Deutsches Institut für Bautechnik
DIBt

Approval body for construction products and types of construction

Bautechnisches Prüfamt

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European Technical Assessment

ETA-01/0013 of 17 September 2020

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Wegde Anchor B
Product family to which the construction product belongs	Mechanical fastener for use in concrete
Manufacturer	MKT Metall-Kunststoff-Technik GmbH & Co. KG Auf dem Immel 2 67685 Weilerbach
Manufacturing plant	MKT Metall-Kunststoff-Technik GmbH & Co. KG Auf dem Immel 2 67685 Weilerbach
This European Technical Assessment contains	15 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 330232-01-0601 Edition 12/2019
This version replaces	ETA-01/0013 issued on 29 November 2018

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Specific Part

1 Technical description of the product

The Wedge anchor B is a fastener made of zinc coated steel or stainless steel which is placed into a drilled hole and anchored by application of the installation torque.

The product description is given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the anchor of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic resistance to tension load (static and quasi static action) Method A	See Annex B4, C1 and C2
Characteristic resistance to shear load (static and quasi static action)	See Annex C3
Displacements and Durability	See Annex C4 and B1
Characteristic resistance and displacements for seismic performance categories C1 and C2	No performance assessed

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire	No performance assessed

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with the European Assessment Document EAD 330232-01-0601 the applicable European legal act is: [96/582/EC].

The system to be applied is: 1

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 17 September 2020 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Lange

Wedge Anchor B / B fvz / B sh / B A2 / B A4 / B HCR

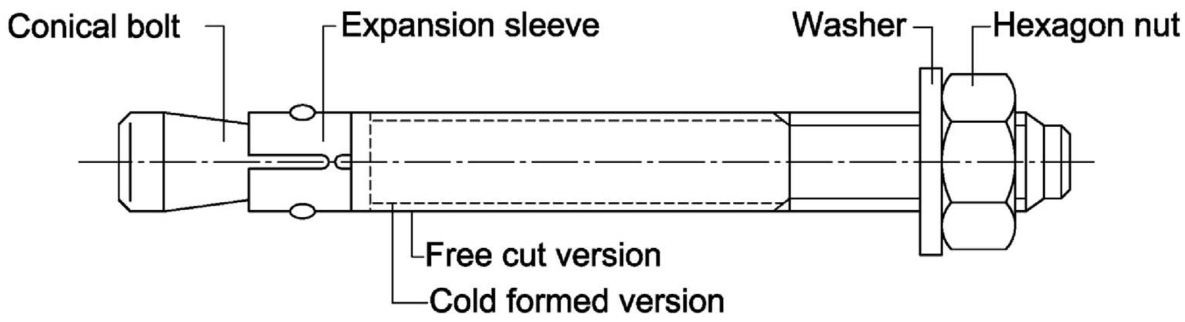


Table A1: Dimensions

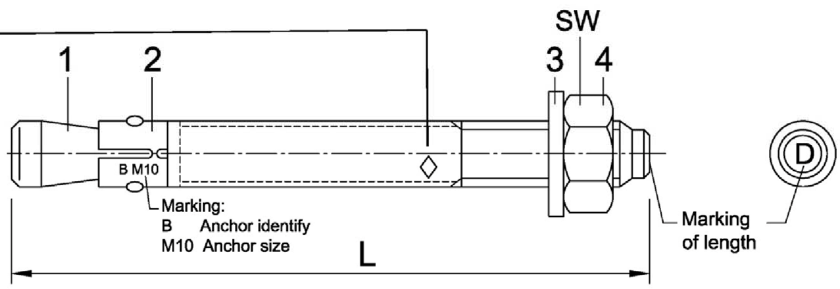
Anchor size	Anchor length L			Wrench size [SW]
	Embedment depth $h_{ef,1}$	Embedment depth $h_{ef,2}$	Embedment depth $h_{ef,3}$	
M6	$t_{fix\ hef,1}$ + 47,4	$t_{fix,hef,2}$ + 57,4	$t_{fix,hef,3}$ + 77,4	10
M8	$t_{fix\ hef,1}$ + 57,4	$t_{fix,hef,2}$ + 66,4	$t_{fix,hef,3}$ + 92,4	13
M10	$t_{fix\ hef,1}$ + 68,0	$t_{fix,hef,2}$ + 74,0	$t_{fix,hef,3}$ + 106,0	17
M12	$t_{fix\ hef,1}$ + 82,3	$t_{fix,hef,2}$ + 97,3	$t_{fix,hef,3}$ + 132,3	19
M16	$t_{fix\ hef,1}$ + 103,0 ($t_{fix\ hef,1}$ + 101,8)[1)]	$t_{fix,hef,2}$ + 121,0 ($t_{fix,hef,2}$ + 117,8)[1)]	$t_{fix,hef,3}$ + 159,0 ($t_{fix,hef,3}$ + 157,8)[1)]	24
M20	$t_{fix\ hef,1}$ + 120,7	$t_{fix,hef,2}$ + 142,7	$t_{fix,hef,3}$ + 157,7	30

