

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

ETA-07/0287  
of 2 February 2018

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 nailed-in anchor TERMOFIX CF 8

Product family  
to which the construction product belongs

Nailed-in plastic 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  
fischerwerke

This European Technical Assessment  
contains

12 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

EAD 330196-01-0604

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## Specific part

### 1 Technical description of the product

The fischer nailed-in anchor TERMOFIX CF 8 consists of an anchor sleeve made of virgin polypropylene, a plastic cylinder made of polyamide and an accompanying specific nail of galvanised steel or of galvanised steel with an additional Duplex-coating or of stainless steel.

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

An 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 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 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 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic tension resistance	See Annex C 1
Edge distances and spacing	See Annex B 2
Plate stiffness	See Annex C 2
Displacements	See Annex C 2

#### 3.2 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Point thermal transmittance	See Annex C 2

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

In accordance with EAD No. 330196-01-0604, 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 European Assessment Document**

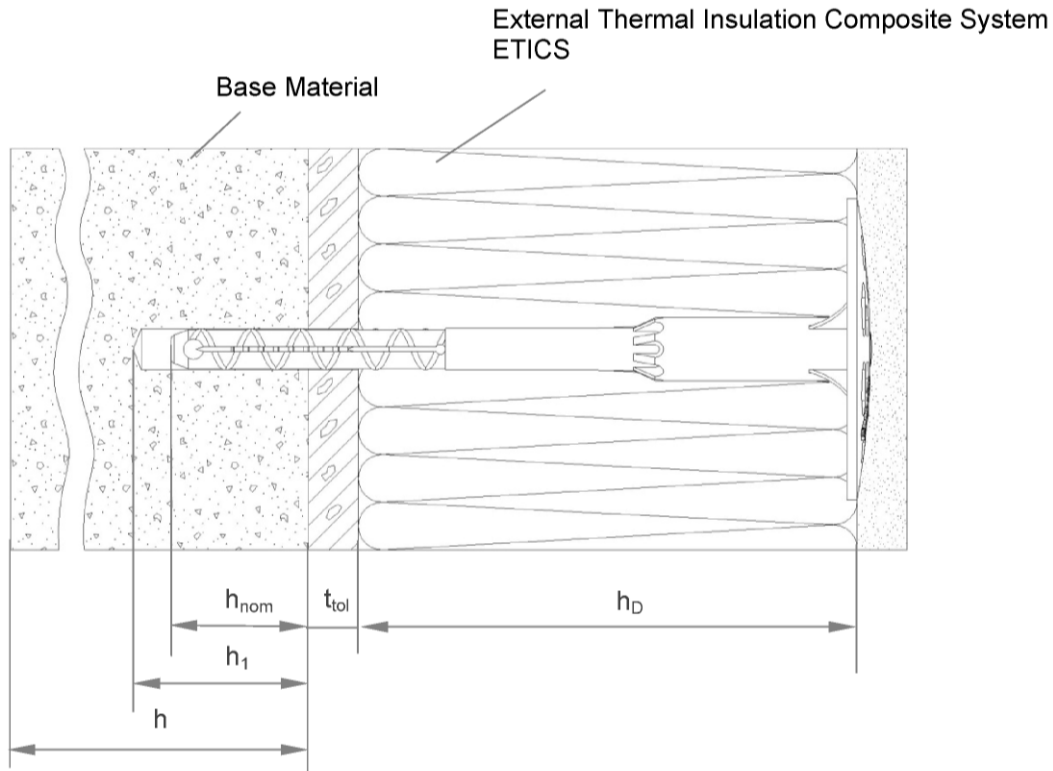
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 2 February 2018 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow  
Head of Department

