



DECLARATION OF PERFORMANCE No. 0459

1. Unique identification code of the product-type: **Termoz CS 8 KERAKOLL**
2. Intended use/es: **For use in external thermal insulation composite systems (ETICS) with rendering for the transmission of wind suction loads, see appendix, especially Annexes B1 to B3**
3. Manufacturer: **Kerakoll S.p.A Via dell'Artigianato, 9 - 41049 Sassuolo (MO) Italia**
4. System/s of AVCP: **System 2+**
5. European Assessment Document: **EAD 330196-01-0604, July 2017**
European Technical Assessment : **ETA-19/0113; of 25-02-2019**
Technical Assessment Body: **ETA Danmark A/S**
Notified body/ies: **1343 – MPA Darmstadt**
6. Declared performance/s:

Essential characteristics	Performance
Mechanical resistance and stability	BWR 4
Characteristic tension resistance	See appendix, Annexes C1 to C2
Edge distances and spacing	See appendix, Annex B2
Plate stiffness	See appendix, Annex C3
Displacements	See appendix, Annexes C3 e C4
Energy economy and heat retention	BWR 6
Point thermal transmittance	See appendix, Annex C3

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by: **Romano Sghedoni (legal representative)**

At Sassuolo, on 02/12/2019

II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product and intended use

Technical description of the product

The screwed-in anchor termoz CS8 KERAKOLL for fixing of external thermal insulation composite systems (ETICS) 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 color of the anchor sleeve is grey. The special compound screw is made of galvanized 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 deep-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 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

Mechanical resistance and stability (BWR 1):

The essential characteristics regarding mechanical resistance and stability are included under the Basic Works Requirement Safety in use.

Safety in case of fire (BWR 2):

No Performance determined

Safety in use (BWR4):

The essential characteristics are detailed in the Annex from C1 to C4.

Sustainable use of natural resources (BWR7)

No performance determined

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.

In addition to the specific clauses relating to dangerous substances contained in this European technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

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

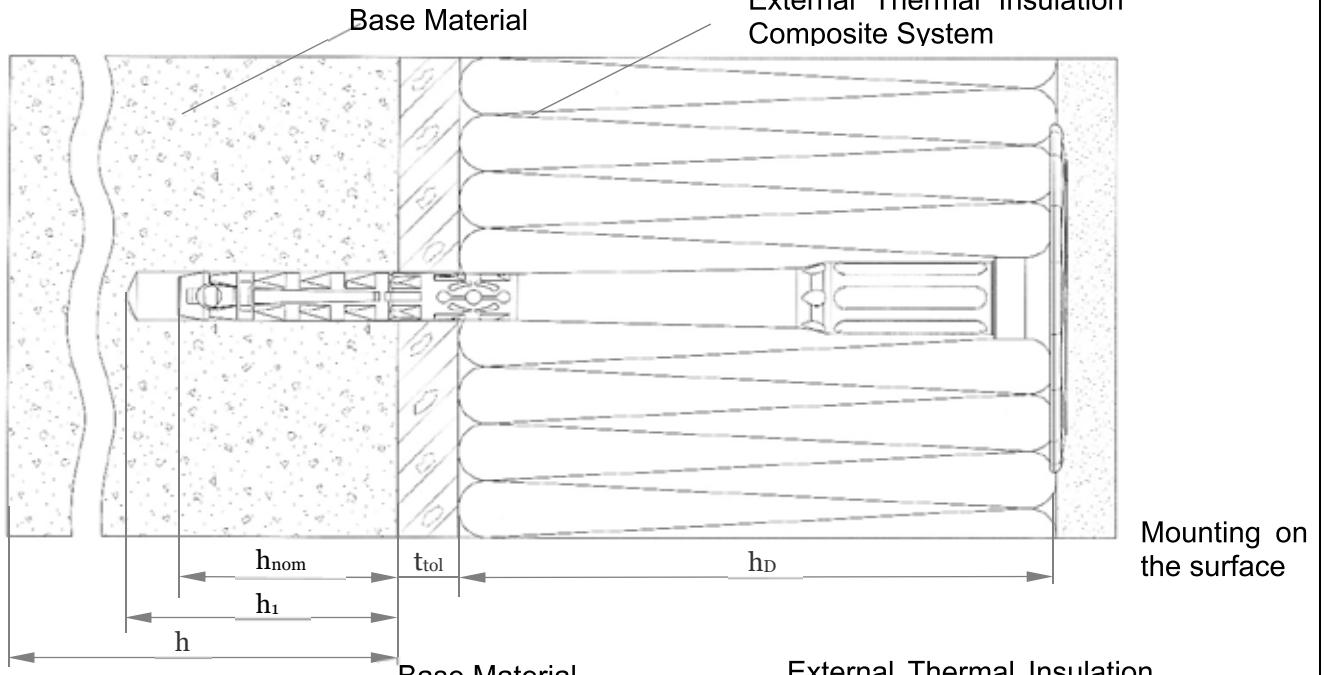
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking

