

IZJAVA O LASTNOSTIH

DoP 0374

Udarno fischer Ceiling Anchor FDN II (Mehansko sidro za uporabo v betonu)

SL

- | | |
|---|--|
| 1. <u>Enotna identifikacijska oznaka tipa proizvoda:</u> | DoP 0374 |
| 2. <u>Predvidena uporaba:</u> | Naknadno nameščen pritrdilni element za uporabo v betonu za nestrukturne sisteme, glej dodatek, zlasti priloge B1 - B3. |
| 3. <u>Proizvajalec:</u> | fischerwerke GmbH & Co. KG, Klaus-Fischer-Str. 1, 72178 Waldachtal, Nemčija |
| 4. <u>Pooblaščen zastopnik:</u> | – |
| 5. <u>Sistemi ocenjevanja in preverjanja nespremenljivosti lastnosti:</u> | 2+ |
| 6. <u>Evropski ocenjevalni dokument:</u> | EAD 330747-00-0601, Edition 06/2018 |
| Evropska tehnična ocena: | ETA-17/0736; 2025-04-10 |
| Organ za tehnično ocenjevanje: | DIBt- Deutsches Institut für Bautechnik |
| Priglašeni organi: | 2873 TU Darmstadt |
| 7. <u>Navedene lastnosti:</u> | |
| <u>Varnost pri uporabi (BWR 4)</u> | |
| Karakteristična odpornost na napetostno obremenitev (statična in kvazistatična obremenitev): | |
| Odpornost pri odpovedi jekla: NPD | $E_s = 210\,000\text{ MPa}$ |
| Odpornost na izvlek: NPD | |
| Odpornost na odpoved v betonski coni: NPD | |
| Robusnost: Priloge C1 | |
| Najmanjša razdalja do roba betona in razmik: Prilogah B2, C1 | |
| Razdalja od roba betona za preprečevanje loma pod obremenitvijo: NPD | |
| Karakteristična odpornost proti strižni obremenitvi (statična in kvazistatična obremenitev): | |
| Odpornost na odpoved jekla (strižna obremenitev): Priloge C1 | $V_{Rk,s} = \text{NPD}; k_7 = \text{NPD}$ |
| Odpornost na neuspešno odstranitev: NPD | |
| Odpornost na odpoved od roba betona: NPD | |
| Karakteristična odpornost za vse smeri obremenitve in načine odpovedi na poenostavljeno zasnovi: | |
| Karakteristična odpornost: Priloge C1 | |
| Trajnost: | |
| Trajnost: Priloge A1 | |
| <u>Varnost v primeru požara (BWR 2)</u> | |
| Odzivnost na ogenj: Razred (A1) | |
| Odpornost proti ognju: | |
| Požarna odpornost pri odpovedi jekla (napetostna obremenitev): Priloge C1 | |
| Požarna odpornost pri izvleku (napetostna obremenitev): Priloge C1 | |
| Požarna odpornost pri odpovedi jekla (strižna obremenitev): Priloge C1 | |
| 8. <u>Ustrezna tehnična dokumentacija in/ali specifična tehnična dokumentacija:</u> | – |

Lastnosti proizvoda, navedenega zgoraj, so v skladu z navedenimi lastnostmi. Za izdajo te izjave o lastnostih je v skladu z Uredbo (EU) št. 305/2011 odgovoren izključno proizvajalec, naveden zgoraj.

Podpisal za in v imenu proizvajalca:



Dr. Ronald Mihala, Vodja razvoja in vodenja proizvodnje
Tumlingen, 2025-05-19



Dieter Pfaff, Vodja Mednarodne proizvodne federacije in upravljanja kakovosti

Ta izjava o lastnostih je bila pripravljena v različnih jezikih. V primeru nerazumevanja, se vedno upošteva angleška različica.

Priloga vsebuje informacije v angleškem jeziku, ki presegajo zakonske zahteve.

Translation guidance Essential Characteristics and Performance Parameters for Annexes

Navodila za prevajanje. Bistvene značilnosti in parametri za pravilno delovanje priloge

