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European Technical Assessment ETA-14/0372 of 2022/05/08

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:

fischer TermoZ CS II 8 fischer TermoZ CS II 8 DT 110 V

Product family to which the above construction product belongs:

Screwed-in plastic anchor for fixing of external thermal insulation composite systems with rendering in concrete, masonry, lightweight aggregate concrete and autoclaved aerated concrete

Manufacturer:

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

Manufacturing plant:

fischerwerke

This European Technical Assessment contains:

19 pages including 14 annexes which form an integral part of the document

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

EAD 330196-01-0604 - Plastic anchors made of virgin or non-virgin material for fixing of external thermal insulation composite systems with rendering

This version replaces:

The ETA with the same number issued on 2021-03-26

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product

The screwed-in anchors fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V are used for fixing of external thermal insulation composite systems (ETICS). The fischer TermoZ CS II 8 consists of an anchor sleeve made of polypropylene with a diameter of 8 mm and an insulation plate made of glass-fiber reinforced polyamide with a diameter of 60 mm. The fischer Termoz CS II 8 DT 110 V consists of an anchor sleeve made of polypropylene with a diameter of 8 mm and an insulation plate made of glass-fiber reinforced polyamide with a diameter of 110 mm. The color of the anchor sleeve is grey. The special compound screw is made of galvanised steel and glass-fiber reinforced polyamide. The anchor is expanded by screwing the screw into the sleeve. It is possible to install the anchor flush or countersunk mounted to the surface of the insulation.

The product description is given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B1 to B3

The provisions made in this European Technical Assessment are based on an assumed intended working life of the anchor of 25 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body, 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 Characteristics of product

Safety in case of fire (BWR 2):

No Performance Assessed.

Safety in use (BWR4):

The essential characteristics are detailed in Annex B2 and Annex C1 to C4.

Energy economy and heat retention (BWR6):

The essential characteristics are detailed in the Annex C3.

Other Basic Requirements are not relevant.

General aspects

The verification of durability is part of testing of the essential characteristics. Durability is only ensured if the specifications of intended use according to Annex B are taken into account.

3.2 Methods of assessment

The assessment of fitness of the anchor for the intended use in relation to the requirements for mechanical resistance and stability and safety in use in the sense of the Basic Requirements 4 has been made in accordance with the EAD 330196-01-0604 Plastic anchors made of virgin or non-virgin material for fixing of external thermal insulation composite systems with rendering.

4 Assessment and verification of constancy of performance (AVCP)

4.1 AVCP system

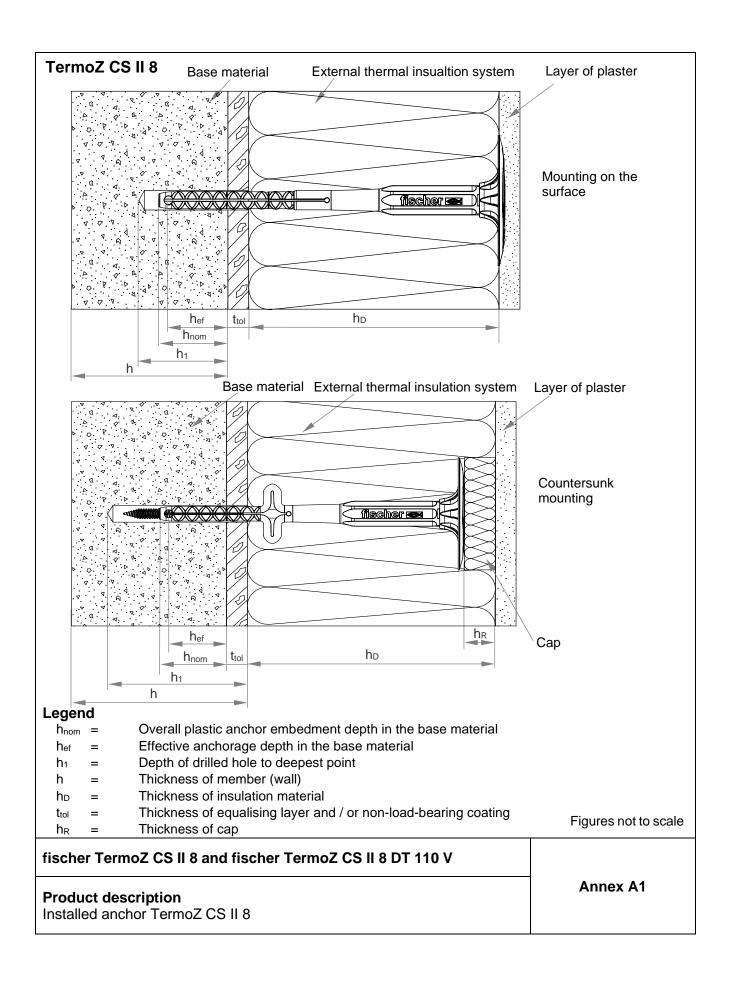
According to the decision 97/463/EC of the European Commission, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 2+.

