Deutsches Institut für Bautechnik

Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

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# European Technical Assessment

# ETA-14/0132 of 17 June 2014

**General Part**

| | |
|---|---|
| Technical Assessment Body issuing the European Technical Assessment: | Deutsches Institut für Bautechnik |
| Trade name of the construction product | Eurotec Ceiling anchor EDN |
| Product family to which the construction product belongs | Anchor for multiple use for non-structural applications in concrete |
| Manufacturer | Eurotec GmbH<br>Unter dem Hofe 5<br>58099 Hagen<br>DEUTSCHLAND |
| Manufacturing plant | Werk I |
| This European Technical Assessment contains | 9 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 | Guideline for European technical approval of "Metal anchors for use in concrete", ETAG 001 Part 6: "Anchors for multiple use for non-structural applications", January 2011,<br>used as European Assessment Document (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 Eurotec ceiling anchor EDN is an anchor made of galvanised steel which is pushed 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)

| Essential characteristic | Performance |
|---|---|
| Characteristic values | See Annex C 1 |

#### 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 C 1 |

#### 3.3 Hygiene, health and the environment (BWR 3)

Regarding dangerous substances there may be requirements (e.g. transposed European legislation and national laws, regulations and administrative provisions) applicable to the products falling within the scope of this European Technical Assessment. In order to meet the provisions of Regulation (EU) No 305/2011, these requirements need also to be complied with, when and where they apply.

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

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

#### 3.5 Protection against noise (BWR 5)

Not applicable.

#### 3.6 Energy economy and heat retention (BWR 6)

Not applicable.

### 3.7 Sustainable use of natural resources (BWR 7)

The sustainable use of natural resources was not investigated.

### 3.8 General aspects

The verification of durability is part of testing the essential characteristics. Durability is only ensured if the specifications of intended use according to Annex B are taken into account.

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

According to Decision of the Commission of 17 February 1997 (97/161/EC) (OJ L 062 of 04.03.97 p. 41-42), the system of assessment and verification of constancy of performance (see Annex V and Article 65 Paragraph 2 to Regulation (EU) No 305/2011) given in the following table applies.

| Product | Intended use | Level or class | System |
|---|---|---|---|
| Metal anchors for use in concrete (light-duty type) | For use in redundant systems for fixing and/or supporting to concrete elements such as lightweight suspended ceilings, as well as installations | — | 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 at Deutsches Institut für Bautechnik.

