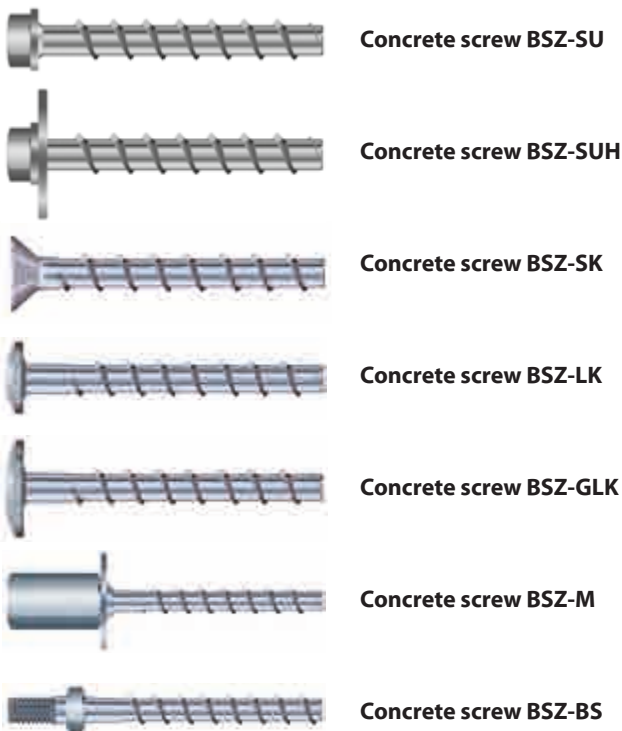
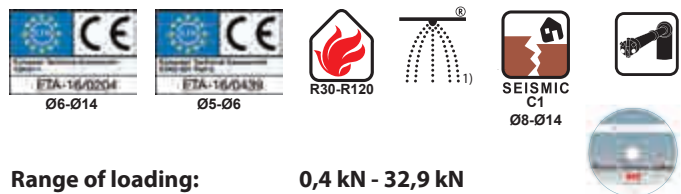


# Concrete screw BSZ

Steel zinc plated/Steel zinc flake coated



## Approvals and Certificates



**Range of loading:** 0,4 kN - 32,9 kN  
**Range of concrete quality:** C20/25 - C50/60

## Description

Option 1 approved concrete screw BSZ cut a positive thread in the concrete when being screwed in and enable attachment to be made close to the edge through the expansion-free operating principle (=undercut). The approved adjustment enables subsequent alignment to compensate for unevenness. The concrete screw BSZ is also ideal for temporary fixings since it is fully removable. Installation with an impact screwdriver means that you do not need to use a torque wrench. It is quick, reliable and reduces assembly errors.

The concrete screw BSZs are available with connection thread and with a range of different head shapes for a wide variety of applications. The versions with hex head have a special zinc flake coating.

## Advantages

- European Technical Assessment for anchoring in cracked and non-cracked concrete (Option 1) for concrete screws in sizes 6, 8, 10, 12 and 14
- With up to 3 embedment depths, it is versatile for high loads or low levels of drilling and installation effort
- European Technical Assessment for multiple use for non-structural systems in concrete and precast pre-stressed hollow core slabs for concrete screws in sizes 5 and 6
- Approved for use under seismic conditions of category C1 (Ø8 to Ø14 for embedment depth  $h_{nom}$  3)
- Approved for use under fire exposure (R30-R120).
- Small drill hole diameter, small edge and axial gap
- Rapid push-through installation with an impact screwdriver without torque regulation
- No curing times, can be loaded immediately
- Adjustable to compensate for unevenness (Ø8- Ø14 mm)
- Can be fully removed
- Wide range of possible applications through numerous variants

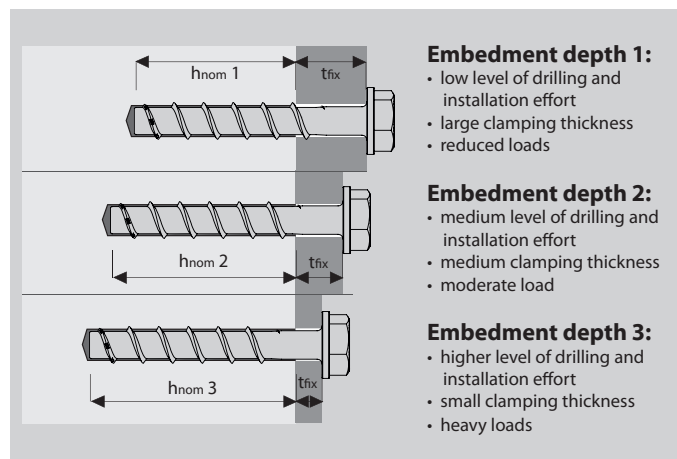
<sup>1)</sup>Not for applications in precast pre-stressed hollow core slabs

- Visually appealing through different head shapes
- Without approval, can also be used in compression-resistant natural stone, various solid bricks and green concrete

## Applications

To anchor moderate to heavy loads in cracked and non-cracked concrete: Railings and handrails, shelves, wooden beams, supports and braces, brackets, pipeline and cable routes, suspended ceilings, etc.

