

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-09/0171**  
**of 18 October 2022**

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 TermoZ PN 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

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, Edition 10/2017

This version replaces

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## Specific part

### 1 Technical description of the product

The fischer nailed-in anchor TermoZ PN 8 consists of a plastic sleeve made of polypropylene, a plate and an accompanying specific nail 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 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 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 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic load bearing capacity <ul style="list-style-type: none"><li>- Characteristic resistance under tension load</li><li>- Minimum edge distance and spacing</li></ul>	See Annex C 1 See Annex B 2
Displacements	See Annex C 2
Plate stiffness	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 EAD

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

The following standards and documents are referred to in this European Technical Assessment:

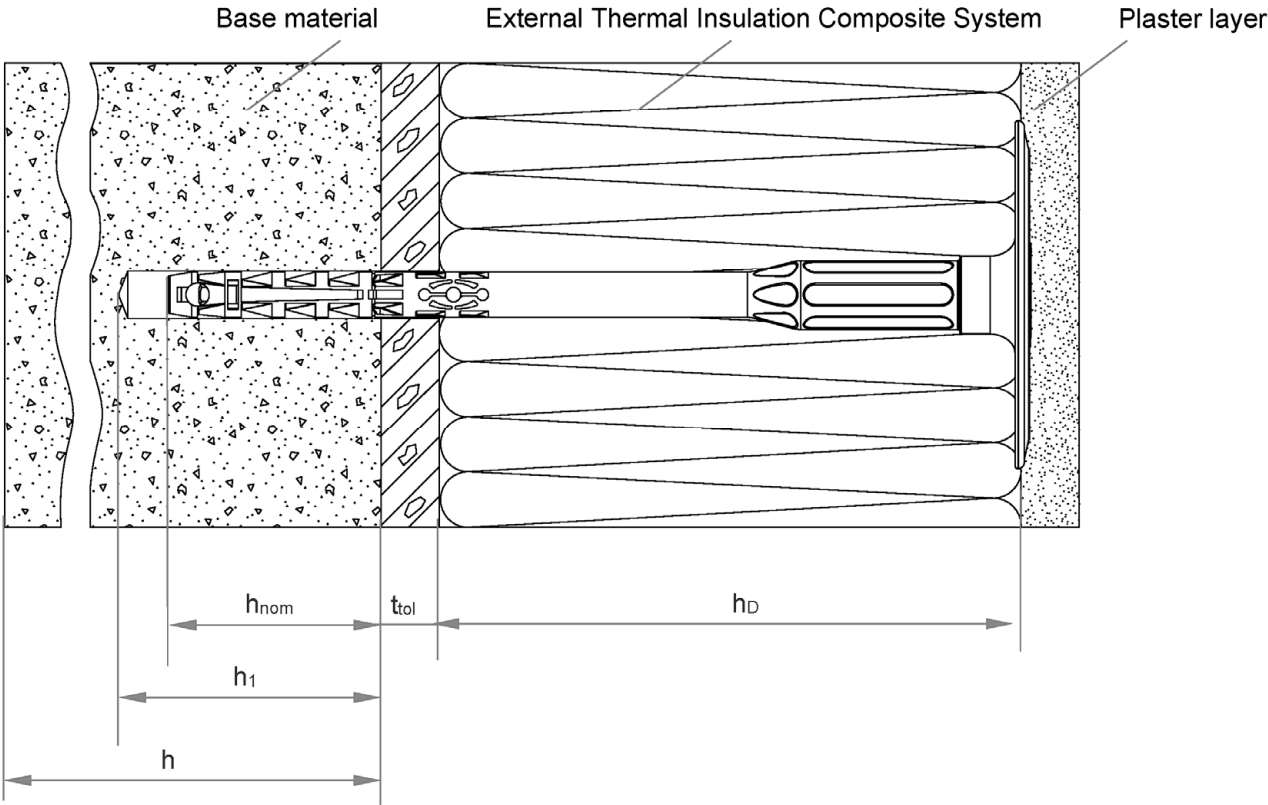
- EOTA Technical Report TR 025, Point thermal transmittance of plastic anchors for etics  
Edition May 2016
- EOTA Technical Report TR 026, Plate stiffness of plastic anchors for ETICS  
Edition May 2016
- EOTA Technical Report TR 051, Job site tests of plastic anchors and screws  
Edition April 2018
- EN 206:2013 Concrete - Specification, performance, production and conformity
- EN 771-1:2011+A1:2015 Specification for masonry units - Part 1: Clay masonry units
- EN 771-2:2011+A1:2015 Specification for masonry units - Part 2: Calcium silicate masonry units
- EN 771-3:2011+A1:2015 Specification for masonry units - Part 3: Aggregate concrete masonry units (Dense and lightweight aggregates)
- EN 771-4:2011+A1:2015 Specification for masonry units - Part 4: Autoclaved aerated concrete masonry units
- EN 1520:2011 Prefabricated reinforced components of lightweight aggregate concrete with open structure
- EN ISO 4042:2018-11 Fasteners - Electroplated coating systems
- EN 12602:2013 Prefabricated reinforced components of autoclaved aerated concrete

