... eine starke Verbindung

DECLARATION OF PERFORMANCE

DoP Nr.: **MKT-1.3-600_en**

- ✧ **Unique identification code of product-type:** **Concrete screw BSZ-IG**
- ✧ **Intended use/es:** Fasteners for use in concrete for redundant non-structural systems, see Annex B
- ✧ **Manufacturer:** MKT Metall-Kunststoff-Technik GmbH & Co.KG
  Auf dem Immel 2
  67685 Weilerbach
- ✧ **System/s of AVCP:** 2+
- ✧ **European Assessment Document:** **EAD 330747-00-0601**
  - European Technical Assessment: **ETA-25/0844, 26.01.2026**
  - Technical Assessment Body: DIBt, Berlin
  - Notified body/ies: NB 2873 – Technische Universität Darmstadt

✧ **Declared performance/s:**

Essential characteristics	Performance
Safety in case of fire (BWR 2)	
Reaction to fire	Class A1
Resistance to fire	Annex C3
Safety in use (BWR 4)	
Characteristic resistance to tension load (static and quasi-static loading)	Annex C1, C2
Characteristic resistance to shear load (static and quasi-static loading)	Annex C1, C2
Durability	Annex B1

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 2024/3110, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Stefan Weustenhagen
(General manager)
Weilerbach, 26.01.2026

p.p.
Dipl.-Ing. Detlef Bigalke
(Head of product development)

The original of this declaration of performance was written in German. In the event of deviations in the translation, the German version shall be valid.

Deutsches Institut für Bautechnik

Public-law institution jointly founded by the federal states and the Federation

European Technical Assessment Body for construction products

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European Technical Assessment ETA-25/0844 of 26 January 2026

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Concrete Screw BSZ-IG
Product family to which the construction product belongs	Fasteners for use in concrete for redundant non-structural systems
Manufacturer	MKT Metall-Kunststoff-Technik GmbH & Co. KG Auf dem Immel 2 67685 Weilerbach GERMANY
Manufacturing plant	MKT, Werk 5,D
This European Technical Assessment contains	12 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Article 95(4) of Regulation (EU) No 2024/3110, on the basis of	EAD 330747-00-0601

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

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Specific Part

1 Technical description of the product

The Concrete Screw BSZ-IG is an anchor of size of 8, 10 and 12 mm made of galvanized steel or steel with zinc flake coating. The anchor is screwed into a predrilled cylindrical drill hole. The special thread of the anchor cuts an internal thread into the member while setting. The anchorage is characterised by mechanical interlock in the special thread.

The product description is given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the anchor of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire	See Annex C3

3.2 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance to tension load (static and quasi-static loading)	See Annex C1 and C2
Characteristic resistance to shear load (static and quasi-static loading)	See Annex C1 and C2
Durability	See Annex B1

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with European Assessment Document EAD No. 330747-00-0601, the applicable European legal act is: [97/161/EC].

The system to be applied is: 2+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 26 January 2026 by Deutsches Institut für Bautechnik

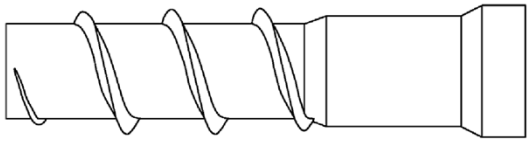
Dipl.-Ing. Beatrix Wittstock
Head of Section