*beglaubigt:*  
Ziegler

**Installed anchor: Termofix CF 8**



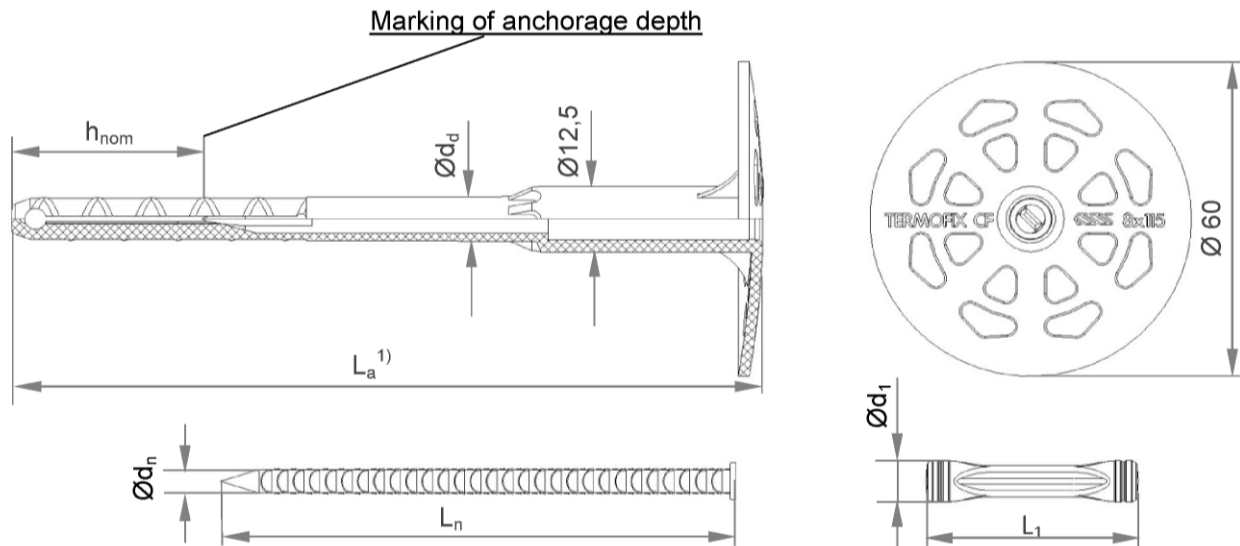
**Legend**

- $h_{nom}$  = Overall plastic anchor embedment depth in the base material
- $h_1$  = Depth of drill hole in base material 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

Figures not to scale

Termofix CF 8	<b>Annex A 1</b>
<b>Product description</b> Installed condition	

### Single parts : Termofix CF 8



- 1) Various length of the anchors are permissible:  
 $L_a = L_n$  (length of accompanying specific nail) + 44 mm

Determination of maximum thickness of insulation:

$$h_D = L_a - h_{nom} - t_{tol}$$

e.g. Termofix CF 8x135 :  $L_a = 140$  mm,  $h_{nom} = 27,5$  mm,  $t_{tol} = 10 \Rightarrow h_D = 140 - 27,5 - 10 \approx 100$  mm

**Table A2.1: Marking**

Anchor Type	Termofix CF 8
Plate diameter	Ø 60
Works symbol	
Size of anchor	Ø 8
Length of anchor	$L_a$
Example	Termofix CF  8 x 115

**Table A2.2: Dimensions**

Anchor Type	Anchor Sleeve				Accompanying specific nail		Plastic cylinder	
	Ø d <sub>d</sub>	h <sub>nom</sub>	L <sub>a,min</sub>	L <sub>a,max</sub>	Ø d <sub>n</sub>	L <sub>n</sub>	L <sub>1</sub>	Ø d <sub>1</sub>
Termofix CF 8	Ø 8	27,5	100	240	4,5	56 - 196	39	8

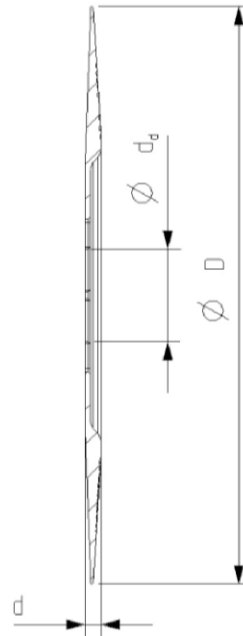
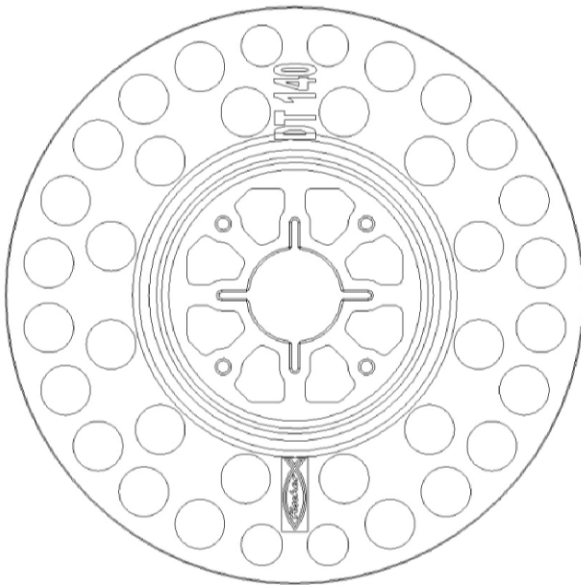
Figures not to scale

Termofix CF 8	<b>Annex A 2</b>
<b>Product description</b> Single parts, marking and dimensions	

