

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-06/0155
of 2 May 2022

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

MKT Wedge anchor B A4 and B HCR

Product family
to which the construction product belongs

Fasteners for use in concrete for redundant non-structural
systems

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

10 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 330747-00-0601 Edition 06/2018

This version replaces

ETA-06/0155 issued on 9 May 2018

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

Specific Part

1 Technical description of the product

The MKT Wedge Anchor B A4 and B HCR is an anchor made of stainless steel and high corrosion resistant steel which is placed into a drilled hole and anchored by torque-controlled expansion. 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 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire	See Annex C1

3.2 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance for all load directions and modes of failure for simplified design	See Annex C1
Durability	See Annex B1

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

In accordance with European Assessment Document EAD No. 330747-00-0601, the applicable European legal act is: [97/161/EC].

The system to be applied is: 2+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

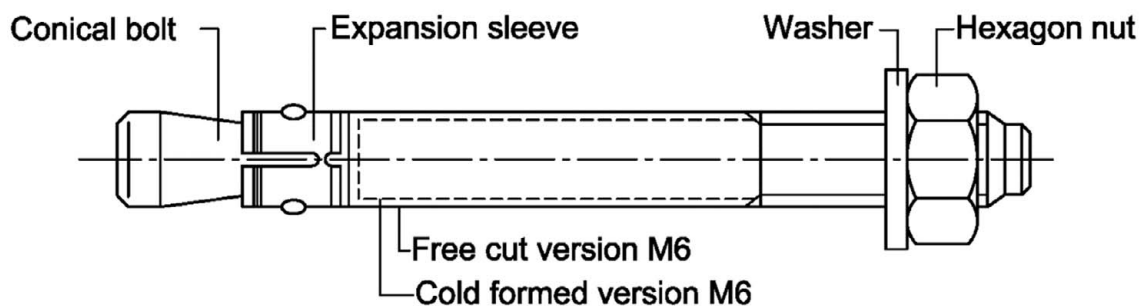
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 2 May 2022 by Deutsches Institut für Bautechnik

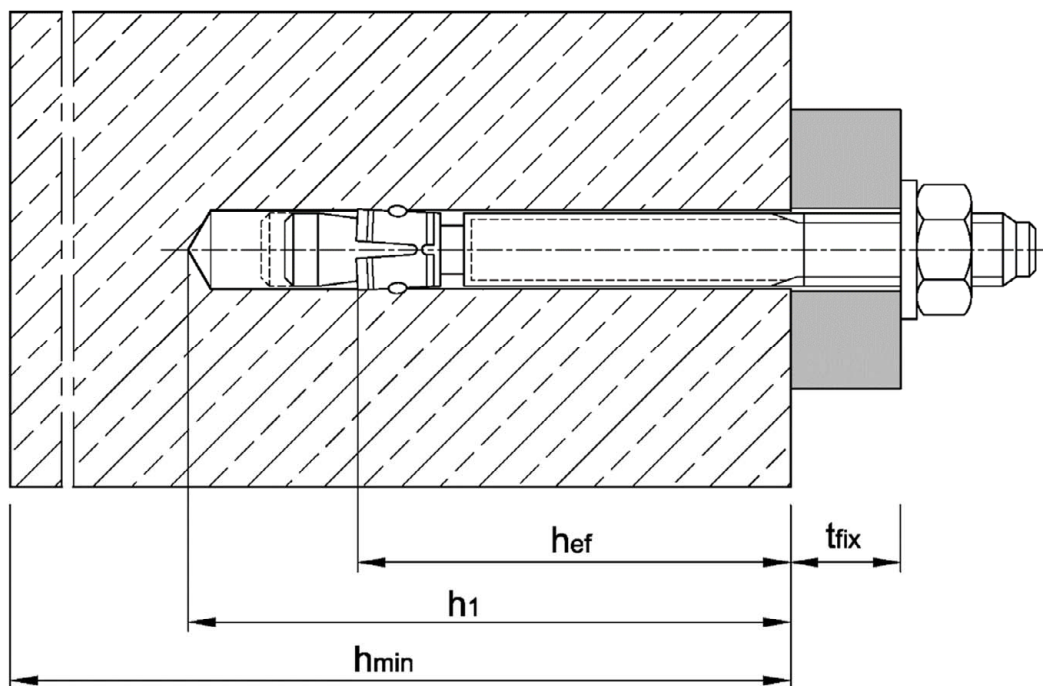
Dipl.-Ing. Beatrix Wittstock
Head of Section

beglaubigt:
Ziegler

Wedge Anchor B A4 / B HCR
30 M6 und 40 M6
for multiple use for non-structural applications



