

DECLARAÇÃO DE DESEMPENHO

DoP 0374
para fischer Ceiling Anchor FDN II (ancoragem mecânica para uso em betão) PT

1. Código de identificação único do produto-tipo:

DoP 0374
2. Utilização(ões) prevista(s):

Fixação pós-instalada para uso em betão para sistemas não-estruturais redundantes, ver anexos, especialmente anexos B1 - B3.
3. Fabricante:

fischerwerke GmbH & Co. KG, Klaus-Fischer-Str. 1, 72178 Waldachtal, Alemanha
4. Representante autorizado:

-
5. Sistema(s) de avaliação e verificação da regularidade do desempenho (AVCP):

2+
6. Documento de Avaliação Europeu:

EAD 330747-00-0601, Edition 06/2018

Avaliação Técnica Europeia:

ETA-17/0736; 2025-04-10

Organismo de Avaliação Técnica:

DIBt- Deutsches Institut für Bautechnik

Organismo(s) notificado(s):

2873 TU Darmstadt

7. Desempenho(s) declarado(s):

Segurança em uso (BWR 4)

Características de resistência à tração (para acção estática e quase-estática):

Resistência à rotura do aço: NPD

Resistência à rotura por arranque: NPD

Resistência à rotura por cone de betão: NPD

Robustez: Anexo C1

Distância mínima ao bordo e espaçamento: Anexos B2, C1

Distância ao bordo para prevenir rotura por fendilhação: NPD

E_s= 210 000 MPa

- Características de resistência ao corte (para acção estática e quase-estática):

Resistência à rotura do aço (corte): Anexo C1

Resistência do betão ao destacamento: NPD

Resistência do bordo do betão: NPD

V_{Rk,s}=NPD; k₇=NPD

- Resistência característica para todas as direcções de carga e tipos de rotura para dimensionamento simplificado:

Resistência característica: Anexo C1

- Durabilidade:

Durabilidade: Anexo A1

- Segurança em caso de incêndio (BWR 2)

Reação ao fogo:Classe (A1)

- Resistência ao fogo:

Resistência em caso de incêndio, rotura do aço (tração): Anexo C1

Resistência em caso de incêndio, rotura por arranque (tração): Anexo C1

Resistência em caso de incêndio, rotura do aço (corte): Anexo C1

8. Documentação Técnica Adequada e/ou Documentação Técnica Específica:

-

O desempenho do produto identificado acima está em conformidade com o conjunto de desempenhos declarados. A presente declaração de desempenho é emitida, em conformidade com o Regulamento (UE) n.o 305/2011, sob a exclusiva responsabilidade do fabricante identificado acima.

Assinado por e em nome do fabricante por:



Dr. Ronald Mihala, Diretor de Desenvolvimento e Gestão da Produção
Tumlingen, 2025-05-19



Dieter Pfaff, Chefe da Federação Internacional de Produção e Gestão da Qualidade

Este DoP foi preparado em diferentes línguas. Em caso de litígio sobre a interpretação, a versão em inglês prevalecerá sempre.

O Anexo inclui informações voluntárias e complementares em inglês que excedem os requisitos legais (linguisticamente especificados).

Translation guidance Essential Characteristics and Performance Parameters for Annexes

Guia de tradução das Características Essenciais e Parâmetros de Desempenho para os Anexos

Safety in case of fire (BWR 2)		
Segurança em caso de incêndio (BWR 2)		
1	Reaction to fire: Reação ao fogo:	Class Classe (A1)
Resistance to fire: Resistência ao fogo:		
2	Fire resistance to steel failure (tension load): Resistência em caso de incêndio, rotura do aço (tração):	$N_{Rk,s,fi}$ [kN]
3	Fire resistance to pull-out failure (tension load): Resistência em caso de incêndio, rotura por arranque (tração):	$N_{Rk,p,fi}$ [kN]
4	Fire resistance to steel failure (shear load): Resistência em caso de incêndio, rotura do aço (corte):	$V_{Rk,s,fi}$ [kN], $M^0_{Rk,s,fi}$ [Nm]
Safety and accessibility in use (BWR 4)		
Segurança em uso (BWR 4)		
Characteristic resistance to tension load (static and quasi-static loading): Características de resistência à tração (para acção estática e quase-estática):		
6	Resistance to steel failure: Resistência à rotura do aço:	$N_{Rk,s}$ [kN], E_s [N/mm ²]
7	Resistance to pull- out failure: Resistência à rotura por arranque:	$N_{Rk,p}$ [kN], ψ_c , $T_{Rk,p}$ [N/mm ²]
8	Resistance to concrete cone failure: Resistência à rotura por cone de betão:	$k_{cr,N}$, $k_{ucr,N}$ [-], h_{ef} , $c_{cr,N}$ [mm]
9	Robustness: Robustez:	γ_{inst} [-]
10	Minimum edge distance and spacing: Distância mínima ao bordo e espaçamento:	c_{min} , s_{min} , h_{min} [mm]
11	Edge distance to prevent splitting under load: Distância ao bordo para prevenir rotura por fendilhação:	$N^0_{Rk,sp}$ [kN], $c_{cr,sp}$ [mm]
Characteristic resistance to shear load (static and quasi-static loading): Características de resistência ao corte (para acção estática e quase-estática):		
12	Resistance to steel failure (shear load): Resistência à rotura do aço (corte):	$V_{Rk,s}$ [kN], $M^0_{Rk,s}$ [Nm], k_7 [-]
13	Resistance to pry-out failure: Resistência do betão ao destacamento:	k_8 [-]
14	Resistance to concrete edge failure: Resistência do bordo do betão:	d_{nom} , l_f [mm]
Characteristic resistance for all load directions and modes of failure for simplified design: Resistência característica para todas as direções de carga e tipos de rotura para dimensionamento simplificado:		
15	Characteristic resistance: Resistência característica:	F^0_{Rk} [kN], s_{cr} , c_{cr} [mm]
Durability: Durabilidade:		
16	Durability: Durabilidade:	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

