

Wedge Anchor BZ plus A4

Stainless steel A4/316



Wedge Anchor
BZ plus s A4



Wedge Anchor
BZ plus A4



Wedge Anchor
BZ-U plus A4



Wedge Anchor
BZ plus A4 M24

Range of Loading: 2,4 kN - 70,6 kN

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



Approvals and Certificates



Description

There has been further improvement to the performance and application range of the wedge anchor BZ plus A4. The new European Technical Assessment replaces the previous European technical approval. Now its suitability has been verified for seismic loading, performance categories C1 and C2. Variants include a second effective anchorage depth, longer thread, and new sizes with a shorter overall length and only the one effective anchorage depth.

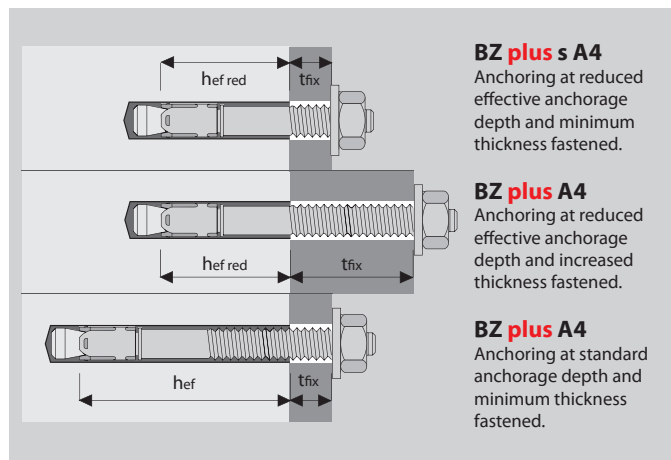
Advantages

- Approved under the building regulations with a new European Technical Assessment (Option 1)
- Approved for use in cracked and non-cracked concrete
- Approved for use under seismic loading, performance categories C1 and C2 (M8 to M20, maximum anchor length 210 mm)
- Approved for use under fire exposure. Fire resistance ratings R30-R120
- Suitable for use in compression resistant natural stone (without approval)
- Two effective anchorage depths for greater flexibility (M8 to M16, maximum anchor length 210 mm)
- Anchoring with the smaller effective anchorage depth reduces drilling and installation time.
- Anchoring with the standard effective anchorage depth is suitable for the highest load limits
- Particularly cost effective: the short "s" versions with only one effective anchorage depth in the sizes M8 to M16
- Suitable for surface, through, and stand-off fastening
- Suitable for sprinkler system installations complying with VdS requirements
- FM approval for the installation of sprinkler systems (M10 to M16)
- Shock approval by the Swiss Federal Office for Civil Protection

Applications

Medium to heavy duty anchoring in cracked and non-cracked concrete: Steel beams, channels, facade substructures, stadium seating, wood structures.

Example of Installation



BZ plus s A4
Anchoring at reduced effective anchorage depth and minimum thickness fastened.

BZ plus A4
Anchoring at reduced effective anchorage depth and increased thickness fastened.

BZ plus A4
Anchoring at standard anchorage depth and minimum thickness fastened.