[1)] Anchor version B A2 / B A4 / B HCR

Marking: e.g.: ◇ 15/21

◇ Identifying mark of manufacturing plant
15 maximum thickness of fixture for $h_{ef,2}$
21 maximum thickness of fixture for $h_{ef,1}$

additional marking:
A2 stainless steel
A4 stainless steel
HCR high corrosion resistant steel



Marking of length	A	B	C	D	E	F	G	H	I	J	K	L	M
Length of anchor min ≥	38,1	50,8	63,5	76,2	88,9	101,6	114,3	127,0	139,7	152,4	165,1	177,8	190,5
Length of anchor max <	50,8	63,5	76,2	88,9	101,6	114,3	127,0	139,7	152,4	165,1	177,8	190,5	203,2

Marking of length	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Length of anchor min ≥	203,2	215,9	228,6	241,3	254,0	279,4	304,8	330,2	355,6	381,0	406,4	431,8	457,2
Length of anchor max <	215,9	228,6	241,3	254,0	279,4	304,8	330,2	355,6	381,0	406,4	431,8	457,2	483,0

Dimensions in mm

Wedge Anchor B / B fvz / B sh / B A2 / B A4 / B HCR

Product description
Marking and Dimensions

Annex A1

Table A2: Materials

Part	Designation	Material
B	electroplated	≥ 5 µm acc. to EN ISO 4042:1999
B fvz	hot-dip galvanized	≥ 40 µm (in average 50 µm) acc. to EN ISO 10684:2011 or EN ISO 1461:2009
B sh	sherardized	≥ 45 µm acc. to EN ISO 17668:2016
1	Conical bolt	Cold formed or machined steel
2	Expansion sleeve	Stainless steel according CRC II [1)], acc. to EN 10088:2014
3	Washer	Steel, zinc plated
4	Hexagon nut	Property class 8 acc. to EN ISO 898-2:2012
B A2		
1	Conical bolt	Stainless steel according CRC II [1)], coated
2	Expansion sleeve	Stainless steel according CRC II [1)], acc. to EN 10088:2014
3	Washer	Stainless steel according CRC II [1)]
4	Hexagon nut	Stainless steel according CRC II [1)], property class 70, coated, EN ISO 3506-2:2009
B A4		
1	Conical bolt	Stainless steel according CRC III [1)], coated
2	Expansion sleeve	Stainless steel according CRC II [1)] or CRC III [1)], acc. to EN 10088:2014
3	Washer	Stainless steel according CRC III [1)]
4	Hexagon nut	Stainless steel according CRC III [1)], property class 70, coated, EN ISO 3506-2:2009
B HCR		
1	Conical bolt	Stainless steel according CRC V [1)], coated
2	Expansion sleeve	Stainless steel according CRC III [1)], acc. to EN 10088:2014
3	Washer	Stainless steel according CRC V [1)]
4	Hexagon nut	Stainless steel according CRC V [1)], property class 70, coated, EN ISO 3506-2:2009, EN 10088:2014