beglaubigt:
Baderschneider

Deutsches Institut für Bautechnik DIBt

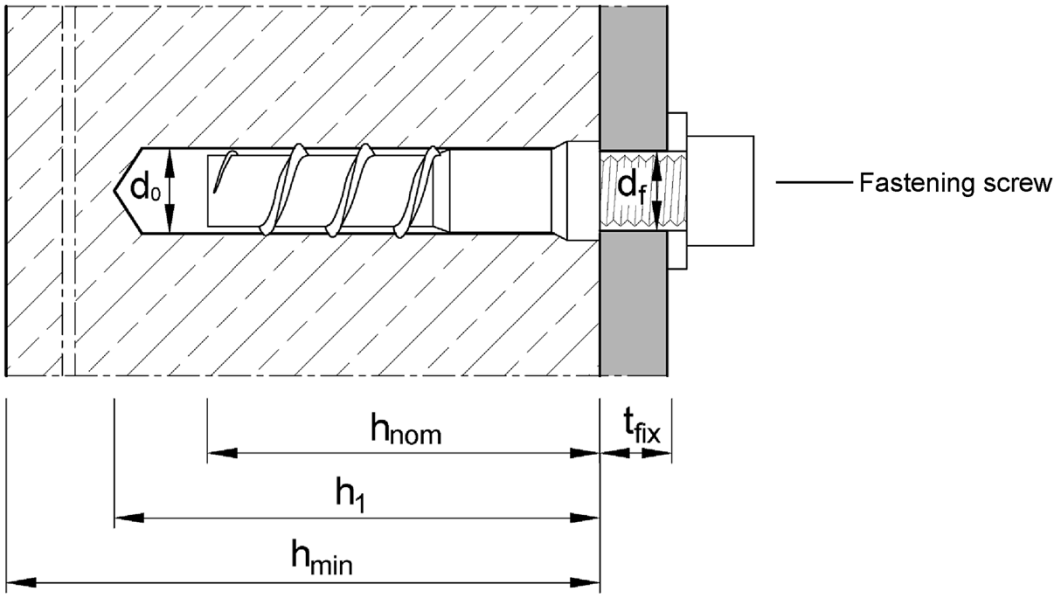
Concrete Screw BSZ-IG

Steel, galvanized or zinc flake coated



Installation situation in concrete

e.g. Concrete Screw BSZ-IG 8 and fixture

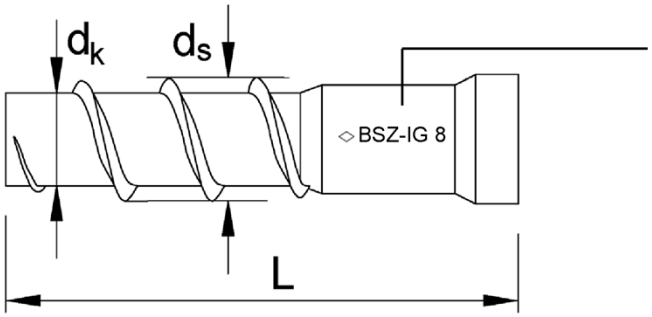


d_0 = nominal drill bit diameter
h_{nom} = nominal embedment depth
h_1 = depth of the drill hole
h_{min} = minimum thickness of member
d_f = diameter of clearance hole in the fixture
t_{fix} = thickness of fixture

Concrete Screw BSZ-IG	
Product description Product and installation situation	**Annex A1**

Table A1: Dimensions

Screw size				BSZ-IG 8	BSZ-IG 10	BSZ-IG 12
Length of the anchor		L	[mm]	40		
Thread	Core diameter	d_k	[mm]	7,0	9,0	11,0
	Outside diameter	d_s	[mm]	10,5	12,5	14,5



Marking	e.g.: ◇ BSZ-IG 8 or *or* TSM 8 M
◇BSZ *or* TSM	Trade name (optional with manufacturer identification ◇)
M *or* -IG	Screw type
8	Screw size

Configuration with internal thread and TORX

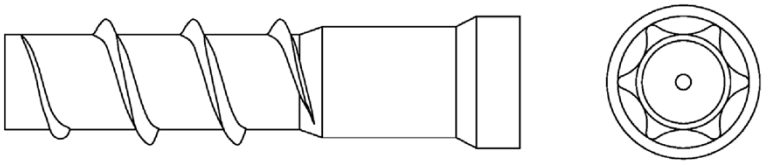


Table A2: Materials

Version		Steel, zinc plated
Material		Carbon steel galvanized or zinc flake coated
Nominal characteristic steel yield strength	f_{yk}	540 N/mm²
Nominal characteristic steel ultimate strength	f_{uk}	700 N/mm²
Elongation at fracture	A_5	≤ 8%

