Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-16/0818 of 8 December 2016

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	FIF - CN
Product family to which the construction product belongs	Nailed-in anchor for fixing of external thermal insulation composite systems with rendering in concrete and masonry
Manufacturer	fischerwerke GmbH & Co. KG Klaus-Fischer-Straße 1 72178 Waldachtal DEUTSCHLAND
Manufacturing plant	fischerwerke
This European Technical Assessment contains	11 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 "Plastic anchors for fixing of external thermal insulation composite systems with rendering", ETAG 014, Edition February 2011, used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011.

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This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

Specific Part

1 Technical description of the product

The fischer nailed-in anchor FIF-CN consists of an anchor sleeve with an enlarged shaft made of polypropylene, an insulation plate made of glass fibre reinforced polyamide and a specific compound nail (for FIF-CN 60-180) made of glass fibre reinforced polyamide with galvanized steel or a specific nail (for FIF-CN 200-340) made of galvanised steel which is installed together with a plastic cylinder made of glass fibre reinforced polyamide.

The anchor may in addition be combined with the anchor plates DT 90, DT 110 and DT 140.

The illustration and the description of the product are 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 verification 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 25 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)

Requirements with respect to the mechanical resistance and stability of non- load bearing parts of the works are not included in this Essential requirement but are under the Essential Requirement safety in use.

3.2 Hygiene, health and the environment (BWR 3)

Regarding dangerous substances there may be requirements (e.g. transposed European legislation and national laws, regulations and administrative provisions) applicable to the products falling within the scope of this European Technical Assessment. In order to meet the provisions of the Regulation (EU) No 305/2011, these requirements need also to be complied with, when and where they apply.

3.3 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance	See Annex C 1
Edge distances and spacing	See Annex B 2
Point thermal transmittance	See Annex C 1
Plate stiffness	See Annex C 1
Displacements	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 014, February 2011 used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011 the applicable European legal act is: 97/463/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.

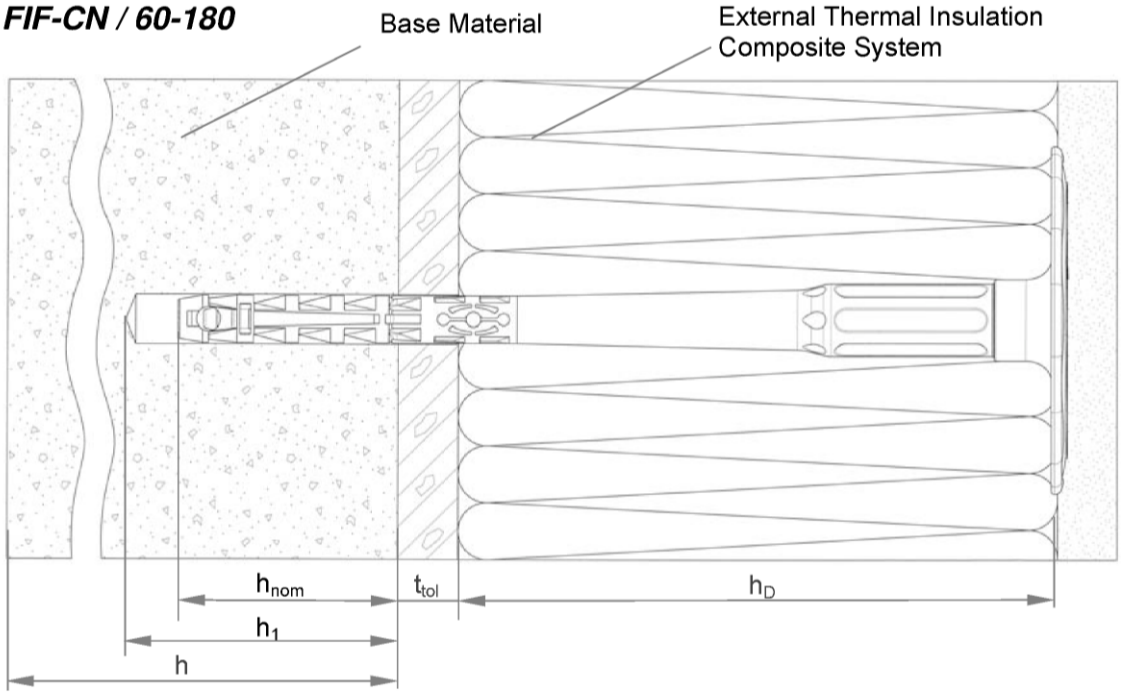
Issued in Berlin on 8 December 2016 by Deutsches Institut für Bautechnik

