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Authorised and notified according
to Article 29 of the Regulation (EU)
No 305/2011 of the European
Parliament and of the Council of 9
March 2011



European Technical Assessment ETA-25/0263 of 2025/05/20

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:

HAZ HB05

Product family to which the above construction product belongs:

Mechanical fasteners for use in concrete

Manufacturer:

HAZ Metal Deutschland GmbH
Alfred-Zippe-Strasse 1
DE-97877 Wertheim
Telephone: +49 9342 93590
www.haz.eu

Manufacturing plant:

HAZ Metal AS,
Şehit Er Ali Çıracı Caddesi, No: 10, Akçay Sanayi Bölgesi
TR-31200 İskenderun/Hatay

This European Technical Assessment contains:

15 pages including 8 annexes which form an integral part of the document

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:

EAD 330232-01-0601, “Mechanical fasteners for use in concrete”

This version replaces:

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product

The HAZ HB05 is a drop-in deformation-controlled expansion anchor made of galvanized steel. The anchor is installed in a drilled hole and anchored by torque-controlled expansion.

The product description is given in Annex A and the intended use specifications of the product are detailed in Annex B.

2 Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

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 provisions made in this European Technical Assessment are based on an assumed intended working life of the anchor of 50 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body, 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 Characteristics of product

Mechanical resistance and stability (BWR 1):

The essential characteristics are detailed in Annex C1 and C2.

Safety in case of fire (BWR 2):

The metal parts are classified as Euroclass A1 in accordance with EN13501-1 and Commission Delegated Regulation 2016/364.

3.2 Methods of assessment

The assessment of fitness of the anchor for the intended use in relation to the requirements for mechanical resistance and stability and safety in use in the sense of the Basic Works Requirements 1 and 4 has been made in accordance with EAD 330232-01-0601; Mechanical fasteners for use in concrete and EOTA Technical Report 049 Post-installed fasteners in concrete under seismic action.

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

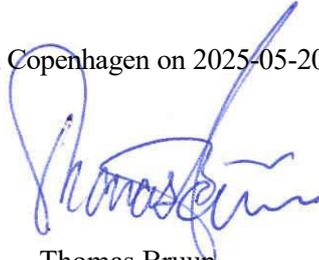
4.1 AVCP system

According to the decision 1996/582/EC of the European Commission, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) 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 at ETA-Danmark prior to CE marking.

Issued in Copenhagen on 2025-05-20 by

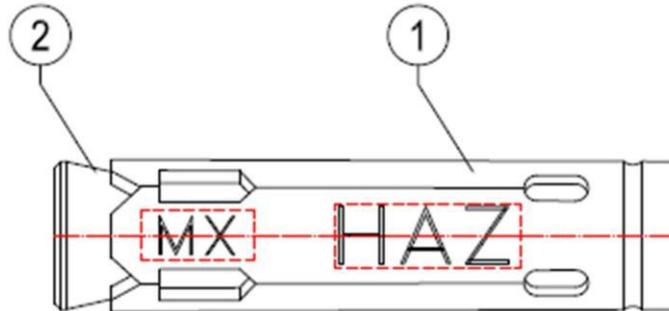


Thomas Bruun
Managing Director, ETA-Danmark

Pre-positioned installation:

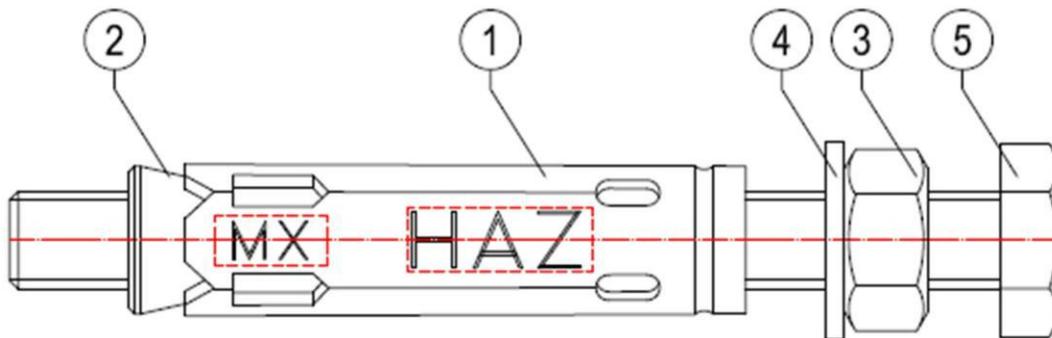
HB05 Shell:

The hexagon head screw and the washer according to table A.1.



