DECLARATION OF PERFORMANCE

DoP 0374

for fischer Ceiling Anchor FDN II (Mechanical fastener for use in concrete) EN

1. Unique identification code of the product-type:	**DoP 0374**
2. Intended use/es:	**Post-installed fastener for use in concrete for redundant non-structural systems, see appendix, especially annexes B1 - B3.**
3. Manufacturer:	**fischerwerke GmbH & Co. KG, Klaus-Fischer-Str. 1, 72178 Waldachtal, Germany**
4. Authorised representative:	**–**
5. System/s of AVCP:	**2+**
6. European Assessment Document:	**EAD 330747-00-0601, Edition 06/2018**
European Technical Assessment:	**ETA-17/0736; 2025-04-10**
Technical Assessment Body:	**DIBt- Deutsches Institut für Bautechnik**
Notified body/ies:	**2873 TU Darmstadt**

7. Declared performance/s:

Safety in use (BWR 4)

Characteristic resistance to tension load (static and quasi-static loading):

Resistance to steel failure: NPD	E_S= 210 000 MPa
Resistance to pull- out failure: NPD	
Resistance to concrete cone failure: NPD	
Robustness: Annex C1	
Minimum edge distance and spacing: Annexes B2, C1	
Edge distance to prevent splitting under load: NPD	

Characteristic resistance to shear load (static and quasi-static loading):

Resistance to steel failure (shear load): Annex C1	$V_{Rk,s}$=NPD; k_7=NPD
Resistance to pry-out failure: NPD	
Resistance to concrete edge failure: NPD	

Characteristic resistance for all load directions and modes of failure for simplified design:

Characteristic resistance: Annex C1

Durability:

Durability: Annex A1

Safety in case of fire (BWR 2)

Reaction to fire:Class (A1)

Resistance to fire:

Fire resistance to steel failure (tension load): Annex C1

Fire resistance to pull-out failure (tension load): Annex C1

Fire resistance to steel failure (shear load): Annex C1

8. Appropriate Technical Documentation and/or Specific Technical Documentation: **–**

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Dr. Ronald Mihala, Head of Development and Production Management

Dieter Pfaff, Head of International Production Federation and Quality Management

Tumlingen, 2025-05-19

This DoP has been prepared in different languages. In case there is a dispute on the interpretation the English version shall always prevail.

The Appendix includes voluntary and complementary information in English language exceeding the (language-neutrally specified) legal requirements.

Translation guidance Essential Characteristics and Performance Parameters for Annexes

Safety in case of fire (BWR 2)		
1	Reaction to fire:	Class
Resistance to fire:		
2	Fire resistance to steel failure (tension load):	$N_{Rk,s,fi}$ [kN]
3	Fire resistance to pull-out failure (tension load):	$N_{Rk,p,fi}$ [kN]
4	Fire resistance to steel failure (shear load):	$V_{Rk,s,fi}$ [kN], $M^0_{Rk,s,fi}$ [Nm]
Safety and accessibility in use (BWR 4)		
Characteristic resistance to tension load (static and quasi-static loading):		
6	Resistance to steel failure:	$N_{Rk,s}$ [kN], E_s [N/mm^2]
7	Resistance to pull- out failure:	$N_{Rk,p}$ [kN], ψ_c, $\tau_{Rk,p}$ [N/mm^2]
8	Resistance to concrete cone failure:	$k_{cr,N}$, $k_{ucr,N}$ [-], h_{ef}, $c_{cr,N}$ [mm]
9	Robustness:	γ_{inst} [-]
10	Minimum edge distance and spacing:	c_{min}, s_{min}, h_{min} [mm]
11	Edge distance to prevent splitting under load:	$N^0_{Rk,sp}$ [kN], $c_{cr,sp}$ [mm]
Characteristic resistance to shear load (static and quasi-static loading):		
12	Resistance to steel failure (shear load):	$V_{Rk,s}$ [kN], $M^0_{Rk,s}$ [Nm], k_7 [-]
13	Resistance to pry-out failure:	k_8 [-]
14	Resistance to concrete edge failure:	d_{nom}, l_f [mm]
Characteristic resistance for all load directions and modes of failure for simplified design:		
15	Characteristic resistance:	F^0_{Rk} [kN], s_{cr}, c_{cr} [mm]
Durability:		
16	Durability:	Description