Issued in Copenhagen on 2019-02-25 by

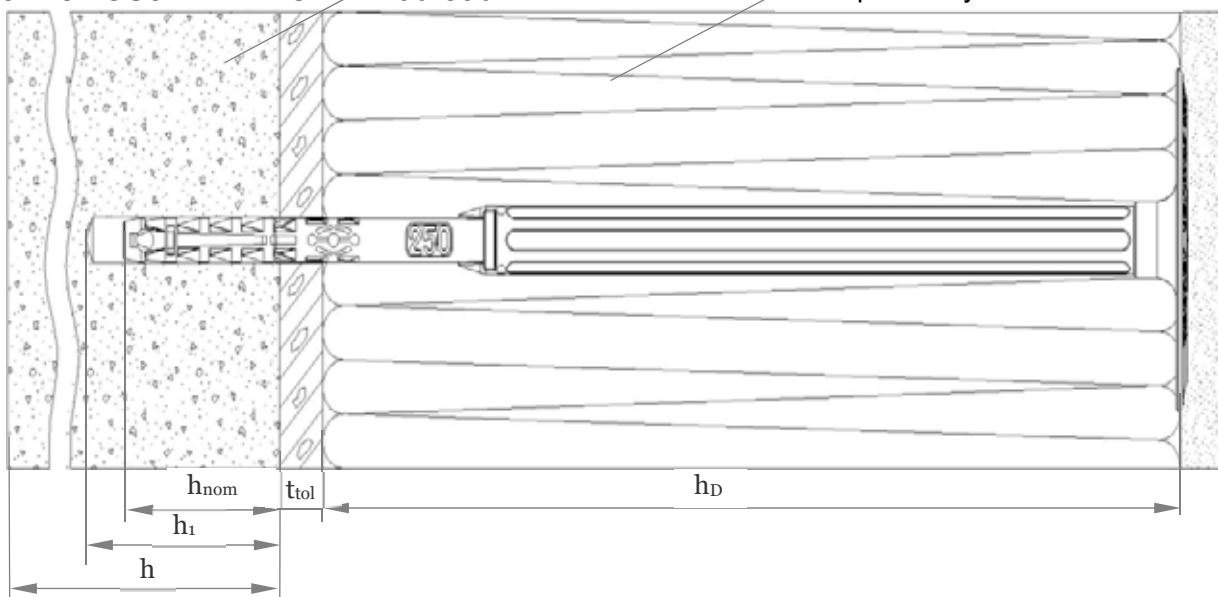


Thomas Bruun
Managing Director, ETA-Danmark

termoz CS8 KERAKOLL / 110-230



termoz CS8 KERAKOLL / 250-390



Legend

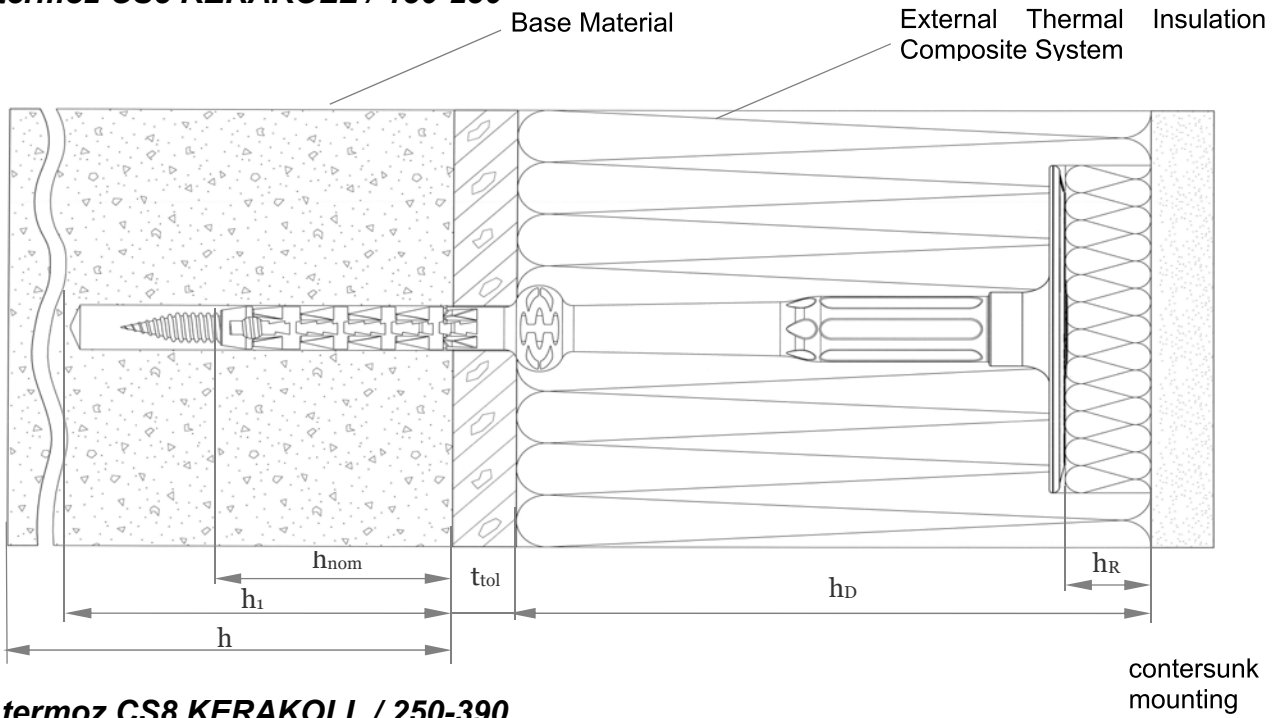
- h_{nom} = Overall plastic anchor embedment depth in the base material
- h_1 = Depth of drilled hole to deepest point
- h = Thickness of member (wall)
- h_D = Thickness of insulation material
- t_{tol} = Thickness of equalizing layer or non-load bearing coating