Safety in case of fire (BWR 2)		
Varnost v primeru požara (BWR 2)		
1	Reaction to fire: Odzivnost na ogenj:	Class Razred (A1)
Resistance to fire: Odpornost proti ognju:		
2	Fire resistance to steel failure (tension load): Požarna odpornost pri odpovedi jekla (napetostna obremenitev):	$N_{RK,s,fi}$ [kN]
3	Fire resistance to pull-out failure (tension load): Požarna odpornost pri izvleku (napetostna obremenitev):	$N_{RK,p,fi}$ [kN]
4	Fire resistance to steel failure (shear load): Požarna odpornost pri odpovedi jekla (strižna obremenitev):	$V_{RK,s,fi}$ [kN], $M^0_{RK,s,fi}$ [Nm]
Safety and accessibility in use (BWR 4)		
Varnost pri uporabi (BWR 4)		
Characteristic resistance to tension load (static and quasi-static loading): Karakteristična odpornost na napetostno obremenitev (statična in kvazistatična obremenitev):		
6	Resistance to steel failure: Odpornost pri odpovedi jekla:	$N_{RK,s}$ [kN], E_s [N/mm ²]
7	Resistance to pull- out failure: Odpornost na izvlek:	$N_{RK,p}$ [kN], ψ_c , $T_{RK,p}$ [N/mm ²]
8	Resistance to concrete cone failure: Odpornost na odpoved v betonski coni:	$k_{cr,N}$, $k_{ucr,N}$ [-], h_{ef} , $c_{cr,N}$ [mm]
9	Robustness: Robusnost:	γ_{inst} [-]
10	Minimum edge distance and spacing: Najmanjša razdalja do roba betona in razmik:	c_{min} , s_{min} , h_{min} [mm]
11	Edge distance to prevent splitting under load: Razdalja od roba betona za preprečevanje loma pod obremenitvijo:	$N^0_{RK,sp}$ [kN], $c_{cr,sp}$ [mm]
Characteristic resistance to shear load (static and quasi-static loading): Karakteristična odpornost proti strižni obremenitvi (statična in kvazistatična obremenitev):		
12	Resistance to steel failure (shear load): Odpornost na odpoved jekla (strižna obremenitev):	$V_{RK,s}$ [kN], $M^0_{RK,s}$ [Nm], k_7 [-]
13	Resistance to pry-out failure: Odpornost na neuspešno odstranitev:	k_8 [-]
14	Resistance to concrete edge failure: Odpornost na odpoved od roba betona:	d_{nom} , l_f [mm]
Characteristic resistance for all load directions and modes of failure for simplified design: Karakteristična odpornost za vse smeri obremenitve in načine odpovedi na poenostavljeno zasnovu:		
15	Characteristic resistance: Karakteristična odpornost:	F^0_{RK} [kN], s_{cr} , c_{cr} [mm]
Durability: Trajnost:		
16	Durability: Trajnost:	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

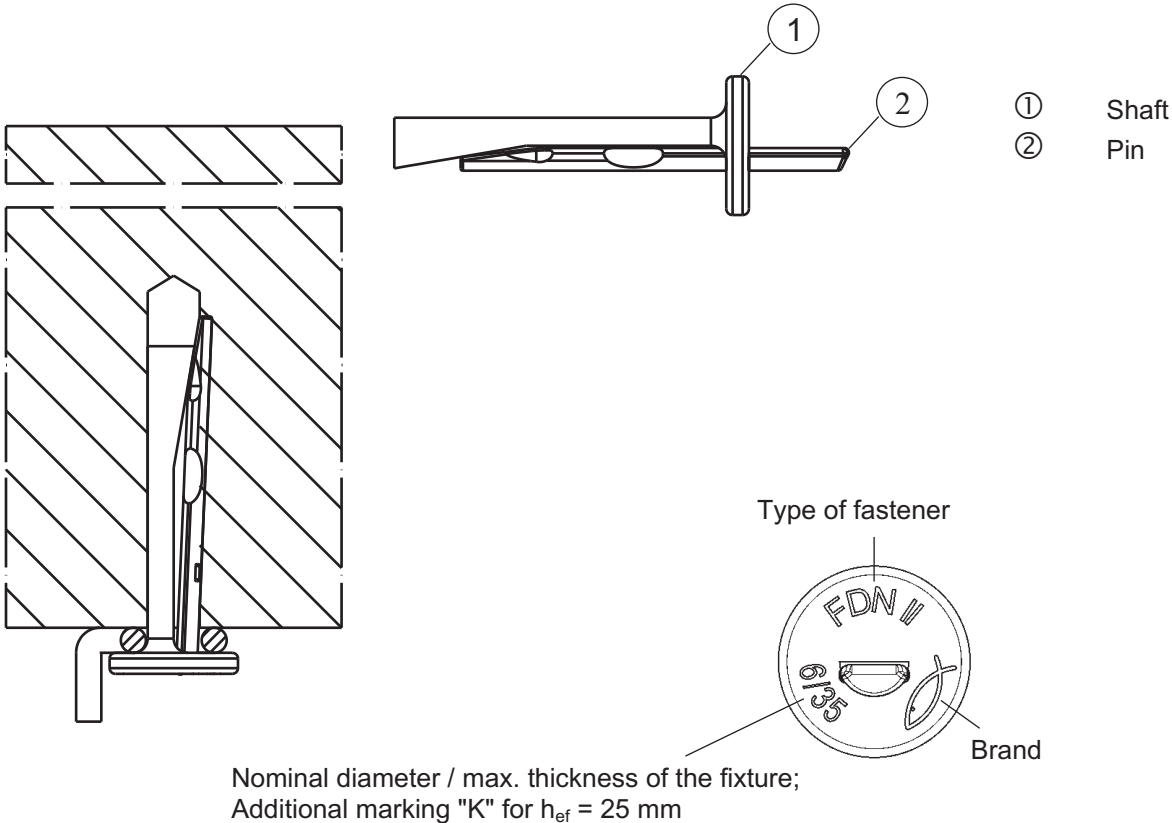
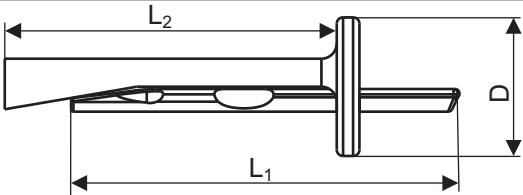