Andreas Kummerow
p. p. Head of Department

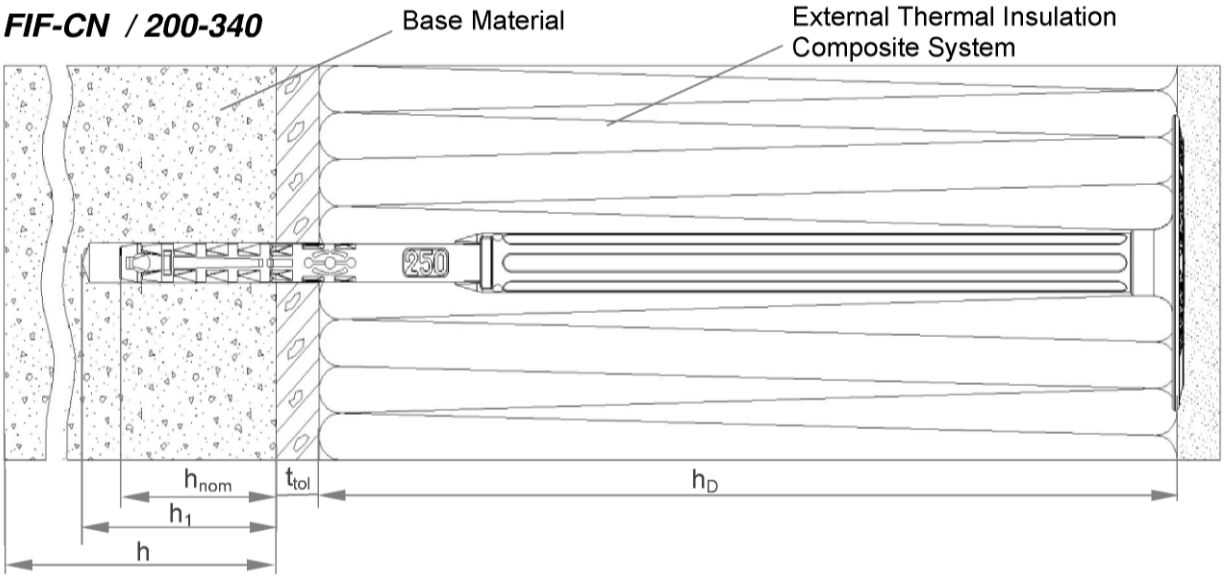
beglaubigt:
Ziegler

Deutsches Institut für Bautechnik DIBt

FIF-CN / 60-180



FIF-CN / 200-340



Legend

h_{nom}	=	Overall plastic anchor embedment depth in the base material
h_1	=	Depth of drilled hole to deepest point
h	=	Thickness of member (wall)
h_D	=	Thickness of insulation material
t_{tol}	=	Thickness of equalizing layer or non–load bearing coating