[1)] Corrosion resistance class according to EN 1993-1-4:2015, Annex A, Table A.3

Specifications of intended use

B / B fvz / B sh / B A2 / B A4 / B HCR		M6	M8	M10	M12	M16	M20
B	electroplated	✓	✓	✓	✓	✓	✓
B fvz	hot-dip galvanized	-	✓	✓	✓	✓	✓
B sh	sherardized	✓	✓	✓	✓	✓	✓
B A2	stainless steel	✓	✓	✓	✓	✓	✓
B A4	stainless steel	✓	✓	✓	✓	✓	✓
B HCR	high corrosion resistant steel	✓	✓	✓	✓	✓	✓
All versions	static or quasi-static action	✓					
	uncracked concrete	✓					

Base materials:

- Reinforced or unreinforced normal weight concrete according to EN 206:2013 + A1:2016
- Strength classes C20/25 to C50/60 according to EN 206:2013 + A1:2016

Use conditions (Environmental conditions):

- Structures subject to dry internal conditions (all materials)
- For all other conditions:

Anchor version	Use according to EN 1993-1-4:2015 corresponding to the corrosion resistance class CRC according to Annex A, Table A.2
B A2	CRC II
B A4	CRC III
B HCR	CRC V

Design:

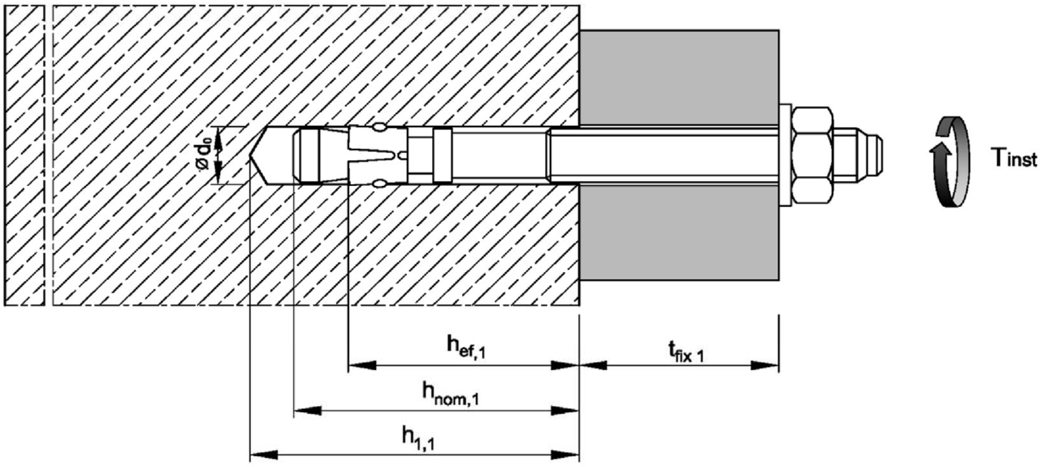
- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings (e.g. position of the anchor relative to reinforcement or to supports, etc.)
- Anchorages are designed according to EN 1992-4:2018 or TR 055

Installation:

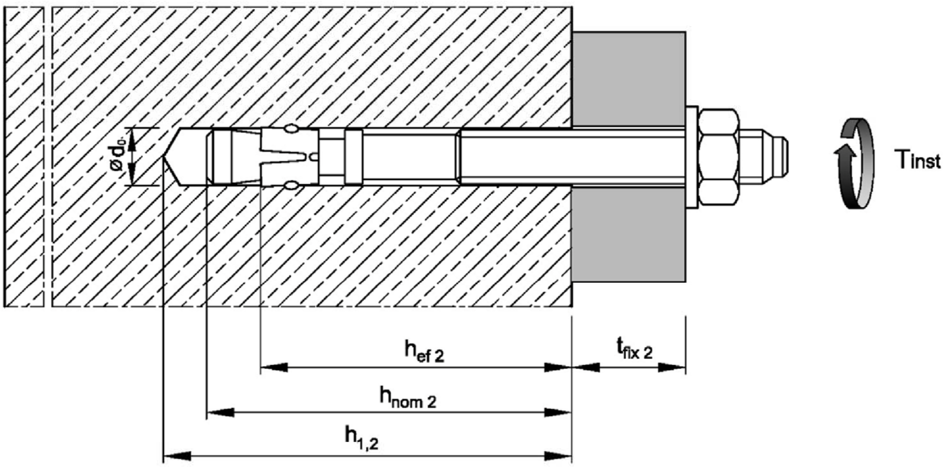
- Hole drilling by hammer drill bit or vacuum drill bit
- Use of the fastener only as supplied by the manufacturer without exchanging the components of the fastener

