DECLARATION OF PERFORMANCE

DoP 0246

for fischer TERMOZ 8 U, TERMOZ 8 UZ, WS 8 L (Plastic anchors for use in concrete and masonry) EN

1.	Unique identification code of the product-type:	**DoP 0246**	
2.	Intended use/es:	**Screwed-in plastic anchor for fixing of external thermal insulation composite systems (ETICS) with rendering in concrete and masonry., see appendix, especially annexes B1 - B4.**	
3.	Manufacturer:	**fischerwerke GmbH & Co. KG, Klaus-Fischer-Str. 1, 72178 Waldachtal, Germany**	
4.	Authorised representative:	**–**	
5.	System/s of AVCP:	**2+**	
6.	European Assessment Document:	**EAD 330196-01-0604**	
	European Technical Assessment:	**ETA-02/0019; 2017-10-09**	
	Technical Assessment Body:	**DIBt- Deutsches Institut für Bautechnik**	
	Notified body/ies:	**2873 TU Darmstadt**	
7.	Declared performance/s:		
	Safety in use (BWR 4)		
	Characteristic load bearing capacity:	**Characteristic resistance under tension load:**	**Annexes C1, C2**
		Minimum edge distance:	**Annex B2**
		Minimum spacing:	**Annex B2**
	Displacements:	**Tension load with partial factor:**	**Annex C2**
		Displacements:	**Annex C2**
	Plate stiffness:	**Diameter of the anchor plate:**	**Annex C2**
		Load resistance of the anchor plate:	**Annex C2**
		Plate stiffness:	**Annex C2**
	Energy economy and heat retention (BWR 6)		
	Thermal transmittance:	**Point thermal transmittance of an anchor:**	**Annex C2**
		Insulating layer thickness of the ETICS:	**Annex C2**
8.	Appropriate Technical Documentation and/or Specific Technical Documentation:	**–**	

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:

Dr. Oliver Geibig, Managing Director Business Units & Engineering

Jürgen Grün, Managing Director Chemistry & Quality

Tumlingen, 2021-01-01

This DoP has been prepared in different languages. In case there is a dispute on the interpretation the English version shall always prevail.

The Appendix includes voluntary and complementary information in English language exceeding the (language-neutrally specified) legal requirements.

Specific Part

1 Technical description of the product

The fischer screwed-in anchor TERMOZ 8 U with a plate consists of a plastic part made of polyamide (virgin material) and an accompanying specific screw of galvanised steel with an additional Duplex-coating or an accompanying specific screw of stainless steel.

The fischer screwed-in anchor TERMOZ 8 UZ with a plate consists of a plastic part made of polypropylene (virgin material) and an accompanying specific screw of polyamide.

The fischer screwed-in anchor WS 8 L with a collar consists of a plastic part made of polyamide (virgin material) and an accompanying specific screw of galvanised steel or of galvanised steel with an additional Duplex-coating or of stainless steel.

The anchor types TERMOZ 8 U and TERMOZ 8 UZ may in addition be combined with the anchor plates DT 90, DT 110 and DT 140.

An illustration and the description of the product are given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

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

The 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 tension resistance	See Annexes C 1 and C 2
Edge distances and spacing	See Annex B 2
Plate stiffness	See Annex C 2
Displacements	See Annex C 2

3.2 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Point thermal transmittance	See Annex C 2

