Wedge Anchor BZ3 HCR

High corrosion resistant steel 1.4529 (HCR)

NEW

Wedge Anchor BZ3 HCR

Range of Loading: **3,4 kN–39,7 kN**
Range of concrete quality: **C20/25–C50/60**

Description

The newly developed Wedge Anchor BZ3 HCR with European Technical Assessment combines the highest approved tensile and shear loads with variable anchorage depths. For applications under particularly aggressive environmental conditions, such as those that can arise in swimming pools, in road tunnels or in contact with sea water, it sets standards in terms of the performance and flexibility of mechanical expansion anchors.

In many cases, with the same setting depth as before, it allows higher loads, which can be further increased by deeper setting. This can save fixing points or fastenings can be realized, that have not been possible with a wedge anchor. Due to the generally higher approved loads, the BZ3 HCR can often be installed with a reduced anchorage depth compared to the conventional wedge anchors. For this, extra short versions are available. This reduces drilling and setting effort and reduces the risk of reinforcement hits. The innovative calculation method in dependence of anchorage depth and concrete thickness, enables smallest spacing and edge distances for the respective application. This flexibility allows a perfect adaptation to the installation situation and allows more economical fastenings. By optimization of the material, the geometry and the manufacturing process, performance under the influence of earthquakes was significantly increased. Fewer turns until the tightening torque is reached and a colored marking of the minimum anchorage depth enable shorter processing times with higher installation safety.

Advantages

- The Wedge Anchor with the highest approved loads and variable anchoring depths
- European Technical Assessment ETA-19/0619 in cracked and uncracked concrete (option 1) for seismic action of category C1 and C2 and for use in fire (R30 - R120)
- For higher loads for seismic action, the annular gap between the Wedge Anchor BZ3 HCR and the fixture can be filled with adhesive, by using the Filling Washer VS
- Low minimum anchorage depths
- New calculation method in dependence of the anchorage depth and the thickness of the concrete component
- The high flexibility enables the optimal adaptation to the installation situation for maximum efficiency
- Extra short versions available
- Fewer turns until the tightening torque is reached
- Coloured marking of the minimum anchorage depth

ETA-19/0619 SEISMIC R30 - R120 UKTA - 22/6211 ZIVILSCHUTZ[1)]

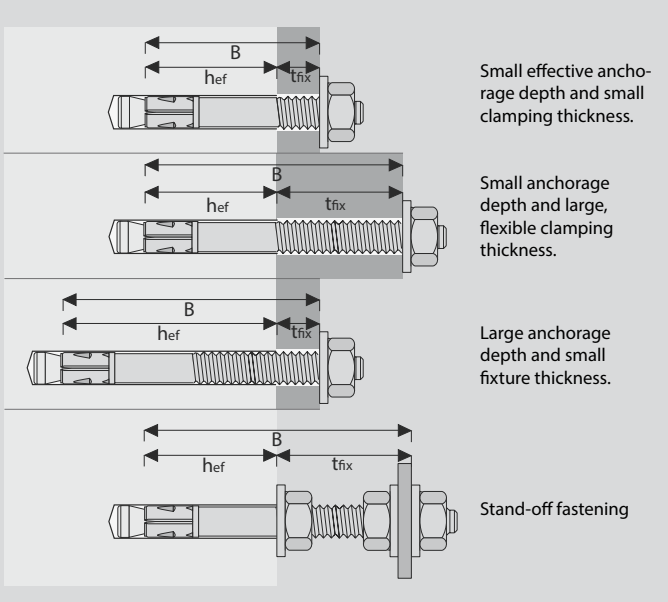
EDELSTAHL Rostfrei

- Shock approval by the „Bundesamt für Bevölkerungsschutz“ in Bern, Switzerland[1)]

Applications

Anchoring of medium to heavy loads in cracked and uncracked concrete that are exposed to highly corrosive influences. For high concentrations of sulphur dioxides, chlorides, etc. in damp environments: Suspensions of ventilation systems, ceilings, fastening of cable routes, pipes in road tunnels, fastenings in indoor swimming pools, fastenings in earthquake zones, fastenings in industrial plants, etc.

Examples of Installation BZ3 HCR



Wedge Anchor BZ3 HCR

- High corrosion resistant steel 1.4529 (HCR)
- Approved for cracked and non-cracked concrete
- Variable anchorage depths