## Highly versatile for up to three different embedment depths:



**Concrete screw BSZ-SU**



- ➔ Hex head with pressed disc
- ➔ Steel, zinc flake coated
- ➔ Through smaller drive with pressed disc also suitable for areas, where access is difficult, and elongated holes (e.g. mounting rails)

Description	Ref. No.	Embedment depth h 1 <sup>1)</sup>			Embedment depth h 2			Embedment depth h 3				Anchor length L	Pressed disc Ø	Drive	Pkg. content	Weight per pkg.
		Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 1</sub>	Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 2</sub>	Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 3</sub>	Seismic C1					
BSZ-SU 5x40 ZL	58111201	5	5x40	35	-	-	-	-	-	-	-	40	12,5	SW 10	100	0,96
BSZ-SU 5x50 ZL	58111701	15	5x40	35	-	-	-	-	-	-	-	50	12,5	SW 10	100	1,12
BSZ-SU 5x60 ZL	58112201	25	5x40	35	-	-	-	-	-	-	-	60	12,5	SW 10	100	1,26
BSZ-SU 6x40 ZL	58121201	5	6x40	35	-	-	-	-	-	-	-	40	15	SW 13	100	1,51
BSZ-SU 6x50 ZL	58121701	15	6x40	35	10	6x45	40	-	-	-	-	50	15	SW 13	100	1,73
BSZ-SU 6x60 ZL	58122201	25	6x40	35	20	6x45	40	5	6x60	55	-	60	15	SW 13	100	1,93
BSZ-SU 6x80 ZL	58123201	45	6x40	35	40	6x45	40	25	6x60	55	-	80	15	SW 13	100	2,33
BSZ-SU 6x100 ZL	58124201	65	6x40	35	60	6x45	40	45	6x60	55	-	100	15	SW 13	100	2,73
BSZ-SU 8x50 ZL	58131201	5	8x55	45	-	-	-	-	-	-	-	50	16	SW 13	50	1,58
BSZ-SU 8x60 ZL	58131701	15	8x55	45	5	8x65	55	-	-	-	-	60	16	SW 13	50	1,78
BSZ-SU 8x70 ZL	58132201	25	8x55	45	15	8x65	55	5	8x75	65	✓	70	16	SW 13	50	1,97
BSZ-SU 8x80 ZL	58132701	35	8x55	45	25	8x65	55	15	8x75	65	✓	80	16	SW 13	50	2,16
BSZ-SU 8x90 ZL	58133201	45	8x55	45	35	8x65	55	25	8x75	65	✓	90	16	SW 13	50	2,35
BSZ-SU 8x100 ZL	58133701	55	8x55	45	45	8x65	55	35	8x75	65	✓	100	16	SW 13	50	2,57
BSZ-SU 8x120 ZL	58134701	75	8x55	45	65	8x65	55	55	8x75	65	✓	120	16	SW 13	50	2,95
BSZ-SU 8x140 ZL	58135701	95	8x55	45	85	8x65	55	75	8x75	65	✓	140	16	SW 13	50	3,33
BSZ-SU 10x60 ZL	58141201	5	10x65	55	-	-	-	-	-	-	-	60	20	SW 15	50	2,82
BSZ-SU 10x70 ZL	58141701	15	10x65	55	-	-	-	-	-	-	-	70	20	SW 15	50	3,12
BSZ-SU 10x80 ZL	58142201	25	10x65	55	5	10x85	75	-	-	-	-	80	20	SW 15	50	3,42
BSZ-SU 10x90 ZL	58142701	35	10x65	55	15	10x85	75	5	10x95	85	✓	90	20	SW 15	50	3,72
BSZ-SU 10x100 ZL	58143201	45	10x65	55	25	10x85	75	15	10x95	85	✓	100	20	SW 15	50	4,03
BSZ-SU 10x120 ZL	58144201	65	10x65	55	45	10x85	75	35	10x95	85	✓	120	20	SW 15	50	4,63
BSZ-SU 10x140 ZL	58145201	85	10x65	55	65	10x85	75	55	10x95	85	✓	140	20	SW 15	50	5,26
BSZ-SU 10x160 ZL	58146201	105	10x65	55	85	10x85	75	75	10x95	85	✓	160	20	SW 15	50	5,86
BSZ-SU 12x80 ZL	58151201	15	12x75	65	-	-	-	-	-	-	-	80	23,5	SW 17	25	2,32
BSZ-SU 12x110 ZL	58152701	45	12x75	65	25	12x95	85	10	12x110	100	✓	110	23,5	SW 17	25	2,95
BSZ-SU 12x130 ZL	58153701	65	12x75	65	45	12x95	85	30	12x110	100	✓	130	23,5	SW 17	25	3,40
BSZ-SU 12x150 ZL	58154701	85	12x75	65	65	12x95	85	50	12x110	100	✓	150	23,5	SW 17	25	3,82
BSZ-SU 14x80 ZL	58161201	5	14x85	75	-	-	-	-	-	-	-	80	28	SW 21	25	3,38
BSZ-SU 14x110 ZL	58162701	35	14x85	75	10	14x110	100	-	-	-	-	110	28	SW 21	25	4,22
BSZ-SU 14x130 ZL	58163701	55	14x85	75	30	14x110	100	15	14x125	115	✓	130	28	SW 21	25	4,82
BSZ-SU 14x150 ZL	58164701	75	14x85	75	50	14x110	100	35	14x125	115	✓	150	28	SW 21	25	5,40

<sup>1)</sup>For embedment depth h<sub>nom 1</sub> = 35 mm: Only for multiple use for non-structural systems in concrete and precast pre-stressed hollow core slabs.

