

DECLARAÇÃO DE DESEMPENHO

DoP 0326

para fischer termoz CN 8 / fischer termoz CN 8 R / fischer termoz CNplus 8 (Âncoras plásticas para betão e alvenaria)

PT

1. Código de identificação único do produto-tipo: DoP 0326
2. Utilização(ões) prevista(s): Bucha plástica pregado para fixar sistemas compósitos de isolamento térmico exterior (ETICS) com reboco em betão e alvenaria, ver anexos, especialmente anexos B1 - B3.
3. Fabricante: fischerwerke GmbH & Co. KG, Klaus-Fischer-Str. 1, 72178 Waldachtal, Alemanha
4. Representante autorizado: -
5. Sistema(s) de avaliação e verificação da regularidade do desempenho (AVCP): 2+
6. Documento de Avaliação Europeu: EAD 330196-01-0604, Edition 10/2017
Avaliação Técnica Europeia: ETA-09/0394; 2022-10-18
Organismo de Avaliação Técnica: DIBt- Deutsches Institut für Bautechnik
Organismo(s) notificado(s): 2873 TU Darmstadt
7. Desempenho(s) declarado(s):
Segurança em uso (BWR 4)

Capacidade de carga característica:	Resistência característica sob cargas de tração: Distância ao bordo mínima: Espaçamento mínimo:	Anexos C1, C2 Anexo B2 Anexo B2
Deslocamentos:	Carga de tração com fator de segurança parcial: Deslocamentos:	Anexo C5 Anexo C5
Rigidez da placa:	Diâmetro da placa de ancoragem: Resistência da placa de ancoragem: Rigidez da placa:	Anexo C4 Anexo C4 Anexo C4

Economia de energia e retenção de calor (BWR 6)

Transmitância térmica:	Ponto de transmissão térmica de uma ancoragem: Espessura da camada isolamento do ETICS:	Anexos C3, C4 Anexos C3, C4
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8. Documentação Técnica Adequada e/ou Documentação Técnica Específica: -

O desempenho do produto identificado acima está em conformidade com o conjunto de desempenhos declarados. A presente declaração de desempenho é emitida, em conformidade com o Regulamento (UE) n.º 305/2011, sob a exclusiva responsabilidade do fabricante identificado acima.

Assinado por e em nome do fabricante por:



Dr.-Ing. Oliver Geibig, Diretor Administrativo de Unidades de Negócios e Engenharia
Tumlingen, 2022-10-31



Jürgen Grün, Diretor Administrativo de Química e Qualidade

Este DoP foi preparado em diferentes línguas. Em caso de litígio sobre a interpretação, a versão em inglês prevalecerá sempre.

O Anexo inclui informações voluntárias e complementares em inglês que excedem os requisitos legais (linguisticamente especificados).

Specific part

1 Technical description of the product

The fischer nailed-in anchor TermoZ CN 8 110-230 and TermoZ CNplus 8 110-230 consists of an anchor sleeve with an enlarged shaft made of polypropylene (virgin material), an insulation plate made of glass fibre reinforced polyamide (virgin material) and a special compound nail consisting of two parts, one made of glass fibre reinforced polyamide for the shaft element and the other part made of galvanised steel.

The fischer nailed-in anchor TermoZ CN 8 250-390 and TermoZ CN 8 R 250-310 consists of an anchor sleeve made of polypropylene (virgin material), a shaft part, whose the serrated expanding part is slotted, such as an insulation plate made of glass fibre reinforced polyamide (virgin material).

The fischer nailed-in anchor TermoZ CN 8 250-390 and TermoZ CN 8 R 250-310 made of galvanised steel and is used together with a plastic cylinder made of glass fiber reinforced polyamide.

The fischer nailed-in anchor TermoZ CNplus 8 250-390 consists of an anchor sleeve made of polypropylene (virgin material), a shaft part made of polyamide (virgin material), whose the serrated expanding part is slotted, an insulation plate made of glass fibre reinforced polyamide (virgin material) and a special compound nail consisting of two parts, one made of glass fibre reinforced polyamide for the shaft element and the other part made of galvanised steel.

All anchors 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 - Characteristic resistance under tension load - Minimum edge distance and spacing	See Annex C 1 - C 2 See Annex B 2
Displacements	See Annex C 5
Plate stiffness	See Annex C 4

3.2 Energy economy and heat retention (BWR 6)

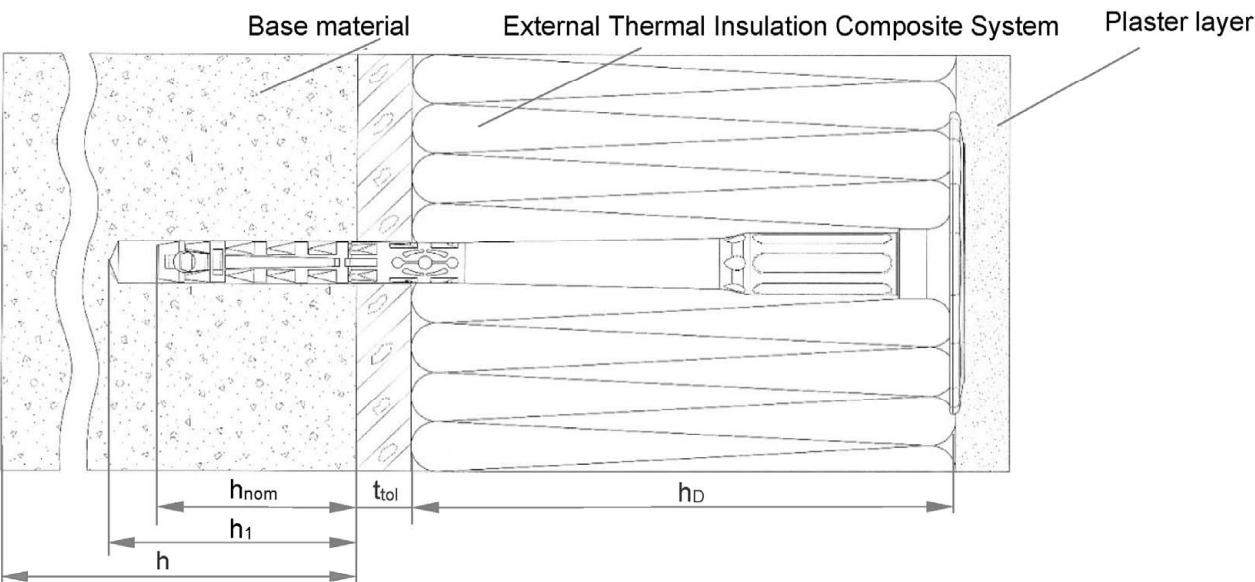
Essential characteristic	Performance
Point thermal transmittance	See Annex C 3 - C 4

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

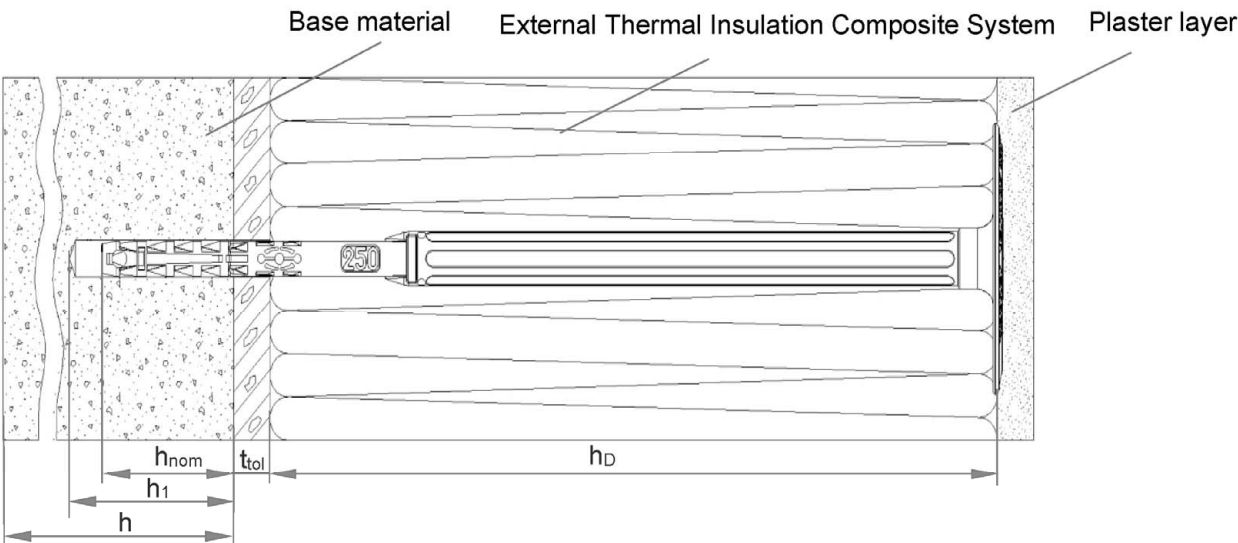
In accordance with EAD No. 330196-01-0604, the applicable European legal act is: [97/463/EC].

