Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

# European Technical Assessment ETA-17/0858 of 1 March 2018

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 | Butler macht's! Ceiling Anchor |
| Product family to which the construction product belongs | Anchor for multiple use for non-structural applications in concrete |
| Manufacturer | hagebau Handelsgesellschaft für Baustoffe mbH & Co. KG<br>Celler Straße 47<br>29614 Soltau<br>DEUTSCHLAND |
| Manufacturing plant | Werk Deutschland |
| This European Technical Assessment contains | 8 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 | ETAG 001 Part 6: "Anchors for multiple use for non-structural applications", January 2011, used as EAD according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011. |



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## Specific Part

### 1 Technical description of the product

The Butler macht's! Ceiling Anchor is an anchor made of zinc-plated steel which is placed into a drilled hole and anchored by deformation-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 Mechanical resistance and stability (BWR 1)

The essential characteristics regarding mechanical resistance and stability are included under the Basic Works Requirement Safety in use.

#### 3.2 Safety in case of fire (BWR 2)

| Essential characteristic | Performance |
|---|---|
| Reaction to fire | Anchorages satisfy requirements for Class A1 |
| Resistance to fire | See Annex C1 |

#### 3.3 Safety in use (BWR 4)

| Essential characteristic | Performance |
|---|---|
| Characteristic resistance for all load directions | See Annex C1 |

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

In accordance with guideline for European technical approval ETAG 001, January 2011, used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011, 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 1 March 2018 by Deutsches Institut für Bautechnik

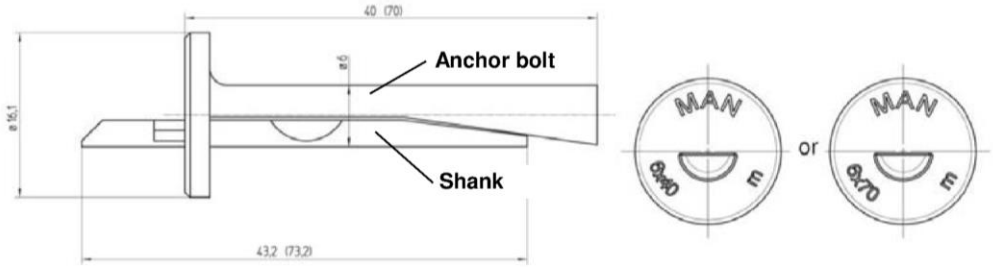
BD Dipl.-Ing. Andreas Kummerow
Head of Department