Issued in Berlin on 17 June 2014 by Deutsches Institut für Bautechnik

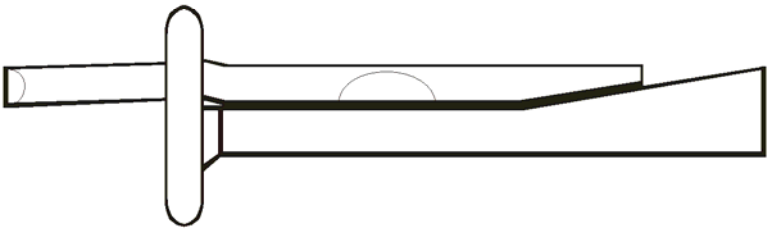
Dr.-Ing- Karsten Kathage
Vice President

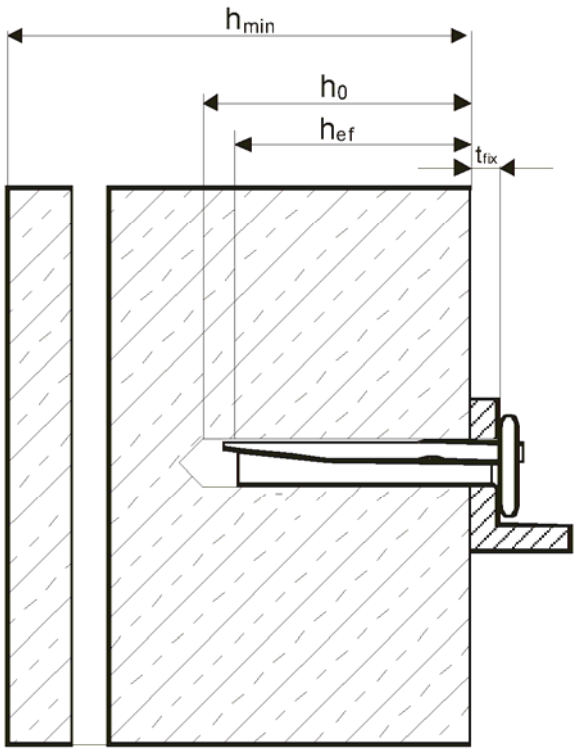
*Beglaubigt:*
Baderschneider

Deutsches Institut für Bautechnik

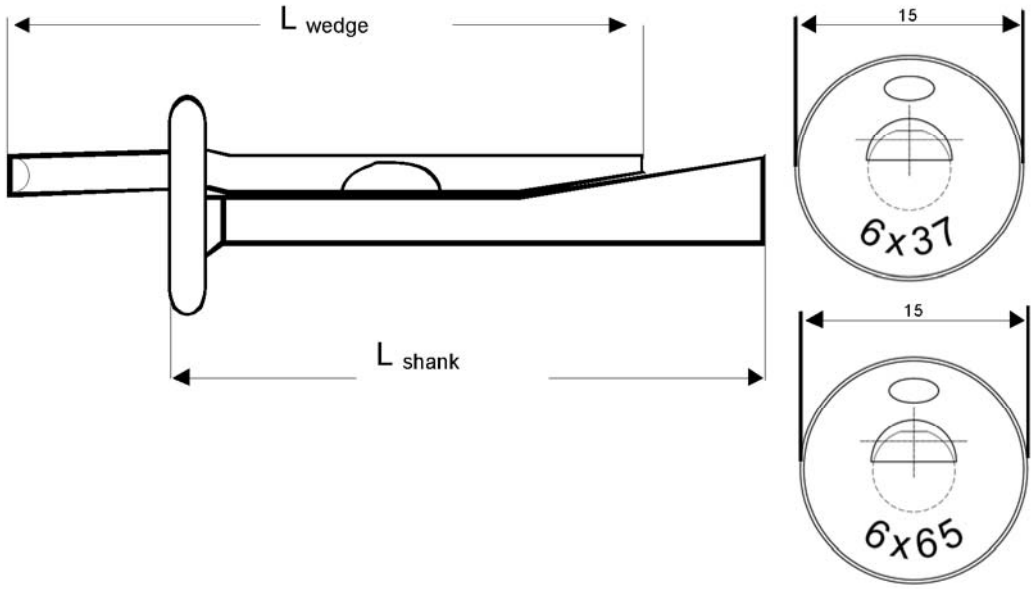
DIBt

## Installed condition






| | |
|---|---|
| **Eurotec Ceiling Anchor EDN** | **Annex A 1** |
| **Product description**<br>Installed condition | |




## Table A1: Dimensions and material

| **Ceiling Anchor** | | **6** | **6/65** |
|---|---|---|---|
| Length of wedge | [ mm ] | 43 | 68 |
| Length of shank | [ mm ] | 39 | 64,5 |
| Material | Steel acc. to EN 10263-2:2001 | | |

| **Eurotec Ceiling Anchor EDN** | **Annex A 2** |
|---|---|
| **Product description**<br>Dimensions and Material | |

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## Specifications of intended use

**Anchorages subject to:**

- Static and quasi-static loads: all sizes.
- Fire exposure: all sizes.

**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.
- Cracked and non-cracked concrete: all sizes.

**Use conditions (Environmental conditions):**

- Structures subject to dry internal conditions

**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 under static or quasi-static actions and under fire exposure are designed for design method C in accordance with ETAG 001, Annex C, Edition August 2010.
- In case of requirements to resistance to fire local spalling of the concrete cover must be avoided.
- Fasteners are only to be used for multiple use for non-structural application, according to ETAG 001 Part 6, Edition August 2010.

**Installation:**

- Hole drilling by hammer drilling only.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- The anchor may only be set once.
- 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 in the direction of load application.

| **Eurotec Ceiling Anchor EDN** | **Annex B 1** |
|---|---|
| **Intended Use**<br>Specifications | |

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## Table B1: Installation Parameters

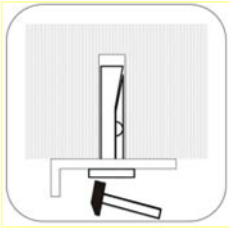
| **Ceiling Anchor** | | | **6** | **6/65** |
|---|---|---|---|---|
| Nominal diameter of drill bit | $d_0$ | [ mm ] | 6 | |
| Cutting diameter of drill bit | $d_{cut}$ | [ mm ] | ≤ 6,4 | |
| Depth of drill hole | $h_0$ ≥ | [ mm ] | 40 | |
| Effective anchorage depth | $h_{ef}$ | [ mm ] | 32 | |
| Minimum thickness of member | $h_{min}$ | [ mm ] | 80 | |
| Maximal thickness of fixture | $t_{fix}$ | [ mm ] | 4,5 | 32,5 |
| Minimum spacing | $s_{min}$ | [ mm ] | 200 | |
| Minimum edge distance | $c_{min}$ | [ mm ] | 150 | |

## Installation Instructions

Hole drilling by hammer drilling.

Blow out dust from drilling hole.


Insert anchor with fixture.



Hammer down wedge. The anchor is properly set if the wedge is fully dropped in.

| **Eurotec Ceiling Anchor EDN** | **Annex B 2** |
|---|---|
| **Intended Use**<br>Installation parameters<br>Installation Instructions | |

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## Table C1: Characteristic values

| **Ceiling Anchor** | | | **6** | **6/65** |
|---|---|---|---|---|
| **Any load direction** | | | | |
| Characteristic resistance (in concrete C20/25 to C50/60) | $F_{Rk}$ | [ kN ] | 4 | |
| Installation safety factor | $\gamma_2$ | [ - ] | 1,0 | |
| **Shear load with lever arm** | | | | |
| Characteristic bending moment | $M^0_{Rk,\,s}$ | [ Nm ] | 6,6 | |
| Partial safety factor | $\gamma_2$ | [ - ] | 1,0 | |

## Table C2: Characteristic values under fire exposure in concrete C20/25 to C50/60 in any load direction without lever arm

| **fire resistance class** | | | | **6** | **6/65** |
|---|---|---|---|---|---|
| **R 30** | Characteristic resistance | $F_{Rk,\,fi}$ | [ kN ] | 0,36 | |
| **R 60** | Characteristic resistance | $F_{Rk,\,fi}$ | [ kN ] | 0,28 | |
| **R 90** | Characteristic resistance | $F_{Rk,\,fi}$ | [ kN ] | 0,20 | |
| **R 120** | Characteristic resistance | $F_{Rk,\,fi}$ | [ kN ] | 0,15 | |
| **R 30 to 120** | Spacing | $s_{cr,\,fi}$ | [ mm ] | 200 | |
| | Edge distance | $c_{cr,\,fi}$ | [ mm ] | 150 | |

In case of fire exposure from more than one side, the edge distance shall be ≥ 300 mm