The system to be applied is: 2+

TermoZ CN 8 / 110 – 230 / TermoZ CNplus 8 / 110 – 230 – mounting on the surface



TermoZ CN 8 / 250 – 390 / TermoZ CN 8 R / 250 – 310 / TermoZ CNplus 8 / 250 - 390 – mounting on the surface



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

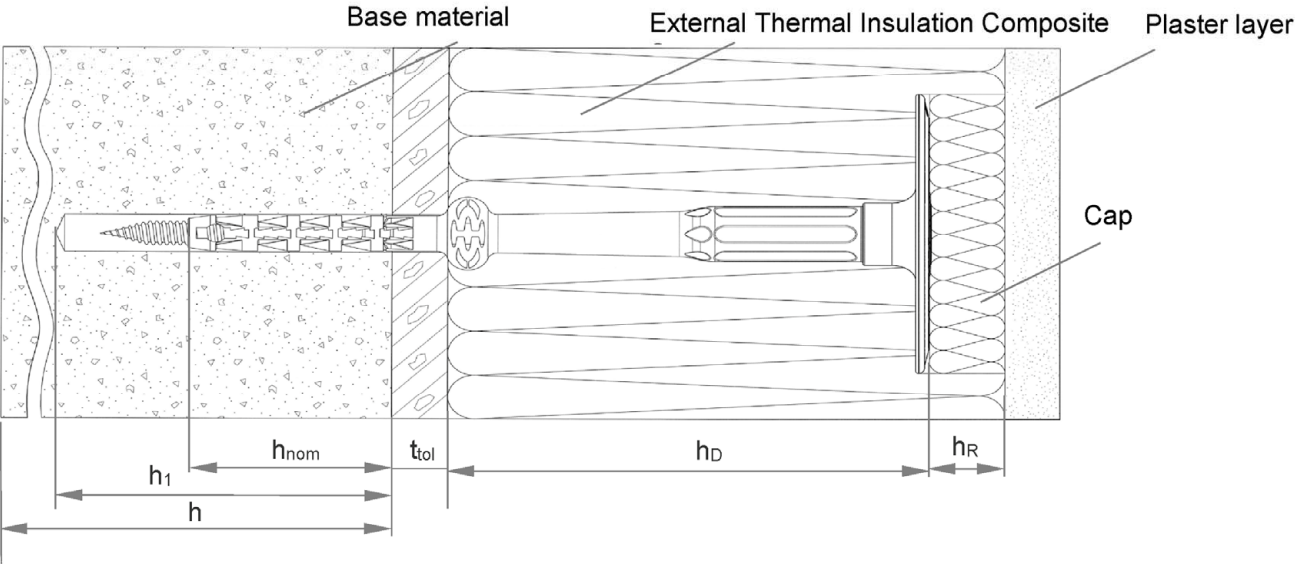
Figures not to scale

fischer TermoZ CN 8 | fischer TermoZ CN 8 R | fischer TermoZ CNplus 8

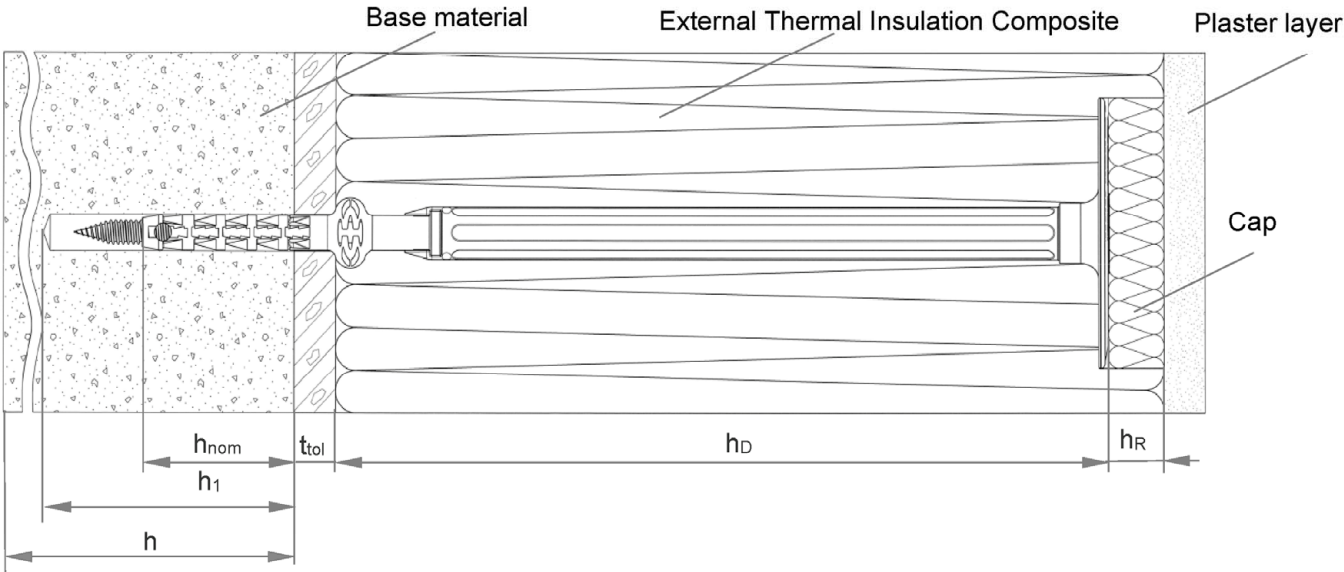
Product description
Installed anchor – mounting on the surface

Annex A 1
Appendix 3 / 20

TermoZ CNplus 8 / 110 – 230 – countersunk mounting



TermoZ CNplus 8 / 250 – 390 – countersunk mounting



- 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
 - h_R = Thickness of cap
 - t_{tol} = Thickness of equalising layer and / or non-load bearing coating