*beglaubigt:*
Baderschneider

Deutsches Institut für Bautechnik DIBt

## Only for multiple use for non-structural applications according to ETAG 001, Part 6, Annex 1

Head marking: Identifying mark of the producer and anchor type




**Installed condition for Butler macht's! Ceiling Anchor**

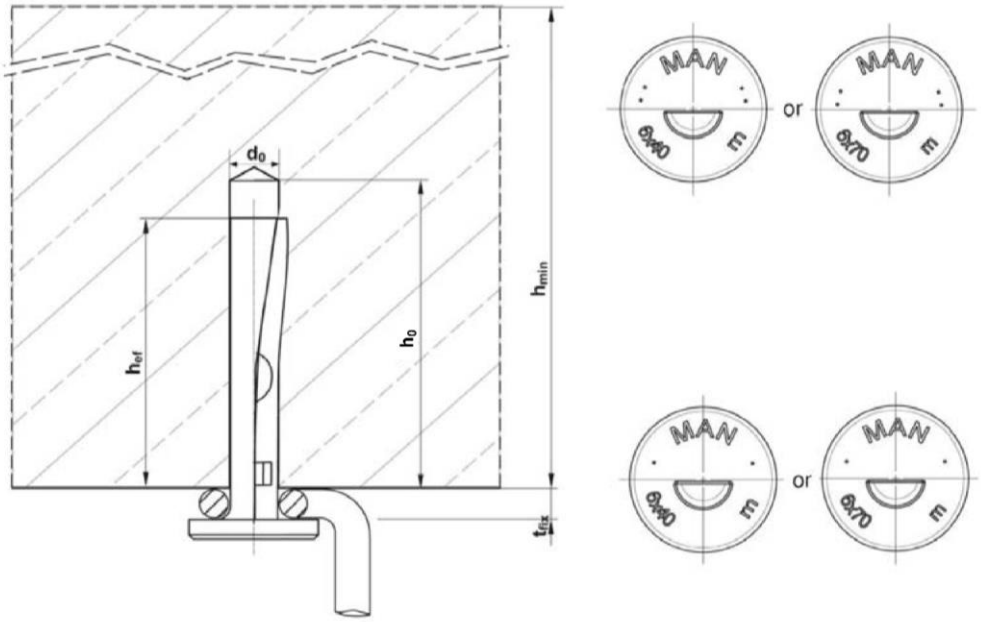



**Table A1: Anchor dimension, marking and material**

| **Butler macht's! Ceiling Anchor** | | **6 x 40** | **6 x 70** |
|---|---|---|---|
| Marking / embossing | | MAN 6 x 40 | MAN 6 x 70 |
| Anchor length | [mm] | 40 | 70 |
| Material | Anchor bolt | Strength class 4.8 according to EN ISO 898-1<br>galvanized steel, Zinc plating ≥ 5 µm according to EN ISO 4042 | |
| | Shank | Strength class 8.8 according to EN ISO 898-1;<br>galvanized steel, Zinc plating ≥ 5 µm according to EN ISO 4042 | |

| **Butler macht's! Ceiling Anchor** | **Annex A1** |
|---|---|
| **Product description**<br>Installed condition, anchor types, dimensions and materials | |

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## Specifications of intended use

**Anchorages subject to:**

- Static and quasi-static loads
- Multiple fixing of non-structural applications
- Fire exposure

**Base materials:**

- Reinforced or unreinforced normal weight concrete according to EN 206-1:2000
- Strength classes C20/25 to C50/60 according to EN 206-1:2000
- Non-cracked and cracked concrete

**Use conditions:**

- Structures subject to dry internal conditions

**Design:**

- The anchorages are to be designed under the responsibility of an engineer experienced in anchorages and concrete work.
- Verifiable calculation notes and drawings shall be prepared taking account of the loads to be anchored, the nature and strength of the base materials and the dimensions of the anchorage members as well as of the relevant tolerances. The position of the anchor shall be indicated on the design drawings (e. g. position of the anchor relative to reinforcement or to supports, etc.).
- Anchorages under static or quasi-static actions are designed in accordance with ETAG 001, Annex C, design method C, Edition August 2010.
- Anchorages under fire exposure are designed in accordance with ETAG 001, Annex C, design Method C, Edition August 2010 and EOTA Technical Report TR 020, Edition May 2004. It must be ensured that local spalling of the concrete cover does not occur.
- Fasteners are only to be used for multiple use for non-structural application, according to ETAG 001 Part 6, Edition January 2011.

**Installation:**

- Dry or wet concrete
- Anchor installation has to be carried out by appropriately qualified personnel according to Annex B2 under the supervision of the person responsible for technical matters of the site.
- Hole drilling by hammer drilling
- Anchor expansion by impact on the shank. The anchor is properly set, if no further driving by impact is possible and the excess of the shank is at maximum 2,5 mm.
- The anchor may only be set once.



| | |
|---|---|
| **Butler macht's! Ceiling Anchor** | **Annex B1** |
| **Intended use**<br>Specifications | |

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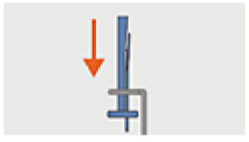
**Table B1: Installation parameters**