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking.

Issued in Copenhagen on 2022-05-08 by

Thomas Bruun Managing Director, ETA-Danmark



Base Material External Thermal Insulation Composite System Layer of plaster

Legend

 h_{nom} = Overall plastic anchor embedment depth in the base material

hef = Effective anchorage depth in the base material

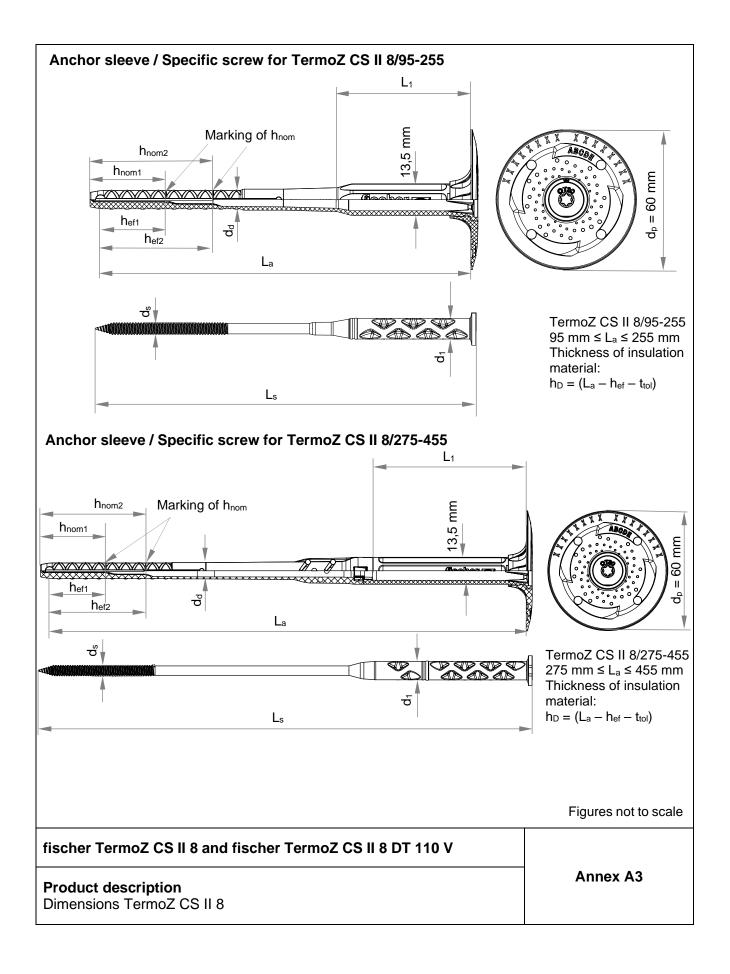
 h_1 = Depth of drilled hole to deepest point