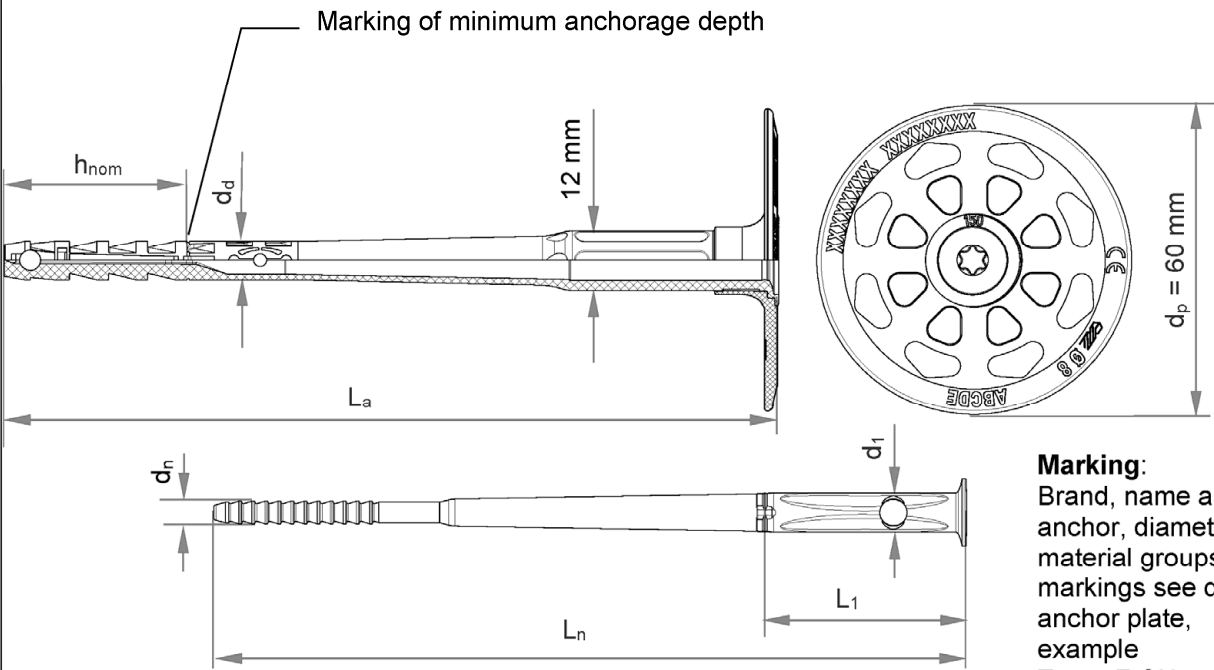
Figures not to scale

fischer TermoZ CN 8 | fischer TermoZ CN 8 R | fischer TermoZ CNplus 8

Product description
 Installed anchor – mounting on the surface

Annex A 2
 Appendix 4 / 20

TermoZ CN 8 / 110 – 230



Marking:
Brand, name and size of anchor, diameter, base material groups, optional markings see drawing of anchor plate, example
TermoZ CN 8 ABCDE

Various length of the anchors are possible.

e.g. for TermoZ CN 8 / 110 - 230:
 $110\text{ mm} \geq L_a \leq 230\text{ mm}$
 $L_a = L_n + 4\text{ mm}$

Table A3.1: Dimensions TermoZ CN 8 / 110 – 230

Anchor type	Anchor sleeve		Specific compound nail		
	d_d [mm]	h_{nom} [mm]	d_n [mm]	L_1 [mm]	d_1 [mm]
TermoZ CN 8 / 110 - 230	8	35/55 ¹⁾	4,4	40	8

¹⁾ Only valid for base material group “E”.

Determination of maximum thickness of insulation:

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

e.g. for TermoZ CN 8x150:

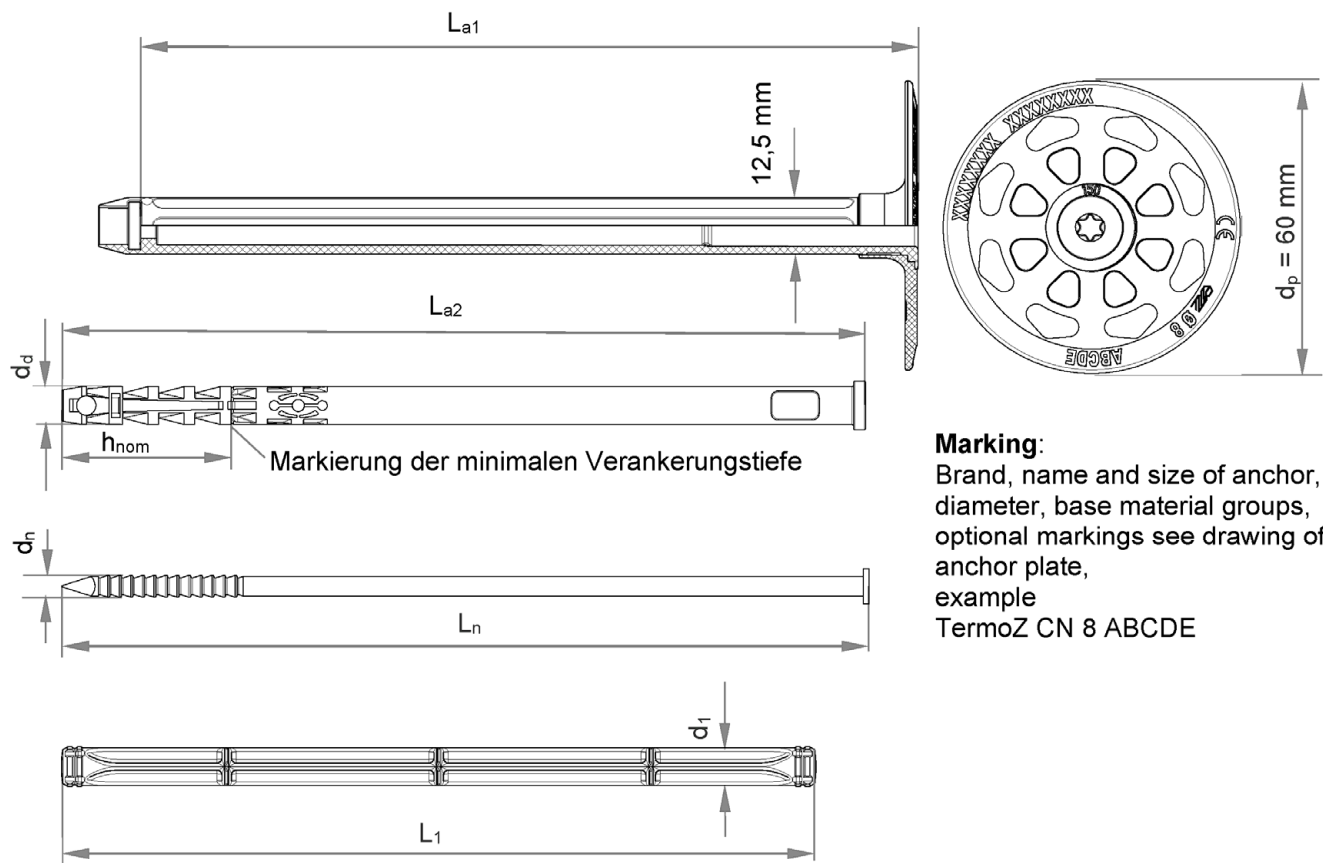
$L_a = 148\text{ mm}$, $h_{nom} = 35\text{ mm}$, $t_{tol} = 10\text{ mm}$

maximum $h_D = 148 - 35 - 10 = 103\text{ mm}$
→ recommended $h_D = 100\text{ mm}$

Figures not to scale

fischer TermoZ CN 8 fischer TermoZ CN 8 R fischer TermoZ CNplus 8	Annex A 3 Appendix 5 / 20
Product description Dimensions TermoZ CN 8 / 110 – 230	

TermoZ CN 8 / 250 – 390



Marking:
Brand, name and size of anchor,
diameter, base material groups,
optional markings see drawing of
anchor plate,
example
TermoZ CN 8 ABCDE

Various length of the anchors are possible.

e.g. for TermoZ CN 8 / 250 – 390:
 $250\text{ mm} \geq L_{a1} + L_{a2} \leq 390\text{ mm}$
 $L_a = L_{a1} + L_{a2} = L_n + 160,5\text{ mm}$

Table A4.1: Dimensions TermoZ CN 8 / 250 – 390

Anchor type	Shaft	Anchor sleeve			Nail		Plastic cylinder	
	L_{a1} [mm]	d_d [mm]	h_{nom} [mm]	L_{a2} [mm]	d_n [mm]	L_n [mm]	L_1 [mm]	d_1 [mm]
TermoZ CN 8 / 250 – 390	161	8	35/55 ¹⁾	87 - 247	4,5	$(L_{a1}+L_{a2}) - 160,5$	157	8

¹⁾ Only valid for base material group "E".