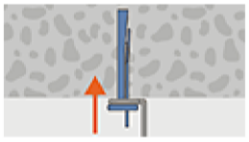
| **Butler macht's! Ceiling Anchor** | | | **6 x 40** | **6 x 70** |
|---|---|---|---|---|
| Effective anchorage depth | $h_{ef} \geq$ | [mm] | 32 | |
| Thickness of fixture | $t_{fix}$ | [mm] | 0 - 5 | 0 - 35 |
| Nominal drill hole diameter | $d_o$ | [mm] | 6 | |
| Max. drill bit diameter | $d_{cut}$ | [mm] | 6,4 | |
| Drill hole depth | $h_o \geq$ | [mm] | 40 | |
| Minimum thickness of concrete member | $h_{min}$ | [mm] | 80 | |
| Minimum spacing | $s_{min}$ | [mm] | 200 | |
| Minimum edge distance | $c_{min}$ | [mm] | 150 | |

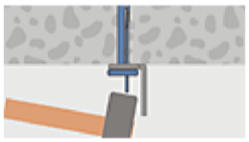
**Installation instructions:**

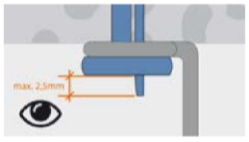

Make the drill hole


Clean the drill hole from drill dust


Place the fixture on the ceiling anchor


Place the ceiling anchor with the fixture concisely into the hole


Drive in the nail with a hammer



Installed ceiling anchor; control of maximum overlap of shank:
≤ 2,5 mm



| **Butler macht's! Ceiling Anchor** | **Annex B2** |
|---|---|
| **Intended use**<br>Installation parameters, edge distance and spacing<br>Installation instructions | |

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**Table C1: Characteristic values of resistance in concrete in all load directions (Design according to ETAG 001, Annex C, design method C)**

| **Butler macht's! Ceiling Anchor** | | | **6 x 40** | **6 x 70** |
|---|---|---|---|---|
| **All load directions** | | | | |
| Characteristic resistance in concrete C20/25 to C50/60 | $F_{Rk}$ | [kN] | 3,0 | |
| Installation safety factor | $\gamma_2$ | [-] | 1,0 | |
| Minimum spacing | $s_{min}$ | [mm] | 200 | |
| Minimum edge distance | $c_{min}$ | [mm] | 150 | |
| **Shear load with lever arm** | | | | |
| Characteristic bending moment | $M^0_{Rk,s}$ [1)] | [Nm] | 5,4 | |
| Installation safety factor | $\gamma_2$ | [-] | 1,0 | |

[1)] Characteristic bending moment $M^0_{Rk,s}$ for Equation (5.5) in ETAG 001, Annex C

**Only for multiple use for non-structural applications, the definition of multiple use according to the member states is given in the informative Annex 1 of ETAG 001, Part 6**

**Table C2: Characteristic values under fire exposure in cracked and non-cracked concrete C20/25 to C50/60 in all load directions without lever arm (Design according to EOTA TR 020)**

| **Fire resistance class** | **Butler macht's! Ceiling Anchor** | | | **6 x 40** | **6 x 70** |
|---|---|---|---|---|---|
| **R 30** | Characteristic resistance | $F^0_{Rk,fi}$ [1)] | [kN] | 0,6 | |
| **R 60** | | | | 0,5 | |
| **R 90** | | | | 0,4 | |
| **R 120** | | | | 0,3 | |
| **R 30 - R 120** | Minimum spacing | $s_{min,fi}$ | [mm] | 200 | |
| | Minimum edge distance [2)] | $c_{min,fi}$ | [mm] | 150 | |

[1)] In absence of other national regulations, the partial safety factor for resistance under fire exposure $\gamma_{m,fi} = 1,0$ is recommended.

[2)] In case of fire attack from more than one side of the concrete member, the edge distance shall be $\geq$ 300 mm.



| **Butler macht's! Ceiling Anchor** | **Annex C1** |
|---|---|
| **Performances**<br>Characteristic resistances in concrete<br>Design method C according to ETAG 001, Annex C | |