

SUORITUSTASOILMOITUS

DoP 0267

fischer Ceiling Anchor FDN II (mekaaninen kiinnitin betoniin)

FI

- Tuotetyypin yksilöllinen tunniste: DoP 0267
- Aiottu käyttötarkoitus (aiotut käyttötarkoitukset): Jälkiasennettu kiinnitin käytettäväksi betonissa tarpeettomille ei-rakenteellisille järjestelmille, katso lisäys, erityisesti liitteet B1 - B2.
- Valmistaja: fischerwerke GmbH & Co. KG, Klaus-Fischer-Str. 1, 72178 Waldachtal, Saksa
- Valtuutettu edustaja: -
- Suoritusasteen pysyvyyden arvioinnissa ja varmentamisessa käytetty järjestelmä/käytetyt järjestelmät: 2+
- Eurooppalainen arviointiasiakirja: ETAG 001, Part 6, April 2013, käytetään EAD:nä
Eurooppalainen tekninen arviointi: ETA-17/0736; 2018-01-30
Teknisestä arvioinnista vastaava laitos: DIBt- Deutsches Institut für Bautechnik
Ilmoitettu laitos/ilmoitetut laitokset: 2873 TU Darmstadt
- Ilmoitettu suoritusaste/ilmoitetut suoritusastot:
Käyttöturvallisuus (BWR 4)
Tyypillinen kestävyys kuormitukselle (staattinen ja lähes staattinen kuormitus):
Teräksen murtokuorma: NP
Ulosvetoarvon murtokuorma: NP
Betonimassan murtokuorma: NP
Kestävyys: Liite C1
Pienin reuna- ja keskinäis etäisyys: Liitteet B2, C1
Reunaetäisyys halkeamien estämiseksi kuormituksessa: NP

Tyypillinen kestävyys leikkauskuormalle (staattinen ja näennäisstaattinen kuormitus):
Teräksen murtokuorma (leikkauskuorma): Liite C1 $V_{Rk,s}=NP$; $k_7=NP$
Taivutusvoiman murtokuorma: NP
Betonireunan murtokuorma: NP

Ominaisvastus kaikille kuorman suunnille ja vikatiloille yksinkertaistettua suunnittelua varten:
Ominaisarvo: Liite C1

Kestävyys:
Kestävyys: Liite B1

Turvallisuus tulipalon sattuessa (BWR 2)
Reaktio paloon: Luokka (A1)
Tulenkestävyys:
Teräksen murtokuorma tulipalossa (vetokuorma): NP
Ulosvedon murtokuorma tulipalossa (vetokuorma): NP
Teräksen murtokuorma tulipalossa (leikkauskuorma): NP
Palonkestävyys kaikissa kuorman suunnissa ja vikatiloissa: Liite C1
- Asianmukainen tekninen asiakirja ja/tai tekninen erityisasiakirja: -

Edellä yksilöidyn tuotteen suoritusaste on ilmoitettujen suoritusasteiden joukon mukainen. Tämä suoritusasteilmoitus on asetuksen (EU) N:o 305/2011 mukaisesti annettu edellä ilmoitetun valmistajan yksinomisella vastuulla.

Valmistajan puolesta allekirjoittanut:



Dr.-Ing. Oliver Geibig, Toimitusjohtaja Liiketoimintayksikkö & Suunnittelu
Tumlingen, 2021-01-11



Jürgen Grün, Toimitusjohtaja Kemia & Laatu

Tämä suoritusasteilmoitus on laadittu useilla kielillä. Jos tulkinnasta syntyy erimielisyyttä, englanninkielinen versio on aina katsottava ensisijaiseksi.

Lisäys sisältää vapaaehtoisesti ilmoitettua ja täydentävää englanninkielistä tietoa, joka ylittää (kielestä riippumatta määritellyt) lakisääteiset vaatimukset.

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 satisfies requirements for Class A1
Resistance to fire	See Annex C 1

3.3 Safety in use (BWR 4)

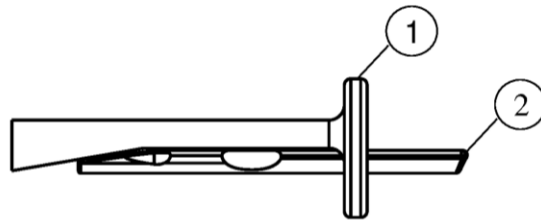
Essential characteristic	Performance
Characteristic resistance in concrete	See Annex C 1

