

YDEEVNEDEKLARATION

DoP 0374

til fischer loftanker FDN II (Metalanker til brug i beton)

DA

1. Varetypens unikke identifikationskode:

2. Anvendelsesformål:

3. Fabrikant:

4. Bemyndiget repræsentant:

5. System(er) til vurdering og kontrol af konstansen af ydeevnen:

6. Europæisk vurderingsdokument:
Europæisk Teknisk Vurdering
Teknisk vurderingsorgan:
Notificeret organ(er)
- DoP 0374

Eftermonteret fastgørelse til anvendelse i beton til redundante, ikke-strukturelle systemer, se
appendiks, specifikt Bilage B1 - B3.

fischerwerke GmbH & Co. KG, Klaus-Fischer-Str. 1, 72178 Waldachtal, Tyskland

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2+

EAD 330747-00-0601, Edition 06/2018
ETA-17/0736; 2025-04-10
DIBt- Deutsches Institut für Bautechnik
2873 TU Darmstadt

7. Deklareret ydeevne(r):
Sikkerhed under anvendelse (BWR 4)
Karakteristisk modstand for træklast (statisk og quasi-statisk belastning):
Modstand overfor stålsvig: NPD
Modstand overfor svigt ved udtrækning: NPD
Modstand overfor svigt af beton-kegle: NPD
Robusthed: Bilag C1
Min. kant og indbyrdes afstand: Bilag B2, C1
Kantafstand til forhindring af flækning under belastning: NPD
- E_s= 210 000 MPa

- Karakteristisk modstand for tværlast (statisk og quasi-statisk belastning):**
Modstand overfor stålsvig (tværlast): Bilag C1
Modstand overfor svigt ved udtrækning: NPD
Modstand overfor svigt af betonkant: NPD
- V_{Rk,s}=NPD; k₇=NPD

- Karakteristisk modstand for alle belastningsrestninger og fejltilstande til forenklet design:**
Karakteristisk modstand: Bilag C1

- Holdbarhed:**
Holdbarhed: Bilag A1

- Brandbeskyttelse (BWR 2)**
Brandegenskaber:Klasse (A1)
Brandbeskyttelse:
Brandbeskyttelse overfor stålsvig (spændingslast): Bilag C1
Brandbeskyttelse overfor svigt ved udtrækning (spændingslast): Bilag C1
Brandbeskyttelse overfor stålsvig (tværlast): Bilag C1

8. Relevant teknisk dokumentation og/eller specifik teknisk dokumentation:
-

Ydeevnen for den vare, der er anført ovenfor, er i overensstemmelse med den deklarerede ydeevne. Denne ydeevnedeklaration er udarbejdet i overensstemmelse med forordning (EU) nr. 305/2011 på eneansvar af den fabrikant, der er anført ovenfor.

Underskrevet for fabrikanten og på dennes vegne af:


Dr. Ronald Mihala, Chef for udvikling og produktionsledelse
Tumlingen, 2025-05-19


Dieter Pfaff, Leder af International Produktionsforbund og Kvalitetsstyring

Denne DoP er tilgængelig i forskellige sprogversioner. I tilfælde af fortolkningsmæssig uoverensstemmelse, henvises der til den engelske version, som altid er gældende.

Appendikset indeholder frivillige og udvidede informationer på engelsk. Disse overgår de lokale (sprogneutrale) retslige krav.

Translation guidance Essential Characteristics and Performance Parameters for Annexes