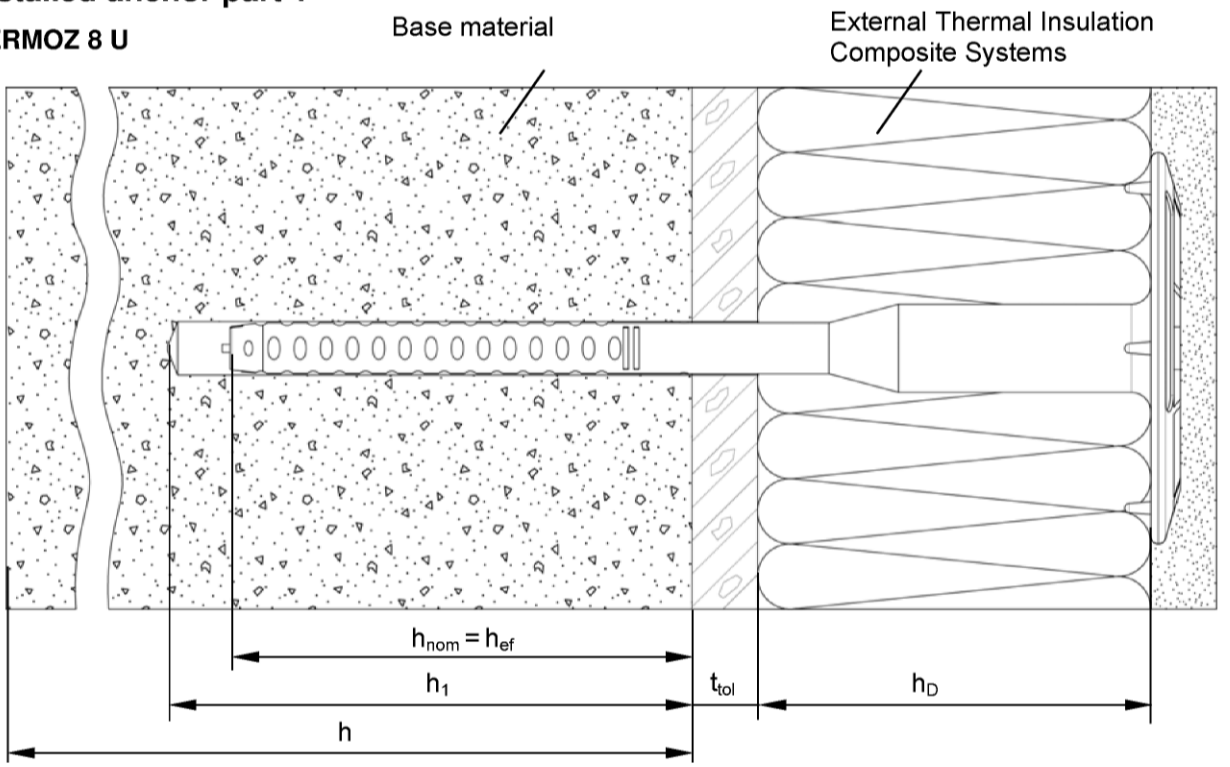
4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