Installation condition

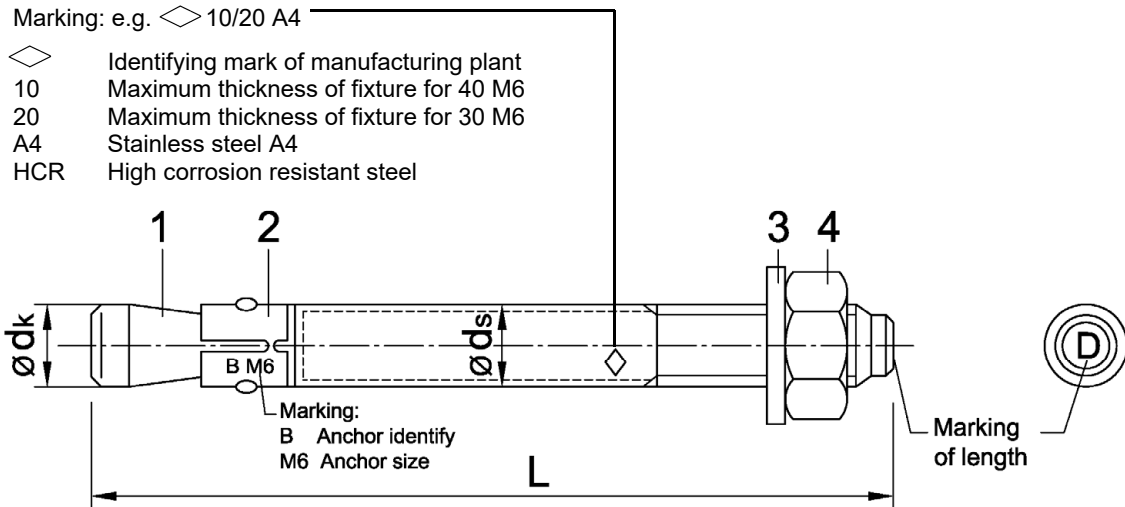


MKT Wedge anchor B A4 and B HCR

Product description
Product and installation condition

Annex A1

English translation prepared by DIBt



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

Marking of length	K	L	M	N	O	P	Q	R	S	T	U
Length of anchor min \geq	165,1	177,8	190,5	203,2	215,9	228,6	241,3	254,0	279,4	304,8	330,2
Length of anchor max $<$	177,8	190,5	203,2	215,9	228,6	241,3	254,0	279,4	304,8	330,2	355,6

Dimensions in mm

Table A1: Dimensions in mm

Anchor size	$\varnothing d_k$	$\varnothing d_s$	Anchor length L	Wrench size
30 M6	6	6 / 5,3 ¹⁾	$t_{fix} + 47,4$	10
40 M6	6	6 / 5,3 ¹⁾	$t_{fix} + 57,4$	10

¹⁾ cold formed version

Dimensions in mm

Table A2: Materials

Part	Designation	Material
Stainless steel A4		
1	Conical bolt	Stainless steel according to CRC III ¹⁾
2	Expansion sleeve	Stainless steel according to CRC II ¹⁾ or CRC III ¹⁾
3	Washer	Stainless steel according to CRC III ¹⁾
4	Hexagon nut	Stainless steel according to CRC III ¹⁾ , property class 70, EN ISO 3506-2:2009
High corrosion resistant steel HCR		
1	Conical bolt	Stainless steel according to CRC V ¹⁾
2	Expansion sleeve	Stainless steel according to CRC III ¹⁾
3	Washer	Stainless steel according to CRC V ¹⁾
4	Hexagon nut	Stainless steel according to CRC V ¹⁾ , property class 70, EN ISO 3506-2:2009

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

MKT Wedge anchor B A4 and B HCR	Annex A2
Product description Marking, dimensions and material	