Tabelle A1.1: Materials

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.

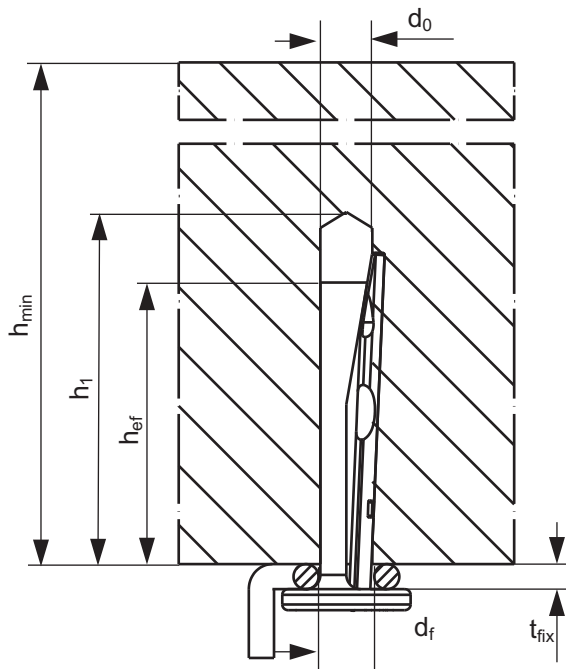
fischer Ceiling Anchor FDN II

Intended use
Specifications

Annex B 1
Appendix 3 / 6

Table B2.1: Installation parameters

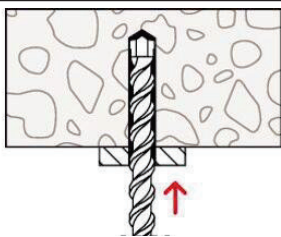
Size			FDN II					
			6/5 K	6/5	6/35 K	6/35		
Thickness of the fixture	t_{fix}	$\leq$	5		35			
Nominal drill hole diameter	d_0		6					
Diameter of clearance hole in the fixture	d_f	$\leq$	7					
Maximum drill bit diameter	$d_{cut,max}$	[mm]	6,40					
Effective embedment depth	h_{ef}		25	32	25	32		
Depth 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					



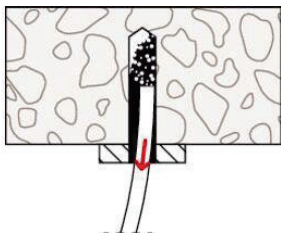
(Figure not to scale)

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

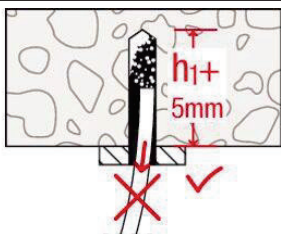
Installation instructions



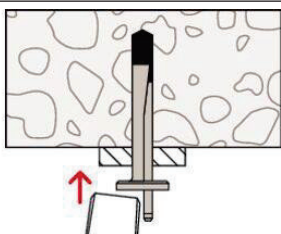
1. Drill the hole: hammer or hollow drilling only.



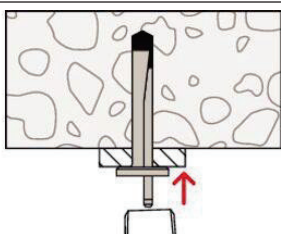
2. Clean the drill hole (only relates to hammer drilling).



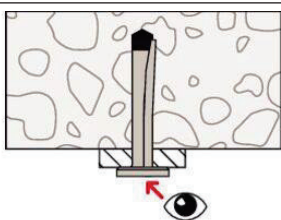
3. Cleaning of the drill hole not necessary, if the drill hole is 5 mm deeper (only relates to hammer drilling).



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		$M_{Rk,s}^0$	[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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