termoz CS8 KERAKOLL

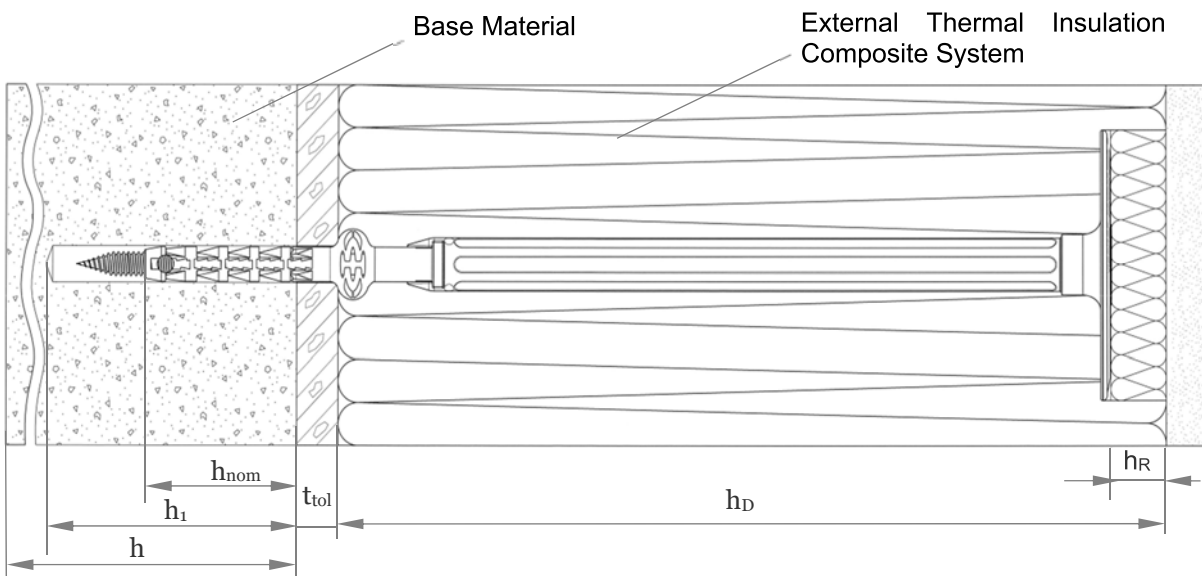
Annex A1

Product description - Installed anchor

termoz CS8 KERAKOLL / 130-230



termoz CS8 KERAKOLL / 250-390

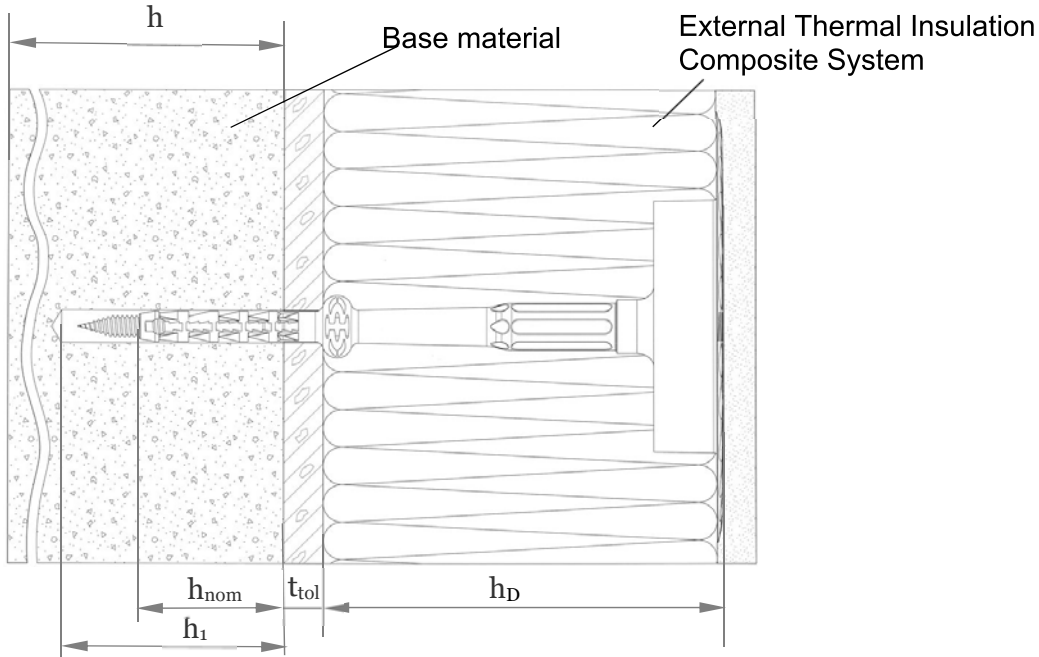


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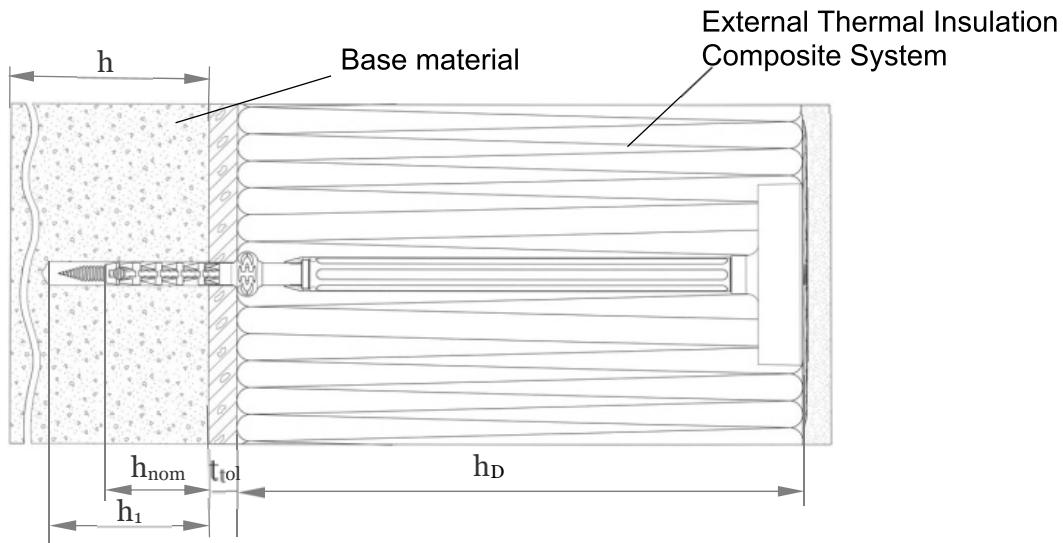
- h_{nom} = Overall plastic anchor embedment depth in the base material
- h_1 = Depth of drilled hole to deepest point
- h = Thickness of member (wall)
- h_D = Thickness of insulation material
- t_{tol} = Thickness of equalizing layer or non-load bearing coating
- h_R = Thickness of insulation cap