Oversættelsesvejledning Væsentlige kendetegn og præstationsparametre til anneks

Safety in case of fire (BWR 2)		
Brandbeskyttelse (BWR 2)		
1	Reaction to fire: Brandegenskaber:	Class Klasse (A1)
Resistance to fire: Brandbeskyttelse:		
2	Fire resistance to steel failure (tension load): Brandbeskyttelse overfor stålsvigt (spændingslast):	$N_{RK,s,fi}$ [kN]
3	Fire resistance to pull-out failure (tension load): Brandbeskyttelse overfor svigt ved udtrækning (spændingslast):	$N_{RK,p,fi}$ [kN]
4	Fire resistance to steel failure (shear load): Brandbeskyttelse overfor stålsvigt (tværlast):	$V_{RK,s,fi}$ [kN], $M^0_{RK,s,fi}$ [Nm]
Safety and accessibility in use (BWR 4)		
Sikkerhed under anvendelse (BWR 4)		
Characteristic resistance to tension load (static and quasi-static loading): Karakteristisk modstand for træklast (statisk og quasi-statisk belastning):		
6	Resistance to steel failure: Modstand overfor stålsvig:	$N_{RK,s}$ [kN], E_s [N/mm ²]
7	Resistance to pull- out failure: Modstand overfor svigt ved udtrækning:	$N_{RK,p}$ [kN], ψ_c , $T_{RK,p}$ [N/mm ²]
8	Resistance to concrete cone failure: Modstand overfor svigt af beton-kegle:	$k_{cr,N}$, $k_{ucr,N}$ [-], h_{ef} , $c_{cr,N}$ [mm]
9	Robustness: Robusthed:	γ_{inst} [-]
10	Minimum edge distance and spacing: Min. kant og indbyrdes afstand:	c_{min} , s_{min} , h_{min} [mm]
11	Edge distance to prevent splitting under load: Kantafstand til forhindring af flækning under belastning:	$N^0_{RK,sp}$ [kN], $c_{cr,sp}$ [mm]
Characteristic resistance to shear load (static and quasi-static loading): Karakteristisk modstand for tværlast (statisk og quasi-statisk belastning):		
12	Resistance to steel failure (shear load): Modstand overfor stålsvigt (tværlast):	$V_{RK,s}$ [kN], $M^0_{RK,s}$ [Nm], k_7 [-]
13	Resistance to pry-out failure: Modstand overfor svigt ved udtrækning:	k_8 [-]
14	Resistance to concrete edge failure: Modstand overfor svigt af betonkant:	d_{nom} , l_f [mm]
Characteristic resistance for all load directions and modes of failure for simplified design: Karakteristisk modstand for alle belastningsrestninger og fejltilstande til forenklet design:		
15	Characteristic resistance: Karakteristisk modstand:	F^0_{RK} [kN], s_{cr} , c_{cr} [mm]
Durability: Holdbarhed:		
16	Durability: Holdbarhed:	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

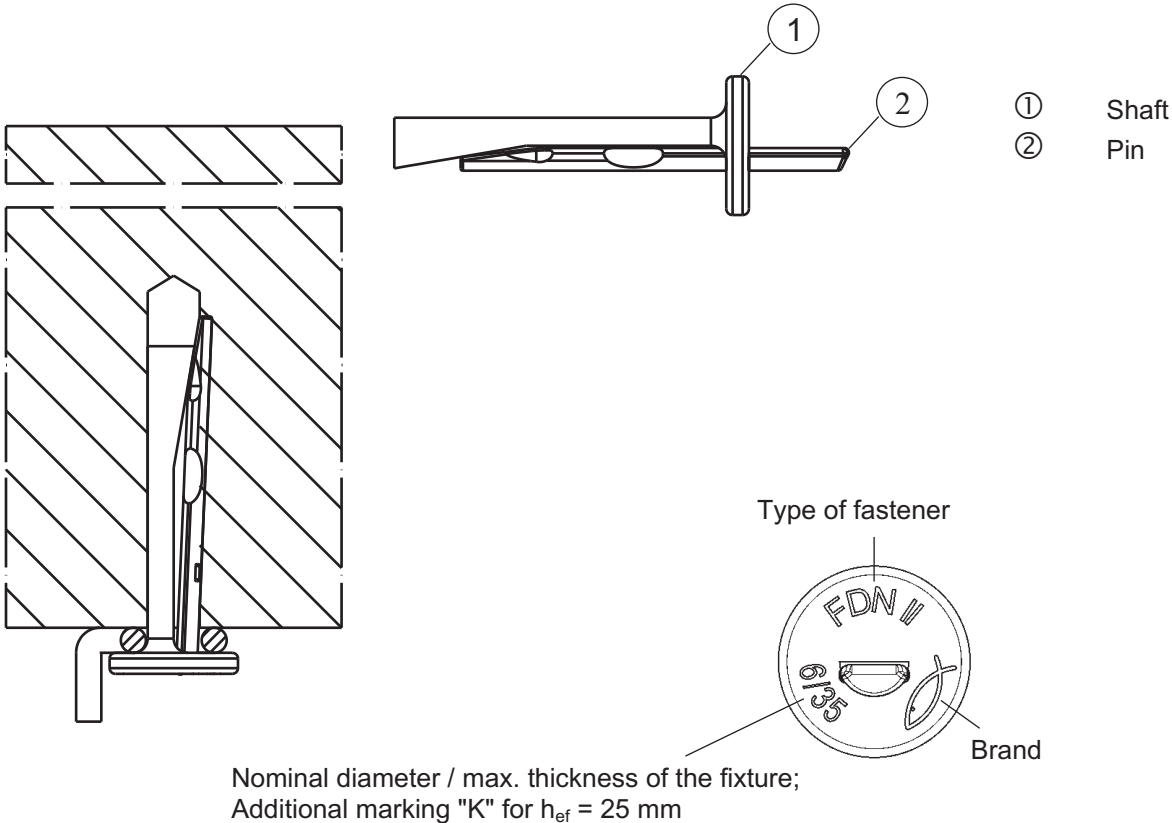
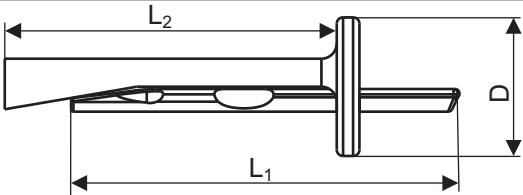


