

Wedge Anchor BZ-IG

Steel, zinc plated



Range of Loading: 2,0 kN–18,8 kN

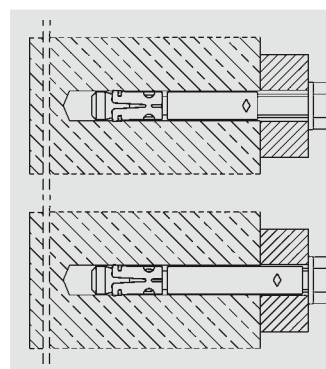
Range of concrete quality: C20/25–C50/60

Description

The fastening system BZ-IG is the first approved (ETA-99/0010) wedge anchor for cracked concrete with internal thread. It combines the benefits of a mechanical anchor with an easy installation and the flexibility of an internal thread. For the first time it is possible to fasten balcony and stair railings or stadium seats using a countersunk head screw at favourable costs. Since this anchor system is also approved for use with hexagon head screws and standard threaded rods a wide range of applications is possible. Compared to a drop in anchor the fastening system BZ-IG can carry significant higher loads, even in cracked concrete. The versatility of the MKT Fastening System BZ-IG breaks new ground in design and application.

Applications:

Medium to heavy duty fastenings in cracked and uncracked concrete: Railings, suspended ceilings, ladders, doors, sprinkler systems, pipe hangers and all kinds of temporary fastenings.



Pre-installation:

For pre-installation the anchor gets installed below the concrete surface. When the coated screw gets removed the anchor leaves flush with the concrete surface. So it's excellent for temporary fastenings.

Through fastening:

If through-fastening is used the fixture can be used as drilling template. Afterwards the anchor can be installed through the clearance hole in the fixture. So it combines easy installation with the aesthetics of a screw head.

Pre-Installation

Wedge Anchor BZ-IG¹⁾



- Steel, zinc plated; Pre-Installation
- Approved for cracked and uncracked concrete

Description	Ref. No.	Drill hole	Anchor length	Thread	Pkg. content.	Weight per pkg.
		Ø x depth		Ø x length		
		mm	mm	mm	pcs.	kg
BZ-IG M 6-0	03600101	8 x 60	50	M6x20	100	1,42
BZ-IG M 8-0	03610101	10 x 75	62	M8x22	50	1,31
BZ-IG M 10-0	03620101	12 x 90	70	M10x23	25	1,08
BZ-IG M 12-0	03630101	16 x 105	86	M12x27	20	2,03

Coated Screw DIN 933 with Washer DIN EN ISO 7089 (DIN 125)¹⁾



Description	Ref. No.	Fixture thickn. t _{fix} mm	Pkg. content pcs.	Weight per pkg. kg
S-IG 6x25	54010101	4-12	100	0,80
S-IG 8x25	54110101	2-8	50	0,79
S-IG 10x40	54210101	15-19	25	0,90
S-IG 12x45	54310101	16-21	20	1,13

Coated Hex Nut DIN 933 with Washer DIN EN ISO 7089 (DIN 125)¹⁾



Description	Ref. No.	Pkg. content pcs	Weight per pkg. kg
MU-IG 6	56005101	100	0,32
MU-IG 8	56105101	50	0,35
MU-IG 10	56205101	25	0,36
MU-IG 12	56305101	20	0,45

¹⁾Screws (Strength class 8.8) or hex nuts and washers to be ordered separately.

Other screw lengths on demand.

Threaded stud must have at least the strength of 8.8. Threaded studs with the certificate see page 174.

Coated Countersunk Screw DIN 7991 with Countersunk Washer¹


Description	Ref. No.	Fixture thickn. t _{fix} mm	Pkg. content		Wght. per pkg. kg
			pcs.		
SK-IG 6x25 ²⁾	55013101	6-14	100		0,78
SK-IG 8x30 ²⁾	55112101	9-15	50		0,59
SK-IG 10x30	55211101	8-11	25		0,48
SK-IG 12x35	55311101	9-14	20		0,64

¹⁾Screws (Strength class 8.8) or hex nuts and washers to be ordered separately.

²⁾Screw similar to DIN 7991 with Torx®-drive. Size see page 33.

Other screw lengths on demand.

Threaded stud must have at least the strength of 8.8. Threaded studs with the certificate see page 174.