termoz CS8 KERAKOLL	Annex A2
Product description - Installed anchor	

termoz CS8 KERAKOLL / 130-230 DT 110 V



termoz CS8 KERAKOLL / 250-390 DT 110 V

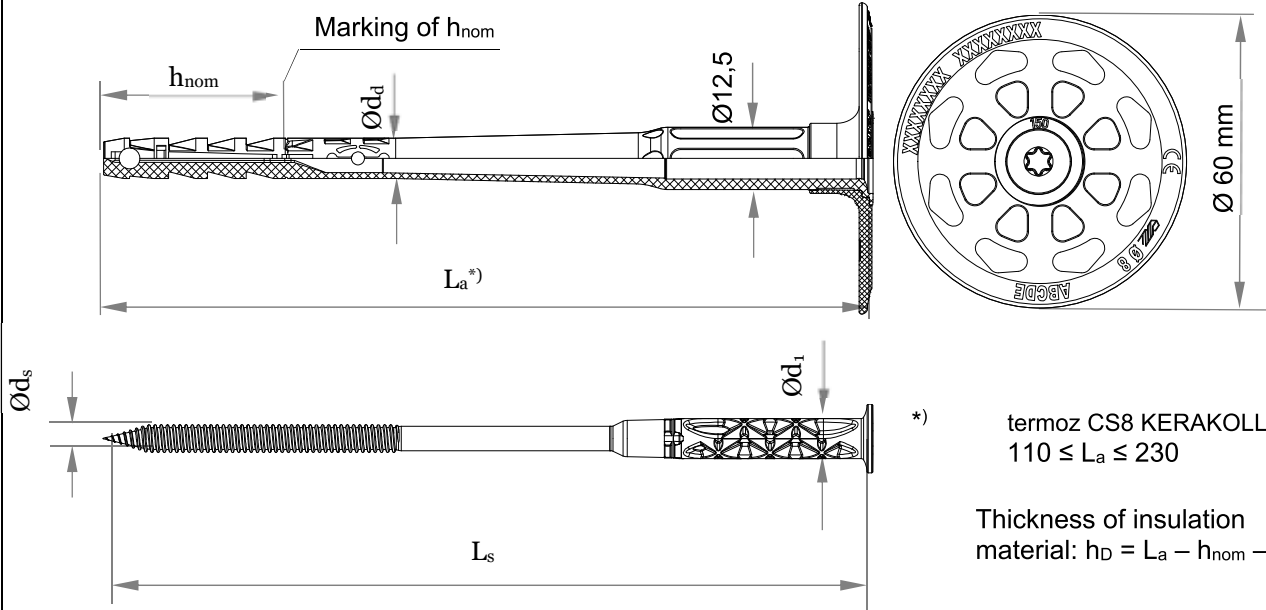


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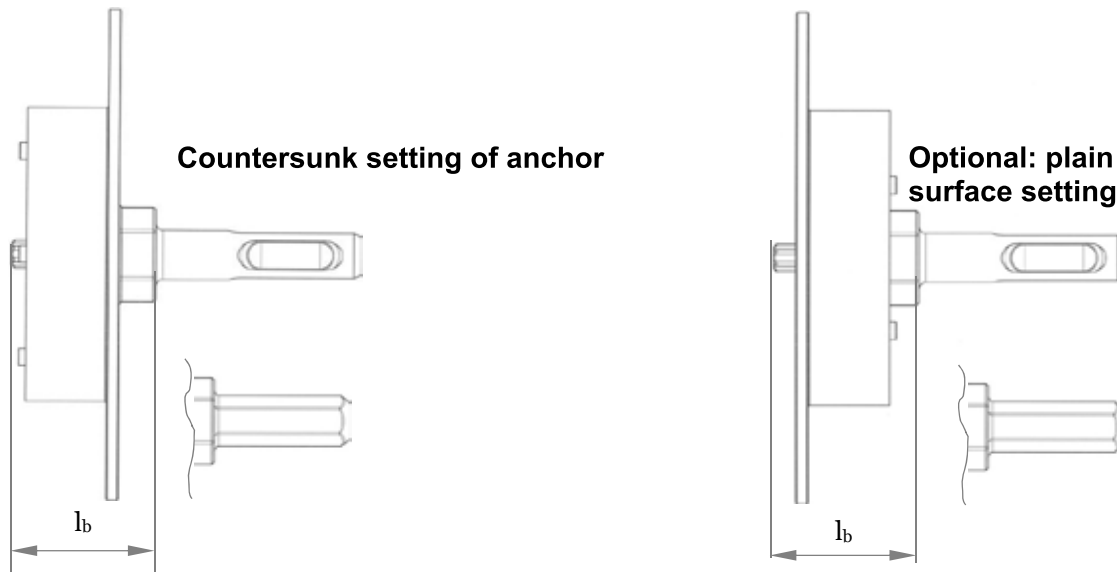
- h_{nom} = Overall plastic anchor embedment depth in the base material
- h_1 = Depth of drilled hole to deepest point
- h = Thickness of member (wall)
- h_D = Thickness of insulation material
- t_{tol} = Thickness of equalizing layer or non-load bearing coating

termoz CS8 KERAKOLL	Annex A3
Product description - Installed anchor	

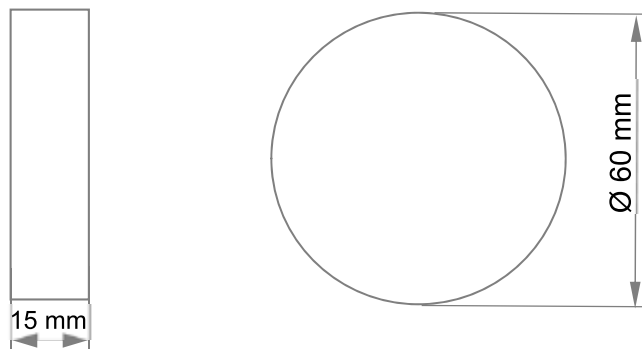
Anchor sleeve / Specific screw for termoz CS8 KERAKOLL / 110-230



Setting tool with SDS adapter or hexagonal adapter available

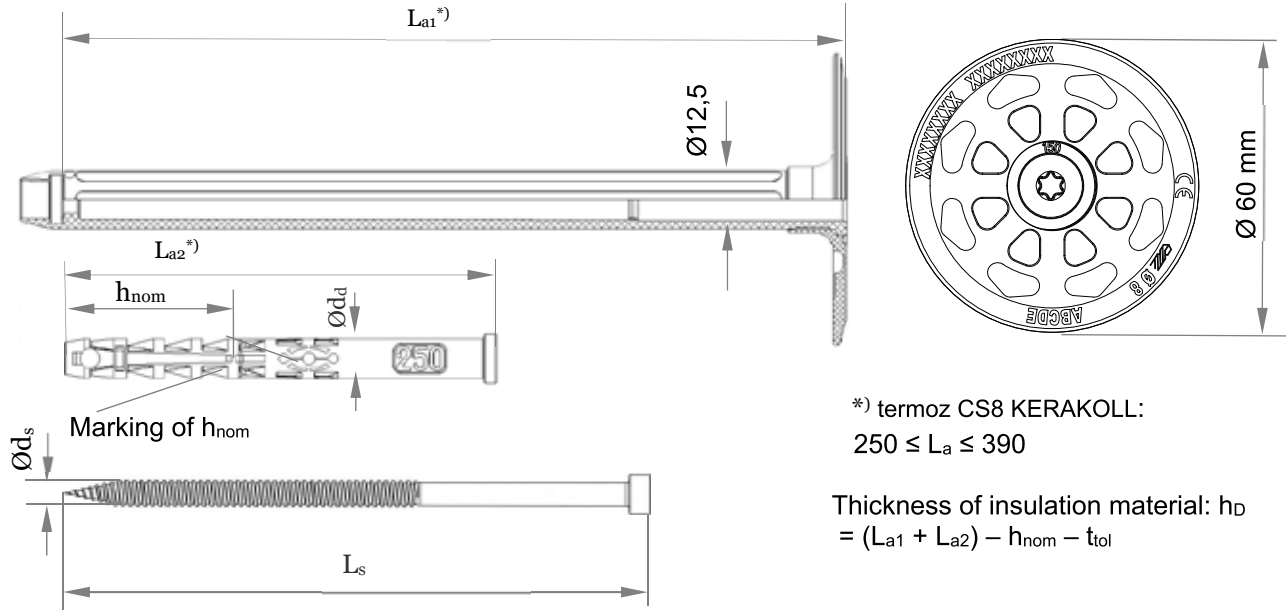


Polystyrene or mineral wool caps

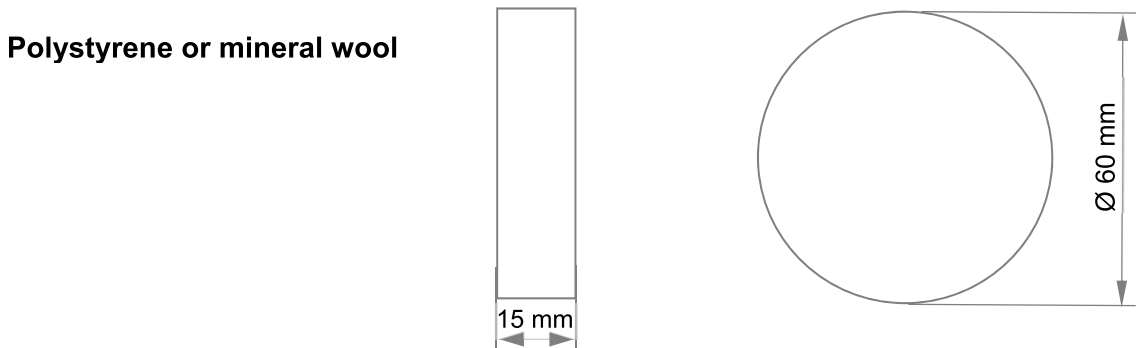
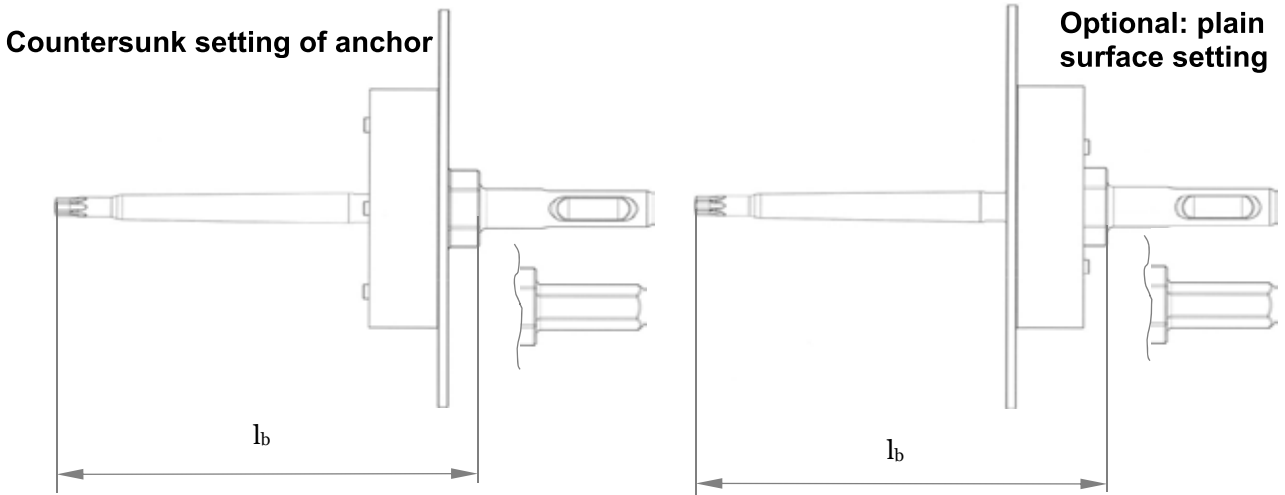