FIF - CN	Annex A 1
Product description Intended use	

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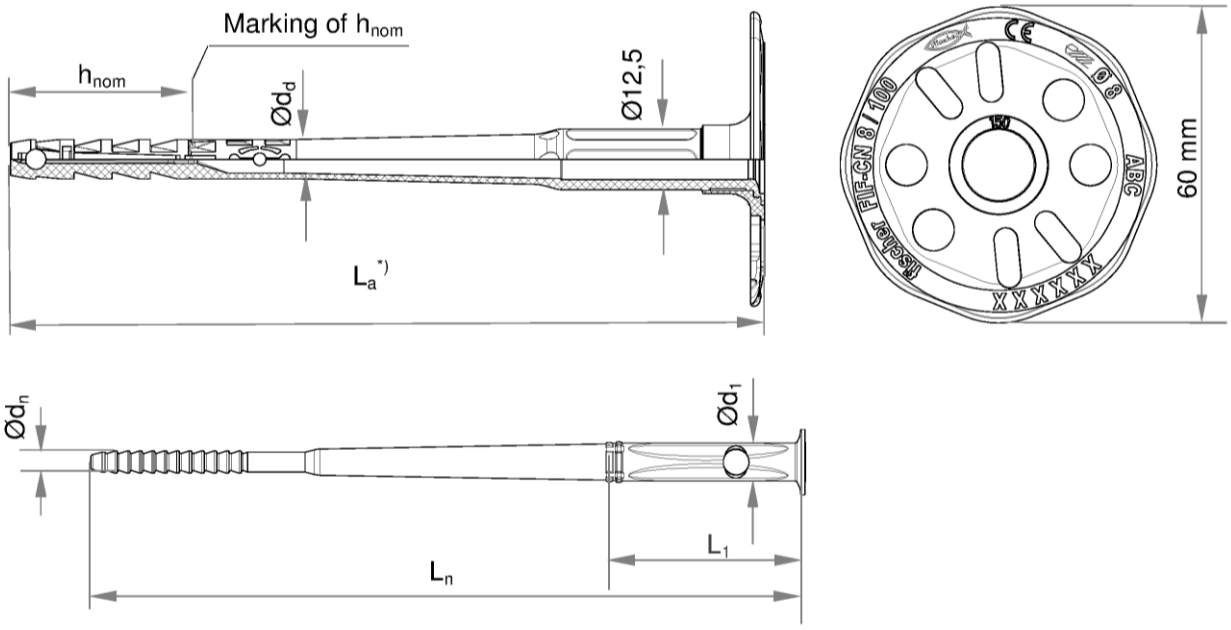
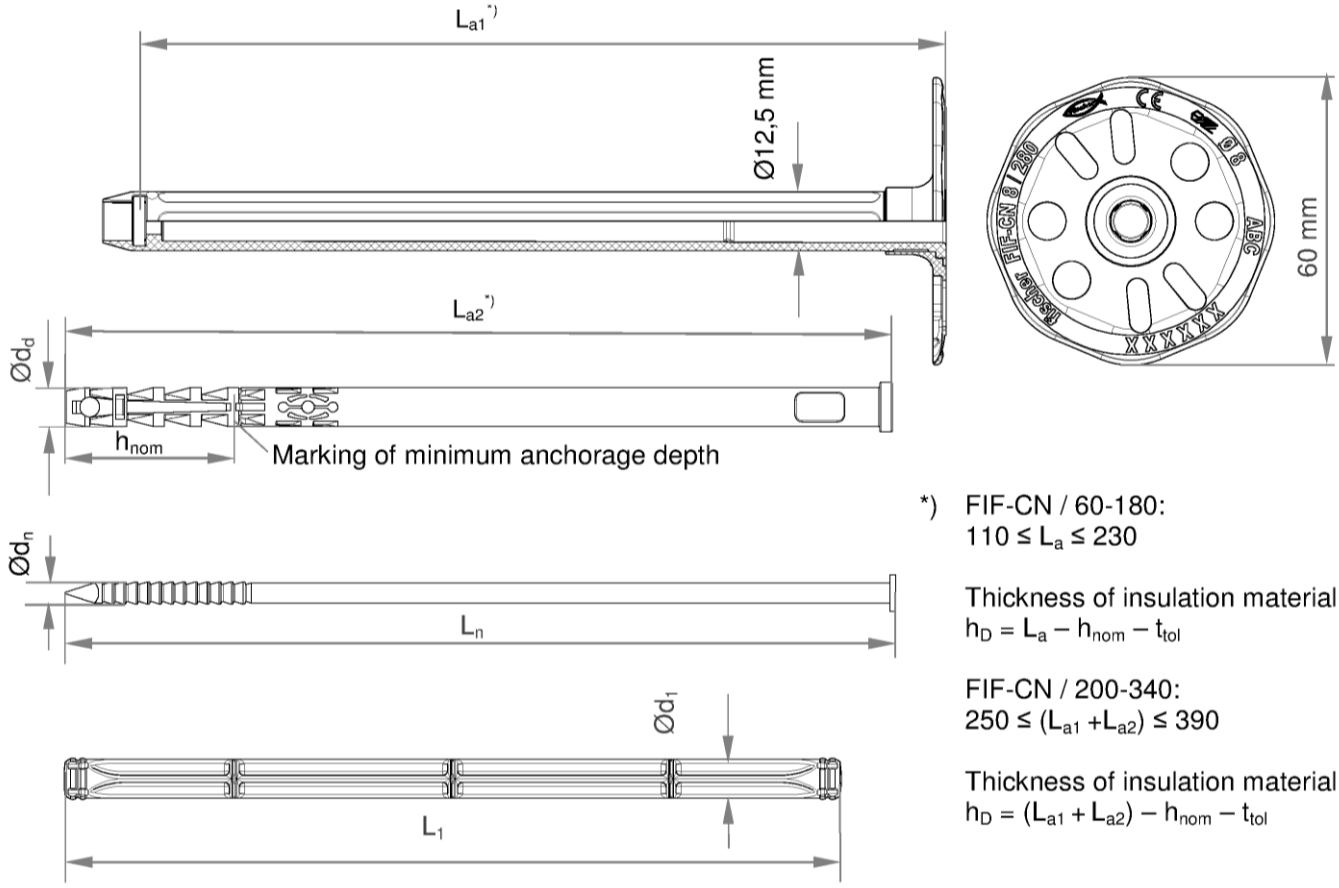
Anchor sleeve / Specific nail for FIF-CN 60-180