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

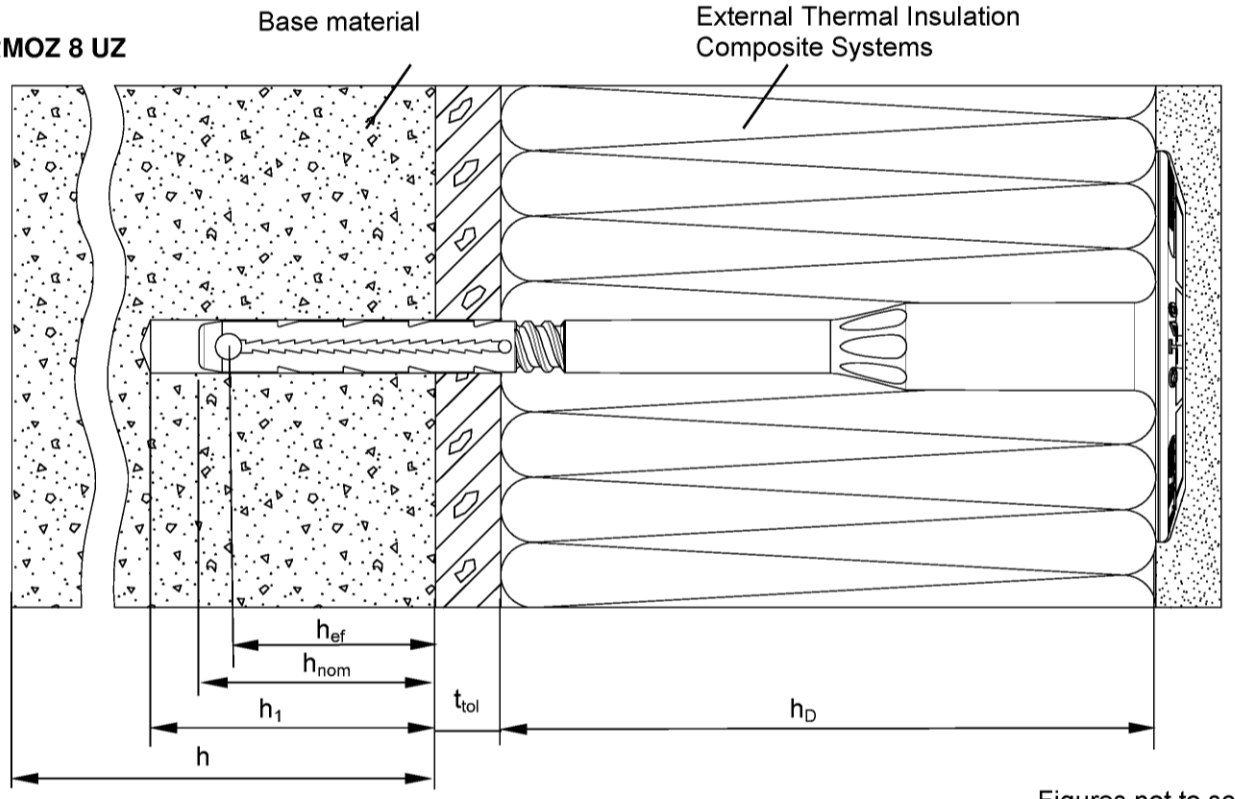
The system to be applied is: 2+

Installed anchor part 1

TERMOZ 8 U



TERMOZ 8 UZ

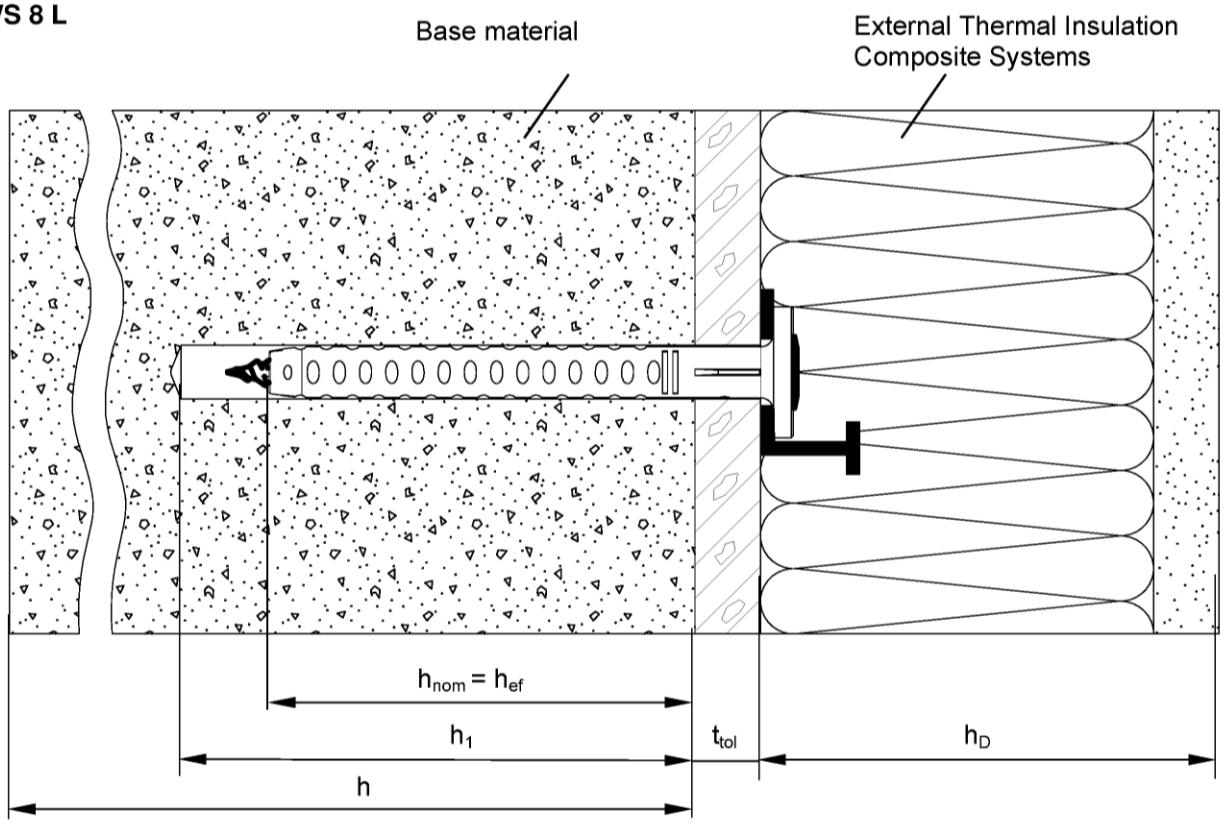


Figures not to scale

fischer TERMOZ 8 U, TERMOZ 8 UZ and WS 8 L	
Product description Installed anchor	**Annex A 1** Appendix 2 / 13