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Dipl.-Ing. Beatrix Wittstock  
Head of Section

*beglaubigt:*  
Aksünger

TermoZ PN 8



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 equalising layer and / or non-load bearing coating

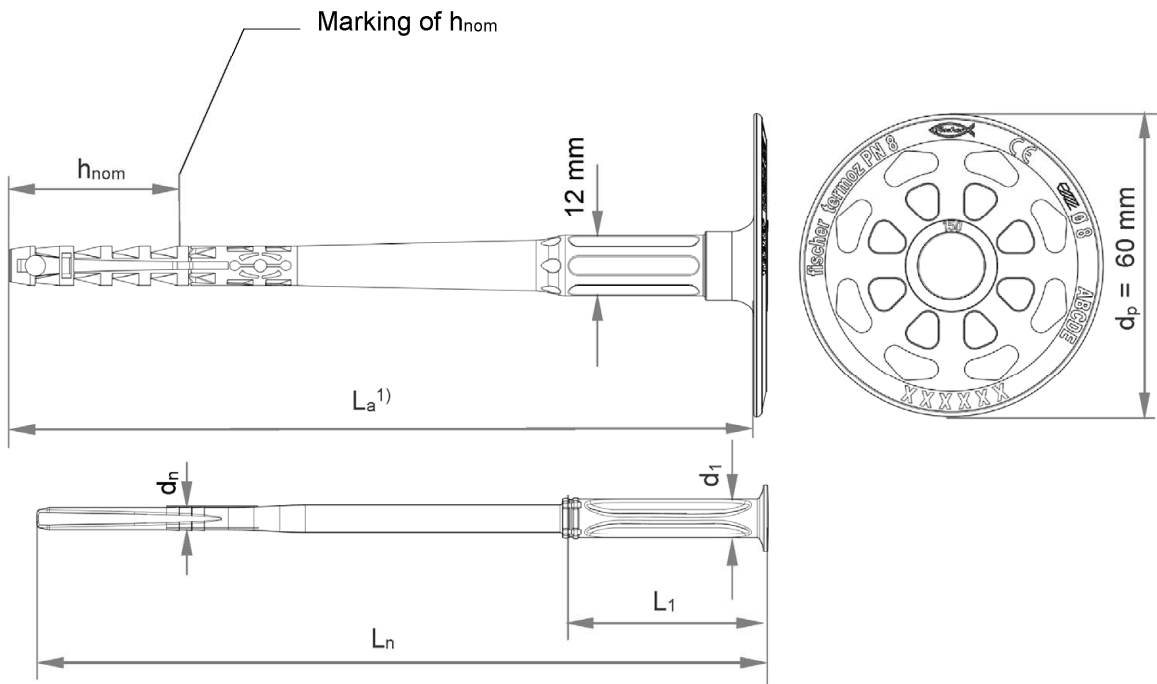
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fischer TermoZ PN 8

Product description  
Installed anchor

Annex A 1

TermoZ PN 8



1) Various length of the anchors are possible.

TermoZ PN 8 :

$L_{a \min} \geq 110 \text{ mm}$ ;  $L_{a \max} \leq 230 \text{ mm}$

$L_a$  = length of accompanying specific nail  $L_n + 5 \text{ mm}$

Table A2.1: Dimensions

Anchor typep	Anchor sleeve		Accompanying specific plastic nail		
	$d_d$ [mm]	$h_{nom}$ [mm]	$d_n$ [mm]	$L_1$ [mm]	$d_1$ [mm]
TermoZ PN 8	8	35/55 <sup>2)</sup>	4,4	40	8

<sup>2)</sup> Only for base material group „D“ and „E“.