**Concrete screw BSZ-SUH**



- ➔ Hex head with pressed disc and large washer EN ISO 7094 (DIN 440)
- ➔ Steel, zinc flake coated
- ➔ For fixing purlins and wooden beams onto concrete

Description	Ref. No.	Embedment depth h <sub>nom 1</sub>			Embedment depth h <sub>nom 2</sub>			Embedment depth h <sub>nom 3</sub>				Anchor length L	Drive	Washer <sup>2)</sup>	Pkg. content	Weight per pkg.
		Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 1</sub>	Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 2</sub>	Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 3</sub>	Seismic C1					
BSZ-SUH 10x180 ZL	58246701	121	10x65	55	101	10x85	75	91	10x95	85	✓	180	SW 15	44x4	25	4,34
BSZ-SUH 10x200 ZL	58247201	141	10x65	55	121	10x85	75	111	10x95	85	✓	200	SW 15	44x4	25	4,64
BSZ-SUH 10x240 ZL	58247701	181	10x65	55	161	10x85	75	151	10x95	85	✓	240	SW 15	44x4	25	5,25
BSZ-SUH 10x280 ZL	58248201	221	10x65	55	201	10x85	75	191	10x95	85	✓	280	SW 15	44x4	25	5,94
BSZ-SUH 10x320 ZL	58248701	261	10x65	55	241	10x85	75	231	10x95	85	✓	320	SW 15	44x4	25	6,54

<sup>2)</sup>Outer diameter x thickness

### Concrete screw BSZ-SK



- Countersunk head with Torx drive
- Steel, zinc plated
- For installations being flush with the fixture

Description	Ref. No.	Embedment depth 1 <sup>1)</sup>			Embedment depth 2			Embedment depth 3			Seismic C1	Anchor length L	Head-Ø	Drive	Pkg. content	Weight per pkg.
		Fixture thickness t <sub>fix</sub> mm	Drill hole Ø x depth mm	Embedment depth h <sub>nom</sub> 1 mm	Fixture thickness t <sub>fix</sub> mm	Drill hole Ø x depth mm	Embedment depth h <sub>nom</sub> 2 mm	Fixture thickness t <sub>fix</sub> mm	Drill hole Ø x depth mm	Embedment depth h <sub>nom</sub> 3 mm						
BSZ-SK 5x40	58311001	5	5x40	35	-	-	-	-	-	-	-	40	12	T 30	100	0,78
BSZ-SK 5x50	58311501	15	5x40	35	-	-	-	-	-	-	-	50	12	T 30	100	0,94
BSZ-SK 5x60	58312001	25	5x40	35	-	-	-	-	-	-	-	60	12	T 30	100	1,08
BSZ-SK 6x40	58321001	5	6x40	35	-	-	-	-	-	-	-	40	13	T 30	100	0,99
BSZ-SK 6x50	58321501	15	6x40	35	10	6x45	40	-	-	-	-	50	13	T 30	100	1,20
BSZ-SK 6x60	58322001	25	6x40	35	20	6x45	40	5	6x60	55	-	60	13	T 30	100	1,41
BSZ-SK 6x80	58323001	45	6x40	35	40	6x45	40	25	6x60	55	-	80	13	T 30	100	1,85
BSZ-SK 6x100	58324001	65	6x40	35	60	6x45	40	45	6x60	55	-	100	13	T 30	100	2,27
BSZ-SK 6x120	58325001	85	6x40	35	80	6x45	40	65	6x60	55	-	120	13	T 30	100	2,69
BSZ-SK 6x140	58326001	105	6x40	35	100	6x45	40	85	6x60	55	-	140	13	T 30	100	3,11
BSZ-SK 8x80	58332501	35	8x55	45	25	8x65	55	15	8x75	65	✓	80	19,5	T 40	50	1,95
BSZ-SK 10x90	58342501	35	10x65	55	15	10x85	75	5	10x95	85	✓	90	21,5	T 50	50	3,10

<sup>1)</sup>For embedment depth h<sub>nom</sub> 1 = 35 mm: Only for multiple use for non-structural systems in concrete and precast pre-stressed hollow core slabs.