Specifications of intended use

Multiple use for non-structural applications according to EN 1992-4:2018		
Wedge Anchor B A4 / B HCR	30 M6	40 M6
Stainless steel A4		✓
High corrosion resistant steel HCR		✓
Static and quasi-static actions		✓
Fire exposure		✓
Cracked and uncracked concrete		✓

Base materials:

- Reinforced or unreinforced normal weight concrete without fibres 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 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 (and EOTA Technical Report TR 055:2018), design method B

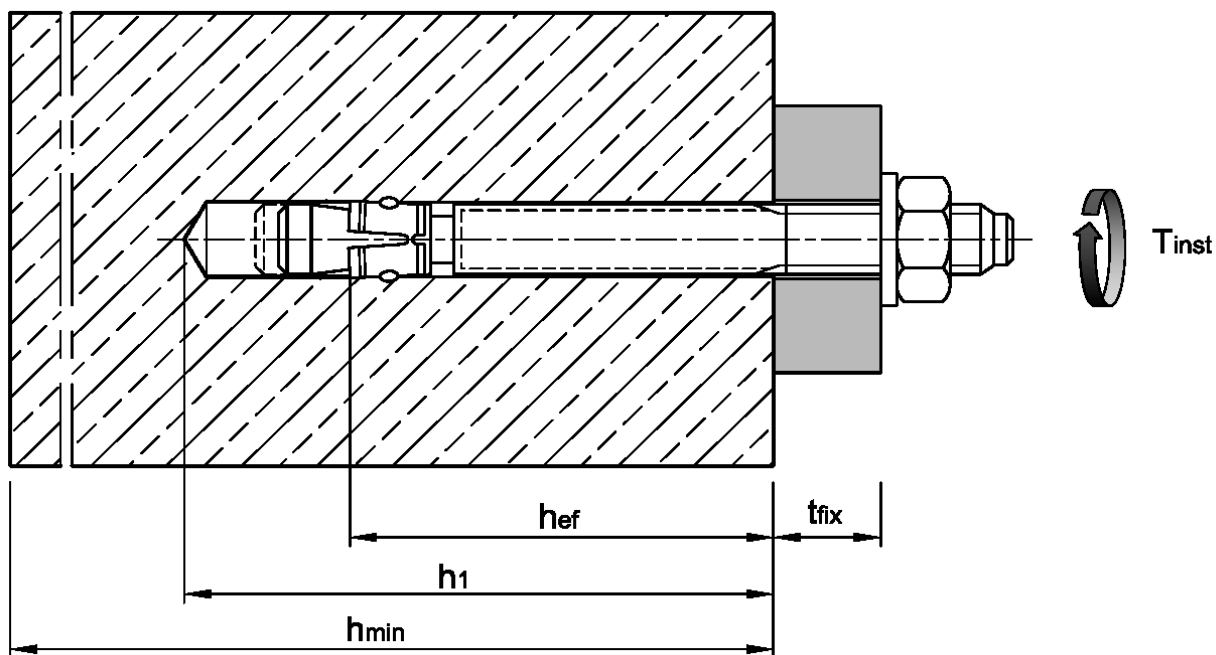
Installation:

- Hole drilling by hammer drill bit or vacuum drill bit.
- Anchor installation such that the effective anchorage depth is complied with. This compliance is ensured, if the thickness of fixture is not greater than the maximum thickness of fixture marked on the anchor in accordance with Annex A2 and the hexagon nut is placed at the end of the conical bolt as delivered by the manufacturer.
- Use of the fastener only as supplied by the manufacturer without exchanging the components of the fastener.

MKT Wedge anchor B A4 and B HCR	Annex B1
Intended use Specifications	

Table B1: Installation parameters

Anchor size			30 M6	40 M6
Nominal drill hole diameter	$d_0 =$	[mm]	6	6
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	6,40	6,40
Installation torque	$T_{inst} =$	[Nm]	8	8
Depth of drill hole	$h_1 \geq$	[mm]	45	55
Effective embedment depth	$h_{ef} \geq$	[mm]	30	40
Minimum thickness of concrete member	h_{min}	[mm]	80	80
Minimum spacing	s_{min}	[mm]	50	50
Minimum edge distance	c_{min}	[mm]	50	50
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	7	7