Determination of maximum thickness of insulation:

e.g. for TermoZ CN 8x330:
 $L_a = 328\text{ mm}, h_{nom} = 35\text{ mm}, t_{tol} = 10\text{ mm}$

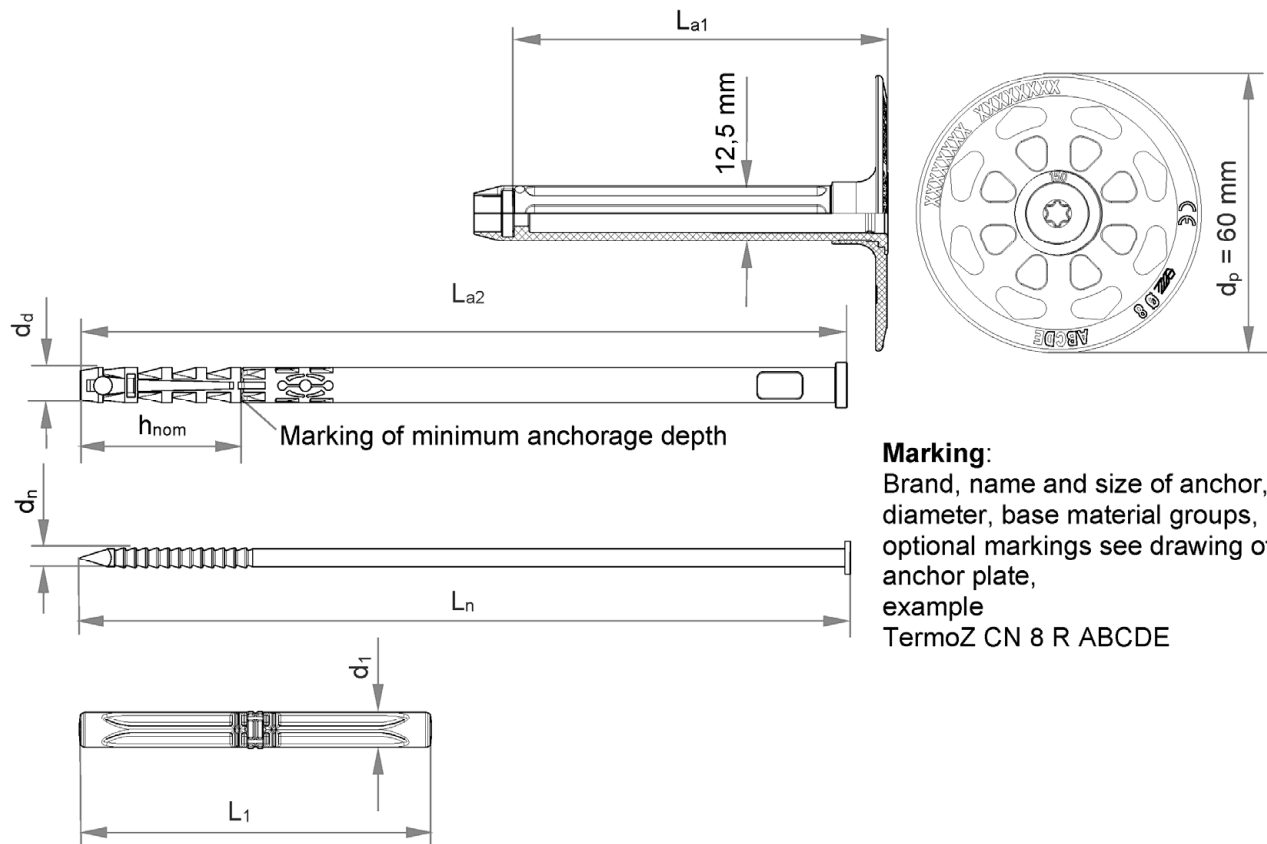
maximum $h_D = L_a - h_{nom} - t_{tol}$

maximum $h_D = 328 - 35 - 10 = 283\text{ mm}$
→ recommended $h_D = 280\text{ mm}$

Figures not to scale

fischer TermoZ CN 8 fischer TermoZ CN 8 R fischer TermoZ CNplus 8	Annex A 4 Appendix 6 / 20
Product description Dimensions TermoZ CN 8 / 250 – 390	

TermoZ CN 8 R / 250 – 310



Marking:
Brand, name and size of anchor,
diameter, base material groups,
optional markings see drawing of
anchor plate,
example
TermoZ CN 8 R ABCDE

Various length of the anchors are possible.
z. B. für TermoZ CN 8 R / 250 – 310:
 $250\text{ mm} \geq L_{a1} + L_{a2} \leq 310\text{ mm}$
 $L_a = L_{a1} + L_{a2} = L_n + 80,5\text{ mm}$

Table A5.1: Dimensions TermoZ CN 8 R / 250 – 310

Anchor type	Shaft	Anchor sleeve			Nail		Plastic cylinder	
	L _{a1} [mm]	d _d [mm]	h _{nom} [mm]	L _{a2} [mm]	d _n [mm]	L _n [mm]	L ₁ [mm]	d ₁ [mm]
TermoZ CN 8 R / 250 – 310	81	8	35/55 ¹⁾	167 - 247	4,5	(L _{a1} +L _{a2}) – 80,5	77	8

¹⁾ Only valid for base material group “E”.

Determination of maximum thickness of insulation:

e.g. for TermoZ CN 8 R 8x250:
L_a = 248 mm, h_{nom} = 35 mm, t_{tol} = 10 mm

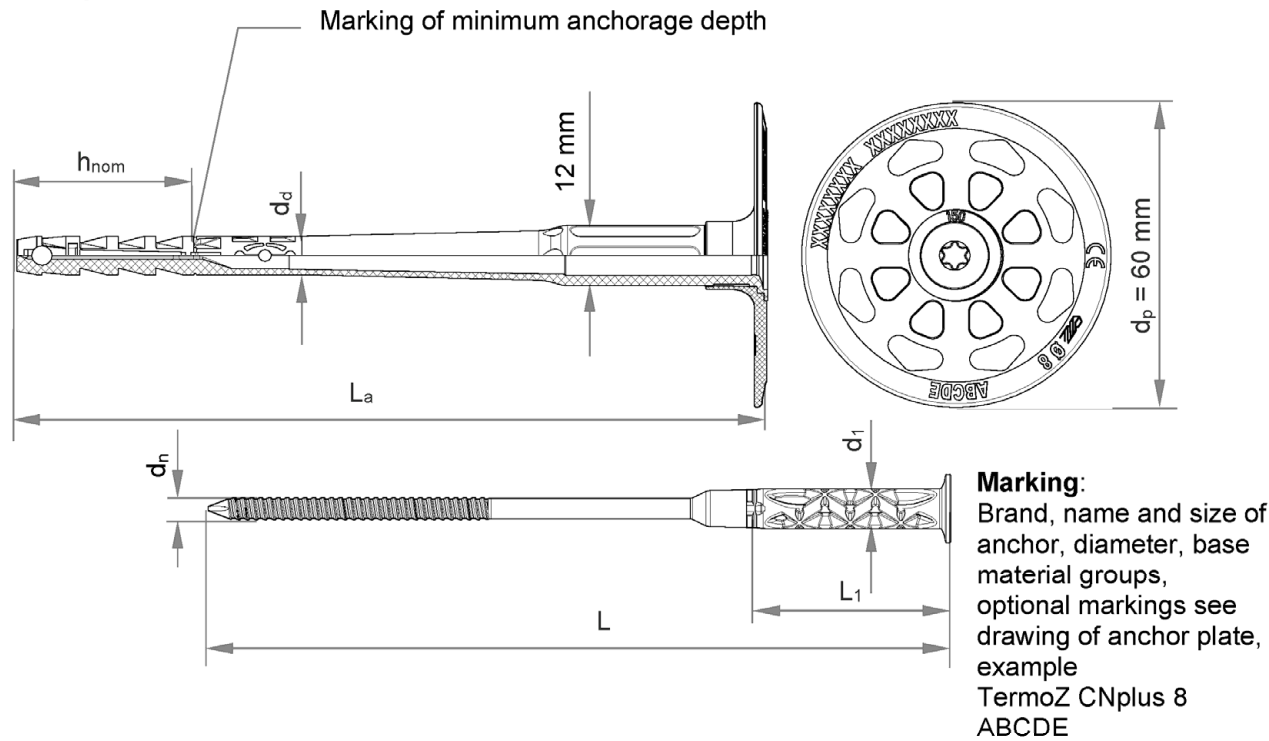
maximum h_D = L_a – h_{nom} – t_{tol}

maximum h_D = 248 – 35 – 10 = 203 mm
→ recommended h_D = 200 mm

Figures not to scale

fischer TermoZ CN 8 fischer TermoZ CN 8 R fischer TermoZ CNplus 8	Annex A 5 Appendix 7 / 20
Product description Dimensions TermoZ CN 8 R / 250 – 310	

TermoZ CNplus 8 / 110 – 230



Various length of the anchors are possible.

e.g. for TermoZ CNplus 8 / 110 – 230:
 $110\text{ mm} \geq L_a \leq 230\text{ mm}$
 $L_a = L_n + 1,5\text{ mm}$

Table A6.1: Dimensions TermoZ CNplus 8 / 110 – 230

Anchor type	Anchor sleeve		Specific compound nail			
	d_d [mm]	h_{nom} [mm]	d_n [mm]	L_n [mm]	L_1 [mm]	d_1 [mm]
TermoZ CNplus 8 / 110 - 230	8	35/55 ¹⁾	4,3	$L_a - 1,5$	40	8

¹⁾ Only valid for base material group “D” and “E”.