### Concrete screw BSZ-LK



- Pan head with Torx drive
- Steel, zinc plated
- For a flat fixing which has a high-quality look

Description	Ref. No.	Embedment depth 1 <sup>1)</sup>			Embedment depth 2			Embedment depth 3			Seismic C1	Anchor length L	Head-Ø	Drive	Pkg. content	Weight per pkg.
		Fixture thickness t <sub>fix</sub> mm	Drill hole Ø x depth mm	Embedment depth h <sub>nom</sub> 1 mm	Fixture thickness t <sub>fix</sub> mm	Drill hole Ø x depth mm	Embedment depth h <sub>nom</sub> 2 mm	Fixture thickness t <sub>fix</sub> mm	Drill hole Ø x depth mm	Embedment depth h <sub>nom</sub> 3 mm						
BSZ-LK 5x40	58411001	5	5x40	35	-	-	-	-	-	-	-	40	14	T 30	100	0,83
BSZ-LK 5x50	58411501	15	5x40	35	-	-	-	-	-	-	-	50	14	T 30	100	0,97
BSZ-LK 5x60	58412001	25	5x40	35	-	-	-	-	-	-	-	60	14	T 30	100	1,11
BSZ-LK 6x40	58421001	5	6x40	35	-	-	-	-	-	-	-	40	14,5	T 30	100	1,18
BSZ-LK 6x50	58421501	15	6x40	35	10	6x45	40	-	-	-	-	50	14,5	T 30	100	1,41
BSZ-LK 6x60	58422001	25	6x40	35	20	6x45	40	5	6x60	55	-	60	14,5	T 30	100	1,59
BSZ-LK 6x80	58423001	45	6x40	35	40	6x45	40	25	6x60	55	-	80	14,5	T 30	100	2,03
BSZ-LK 6x100	58424001	65	6x40	35	60	6x45	40	45	6x60	55	-	100	14,5	T 30	100	2,45

<sup>1)</sup>For embedment depth h<sub>nom</sub> 1 = 35 mm: Only for multiple use for non-structural systems in concrete and precast pre-stressed hollow core slabs.

### Concrete screw BSZ-GLK



- Large pan head with Torx drive
- Steel, zinc plated
- For fixing mounting rails

Description	Ref. No.	Embedment depth 1 <sup>1)</sup>			Embedment depth 2			Embedment depth 3			Seismic C1	Anchor length L	Head-Ø	Drive	Pkg. content	Weight per pkg.
		Fixture thickness t <sub>fix</sub> mm	Drill hole Ø x depth mm	Embedment depth h <sub>nom</sub> 1 mm	Fixture thickness t <sub>fix</sub> mm	Drill hole Ø x depth mm	Embedment depth h <sub>nom</sub> 2 mm	Fixture thickness t <sub>fix</sub> mm	Drill hole Ø x depth mm	Embedment depth h <sub>nom</sub> 3 mm						
BSZ-GLK 6x40	58521001	5	6x40	35	-	-	-	-	-	-	-	40	18	T 30	100	1,35
BSZ-GLK 6x60	58522001	25	6x40	35	20	6x45	40	5	6x60	55	-	60	18	T 30	100	1,81

<sup>1)</sup>For embedment depth h<sub>nom</sub> 1 = 35 mm: Only for multiple use for non-structural systems in concrete and precast pre-stressed hollow core slabs.

**Concrete screw BSZ-M**



- Socket with connecting thread M8/M10 and hex drive
- Steel, zinc plated
- For direct attachment of threaded rods

Description	Ref. No.	Embedment depth 1 <sup>1)</sup>			Embedment depth 2			Embedment depth 3			Seismic C1	Anchor length L	Con-necting thread	Washer-Ø	Drive	Pkg. content	Weight per pkg.
		Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 1</sub>	Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 2</sub>	Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 3</sub>							
		mm	mm	mm	mm	mm	mm	mm	mm	mm							
BSZ-M 6x35	58621001	0	6x40	35	-	-	-	-	-	-	-	35	M8/10 IG	25	SW 13	50	1,77
BSZ-M 6x55	58622001	20	6x40	35	15	6x45	40	0	6x60	55	-	55	M8/10 IG	25	SW 13	50	1,97

<sup>1)</sup>For embedment depth h<sub>nom 1</sub> = 35 mm: Only for multiple use for non-structural systems in concrete and precast pre-stressed hollow core slabs.