Installation parameters

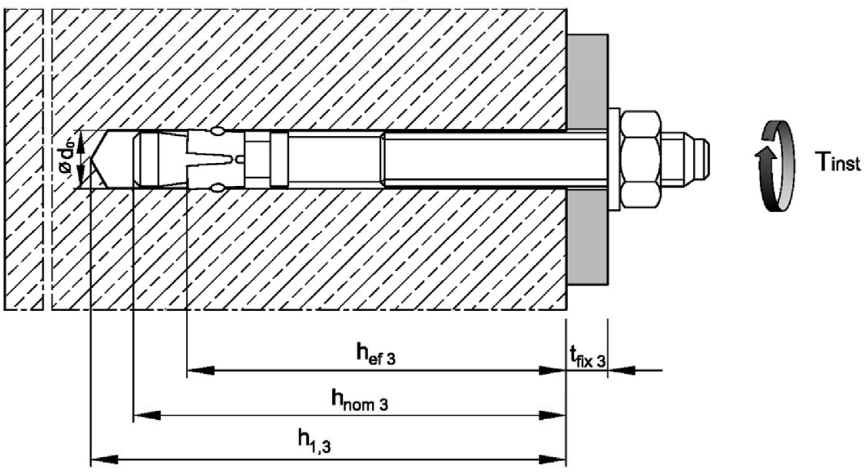
Effective embedment depths $h_{ef,1}$



Effective embedment depths $h_{ef,2}$



Effective embedment depths $h_{ef,3}$



Wedge Anchor B / B fvz / B sh / B A2 / B A4 / B HCR	
Intended use Installation parameters	**Annex B2**

Table B1: Installation parameters

Anchor size				M6	M8	M10	M12	M16	M20
Nominal drill hole diameter		$d_0 =$	[mm]	6	8	10	12	16	20
Cutting diameter of drill bit		$d_{cut} \leq$	[mm]	6,40	8,45	10,45	12,5	16,5	20,55
Installation torque	B	$T_{inst} =$	[Nm]	8	15	30	50	100	200
	B fvz	$T_{inst} =$	[Nm]	-	15	30	40	90	120
	B sh	$T_{inst} =$	[Nm]	5	15	30	40	90	120
	B A2 / B A4 / B HCR	$T_{inst} =$	[Nm]	6	15	25	50	100	160
Diameter of clearance hole in the fixture		$d_f \leq$	[mm]	7	9	12	14	18	22
Embedment depth $h_{ef,1}$									
Effective embedment depth		$h_{ef,1} \geq$	[mm]	30	35	42	50	64	78
Depth of drill hole		$h_{1,1} \geq$	[mm]	45	55	65	75	95	110
Embedment depth		$h_{nom,1} \geq$	[mm]	39	47	56	67	84	99
Embedment depth $h_{ef,2}$									
Effective embedment depth		$h_{ef,2} \geq$	[mm]	40	44	48	65	82 (80)[1)]	100
Depth of drill hole		$h_{1,2} \geq$	[mm]	55	65	70	90	110	130
Embedment depth		$h_{nom,2} \geq$	[mm]	49	56	62	82	102	121
Embedment depth $h_{ef,3}$									
Effective embedment depth		$h_{ef,3} \geq$	[mm]	60	70	80	100	120	115
Depth of drill hole		$h_{1,3} \geq$	[mm]	75	91	102	125	148	145
Embedment depth		$h_{nom,3} \geq$	[mm]	69	82	94	117	140	136

