

Wedge Anchor BZ plus HCR

High corrosion resistant steel 1.4529 (HCR)



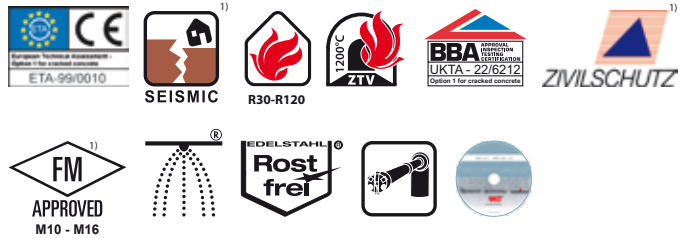
Wedge Anchor BZ plus s HCR



Wedge Anchor BZ plus HCR



Wedge Anchor BZ-U plus HCR



Range of Loading: 2,4 kN–70,6 kN
Range of concrete quality: C20/25–C50/60

Description

Due to its high performance, its easy and quick installation, as well as its superior corrosion protection, the wedge anchor BZ plus HCR with European Technical Assessment can be used in the broadest range of applications. This includes installations in particularly aggressive environmental conditions, which can for example develop in swimming pools, roadway tunnels or in contact with seawater.

The long thread length and two approved anchorage depths allow the wedge anchor BZ plus HCR allow greater flexibility of use. The option for reduced anchorage depth saves time during drilling and reduces the installation effort. Using a suction drill also eliminates the need for blowing out the drilled hole.

The wedge anchors BZ plus M8 - M20 are also approved for use under seismic loading C1 and C2 up to an anchor length of 210 mm¹⁾.

Advantages

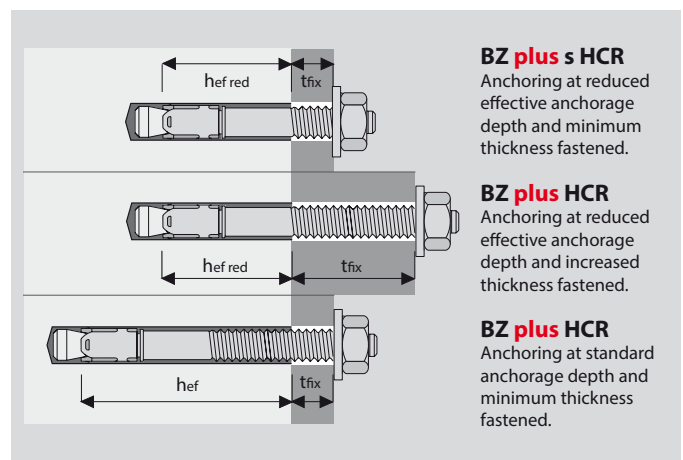
- Approved for use in cracked and uncracked concrete (Option 1)
- Approved for use under seismic loading, performance categories C1 and C2 (on demand for M8 to M20, maximum anchor length 210 mm)
- Suitable for use in compression resistant natural stone (without approval)
- Two effective anchorage depths 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 anchorages 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 uncracked 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 | - / - ²⁾ | - | - | - | - | 165 | M20x50 | 10 | 4,95 | |

¹⁾Delivery time on request.

²⁾Seismic C1/C2 on request

Other lengths and BZ plus M24 HCR on demand.

Mechanical Heavy Duty Anchors

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 uncracked 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.

