

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-07/0144
of 6 April 2017

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

fischer Ceiling Anchor FDN

Product family
to which the construction product belongs

Deformation- controlled expansion anchor
for multiple use for non-structural
applications in concrete

Manufacturer

fischerwerke GmbH & Co. KG
Klaus-Fischer-Straße 1
72178 Waldachtal
DEUTSCHLAND

Manufacturing plant

fischerwerke

This European Technical Assessment
contains

10 pages including 3 annexes which form an integral part
of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

Guideline for European technical approval of "Metal
anchors for use in concrete", ETAG 001 Part 6: "Anchors
for multiple use for non-structural applications", January
2011,
used as European Assessment Document (EAD)
according to Article 66 Paragraph 3 of Regulation (EU)
No 305/2011.

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Specific Part

1 Technical description of the product

The fischer Ceiling Anchor FDN 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 2

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+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

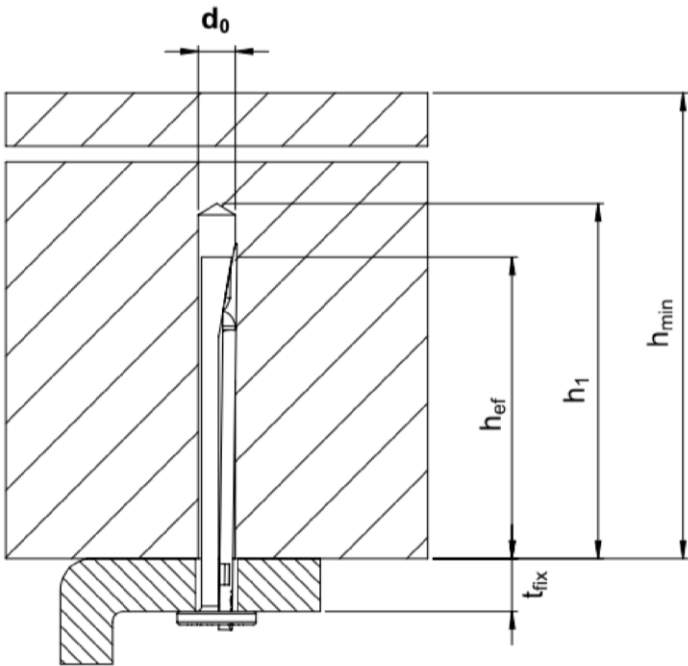
Issued in Berlin on 6 April 2017 by Deutsches Institut für Bautechnik

Uwe Bender
Head of Department

beglaubigt:
Baderschneider

Product and installation condition

Installed anchor



- h_{ef} = effective anchorage depth
- h_1 = depth of the drill hole
- h_{min} = thickness of member
- t_{fix} = Thickness of fixture
- d_0 = nominal drill bit diameter

fischer Ceiling Anchor FDN

Product description
Installation conditions

Annex A 1

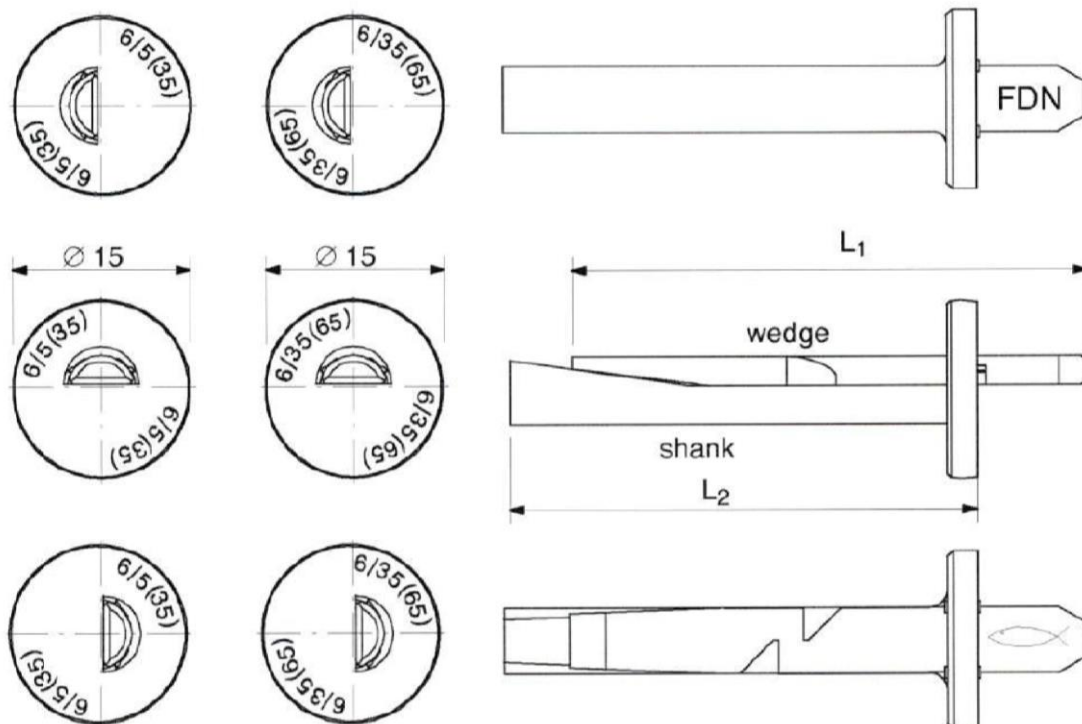


Table A 1: Materials

Material
Steel EN 10263-2:2002 galvanized according EN ISO 4042:2001

Table A 2: Dimensions

Anchor size			FDN	
			6/5	6/35
Length of the wedge	L1	[mm]	43	73
Length of the shaft	L2	[mm]	39	69,5

fischer Ceiling Anchor FDN

Product description

Material and variants

Annex A 2

Specifications of Intended use

Anchorage subject to:

- static and quasi static loads
- use only for multiple use of non-structural applications acc. ETAG 001, Part 6
- use for anchorages with requirements related to resistance of fire

Base materials:

- reinforced and unreinforced concrete according to EN 206-1:2000
- strength classes C 20/25 to C 50/60 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 are 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 are 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 are 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).

