

Wedge Anchor BZ plus HCR

High corrosion resistant steel 1.4529 (HCR)



Wedge Anchor
BZ plus s HCR



Wedge Anchor
BZ plus HCR



Wedge Anchor
BZ-U plus HCR



Approvals and Certificates



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

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

Description

There has been further improvement to the performance and application range of the wedge anchor BZ plus HCR. 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.

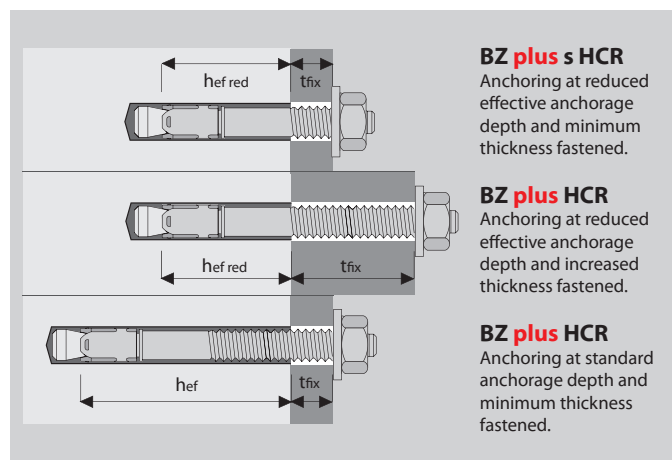
Advantages

- 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 (on demand for M8 to M20, maximum anchor length 210 mm)
- Suitable for use in compression resistant natural stone (without approval)
- Two effective anchorage depths for greater flexibility (on demand for 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
- Approved for use under fire exposure. Fire resistance ratings R30-R120
- 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 anchorings which are exposed to highly corrosive atmospheres with high concentration of sulphur dioxides, chlorides, humidity: attaching brackets, ventilation systems, suspended ceilings, cable trays, in road tunnels, indoor swimming pools, etc.

Example of Installation



¹⁾Only standard anchorage depth

Wedge Anchor BZ plus HCR



→ High corrosion resistant steel 1.4529 (HCR)

→ Approved for cracked and non-cracked concrete

Description	Ref. No.	Standard anchorage depth					Reduced anchorage depth				Anchor length l mm	Thread 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 8-11/65 s HCR ¹⁾	07110001	-	-	-	-	- / -	11	8x49	41	35	65	M8x22	100	2,74
BZ 8-10-21/75 HCR	07115001	10	8x60	52	46	✓ / ✓	21	8x49	41	35	75	M8x32	100	3,08
BZ 8-15-26/80 HCR	07125001	15	8x60	52	46	✓ / ✓	26	8x49	41	35	80	M8x37	100	3,22
BZ 8-30-41/95 HCR	07140001	30	8x60	52	46	✓ / ✓	41	8x49	41	35	95	M8x52	100	3,72
BZ 8-50-61/115 HCR	07150001	50	8x60	52	46	✓ / ✓	61	8x49	41	35	115	M8x72	100	4,35
BZ 10-10/70 s HCR ¹⁾	07205001	-	-	-	-	- / -	10	10x55	48	40	70	M10x22	50	2,44
BZ 10-10-30/90 HCR	07215001	10	10x75	68	60	✓ / ✓	30	10x55	48	40	90	M10x42	50	3,02
BZ 10-15-35/95 HCR	07220001	15	10x75	68	60	✓ / ✓	35	10x55	48	40	95	M10x47	50	3,14
BZ 10-30-50/110 HCR	07230001	30	10x75	68	60	✓ / ✓	50	10x55	48	40	110	M10x62	50	3,90
BZ 10-50-70/130 HCR	07235001	50	10x75	68	60	✓ / ✓	70	10x55	48	40	130	M10x82	50	4,31
BZ 12-10/85 s HCR ¹⁾	07305001	-	-	-	-	- / -	10	12x70	60	50	85	M12x26	25	2,51
BZ 12-15-35/110 HCR	07315001	15	12x90	80	70	✓ / ✓	35	12x70	60	50	110	M12x51	25	2,55
BZ 12-20-40/115 HCR	07320001	20	12x90	80	70	✓ / ✓	40	12x70	60	50	115	M12x56	25	2,66
BZ 12-30-50/125 HCR	07325001	30	12x90	80	70	✓ / ✓	50	12x70	60	50	125	M12x66	25	2,88
BZ 12-50-70/145 HCR	07330001	50	12x90	80	70	✓ / ✓	70	12x70	60	50	145	M12x86	25	3,23
BZ 16-25-45/145 HCR	07525001	25	16x110	97	85	✓ / ✓	45	16x90	77	65	145	M16x66	20	4,90
BZ 16-50-70/170 HCR	07530001	50	16x110	97	85	✓ / ✓	70	16x90	77	65	170	M16x91	20	5,80
BZ 16-100/220 HCR	07540001	100	16x110	97	85	- / -	-	-	-	-	220	M16x80	10	3,70
BZ 20-30/165 HCR	07615001	30	20x125	114	100	✓ / ✓	-	-	-	-	165	M20x50	10	4,95

¹⁾Delivery time on request.

Other lengths on demand. BZ plus M24 HCR on demand.

Wedge Anchor BZ-U plus HCR



→ High corrosion resistant steel 1.4529 (HCR)

→ 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 ²⁾ 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 HCR	07115301	10	8x60	52	46	✓ / ✓	21	8x49	41	35	75	M8x32	24x2	100	3,46
BZ-U 10-10-30/90 HCR	07215301	10	10x75	68	60	✓ / ✓	30	10x55	48	40	90	M10x42	30x2,5	50	3,30
BZ-U 12-30-50/125 HCR	07325301	30	12x90	80	70	✓ / ✓	50	12x70	60	50	125	M12x66	37x3	25	3,26

²⁾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 HCR		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		
	≥ 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

	h _{ef}	[mm]	46	35	60	40	70	50	85	65	100	125
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

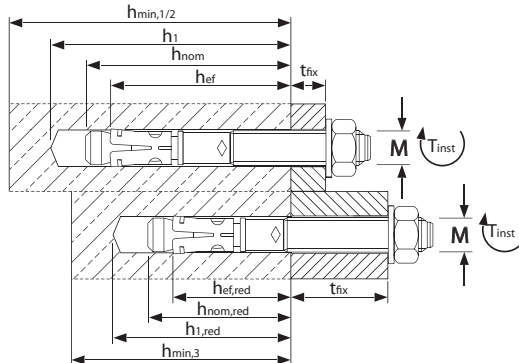
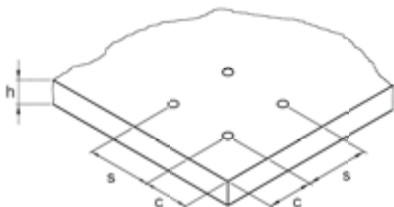
Minimum spacing and edge distance for minimum thickness of concrete member

		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

		[mm]	8	8	10	10	12	12	16	16	20	24
Drill hole diameter	d ₀	[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