Determination of maximum thickness of insulation:

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

e.g. for TermoZ CNplus 8x150:

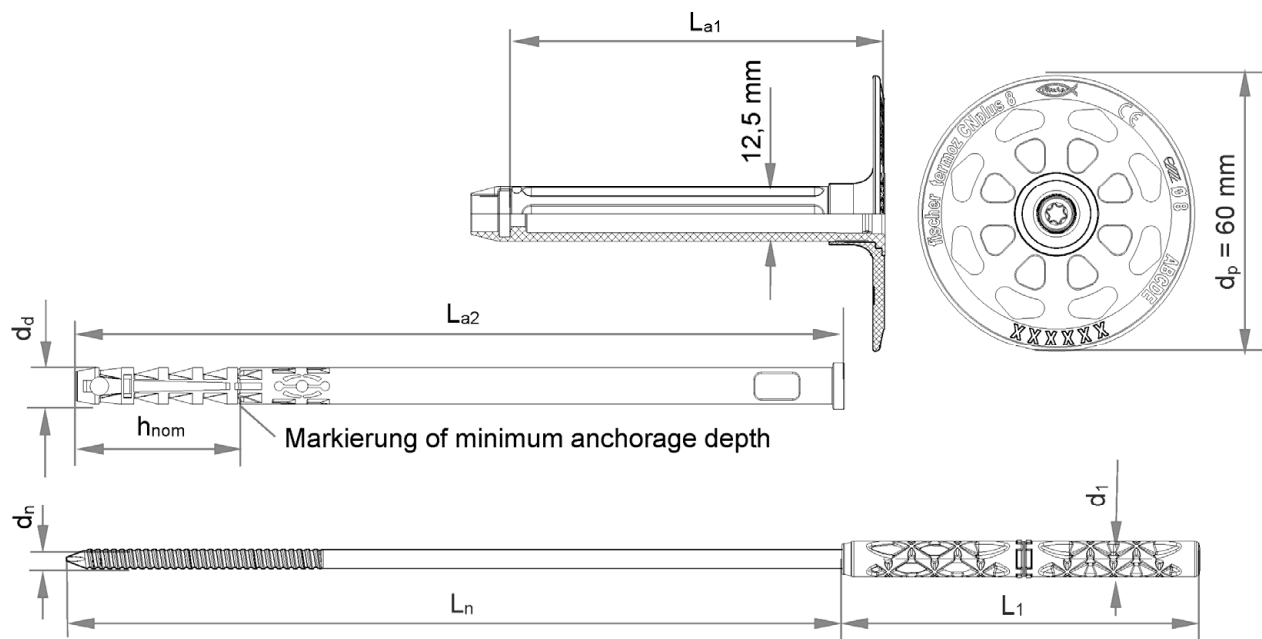
$L_a = 148\text{ mm}$, $h_{nom} = 35\text{ mm}$, $t_{tol} = 10\text{ mm}$

maximum $h_D = 148 - 35 - 10 = 103\text{ mm}$
 → recommended $h_D = 100\text{ mm}$

Figures not to scale

fischer TermoZ CN 8 fischer TermoZ CN 8 R fischer TermoZ CNplus 8	Annex A 6 Appendix 8 / 20
Product description Dimensions TermoZ CNplus 8 / 110 – 230	

TermoZ CNplus 8 / 250 – 310



Various length of the anchors are possible.

e.g. for TermoZ CNplus 8 / 250 – 310:
 $250 \text{ mm} \geq L_{a1} + L_{a2} \leq 310 \text{ mm}$
 $L_a = L_{a1} + L_{a2} = L_n + 79,5 \text{ mm}$

Marking:
Brand, name and size of anchor, diameter, base material groups, optional markings see drawing of anchor plate, example
TermoZ CNplus 8 ABCDE

Table A7.1: Dimensions TermoZ CNplus 8 / 250 – 310

Anchor type	Shaft	Anchor sleeve			Specific compound nail			
	L _{a1} [mm]	d _d [mm]	h _{nom} [mm]	L _{a2} [mm]	d _n [mm]	L _n [mm]	L ₁ [mm]	d ₁ [mm]
Termoz CNplus 8 / 250 – 310	81	8	35/55 ¹⁾	167 - 247	4,3	(L _{a1} +L _{a2}) - 79,5	77,5	8

¹⁾ Only valid for base material group “D” and “E”.

Determination of maximum thickness of insulation:

e.g. for TermoZ CNplus 8x250:
 $L_a = 248 \text{ mm}$, $h_{nom} = 35 \text{ mm}$, $t_{tol} = 10 \text{ mm}$

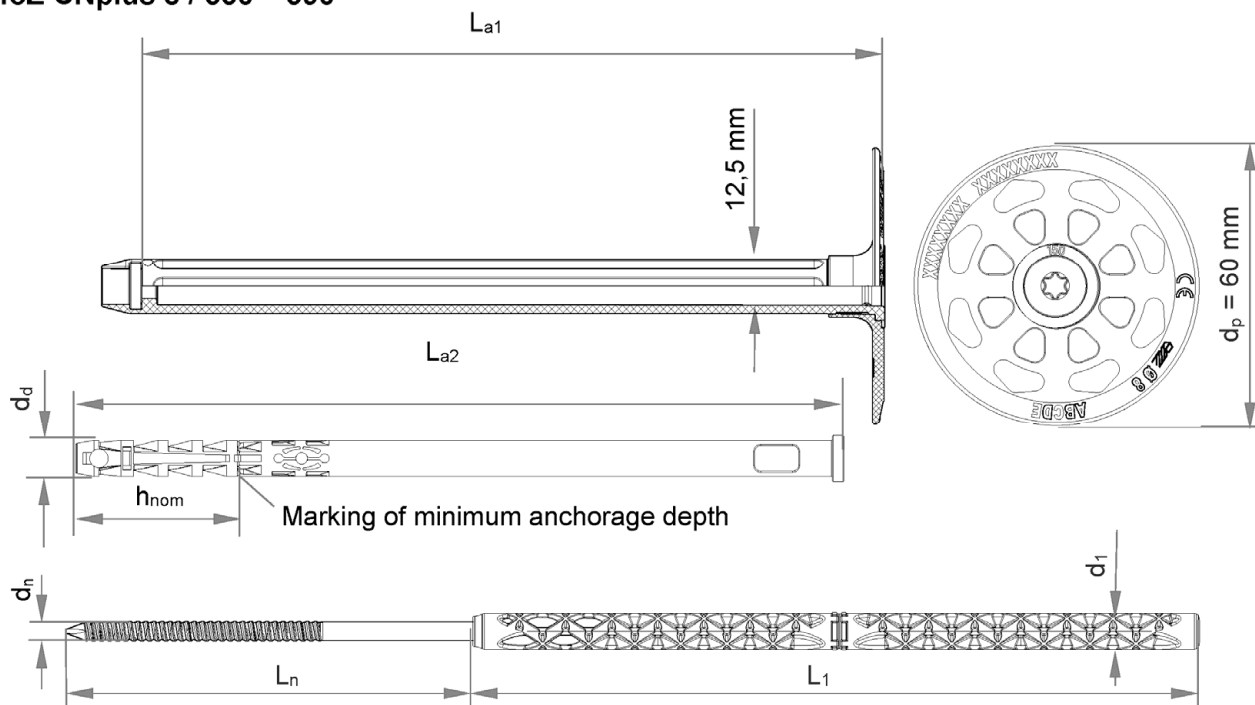
maximum $h_D = L_a - h_{nom} - t_{tol}$

maximum $h_D = 248 - 35 - 10 = 203 \text{ mm}$
→ recommended $h_D = 200 \text{ mm}$