¹⁾Only standard anchorage depth

Wedge Anchor BZ plus A4

→ Stainless steel A4/316



→ Approved for cracked and non-cracked concrete

Description	Ref. No.	Standard anchorage depth					Reduced anchorage depth				Anchor length	Thread	Pkg. content	Weight per pkg.
		max. Fixture thickness t _{fix} mm	Drill hole Ø x depth mm	Setting depth h _{nom} mm	Anchorage depth h _{ef} mm	Seismic C1 / C2	max. Fixture thickness t _{fix,red} mm	Drill hole Ø x depth mm	Setting depth h _{nom,red} mm	Anchorage depth h _{ef,red} mm				
BZ 8-6/60 s A4	02105001	-	-	-	-	- / -	6	8x49	41	35	60	M8x16	100	2,54
BZ 8-11/65 s A4	02110001	-	-	-	-	- / -	11	8x49	41	35	65	M8x22	100	2,69
BZ 8-10-21/75 A4	02115001	10	8x60	52	46	✓ / ✓	21	8x49	41	35	75	M8x32	100	2,99
BZ 8-15-26/80 A4	02125001	15	8x60	52	46	✓ / ✓	26	8x49	41	35	80	M8x37	100	3,14
BZ 8-30-41/95 A4	02140001	30	8x60	52	46	✓ / ✓	41	8x49	41	35	95	M8x52	100	3,60
BZ 8-50-61/115 A4	02150001	50	8x60	52	46	✓ / ✓	61	8x49	41	35	115	M8x72	100	4,24
BZ 8-100-111/165 A4	02170001	100	8x60	52	46	✓ / ✓	111	8x49	41	35	165	M8x122	50	2,94
BZ 10-10/70 s A4	02205001	-	-	-	-	- / -	10	10x55	48	40	70	M10x22	50	2,44
BZ 10-20/80 s A4	02210001	-	-	-	-	- / -	20	10x55	48	40	80	M10x32	50	2,69
BZ 10-10-30/90 A4	02215001	10	10x75	68	60	✓ / ✓	30	10x55	48	40	90	M10x42	50	2,94
BZ 10-15-35/95 A4	02220001	15	10x75	68	60	✓ / ✓	35	10x55	48	40	95	M10x47	50	3,06
BZ 10-20-40/100 A4	02225001	20	10x75	68	60	✓ / ✓	40	10x55	48	40	100	M10x52	50	3,18
BZ 10-30-50/110 A4	02230001	30	10x75	68	60	✓ / ✓	50	10x55	48	40	110	M10x62	50	3,44
BZ 10-50-70/130 A4	02235001	50	10x75	68	60	✓ / ✓	70	10x55	48	40	130	M10x82	50	3,95
BZ 10-75-95/155 A4	02250001	75	10x75	68	60	✓ / ✓	95	10x55	48	40	155	M10x107	50	4,55
BZ 10-100-120/180 A4	02260001	100	10x75	68	60	✓ / ✓	120	10x55	48	40	180	M10x132	50	5,16
BZ 10-150/230 A4	02270001	150	10x75	68	60	- / -	-	-	-	-	230	M10x80	25	3,49
BZ 12-10/85 s A4	02305001	-	-	-	-	- / -	10	12x70	60	50	85	M12x26	25	2,10
BZ 12-20/95 s A4	02310001	-	-	-	-	- / -	20	12x70	60	50	95	M12x36	25	2,28
BZ 12-10-30/105 A4	02313001	10	12x90	80	70	✓ / ✓	30	12x70	60	50	105	M12x46	25	3,48