Installed anchor part 2

WS 8 L



Legend

h_{ef} = Effective anchorage depth

h_{nom} = Overall embedment depth

h_1 = Depth of drill hole in base material

h = Thickness of base material

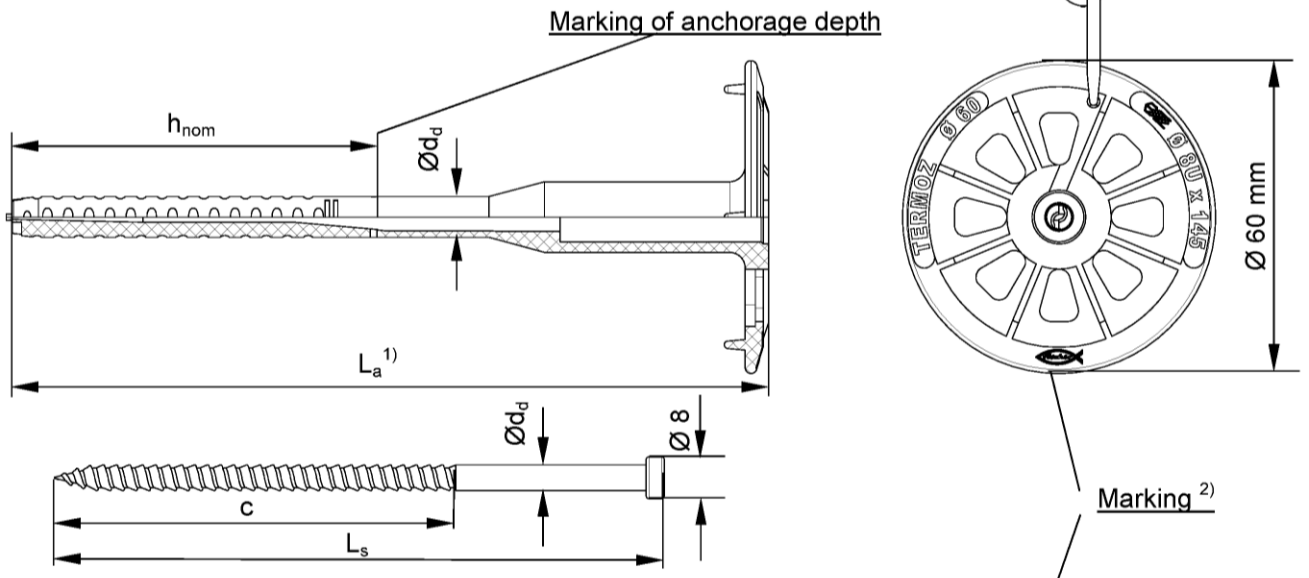
h_D = Thickness of insulation material

t_{tol} = Thickness of equalizing layer or non–load bearing coating

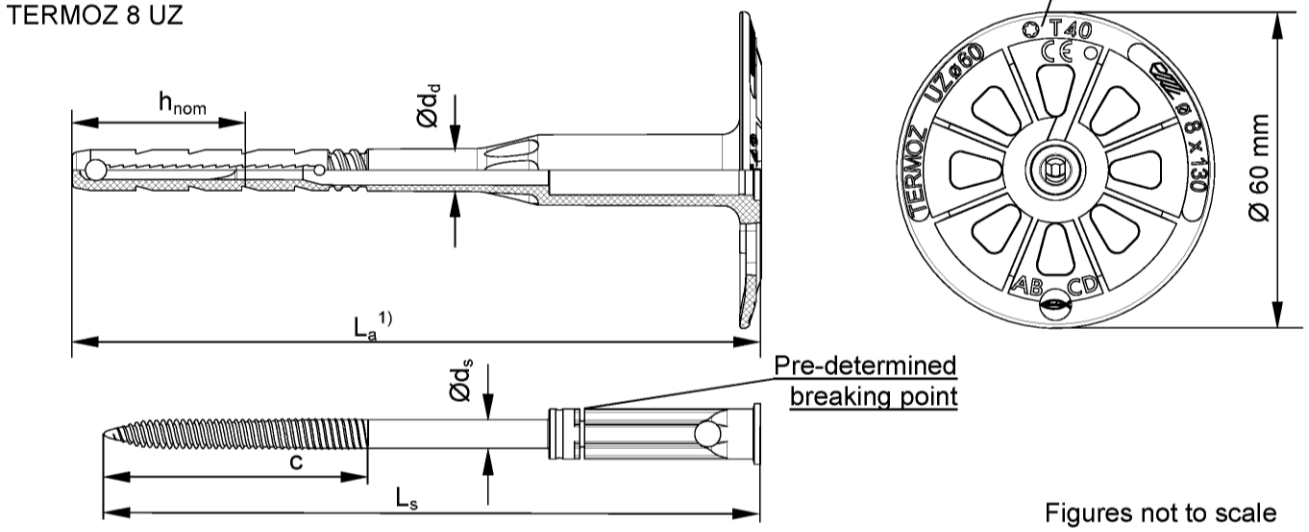
Figures not to scale

Product description

TERMOZ 8 U



TERMOZ 8 UZ



Figures not to scale

1) Various length of the anchors are permissible:

TERMOZ 8 U $L_{a\,min}$ = 100 mm; $L_{a\,max}$ = 605 mm
L_a = length of accompanying specific screw L_s + 28 mm

TERMOZ 8 UZ $L_{a\,min}$ = 110 mm; $L_{a\,max}$ = 230 mm
L_a = length of accompanying specific screw L_s + 5 mm