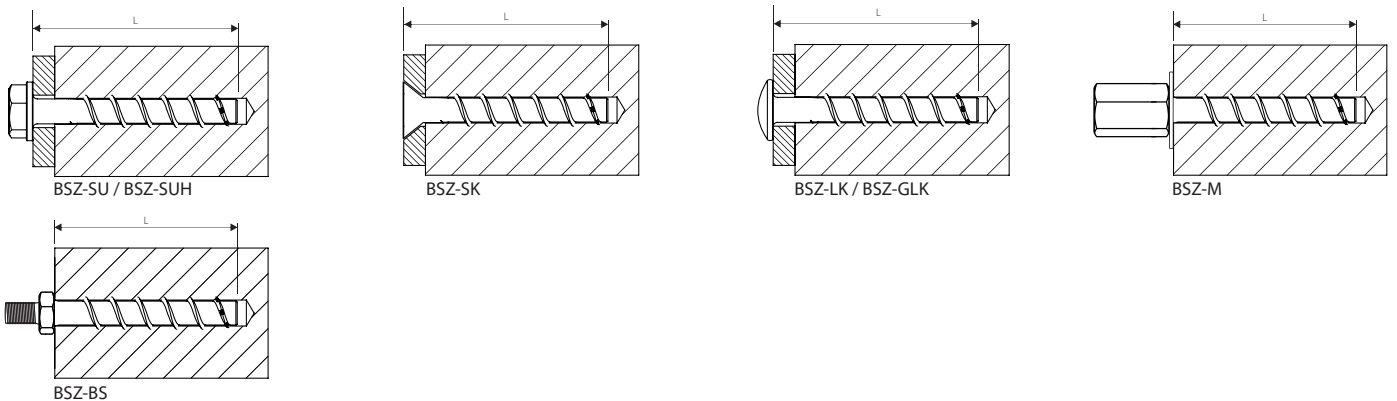
**Concrete screw BSZ-BS**



- Hanger bolt with metric connection thread and hex drive
- Steel, zinc plated
- To connect pipe clamps and threaded sockets

Description	Ref. No.	Embedment depth 1 <sup>1)</sup>			Embedment depth 2			Embedment depth 3			Seismic C1	Anchor length L	Con-nection thread	Drive	Pkg. content	Weight per pkg.
		Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 1</sub>	Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 2</sub>	Fixture thickness t <sub>fix</sub>	Drill hole Ø x depth	Embedment depth h <sub>nom 3</sub>						
		mm	mm	mm	mm	mm	mm	mm	mm	mm						
BSZ-BS 6x35	58721001	0	6x40	35	-	-	-	-	-	-	-	35	M8x16	SW 10	100	1,63
BSZ-BS 6x55	58722001	20	6x40	35	15	6x45	40	0	6x60	55	-	55	M8x16	SW 10	100	1,88
BSZ-BS 6x75	58723001	40	6x40	35	35	6x45	40	20	6x60	55	-	75	M8x16	SW 10	100	2,30
BSZ-BS 6x95	58724001	60	6x40	35	55	6x45	40	40	6x60	55	-	95	M8x16	SW 10	100	2,71

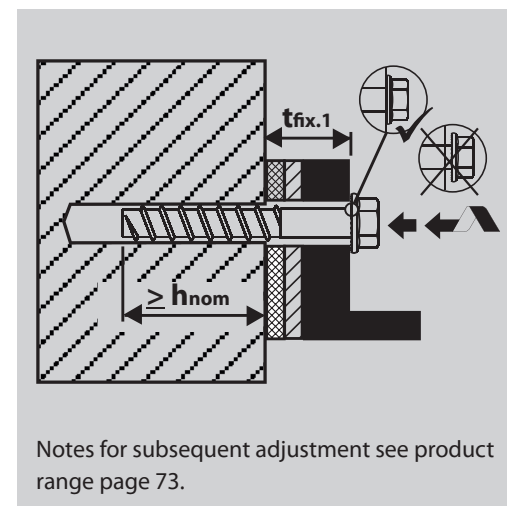
<sup>1)</sup>For embedment depth h<sub>nom 1</sub> = 35 mm: Only for multiple use for non-structural systems in concrete and precast pre-stressed hollow core slabs.



**Recommended impact screwdriver**

Description of concrete screw	recommended impact screwdriver
<b>BSZ 5</b>	<ul style="list-style-type: none"> <li>• Milwaukee C 12 IW (Square drive, Battery operation, max. torque 136 Nm)</li> <li>• Milwaukee C 12ID (Multi-toothed drive, Battery operation, max. torque 96 Nm)</li> <li>• Würth ASS 10-A (Battery operation, max. torque 105 Nm)</li> </ul>
<b>BSZ 6</b>	<ul style="list-style-type: none"> <li>• Milwaukee C 12 IW (Square drive, Battery operation, max. torque 136 Nm)</li> <li>• Milwaukee C 12ID (Multi-toothed drive, Battery operation, max. torque 96 Nm)</li> <li>• DeWalt DEDC 840 KB (Square drive, Battery operation, max. torque 160 Nm)</li> <li>• Würth ASS 14 (1/4 inch drive, Battery operation, max. torque 150 Nm)</li> </ul>
<b>BSZ 8 BSZ 10</b>	<ul style="list-style-type: none"> <li>• Milwaukee C 18 IW (Square drive, Battery operation, max. torque 250 Nm)</li> <li>• Bosch GDS 18E (Square drive, Mains operation, max. torque 250 Nm)</li> <li>• Makita 6905H (Square drive, Mains operation, max. torque 300 Nm)</li> <li>• Würth ASS 18 (1/2 inch drive, Battery operation, max. torque 180 Nm)</li> <li>• Würth ESS (1/2 inch drive, Mains operation, max. torque 250 Nm)</li> </ul>
<b>BSZ 12 BSZ 14</b>	<ul style="list-style-type: none"> <li>• Milwaukee HD 28 IW (Square drive, Battery operation, max. torque 440 Nm)</li> <li>• Bosch GDS 18E (Square drive, Mains operation, max. torque 250 Nm)</li> <li>• Makita 6905H (Square drive, Mains operation, max. torque 300 Nm)</li> <li>• Würth ASS 18 (1/2 inch drive HAT, Battery operation, max. torque 610 Nm)</li> <li>• Würth ESS (1/2 inch drive, Mains operation, max. torque 250 Nm)</li> </ul>

