

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-17/0737**  
**of 30 January 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

fischer Ceiling Anchor FDZ

Product family  
to which the construction product belongs

Anchor for fastening redundant non-structural systems in  
concrete

Manufacturer

fischerwerke GmbH & Co. KG  
Klaus-Fischer-Straße 1  
72178 Waldachtal  
DEUTSCHLAND

Manufacturing plant

fischerwerke

This European Technical Assessment  
contains

8 pages including 4 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", April 2013,  
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 Fischer Ceiling Anchor FDZ is an anchor made of galvanized 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	Anchorage satisfy requirements for Class A1
Resistance to fire	See Annex C 1

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

Essential characteristic	Performance
Characteristic resistance in concrete	See Annex C 1

### 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, April 2013 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+

English translation prepared by DIBt

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

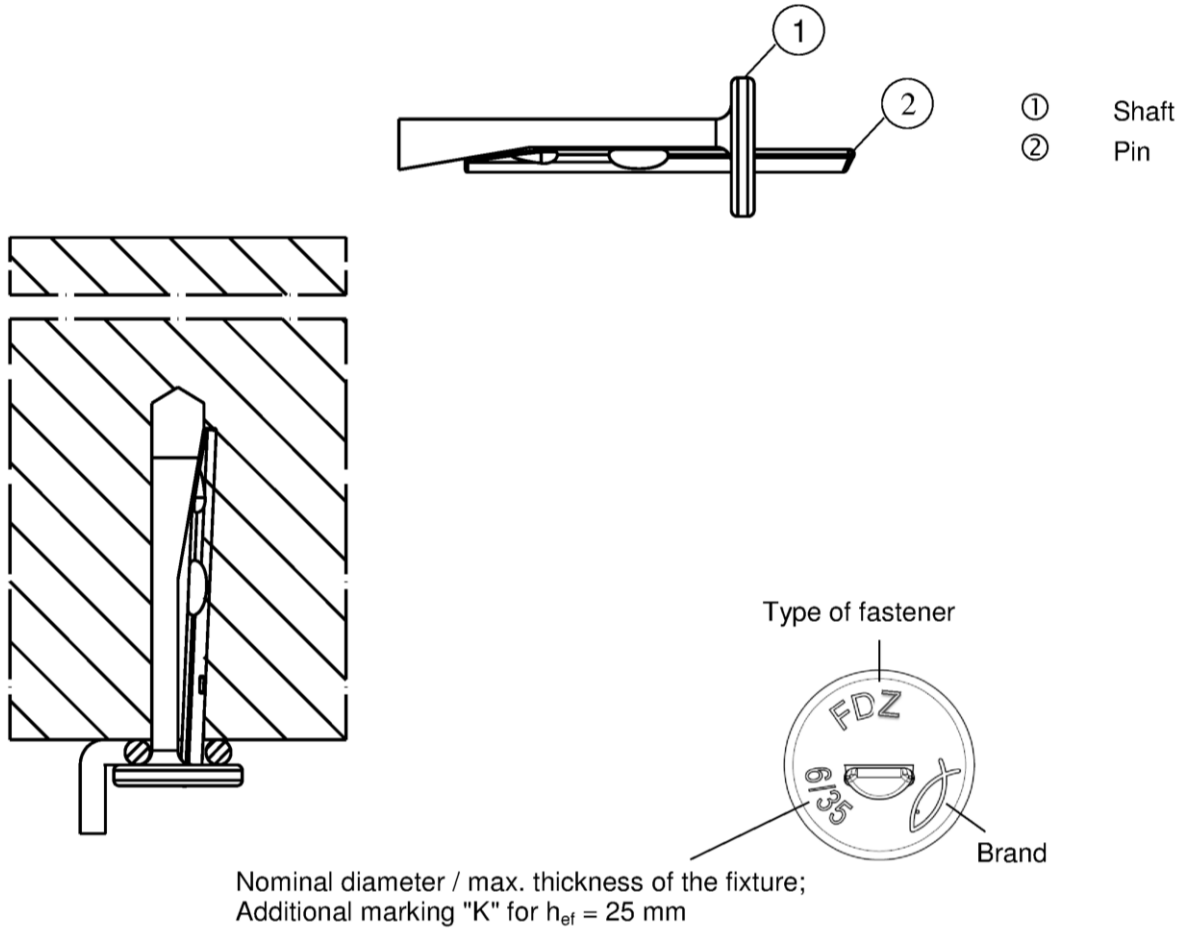
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 30 January 2018 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow  
Head of Department