Setting Tool BZ-IG for Pre-Installation


Description	Ref. No.	Weight per pcs. kg
BZ-IGS M 6V	43005150	0,43
BZ-IGS M 8V	43100150	0,44
BZ-IGS M 10V	43200150	0,46
BZ-IGS M 12V	43300150	0,56

Through Fastening
Wedge Anchor BZ-IG¹⁾


→ Steel, zinc plated; Through Fastening

→ Approved for cracked and uncracked concrete

Description	Ref. No.	Drill hole Ø x depth mm	Drill hole depth through fixture mm	Fixture thickness t _{fix} mm		Anchor length l mm	Thread Ø x length mm	Pkg. content pcs	Weight per pkg. kg
				Typ S-IG	Typ SK-IG				
BZ-IG M 6-10	03602101	8 x 60	74	10	14	60	M6 x 20	100	1,80
BZ-IG M 6-20	03604101	8 x 60	84	20	24	70	M6 x 20	100	2,20
BZ-IG M 6-30	03606101	8 x 60	94	30	34	80	M6 x 20	100	2,60
BZ-IG M 8-10	03611101	10 x 75	90	10	15	72	M8 x 22	50	1,65
BZ-IG M 8-20	03612101	10 x 75	100	20	25	82	M8 x 22	50	1,95
BZ-IG M 8-30	03613101	10 x 75	110	30	35	92	M8 x 22	50	2,25
BZ-IG M 10-10	03621101	12 x 90	106	10	16	80	M10 x 23	25	1,32
BZ-IG M 10-20	03622101	12 x 90	116	20	26	90	M10 x 23	25	1,48
BZ-IG M 10-30	03623101	12 x 90	126	30	36	100	M10 x 23	25	1,76
BZ-IG M 12-10	03631101	16 x 105	122	10	17	96	M12 x 27	20	2,34
BZ-IG M 12-20	03632101	16 x 105	132	20	27	106	M12 x 27	20	2,66
BZ-IG M 12-30	03633101	16 x 105	142	30	37	116	M12 x 27	20	2,97

Coated Screw DIN 933 with Washer DIN EN ISO 7089 (DIN 125)¹⁾


Description	Ref. No.	Pkg. content pcs	Weight per pcs. kg
S-IG 6x16	54020101	100	0,64
S-IG 8x18	54120101	50	0,68
S-IG 10x20	54220101	25	0,64
S-IG 12x25	54320101	20	0,67

¹⁾Screws (Strength class 8.8) to be ordered separately.

Coated Countersunk Screw DIN 7991 with Countersunk Washer¹⁾


Description	Ref. No.	Pkg. content pcs	Weight per pcs. kg
SK-IG 6x16 ²⁾	55010101	100	0,64
SK-IG 8x20 ²⁾	55110101	50	0,60
SK-IG 10x25	55210101	25	0,62
SK-IG 12x30	55310101	20	0,80

²⁾Screw similar to DIN 7991 with Torx®-drive. Size see page 33.

Setting Tool BZ-IG for Through Fastening


Description	Ref. No.	Weight per pcs. kg
BZ-IGS M 6D	43005155	0,32
BZ-IGS M 8D	43100155	0,33
BZ-IGS M 10D	43200155	0,33
BZ-IGS M 12D	43300155	0,35



Extract from Permissible Service Conditions of European Technical Assessment ETA-99/0010 for use in cracked and uncracked concrete (Option 1)

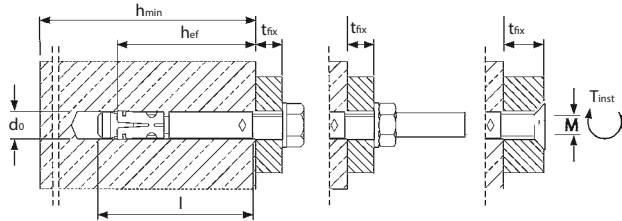
Approved loads according to EN 1992-4 for single anchors without the influence of spacing and edge distances. The total safety factor (γ_M und γ_F) is included. Load capacities under fire exposure see page 196.