**Subsequent adjustment**





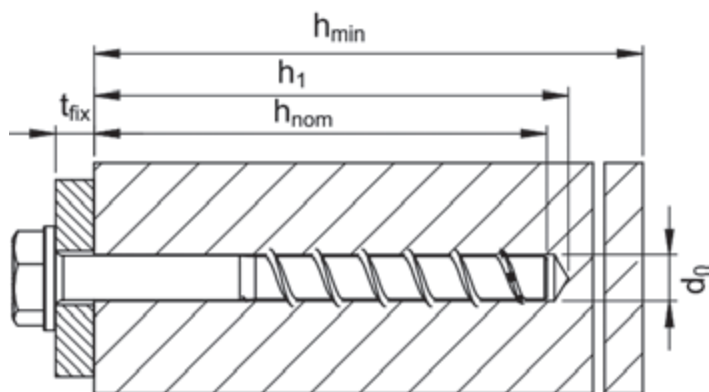
**Excerpt from the application conditions of the European Technical Assessment ETA-16/0204**

Approved loads for single anchor without influence of spacing and edge distance.

Total safety factor as per ETAG 001 included ( $\gamma_M$  and  $\gamma_F$ ). Load capacities under fire exposure see page 167.

Loads and performance data		Concrete screw size		BSZ 6		BSZ 8		BSZ 10		BSZ 12		BSZ 14					
Nominal embedment depth 1	$h_{nom 1}$	[mm]	-	-	45	-	-	55	-	-	65	-	-	75	-	-	
Nominal embedment depth 2	$h_{nom 2}$	[mm]	40	-	-	55	-	-	75	-	-	85	-	-	100	-	
Nominal embedment depth 3	$h_{nom 3}$	[mm]	-	55	-	-	65	-	-	85	-	-	100	-	-	115	
cracked concrete																	
Approved loads, tension	C20/25	appr. N	[kN]	1,0	1,9	2,4	4,3	5,7	4,3	8,0	9,6	5,7	9,4	12,3	7,6	12,0	15,1
	C25/30	appr. N	[kN]	1,0	2,1	2,6	4,7	6,3	4,7	8,7	10,5	6,3	10,3	13,4	8,3	13,2	16,6
	C30/37	appr. N	[kN]	1,2	2,3	2,9	5,2	7,0	5,2	9,7	11,7	7,0	11,4	14,9	9,2	14,6	18,4
	C40/50	appr. N	[kN]	1,3	2,7	3,4	6,1	8,1	6,1	11,3	13,6	8,1	13,3	17,3	10,7	17,0	21,4
	C50/60	appr. N	[kN]	1,5	3,0	3,7	6,6	8,9	6,6	12,3	14,9	8,9	14,6	19,0	11,7	18,6	23,4
non-cracked concrete																	
Approved loads, tension	C20/25	appr. N	[kN]	1,9	4,3	3,6	5,7	7,6	5,7	9,5	11,9	7,6	13,2	17,2	10,6	16,9	21,2
	C25/30	appr. N	[kN]	2,1	4,7	3,9	6,3	8,3	6,3	10,4	13,0	8,3	14,4	18,8	11,6	18,5	23,2
	C30/37	appr. N	[kN]	2,3	5,2	4,3	7,0	9,3	7,0	11,6	14,5	9,3	16,0	20,9	12,9	20,5	25,8
	C40/50	appr. N	[kN]	2,7	6,1	5,1	8,1	10,8	8,1	13,5	16,8	10,8	18,7	24,3	15,0	23,9	30,0
	C50/60	appr. N	[kN]	3,0	6,6	5,5	8,9	11,8	8,9	14,8	18,4	11,8	20,4	26,7	16,5	26,2	32,9
cracked / non-cracked concrete																	
Approved loads, shear	C20/25	appr. V	[kN]	3,0/4,0	4,0/4,0	3,5/5,0	4,8/6,8	6,4/9,0	4,8/6,8	15,9/19,4	19,2/19,4	6,1/8,5	18,8/24,0	24,0/24,0	7,6/10,6	24,1/32,0	30,3/32,0
	$\geq$ C25/30	appr. V	[kN]	3,2/4,0	4,0/4,0	3,9/5,5	5,3/7,4	7,0/9,7	5,3/7,4	17,5/19,4	19,4/19,4	6,6/9,3	20,6/24,0	24,0/24,0	8,3/11,6	26,4/32,0	32,0/32,0
Approved bending moments	appr. M	[Nm]	6,2	6,2	14,9	14,9	14,9	32,0	32,0	32,0	64,6	64,6	64,6	105,7	105,7	105,7	
<b>Spacing and edge distance</b>																	
Effective anchorage depth	$h_{ef}$	[mm]	31	44	35	43	52	43	60	68	50	67	80	58	79	92	
Characteristic spacing	$s_{cr, N}$	[mm]	93	132	105	129	156	129	180	204	150	201	240	174	237	276	
Characteristic edge distance	$c_{cr, N}$	[mm]	46,5	66	52,5	64,5	78	64,5	90	102	75	100,5	120	87	118,5	138	
Minimum thickness of concrete slab	$h_{min}$	[mm]	100	100	100	100	120	100	130	130	120	130	150	130	150	170	
Minimum spacing	$s_{min}$	[mm]	40	40	40	50	50	50	50	50	50	50	70	50	70	70	
Minimum edge distance	$c_{min}$	[mm]	40	40	40	50	50	50	50	50	50	50	70	50	70	70	
<b>Installation parameters</b>																	
Drill hole diameter	$d_o$	[mm]	6	6	8	8	8	10	10	10	12	12	12	14	14	14	
Diameter of clearance hole in the fixture	$d_{f \leq}$	[mm]	8	8	12	12	12	14	14	14	16	16	16	18	18	18	
Depth of drill hole	$h_{i \geq}$	[mm]	45	60	55	65	75	65	85	95	75	95	110	85	110	125	
Installation torque with metric connection thread	$T_{inst \leq}$	[Nm]	10	10	20	20	20	40	40	40	60	60	60	80	80	80	
Tangential impact screwdriver <sup>1)</sup>	$T_{imp, max}$	[Nm]	160	160	300	300	300	400	400	400	500	500	500	500	500	500	