In-place installation:

The hexagon head screw is provided by the manufacturer (Haz Metal) together with the anchor.



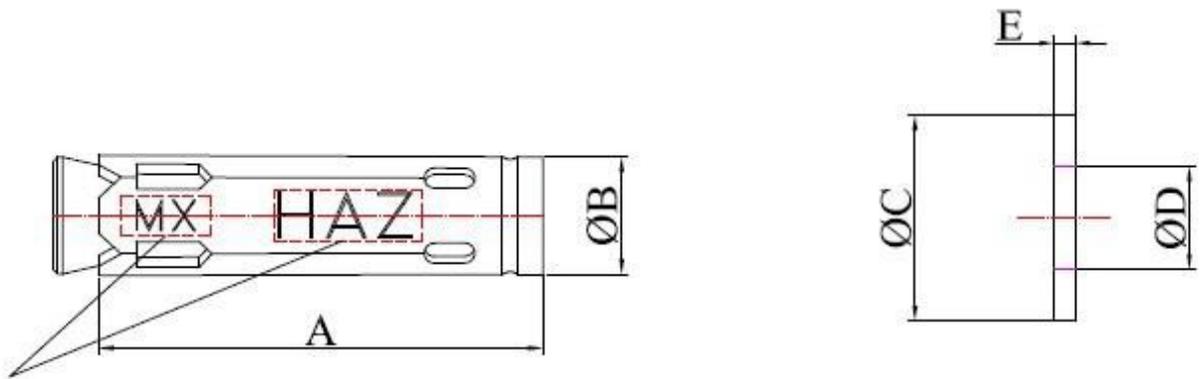
- ① SHELL
- ② CONICAL NUT
- ③ NUT
- ④ ROUND WASHER
- ⑤ HEXAGON HEAD SCREW

HAZ HB05

Product description
Product types and installation conditions

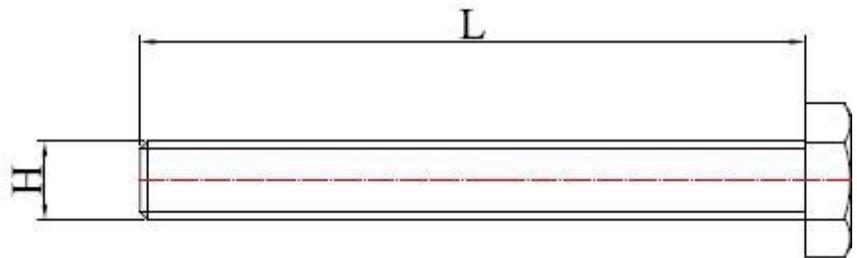
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Marking:

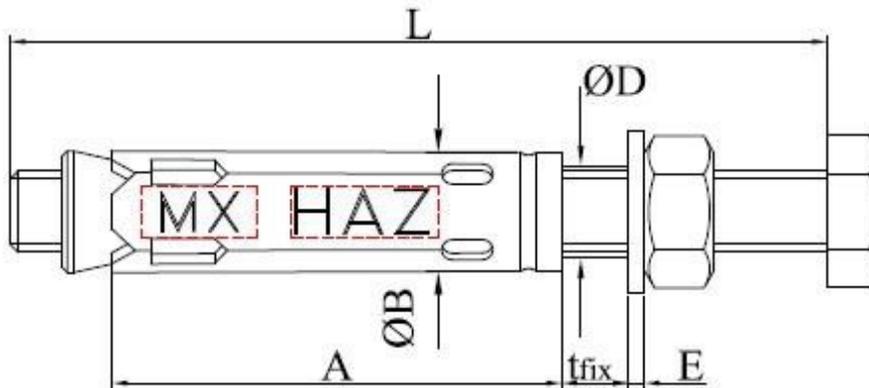


Marking:

- Brand
- Thread size (e.g. M 8)



Description:



L	Hexagon Head Screw Length
A	Shell Length
ØB	Shell Diameter
t _{fix}	Fixture Thickness
E	Round Washer Thickness
ØD	Fixture Hole Diameter
H	Hexagon Head Screw Diameter
ØC	Round Washer Diameter