BZ 12-15-35/110 A4	02315001	15	12x90	80	70	✓ / ✓	35	12x70	60	50	110	M12x51	25	2,55
BZ 12-20-40/115 A4	02320001	20	12x90	80	70	✓ / ✓	40	12x70	60	50	115	M12x56	25	2,66
BZ 12-30-50/125 A4	02325001	30	12x90	80	70	✓ / ✓	50	12x70	60	50	125	M12x66	25	2,84
BZ 12-50-70/145 A4	02330001	50	12x90	80	70	✓ / ✓	70	12x70	60	50	145	M12x86	25	3,23
BZ 12-65-85/160 A4	02335001	65	12x90	80	70	✓ / ✓	85	12x70	60	50	160	M12x101	25	3,48
BZ 12-85-105/180 A4	02340001	85	12x90	80	70	✓ / ✓	105	12x70	60	50	180	M12x121	25	3,84
BZ 12-105-125/200 A4	02345001	105	12x90	80	70	✓ / ✓	125	12x70	60	50	200	M12x141	25	4,21
BZ 12-125/220 A4	02350001	125	12x90	80	70	- / -	-	-	-	-	220	M12x80	25	4,93
BZ 12-160/255 A4	02360001	160	12x90	80	70	- / -	-	-	-	-	255	M12x80	20	4,59
BZ 12-190/285 A4	02370001	190	12x90	80	70	- / -	-	-	-	-	285	M12x80	20	4,99
BZ 12-230/325 A4	02380001	230	12x90	80	70	- / -	-	-	-	-	325	M12x80	20	5,84
BZ 16-15/115 s A4	02510001	-	-	-	-	- / -	15	16x90	77	65	115	M16x36	20	3,76
BZ 16-5-25/125 A4	02515001	5	16x110	97	85	✓ / ✓	25	16x90	77	65	125	M16x46	20	4,15
BZ 16-15-35/135 A4	02520001	15	16x110	97	85	✓ / ✓	35	16x90	77	65	135	M16x56	20	4,32
BZ 16-25-45/145 A4	02525001	25	16x110	97	85	✓ / ✓	45	16x90	77	65	145	M16x66	20	4,68
BZ 16-50-70/170 A4	02530001	50	16x110	97	85	✓ / ✓	70	16x90	77	65	170	M16x91	20	5,36
BZ 16-80-100/200 A4	02535001	80	16x110	97	85	✓ / ✓	100	16x90	77	65	200	M16x121	10	3,20
BZ 16-100/220 A4	02540001	100	16x110	97	85	- / -	-	-	-	-	220	M16x80	10	3,59
BZ 16-160/280 A4	02553001	160	16x110	97	85	- / -	-	-	-	-	280	M16x80	10	4,50
BZ 20-30/165 A4	02615501	30	20x125	114	100	✓ / ✓	-	-	-	-	165	M20x50	10	4,51
BZ 20-60/195 A4	02625501	60	20x125	114	100	✓ / ✓	-	-	-	-	195	M20x70	10	5,14
BZ 20-100/235 A4	02630501	100	20x125	114	100	- / -	-	-	-	-	235	M20x80	5	3,09
BZ 20-130/265 A4	02635501	130	20x125	114	100	- / -	-	-	-	-	265	M20x80	5	3,48
BZ 20-150/285 A4	02640501	150	20x125	114	100	- / -	-	-	-	-	285	M20x80	5	3,73
BZ 24-30/200 A4	02717501	30	24x155	140	125	- / -	-	-	-	-	200	M24x58	10	7,25
BZ 24-60/230 A4	02727501	60	24x155	140	125	- / -	-	-	-	-	230	M24x88	5	4,12
BZ 24-75/245 A4	02737501	75	24x155	140	125	- / -	-	-	-	-	245	M24x103	5	4,34