Shaft / Anchor sleeve / Specific nail / Plastic cylinder for FIF-CN 200-340



*) FIF-CN / 60-180:
$110 \le L_a \le 230$

Thickness of insulation material:
$h_D = L_a - h_{nom} - t_{tol}$

FIF-CN / 200-340:
$250 \le (L_{a1} + L_{a2}) \le 390$

Thickness of insulation material:
$h_D = (L_{a1} + L_{a2}) - h_{nom} - t_{tol}$

FIF - CN	Annex A 2
Product description Dimensions	

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Table A1: Marking

Anchor type	**FIF-CN**
Name and size of anchor	FIF-CN 8
Thickness of insulation material	**60, 80, 100, 120, ….., 340**
Example	**FIF-CN 8/100 (optional) CE (optional) Ø 8 ABC**

Table A2: Dimensions [mm]

Anchor type	**Anchor sleeve**		**Shaft**		**Specific nail**			**Plastic cylinder**	
	Ø d_d	**h_{nom}**	**L_a**	**$L_{a1}+L_{a2}$**	**Ø d_n**	**L_n**	**Ø d_1**	**L_1**	**Ø d_2**
FIF-CN 60-180	8	35	110-230	-	4,5	L_a - 4	8	40	-
FIF-CN 200-340	8	35	-	250-390	4,5	$(L_{a1} + L_{a2}) - L_1$ - 4	-	157	8

Table A3: Materials

Designation	**Material**
Anchor sleeve	PP colour: grey
Shaft (FIF-CN / 200-340)	PA6 GF colour: grey
Plastic cylinder (FIF-CN / 200-340)	PA6 GF nature
Specific compound nail (FIF-CN / 60-180) or specific nail (FIF-CN / 200-340)	PA6 GF with Steel gal Zn A2G or A2F acc. to EN ISO 4042:2001 Steel gal Zn A2G or A2F according to EN ISO 4042:2001
Anchor plate	PA6 GF colour: grey

Drawing of the slip-on plates

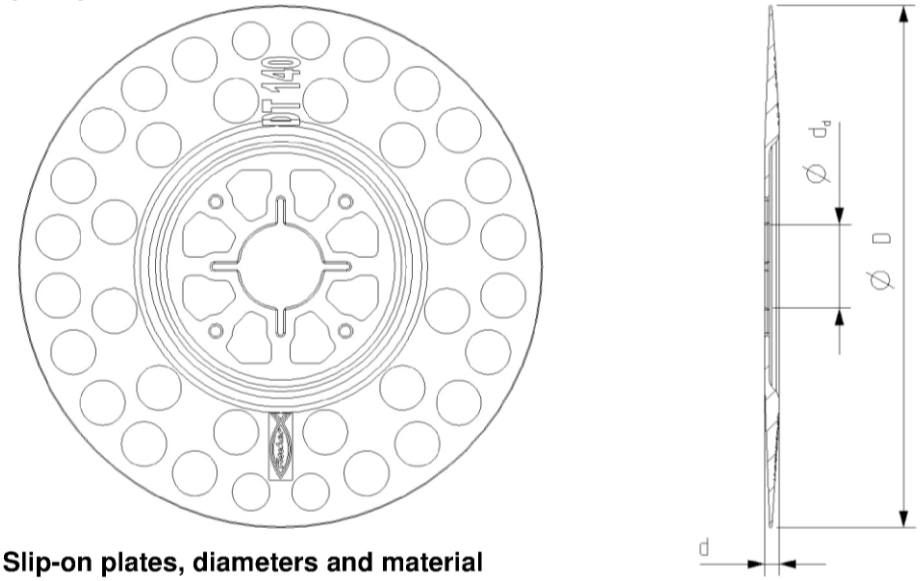

Table A4: Slip-on plates, diameters and material

Slip-on plate	**Ø D [mm]**	**Ø d_d [mm]**	**d [mm]**	**Material**
DT 90	90	22,5	3,9	PA 6 GF
DT 110	110	22,5	3,9	PA 6 GF
DT 140	140	22,5	3,9	PA 6 GF

FIF - CN

Product description
Marking, dimensions, materials,
Slip-on plates combined with FIF-CN

Annex A 3

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Specifications of intended use

Anchorages subject to:

- The anchor may only be used for transmission of wind suction loads and shall not be used for the transmission of dead loads of the thermal insulation composite system.