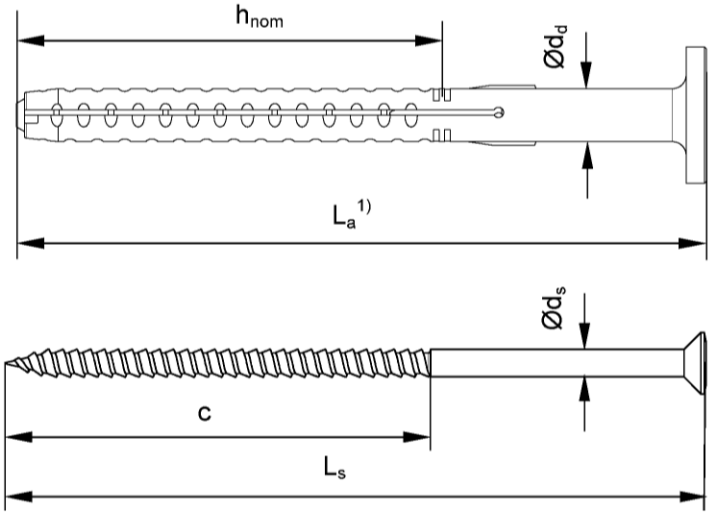
Determination of maximum thickness of insulation: $h_D = L_a - h_{nom} - t_{tol}$

e.g. for TERMOZ 8 U: L_a = 605 mm, h_{nom} = 70 mm, t_{tol} = 0 $\Rightarrow$ h_D = 605 – 70 – 0 = 535 mm
e.g. for TERMOZ 8 UZ: L_a = 230 mm, h_{nom} = 35 mm, t_{tol} = 0 $\Rightarrow$ h_D = 230 – 35 – 0 = 195 mm

2) Different markings see Table A4.1

Product description

WS 8 L



1) Various length of the anchors are permissible:

WS 8 L $L_{a\,min}$ = 80 mm; $L_{a\,max}$ = 160 mm

L_a = length of accompanying specific screw L_s - 7 mm

Table A4.1: Marking

Anchor Type	TERMOZ 8 U	TERMOZ 8 UZ	WS 8 L
Plate diameter	Ø 60	Ø 60	-
Works symbol			
Size of anchor	Ø 8 U	Ø 8 UZ	-
Length of anchor	L_a	L_a	L_a
Example	termoz Ø60Ø8U x 150	termoz Ø60Ø8UZx150	WS 8 L x 100

Table A4.2: Dimensions

Anchor Type	Anchor Sleeve		Accompanying specific screw	
	Ø d_d	h_{nom}	Ø d_s	c
	[mm]			
TERMOZ 8 U	**Ø 8**	**70**	**5,0**	**70**
TERMOZ 8 UZ		**35**	**5,4**	**50**
WS 8 L		**70**	**5,0**	**77**

Figures not to scale

Table A5.1: Material

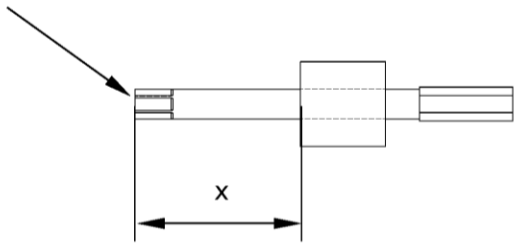
Designation		Material
Anchor sleeve	TERMOZ 8 U	Polyamide 6 (virgin material), colour: nature, blue, red or grey
	WS 8 L	Polyamide 6 (virgin material), colour: nature, blue, red, grey or green
	TERMOZ 8 UZ	Polypropylen (virgin material), colour: grey
Special screw	TERMOZ 8 U	Steel (f_{uk} ≥ 420 N/mm²; f_{yk} ≥ 520 N/mm²) gvz A2F acc. to EN ISO 4042:1999 or Steel gvz A2F acc. to EN ISO 4042:1999 + Duplex-coating type Delta-Seal in three layers (overall thickness ≥ 6µm) or Stainless steel material No. 1.4401 or 1.4571(f_{uk} ≥ 700 N/mm²; f_{yk} ≥ 450 N/mm²)
	WS 8 L	Steel (f_{uk} ≥ 420 N/mm²; f_{yk} ≥ 520 N/mm²) gvz A2F acc. to EN ISO 4042:1999 or Steel gvz A2F acc. to EN ISO 4042:1999 + Duplex-coating type Delta-Seal in three layers (overall thickness ≥ 6µm) or Stainless steel material No. 1.4401 or 1.4571(f_{uk} ≥ 700 N/mm²; f_{yk} ≥ 450 N/mm²)
	TERMOZ 8 UZ	Polyamide (virgin material) with glass fibre, colour: nature

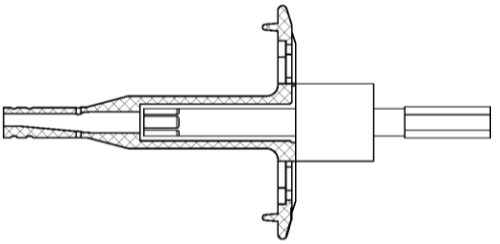
Table A5.2: Control of the length of thread engagement