Loads and performance data	Wedge Anchor BZ-IG		M 6	M 8	M 10	M 12
cracked concrete						
Mean ultimate loads, tension	C25/30 Num	[kN]	14,1	19,8	28,3	45,9
Mean ultimate loads, shear	C25/30 Vum	[kN]	8,7	11,4	14,8	33,9
Approved loads, tension	C20/25 appr. N	[kN]	2,0	3,6	4,8	7,9
	C25/30 appr. N	[kN]	2,2	4,0	5,3	8,9
	C30/37 appr. N	[kN]	2,4	4,4	5,8	9,7
	C40/50 appr. N	[kN]	2,8	5,1	6,7	11,2
	C50/60 appr. N	[kN]	3,1	5,6	7,5	12,5
uncracked concrete						
Approved loads, tension	C20/25 appr. N	[kN]	4,8	6,3	7,9	11,9
	C25/30 appr. N	[kN]	5,3	7,1	8,9	13,3
	C30/37 appr. N	[kN]	5,8	7,8	9,7	14,6
	C40/50 appr. N	[kN]	6,7	9,0	11,2	16,8
	C50/60 appr. N	[kN]	7,5	10,0	12,4	18,8
cracked / uncracked concrete						
Approved loads, shear (Pre-Installation)	\geq C20/25 appr. V	[kN]	3,3	3,9	5,9	14,7
Approved loads, shear (Through Fastening)	\geq C20/25 appr. V	[kN]	2,9	4,3	6,2	13,9
Approved bending moments (Pre-Installation)	appr. M	[Nm]	7,0	17,1	34,2	59,8
Approved bending moments (Through Fastening)	appr. M	[Nm]	20,6	30,4	43,4	118,3
Spacing and edge distance						
Effective anchorage depth	h_{ef}	[mm]	45	58	65	80
Characteristic spacing	$s_{cr, N}$	[mm]	135	174	195	240
Characteristic edge distance	$c_{cr, N}$	[mm]	67,5	87	97,5	120
cracked concrete						
Minimum spacing / for edge distance c	s_{min} / C	[mm]	50 / 60	60 / 80	70 / 100	80 / 120
Minimum edge distance / for spacing s	c_{min} / S	[mm]	50 / 75	60 / 100	70 / 100	80 / 120
uncracked concrete						
Minimum spacing / for edge distance c	s_{min} / C	[mm]	50 / 80	60 / 100	65 / 120	80 / 160
Minimum edge distance / for spacing s	c_{min} / S	[mm]	50 / 115	60 / 155	70 / 170	100 / 210
Minimum thickness	h_{min}	[mm]	100	120	130	160
Installation parameters						
Drill hole diameter	d_o	[mm]	8	10	12	16
Diameter of clearance hole in the fixture - Pre-Installation	d_f	[mm]	7	9	12	14
Diameter of clearance hole in the fixture - Through Fastening	d_f	[mm]	9	12	14	18
Depth of drill hole	h_1	[mm]	60	75	90	105
Installation torque	Screw DIN 933 T_{inst}	[Nm]	10	30	30	55
	Countersunk screw T_{inst}	[Nm]	10	25	40	50
	Threaded rod T_{inst}	[Nm]	8	25	30	45
Width across nut	Screw DIN 933 SW	[mm]	10	13	17	19
Internal hexagon size	Countersunk screw SW	[mm]	-	-	6	8
Torx® size	Countersunk screw		T30	T45	-	-
Min. thickness of fixture	Screw DIN 933 or Threaded rod $t_{fix} \geq$	[mm]	1 / 5 ¹⁾	1 / 7 ¹⁾	1 / 8 ¹⁾	1 / 9 ¹⁾
Min. thickness of fixture	Countersunk screw $t_{fix} \geq$	[mm]	5 / 9 ¹⁾	7 / 12 ¹⁾	8 / 14 ¹⁾	9 / 16 ¹⁾

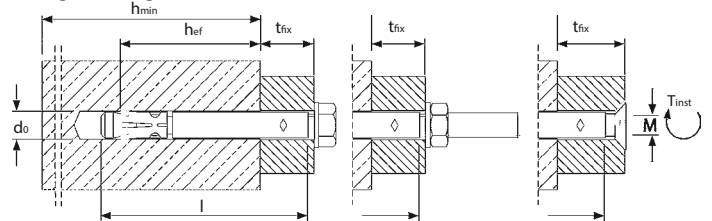
¹⁾Pre-Installation / Through Installation.

For anchor designing, an easy to operate software on CD-ROM is available on request or can be downloaded at www.mkt.de.

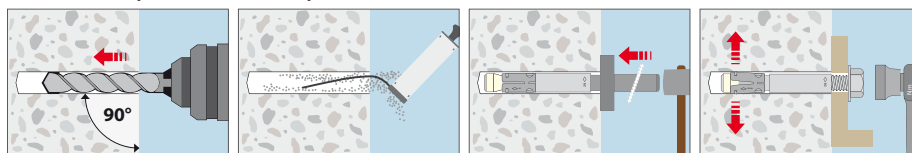
Pre-installation:



Through fastening:

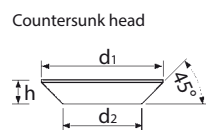


Installation (Pre-installation)



Dimension countersunk washer [mm]

	d1	d2	h
SK M 6	16,5	9,5	3,9
SK M 8	20,5	11,5	5,0
SK M 10	24,5	14,5	5,7
SK M 12	29,5	17,5	6,7



Installation (Through fastening)