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

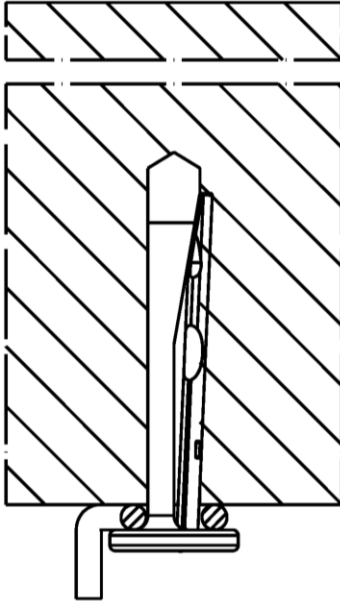
In accordance with guideline for European technical approval ETAG 001, April 2013 used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011 the applicable European legal act is: [97/161/EC].

The system to be applied is: 2+

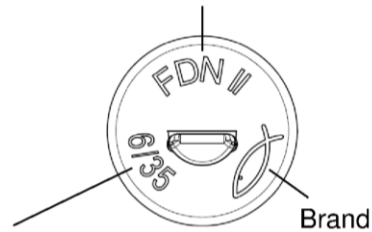
Product installation conditions, product marking and product dimensions



- ① Shaft
- ② Pin



Type of fastener

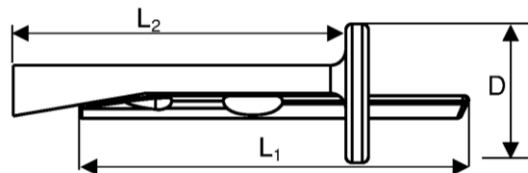


Brand

Nominal diameter / max. thickness of the fixture;
Additional marking "K" for $h_{ef} = 25$ mm

Table A1.1: Dimensions

Size	FDN II			
	6/5 K	6/5	6/35 K	6/35
Length of the $\frac{\text{pin}}{\text{shaft}}$ L_1	36	43	66	73
L_2 [mm]	30,5	37,5	60,5	67,5
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

Appendix 2 / 5

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

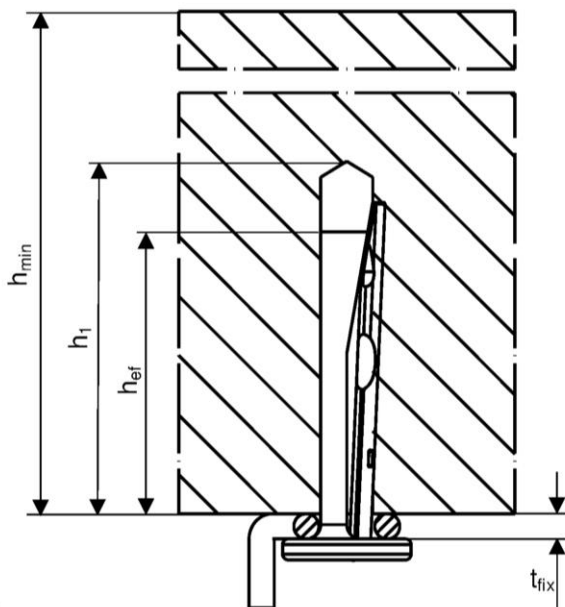
Intended use
Specifications

Annex B 1

Appendix 3 / 5

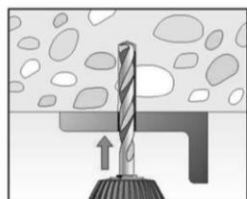
Table B2.1: Installation parameters

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}	25	32	25	32
Depth of drill hole to deepest point	with hole cleaning	30	37	30	37
	without hole cleaning	35	42	35	42
Minimum thickness of concrete member	h_{min}	80			

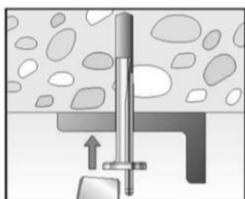


Installation instructions

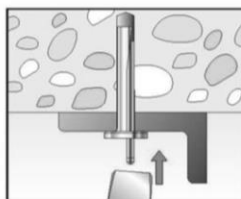
- Hammer or hollow drilling only
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site
- Positioning of the drill holes without damaging the reinforcement
- In case of aborted hole: New drilling at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



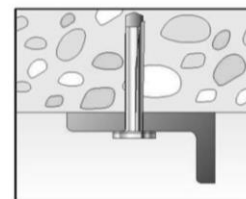
1: Drill the hole



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

Appendix 4 / 5

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	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	$F_{Rk,s,fi30}$	1,00	
R60	$F_{Rk,s,fi60}$	0,50	
R90	Characteristic resistance $F_{Rk,s,fi90}$ [kN]	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