Concrete Screw BSZ-IG

Product description
Dimensions, marking and materials

Annex A2

Deutsches Institut für Bautechnik DIBt

Specification of intended use

Concrete Screw BSZ-IG		BSZ-IG 8	BSZ-IG 10	BSZ-IG 12
Anchorages subject to	Static or quasi-static loading	✓		
	Fire exposure	✓		
	Redundant non-structural systems according to EN 1992-4:2018	✓		
Base material	Cracked or uncracked concrete	✓		
	Compacted, reinforced or unreinforced concrete (without fibres) according to EN 206:2013+A1:2016	✓		
	Strength classes according to EN 206:2013+A1:2016, C20/25 to C50/60	✓		

Use conditions (Environmental conditions):

- Structures subject to dry internal conditions

Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings (e.g. position of the anchor relative to reinforcement or to supports, etc.)
- Design method of anchorages according to EN 1992-4:2018 and EOTA Technical Report TR 055, Version February 2018.
- Anchorages are designed for static or quasi-static actions according to EN 1992-4:2018, Section 6.2.2 applies for all specified diameters d_f of clearance hole in the fixture in Annex B2, Table B1.

Installation:

- Drill hole by hammer drilling or vacuum drill bit. When using a vacuum drill bit no drill hole cleaning is required.
- Anchor installation carried out by appropriately qualified personal and under the responsibility of the person responsible for technical matters on site.
- After installation further turning of the concrete screw must not be possible. The head of the concrete screw is supported in the fixture and is not damaged. The concrete screw must be screwed in level with the concrete surface. The fixture is fastened by a fixing screw.
- In case of aborted hole: new drilling must be drilled at a minimum distance of twice the depth of aborted hole or closer, if the aborted hole is filled with high strength mortar and only if the hole is not in the direction of the oblique tensile or shear load.

Concrete Screw BSZ-IG	
Intended Use Specifications	**Annex B1**

Table B1: Installation parameters

Screw size			BSZ-IG 8	BSZ-IG 10	BSZ-IG 12
Nominal embedment depth	h_{nom}	[mm]	40		
Nominal drill bit diameter	d_0	[mm]	8	10	12
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8,45	10,45	12,50
Depth of drill hole	$h_1 \geq$	[mm]	50	50	50
Diameter of clearance hole in the fixture	d_f	[mm]	7	9	12
Diameter of the metric internal thread		[mm]	6	8	10
Minimum screw-in depth of the fixing screw or threaded rod	L_{sd}	[mm]	8	8	8
Installation torque	T_{inst}	[Nm]	4	8	15
Tangential impact screwdriver [1)]	$T_{imp,max}$	[Nm]	180		
Fastening screws or threaded rods of strength classes 4.8, 5.8 and 8.8 according to EN ISO 898-1:2013 may be used.					

[1)] Installation with tangential impact screwdriver, with maximum power output $T_{imp,max}$ acc. to manufacturer's instructions is possible

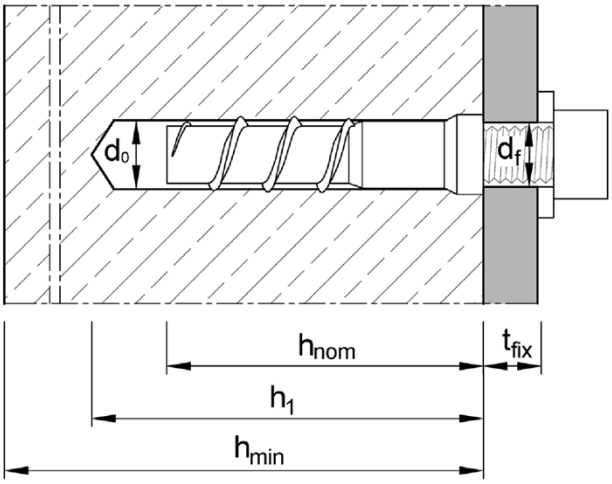


Table B2: Minimum thickness of member, minimum edge distance and minimum spacing

Screw size			BSZ-IG 8	BSZ-IG 10	BSZ-IG 12
Nominal embedment depth	h_{nom}	[mm]	40		
Minimum thickness of member	h_{min}	[mm]	80	80	80
Minimum spacing	s_{min}	[mm]	30	40	40
Minimum edge distance	c_{min}	[mm]	40	40	40