Figures not to scale

fischer TermoZ CN 8 fischer TermoZ CN 8 R fischer TermoZ CNplus 8	Annex A 7 Appendix 9 / 20
Product description DimensionsTermoZ CNplus 8 / 250 – 310	

TermoZ CNplus 8 / 330 – 390



Various length of the anchors are possible.

e.g. for ThermoZ CNplus 8 / 330 – 390:

$$330 \text{ mm} \geq L_{a1} + L_{a2} \leq 390 \text{ mm}$$

$$L_a = L_{a1} + L_{a2} = L_n + 159,5 \text{ mm}$$

Marking:

Brand, name and size of anchor, diameter, base material groups, optional markings see drawing of anchor plate, example

TermoZ CNplus 8 ABCDE

Table A8.1: Dimensions ThermoZ CNplus 8 / 330 – 390

Anchor type	Shaft	Anchor sleeve			Specific compound nail			
	L _{a1} [mm]	d _d [mm]	h _{nom} [mm]	L _{a2} [mm]	d _n [mm]	L _n [mm]	L ₁ [mm]	d ₁ [mm]
Termoz CNplus 8 / 330 – 390	161	8	35/55 ¹⁾	167 - 247	4,3	(L _{a1} +L _{a2}) – 159,5	157,5	8

1) Only valid for base material group "D" and "E".

Determination of maximum thickness of insulation:

$$\text{maximum } h_D = L_a - h_{\text{nom}} - t_{\text{tol}}$$

e.g. for ThermoZ CNplus 8x330:

$$L_a = 328 \text{ mm}, h_{\text{nom}} = 35 \text{ mm}, t_{\text{tol}} = 10 \text{ mm}$$

$$\text{maximum } h_D = 328 - 35 - 10 = 283 \text{ mm}$$

→ recommended $h_D = 280 \text{ mm}$

Figures not to scale

fischer TermoZ CN 8 | fischer TermoZ CN 8 R | fischer TermoZ CNplus 8

Product description

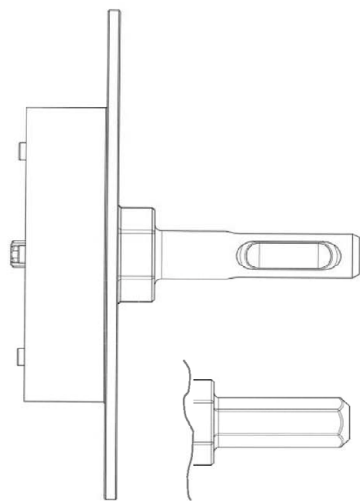
Dimensions ThermoZ CNplus 8 / 330 – 390

Annex A 8

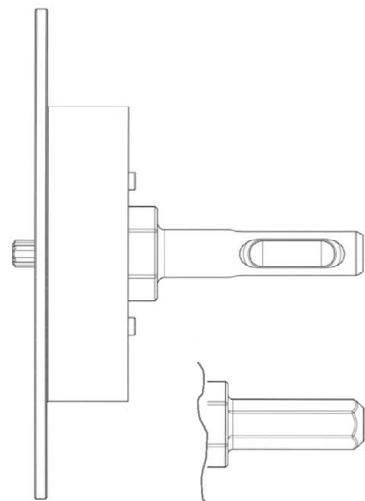
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Setting tool with SDS adapter or hexagonal adapter for TermoZ CNplus 8

Countersunk setting¹⁾

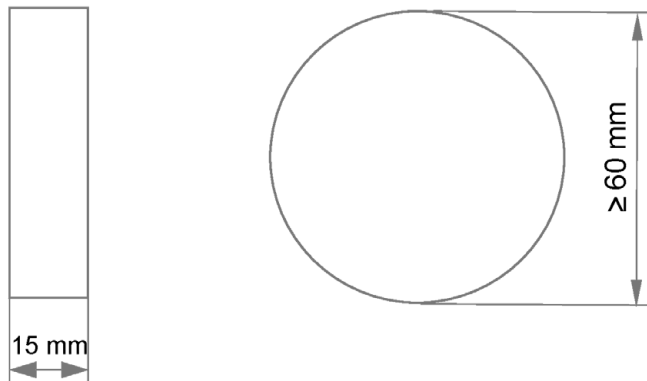


Optional: plain surface setting



¹⁾ Alternatively, it is possible to mill the insulation material with a standard, market-available milling tool.

Cap



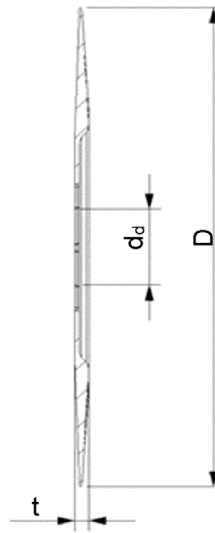
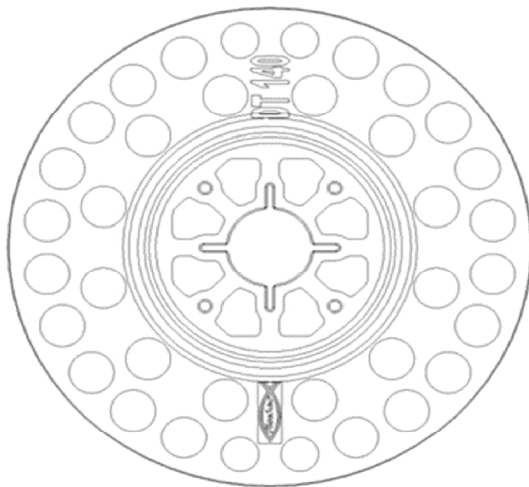
Figures not to scale

fischer TermoZ CN 8 | fischer TermoZ CN 8 R | fischer TermoZ CNplus 8

Product description
Setting tool and dimensions of cap for fischer TermoZ CNplus 8

Table A10.1: Materials

Designation	Material
Anchor sleeve	PP, colour: grey
Shaft TermoZ CN 8 / 250 – 390 or TermoZ CN 8 R / 250 – 310 or TermoZ CNplus 8 / 250 – 390	PA6 GF, colour: grey
Plastic cylinder TermoZ CN 8 / 250 – 390 or TermoZ CN 8 R / 250 – 310	PA6 GF
Specific nail TermoZ CN 8 / 250 – 390 or TermoZ CN 8 R / 250 – 310	Galvanised steel witht Zn5/Ag or Zn5/An as per EN ISO 4042
Specific cpompond nail TermoZ CN 8 / 110 – 230 or TermoZ CNplus 8 / 110 – 230 or TermoZ CNplus 8 / 250 – 390	PA6 GF (plastic part of compound nail) with galvanised steel Zn5/Ag or Zn5/An as per EN ISO 4042
Cap	Polystyrene; mineral wood, soft wood fibre
Anchor plate / slip-on plate	PA6 GF, colour: grey, yellow, red, orange, green, blue, mocca-latte, black

Drawing of the slip-on plate (e.g. DT 140)**Table A10.2: Slip-on plate, dimensions and material**

Slip-on plate	D [mm]	d _{dt} [mm]	t [mm]
DT 90 / 110 / 140	90 / 110 / 140	22,5	3,9

Figures not to scale

fischer TermoZ CN 8 | fischer TermoZ CN 8 R | fischer TermoZ CNplus 8

Product description

Material, Slip-on plate dimensions and material combined with fischer
TermoZ CN 8, TermoZ CN 8 R and TermoZ CNplus 8

Annex A 10

Appendix 12 / 20

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 C 1 and C 2.
- Solid brick masonry (base material group "B") as per EN 771-1, EN 771-2 or EN 771-3, see Annex C 1 and C 2.
- Hollow brick masonry (base material group "C"), as per EN 771-1, EN 771-2 or EN 771-3, see Annex C 1 and C 2.
- Prefabricated reinforced components of lightweight aggregate concrete with open structure (base material group "D") as per EN 1520, see Annex C 1 and C 2.
- Unreinforced autoclaved aerated concrete (base material group "E") as per EN 771-4, see Annex C 1 and C 2.
- 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 C 1 and C 2.
- 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.

fischer TermoZ CN 8 | fischer TermoZ CN 8 R | fischer TermoZ CNplus 8

Intended Use
Specification

Annex B 1

Appendix 13 / 20

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 – flush mounting

Anchor type		TermoZ CN 8 TermoZ CN 8 R TermoZ CNplus 8
Nominal drill hole diameter	$d_0 =$ [mm]	8
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45
Depth of drilled hole to deepest point	$h_1 \geq$ [mm]	45/55 ¹⁾ /65 ²⁾
Overall plastic anchor embedment depth in the base material	$h_{nom} \geq$ [mm]	35/45 ¹⁾ /55 ²⁾

¹⁾ Only TermoZ CNplus valid for weather shells (thin concrete slabs) : $35 \text{ mm} \leq h_{nom} \leq 45 \text{ mm}$.