[1)] Anchor version B A2 / B A4 / B HCR

Wedge Anchor B / B fvz / B sh / B A2 / B A4 / B HCR

Intended use
Installation data

Annex B3

Table B2: Minimum spacings and edge distances for B / B fvz[1)] / B sh

Anchor size			M6	M8	M10	M12	M16	M20
Embedment depth $h_{ef,1}$								
Minimum member thickness	h_{min}	[mm]	80	80	100	100	130	160
Minimum spacing	s_{min}	[mm]	35	40	55	100	100	140
Minimum edge distance	c_{min}	[mm]	40	45	65	100	100	140
Embedment depth $h_{ef,2}$								
Minimum member thickness	h_{min}	[mm]	100	100	100	130	170	200
Minimum spacing	s_{min}	[mm]	35	40	55	75	90	105
Minimum edge distance	c_{min}	[mm]	40	45	65	90	105	125
Embedment depth $h_{ef,3}$								
Minimum member thickness	h_{min}	[mm]	120	126	132	165	208	215
Minimum spacing	s_{min}	[mm]	35	40	55	75	90	105
Minimum edge distance	c_{min}	[mm]	40	45	65	90	105	125

[1)] Anchor version B fvz: M8-M20

Table B3: Minimum spacings and edge distances for B A2 / B A4 / B HCR

Anchor size			M6	M8	M10	M12	M16	M20
Embedment depth $h_{ef,1}$								
Minimum member thickness	h_{min}	[mm]	80	80	100	100	130	160
Minimum spacing	s_{min}	[mm]	35	60	55	100	110	140
Minimum edge distance	c_{min}	[mm]	40	60	65	100	110	140
Embedment depth $h_{ef,2}$								
Minimum member thickness	h_{min}	[mm]	100	100	100	130	160	200
Minimum spacing	s_{min}	[mm]	35	35	45	60	80	100
	for $c \geq$	[mm]	40	65	70	100	120	150
Minimum edge distance	c_{min}	[mm]	35	45	55	70	80	100
	for $s \geq$	[mm]	60	110	80	100	140	180
Embedment depth $h_{ef,3}$								
Minimum member thickness	h_{min}	[mm]	120	126	132	165	200	215
Minimum spacing	s_{min}	[mm]	35	35	45	60	80	100
	for $c \geq$	[mm]	40	65	70	100	120	150
Minimum edge distance	c_{min}	[mm]	35	45	55	70	80	100
	for $s \geq$	[mm]	60	110	80	100	140	180

Intermediate values by linear interpolation

Wedge Anchor B / B fvz / B sh / B A2 / B A4 / B HCR	Annex B4
Intended use Minimum spacings and edge distances	

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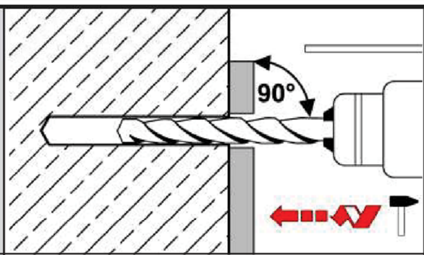
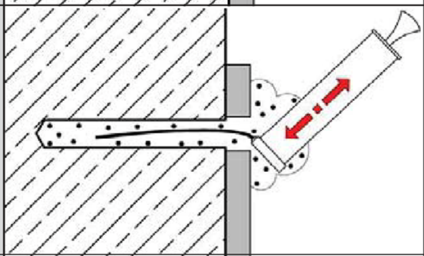
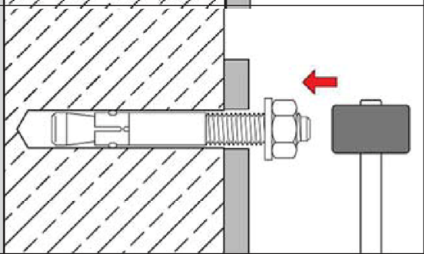
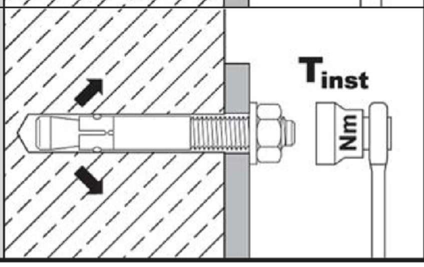
Installation instructions