NEW

Description	Ref. No.	Drill hole-Ø	Standard anchorage depth		Minimum anchorage depth		Variable anchorage depth				Seismic C1 / C2	Anchor length	Thread	Pkg. content	Weight per pkg.
		d_0 mm	Fixture thickness $t_{fix,std}$ mm	Anchorage depth $h_{ef,std}$ mm	Fixture thickness $t_{fix,min}$ mm	Anchorage depth $h_{ef,min}$ mm	Usable length B mm	Fixture thickness t_{fix} mm	Depth of drill hole h_1 mm	Setting depth h_{nom}		l mm	mm	pcs.	kg
BZ3 M8x65/0-10 HCR	67110001	8	-	-	10	35	45	B -h_{ef}	h_{ef} + 10	h_{ef} + 8	✓ / ✓[1)]	65	M8x23	100	2,73
BZ3 M8x75/0-20 HCR	67115001	8	10	45	20	35	55	B -h_{ef}	h_{ef} + 10	h_{ef} + 8	✓ / ✓[1)]	75	M8x33	100	3,05
BZ3 M8x80/0-25 HCR	67125001	8	15	45	25	35	60	B -h_{ef}	h_{ef} + 10	h_{ef} + 8	✓ / ✓[1)]	80	M8x38	100	3,22
BZ3 M8x95/0-40 HCR	67140001	8	30	45	40	35	75	B -h_{ef}	h_{ef} + 10	h_{ef} + 8	✓ / ✓[1)]	95	M8x53	100	3,68
BZ3 M8x115/5-60 HCR	67150001	8	50	45	60	35	95	B -h_{ef}	h_{ef} + 10	h_{ef} + 8	✓ / ✓[1)]	115	M8x73	100	4,41
BZ3 M10x70/0-10 HCR	67205001	10	-	-	10	40	50	B -h_{ef}	h_{ef} + 11	h_{ef} + 9	✓ / ✓	70	M10x25	50	2,64
BZ3 M10x90/0-30 HCR	67215001	10	10	60	30	40	70	B -h_{ef}	h_{ef} + 11	h_{ef} + 9	✓ / ✓	90	M10x45	50	3,13
BZ3 M10x95/0-35 HCR	67220001	10	15	60	35	40	75	B -h_{ef}	h_{ef} + 11	h_{ef} + 9	✓ / ✓	95	M10x50	50	3,19
BZ3 M10x130/10-70 HCR	67235001	10	50	60	70	40	110	B -h_{ef}	h_{ef} + 11	h_{ef} + 9	✓ / ✓	130	M10x85	50	4,09
BZ3 M12x85/0-10 HCR	67305001	12	-	-	10	50	60	B -h_{ef}	h_{ef} + 13	h_{ef} + 10	✓ / ✓	85	M12x29	25	2,17
BZ3 M12x110/0-35 HCR	67315001	12	15	70	35	50	85	B -h_{ef}	h_{ef} + 13	h_{ef} + 10	✓ / ✓	110	M12x54	25	2,65
BZ3 M12x115/0-40 HCR	67320001	12	20	70	40	50	90	B -h_{ef}	h_{ef} + 13	h_{ef} + 10	✓ / ✓	115	M12x59	25	2,71
BZ3 M12x125/0-50 HCR	67325001	12	30	70	50	50	100	B -h_{ef}	h_{ef} + 13	h_{ef} + 10	✓ / ✓	125	M12x69	25	2,91
BZ3 M12x145/0-70 HCR	67330001	12	50	70	70	50	120	B -h_{ef}	h_{ef} + 13	h_{ef} + 10	✓ / ✓	145	M12x89	25	3,28
BZ3 M16x145/0-45 HCR	67525001	16	25	85	45	65	110	B -h_{ef}	h_{ef} + 17	h_{ef} + 14	✓ / ✓	145	M16x69	20	4,71

[1)] Seismic C1 and C2 for anchorage depth $h_{ef} \geq 40$mm

Other lengths on demand.

Wedge Anchor-Setting Tool BSW

- Setting Tool for Wedge Anchor M6 – M16
- With SDS plus connection

Description	Ref. No.	Suitable for Wedge Anchor	Length mm	Package content pcs	Weight per pkg. kg
BSW M6-M16	43990101	BZ3/BZ plus/B M6 – M16	140	1	0,13

ETA-19/0619

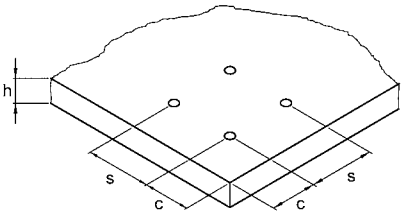
Extract from Permissible Service Conditions of European Technical Assessment ETA-19/0619 for use in cracked and uncracked concrete (Option 1)

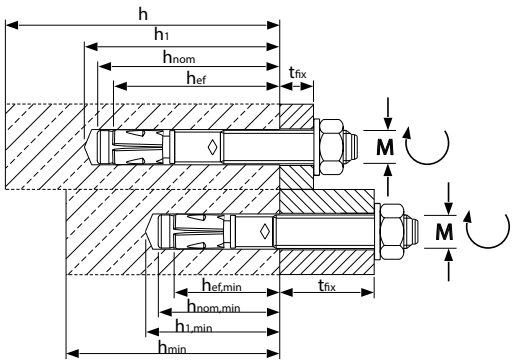
Approved loads according to EN 1992-4 for single anchors without the influence of spacing and edge distances. The total safety factor (γ_M und γ_F). Load capacities under fire exposure see PR 2023/24 page 196.