Anchor type	Type of drive	Length "x" [mm]
TERMOZ 8 U	Screw head drive T30	39

Setting tool TERMOZ 8 U

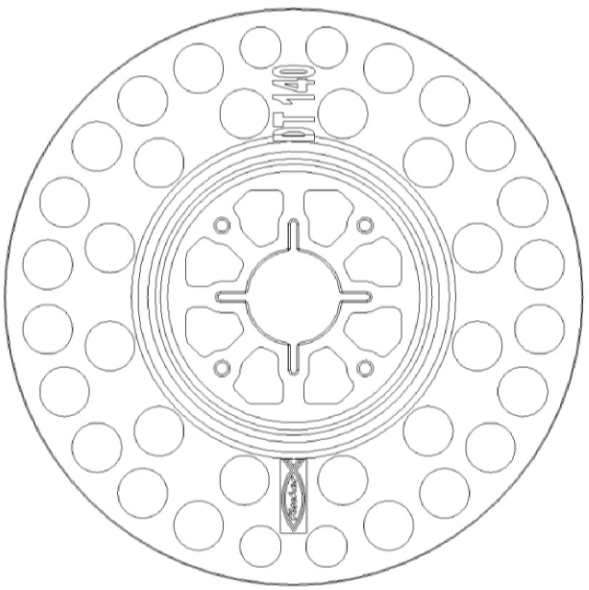
Special geometry for screw head





Figures not to scale

Slip-on plates DT 90, DT 110 and DT 140



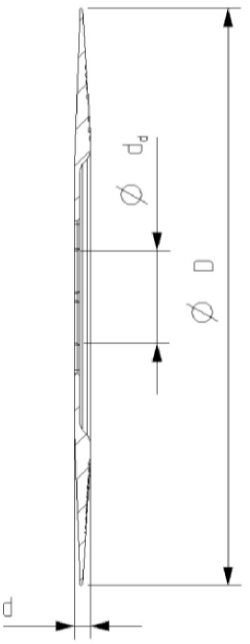


Table A 6.1: Slip-on plate, diameters and material

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

Figures not to scale.

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 external thermal insulation composite system (ETICS).

Base materials:

- Normal weight concrete (use category A), according to Annex C1.
- Solid masonry (use category B), according to Annex C1.
- Hollow or perforated masonry (use category C), according to Annex C1.
- Lightweight aggregate concrete (use category D), according to Annex 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 acc. to EOTA Technical Report TR 051 Edition December 2016.

Temperature Range:

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

Design:

- The anchorages are designed under the responsibility of an engineer experienced in anchorages and masonry work with the partial safety factors γ_M = 2,0 and 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 ETICS.

Installation:

- Drillmethod 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 ≤ 6 weeks.

Table B2.1: Installation parameters

Anchor type				TERMOZ 8 U	TERMOZ 8 UZ	WS 8 L
Drill hole diameter	d_0		[mm]	8		
Cutting diameter of drill bit	d_{cut}	≤		8,45		
Depth of drill hole to deepest point	h_1	≥		80	45	80
Nominal anchorage depth	h_{ef}	≥		70	30	70

Table B2.2: Minimum thickness, distance and spacing

Anchor type			TERMOZ 8 U	TERMOZ 8 UZ	WS 8 L
Minimum thickness of member	h	[mm]	100	100	100
Minimum spacing	s_{min}		100	100	100
Minimum edge distance	c_{min}		100	100	100

Scheme of distance and spacing

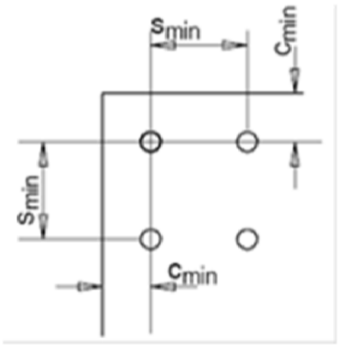


Table B3.1: Geometry of Vbl acc. to DIN V 18152-100, EN 771-3:2005-10

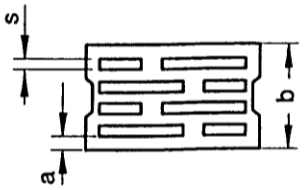
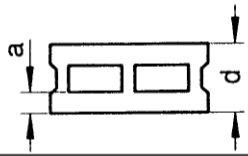
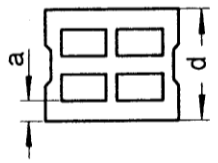
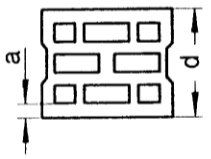
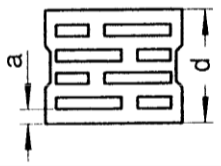
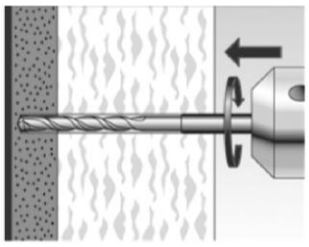
Form	Thickness of brick b [mm]	Number of slot rows	Web a [mm]	Width of slot s [mm]
	175	2	≥ 35	≥ 11
	240	3 or 4		
	300	4 or 5		
	365	5 or 6		
	490	6 or 7		