<sup>1)</sup>It is possible to fit with a tangential screwdriver with maximum output of  $T_{imp, max}$  in accordance with the manufacturer's specifications



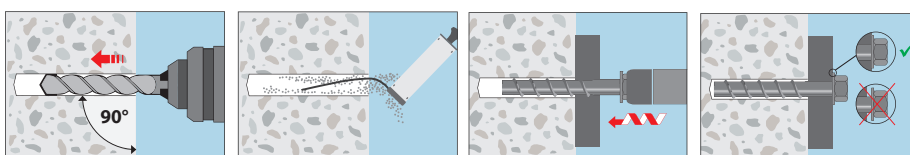

**Extract from Permissible Service Conditions of European Technical Assessment ETA-16/0439**

Multiple use for non-structural applications. Total safety factor as per ETAG 001 included ( $\gamma_M$  and  $\gamma_F$ ). Depending on national regulations, the maximum allowable load per fixing point may be lower than the approved load of the anchor. The allowable loads per fixing point are regulated for the particular countries in the ETAG 001, Part 6.

Loads and performance data		Concrete screw size		BSZ 5	BSZ 6	
Nominal embedment depth 1	$h_{nom 1}$	[mm]	35	35	-	
Nominal embedment depth 2	$h_{nom 2}$	[mm]	-	-	-	
Nominal embedment depth 3	$h_{nom 3}$	[mm]	-	-	55	
cracked concrete						
Approved loads, tension	C20/25	appr. N	[kN]	0,6	0,6	3,6
	C25/30	appr. N	[kN]	0,7	0,7	3,9
	C30/37	appr. N	[kN]	0,7	0,7	4,3
	C40/50	appr. N	[kN]	0,8	0,8	5,1
	C50/60	appr. N	[kN]	0,9	0,9	5,5
non-cracked concrete						
Approved loads, tension	C20/25	appr. N	[kN]	0,6	0,6	3,6
	C25/30	appr. N	[kN]	0,7	0,7	3,9
	C30/37	appr. N	[kN]	0,7	0,7	4,3
	C40/50	appr. N	[kN]	0,8	0,8	5,1
	C50/60	appr. N	[kN]	0,9	0,9	5,5
cracked / non-cracked concrete						
Approved loads, shear	C20/25	appr. V	[kN]	2,0/2,5	2,0/2,8	4,0/4,0
	$\geq$ C25/30	appr. V	[kN]	2,2/2,5	2,2/3,1	4,0/4,0
Approved bending moments		appr. M	[Nm]	3	6,2	6,2
<b>Spacing and edge distance</b>						
Effective anchorage depth	$h_{ef}$	[mm]	27	27	44	
Characteristic spacing	$s_{cr, N}$	[mm]	81	81	132	
Characteristic edge distance	$c_{cr, N}$	[mm]	40,5	40,5	66	
Minimum thickness of concrete slab	$h_{min}$	[mm]	80	80	100	
Minimum spacing	$s_{min}$	[mm]	35	35	40	
Minimum edge distance	$c_{min}$	[mm]	35	35	40	
<b>Installation parameters</b>						
Drill hole diameter	$d_o$	[mm]	5	6	6	
Diameter of clearance hole in the fixture	$d_f$	[mm]	7	8	8	
Depth of drill hole	$h_{1 \geq}$	[mm]	40	40	60	
Installation torque with metric connection thread	$T_{inst \leq}$	[Nm]	8	10	10	
Tangential impact screwdriver <sup>1)</sup>	$T_{imp, max}$	[Nm]	110	160	160	

<sup>1)</sup>It is possible to fit with a tangential screwdriver with maximum output of  $T_{imp, max}$  in accordance with the manufacturer's specifications

