

DECLARAÇÃO DE DESEMPENHO

DoP 0267

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

PT

1. Código de identificação único do produto-tipo: DoP 0267
2. Utilização(ões) prevista(s): Fixação pós-instalada para uso em betão para sistemas não-estruturais redundantes, ver anexos, especialmente anexos B1 - B2.
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: ETAG 001, Part 6, April 2013, utilizado como EAD
Avaliação Técnica Europeia: ETA-17/0736; 2018-01-30
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

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

Resistência à rotura do aço (corte):	Anexo C1	$V_{Rk,s}=NPD; k_7=NPD$
Resistência do betão ao destacamento:	NPD	
Resistência do bordo do betão:	NPD	

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

Resistência característica:	Anexo C1
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Durabilidade:

Durabilidade:	Anexo B1
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Segurança em caso de incêndio (BWR 2)

Reação ao fogo:	Classe (A1)
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Resistência ao fogo:

Resistência em caso de incêndio, rotura do aço (tração):	NPD
Resistência em caso de incêndio, rotura por arranque (tração):	NPD
Resistência em caso de incêndio, rotura do aço (corte):	NPD
Resistência ao fogo para todas as direcções de carga e modos de falha:	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.-Ing. Oliver Geibig, Diretor Administrativo de Unidades de Negócios e Engenharia
Tumlingen, 2021-01-11



Jürgen Grün, Diretor Administrativo de Química e 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).

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.

The 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 Mechanical resistance and stability (BWR 1)

The essential characteristics regarding mechanical resistance and stability are included under the Basic Works Requirement Safety in use.

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Anchorage satisfy requirements for Class A1
Resistance to fire	See Annex C 1

3.3 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance in concrete	See Annex C 1

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with guideline for European technical approval ETAG 001, April 2013 used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011 the applicable European legal act is: [97/161/EC].

The system to be applied is: 2+

Product installation conditions, product marking and product dimensions

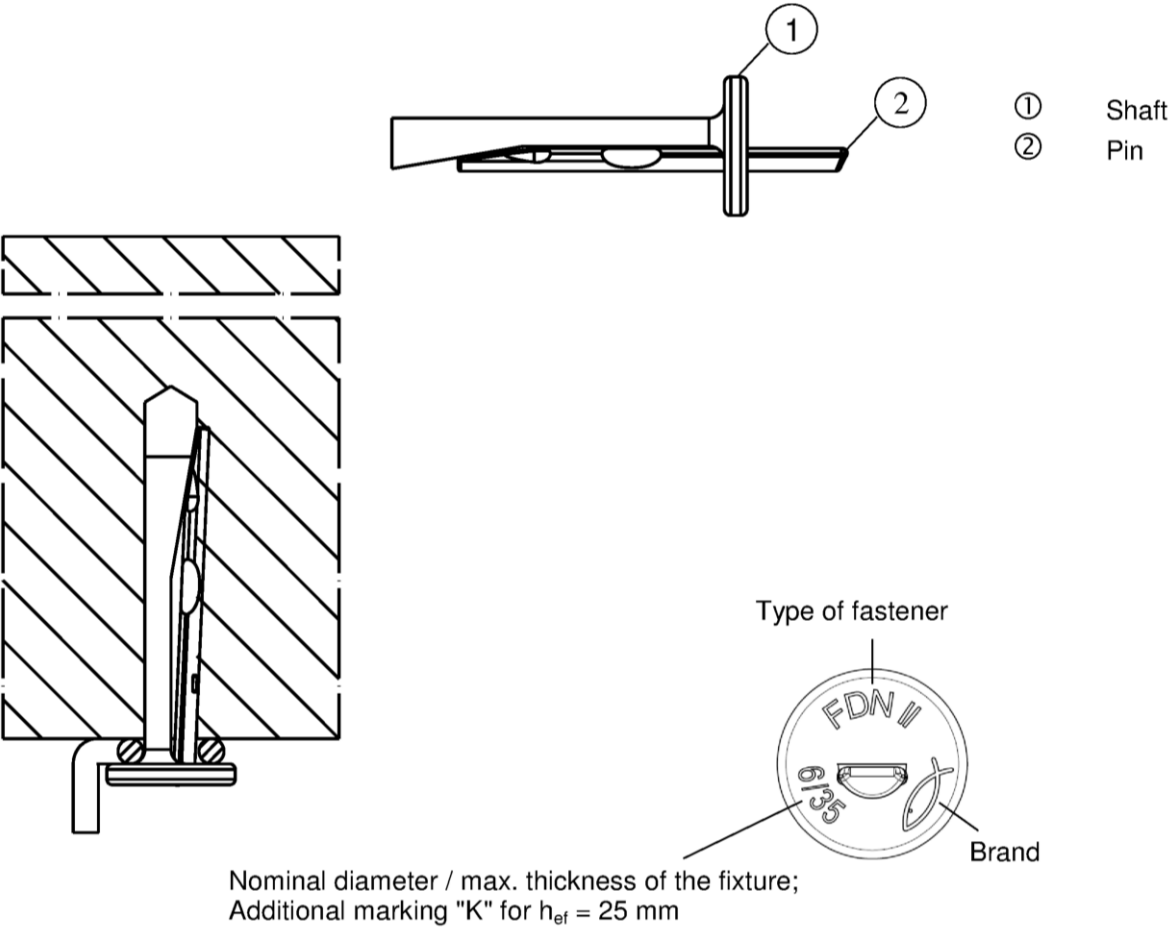
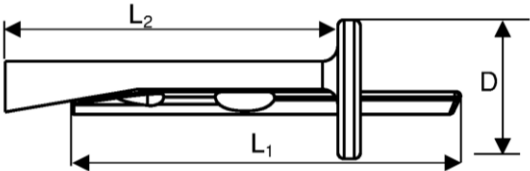