Other lengths on demand.

Mechanical Heavy Duty Anchors

Wedge Anchor BZ-U plus A4



- Stainless steel A4
- With large washer DIN EN ISO 7093-1 (DIN 9021)
- Approved for cracked and non-cracked concrete

Description	Ref. No.	Standard anchorage depth					Reduced anchorage depth				Anchor length l mm	Thread mm	Washer ¹⁾ mm	Pkg. content pcs.	Weight per pkg. kg
		max. Fixture thickness t _{fix} mm	Drill hole Ø x depth mm	Setting depth h _{nom} mm	Anchorage depth h _{ef} mm	Seismic C1 / C2	max. Fixture thickness t _{fix,red} mm	Drill hole Ø x depth mm	Setting depth h _{nom,red} mm	Anchorage depth h _{ef,red} mm					
BZ-U 8-10-21/75 A4	02115301	10	8x60	52	46	✓ / ✓	21	8x49	41	35	75	M8x32	24x2	100	3,46
BZ-U 8-15-26/80 A4	02125301	15	8x60	52	46	✓ / ✓	26	8x49	41	35	80	M8x37	24x2	100	3,52
BZ-U 8-30-41/95 A4	02140301	30	8x60	52	46	✓ / ✓	41	8x49	41	35	95	M8x52	24x2	100	4,01
BZ-U 8-50-61/115 A4	02150301	50	8x60	52	46	✓ / ✓	61	8x49	41	35	115	M8x72	24x2	100	4,63
BZ-U 10-10-30/90 A4	02215301	10	10x75	68	60	✓ / ✓	30	10x55	48	40	90	M10x42	30x2,5	50	3,30
BZ-U 10-15-35/95 A4	02220301	15	10x75	68	60	✓ / ✓	35	10x55	48	40	95	M10x47	30x2,5	50	3,45
BZ-U 10-30-50/110 A4	02230301	30	10x75	68	60	✓ / ✓	50	10x55	48	40	110	M10x62	30x2,5	50	3,95
BZ-U 10-50-70/130 A4	02235301	50	10x75	68	60	✓ / ✓	70	10x55	48	40	130	M10x82	30x2,5	50	4,31
BZ-U 12-15-35/110 A4	02315301	15	12x90	80	70	✓ / ✓	35	12x70	60	50	110	M12x51	37x3	25	2,86
BZ-U 12-20-40/115 A4	02320301	20	12x90	80	70	✓ / ✓	40	12x70	60	50	115	M12x56	37x3	25	3,06
BZ-U 12-30-50/125 A4	02325301	30	12x90	80	70	✓ / ✓	50	12x70	60	50	125	M12x66	37x3	25	3,26
BZ-U 12-50-70/145 A4	02330301	50	12x90	80	70	✓ / ✓	70	12x70	60	50	145	M12x86	37x3	25	3,68
BZ-U 16-25-45/145 A4	02525301	25	16x110	97	85	✓ / ✓	45	16x90	77	65	145	M16x66	50x3	20	5,15

¹⁾Outer diameter x thickness
Other lengths on demand.



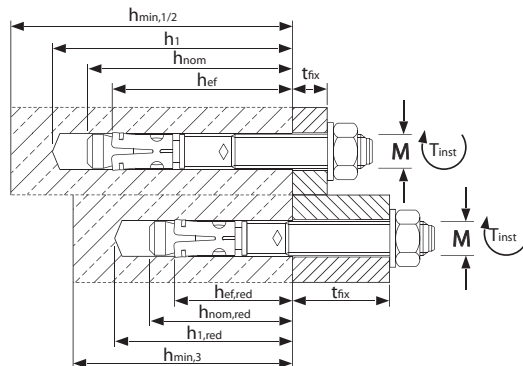
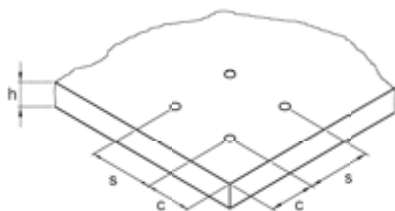
Extract from Permissible Service Conditions of European Technical Assessment ETA-99/0010

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

Total safety factor as per ETAG 001 included (γ_M and γ_P). Load capacities under fire exposure see page 166.

