Deutsches Institut für Bautechnik

Public-law institution jointly founded by the federal states and the Federation

European Technical Assessment Body for construction products

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European Technical Assessment ETA-17/0736 of 10 April 2025

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 FDN II
Product family to which the construction product belongs	Fasteners for use in concrete for redundant non-structural systems
Manufacturer	fischerwerke GmbH & Co. KG Klaus-Fischer-Straße 1 72178 Waldachtal DEUTSCHLAND
Manufacturing plant	fischerwerke
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	EAD 330747-00-0601, Edition 06/2018
This version replaces	ETA-17/0736 issued on 30 January 2018

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Specific Part

1 Technical description of the product

The fischer Ceiling Anchor FDN II is an anchor made of galvanized steel which is placed into a drilled hole and anchored by deformation-controlled expansion.

Product and 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 C 1

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 C 1
Durability	See Annex B 1

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 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 10 April 2025 by Deutsches Institut für Bautechnik

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Head of Section

beglaubigt:
Ziegler

Product installation conditions, product marking and product dimensions

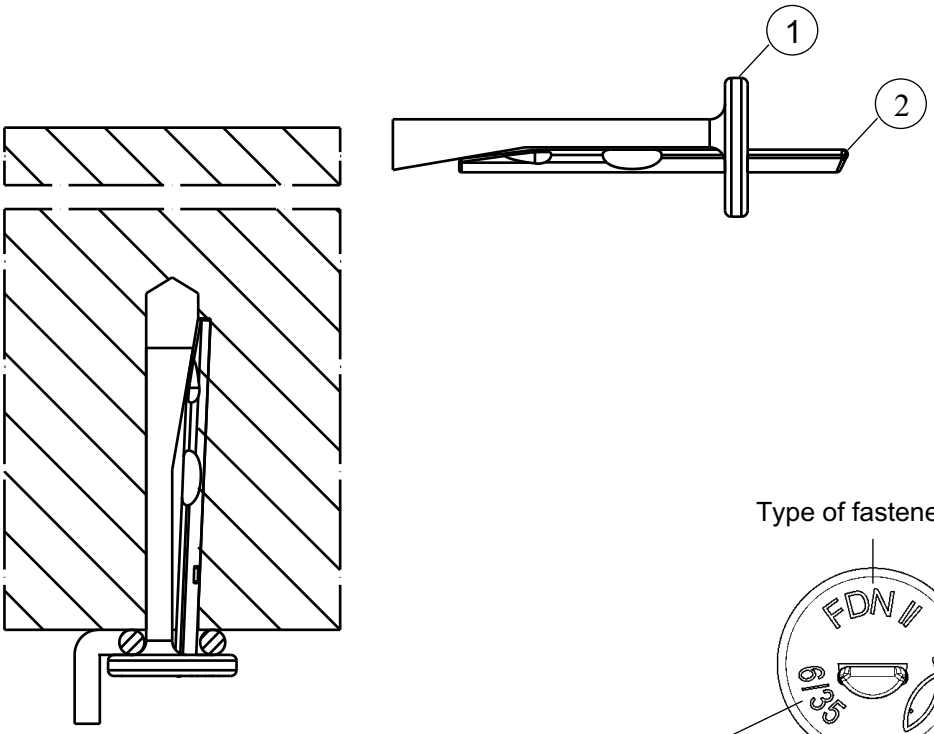
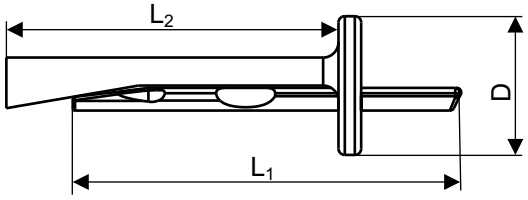


Tabelle A1.1: Materials

Part	Description	Material
1	Shaft	Steel, galvanised ≥ 5µm according to EN ISO 4042:2022
2	Pin	Steel, galvanised ≥ 5µm according to EN ISO 4042:2022