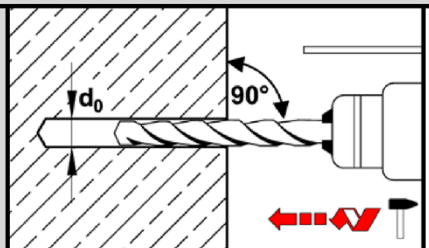
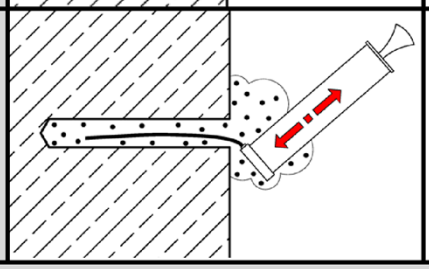
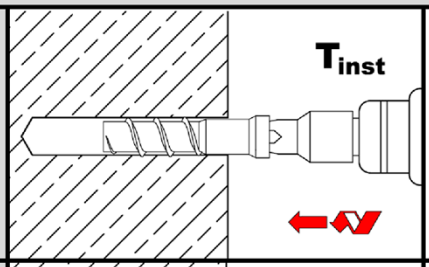
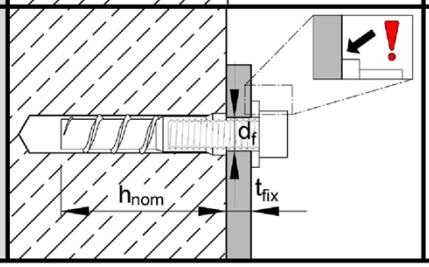
Concrete Screw BSZ-IG

Intended Use
Installation parameters, Minimum thickness of concrete member, minimum spacing and edge distance

Annex B2

Deutsches Institut für Bautechnik DIBt

Installation instructions

Drill hole preparation and cleaning		
1		Drill hole perpendicular to concrete surface. Using a vacuum drill, continue with step 3.
2		Blow out dust or alternatively vacuum clean down to the bottom of the hole.
Installation concrete screw		
3		Screw in, e.g. with tangential impact screwdriver or torque wrench.
4		The screw must be screwed in below the concrete surface. The fixture is attached with the fastening screw.

Concrete Screw BSZ-IG	
Intended Use Installation instruction	**Annex B3**

Table C1: Steel failure for tension and shear loads

Screw size			**BSZ-IG 8**	**BSZ-IG 10**	**BSZ-IG 12**
Nominal embedment depth	h_{nom}	[mm]	40		
Characteristic resistance for steel failure under tension loads					
Strength class 4.8, 5.8 and 8.8	$N_{Rk,s}$	[kN]	8,0	9,5	10,0
Partial factor	$\gamma_{Ms,N}$ [1)]	[-]	1,5		
Characteristic resistance for steel failure under shear loads					
Strength class 4.8	$V_{Rk,s}$	[kN]	4,0	7,3	9,0
Strength class 5.8	$V_{Rk,s}$	[kN]	5,0	7,5	9,0
Strength class 8.8	$V_{Rk,s}$	[kN]	6,0	7,5	9,0
Partial factor	$\gamma_{Ms,V}$ [1)]	[-]	1,25		
Ductility factor	k_7	[-]	0,8		
Characteristic bending resistance					
Strength class 4.8	$M^0_{Rk.s}$	[Nm]	5,0	12,5	23,9
Strength class 5.8	$M^0_{Rk.s}$	[Nm]	6,3	15,4	23,9
Strength class 8.8	$M^0_{Rk.s}$	[Nm]	8,8	15,4	23,9