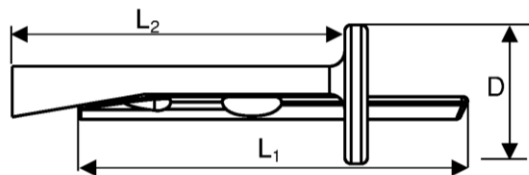
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**Product installation conditions, product marking and product dimensions**



**Table A1.1:** Dimensions

Size	FDZ			
	6/5 K	6/5	6/35 K	6/35
Length of the $\frac{\text{pin}}{\text{shaft}}$ $L_1$	36	43	66	73
$L_2$ [mm]	30,5	37,5	60,5	67,5
Diameter of the head $D \geq$	13			



(Fig. not to scale)

**fischer Ceiling Anchor FDZ**

**Product description**

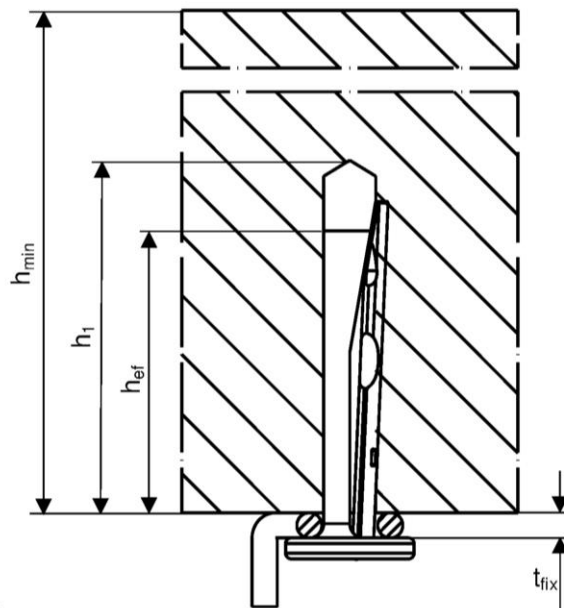
Product installation conditions, product marking and product dimensions

**Annex A 1**

<b>Specifications of intended use</b>	
<b>Anchorage subject to:</b>	
Size	<b>FDZ 6</b>
Static and quasi-static loads	✓
Use for multiple fixture of non-structural applications according to ETAG 001, Part 6	
Fire exposure	
<p><b>Base materials:</b></p> <ul style="list-style-type: none"> <li>Reinforced and unreinforced normal weight concrete according to EN 206-1:2000</li> <li>Strength classes C12/15 to C50/60 according to EN 206-1:2000</li> <li>Cracked and non-cracked concrete</li> </ul> <p><b>Use conditions (Environmental conditions):</b></p> <ul style="list-style-type: none"> <li>Anchorage subject to dry internal conditions</li> </ul> <p><b>Design:</b></p> <ul style="list-style-type: none"> <li>Anchorage are designed under the responsibility of an engineer experienced in anchorages and concrete work</li> <li>Verifiable calculation notes and drawings have to be 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.).</li> <li>Anchorage under static or quasi-static actions have to be designed for Design Method C in accordance with: <ul style="list-style-type: none"> <li>ETAG 001, Annex C, Design Method C, Edition August 2010</li> <li>CEN/TS 1992-4:2009</li> </ul> </li> <li>Anchorage under fire exposure have to be designed in accordance with <ul style="list-style-type: none"> <li>EOTA Technical Report TR 020, Edition May 2004</li> <li>CEN/TS 1992-4:2009, Annex D (it must be ensured that local spalling of the concrete cover does not occur)</li> </ul> </li> </ul>	
<b>fischer Ceiling Anchor FDZ</b>	
<b>Intended use</b>	<b>Annex B 1</b>
Specifications	