Table A1.2: Dimensions

Size					FDN II			
					6/5 K	6/5	6/35 K	6/35
Length of the	pin	L_1		[mm]	36	43	66	73
	shaft	L_2			30,5	37,5	60,5	67,5
Diameter of the head		D	≥		13			



(Figures not to scale)

fischer Ceiling Anchor FDN II	**Annex A 1**
Product description Product installation conditions, product marking and product dimensions	

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Specifications of intended use

Anchorages subject to:

Size	**FDN II 6**
Static and quasi-static loads	✓
Only for redundant non-structural systems according to EN 1992-4:2018	
Fire exposure	

Base materials:
- Compacted reinforced and unreinforced normal weight concrete without fibres according to EN 206:2013+A2:2021.
- Strength classes C12/15 to C50/60 according to EN 206:2013+A2:2021.
- Cracked and uncracked concrete.

Use conditions (Environmental conditions):
- Anchorages 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 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.).
- Anchorages under static and quasi-static loading are designed in accordance with EN 1992-4:2018, Design Method C or Technical Report CEN/TR 17079.
- In case of requirements to resistance to fire local spalling of the concrete cover must be avoided.

Installation:
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Use of the fastener only as supplied by the manufacturer without exchanging the components of the fastener.
- Anchor installation in accordance with the manufacturer's specifications and drawings and using the appropriate tools.
- Check of concrete being well compacted, e.g. without significant voids.
- 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 aborted hole or smaller distance if the aborted hole is filled with high strength mortar (e.g. FIS HB, FIS SB, FIS EM Plus, FIS V Plus) and if under shear of oblique tension load it is not on the direction of the load application.

fischer Ceiling Anchor FDN II	**Annex B 1**
Intended use Specifications	

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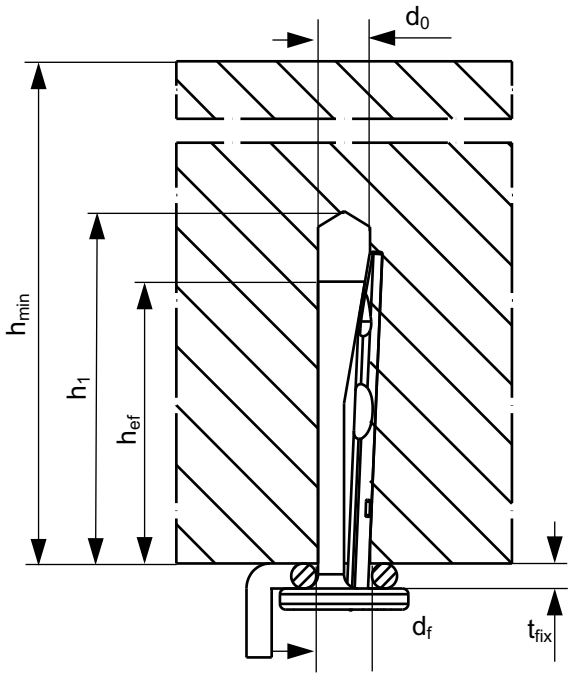
Table B2.1: Installation parameters

Size				FDN II			
				6/5 K	6/5	6/35 K	6/35
Thickness of the fixture	t_{fix}	≤	[mm]	5		35	
Nominal drill hole diameter	d_0			6			
Diameter of clearance hole in the fixture	d_f	≤		7			
Maximum drill bit diameter	$d_{cut,max}$			6,40			
Effective embedment depth	h_{ef}			25	32	25	32
Depth of drill hole to deepest point — with hole cleaning	h_1	≥		30	37	30	37
Depth of drill hole to deepest point — without hole cleaning	h_1	≥		35	42	35	42
Minimum thickness of concrete member	h_{min}			80			