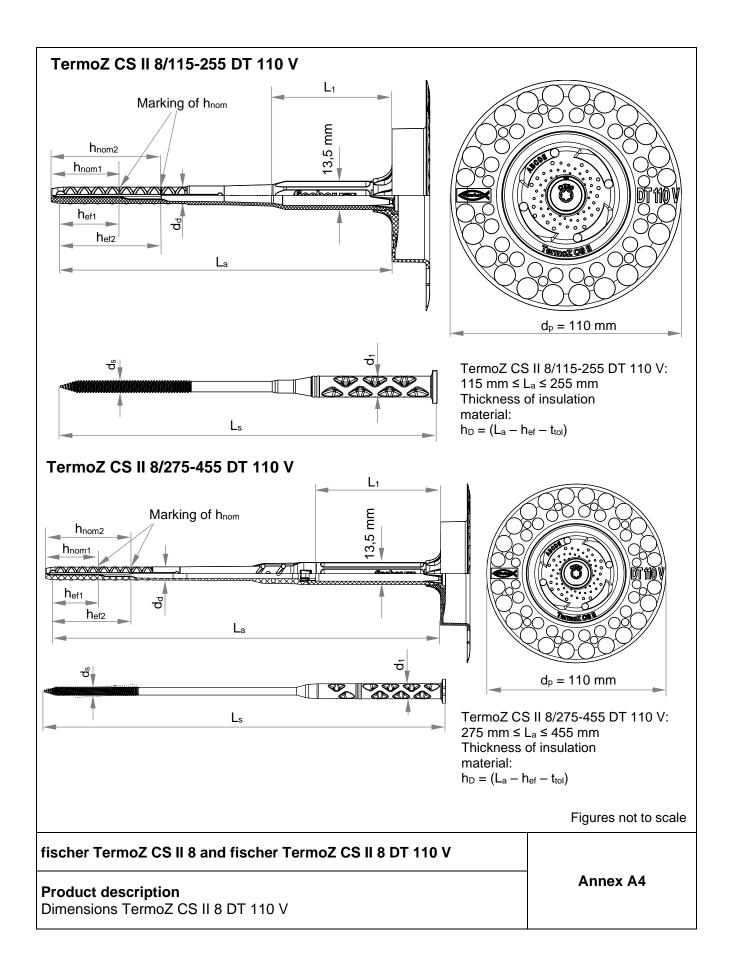
h = Thickness of member (wall) hD = Thickness of insulation material

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

Figure not to scale

fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V		
Product description Installed anchor TermoZ CS II 8 DT 110 V	Annex A2	





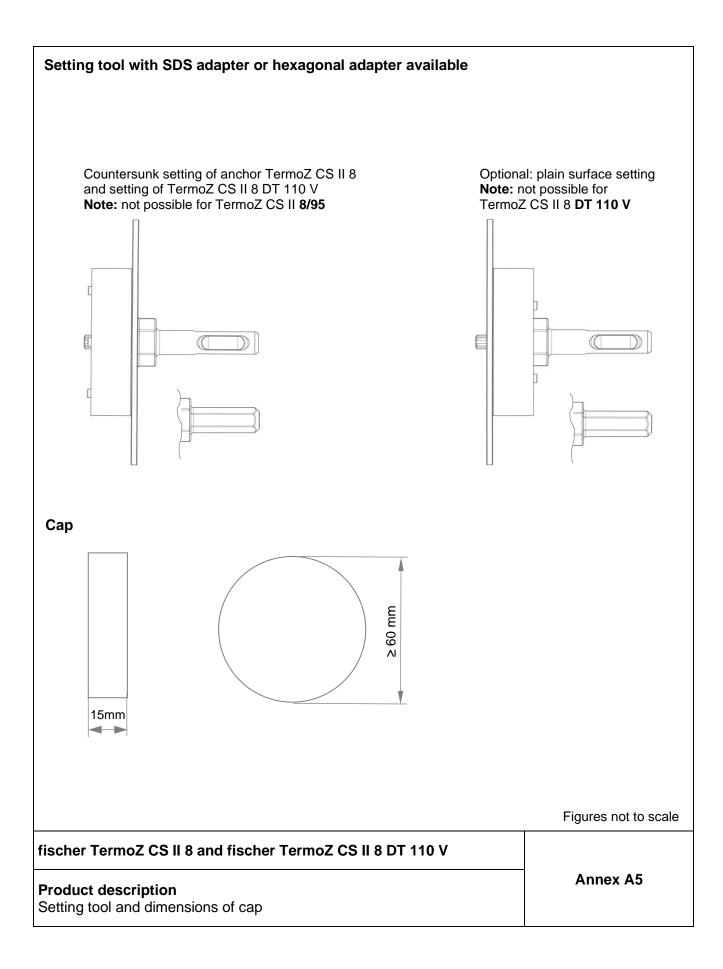


Table A6.1: Marking of plates				
	Designation			
Name of anchor	TermoZ CS II 8			
Example	TermoZ CS II ABCDE, (optional), CE (optional), Ø 8 (optional) xxxxx additional marks possible			
Name of anchor	TermoZ CS II 8 DT 110 V			
Example	TermoZ CS II ABCDE OT 110 V			