Tabelle A1.1: Materials

Part	Description	Material
1	Shaft	Steel, galvanised $\geq 5\mu\text{m}$ according to EN ISO 4042:2022
2	Pin	Steel, galvanised $\geq 5\mu\text{m}$ 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	36	43	66	73
	shaft L_2 [mm]	30,5	37,5	60,5	67,5
Diameter of the head $D \geq$		13			



(Figures not to scale)

fischer Ceiling Anchor FDN II

Product description

Product installation conditions, product marking and product dimensions

Annex A 1

Appendix 2 / 6

Specifications of intended use

Anchorage 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 or oblique tension load it is not on the direction of the load application.

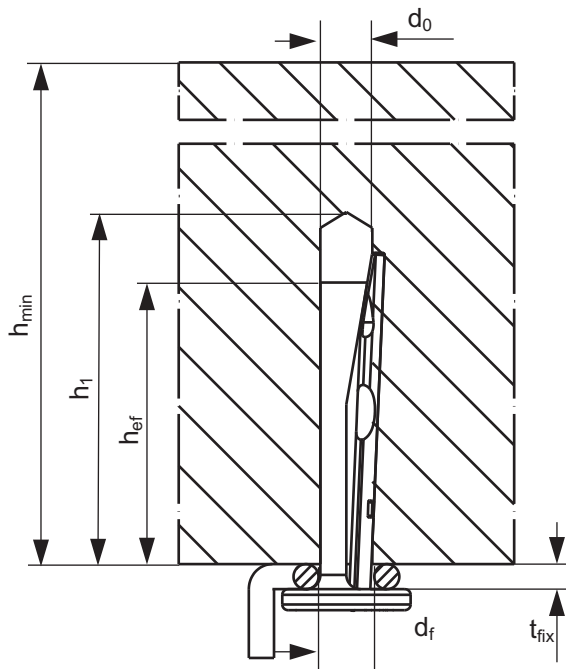
fischer Ceiling Anchor FDN II

Intended use
Specifications

Annex B 1
Appendix 3 / 6

Table B2.1: Installation parameters

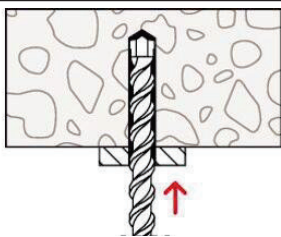
Size			FDN II					
			6/5 K	6/5	6/35 K	6/35		
Thickness of the fixture	t_{fix}	$\leq$	5		35			
Nominal drill hole diameter	d_0		6					
Diameter of clearance hole in the fixture	d_f	$\leq$	7					
Maximum drill bit diameter	$d_{cut,max}$	[mm]	6,40					
Effective embedment depth	h_{ef}		25	32	25	32		
Depth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



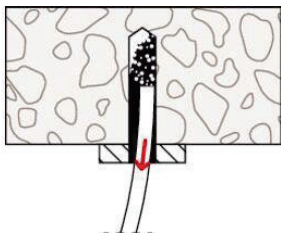
(Figure not to scale)

fischer Ceiling Anchor FDN II	Annex B 2 Appendix 4 / 6
Intended use Installation parameters	

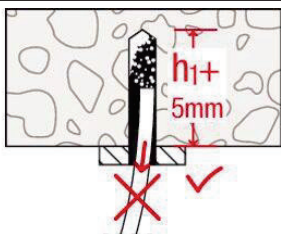
Installation instructions



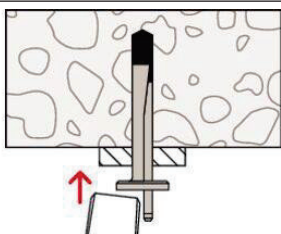
1. Drill the hole: hammer or hollow drilling only.



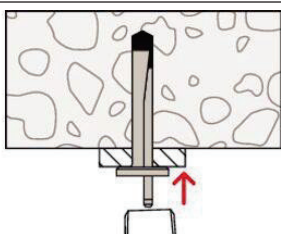
2. Clean the drill hole (only relates to hammer drilling).



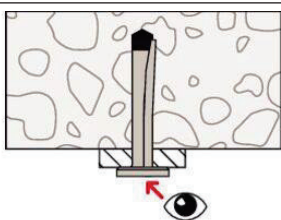
3. Cleaning of the drill hole not necessary, if the drill hole is 5 mm deeper (only relates to hammer drilling).



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 flush 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

Intended use

Installation instructions

Annex B 3

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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		$\gamma_M^{2)}$	[-]	1,5	
Shear load with lever arm					
Characteristic bending resistance		$M^0_{Rk,s}$	[Nm]	4,4	
Partial safety factor for steel failure		$\gamma_{Ms}^{1)}$	[-]	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

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