termoz CS8 KERAKOLL	Annex A4
Product description - Dimension	

Shaft / Anchor sleeve / Specific screw for termoz CS8 KERAKOLL / 250-390

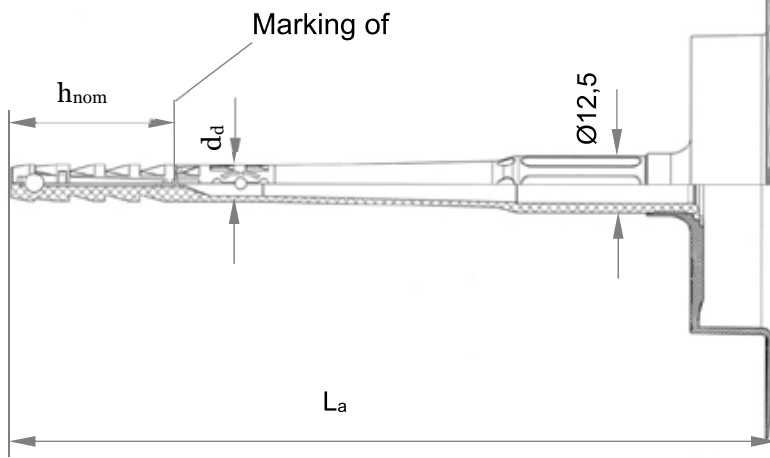


Setting tool with SDS adapter or hexagonal adapter available

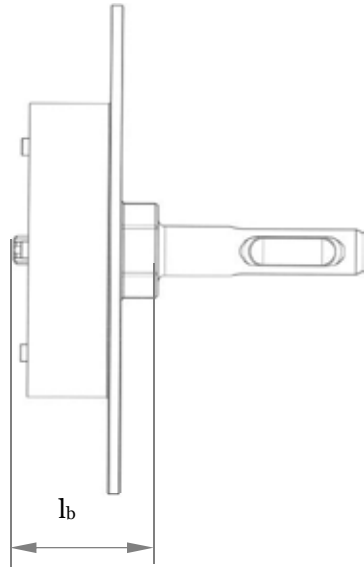


termoz CS8 KERAKOLL	Annex A5
Product description - Dimension	

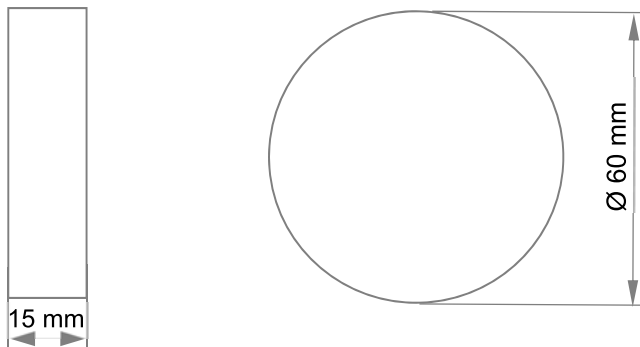
termoz CS8 KERAKOLL / 130-230 DT 110 V



Setting tool with SDS adapter or hexagonal adapter available



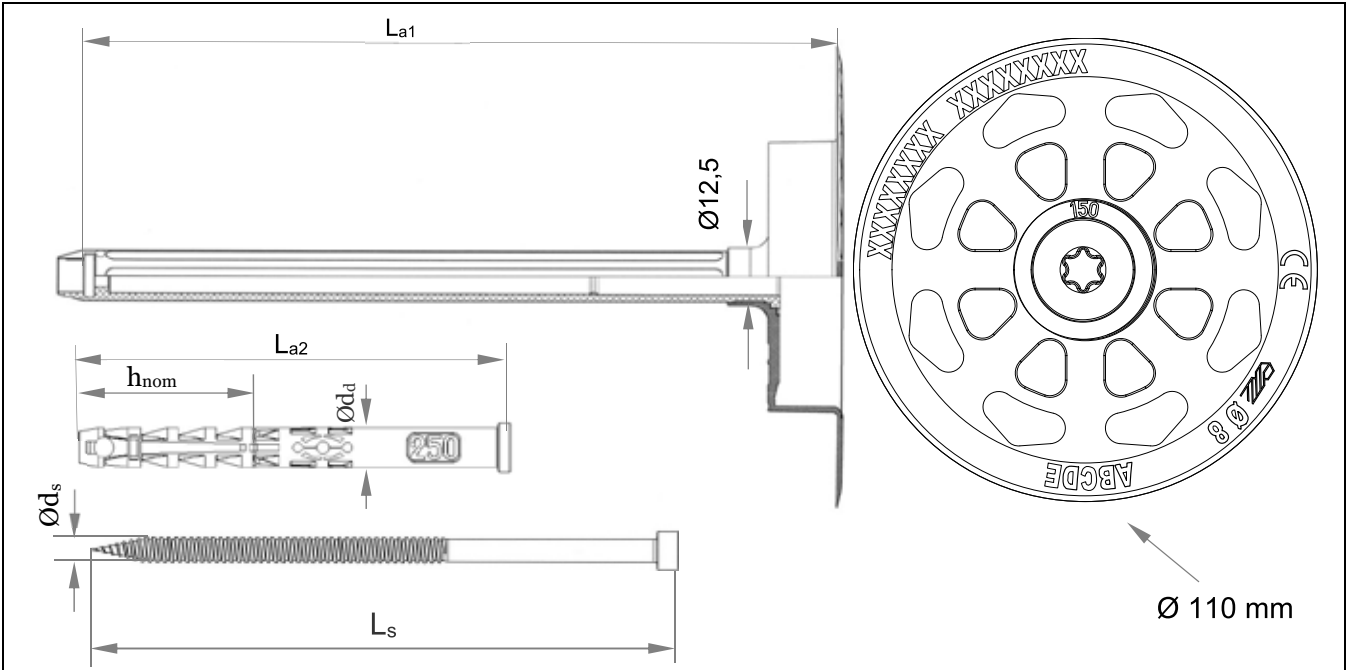
Polystyrene or mineral wool caps



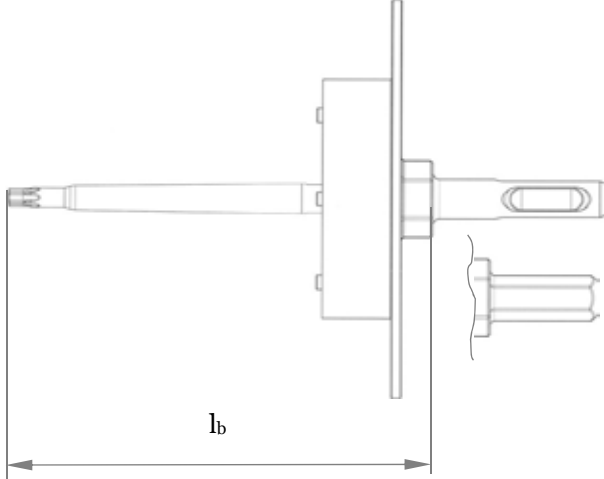
termoz CS8 KERAKOLL

Annex A6

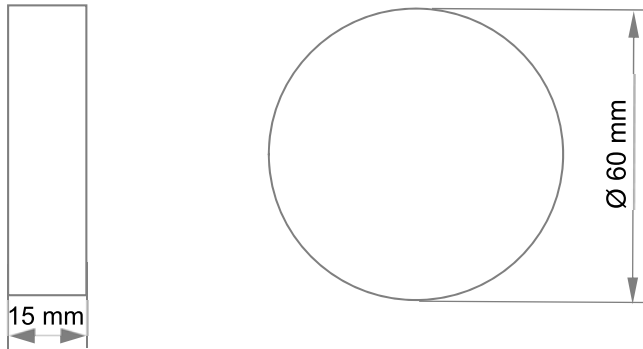
Product description - Dimension



Setting tool with SDS adapter or hexagonal adapter available



Polystyrene or mineral wool caps



<p>termoz CS8 KERAKOLL</p>	<p>Annex A7</p>
<p>Product description - Dimension</p>	

Table A1: Slip-on plates, diameters and material


	Designation
Name and size of anchor	termoz CS8 KERAKOLL
Example	termoz CS8 KERAKOLL / (optional) CE  (optional) Ø 8 ABCDE (optional) and xxxxx additional marks possible

Table A2: Dimensions [mm]

Anchor type	Anchor sleeve		Shaft		Specific screw			Length of bits l _b	
	Ø d _d	h _{nom}	L _a	(L _{a1} +L _{a2})	Ø d _s	l _s	Ø d ₁	l _b [mm]	size
termoz CS8 KERAKOLL 110-230	8	35	110-230	-	5,4	L _a	8	30	T30
termoz CS8 KERAKOLL 250-390	8	35	-	250-390	5,4	(L _{a1} + L _{a2}) – 155mm	-	180	T25
termoz CS8 KERAKOLL Renovation type 250-310	8	35	-	250-310	5,4	(L _{a1} + L _{a2}) – 75mm	-	100	T25

Table A3: Dimensions [mm]

Anchor type	Anchor sleeve		Shaft		Specific screw			Length of bits l _b	