Determination of max. thickness of insulation:

e.g. for TermoZ PN 8x150:

$L_a = 148 \text{ mm}$ ,  $h_{nom} = 35 \text{ mm}$ ,  $t_{tol} = 10 \text{ mm}$

$$\max. h_D = L_a - h_{nom} - t_{tol}$$

$$\begin{aligned} \max h_D &= 148 - 35 - 10 = 103 \text{ mm} \\ \text{recommended } h_D &= 100 \text{ mm} \end{aligned}$$

Figures not to scale

fischer TermoZ PN 8

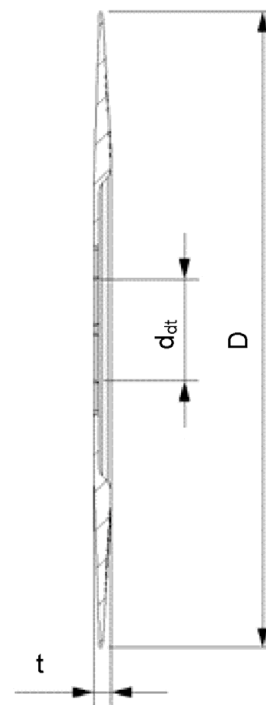
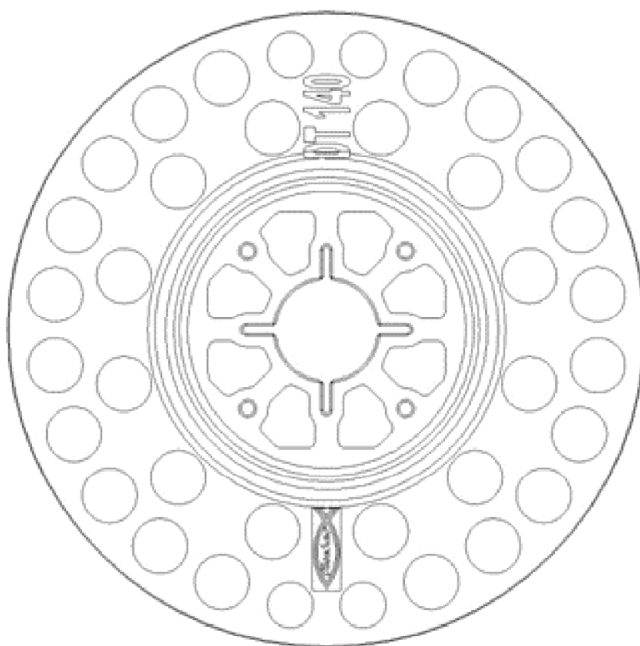
Product description  
Dimensions

Annex A 2

**Table A3.1: Material**

Designation	Material
Anchor sleeve	PP, colour: grey
Specific plastic nail	PA6 GF, colour: nature
Anchor plate / Slip-on plate	PA6, GF colour: grey, orange, red, green, yellow, blue, mocca-latte, black

**Drawing of the slip-on-plate (e.g. DT 140)**



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

Slip-on plate	D [mm]	d <sub>dt</sub> [mm]	t [mm]
DT 90 / 110 / 140	90 / 110 / 140	22,5	3,9

Figures not to scale

**fischer TermoZ PN 8**

**Product description**

Material

Dimensions of slip-on plate for the combination with TermoZ PN 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:

- Compacted normal weight concrete without fibres, strength classes  $\geq C12/15$  (base material group "A"), in accordance with EN 206, see Annex C1.
- Solid brick masonry (base material group "B") as per EN 771-1, EN 771-2 or EN 771-3, see Annex C1.
- Hollow brick masonry (base material group "C"), as per EN 771-1, EN 771-2 or EN 771-3, see Annex C1.
- Prefabricated reinforced components of lightweight aggregate concrete with open structure (base material group "D") as per EN 1520, see Annex C1.
- Unreinforced autoclaved aerated concrete (base material group "E") as per EN 771-4 and reinforced autoclaved aerated concrete (base material group "E") as per EN 12602, see Annex C1.
- For other comparable base materials of the base material group "A", "B", "C", "D" and "E" the characteristic resistance of the anchor may be determined by job site tests in accordance with EOTA Technical Report TR 051.

### Temperature Range:

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

### Design:

- The anchorages are designed under the responsibility of an engineer experienced in anchorages and masonry work with the partial safety factors for material related resistances  $\gamma_M = 2,0$  and for action loads  $\gamma_F = 1,5$  in absence of 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 external thermal insulation composite system.