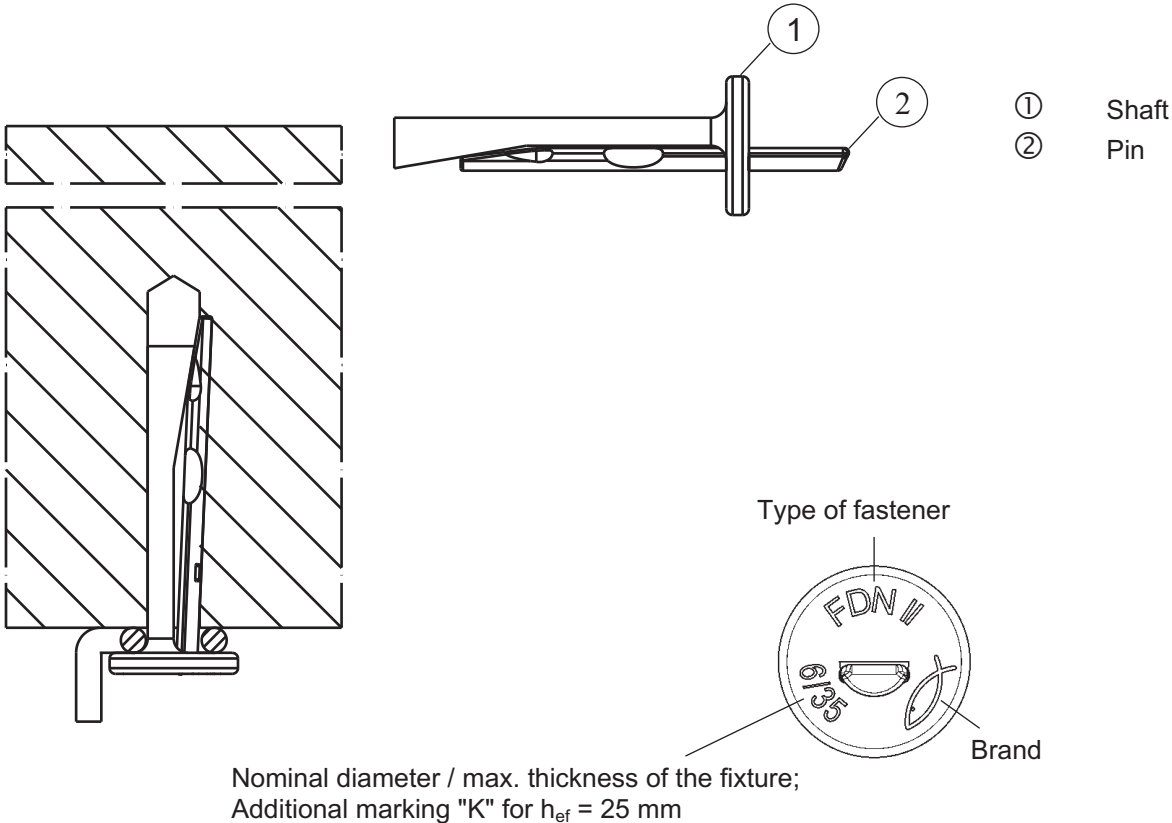
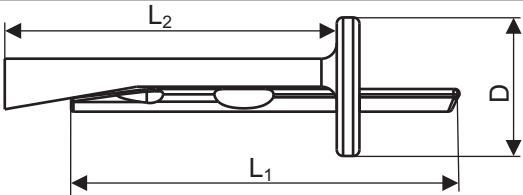


Tabelle A1.1: Materials

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

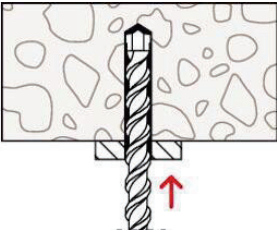
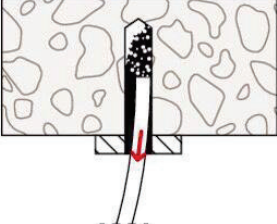
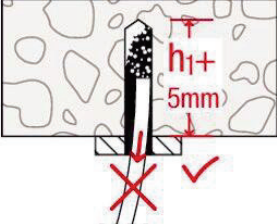
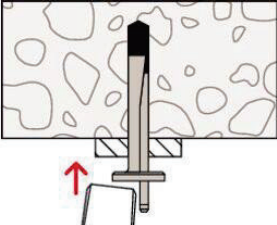
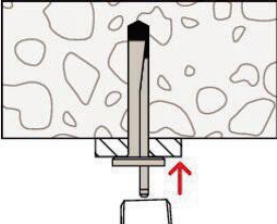
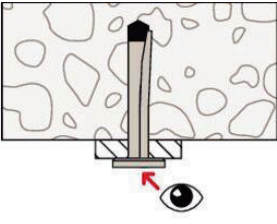
Annex B 1
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Table B2.1: Installation parameters							
Size			FDN II				
			6/5 K	6/5	6/35 K	6/35	
Thickness of the fixture	t_{fix}	$\leq$	5		35		
Nominal drill hole diameter	d_0		6				
Diameter of clearance hole in the fixture	d_f	$\leq$	7				
Maximum drill bit diameter	$d_{cut,max}$		6,40				
Effective embedment depth	h_{ef}	[mm]	25	32	25	32	
Depth of drill hole to with hole cleaning	h_1		30	37	30	37	
deepest point without hole cleaning			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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