB	-	10	65/85/95	55/75/85	160	105/85/75	SW 15	30	150
10-180/95*	9ZG10180BTSB	-	10	65/85/95	55/75/85	180	125/105/95	SW 15	20	100
10-200/115*	9ZG10200BTSB	-	10	65/85/95	55/75/85	200	145/125/115	SW 15	20	80
10-240/155*	9ZG10240BTSB	-	10	65/85/95	55/75/85	240	185/165/155	SW 15	20	80
10-280/195*	9ZG10280BTSB	-	10	65/85/95	55/75/85	280	225/205/195	SW 15	20	80
14-80/-	9ZG1480BTSB	-	14	85/110/125	75/100/115	80	5/-/-	SW 21	20	100
14-110/-	9ZG14110BTSB	-	14	85/110/125	75/100/115	110	35/10/-	SW 21	20	100

* With large washer acc. ISO7094 (DIN 440) for woodworking

¹⁾ ZnAl-coating = zinc flake coating



TSM B with Pan head (TX 30), head-Ø: 14,5 mm, zinc plated									Packing	
Type	Art-No	d_0 [mm]	$h_1 \geq$ [mm]	$h_{nom} \geq$ [mm]	L [mm]	$t_{fix} \leq$ [mm]	Recess	 [pcs]	 [pcs]	
6-60/5	9660TSMT	6	60	55	60	5	TX 30	100	500	



BTS ST with countersunk head (Head-Ø: BTS ST 8: Ø 19,5 mm; BTS ST 10: Ø 21,5 mm)									Packing	
Type	Art-No zinc plated	Art-No A4	d_0 [mm]	$h_1 \geq$ [mm]	$h_{nom} \geq$ [mm]	L [mm]	$t_{fix} \leq$ [mm]	Recess	 [pcs]	 [pcs]
8-80/15	9880BTSST	9X880BTSST	8	55/65/75	45/55/65	80	35/25/15	TX 40	50	250
10-90/5	91090BTSST	9X1090BTSST	10	65/85/95	55/75/85	90	35/15/5	TX 50	40	200



BTS M zinc plated, 1 tube gauge per box included (Head-Ø: 14-80: 28 mm; 14-130: 32 mm)									Packing	
Type	Art-No	d_0 [mm]	$h_1 \geq$ [mm]	$h_{nom} \geq$ [mm]	L [mm]	$t_{fix} \leq$ [mm]	Drive	 [pcs]	 [pcs]	
14-80/5	91480BTSMB	14	85	75	80	5	SW 22	20	100	
14-130/15	914130BTSMB	14	85/100/125	75/90/115	130	55/40/15	SW 24	15	75	

Loads and installation parameters

Loads and installation parameters (Values valid for BTS in carbon steel and stainless steel and TSM 6)

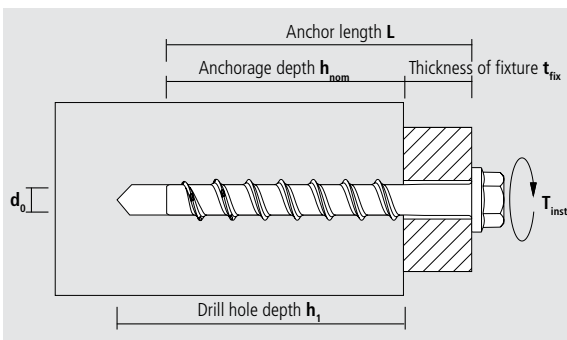
		TSM 6		BTS 8			BTS 10			BTS 14		
Drill hole-Ø	d_0 [mm]	6		8			10			14		
Thread-Ø	d_s [mm]	7,5		10,6			12,6			16,6		
Ø of clearance hole in fixture	$d_{f\leq}$ [mm]	8		12			14			18		
Anchorage depth	h_{nom} [mm]	55	45	55	65	55	75	85	75	100	115	
Permissible tension load in non-cracked concrete^{1), 2), 3)}												
C20/25	N_{per} [kN]	4,3	3,6	5,7	7,6	5,7	9,5	11,9	10,6	16,9	21,2	
C30/37	N_{per} [kN]	5,2	4,4	7,0	9,3	7,0	11,6	14,5	12,9	20,6	25,8	
Permissible tension load in cracked concrete^{1), 2), 3)}												
C20/25	N_{per} [kN]	1,9	2,4	4,3	5,7	4,3	7,9	9,6	7,6	12,0	15,1	
C30/37	N_{per} [kN]	2,3	2,9	5,2	7,0	5,2	9,7	11,7	9,2	14,7	18,5	
Permissible shear load in cracked and non-cracked concrete												
C20/25, C30/37	V_{per} [kN]	4,0		9,7			19,4			32,0		
Permissible bending moment	M_{per} [Nm]	6		15			32			106		
Spacing and edge distance												
Spacing ⁴⁾	$s_{cr,N}$ [mm]	132	105	129	156	129	180	204	174	237	276	
Edge distance ⁴⁾	$c_{cr,N}$ [mm]	66	53	65	78	65	90	102	87	119	138	
Minimum spacing ⁴⁾	s_{min} [mm]	40	40	50	50	50	50	50	50	70	70	
Minimum edge distance ⁴⁾	c_{min} [mm]	40	40	50	50	50	50	50	50	70	70	
Minimum thickness of structural part	h_{min} [mm]	100	100	100	120	100	130	130	130	150	170	
Maximum installation torque for impact wrench	$T_{inst\leq}$ [Nm]	160		300			400			500		

¹⁾ Permissible loads for single anchor without influence of spacing and edge distance

²⁾ Load figures include the resistances' partial safety factors as per approval and a partial factor on the action of $\gamma_F = 1,4$.

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

⁴⁾ Interim values between S_{cr} and S_{min} / C_{cr} and C_{min} may be interpolated linearly. S_{min} and C_{min} must not be underrun.



Loads and installation parameters (Values valid for BTS M)

		BTS M 14-80/5		BTS M 14-130/15		
Drill hole Ø	d_0 [mm]	14		14		
Thread Ø	d_s [mm]	16,6		16,6		
Ø of clearance hole in fixture	$d_{f\leq}$ [mm]	18		18		
Anchorage depth	h_{nom} [mm]	75	75	90	115	
Minimum thickness of structural part	h_{min} [mm]	150	150	195	200	225
Permissible load in cracked concrete^{1), 2)}						
C8/10	F_{per} [kN]	4,0	4,0	8,0	10,0	11,3
C12/15	F_{per} [kN]	4,7	4,7	8,7	12,0	14,0
C16/20	F_{per} [kN]	5,3	5,3	9,3	13,3	16,0
Spacing and edge distance						
Minimum spacing	s_{min} [mm]	320	320	390	500	500
Minimum edge distance in load direction	$c_{1,min}$ [mm]	105	105	130	165	165
Minimum edge distance vertical to load direction	$c_{2,min}$ [mm]	160	160	195	250	250
Maximum installation torque for impact wrench	$T_{inst\leq}$ [Nm]	450		450		

¹⁾ Permissible load in all directions for single anchor without influence of spacing and edge distance

²⁾ Load figures include the resistances' partial safety factors as per approval and a partial factor on the action of $\gamma_F = 1,5$.

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