### Installation:

- Drilling method 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.

fischer TermoZ PN 8

Intended use  
Specifications

Annex B 1



**Table B2.1: Installation parameters for base material groups “A” concrete, “B” solid bricks, “C” hollow or perforated bricks, “D” lightweight aggregate concrete and “E” autoclaved aerated concrete**

Anchor type			TermoZ PN 8
Nominal drill hole diameter	$d_0$	= [mm]	8
Cutting diameter of drill bit	$d_{cut}$	≤ [mm]	8,45
Depth of drilled hole to deepest point	$h_1$	≥ [mm]	45/65 <sup>1)</sup>
Overall plastic anchor embedment depth in the base material	$h_{nom}$	≥ [mm]	35/55 <sup>1)</sup>

<sup>1)</sup> Only for base material group “D” and “E”.

**Table B2.2: Minimum thickness of member, edge distances and spacing in all regulated base material groups**

Anchor type			TermoZ PN 8
Minimum thickness of member	$h_{min}$	= [mm]	100
Minimum spacing	$s_{min}$	= [mm]	100
Minimum edge distance	$c_{min}$	= [mm]	100

**Scheme of edge distances and spacing**  
for base material group “A”, concrete,  
group “B” solid bricks, group “C” hollow or  
perforated masonry, group “D” lightweight  
aggregate concrete, group “E” autoclaved  
aerated concrete

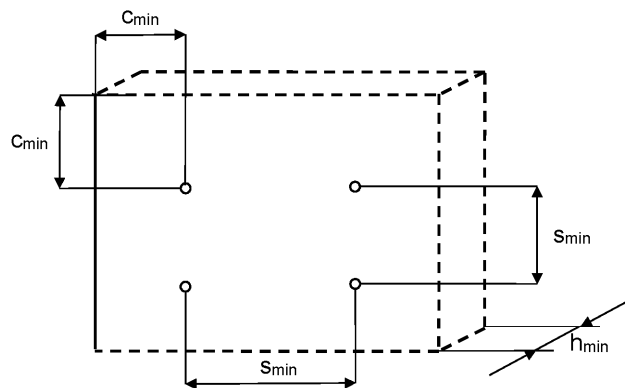


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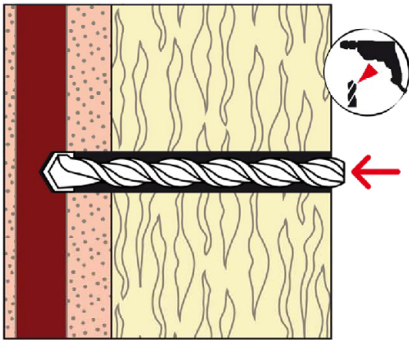
fischer TermoZ PN 8

**Intended use**

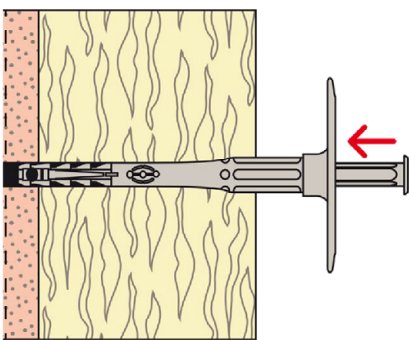
Installation parameters depending on the base material groups  
Minimum thickness of member, edge distances and spacings

**Annex B 2**

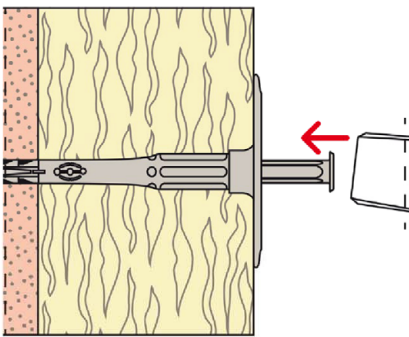
## Installation instruction



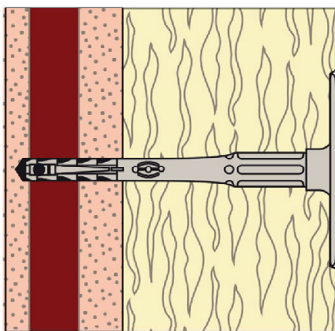
1. Drill hole by corresponding drilling method defined for each stone according to Table C1.1 and drill hole diameter  $d_0$  and depth  $h_1$  according to Table B2.1.