Table A6.2: Dimensions of TermoZ CS II 8

Anchor type		Anchor sleeve			Shaft		Specific screw									
	d₀	h _{nom}	h _{ef}	La	L ₁	d₅	Is	d ₁								
TermoZ CS II 8/95-115		32,5	25	95-115	42											
TermoZ CS II		32,5	25	135-255 52	405.055	125 255 52)FF									
8/135-255		52,5	45													
TermoZ CS II		32,5	25	275-295	76	1										
8/275-295	8	52,5	45		213-293	70	5,4	L _a + 10	9,5							
TermoZ CS II		32,5	25	315-375	315-375	245 275	245 275	245 275	245 275	245 275	245 275	215 275	156			
8/315-375		52,5	45			156										
TermoZ CS II		32,5	25	395-455	205 455	20E 4EE	205 455	236								
8/395-455		52,5	45		230											

Table A6.3: Dimensions of TermoZ CS II 8 DT 110 V

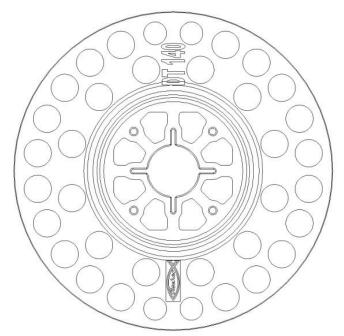
Anchor type	Anchor sleeve		Sha	ft		Specific sc	rew				
	d _d	h _{nom}	h _{ef}	La	L ₁	ds	Is	d ₁			
TermoZ CS II 8/115 DT 110 V		32,5	25	95-115	42						
TermoZ CS II		32,5	25	125 255	135-255 52		L _a + 10	9,5			
8/135-255 DT110 V		52,5	45	133-233	255 52						
TermoZ CS II	1	32,5	25	075 005	76						
8/275-295 DT 110 V	8	52,5	45	275-295	76	5,4					
TermoZ CS II		32,5	25	315-375	315-375	315_375	315-375 156	156	6		
8/315-375 DT 110 V		52,5	45			130					
TermoZ CS II	1	32,5	25	395-455	005.455	000	000				
8/395-455 DT 110 V		52,5	45		236						

All dimensions in [mm]

fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V	
Product description	Annex A6
Marking of plates	
Dimensions of anchors	

Table A7.1: Materials					
Designation	Material				
Anchor sleeve / shaft	PP, colour: grey				
Specific compound screw TermoZ CS II 8 / TermoZ CS II 8 DT 110 V	PA 6 GF with galvanised steel Zn5/Ag or Zn5/An as per EN ISO 4042:2018				
Сар	Soft wood fibre; polystyrene; mineral wool				
Anchor plate / Slip-on plate	PA 6 GF, colour: grey, blue, green, orange, red, yellow, black, mocca-latte				

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



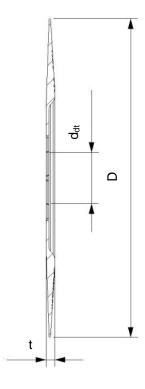


Table A7.2: Slip-on plates, diameters

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

Figures not to scale

fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V	
Product description Materials and dimensions of slip-on plates	Annex A7

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 without fibres ≥ C12/15 (base material group "A") as per EN 206:2013+A1:2016, see Annex C1.
- Solid masonry (base material group "B"), as per EN 771-1:2011+A1:2015, EN 771-2:2011+A1:2015, EN 771-3:2011+A1:2015, see Annex C1.
- Hollow or perforated masonry (base material group "C"), as per EN 771-1:2011+A1:2015, EN 771-2:2011+A1:2015 or EN 771-3:2011+A1:2015, see Annex C1 and C2.
- Lightweight aggregate concrete (base material group "D"), as per EN 1520:2011 / EN 771-3:2011+A1:2015, see Annex C2.
- Autoclaved aerated concrete (base material group "E"), as per EN 771-4:2011+A1:2015, see Annex C2.
- For other comparable materials of the base material groups "A", "B", "C", "D" and "E" the characteristic resistance of the anchor may be determined by job site tests according to EOTA Technical Report TR 051 Edition April 2018.