1		Drill hole perpendicular to concrete surface, positioning of the drill holes without damaging the reinforcement. If using a vacuum drill bit, proceed with step 3.
2		Blow out dust. Alternatively, vacuum clean down to the bottom of the hole.
3		Drive in anchor, such that the selected embedment depth is met.
4		Apply installation torque T_{inst} as specified in Table B1.

Wedge Anchor B / B fvz / B sh / B A2 / B A4 / B HCR

Intended use
Installation instructions

Annex B5

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Table C1: Characteristic values for **tension loads for B / B fvz[1] / B sh**

Anchor size				**M6**	**M8**	**M10**	**M12**	**M16**	**M20**
Installation factor		γ_{inst}	[-]	1,0					
Steel failure									
Characteristic resistance		$N_{Rk,s}$	[kN]	8,7	15,3	26	35	65	107
Partial factor		γ_{Ms}	[-]	1,5				1,6	
Pull-out									
Characteristic resistance in uncracked concrete C20/25	for $h_{ef,1}$	$N_{Rk,p}$	[kN]	6,5 [2]	10,2 [2]	13,4	17,4	25,2	33,9
	for $h_{ef,2}$	$N_{Rk,p}$	[kN]	10	13	16,4	25,8	36,5	49,2
	for $h_{ef,3}$	$N_{Rk,p}$	[kN]	10	13	16,4	26	40	55
Increasing factor for $N_{Rk,p}$		ψ_C	[-]	$\left(\frac{f_{ck}}{20}\right)^{0,5}$			$\left(\frac{f_{ck}}{20}\right)^{0,29}$	$\left(\frac{f_{ck}}{20}\right)^{0,33}$	$\left(\frac{f_{ck}}{20}\right)^{0,5}$
Splitting									
Characteristic resistance in uncracked concrete C20/25		$N^0_{Rk,sp}$	[kN]	min [$N_{Rk,p}$; $N^0_{Rk,c}$ [3]]					
Embedment depth $h_{ef,1}$									
Spacing		$s_{cr,sp}$	[mm]	180	210	230	240	320	400
Edge distance		$c_{cr,sp}$	[mm]	90	105	115	120	160	200
Embedment depth $h_{ef,2}$									
Spacing		$s_{cr,sp}$	[mm]	160	220	240	330	410	500
Edge distance		$c_{cr,sp}$	[mm]	80	110	120	165	205	250
Embedment depth $h_{ef,3}$									
Spacing		$s_{cr,sp}$	[mm]	360	240	480	600	720	690
Edge distance		$c_{cr,sp}$	[mm]	180	210	240	300	360	345
Concrete cone failure									
Effective embedment depth		for $h_{ef,1} \geq$	[mm]	30 [2]	35 [2]	42	50	64	78
		for $h_{ef,2} \geq$	[mm]	40	44	48	65	82	100
		for $h_{ef,3} \geq$	[mm]	60	70	80	100	120	115
Spacing		$s_{cr,N}$	[mm]	3 $h_{ef\,(1,2,3)}$					
Edge distance		$c_{cr,N}$	[mm]	1,5 $h_{ef\,(1,2,3)}$					
Factor	uncracked concrete	$k_{ucr,N}$	[-]	11,0					
	cracked concrete	$k_{cr,N}$	[-]	No performance assessed					

[1] Anchor version B fvz: M8-M20

[2] Restricted to the use of structural components with h_{ef} < 40mm which are statically indeterminate and subject to internal exposure conditions only