Table A1.1: Dimensions

Size	FDN II			
	6/5 K	6/5	6/35 K	6/35
Length of the pin L_1 shaft L_2 [mm]	36	43	66	73
Diameter of the head $D \geq$	13			



(Fig. not to scale)

fischer Ceiling Anchor FDN II

Product description

Product installation conditions, product marking and product dimensions

Annex A 1

Specifications of intended use

Anchorage subject to:

Size	FDN II 6
Static and quasi-static loads	✓
Use for multiple fixture of non-structural applications according to ETAG 001, Part 6	
Fire exposure	

Base materials:

- Reinforced and unreinforced normal weight concrete according to EN 206-1:2000
- Strength classes C12/15 to C50/60 according to EN 206-1:2000
- Cracked and non-cracked concrete

Use conditions (Environmental conditions):

- Anchorage 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 or quasi-static actions have to be designed for Design Method C in accordance with:
 - ETAG 001, Annex C, Design Method C, Edition August 2010
 - CEN/TS 1992-4:2009
- Anchorages under fire exposure have to be designed in accordance with
 - EOTA Technical Report TR 020, Edition May 2004
 - CEN/TS 1992-4:2009, Annex D (it must be ensured that local spalling of the concrete cover does not occur)

fischer Ceiling Anchor FDN II

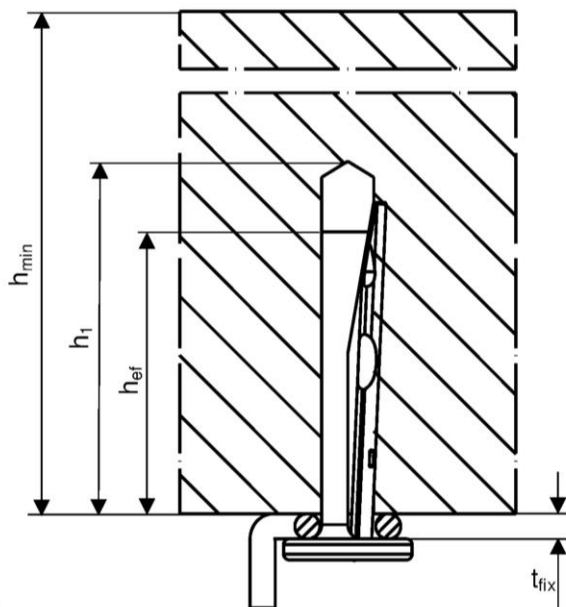
Intended use
Specifications

Annex B 1

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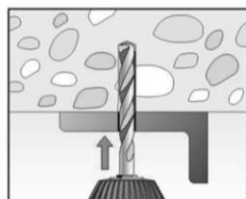
Table B2.1: Installation parameters

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 bit diameter	$d_{cut,max}$		6,40			
Effective embedment depth	h_{ef}	[mm]	25	32	25	32
Depth of drill hole	with hole cleaning		30	37	30	37
to deepest point	without hole cleaning		35	42	35	42
Minimum thickness of concrete member	h_{min}		80			

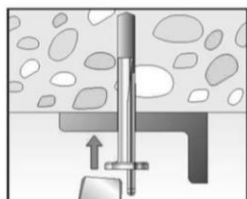


Installation instructions

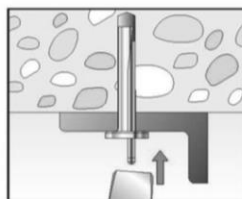
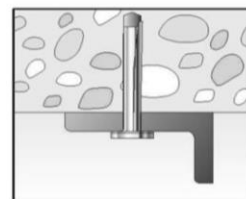
- Hammer or hollow drilling only
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site
- Positioning of the drill holes without damaging the reinforcement
- In case of aborted hole: New drilling at 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



1: Drill the hole



2: Set the fastener

3: Set the pin, until
flush to the surface

4: Installed fastener

(Fig. not to scale)

fischer Ceiling Anchor FDN II

Intended use

Installation parameters and installation instructions

Annex B 2

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Table C1.1: Characteristic resistance					
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 non-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
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	
Steel failure for tension and shear load			
R30	$F_{Rk,s,fi30}$	[kN]	1,00
R60	$F_{Rk,s,fi60}$		0,50
R90	$F_{Rk,s,fi90}$		0,34
R120	$F_{Rk,s,fi120}$		0,26
R180	$F_{Rk,s,fi180}$		0,17
Spacing and edge distance			
R30 – R120	$s_{cr,fi}$	[mm]	200
	$c_{cr,fi}$		150

For fire exposure from more than one side $c_{min} \geq 300$ mm

fischer Ceiling Anchor FDN II	Annex C 1 Appendix 5 / 5
Performances	
Characteristic resistance and characteristic resistance under fire exposure	