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 γ_M = 2,0 und γ_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 thermal insulation composite systems.

Installation:

- Drilling method see Annex C1 and C2.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters on the site.
- Installation temperature of the anchor from 0 °C to + 40 °C.
- Exposure to UV due to solar radiation of the anchor not protected by rendering ≤ 6 weeks.

fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V	
Intended use Specifications	Annex B1

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 CS II 8/95-455 TermoZ CS II 8/115-455 DT 110 V		
				flush	countersunk ¹⁾
Nominal drill hole diameter	d_0	=	[mm]	8	8
Cutting diameter of drill bit	d _{cut}	≤	[mm]	8,45	8,45
Depth of drill hole to deepest point	h ₁	≥	[mm]	40	55
Overall plastic anchor embedment depth in the base material	h _{nom}	≥	[mm]	32,5	32,5
Effective anchorage depth in the base material	h _{ef}	≥	[mm]	25	25

¹⁾ Not possible for TermoZ CS II 8/95.

Table B2.2: Installation parameters alternative option for base material group "E" for higher loads

Anchor type				TermoZ CS II 8/135	
				flush	countersunk
Nominal drill hole diameter	d_0	=	[mm]	8	8
Cutting diameter of drill bit	d _{cut}	≤	[mm]	8,45	8,45
Depth of drill hole to deepest point	h ₁	≥	[mm]	60	75
Overall plastic anchor embedment depth in the base material	h _{nom}	≥	[mm]	52,5	52,5
Effective anchorage depth in the base material	h _{ef}	≥	[mm]	45	45

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

Anchor type	TermoZ CS II 8/95-455 TermoZ CS II 8/115-455 DT 110 V
Minimum thickness of member	h _{min} = [mm] 100
Minimum spacing	s _{min} = [mm] 100
Minimum edge distance	$c_{min} = [mm]$ 100

Scheme of distances and spacing

for base material groups "A", concrete, group "B" solid bricks, group "C" hollow or perforated masonry, group "d" lightweight aggregate concrete, group "E" autoclaved aerated concrete

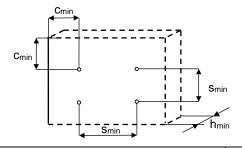


Figure not to scale

fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V	
Intended use Installation parameters depending on the base material groups Minimum thickness of member, edge distances and spacings	Annex B2

Installation instruction Standard setting of TermoZ CS II 8 (plain surface setting) without setting tool 4.Correctly installed 1. Drill hole by corres-2.Insert anchor 3.Set anchor by anchor ponding drilling method manually machine Setting of TermoZ CS II 8 (plain surface setting) by setting tool 4.Correctly installed 1.Drill hole by corres-2.Insert anchor 3.Set anchor by setting ponding drilling method tool with the machine anchor manually Setting of TermoZ CS II 8 (countersunk setting) by setting tool 1.Drill hole by 4. Set anchor by 2.Insert 3. Put on 5.Put on cap 6.Correctly corresponding anchor setting tool setting tool with installed anchor drilling method manually the machine Setting of TermoZ CS II 8 DT 110 V by setting tool 4. Set anchor by 5.Put on cap 1.Drill hole by 2.Insert 3. Put on 6.Correctly corresponding anchor setting tool setting tool with installed anchor drilling method manually the machine

fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V

Intended use

Installation instruction

Annex B3

Table C1.1: Characteristic resistance to tension loads N _{Rk} for single anchor	
TermoZ CS II and TermoZ CS II 8 DT 110 V	