**Table A3.1: Material**

Designation	Material
Anchor sleeve	PP (virgin material), colour: grey, red, orange, green
Plastic cylinder	PA 6 GF (virgin material), colour: black, grey
Special nail	Steel ( $f_{uk} \geq 500 \text{ N/mm}^2$ ; $f_{yk} \geq 400 \text{ N/mm}^2$ ) gvz A2G or A2F acc. to EN ISO 4042:1999 or Steel gvz A2G or A2F acc. to EN ISO 4042:1999 + Duplex-coating type Delta-Seal in three layers (overall thickness $\geq 6\mu\text{m}$ ) or Stainless steel, material no. e.g. 1.4401 or 1.4571 ( $f_{uk} \geq 700 \text{ N/mm}^2$ ; $f_{yk} \geq 450 \text{ N/mm}^2$ )

**Slip-on plate in combination with Termofix CF 8**



**Table A3.2: Slip-on plate, diameters and material**

Slip-on plate	$\varnothing D$	$\varnothing d_d$	d	Material
	[mm]			
DT 90 / 110 / 140	90 / 110 / 140	22,5	3,9	PA6 GF

Figures not to scale.

Termofix CF 8

**Product description**  
Materials, Slip-on plates combined with Termofix CF 8

**Annex A 3**

## Specifications of intended use

### Anchorage 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 external thermal insulation composite system (ETICS).

### 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.
- Lightweight aggregate concrete (use category D), according to Annex C1.
- For other base materials of the use categories A, B, C or D the characteristic resistance of the anchor may be determined by job site tests acc. to EOTA Technical Report TR 051 Edition December 2016.

### 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 under the responsibility of an engineer experienced in anchorages and masonry work with the partial safety factors  $\gamma_M = 2,0$  and  $\gamma_F = 1,5$ , if there are no other national regulations.
- 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 of ETICS.

### Installation:

- Hole drilling by the drill methods 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  $\leq 6$  weeks.

Termofix CF 8

**Intended use**  
Specification

**Annex B 1**



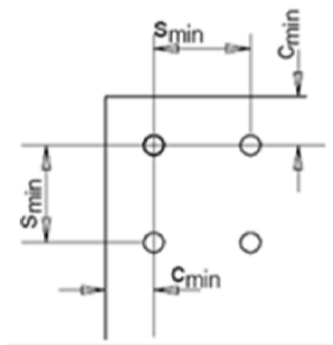
**Table B2.1: Installation parameters**

Anchor type		Termofix CF 8
Drill hole diameter	$d_0 =$	8
Cutting diameter of drill bit	$d_{cut} \leq$	8,45
Depth of drill hole to deepest point	$h_1 \geq$	35
Overall plastic anchor embedment depth in the base material	$h_{nom} \geq$	27,5

**Table B2.2: Minimum thickness, distance and spacing**

Anchor type		Termofix CF 8
Minimum thickness of member	$h_{min}$	100
Minimum spacing	$s_{min} =$	100
Minimum edge distance	$c_{min}$	100

**Scheme of distance and spacing**

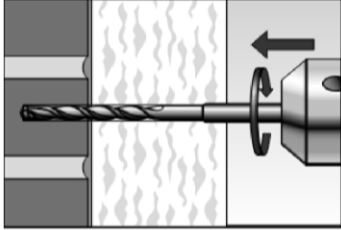


Termofix CF 8

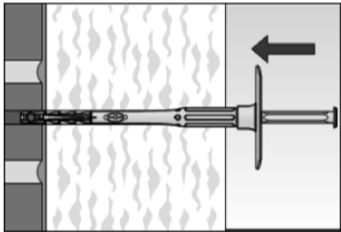
**Intended use**  
Installation parameters, distances and spacing, dimensions of member

**Annex B 2**

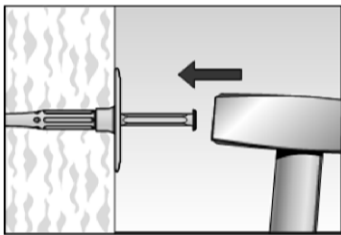
**Installation instructions:**



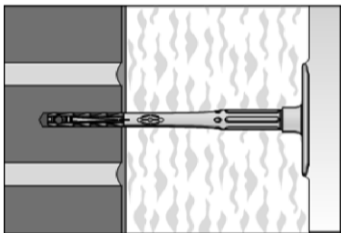
Drill the bore hole by the parameters acc. to Table B2.1 and the corresponding drilling method acc. to Annex C1.



Insert anchor manually.



Set anchor by hammer blows until the plate rests on the surface.



Correctly installed anchor.