Loads and performance data	Wedge Anchor BZ3 HCR			M8			M10			M12			M16		
Minimum anchorage depth[1]		$h_{ef,min}$	[mm]	35			40			50			65		
Standard anchorage depth		$h_{ef,std}$	[mm]		45			60			70			85	
Maximum anchorage depth		$h_{ef,max}$	[mm]			90			100			125			160
									cracked concrete						
Approved loads, tension	C20/25	appr. N	[kN]	3,4	4,5	4,5	4,1	7,6	8,1	5,8	9,6	10,5	8,6	12,9	16,7
	C25/30	appr. N	[kN]	3,8	5,0	5,0	4,6	8,5	9,1	6,5	10,7	11,5	9,6	14,4	18,0
	C30/37	appr. N	[kN]	4,2	5,5	5,5	5,1	9,3	9,9	7,1	11,8	12,5	10,5	15,7	19,2
	C40/50	appr. N	[kN]	4,8	6,3	6,3	5,9	10,8	11,4	8,2	13,6	14,2	12,2	18,2	21,2
	C50/60	appr. N	[kN]	5,4	7,1	7,1	6,6	12,0	12,8	9,2	15,2	15,6	13,6	20,3	23,0
									non-cracked concrete						
Approved loads, tension[1]	C20/25	appr. N	[kN]	4,9	7,1	9,4	5,9	10,9	11,9	8,3	13,7	20,0	12,3	18,4	23,8
	C25/30	appr. N	[kN]	5,4	7,9	9,4	6,6	12,2	12,9	9,3	15,3	21,0	13,7	20,5	24,9
	C30/37	appr. N	[kN]	5,9	8,7	9,4	7,3	13,3	13,8	10,1	16,8	21,4	15,0	22,5	25,8
	C40/50	appr. N	[kN]	6,9	9,4	9,4	8,4	14,5	14,5	11,7	19,4	21,4	17,4	26,0	27,3
	C50/60	appr. N	[kN]	7,7	9,4	9,4	9,4	14,5	14,5	13,1	21,4	21,4	19,4	28,5	28,5
									cracked concrete						
Approved loads, shear	C20/25	appr. V	[kN]	9,2	9,6	9,6	11,6	15,9	15,9	19,1	22,7	22,7	29,2	39,7	39,7
	≥ C25/30	appr. V	[kN]	9,6	9,6	9,6	13,0	15,9	15,9	21,4	22,7	22,7	32,7	39,7	39,7
									non-cracked concrete						
Approved loads, shear	C20/25	appr. V	[kN]	9,6	9,6	9,6	15,9	15,9	15,9	22,7	22,7	22,7	39,7	39,7	39,7
	≥ C25/30	appr. V	[kN]	9,6	9,6	9,6	15,9	15,9	15,9	22,7	22,7	22,7	39,7	39,7	39,7
Approved bending moments		appr. M	[Nm]	15,4	15,4	15,4	31,4	31,4	31,4	56,6	56,6	56,6	127,4	127,4	127,4
Spacing and edge distance[2]															
Effective anchorage depth		h_{ef}	[mm]	35	45	90	40	60	100	50	70	125	65	85	160
Minimum thickness of concrete slab		h_{min}	[mm]	80	80	135	80	90	150	100	105	187,5	120	127,5	240
Minimum spacing		s_{min}	[mm]	35	35	35	40	40	40	50	50	50	65	65	65
Minimum edge distance		c_{min}	[mm]	40	40	40	45	45	45	55	55	55	65	65	65
Installation parameters															
Drill hole diameter		d_o	[mm]	8	8	8	10	10	10	12	12	12	16	16	16
Diameter of clearance hole in the fixture		$d_f \leq$	[mm]	9	9	9	12	12	12	14	14	14	18	18	18
Drill hole depth		h_1	[mm]	45	55	100	51	71	111	63	83	138	82	102	177
Installation torque		T_{inst}	[Nm]	15	15	15	40	40	40	55	55	55	100	100	100
Width across nut		SW	[mm]	13	13	13	17	17	17	19	19	19	24	24	24
Height of hexagon nut			[mm]	6,5	6,5	6,5	8	8	8	10	10	10	13	13	13
Outer diameter x Washer height BZ3 HCR			[mm]	16x1,6	16x1,6	16x1,6	20x2	20x2	20x2	24x2,5	24x2,5	24x2,5	30x3	30x3	30x3

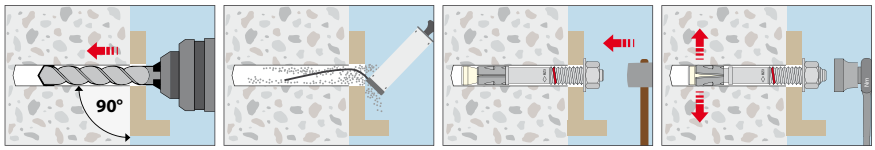
[1] Fastenings with anchorage depths h_{ef} < 40mm are constricted to use of statically indeterminate components under indoor conditions.

[2] For anchor groups and near-edge anchorages, the minimum values of thickness, spacing and edge distance cannot be applied simultaneously but have to be determined according to ETA-19/0619, Table B2.





Installation



... a solid connection