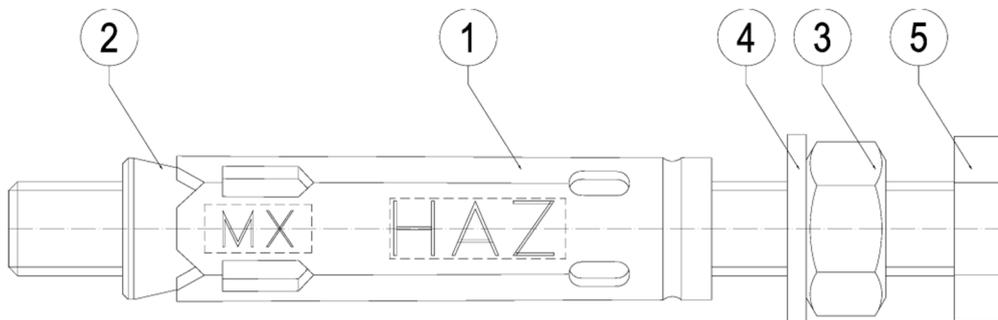
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Product description
Marking and description

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Table A1: Materials and intended use

Table A1: Materials and intended use				
1	2	3	4	5
Item No	Specification	Intended Use		
		For CRC I: HAZ HB05 according to EN 1993-1-4: 2006+A1:2015	For CRC II: HAZ HB05 according to EN 1993-1-4: 2006+A1:2015	For CRC III: HAZ HB05 according to EN 1993-1-4: 2006+A1:2015
		Materials		
1	Shell	Stainless steel 1.4301	Stainless steel 1.4301 EN 10088:2014	Stainless steel 1.4401 EN 10088-2:2014
2	Conical Nut	Stainless steel 1.4305 EN 10088-2:2014	Stainless steel 1.4305 EN 10088-2:2014	Stainless steel 1.4305 EN 10088-2:2014
2	Hexagon head screw	Stainless steel 1.4301 EN 10088:2014	Stainless steel 1.4301 EN 10088:2014	Stainless steel 1.4401 EN 10088-2:2014
3	Nut	Stainless steel 1.4301 EN ISO 3506-1:2009	Stainless steel 1.4301 EN ISO 3506-1:2009	Stainless steel 1.4401 EN 10088-2:2014
4	Washer	Stainless steel 1.4301 EN 10088:2014	Stainless steel 1.4301	Stainless steel 1.4401 EN 10088-2:2014

Table A2: Materials and dimensions

	Designation	Material	M6	Material	M8
1	Shell	Stainless steel 1.4301/1.4401 acc. to EN 10088-2:2014		Stainless steel 1.4301/1.4401 acc. to EN 10088-2:2014	
2	Conical Nut	Stainless steel 1.4305 (AISI 303) acc. to EN 10088-2:2014		Stainless steel 1.4305 (AISI 303) acc. to EN 10088-2:2014	
3	Nut	Stainless steel 1.4301/1.4401 acc. to EN 10088-2:2014	A2/A4-80 according to EN 10088-2:2014	Stainless steel 1.4301/1.4401 acc. to EN 10088-2:2014	A2/A4-70 according to EN ISO 3506-1:2009
4	Round washer	Stainless steel 1.4301/1.4401 acc. to EN 10088-2:2014		Stainless steel 1.4301/1.4401 acc. to EN 10088-2:2014	
5	Hexagon head screw	Stainless steel 1.4301/1.4401 acc. to EN 10088-2:2014	A2/A4-80 according to EN 10088-2:2014	Stainless steel 1.4301/1.4401 acc. to EN 10088-2:2014	A2/A4-70 according to EN ISO 3506-1:2009

HAZ HB05Product description
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Dimensions of Shell and Conical Nut:

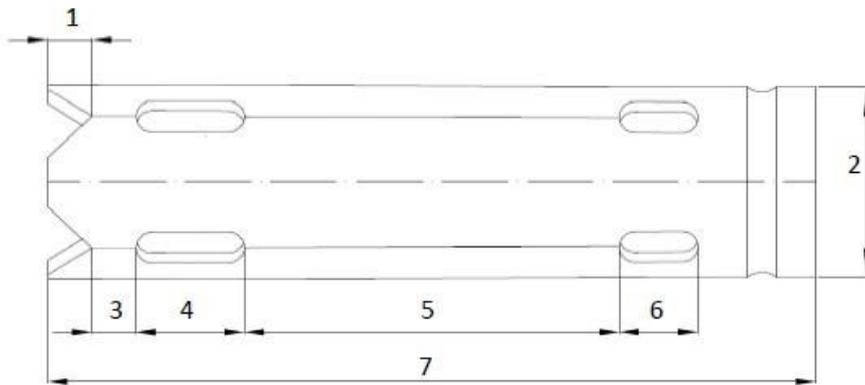


Figure 2: Technical drawing – Shell

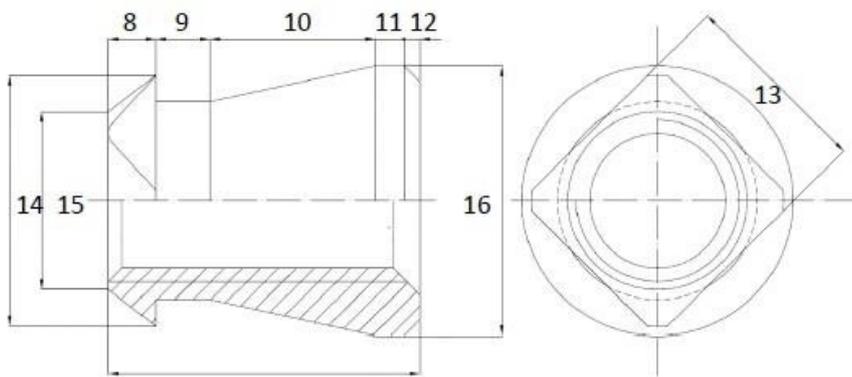


Figure 3: Technical drawing – Conical nut

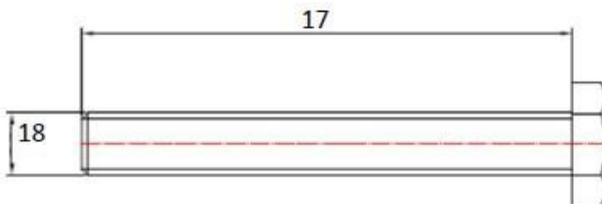


Figure 4: Technical drawing – Hexagon head screw

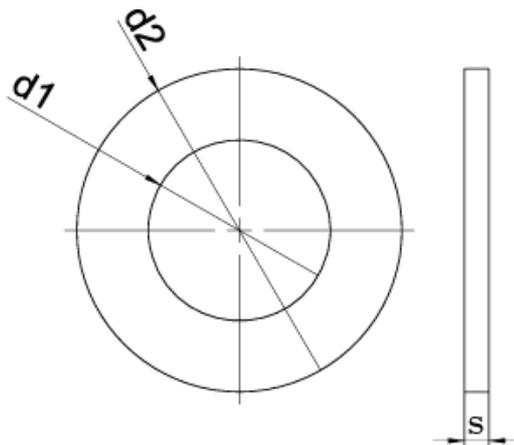
Table 2: Dimensions

Pos.	[mm]																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
M6	2,25	10	2,25	5,5	19	4	39	1,75±0,1	2±0,1	6,1±0,1	1,05±0,1	0,6±0,1	7,1±0,1	9,3±0,1	6,6±0,1	10±0,3	60	6
M8	2,25	12	1,5	6,5	21,5	5	44	3,7±0,1	2±0,1	6,6±0,1	0,6±0,1	0,6	8,7±0,1	11,1±0,1	8,7±0,1	12±0,3	80	8

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Product description

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Dimensions of Round Washer:**Table A3: Dimensions of Round Washer:**

Thread size		M6 (mm)	M8 (mm)
d_1	min.	6,40	8,40
	max.	6,62	8,62
d_2	min.	11,57	15,57
	max.	12	16
s	min.	1,40	1,40
	max.	1,80	1,80
gr/p		1,02	1,83

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Product description

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Specifications of intended use

The anchors are intended to be used for anchorages for which requirements for mechanical resistance and stability and safety in use in the sense of the Basic Requirement 1 of Regulation 305/2011 (EU) shall be fulfilled and failure of anchorages made with these products would compromise the stability of the works, cause risk to human life and/or lead to considerable economic consequences

Anchors subject to:

- Static and quasi-static loads

Base materials:

- Reinforced or unreinforced normal weight concrete of strength class C20/25 at minimum to C50/60 at maximum according to EN 206
- Cracked and uncracked concrete

Use conditions (Environmental conditions):

- Anchors may be used in structures subject to dry internal conditions
- For all other conditions according EN 1993-1-4 + A1, corresponding to corrosion resistance classes CRC according to Annex A3, Table A1

Installation:

- The anchors may be installed in:
 - Dry concrete: sizes M6 and M8.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Anchor installation in accordance with the manufacturer's specifications and drawings and using the appropriate tools.
- Check before placing the anchor to ensure that the strength class of the concrete, in which the anchor is to be placed, is identical with the values which the characteristic loads apply.
- Check of concrete being well compacted, e.g. without significant voids.
- Edge distances and spacings not less than the specified values without minus tolerances.
- Positioning of the drill holes without damaging the reinforcement.
- In case of aborted hole: new drilling at a minimum distance away of twice the depth of the aborted hole or smaller distance if the aborted drill hole is filled with high strength mortar and if under shear or oblique tension load it is not the direction of load application.
- Cleaning of the hole of drilling dust.
- Anchor installation such that the effective anchorage depth is complied with; the compliance is ensured if the thickness of the fixture is not larger than the maximum values given in Annex B2.
- Anchor expansion by impact on the wedge of the anchor; the anchor is properly set if the wedge is fully dropped in.

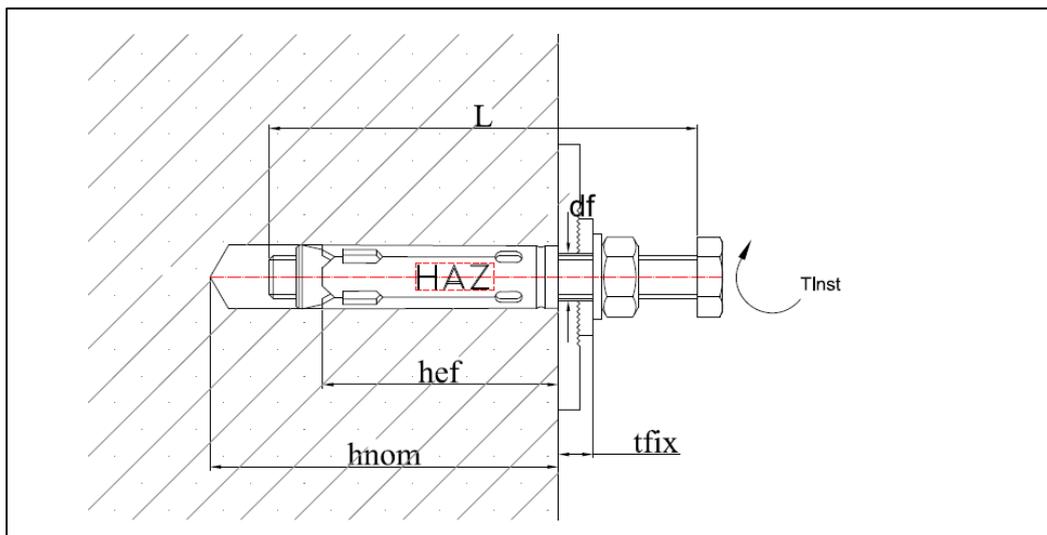
Proposed design methods:

- 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 transmitted. 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 under static and quasi-static loads are designed in accordance EN 1992-4

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Intended use – Specification	

Table B1: Installation parameters

				M6	M8
Nom. drill hole diameter	$\varnothing d_0$	[mm]	=	10	12
Min. Cutting diameter of drill bit	$\varnothing d_{cut}$	[mm]	\geq	10,25	12,10
Max. Cutting diameter of drill bit	$\varnothing d_{cut}$	[mm]	\leq	10,45	12,50
Depth of length of bolt in drill hole	h_{nom}	[mm]	\geq	44	50
Effective anchorage depth	h_{ef}	[mm]	\geq	40,05	44,6
Diameter of clearance hole for in-place installation	d_f	[mm]	\leq	7	9
Installation moment	T_{inst}	[Nm]	=	14	20

**Table B2: Minimum thickness of member, minimum edge distance and minimum spacing**

				M6	M8
Minimum thickness of member	h_{min}	[mm]	=	100	100
Minimum edge distance	c_{min}	[mm]	=	50	60
Minimum spacing	s_{min}	[mm]	=	80	90
Minimum edge distance	$c_{cr,N}$	[mm]	=	60	80