<b>Approved loads with exposure to fire</b>						
in cracked and non-cracked concrete C20/25 to C50/60						
Approved loads, tension	R30	appr. $N_{fi}$	[kN]	-	0,38	0,9
	R60	appr. $N_{fi}$	[kN]	-	0,38	0,8
	R90	appr. $N_{fi}$	[kN]	-	0,38	0,6
	R120	appr. $N_{fi}$	[kN]	-	0,3	0,4
Approved loads, shear	R30	appr. $V_{fi}$	[kN]	-	0,68	0,9
	R60	appr. $V_{fi}$	[kN]	-	0,68	0,8
	R90	appr. $V_{fi}$	[kN]	-	0,6	0,6
	R120	appr. $V_{fi}$	[kN]	-	0,4	0,4
Characteristic spacing	$s_{cr, fi}$	[mm]	-	108	176	
Characteristic edge distance	$c_{cr, fi}$	[mm]	-	54	88	

**Installation**


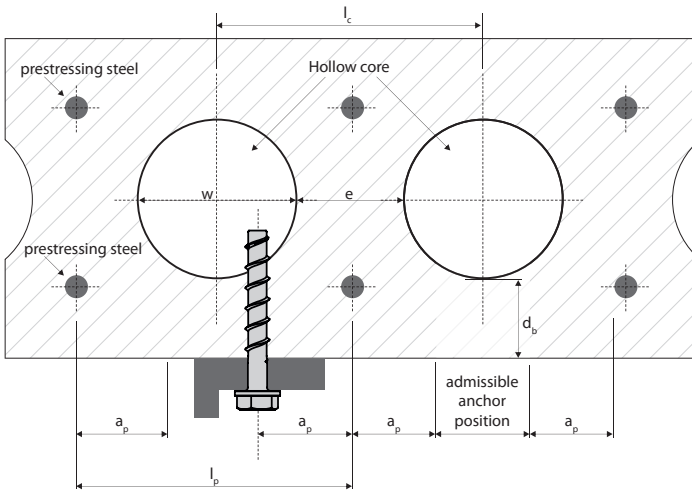


**Extract from Permissible Service Conditions of European Technical Assessment ETA-16/0439**

Multiple use for non-structural applications. Total safety factor as per ETAG 001 included ( $\gamma_M$  and  $\gamma_F$ ). Depending on national regulations, the maximum allowable load per fixing point may be lower than the approved load of the anchor. The allowable loads per fixing point are regulated for the particular countries in the ETAG 001, Part 6.

Loads and performance data		Concrete screw size		BSZ 6
Nominal embedment depth	$h_{nom}$ [mm]			$\geq 35$
Precast pre-stressed hollow core slabs C30/37 to C50/60				
Flange thickness	$d_b \geq$ [mm]	25	30	35
	$F_{appr}$ [kN]	0,4	0,8	1,2
<b>Spacing and edge distance</b>				
Minimum spacing	$s_{min}$ [mm]			100
Minimum edge distance	$c_{min}$ [mm]			100
<b>Installation parameters</b>				
Drill hole diameter	$d_o$ [mm]			6
Diameter of clearance hole in the fixture	$d_f$ [mm]			8
Depth of drill hole	$h_1 \geq$ [mm]			40
Installation torque	$T_{inst} \leq$ [Nm]			10

**Installation in precast pre-stressed hollow core slabs**

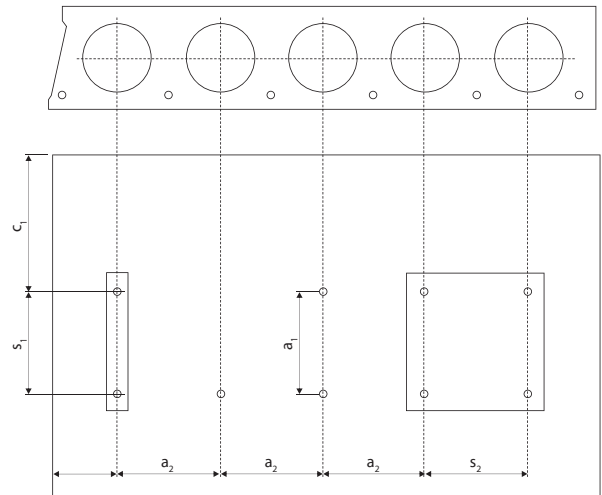


$w / e \leq 4,2$

- w Core width
- e Web thickness

- Core distance  $l_c \geq 100$  mm
- Distance between prestressing steel  $l_p \geq 100$  mm
- Distance between anchor position and pre-stressing steel  $a_p \geq 50$  mm

**Installation parameters for anchors in precast pre-stressed hollow core slabs**



- $c_1, c_2$  Edge distance
- $s_1, s_2$  Anchor spacing
- $a_1, a_2$  Distance between the anchor groups

- Minimum edge distance  $c_{min} \geq 100$  mm
- Minimum spacing  $s_{min} \geq 100$  mm
- Minimum distance between the anchor groups  $a_{min} \geq 100$  mm

**Installation**