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 |

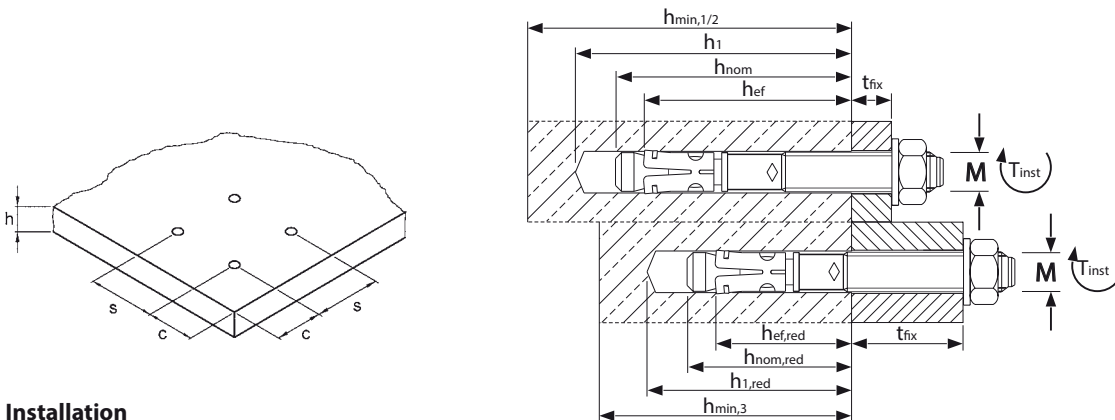


Extract from Permissible Service Conditions of European Technical Assessment ETA-99/0010 for use in cracked and uncracked concrete (Option 1)

Approved loads according to EN 1992-4 for single anchors without the influence of spacing and edge distances. The total safety factor (γ_{M1} und γ_{M2}) is included. Load capacities under fire exposure see page 196.

| 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 | 5,8 | 11,9 | 8,6 | 16,4 | 19,0 | | |
| | C25/30 appr. N | [kN] | 2,7 | 2,7 | 4,8 | 4,0 | 8,5 | 6,5 | 13,3 | 9,6 | 18,3 | 21,3 | | |
| | C30/37 appr. N | [kN] | 2,9 | 2,9 | 5,2 | 4,4 | 9,3 | 7,1 | 14,6 | 10,5 | 20,1 | 23,3 | | |
| | C40/50 appr. N | [kN] | 3,4 | 3,4 | 6,1 | 5,1 | 10,8 | 8,2 | 16,8 | 12,2 | 23,2 | 26,9 | | |
| | C50/60 appr. N | [kN] | 3,8 | 3,8 | 6,8 | 5,6 | 12,0 | 9,2 | 18,8 | 13,6 | 25,9 | 30,1 | | |
| uncracked concrete | | | | | | | | | | | | | | |
| Approved loads, tension | C20/25 appr. N | [kN] | 5,7 | 3,6 | 7,6 | 4,3 | 11,9 | 8,3 | 16,7 | 12,3 | 23,4 | 32,7 | | |
| | C25/30 appr. N | [kN] | 6,4 | 4,0 | 8,5 | 4,8 | 13,3 | 9,3 | 18,6 | 13,7 | 26,2 | 36,6 | | |
| | C30/37 appr. N | [kN] | 7,0 | 4,4 | 9,3 | 5,2 | 14,6 | 10,1 | 20,4 | 15,0 | 28,7 | 40,1 | | |
| | C40/50 appr. N | [kN] | 7,6 | 5,1 | 10,8 | 6,1 | 16,8 | 11,7 | 23,6 | 17,4 | 33,1 | 46,3 | | |
| | C50/60 appr. N | [kN] | 7,6 | 5,6 | 12,0 | 6,8 | 18,8 | 13,1 | 26,4 | 19,4 | 37,0 | 51,8 | | |
| cracked / uncracked concrete | | | | | | | | | | | | | | |
| Approved loads, shear | C20/25 appr. V | [kN] | 7,4 | 7,4 | 11,4 | 10,0/11,4 | 17,1 | 13,9/17,1 | 30,8/31,4 | 20,6/29,5 | 43,9 | 64,2/70,6 | | |
| | \geq C25/30 appr. V | [kN] | 7,4 | 7,4 | 11,4 | 11,1/11,4 | 17,1 | 15,6/17,1 | 31,4 | 23,1/31,4 | 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 | $h_{min,1}$ | [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 | | |
| uncracked 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 | $h_{min,2} / h_{min,3}$ | [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 | - | - | | |
| uncracked 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 software on CD-ROM is available on request or can be downloaded at www.mkt.de.



Installation