Base material	Group	Bulk density ρ [kg/dm³]	Mean compressive strength / minimum compressive strength single brick acc. to EN 771 [N/mm²]	Remarks	Drilling method ¹⁾	Char. resistance to tension loads N _{Rk} [kN]
Concrete ≥ C12/15 to ≤ C50/60 EN 206:2013+A1:2016	А	-	-	-	Н	1,50
Weather resistant concrete shell ≥ C20/25 EN 206:2013+A1:2016	А	-	-	Thickness h ≥ 40 mm.	Н	1,50
Solid clay brick, Mz, as per EN 771-1:2011+A1:2015	B ²⁾	≥ 1,8	≥ 25/20	-	Н	1,50
Calcium silicate solid brick, KS, as per EN 771-2:2011+A1:2015	B ²⁾	≥ 1,4	≥ 15/12 ≥ 25/20	-	н	1,50
Solid lightweight concrete block, Vbl, as per EN 771-3:2011+A1:2015	B ²⁾	≥ 1,4	≥ 10/8	-	Н	1,20
Solid concrete block, Vbn, as per EN 771-3:2011+A1:2015	B ²⁾	≥ 2,0	≥ 15/12 ≥ 25/20	-	Н	1,50

fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V	
Performances Characteristic resistance to tension loads	Annex C1

¹⁾ H = Hammer drilling, R = Rotary drilling.
2) Vertically perforation ≤ 15%; cross section reduced by perforation vertically to the resting area.

Table C2.1: Characteristic resistance to tension loads N _{Rk} for single anchor
TermoZ CS II 8 and TermoZ CS II 8 DT 110 V

	ı	ı	02 00 11 0 01			
Base material	Group	Bulk density ρ [kg/dm³]	Mean compressive strength / minimum compressive strength single brick acc. to EN 771 [N/mm²]	Remarks	Drilling method ¹⁾	Char. resistance to tension loads N _{Rk} [kN]
		[Kg/aiii]	≥ 15/12		R	1,00
Vertically perforated clay brick, Hlz,		≥ 0,9	≥ 15/12 ≥ 15/12	Exterior web thickness	H	0,65
as per	C ₃₎		≥ 60/48	≥ 12 mm.	R	1,50
EN 771-1:2011+A1:2015		≥ 1,6	≥ 60/48		Н	1,50
Hollow calcium silicate brick,KSL, as per EN 771-2:2011+A1:2015	C ₃₎	≥ 1,4	≥ 15/12	Exterior web thickness ≥ 23 mm.	Н	1,50
Hollow brick lightweight concrete, Hbl, as per EN 771-3:2011+A1:2015	C ₃₎	≥ 0,9	≥ 5/4	Exterior web thickness ≥ 16 mm.	Н	0,50
Hollow brick concrete,			≥ 5/4			0,75
Hbn,	O3)		≥ 7,5/6 Exterior web thick	Exterior web thickness	Н	1,10
as per EN 771-3: 2011+A1:2015	C ₃₎	≥ 1,2	≥ 10/8	≥ 38 mm.		1,50
			≥ 12,5/10			1,50
Lightweight aggregate concrete, LAC,			≥ 5/4			0,95
as per EN 1520:2011 EN 771-3:2011+A1:2015	D	≥ 0,9	≥ 7,5/6	-	Н	1,50
Autoclaved aerated concrete blocks, AAC, as per EN 771-4: 2011+A1:2015 h _{nom} = 32,5 mm	E	≥ 0,50	≥ 5/4	_	R	0,65
Autoclaved aerated concrete blocks, AAC, as per EN 771-4: 2011+A1:2015 h _{nom} = 52,5 mm ²⁾	E	_ ∠ ∪,5∪	≥ 3/4	-	, IX	1,10

¹⁾ H = Hammer drilling, R = Rotary drilling.
2) Not possible for TermoZ CS II 8/95 and TermoZ CS II 8/115 and TermoZ CS II 8/115 DT 110 V.
3) Vertically perforation > 15 % and ≤ 50 %, cross section reduced by perforation vertically to the resting area.

fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V	
Performances Characteristic resistance to tension loads	Annex C2