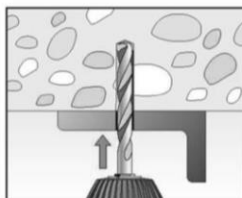
**Table B2.1:** Installation parameters

Size		FDZ			
		6/5 K	6/5	6/35 K	6/35
Thickness of the fixture	$t_{fix} \leq$	5		35	
Nominal drill hole diameter	$d_0$	6			
Diameter of clearance hole in the fixture	$d_f \leq$	7			
Maximum bit diameter	$d_{cut,max}$	6,40			
Effective embedment depth	$h_{ef}$	25	32	25	32
Depth of drill hole	with hole cleaning	30	37	30	37
	without hole cleaning	35	42	35	42
Minimum thickness of concrete member	$h_{min}$	80			

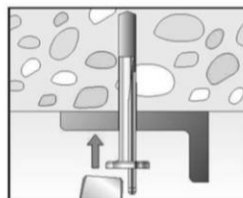


**Installation instructions**

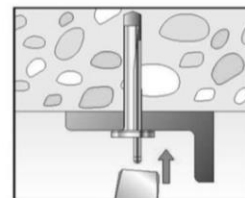
- Hammer or hollow drilling only
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site
- Positioning of the drill holes without damaging the reinforcement
- In case of aborted hole: New drilling at a minimum distance twice the depth of aborted hole away of or smaller distance if the aborted hole is filled with high strength mortar and if under shear or oblique tension load it is not in the direction of the load application



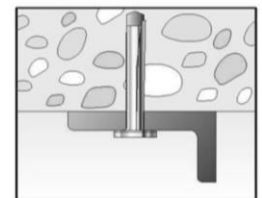
1: Drill the hole



2: Set the fastener



3: Set the pin, until flush to the surface



4: Installed fastener

(Fig. not to scale)

**fischer Ceiling Anchor FDZ**

**Intended use**

Installation parameters and installation instructions

**Annex B 2**

**Table C1.1:** Characteristic resistance

Size	FDZ 6	
<b>For all load directions and for all failures modes</b>		
Effective embedment depth	$h_{ef}$ [mm]	25      32
Characteristic resistance in cracked and non- cracked concrete	C12/15	1,0
	C20/25 to C50/60	1,5
Characteristic edge distance	$c_{cr,N} = c_{min}$ [mm]	70
	spacing	$s_{cr,N} = s_{min}$ [mm]
Partial safety factor	$\gamma_M^{(2)}$ [-]	1,5
<b>Shear load with lever arm</b>		
Characteristic bending resistance	$M_{Rk,s}^0$ [Nm]	4,4
Partial safety factor for steel failure	$\gamma_{Ms}^{(1)}$ [-]	1,25

<sup>1)</sup> In absence of other national regulations

<sup>2)</sup> The installation safety factor  $\gamma_2 = \gamma_{inst} = 1,0$  is included

**Table C1.2:** Characteristic resistance under fire exposure for all effective embedment depths

Size	FDZ 6	
<b>Steel failure for tension and shear load</b>		
R30	$F_{Rk,s,fi30}$	1,00
R60	$F_{Rk,s,fi60}$	0,50
R90	Characteristic resistance $F_{Rk,s,fi90}$ [kN]	0,34
R120	$F_{Rk,s,fi120}$	0,26
R180	$F_{Rk,s,fi180}$	0,17
<b>Spacing and edge distance</b>		
R30 – R120	$s_{cr,fi}$ [mm]	200
	$c_{cr,fi}$	150

For fire exposure from more than one side  $c_{min} \geq 300$  mm

**fischer Ceiling Anchor FDZ**

**Performances**

Characteristic resistance and characteristic resistance under fire exposure

**Annex C 1**