	Ø d _d	h _{nom}	L _a	(L _{a1} +L _{a2})	Ø d _s	l _s	Ø d ₁	l _b [mm]	size
termoz CS8 KERAKOLL 110-230	8	35	130-230	-	5,4	L _a	8	30	T30
termoz CS8 KERAKOLL 250-390	8	35	-	250-390	5,4	(L _{a1} + L _{a2}) – 155mm	-	180	T25
termoz CS8 KERAKOLL Renovation type 250-310	8	35	-	250-310	5,4	(L _{a1} + L _{a2}) – 75mm	-	100	T25

Table A4: Materials

Designation	Material
Anchor sleeve	PP colour: grey
Shaft (termoz CS8 KERAKOLL / 250-390)	PA6 GF colour: grey
Specific compound screw (termoz CS8 KERAKOLL / 110-230) or specific screw (termoz CS8 KERAKOLL / 250-390)	PA6 GF with Steel gal Zn A2G or A2F acc. to EN ISO 4042 Steel gal Zn A2G or A2F according to EN ISO 4042 or stainless steel 1.4362 duplex coating, 1.4401, 1.4571, 1.4529 acc. to EN 10088
Anchor plate	PA6 GF colour: grey

termoz CS8 KERAKOLL

Annex A8

Product description – Dimension and materials

Drawing of the slip-on plates

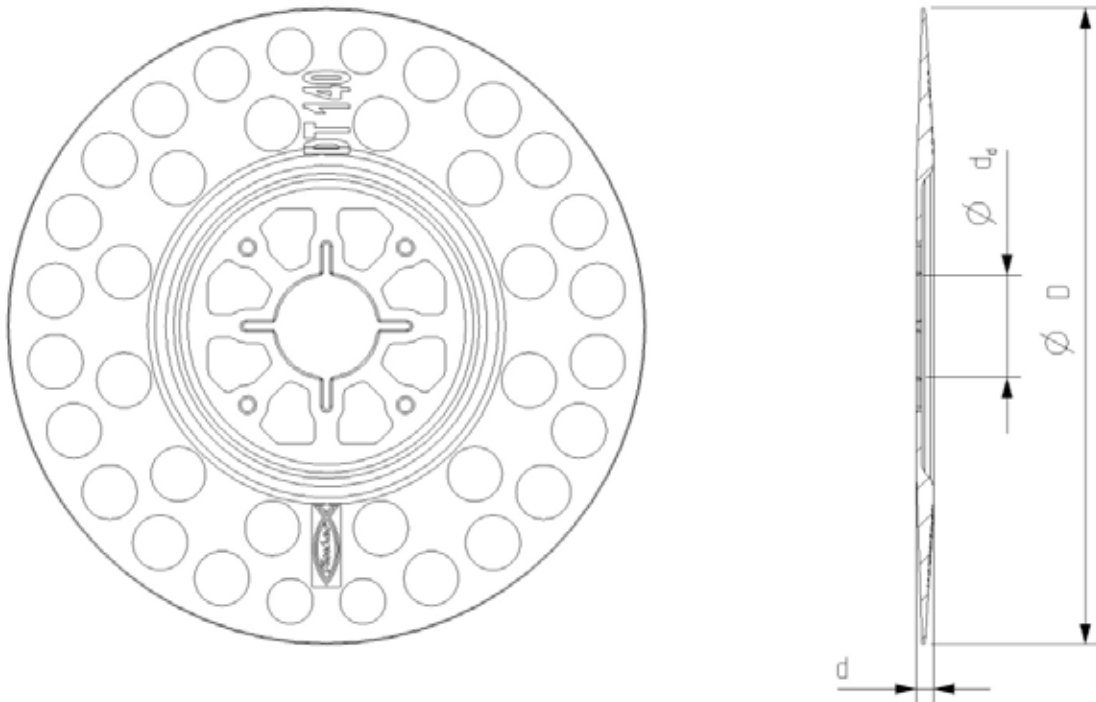


Table A4: Slip-on plates, diameters and material

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

termoz CS8 KERAKOLL

Annex A9

Product description – Slip-on plates combined with termoz CS8 KERAKOLL

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 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 and C2.
- Lightweight aggregate concrete (use category D), according to Annex C2
- Autoclaved aerated concrete (use category E), according to Annex C2
- For other base materials of the use categories A, B, C, D and E the characteristic resistance of the anchor may be determined by job site tests according to EOTA Technical Report 051