2. Insert anchor manually.



3. Set anchor by hammer blows.



4. Correctly installed anchor.

fischer TermoZ PN 8

Intended use  
Installation instruction

Annex B 3

**Table C1.1: Characteristic resistance  $N_{Rk}$  to tension loads for single anchor TermoZ PN 8**

Base material	Group	Bulk density  $\rho$ [kg/dm <sup>3</sup> ]	Mean compressive strength / minimum compressive strength single brick as per EN 771 <sup>4)</sup> [N/mm <sup>2</sup> ]	Remarks	Drilling method <sup>1)</sup>	Characteristic resistance to tension loads  $N_{Rk}$ [kN]
Concrete, C12/15 - C50/60 as per EN 206	A	-	-	-	H	<b>0,50</b>
Solid Clay bricks, Mz as per EN 771-1	B <sup>2)</sup>	$\geq 2,0$	15/12	-	H	<b>0,60</b>
Calcium silicate solid bricks, KS as per EN 771-2	B <sup>2)</sup>	$\geq 1,8$	15/12	-	H	<b>0,60</b>
Vertically perforated clay, HLz bricks as per EN 771-1	C <sup>3)</sup>	$\geq 1,0$	15/12	Exterior web thickness $\geq 12$ mm.	R	<b>0,40</b>
Hollow calcium silicate brick, KSL as per EN 771-2	C <sup>3)</sup>	$\geq 1,4$	15/12	Exterior web thickness $\geq 23$ mm.	H	<b>0,40</b>
Lightweight concrete hollow blocks, Hbl as per EN 771-3	C <sup>3)</sup>	$\geq 1,2$	12,5/10	Exterior web thickness $\geq 38$ mm.	H	<b>0,50</b>
Lightweight aggregate concrete, LAC as per EN 1520	D <sup>3)</sup>	$\geq 0,9$	5/4	Minimum thickness of brick $h = 100$ mm or minimum exterior web thickness $t = 50$ mm.	H	<b>0,30</b>
			7,5/6			<b>0,40</b>
Unreinforced autoclaved aerated concrete members, AAC as per EN 771-4 Reinforced autoclaved aerated concrete blocks, AAC as per EN 12602	E	$\geq 0,5$	5/4	-	R	<b>0,30</b>
		$\geq 0,6$	7,5/6			<b>0,40</b>

<sup>1)</sup> H = Hammer drilling, R = Rotary drilling.

<sup>2)</sup> Vertically perforation  $\leq 15\%$ ; cross section reduced by perforation vertically to the resting area.

<sup>3)</sup> Vertically perforation  $> 15\%$  and  $\leq 50\%$ , cross section reduced by perforation vertically to the resting area.

<sup>4)</sup> The compressive strength of the single brick must not be less than 80% of the mean compressive strength.

**fischer TermoZ PN 8**

**Performances**

Characteristic resistance to tension load for single anchor

**Annex C 1**

**Table C2.1: Point thermal transmittance according to EOTA Technical Report TR 025**

Anchor type	Thickness of insulation material $h_D$ [mm]	Point thermal transmittance $\chi$ [W/K]
TermoZ PN 8	60 - 180	0,000

**Table C2.2: Plate stiffness according to EOTA Technical Report TR 026**

Anchor type	Maximum size of anchor plate $d_p$ [mm]	Load resistance of anchor plate [kN]	Plate stiffness $c$ [kN/mm]
TermoZ PN 8	60	1,7	0,6

**Table C2.3: Displacements TermoZ PN 8**

Base material	Mean compressive strength / minimum compressive strength single brick as per EN 771 <sup>1)</sup> [N/mm <sup>2</sup> ]	Tension load  N [kN]	Displacements  $\Delta\delta_N$ [mm]
Concrete, C12/15 – C50/60 as per EN 206	-	0,15	0,20
Clay brick, Mz as per EN 771-1	15/12	0,20	0,20
Calcium silicate solid bricks, KS as per EN 771-2	15/12	0,20	0,30
Vertically perforated clay brick, Hlz as per EN 771-1	15/12	0,15	0,40
Hollow calcium silicate brick, KSL as per EN 771-2	15/12	0,15	0,20
Hollow brick lightweight concrete, Hbl as per EN 771-3	12,5/10	0,15	0,20
Lightweight aggregate concrete, LAC as per EN 1520	5/4	0,10	0,20
	7,5/6	0,13	
Unreinforced autoclaved aerated concrete members, AAC as per EN 771-4 and reinforced autoclaved aerated concrete members, AAC as per EN 12602	5/4	0,10	0,10
	7,5/6	0,13	0,20

<sup>1)</sup> The compressive strength of the single brick must not be less than 80% of the mean compressive strength.

**fischer TermoZ PN 8**

**Performances**

Point thermal transmittance and plate stiffness  
Displacements

**Annex C 2**