Installation:

- Hammer drilling only.
- Anchor installation carried out by appropriately qualified personal 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 away of twice the depth of aborted hole or smaller distance if the aborted hole is filled with high strength mortar and if under shear or oblique tension load it is not the direction of the load application.

fischer Ceiling Anchor FDN

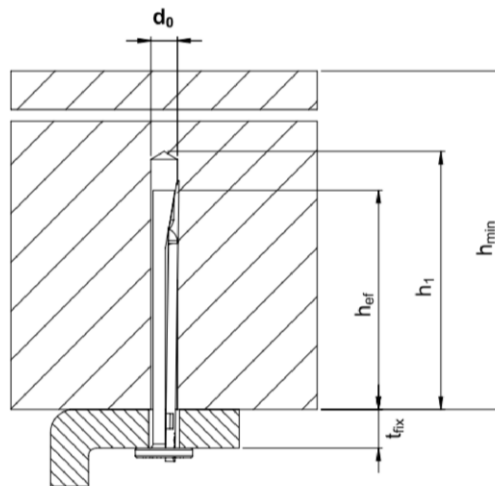
Intended use

Specifications

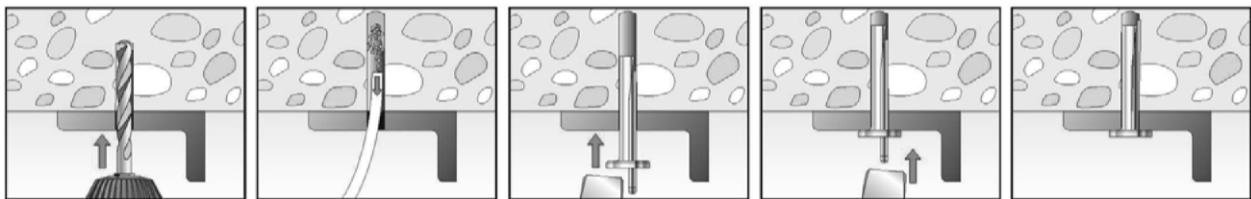
Annex B 1

Table B 1: Installation parameters

Anchorsize			FDN	
			6/5	6/35
nominal drill bit diameter	d_0	[mm]	6,0	
cutting diameter of drill bit	$d_{cut} \leq$	[mm]	6,40	
depth of drill hole	$h_1 \geq$	[mm]	40	
effective anchorage depth	$h_{ef} \geq$	[mm]	32	
Minimum thickness of member	h_{min}	[mm]	80	
Minimum edge distance	c_{min}	[mm]	150	
Minimum spacing	s_{min}	[mm]	200	
Maximal thickness of attachment	$t_{fix,max}$		5	35



Installation instructions



fischer Ceiling Anchor FDN

Intended use

Installation Parameters

Annex B 2

Table C 1: Characteristic values for design method C according ETAG 001 Annex C or for design method C according CEN TS 19927-4

Anchorsize			FDN
For all load directions and for all failures			
Characteristic resistance in cracked and non-cracked concrete C20/25 to C50/60	F_{Rk}	[kN]	5,0
Edge distance	$c_{cr,N} = c_{min}$	[mm]	150
Spacing	$s_{cr,N} = s_{min}$	[mm]	200
Partial safety factor	$\gamma_M^{1)}$	[-]	1,5
Shear load with lever arm			
Characteristic bending moment	$M^0_{Rk,s}$	[Nm]	5,4
Partial safety factor	γ_{Ms}	[-]	1,25

¹⁾ The installation safety factor $\gamma_2 = \gamma_{inst} = 1,0$ is included

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Performances

Characteristic values for design method C according to ETAG 001 or to CEN TS 1992-4

Annex C 1

Table C2: Characteristic resistance under fire exposure

Anchorsize			TDN 6	
Steel failure for tension and shear load ($F_{Rk,s,fi} = N_{Rk,s,fi} = V_{Rk,s,fi}$)				
Fire resistance class				
R30	Characteristic resistance	$F_{Rk,s,fi30}$	[kN]	0,8
R60		$F_{Rk,s,fi60}$	[kN]	0,7
R90		$F_{Rk,s,fi90}$	[kN]	0,6
R120		$F_{Rk,s,fi120}$	[kN]	0,4
R30	Characteristic resistance	$M^0_{Rks,,fi30}$	[Nm]	0,67
R60		$M^0_{Rk,s,fi60}$	[Nm]	0,55
R90		$M^0_{Rk,s,fi90}$	[Nm]	0,43
R120		$M^0_{Rks,,fi120}$	[Nm]	0,31
Edge distance				
R30 bis R120		$C_{cr, fi}$	[mm]	150
Spacing				
R30 bis R120		$S_{cr, fi}$	[mm]	200

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Performances

Characteristic resistance under fire exposure

Annex C 2