Base materials:

- Normal weight concrete (use category A) according to Annex C1.
- Solid masonry (use category B), according to Annex C1.
- Hollow or perforated masonry (use category C), according to Annex C1.
- For other base materials of the use categories A, B, C the characteristic resistance of the anchor may be determined by job site tests according to ETAG 014 Edition February 2011, Annex D.

Temperature Range:

- 0°C to +40°C (max. short term temperature +40°C and max. long term temperature +24°C).

Design:

- The anchorages are designed in accordance with ETAG 014 Edition February 2011 under the responsibility of an engineer experienced in anchorages and masonry work.
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchors is indicated on the design drawings.
- Fasteners are only to be used for multiple fixings for non-structural applications, according to ETAG 014 Edition February 2011.

Installation:

- Hole drilling by the drill modes according to Annex C1
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters on the site.
- Installation temperature from 0°C to +40°C
- Exposure to UV due to solar radiation of the anchor not protected by rendering ≤ 6 weeks.

FIF - CN	Annex B 1
Intended use Specifications	

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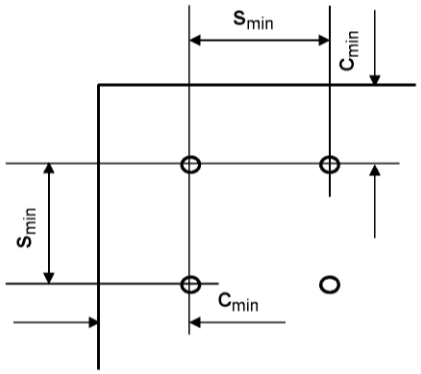
Table B1: Installation parameters

Anchor type				**FIF-CN**
Nominal drill hole diameter	d_0	=	[mm]	**8**
Cutting diameter of drill bit	d_{cut}	≤	[mm]	**8,45**
Depth of drill hole to deepest point	h_1	≥	[mm]	**45**
Overall plastic anchor embedment depth in the base material	h_{nom}	≥	[mm]	**35**

Table B2: Anchor distances and dimensions of members

Anchor type				**FIF-CN**
Thickness of member	h	≥	[mm]	**100**
Minimum spacing	s_{min}	=	[mm]	**100**
Minimum edge distance	c_{min}	=	[mm]	**100**

Scheme of distances and spacing



FIF - CN	Annex B 2
Intended use Installation parameters, minimum thickness of member, edge distances and spacings	

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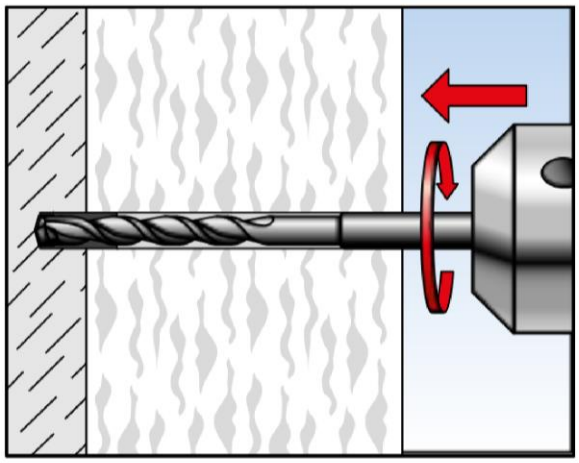
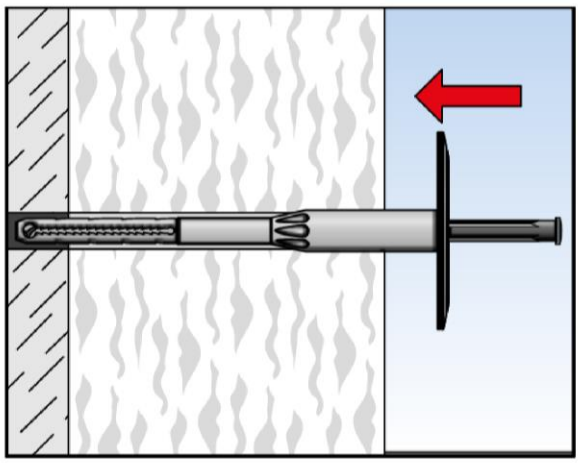
Installation instructions

1.