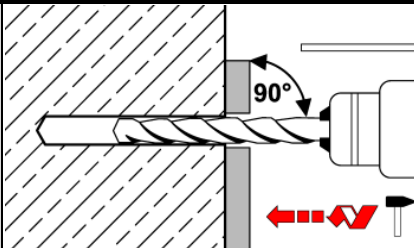
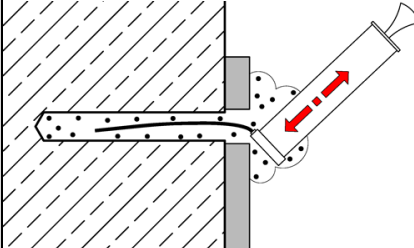
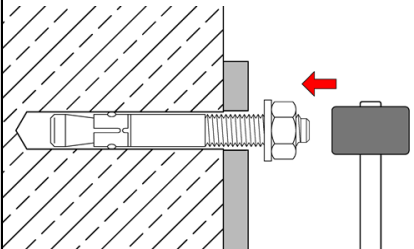
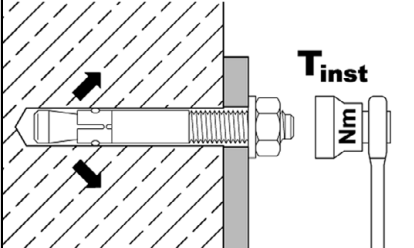


MKT Wedge anchor B A4 and B HCR

Intended use
Installation parameters

Annex B2

Installation instructions

1		<p>Drill hole perpendicular to concrete surface. If using a vacuum drill bit, proceed with step 3.</p>
2		<p>Blow out dust. Alternatively, vacuum clean down to the bottom of the hole.</p>
3		<p>Drive in anchor. Observe effective anchorage depth. This is ensured, if the thickness of fixture is not greater than the maximum thickness of fixture marked on the anchor (according to Annex A2).</p>
4		<p>Apply installation torque T_{inst} by using torque wrench.</p>

MKT Wedge anchor B A4 and B HCR

Intended use
Installation instructions

Annex B3

Table C1: Characteristic values of resistance, design method B

Anchor size			30 M6	40 M6
All load directions				
Characteristic resistance in C20/25 to C50/60	F_{Rk}^0	[kN]	5	6
Partial factor ¹⁾	γ_M	[-]	2,16	1,8
Design resistance in C20/25 to C50/60	F_{Rd}^0	[kN]	2,3	3,3
Spacing	s_{cr}	[mm]	260	370
Edge distance	c_{cr}	[mm]	130	185
Shear load with lever arm				
Characteristic bending resistance	$M_{Rk,s}^0$	[Nm]	10	10
Partial factor ¹⁾	γ_{Ms}	[-]	1,25	1,25

¹⁾ in absence of other national regulations

Table C2: Characteristic values under fire exposure in concrete C20/25 to C50/60, design method B

Anchor size			30 M6 40 M6
Fire resistance class	In any load direction		
R 30	Characteristic resistance	$F_{Rk,fi30}^0$	[kN] 0,6
	Characteristic bending resistance	$M_{Rk,s,fi30}^0$	[Nm] 0,5
R 60	Characteristic resistance	$F_{Rk,fi60}^0$	[kN] 0,5
	Characteristic bending resistance	$M_{Rk,s,fi60}^0$	[Nm] 0,4
R 90	Characteristic resistance	$F_{Rk,fi90}^0$	[kN] 0,3
	Characteristic bending resistance	$M_{Rk,s,fi90}^0$	[Nm] 0,3
R 120	Characteristic resistance	$F_{Rk,fi120}^0$	[kN] 0,3
	Characteristic bending resistance	$M_{Rk,s,fi120}^0$	[Nm] 0,2
R 30 to R 120	Spacing	$s_{cr,fi}$	[mm] 4 h_{ef}
		s_{min}	[mm] 50
	Edge distance	$c_{cr,fi}$	[mm] 2 h_{ef}
		c_{min}	[mm] 50
	Partial factor	$\gamma_{M,fi}$	[-] 1,0
If the fire attacks from more than one side, the edge distance of the anchor shall be ≥ 300 mm.			

MKT Wedge anchor B A4 and B HCR

Performances

Characteristic resistances under normal ambient temperature and fire exposure, design method B

Annex C1