²⁾ TermoZ CN 8 | TermoZ CN 8 R : Only valid for base material group “E”.

TermoZ CNplus 8: Only valid for base material group “D” and “E”.

Table B2.2: 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 – countersunk mounting

Anchor type		TermoZ CNplus 8
Nominal drill hole diameter	$d_0 =$ [mm]	8
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45
Depth of drilled hole to deepest point	$h_1 \geq$ [mm]	60/70 ¹⁾ /80 ²⁾
Overall plastic anchor embedment depth in the base material	$h_{nom} \geq$ [mm]	35/45 ¹⁾ /55 ²⁾

¹⁾ Valid for weather shell (thin concrete slabs): $35 \text{ mm} \leq h_{nom} \leq 45 \text{ mm}$.

²⁾ Only valid for base material group “D” and “E”.

Table B2.3: Minimum thickness of member, edge distances and spacing in all regulated base material groups

Anchor type		TermoZ CN 8 TermoZ CN 8 R TermoZ CNplus 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

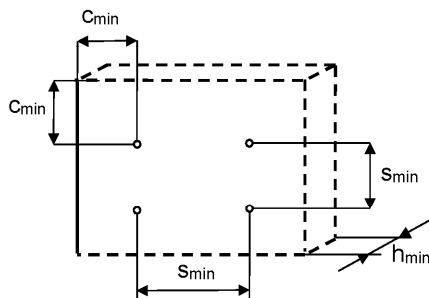


Figure not to scale

fischer TermoZ CN 8 | fischer TermoZ CN 8 R | fischer TermoZ CNplus 8

Intended Use

Installation parameters

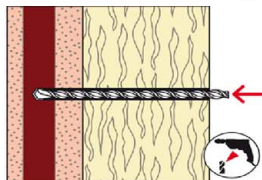
Minimum thickness of member, edge distances and spacing

Annex B 2

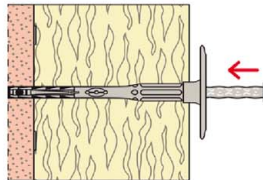
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Installation instruction

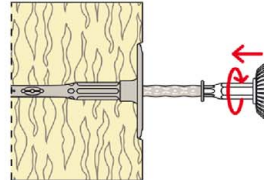
Setting of anchor (plain surface setting) by machine / TermoZ CNplus 8



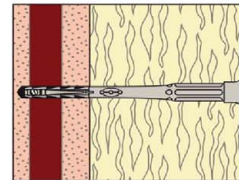
1. Drill hole by corresponding drilling method



2. Insert anchor manually

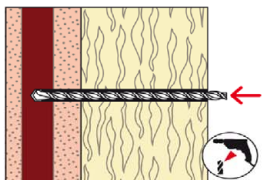


3. Set anchor by machine

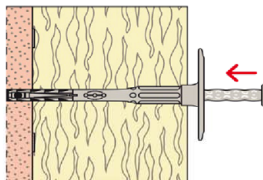


4. Correctly installed anchor

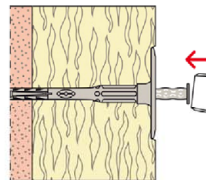
Setting of anchor (plain surface setting) by hammer / TermoZ CN 8 | TermoZ CN 8 R | TermoZ CNplus 8



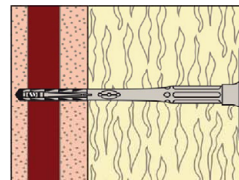
1. Drill hole by corresponding drilling method



2. Insert anchor manually

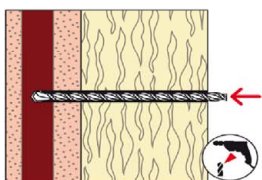


3. Set anchor by hammer blows

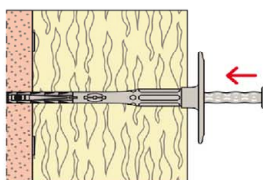


4. Correctly installed anchor

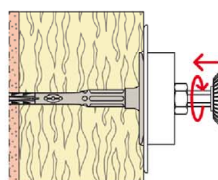
Setting of anchor (plain surface setting) by setting tool / TermoZ CNplus 8



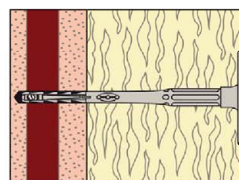
1. Drill hole by corresponding drilling method



2. Insert anchor manually

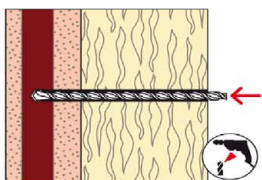


3. Set anchor by setting tool with the machine

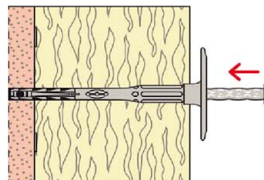


4. Correctly installed anchor

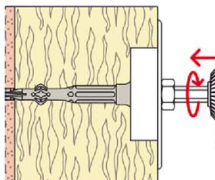
Setting of anchor (countersunk mounting) by setting tool / TermoZ CNplus 8



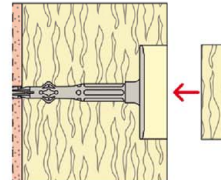
1. Drill hole by corresponding drilling method



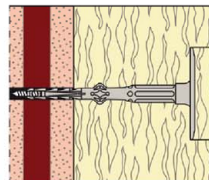
2. Insert anchor manually



3. Set anchor by setting tool with the machine



4. Put on cap



5. Correctly installed anchor

fischer TermoZ CN 8 | fischer TermoZ CN 8 R | fischer TermoZ CNplus 8

Intended Use
Installation instruction

Annex B 3

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

Base material	Group	Bulk density ρ [kg/dm ³]	Mean compressive strength / minimum compressive strength single brick as per EN 771 ⁵⁾ [N/mm ²]	Remarks	Drilling method ¹⁾	Characteristic resistance to tension loads N_{Rk} [kN]
Concrete, C12/15 - C50/60 as per EN 206	A	-	-	-	H	0,90
Solid Clay bricks, Mz as per EN 771-1	B ²⁾	≥ 2,0	15/12	-	H	0,90
Calcium silicate solid bricks, KS as per EN 771-2	B ²⁾	≥ 1,8	15/12	-	H	0,90
Solid concrete blocks, Vbn as per EN 771-3	B ²⁾	≥ 2,0	25/20	-	H	0,75
Lightweight concrete blocks, Vbl as per EN 771-3	B ²⁾	≥ 1,4	10/8	-	H	0,60
Vertically perforated clay bricks, HLz as per EN 771-1	C ³⁾	≥ 1,0	15/12	Exterior web thickness ≥ 15 mm.	R	0,60
Hollow calcium silicate brick, KSL as per EN 771-2	C ³⁾	≥ 1,4	15/12	Exterior web thickness ≥ 23 mm.	H	0,50
			25/20			0,75
Lightweight concrete hollow blocks, Hbl as per EN 771-3	C ³⁾	≥ 1,2	12,5/10	Exterior web thickness ≥ 38 mm.	H	0,60
Lightweight aggregate concrete, LAC as per EN 1520 / EN 771-3	D ³⁾	≥ 0,8	7,5/6	Min. thickness of brick h = 100 mm or min. exterior web thickness t = 50 mm.	H	0,40
			5/4			0,60
Unreinforced autoclaved aerated concrete members, AAC as per EN 771-4	E	> 0,4	7,5/6	-	R	0,30⁴⁾
		> 0,6	5/4	-		0,30⁴⁾

¹⁾ H = Hammer drilling, R = Rotary drilling.