[1)] In absence of other national regulations

Concrete Screw BSZ-IG

Performance
Steel failure for tension and shear loads

Annex C1

Deutsches Institut für Bautechnik DIBt

Table C2: Characteristic values for **static** or **quasi-static loads**

Screw size				**BSZ-IG 8**	**BSZ-IG 10**	**BSZ-IG 12**
Nominal embedment depth		h_{nom}	[mm]	40		
Pull-out failure						
Characteristic resistance to tension load in concrete C20/25	uncracked concrete	$N_{Rk,p,ucr}$	[kN]	6,5	8,0	5,5
	cracked concrete	$N_{Rk,p,cr}$	[kN]	5,5	6,5	4,5
Increasing factor for $N_{Rk,p} = \psi_c \cdot N_{Rk,p\ (C20/25)}$ with $\Psi_C = \left(\frac{f_{ck}}{20}\right)^m$	uncracked concrete	m	[-]	0,213	0,146	0,147
	cracked concrete	m	[-]	0,209	0,121	0,281
Concrete cone failure						
Effective anchorage depth		h_{ef}	[mm]	31	31	30
Spacing		$s_{cr,N}$	[mm]	3 h_{ef}		
Edge distance		$c_{cr,N}$	[mm]	1,5 h_{ef}		
Factor k_1	cracked	$k_{cr,N}$	[-]	7,7		
	uncracked	$k_{ucr,N}$	[-]	11,0		
Splitting						
Characteristic resistance		$N^0_{Rk,sp}$	[kN]	6,5	8,0	5,5
Spacing		$s_{cr,sp}$	[mm]	≥ 200 mm and ≥ 4 h_{ef}		
Edge distance		$c_{cr,sp}$	[mm]	≥ 100 mm and ≥ 3 h_{ef}		
Concrete pry-out failure						
Pry-out factor		k_8	[-]	1,0		
Concrete edge failure						
Effective length of anchor		$l_f = h_{nom}$	[mm]	40		
Outside diameter of anchor		d_{nom}	[mm]	8	10	12
Partial factor		γ_{inst}	[-]	1,0	1,0	1,2

Concrete Screw BSZ-IG

Annex C2

Performance
Characteristic values for **static** or **quasi-static loads**

Deutsches Institut für Bautechnik DIBt

Table C3: Characteristic values of resistance under **fire exposure**

Screw size				**BSZ-IG 8**	**BSZ-IG 10**	**BSZ-IG 12**
Nominal anchorage depth		h_{nom}	[mm]	40		
Steel failure (tension and shear resistance)						
Characteristic resistance	R30	$N_{Rk,s,fi} = V_{Rk,s,fi}$	[kN]	1,01	2,11	3,92
	R60			0,77	1,58	2,86
	R90			0,54	1,05	1,81
	R120			0,43	0,79	1,28
Steel failure <u>with</u> lever arm						
Characteristic bending resistance	R30	$M^0_{Rk,s,fi}$	[Nm]	0,63	1,81	4,28
	R60			0,49	1,36	3,12
	R90			0,34	0,91	1,97
	R120			0,27	0,68	1,39
Pull-out						
Characteristic resistance	R30-R90	$N_{Rk,p,fi}$	[kN]	1,38	1,63	1,13
	R120			1,10	1,30	0,90
Concrete cone failure						
Characteristic resistance	R30-R90	$N^0_{Rk,c,fi}$	[kN]	0,9	0,9	0,8
	R120			0,7	0,7	0,7
Edge distance		$c_{cr,fi}$	[mm]	2 h_{ef}		
In case of fire attack from more than one side, the minimum edge distance shall be ≥ 300 mm						
Spacing		$s_{cr,fi}$	[mm]	4 h_{ef}		
The anchorage depth has to be increased for wet concrete by at least 30 mm.						

Concrete Screw BSZ-IG

Performance
Characteristic values of resistance under **fire exposure**

Annex C3