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+

Product installation conditions, product marking and product dimensions

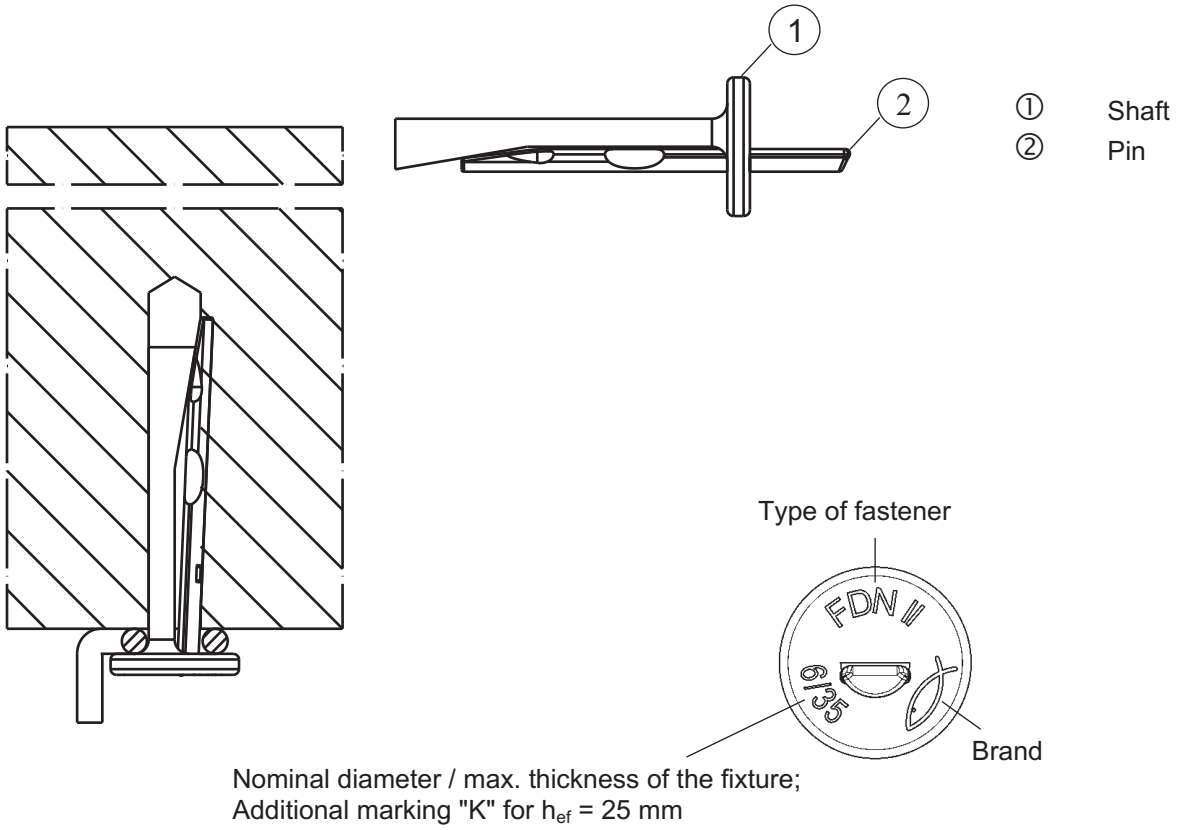
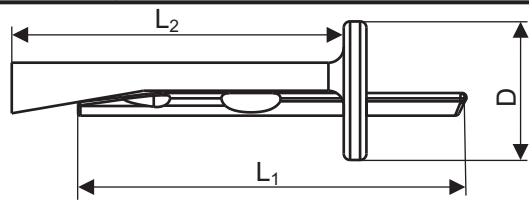


Tabelle A1.1: Materials

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)

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.

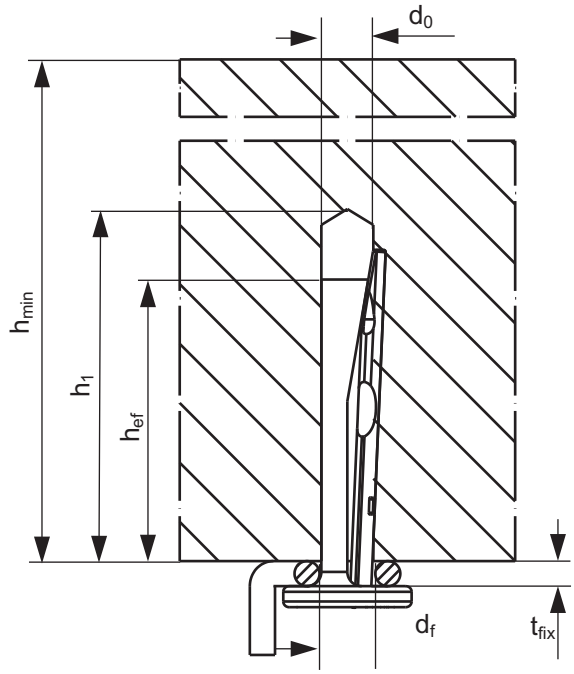
Use conditions (Environmental conditions):
- Anchorages subject to dry internal conditions.

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.

Table B2.1: Installation parameters

Size				FDN II			
				6/5 K	6/5	6/35 K	6/35
Thickness of the fixture		t_{fix}	≤	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}	[mm]	25	32	25	32
Depth of drill hole to deepest point	with hole cleaning	h_1	≥	30	37	30	37
	without hole cleaning			35	42	35	42
Minimum thickness of concrete member		h_{min}		80			



(Figure not to scale)

fischer Ceiling Anchor FDN II

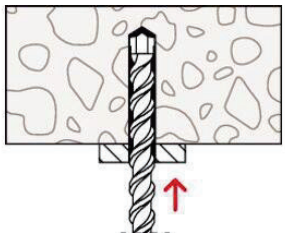
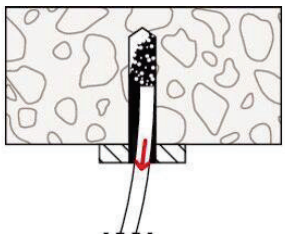
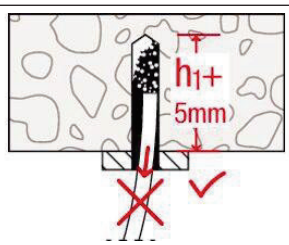
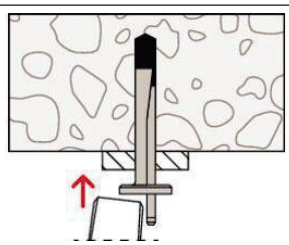
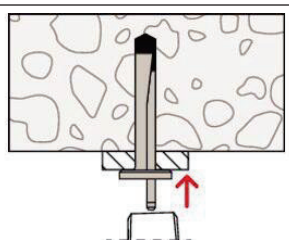
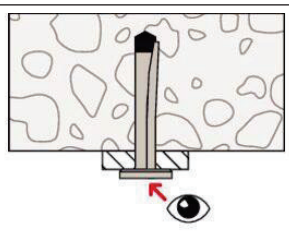
Intended use

Installation parameters

Annex B 2

Appendix 4 / 6

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)

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.