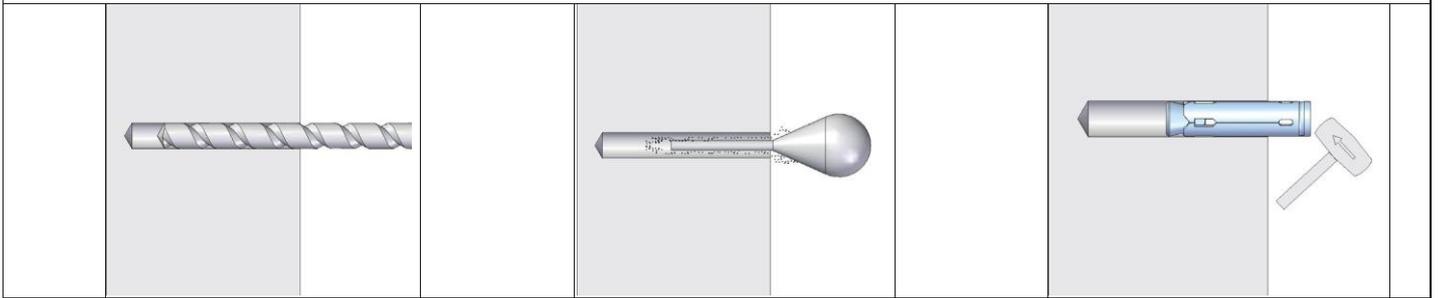
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Intended use – installation parameters

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Installation Instruction

Installation detail of HB-05



1

2

3



4

5

No.	Description
1	Create drill hole with hammer drill
2	Cleaning of hole
3	Set the fastener
4	Apply required torque moment T_{inst}
5	Installed fastener

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Intended use – installation parameters

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Table C1: Characteristic resistance to tension load (static and quasi-static loading) according to EN 1992-4

			M6	M8
Steel failure				
Resistance to steel failure	NR_{k,s}	[kN]	16,08	25,62
Partial safety factor under tension load	γ_{M_s} ¹⁾	[-]	1,50	1,50
Pull-out failure				
Resistance to pull-out failure in non-cracked concrete C20/25	NR_{k,p,ucr}	[kN]	8,00	8,50
Increase factors for non-cracked concrete in C50/60	Ψ_c	[-]	1,45	1,58
Resistance to pull-out failure in cracked concrete C20/25	NR_{k,p,cr}	[kN]	5,00	8,00
Increase factors for cracked concrete in C50/60	Ψ_c	[-]	1,58	1,58
Concrete cone failure				
Effective embedment depth	h_{ef}	[mm]	39	44
Faktor for cracked concrete	k_{cr}	[-]	7,7	7,7
Faktor for non-cracked concrete	k_{ucr}	[-]	11	11
Edge distance	c_{cr,N}	[mm]	1,5xh _{ef}	1,5xh _{ef}
Spacing	s_{cr,N}	[mm]	3xh _{ef}	3xh _{ef}
Robustness				
Installation safety factor	γ_{inst}	[-]	1,00	1,20
Minimum edge distance and spacing				
Minimum edge distance	s ≥	[mm]	80	90
Minimum spacing distance	c ≥	[mm]	50	60
Min. thickness of the concrete member	h_{min}	[mm]	100	100
Edge distance to prevent splitting under load				
Characteristic edge distance	c_{cr,sp}	[mm]	60	80
Characteristic spacing	s_{cr,sp}	[mm]	120	160
Displacements under static and quasi-static loading				
Tension load	N	[kN]	3,81	4,05
Short time tension displacement	δN₀	[mm]	0,26	0,29
Long-time tension displacement	δN_∞	[mm]	1,34	1,27
Splitting				
Characteristic Resistance	N⁰_{Rk,sp}	{Kn}	N⁰_{Rk,sp} = min {N_{Rk,c} ; N_{Rk,p}}	

1) In absence of other national regulations

2) $N_{Rk,sp}^0 = \min \{N_{Rk,c} ; N_{Rk,p}\}$ **HAZ HB05**

Performance for static and quasi-static loads: Resistances

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Table C2: Characteristic resistance to shear load (static and quasi-static loading) according to EN 1992-4

			M6	M8
<i>Resistance to steel failure under shear load</i>				
Resistance to shear load without lever arm	$V^0 R_{k,s}$	[kN]	8,04	12,81
Partial safety factor under shear load	$\gamma M_s^{1)}$	[-]	1,50	1,50
Resistance to shear load with lever arm	$M^0 R_{k,s}$	[kN]	10,7	30
Partial safety factor under shear load	$\gamma M_s^{1)}$	[-]	1,50	1,50
<i>Resistance to pry-out failure</i>				
Factor for pry-out failure	k8	[-]	1,0	1,0
<i>Displacements under static and quasi-static loading</i>				
Shear load	V	[kN]	3,83	6,10
Short time shear displacement	δV_0	[mm]	1,79	0,95
Long-time shear displacement	δV_∞	[mm]	2,69	1,43

1) In absence of other national regulations

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Performance for static and quasi-static loads: Resistances

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