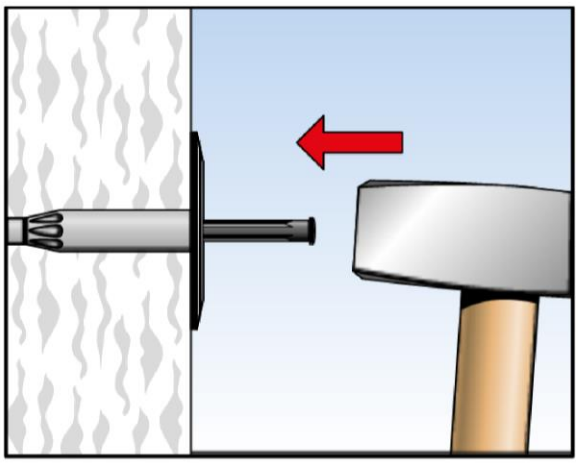
1. Drill hole by corresponding drilling method

2.



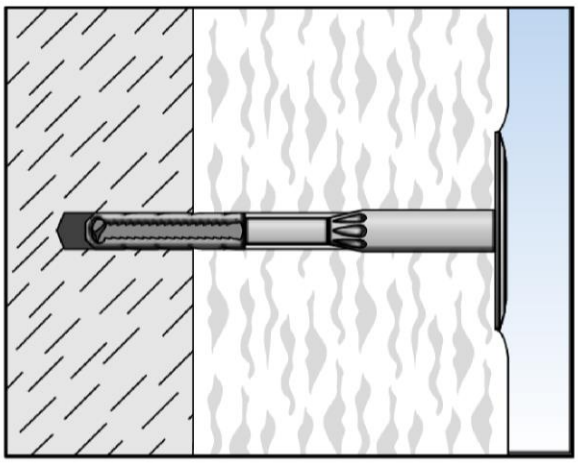
2. Set-in anchor manually

3.



3. Set anchor by hammer blows

4.



4. Correctly installed anchor

FIF - CN	Annex B 3
Intended use Installation instructions	

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Table C1: Characteristic resistance to tension loads N_{Rk} in concrete and masonry for a single anchor in kN

Base material	Bulk density class ρ [kg/dm³]	Minimum compressive strength f_b [N/mm²]	Remarks	Drill mode[1)]	Characteristic resistance FIF-CN 8 N_{Rk} [kN]
Concrete C16/20 - C50/60	-	-	EN 206-1:2000	H	**0,9**
Clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011,Mz	≥ 2,0	12	Cross section reduced up to 15% by perforation vertically to the resting area	H	**0,9**
Vertically perforated clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, HLz	≥ 1,0	12	Cross section reduced up to 15% by perforation vertically to the resting area	R	**0,6**

[1)] H = Hammer drilling, R = Rotary drilling

Table C2: Point thermal transmittance acc. to EOTA Technical Report TR 025:2007-06

Anchor type	Thickness of insulation material h_D [mm]	Point thermal transmittance χ [W/K]
FIF-CN / 60-180	60	0,001
	80 - 180	0,000
FIF-CN / 200-340	200 - 300	0,000
	320 - 340	0,001

Table C3: Plate stiffness acc. to EOTA Technical Report TR 026:2007-06

Anchor type	Max. size of the anchor plate [mm]	Load resistance of the anchor plate [kN]	Plate stiffness [kN/mm]
FIF-CN	60	1,63	0,63

Table C4: Displacements

Base material	Bulk density class ρ [kg/dm³]	Minimum compressive strength f_b [N/mm²]	Tension load N [kN]	Displacements δ_m [mm]
Concrete C16/20 - C50/60 (EN 206-1:2000)	-	-	0,30	0,3
Clay brick, Mz (e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011)	≥ 2,0	12	0,30	0,5
Vertically perforated clay brick, HLz (e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011)	≥ 1,0	12	0,20	0,2

FIF - CN

Performances
Characteristic resistance of the anchor
Point thermal transmittance, plate stiffness and displacements

Annex C 1