Termofix CF 8	<b>Annex B 3</b>
<b>Intended use</b> Installation instruction	

**Table C1.1:** Characteristic values of tension resistance  $N_{Rk}$  for a single anchor

Base material	Use cat.	Bulk density $\rho$ [kg/dm <sup>3</sup> ]	Min. compressive strength $f_b$ [N/mm <sup>2</sup> ]	Remarks	Drill method 1)	Characteristic resistance $N_{Rk}$ [kN]
Normal weight concrete C12/15 acc. to EN 206-1:2000	A				H	0,6
Normal weight concrete C16/20 acc. to EN 206-1:2000	A				H	0,75
Normal weight concrete C50/60 acc. to EN 206-1:2000	A				H	0,9
Clay bricks <b>Mz</b> , acc. to EN 771-1:2011	B	$\geq 2,0$	12	Cross section reduced up to 15% by perforation vertically to the resting area	H	0,9
Calcium silicate solid bricks <b>KS</b> , acc. to EN 771-2:2011	B	$\geq 1,8$	12		H	0,75
Solid concrete block <b>Vbn</b> , acc. to EN 771-3:2011	B	$\geq 2,0$	20	Cross section reduced up to 10% by perforation vertically to the resting area	H	0,6
Lightweight solid brick <b>Vbl</b> , acc. to EN 771-3:2011	B	$\geq 1,4$	8		H	0,3
Perforated clay brick <b>HLz</b> acc. to EN 771-1:2011	C	$\geq 1,0$	12	Cross section reduced more than 15% and less than 50% by perforation vertically to the resting area, outer web thickness $\geq 14$ mm	R	0,6 <sup>2)</sup>
Hollow calcium silicate brick <b>KSL</b> , acc. to EN 771-2:2011	C	$\geq 1,4$	12	Cross section reduced more than 15% and less than 50% by perforation vertically to the resting area, outer web thickness $\geq 23$ mm	H	0,75 <sup>2)</sup>
Hollow brick lightweight concrete <b>Hbl</b> acc. to EN 771-3:2011	C	$\geq 1,2$	10	Cross section reduced more than 15% and less than 50% by perforation vertically to the resting area, outer web thickness $\geq 30$ mm	R	0,5 <sup>2)</sup>
Lightweight aggregate concrete <b>LAC</b> , acc. to EN 1520:2011	D	$\geq 0,8$	4		H	0,3
			6			0,4
<p>1) H = Hammer drilling; R = Rotary drilling</p> <p>2) The value applies only for the given outer web thickness. Otherwise the characteristic resistance <math>N_{Rk}</math> shall be determined by job-site pull-out tests.</p>						
Termofix CF 8					<b>Annex C 1</b>	
<b>Performance</b> Characteristic tension resistance						

**Table C2.1:** Point thermal transmittance acc. to EOTA Technical Report TR 025: 2016-05

Anchor type	Thickness of insulation material $h_D$ [mm]	Point thermal transmittance $\chi$ [W/K]
Termofix CF	60 - 200	0,002

**Table C2.2:** Plate stiffness acc. to EOTA Technical Report TR 026: 2016-05

Anchor type	Diameter of the anchor plate [mm]	Load resistance of the anchor plate [kN]	Plate stiffness [kN/mm]
Termofix CF	60	1,65	0,5

**Table C2.3:** Displacements of the Termofix CF

Base material	Tension load N [kN]	Displacements $\delta_{(N)}$ [mm]
Concrete C12/15 (EN 206-1:2000)	0,2	0,2
Concrete C20/25 (EN 206-1:2000)	0,25	
Concrete C50/60 (EN 206-1:2000)	0,30	
Clay bricks, <b>Mz</b> (EN 771-1:2011)	0,30	0,4
Calcium silicate solid bricks, <b>KS</b> (EN 771-2:2011)	0,25	0,2
Solid concrete block, <b>Vbn</b> (EN 771-3:2011)	0,20	0,2
Lightweight concrete solid blocks, <b>Vbl</b> (EN 771-3:2011)	0,10	0,2
Perforated clay bricks, <b>HLz</b> (EN 771-1:2011)	0,20	0,2
Hollow calcium silicate brick, <b>KSL</b> (EN 771-2:2011)	0,25	0,3
Lightweight concrete hollow blocks, <b>Hbl</b> (EN 771-3:2011)	0,15	0,2
Lightweight aggregate concrete, <b>LAC 4</b> (EN 1520:2011)	0,10	0,1
Lightweight aggregate concrete, <b>LAC 6</b> (EN 1520:2011)	0,15	

Termofix CF 8

**Performance**  
Point thermal transmittance, plate stiffness, displacements

**Annex C 2**