Table B3.2: Geometry of Hbl acc. to DIN V 18151-100:2005-10, EN 771-3:2005-05

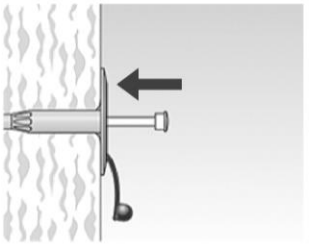
Form	Thickness of brick d [mm]	Outer web in longitudinal direction a [mm]
	175	50
	240 300	50
	240 300 365	35
	240 300 365	30

Installation instructions:

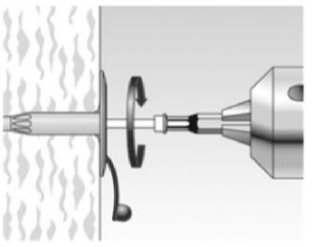
TERMOZ 8 U



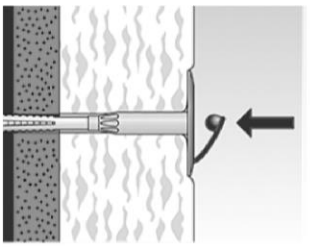
Drill the bore hole
acc. to table C 1.1/2.1



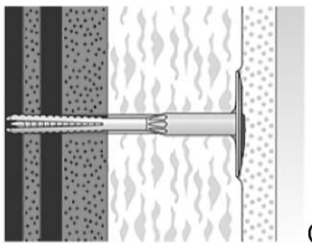
Insert anchor manually



Screw-in the screw

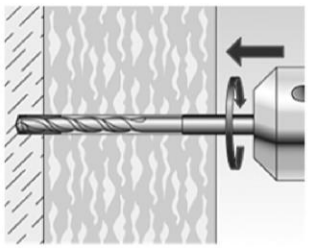


Press the cap on the plate

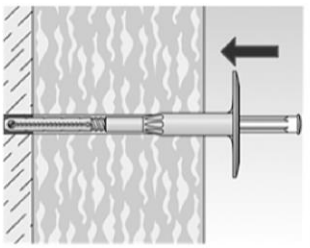


Correctly installed anchor

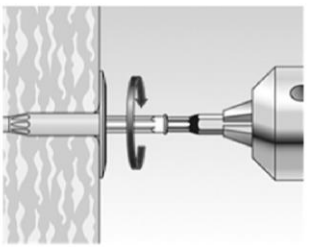
TERMOZ 8 UZ



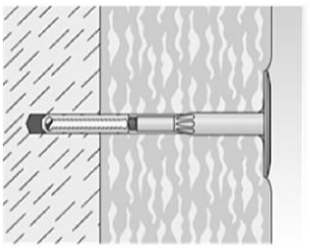
Drill the bore hole
acc. to table C 1.1/2.1



Insert anchor manually

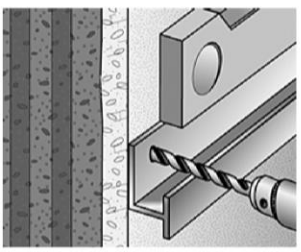


Screw-in the screw

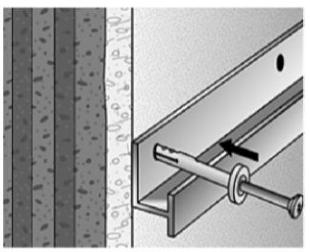


Correctly installed anchor

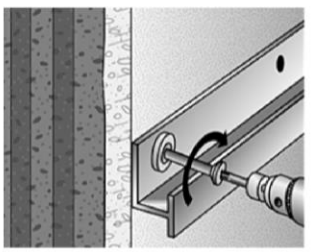
WS 8 L



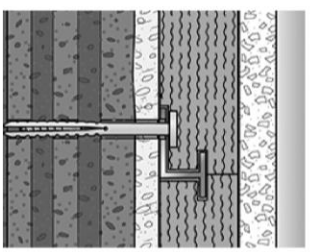
Drill the bore hole
acc. to table C 1.1/2.1