²⁾ Vertically perforation ≤ 15%; cross section reduced by perforation vertically to the resting area.

³⁾ Vertically perforation > 15 % and ≤ 50 %, cross section reduced by perforation vertically to the resting area.

⁴⁾ Only valid for $h_{nom} \geq 55$ mm.

⁵⁾ The compressive strength of the single brick must not be less than 80% of the mean compressive strength.

fischer TermoZ CN 8 | fischer TermoZ CN 8 R | fischer TermoZ CNplus 8

Performances

Characteristic resistance to tension load TermoZ CN 8 and TermoZ CN 8 R

Annex C 1

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Table C2.1: Characteristic resistance N_{Rk} to tension loads for single anchor TermoZ CNplus 8

Base material	Group	Bulk density ρ [kg/dm ³]	Mean compressive strength / minimum compressive strength single brick as per EN 771 ⁵⁾ [N/mm ²]	Remarks	Drilling method ¹⁾	Characteristic resistance to tension loads N_{Rk} [kN]
Concrete, C12/15 - C50/60 as per EN 206	A	-	-	-	H	0,90
Weather resistant concrete shell $\geq$ C20/25 as per EN 206	A	-	-	$h \geq 42$ mm; $t_{fix} \geq 35$ mm.	H	0,90
Solid clay bricks, Mz as per EN 771-1	B ²⁾	$\geq 1,8$	25/20	-	H	0,90
Calcium silicate solid bricks, KS as per EN 771-2	B ²⁾	$\geq 1,8$	25/20	-	H	0,90
Solid concrete blocks, Vbn as per EN 771-3	B ²⁾	$\geq 2,0$	25/20	-	H	0,90
Lightweight concrete blocks, Vbl as per EN 771-3	B ²⁾	$\geq 1,6$	12,5/10	-	H	0,75
Vertically perforated clay bricks, Hlz as per EN 771-1	C ³⁾	$\geq 1,6$	15/12	-	R	0, 50
		$\geq 1,0$	60/48	-		0,75
Hollow calcium silicate brick, KSL as per EN 771-2	C ³⁾	$\geq 1,4$	20/16	Exterior web thickness ≥ 16 mm.	H	0,50
Lightweight concrete hollow blocks, Hbl as per EN 771-2	C ³⁾	$\geq 1,2$	12,5/10	Exterior web thickness ≥ 38 mm.	H	0,60
Lightweight aggregate concrete, LAC as per EN 1520 / EN 771-3	D ³⁾	$\geq 0,9$	7,5/6	Minimum thickness of brick $h = 100$ mm or Minimum exterior web thickness $t = 50$ mm.	H	0,40⁴⁾
Unreinforced autoclaved aerated concrete members, AAC as per EN 771-4	E	$> 0,4$	5/4	-	R	0,30⁴⁾

¹⁾ H = Hammer drilling, R = Rotary drilling.

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

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

⁴⁾ Only valid for $h_{nom} \geq 55$ mm.

⁵⁾ The compressive strength of the single brick must not be less than 80% of the mean compressive strength.

fischer TermoZ CN 8 | fischer TermoZ CN 8 R | fischer TermoZ CNplus 8

Performances

Characteristic resistance to tension load TermoZ CNplus 8

Annex C 2

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Table C3.1: Point thermal transmittance according to EOTA Technical Report TR 025
TermoZ CN 8 and TermoZ CN 8 R

Anchor type	Thickness of insulation material h_D [mm]	Point thermal transmittance χ [W/K]
TermoZ CN 8 / 110 - 230	60 - 80	0,001
	> 80 - 180	0,000
TermoZ CN 8 / 250-350	200 - 300	0,000
TermoZ CN 8 / 370-390	> 300 - 340	0,001
TermoZ CN 8 R / 250 - 310	200 - 260	0,001

Table C3.2: Point thermal transmittance according to EOTA Technical Report TR 025
TermoZ CNplus 8 – countersunk setting

Thickness of insulation material h_D [mm]	Point thermal transmittance χ [W/K] Base material group						
	A	B	C	D	E		
60	0,001	0,001	0,001	0,001	0		
80					0,001		
100	0,002	0,002	0,002	0,001			
120							
140							
160			0,001	0,002			
180				0,001			
200							
220				0	0		
240							
260							
280	0,001	0,001					
300		0,001					
320							
340		1)		1)			

1) No performance assessed

Table C4.1: Point thermal transmittance according to EOTA Technical Report TR 025 TermoZ CNplus 8– countersunk setting						
Thickness of insulation material h _D [mm]	Point thermal transmittance χ [W/K] Base material group					
	A	B	C	D	E	
80	0,001	0	0	0	0	
100		0,001	0,001	0,001	0,001	
120						
140						
160	0,002					
180	0,002					
200	0,001	0,001				
220						
240						
260		0		0		
280	0		0		0	
300	0,001		0,001			
320			0,001			
340		1)	1)			
1) No performance assessed						
Table C4.2: Plate stiffness according to EOTA Technical Report TR 026						
Anchor type	Max. size of the anchor plate d _p [mm]	Load resistance of the anchor plate [kN]	Plate stiffness c [kN/mm]			
TermoZ CN 8 TermoZ CN 8 R TermoZ CNplus 8	60	1,7	0,6			
fischer TermoZ CN 8 fischer TermoZ CN 8 R fischer TermoZ CNplus 8				Annex C 4 Appendix 19 / 20		
Performances Point thermal transmittance Plate stiffness						

Table C5.1: Displacements of TermoZ CN 8 and TermoZ CN 8 R

Base material	Mean compressive strength / minimum compressive strength single brick as per EN 771 ¹⁾ [N/mm ²]	Tension load N [kN]	Displacements $\Delta\delta_N$ [mm]
Concrete, C12/15 - C50/60 as per EN 206	-	0,30	< 0,30
Solid Clay bricks, Mz as per EN 771-1	15/12	0,30	< 0,50
Calcium silicate solid bricks, KS as per EN 771-2	15/12	0,30	< 0,30
Solid concrete blocks, Vbn as per EN 771-3	25/20	0,25	< 0,30
Lightweight concrete blocks, Vbl as per EN 771-3	10/8	0,20	< 0,20
Vertically perforated clay, HLz bricks as per EN 771-1	15/12	0,20	< 0,20
Hollow calcium silicate brick, KSL as per EN 771-2	15/12	0,25	< 0,30
	25/20	0,15	< 0,20
Lightweight concrete hollow blocks, Hbl as per EN 771	12,5/10	0,20	< 0,20
Lightweight aggregate concrete, LAC as per EN 1520 / EN 771-3	5/4	0,13	< 0,30
	7,5/6	0,20	< 0,30
Autoclaved aerated concrete members, AAC as per EN 771-4	5/4	0,10	< 0,30
	7,5/6	0,13	< 0,20

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

Table C5.2: Displacements of TermoZ CNplus 8

Base material	Mean compressive strength / minimum compressive strength single brick as per EN 771 ¹⁾ [N/mm ²]	Tension load N [kN]	Displacements $\Delta\delta_N$ [mm]
Concrete, C12/15 - C50/60 as per EN 206	-	0,30	< 0,10
Weather resistant concrete shell $\geq$ C20/25 as per EN 206	-	0,30	< 0,10
Solid Clay bricks, Mz as per EN 771-1	25/20	0,30	< 0,20
Calcium silicate solid bricks, KS as per EN 771-2	25/20	0,30	< 0,20
Solid concrete blocks, Vbn as per EN 771-3	25/20	0,30	< 0,20
Lightweight concrete blocks, Vbl as per EN 771-3	12,5/10	0,25	< 0,10
Vertically perforated clay, HLz bricks as per EN 771-1	15/12	0,17	< 0,10
Hollow calcium silicate brick, KSL as per EN 771-2	60/48	0,25	< 0,20
Hollow calcium silicate bricks, KSL as per EN 771-2	20/16	0,17	< 0,10
Lightweight concrete hollow blocks, Hbl as per EN 771	12,5/10	0,20	< 0,10
Lightweight aggregate concrete, LAC as per EN 1520 / EN 771-3	7,5/6	0,13	< 0,20
Autoclaved aerated concrete members, AAC as per EN 771-4	5/4	0,10	< 0,10

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

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