Loads and performance data			Wedge Anchor BZ plus A4		M8	M10	M12	M16	M20	M24		
Standard anchorage depth	h_{ef}	[mm]	46	-	60	-	70	-	85	-	100	125
Reduced anchorage depth	$h_{ef,red}$	[mm]	-	35	-	40	-	50	-	65	-	-
cracked concrete												
Mean ultimate loads, tension	C25/30	[kN]	10,8	8,8	16,7	12,4	27,5	17,6	40,0	30,1	54,3	68,8
Mean ultimate loads, shear	C25/30	[kN]	19,0	16,3	28,5	25,5	35,8	40,8	70,3	60,5	108,4	149,5
Approved loads, tension	C20/25 appr. N	[kN]	2,4	2,4	4,3	3,6	7,6	6,1	11,9	9,0	17,1	19,0
	C25/30 appr. N	[kN]	2,6	2,6	4,7	3,9	8,3	6,6	13,0	9,8	18,8	20,9
	C30/37 appr. N	[kN]	2,9	2,9	5,2	4,3	9,3	7,4	14,5	10,9	20,9	23,2
	C40/50 appr. N	[kN]	3,4	3,4	6,1	5,1	10,8	8,6	16,8	12,7	24,2	26,9
	C50/60 appr. N	[kN]	3,7	3,7	6,6	5,5	11,8	9,4	18,4	13,9	26,6	29,5
non-cracked concrete												
Approved loads, tension	C20/25 appr. N	[kN]	5,7	3,6	7,6	4,3	11,9	8,5	16,7	12,6	24,0	33,6
	C25/30 appr. N	[kN]	6,3	3,9	8,3	4,7	13,0	9,3	18,3	13,8	26,3	36,8
	C30/37 appr. N	[kN]	7,0	4,3	9,3	5,2	14,5	10,3	20,3	15,3	29,3	40,9
	C40/50 appr. N	[kN]	7,6	5,1	10,8	6,1	16,8	12,0	23,6	17,8	34,0	47,5
	C50/60 appr. N	[kN]	7,6	5,5	11,8	6,6	18,4	13,2	25,8	19,5	37,3	52,1
cracked / non-cracked concrete												
Approved loads, shear	C20/25 appr. V	[kN]	7,4	7,4	11,4	10,4/11,4	17,1	14,5/17,1	31,4	21,6/30,2	43,9	67,1/70,6
	\geq C25/30 appr. V	[kN]	7,4	7,4	11,4	11,4	17,1	15,9/17,1	31,4	23,6/31,4	43,9	70,6
Approved bending moments	appr. M	[Nm]	14,9	14,9	29,7	29,7	52,6	52,6	114,3	114,3	231,6	448,8
Spacing and edge distance												
Effective anchorage depth	h_{ef}	[mm]	46	35	60	40	70	50	85	65	100	125
Characteristic spacing	$s_{cr, N}$	[mm]	138	105	180	120	210	150	255	195	300	375
Characteristic edge distance	$c_{cr, N}$	[mm]	69	52,5	90	60	105	75	127,5	97,5	150	187,5
Minimum spacing and edge distance for standard thickness of concrete member												
cracked concrete												
Standard thickness of concrete slab	$h_{min,1}$	[mm]	100	-	120	-	140	-	160	-	200	250
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40/70	-	50/75	-	60/100	-	60/100	-	95/150	125/125
Minimum edge distance / for spacing s	c_{min} / s	[mm]	40/80	-	55/90	-	60/140	-	60/180	-	95/200	125/125
non-cracked concrete												
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40/80	-	50/75	-	60/120	-	65/120	-	90/180	125/125
Minimum edge distance / for spacing s	c_{min} / s	[mm]	50/100	-	60/120	-	75/150	-	80/150	-	130/240	125/125
Minimum spacing and edge distance for minimum thickness of concrete member												
cracked concrete												
Minimum thickness of concrete slab	h_{min1}/h_{min2}	[mm]	80	80	100	80	120	100	140	140	-	-
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40/70	50/60	45/90	50/100	60/100	50/160	70/160	65/170	-	-
Minimum edge distance / for spacing s	c_{min} / s	[mm]	40/80	40/185	50/115	65/180	60/140	65/250	80/180	100/250	-	-
non-cracked concrete												
Minimum spacing / for edge distance c	s_{min} / c	[mm]	40/80	50/60	60/140	50/100	60/120	50/160	80/180	65/170	-	-
Minimum edge distance / for spacing s	c_{min} / s	[mm]	50/100	40/185	90/140	65/180	75/150	100/185	90/200	170/65	-	-
Installation parameters												
Drill hole diameter	d_o	[mm]	8	8	10	10	12	12	16	16	20	24
Diameter of clearance hole in the fixture	d_f	[mm]	9	9	12	12	14	14	18	18	22	26
Depth of drill hole	h_1	[mm]	60	49	75	55	90	70	110	90	125	155
Installation torque	T_{inst}	[Nm]	20	20	35	35	50	50	110	110	200	290
Width across nut	SW	[mm]	13	13	17	17	19	19	24	24	30	36

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



Installation