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

Installation:

- Drilling method according to 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 from 0°C to +40°C
- Exposure to UV due to solar radiation of the anchor not protected by rendering ≤ 6 weeks.

termoz CS8 KERAKOLL	Annex B1
Intended use - Specifications	

Table B1: Installation parameters for use categories A, B, C, D and E

Anchor type		termoz CS8 KERAKOLL	
		Flush	Countersunk
Nominal drill hole diameter	$d_0 =$ [mm]	8	8
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45	8,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	45/55 ^{*)}	60/70 ^{*)}
Overall plastic anchor embedment depth in the base material	$h_{nom} \geq$ [mm]	35/45 ^{*)}	35/45 ^{*)}

*) only valid for weather shall acc. to Annex C1

Table B2: Installation parameters for cat. "C" only valid for tested masonry units (see Table C1 Annex 1)

Anchor type		termoz CS8 KERAKOLL	
		Flush	Countersunk
Nominal drill hole diameter	$d_0 =$ [mm]	8	8
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45	8,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	35	50
Overall plastic anchor embedment depth in the base material	$h_{nom} \geq$ [mm]	25	25

Table B3: Installation parameters alternative option for use category "E"

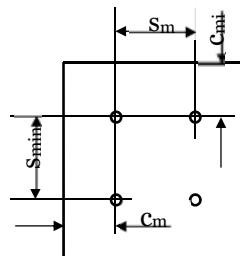
Anchor type		termoz CS8 KERAKOLL	
		Flush	Countersunk
Nominal drill hole diameter	$d_0 =$ [mm]	8	8
Cutting diameter of drill bit	$d_{cut} \leq$ [mm]	8,45	8,45
Depth of drill hole to deepest point	$h_1 \geq$ [mm]	65	80
Overall plastic anchor embedment depth in the base material	$h_{nom} \geq$ [mm]	55	55

Table B4: Anchor distances and dimensions of members

Anchor type		termoz CS8 KERAKOLL
Minimum thickness of member	$h^1) \geq$ [mm]	100
Minimum spacing	$s_{min} =$ [mm]	100
Minimum edge distance	$c_{min} =$ [mm]	100

1) not valid for weather shells acc. to C1

Scheme of distances and spacing



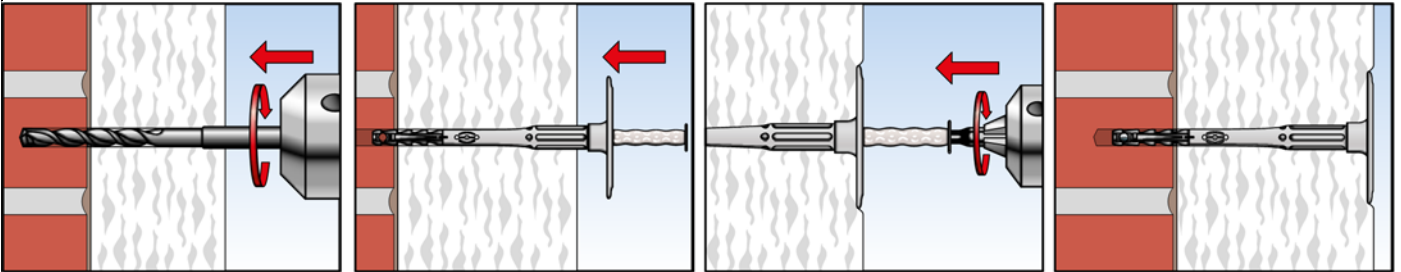
termoz CS8 KERAKOLL

Annex B2

Installation parameters for use categories

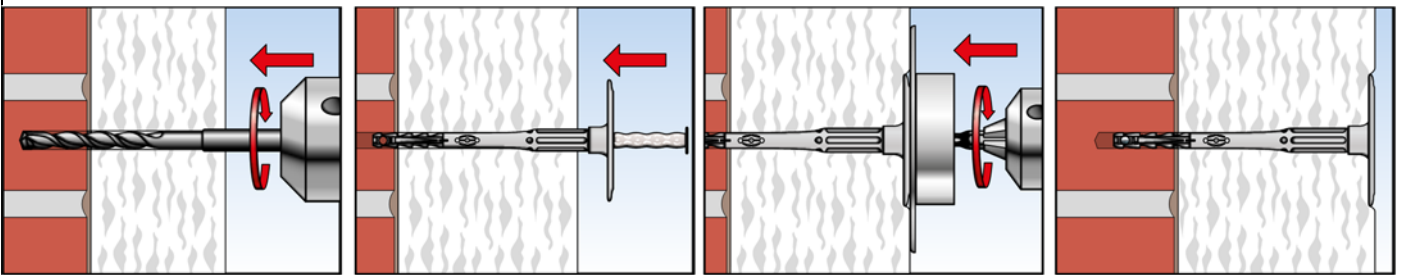
Installation instructions

Standard setting of anchor (plain surface)



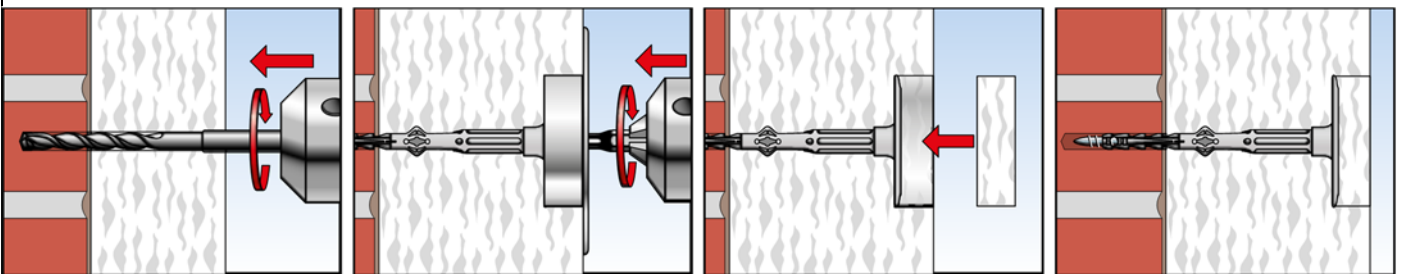
- 1. Drill hole by corresponding drilling method
- 2. Insert anchor manually
- 3. Set anchor by machine
- 4. Correctly installed anchor