Table C3.1: Plate stiffness acc. to EOTA Technical Report TR 026:2016-05						
Anchor type	Max. size of the anchor plate dp Load resistance of the anchor plate c [mm] [kN] [kN/m]					
TermoZ CS II 8	60	2,61	1,29			
TermoZ CS II 8 DT 110 V	110	2,61	1,29			

Table C3.2: Point thermal transmittance acc. to EOTA Technical Report TR 025:2016-05

TermoZ CS II 8 and TermoZ CS II 8 DT 110 V	h _{nom}	Thickness of insulation material h _D		Point thermal transmittance				
	[mm]	[mm]	Α	В	С	D	E	
		60	0,002		0,001		0,000	
		80		0,002		0,00	1	
		100 - 120			0,001			
		140 - 200		0,002		0,00)1	
	32,5	220 - 260		0,0	02		0,001	
		280 - 300		0,0			0,000	
Flush mounted		320 - 340			0,001			
		360 – 400	0,000					
		420	0,001 0,000					
		100 - 120	- 0,001					
	52,5	140 - 240		-			0,001	
	02,0	320		-			0,001	
		400	,			0,000		
		80 - 200			0,001			
		220		0,0			0,001	
		240	0,002		0,0			
	32,5	260		002		0,001		
	,-	280	0,001 0,000					
Countersunk mounted		300			0,00			
		320 – 340	0,001 0,000				0,000	
		360-420	· ·					
		100 - 120		-	•		0,000	
	52,5	140 - 240		-	•		0,001	
	,-	320		-	•		0,000	
		400		- 0,000				

fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V	
Performances Plate stiffness and point thermal transmittance	Annex C3

Base material		Mean compressive strength / minimum compressive strength single brick	Tension load	Displace- ments
		acc. to EN 771 [N/mm²]	N _{Rd} [kN]	Δ(δ _N) [mm]
Concrete ≥ C12/15 ≤ C50/60; EN 206:2013+A1:2016		-	0,50	< 0,3
Weather resistant concrete shell ≥ C20/29 EN 206:2013+A1:2016	5;	-	0,50	< 0,3
Clay brick, Mz, as per EN 771-1:2011+A1:2015		≥ 25/20	0,50	< 0,5
Calcium silicate solid brick, KS,		≥ 15/12	0,50	0.0
as per EN 771-2:2011+A1:2015		≥ 25/20	0,50	< 0,3
Solid lightweight concrete block, Vbl, as per EN 771-3:2011+A1:2015		≥ 10/8	0,43	< 0,4
Solid concrete block, Vbn,		≥ 15/12	0,50	< 0,3
as per EN 771-3:2011+A1:2015		≥ 25/20	0,50	< 0,3
	rotary drilling	\ 15/1Q	0,33	< 0,5
Vertically perforated clay brick, Hlz,	hammer drilling	≥ 15/12	0,22	< 0,3
as per EN 771-1:2011+A1:2015	rotary drilling	≥ 60/48	0,50	< 0,4
	hammer drilling	≥ 00/40	0,50	< 0,4
Hollow calcium silicate brick, KSL, as per EN 771-2:2011+A1:2015		≥ 15/12	0,50	< 0,4
Hollow brick lightweight concrete, Hbl, as per EN 771-3:2011+A1:2015		≥ 5/4	0,17	< 0,2
		≥ 5/4	0,25	< 0,2
Hollow brick concrete, Hbn, as per EN 771-3:2011+A1:2015		≥ 7,5/6	0,37	< 0,3
		≥ 10/8	0,50	< 0,4
		≥ 12,5/10	0,50	< 0,4
Lightweight Aggregate Concrete, ≥ LAC		≥ 5/4	0,32	< 0,5
as per EN 1520:2011 / EN 771-3:2011+A1:2015		≥ 7,5/6	0,50	< 0,5
Autoclaved aerated concrete blocks,	h _{nom} = 32,5 mm		0,22	

¹⁾ Not possible for TermoZ CS II 8/95 and TermoZ CS II 8/115 and TermoZ CS II 8/115 DT 110 V.

as per EN 771-4:2011+A1:2015

fischer TermoZ CS II 8 and fischer TermoZ CS II 8 DT 110 V	
Performances Displacements	Annex C4

 $h_{nom} = 52,5 \text{ mm}^{1)}$

0,37