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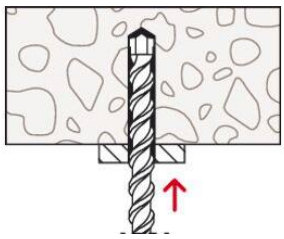
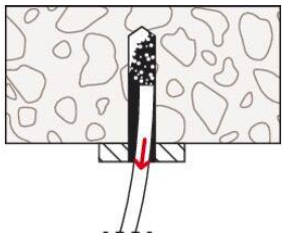
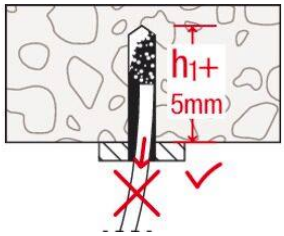
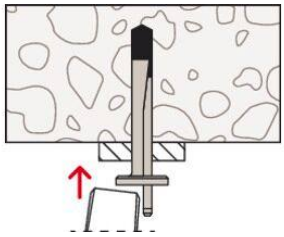
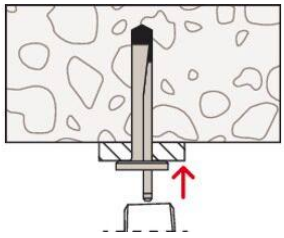
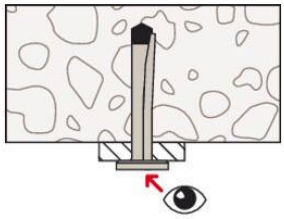
fischer Ceiling Anchor FDN II

Intended use

Installation parameters

Annex B 2

Installation instructions

	1. Drill the hole: hammer or hollow drilling only.
	2. Clean the drill hole (only relates to hammer drilling).
	3. Cleaning of the drill hole not necessary, if the drill hole is 5 mm deeper (only relates to hammer drilling).
	4. Set the fastener: Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
	5. Set the pin, until flish to the surface: Positioning of the drill holes without damaging the reinforcement.
	6. Installed fastener: 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.

(Figures not to scale)

fischer Ceiling Anchor FDN II	**Annex B 3**
Intended use Installation instructions	

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Table C1.1: Characteristic resistance for design method C

Size					FDN II 6	
For all load directions and for all failures modes						
Effective embedment depth			h_{ef}	[mm]	25	32
Characteristic resistance in cracked and un-cracked concrete	C12/15		F_{Rk}	[kN]	2,0	2,5
	C20/25 to C50/60				2,5	3,5
Characteristic	edge distance	$c_{cr,N} = c_{min}$		[mm]	70	60
	spacing	$s_{cr,N} = s_{min}$			60	50
Partial safety factor			γ_M [2)]	[-]	1,5	
Shear load with lever arm						
Characteristic bending resistance			$M^0_{Rk,s}$	[Nm]	4,4	
Partial safety factor for steel failure			γ_{Ms} [1)]	[-]	1,25	

[1)] In absence of other national regulations.
[2)] 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				FDN II 6
For all load directions				
R30	Characteristic resistance	$F_{Rk,fi30}$	[kN]	1,00
R60		$F_{Rk,fi60}$		0,50
R90		$F_{Rk,fi90}$		0,34
R120		$F_{Rk,fi120}$		0,26
R180		$F_{Rk,fi180}$		0,17
Spacing and edge distance				
R30 – R180		$s_{cr,fi}$	[mm]	200
		$c_{cr,fi}$		150
Shear load with lever arm				
R30	Characteristic bending resistance	$M^0_{Rk,s,fi30}$	[Nm]	0,67
R60		$M^0_{Rk,s,fi60}$		0,33
R90		$M^0_{Rk,s,fi90}$		0,22
R120		$M^0_{Rk,s,fi120}$		0,16
R180		$M^0_{Rk,s,fi180}$		0,11

For fire exposure from one side c_{min} and s_{min} see Table C1.1.
For fire exposure from more than one side $c_{min} \geq 300$ mm.

fischer Ceiling Anchor FDN II

Performances
Characteristic resistance and
characteristic resistance under fire exposure

Annex C 1