Setting of anchor (plain surface) by setting tool



- 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) by setting tool



- 1. Drill hole by corresponding drilling method
- 2. Insert anchor and set anchor by setting tool
- 3. Put on polystyrene or mineral wool cap
- 4. Correctly installed anchor

termoz CS8 KERAKOLL

Annex B3

Procedure

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/dm ³]	Minimum compressive strength f_b [N/mm ²]	Remarks	Drill mode ¹⁾	Characteristic resistance termoz CS8 KERAKOLL N_{Rk} [kN]
Concrete $\geq C 12/15$ and $< C 50/60$	-	-	EN 206-1:2000	H	1,2
Concrete C50/60					1,5
Weather resistant concrete shell $\geq C20/25$	-	-	EN 206-1:2000 ; $h \geq 42$ mm	H	1,2
Weather resistant concrete shell C 50/60	-	-	EN 206-1:2000 ; $h \geq 42$ mm		1,5
Solid Clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, Mz	$\geq 1,8$	20	Cross section reduced up to 15% by perforation vertically to the resting area	H	1,5
Calcium silicate solid bricks, e.g. acc. to DIN V 106:2005-10, EN 771-2:2011, KS	$\geq 1,8$	20	Cross section reduced up to 15% by perforation vertically to the resting area	H	1,5
		12			0,9
Solid lightweight concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011 Vbl	$\geq 1,4$	8	Cross section reduced up to 15% by perforation vertically to the resting area	H	0,5
Solid concrete block, e.g. acc. to DIN V 18152-100:2005-10 EN 771-3:2011, Vbn	$\geq 2,0$	20	Cross section reduced up to 15% by perforation vertically to the resting area	H	1,2
		12			0,75
Vertically perforated clay bricks e.g. acc. to DIN 105-100:2012-01, EN 771-1:2011, HLz	$\geq 1,0$	12	Cross section reduced between 15% and 50% by perforation vertically to the resting area. Exterior web thickness ≥ 12 mm	R	0,6
	$\geq 1,6$	48			1,5
Hollow calcium silicate brick, acc. to DIN V 106:2005-10, EN 771-2:2011, KSL	$\geq 1,4$	20	Cross section reduced between 15% and 50% by perforation vertically to the resting area. Exterior web thickness ≥ 23 mm	H	0,9
		12			0,5
Partial safety factor				$\gamma_M^{2)}$	2,0

1) H = Hammer drilling, R = Rotary drilling

2) In absence of other national regulations

Cat. "C" values valid for reduced anchorage depth 25mm

termoz CS8 KERAKOLL

Annex C1

Intended use - Characteristic resistance of the anchor

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

Base material	Bulk density class ρ [kg/dm ³]	Minimum compressive strength f_b [N/mm ²]	Remarks	Drill mode ¹⁾	Characteristic resistance termoz CS8 KERAKOLL N_{Rk} [kN]
Hollow brick light-weight concrete, e.g. acc. to DIN V 18153-100: 2005-10, EN 771-3:2011 Hbl	$\geq 0,9$	4	Exterior web thickness ≥ 20 mm	H	0,5
Hollow brick concrete, e.g. acc. to DIN V 18153-100: 2005-10, EN 771-3:2011 Hbn	$\geq 1,2$	10	Exterior web thickness ≥ 38 mm	H	1,2
		8			0,9
		6			0,75
		4			0,5
Lightweight Aggregate Concrete \geq LAC 6	$\geq 0,9$	6	DIN EN 1520	H	0,75
Autoclaved aerated concrete blocks, e.g. AAC acc. to DIN V 4165-100:2005-10, EN 771-4 $h_{nom} = 35$ mm	$\geq 0,50$	4	DIN V 4165-100	R	0,3
Autoclaved aerated concrete blocks, e.g. AAC acc. to DIN V 4165-100:2005-10, EN 771-4 $h_{nom} = 55$ mm					0,6
Partial safety factor				$\gamma_M^{2)}$	2,0

- 1) H = Hammer drilling, R = Rotary drilling
- 2) In absence of other national regulations

Cat "C" = values valid for reduced anchorage depth 25 mm

termoz CS8 KERAKOLL	Annex C2
Performance - Characteristic resistance of the anchor	

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]
termoz CS8 KERAKOLL/ 110 – 230 flush mounted	60 - 80	0,001
	100 - 180	0,002
termoz CS8 KERAKOLL/ 250 – 390 flush mounted	200 - max.	0,001
termoz CS8 KERAKOLL/ 250 - 310*) flush mounted	200 - 220	0,001
	240 - 260	0,002
termoz CS8 KERAKOLL/ 110 – 230 countersunk mounted	80 - 120	0,001
	140 – 180	0,002
termoz CS8 KERAKOLL/ 250 – 390 countersunk mounted	200 – max.	0,001
termoz CS8 KERAKOLL/ 250 – 310 countersunk mounted*)	200 - 260	0,001

*) Renovation type

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]
termoz CS8 KERAKOLL	60	1,7	0,6

Table C4: Displacements

Base material	Tension load F_{Rd} [kN]	Displacements δ_m [mm]
Concrete \geq C12/15 (EN 206-1:2000)	0,40	< 0,3
Concrete C50/60 (EN 206-1:2000)	0,50	< 0,3
Weather resistant concrete shell \geq C20/C25 (EN 206-1:2000)	0,40	< 0,4
Weather resistant concrete shell C50/60 (EN 206 1:2000)	0,50	< 0,4
Clay brick DIN 105-100:2012-01, EN 771-1:2011, Mz 20	0,50	< 0,3
Calcium silicate solid bricks DIN V 106:2005-10 EN 771-2 :2011,KS 20	0,50	< 0,3
Calcium silicate solid bricks DIN V 106:2005-10 EN 771-2 :2011,KS 12	0,30	
Solid lightweight concrete block DIN V 18152-100:2005-10 EN 771-3 :2011,Vbl 8	0,17	< 0,2

termoz CS8 KERAKOLL

Annex C3

Performance - Point thermal transmittance, plate stiffness and displacements

Table C4.1: Displacements

Base material	Tension load F_{Rd} [kN]	Displacements δ_m [mm]
Solid concrete block DIN V 18152-100:2005-10 EN 771-3:2011,Vbn 20	0,40	< 0,3
Solid concrete block DIN V 18152-100:2005-10 EN 771-3:2011,Vbn 12	0,25	
Vertically perforated clay brick DIN 105-100:2012-01 EN 771-1:2011,Hlz 12	0,20	< 0,2
Vertically perforated clay brick DIN 105-100:2012-01 EN 771-1:2011,Hlz 48	0,50	< 0,3
Hollow calcium silicate brick DIN V 106:2005-10 EN 771-2:2011, KSL 20	0,30	< 0,2
Hollow calcium silicate brick DIN V 106:2005-10 EN 771-2:2011, KSL 12	0,17	
Hollow brick light-weight concrete DIN V 18153-100: 2005-10 EN 771-3:2011, Hbl 4	0,17	< 0,1
Hollow brick concrete DIN V 18153-100: 2005-10 EN 771-3:2011, Hbn 10	0,40	< 0,2
Hollow brick concrete DIN V 18153-100: 2005-10 EN 771-3:2011, Hbn 8	0,30	
Hollow brick concrete DIN V 18153-100: 2005-10 EN 771-3:2011, Hbn 6	0,25	
Hollow brick concrete DIN V 18153-100: 2005-10 EN 771-3:2011, Hbn 4	0,17	
Lightweight Aggregate Concrete \geq LAC 6 DIN EN 1520	0,25	< 0,2
Autoclaved aerated concrete blocks DIN V 4165-100:2005-10 EN 771-4, AAC 4, $h_{nom} = 35$ mm	0,10	< 0,1
Autoclaved aerated concrete blocks DIN V 4165-100:2005-10 EN 771-4, AAC 4, $h_{nom} = 55$ mm	0,20	< 0,1

termoz CS8 KERAKOLL

Annex C4

Performance - Displacements