[3] $N^0_{Rk,c}$ according to EN 1992-4:2018

Wedge Anchor B / B fvz / B sh / B A2 / B A4 / B HCR

Performance
Characteristic values for **tension loads for B / B fvz / B sh**

Annex C1

Table C2: Characteristic values for **tension loads for B A2 / B A4 / B HCR**

Anchor size				**M6**	**M8**	**M10**	**M12**	**M16**	**M20**
Installation factor		γ_{inst}	[-]	1,0					
Steel failure									
Characteristic resistance		$N_{Rk,s}$	[kN]	10	18	30	44	88	134
Partial factor		γ_{Ms}	[-]	1,50					1,68
Pull-out									
Characteristic resistance in uncracked concrete C20/25	for $h_{ef,1}$	$N_{Rk,p}$	[kN]	6,5 [1]	9 [1]	12	17,4	25,2	33,9
	for $h_{ef,2}$	$N_{Rk,p}$	[kN]	8	15	16,4	25	35,2	49,2
	for $h_{ef,3}$	$N_{Rk,p}$	[kN]	8	15	16,4	25	42	60
Increasing factor for $N_{Rk,p}$		ψ_C	[-]	$\left(\frac{f_{ck}}{20}\right)^{0,5}$					
Splitting									
Characteristic resistance in uncracked concrete C20/25		$N^0_{Rk,sp}$	[kN]	min [$N_{Rk,p}$; $N^0_{Rk,c}$ [2]]					
Embedment depth $h_{ef,1}$									
Spacing		$s_{cr,sp}$	[mm]	180	180	180	180	180	180
Edge distance		$c_{cr,sp}$	[mm]	90	90	90	90	90	90
Embedment depth $h_{ef,2}$									
The higher one of the decisive resistances of Case 1 and Case 2 is applicable									
Case 1									
Characteristic resistance in uncracked concrete C20/25		$N^0_{Rk,sp}$	[kN]	6	9	12	20	30	40
Spacing		$s_{cr,sp}$	[mm]	3 h_{ef}					
Edge distance		$c_{cr,sp}$	[mm]	1,5 h_{ef}					
Increasing factor for $N^0_{Rk,sp}$		ψ_C	[-]	$\left(\frac{f_{ck}}{20}\right)^{0,5}$					
Case 2									
Spacing		$s_{cr,sp}$	[mm]	160	220	240	340	410	560
Edge distance		$c_{cr,sp}$	[mm]	80	110	120	170	205	280
Embedment depth $h_{ef,3}$									
Spacing		$s_{cr,sp}$	[mm]	360	240	480	600	720	690
Edge distance		$c_{cr,sp}$	[mm]	180	210	240	300	360	345
Concrete cone failure									
Effective Embedment depth	for $h_{ef,1} \geq$		[mm]	30 [1]	35 [1]	42	50	64	78
	for $h_{ef,2} \geq$		[mm]	40	44	48	65	80	100
	for $h_{ef,3} \geq$		[mm]	60	70	80	100	120	115
Spacing		$s_{cr,N}$	[mm]	3 h_{ef}					
Edge distance		$c_{cr,N}$	[mm]	1,5 h_{ef}					
Factor	uncracked concrete	$k_{ucr,N}$	[-]	11,0					
	cracked concrete	$k_{cr,N}$	[-]	No performance assessed					

[1] Restricted to the use of structural components with h_{ef} < 40mm which are statically indeterminate and subject to internal exposure conditions only

[2] $N^0_{Rk,c}$ according to EN 1992-4:2018

Wedge Anchor B / B fvz / B sh / B A2 / B A4 / B HCR	**Annex C2**
Performance Characteristic values for **tension loads for B A2 / B A4 / B HCR**	

Table C3: Characteristic values for **shear loads**

Anchor size				**M6**	**M8**	**M10**	**M12**	**M16**	**M20**
Installation factor		γ_{inst}	[-]	1,0					
Steel failure without lever arm									
Characteristic resistance	**B / B fvz[1] / B sh**	$V^0_{Rk,s}$	[kN]	5	11	17	25	44	69
	B A2 / B A4 / B HCR	$V^0_{Rk,s}$	[kN]	7	12	19	27	50	86
Ductility factor		k_7	[-]	1,0					
Steel failure with lever arm									
Characteristic bending resistance	**B / B fvz[1] / B sh**	$M^0_{Rk,s}$	[Nm]	9	23	45	78	186	363
	B A2 / B A4 / B HCR	$M^0_{Rk,s}$	[Nm]	10	24	49	85	199	454
Partial factor for $V^0_{Rk,s}$ and $M^0_{Rk,s}$	**B / B fvz[1] / B sh**	γ_{Ms}	[-]	1,25				1,33	
	B A2 / B A4 / B HCR	γ_{Ms}	[-]	1,25					1,4
Concrete pry-out failure									
Factor for $\mathbf{h_{ef}}$	**B / B fvz[1] / B sh**	k_8	[-]	1,0	2,3	2,5	2,9	2,8	3,1
	B A2 / B A4 / B HCR	k_8	[-]	1,0	2,3	2,8	2,8	3,0	3,3
Concrete edge failure									
Effective length of anchor in shear loading	for $\mathbf{h_{ef,1}}$	l_f	[mm]	30 [2]	35 [2]	42	50	64	78
	for $\mathbf{h_{ef,2}}$	l_f	[mm]	40	44	48	65	82 (80) [3]	100
	for $\mathbf{h_{ef,3}}$	l_f	[mm]	60	70	80	100	120	115
Outside diameter of anchor		d_{nom}	[mm]	6	8	10	12	16	20

[1] Anchor version B fvz: M8-M20
[2] Restricted to the use of structural components which are statically indeterminate and subject to internal exposure conditions only
[3] Anchor version B A2 / B A4 / B HCR

Wedge Anchor B / B fvz / B sh / B A2 / B A4 / B HCR

Performance
Characteristic values for **shear loads**

Annex C3

Table C5: Displacements under tension loads

Anchor size			M6	M8	M10	M12	M16	M20
Embedment depth $h_{ef,1}$								
B / B fvz[1] / B sh								
Tension load	N	[kN]	2,9	5,0	6,5	8,5	12,3	16,6
Displacement	δ_{N0}	[mm]	0,3	0,4				
	$\delta_{N\infty}$	[mm]	0,6	1,8				
B A2 / B A4 / B HCR								
Tension load	N	[kN]	2,9	4,3	5,7	8,5	12,3	16,6
Displacement	δ_{N0}	[mm]	0,4	0,7	0,4	0,4	0,6	1,5
	$\delta_{N\infty}$	[mm]	1,3					2,9
Embedment depth $h_{ef,2}$ and $h_{ef,3}$								
B / B fvz[1] / B sh								
Tension load	N	[kN]	4,3	5,8	7,6	11,9	16,7	23,8
Displacement	δ_{N0}	[mm]	0,4	0,5				
	$\delta_{N\infty}$	[mm]	0,7	2,3				
B A2 / B A4 / B HCR								
Tension load	N	[kN]	3,6	5,7	7,6	11,9	17,2	24,0
Displacement	δ_{N0}	[mm]	0,7	0,9	0,5	0,6	0,9	2,1
	$\delta_{N\infty}$	[mm]	1,8					4,2

[1] Anchor version B fvz: M8-M20

Table C6: Displacements under shear loads

Anchor size			M6	M8	M10	M12	M16	M20
B / B fvz[1] / B sh								
Shear load	V	[kN]	2,9	6,3	9,7	14,3	23,6	37,0
Displacement	δ_{V0}	[mm]	1,2	1,5	1,6	2,6	3,1	4,4
	$\delta_{V\infty}$	[mm]	2,4	2,2	2,4	3,9	4,6	6,6
B A2 / B A4 / B HCR								
Shear load	V	[kN]	4,0	6,9	10,9	15,4	28,6	43,7
Displacement	δ_{V0}	[mm]	1,1	2,0	1,2	2,0	2,2	2,1
	$\delta_{V\infty}$	[mm]	1,7	3,0	1,8	3,0	3,3	3,2

[1] Anchor version B fvz: M8-M20

Wedge Anchor B / B fvz / B sh / B A2 / B A4 / B HCR

Performance
Displacements

Annex C4