Insert anchor manually

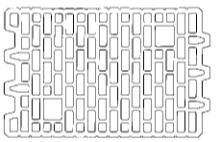


Screw-in the screw



Correctly installed anchor

Table C1.1: Characteristic resistance N_{Rk} in [kN] to tension load for a single anchor

Base material	Use cat.	Bulk density class ρ [kg/dm³]		Min. compressive strength f_b [N/mm²]	Remarks	Drill[4] method	Characteristic resistance N_{Rk} [kN]	
		TERMOZ 8 U WS 8L	8 UZ				TERMOZ 8 U WS 8L	8 UZ
Normal weight concrete C12/15 - C50/60 acc. to EN 206:2013	A					**H**	**1,5**	**1,2**
Clay bricks, acc. to EN 771-1:2011, **Mz**	B	≥ 1,6	≥ 2,0	12	Cross section reduced up to 15% by perforation vertically to the resting area	**H**	**1,5**	**1,5**
Calcium silicate solid bricks, acc. to EN 771-2:2011, **KS**	B	≥ 1,6	≥ 1,8	12		**H**	**1,5**	**1,2**
Lightweight solid brick, acc. to EN 771-3:2011, **Vbl**	B	≥ 0,5	≥ 0,7	4	See Table B3.1	**R**	**0,6**	**0,4**
Perforated clay brick acc. to EN 771-1:2011, **HLz**	C	≥ 1,2	≥ 1,0	12	Cross section reduced more than 15% and less than 50% by perforation vertically to the resting area	**R**	**0,75**	**0,6** [2]
Perforated clay bricks acc.to ÖNORM B 6400 – EN 771-1, **HLz**	C	-	≥ 1,0	12		**R**	-	**0,5** [3]
Hollow calcium silicate brick, acc. to EN 771-2:2011, **KSL**	C	≥ 1,4	≥ 1,4	12	Cross section reduced more than 15% and less than 50% by perforation vertically to the resting area	**H**	**0,75**	**0,6** [1]
Hollow brick light-weight concrete acc. to EN 771-3, **Hbl**	C	≥ 0,5	≥ 0,9	2	See Table B3.2	**R**	**0,4**	**0,4**

[1] The value applies only for outer web thickness ≥ 24 mm
[2] The value applies only for outer web thickness ≥ 14 mm
[3] The value applies only for outer web thickness ≥ 10,3 mm
[4] H = Hammer drilling; R = Rotary drilling

} Otherwise the characteristic resistance shall be determined by job-site pull-out tests.

Table C 2.1: Characteristic resistance N_{Rk} in [kN] to tension load for a single anchor

Base material	Use cat.	Bulk density class ρ [kg/dm³]		Min. compressive strength f_b [N/mm²]	Remarks	Drill[1] method	Characteristic resistance N_{Rk} to tension loads [kN]	
		TERMOZ 8 U WS 8L	8 UZ				TERMOZ 8 U WS 8L	8 UZ
Lightweight aggregate concrete, acc. to EN 1520, **LAC**	D	-	≥ 1,0	4		H		**0,25**
				6				**0,4**
Autoclaved aerated concrete blocks, acc. to EN 771-4:2011, **AAC**	E	≥ 0,35	-	2		R	**0,5**	-
		≥ 0,5		4			**1,2**	

[1] H = Hammer drilling; R = Rotary drilling

Table C2.2: Point thermal transmittance acc. to EOTA Technical Report TR 025 : 2016-05

Anchor type	Thickness of insulation material h_D [mm]	Point thermal transmittance χ [W/K]
TERMOZ 8 U	$50 \le h_D \le 80$	0,001
	$80 \le h_D \le 520$	0,002
TERMOZ 8 UZ	> 50	0,000

Table C2.3: Plate stiffness acc. to EOTA Technical Report TR 026 : 2016-05

Anchor type	Diameter of the anchor plate [mm]	Load resistance of the anchor plate [kN]	Plate stiffness [kN/mm]
TERMOZ 8 U	60	2,45	0,5
TERMOZ 8 UZ	60	1,43	0,5

Table C2.4: Displacements

Base material TERMOZ	Tension load F [kN]		Displacements δ [mm]	
	8 U WS 8L	UZ	8 U WS 8L	UZ
Concrete C12/15 – C50/60, e.g. acc. to EN 206:2013	0,50	0,40	0,2	0,5
Clay bricks, e.g. acc. to EN 771-1:2011, **Mz**	0,50	0,50	0,2	1,0
Calcium silicate solid bricks, e.g. acc. to EN 771-2:2011, **KS**	0,50	0,40	0,2	0,5
Lightweight concrete solid blocks, e.g. acc. to EN 771-3:2011, **Vbl**	0,20	0,15	0,3	0,3
Perforated clay bricks, e.g. acc. to EN 771-1:2011, **HLz**	0,25	0,20	0,3	0,3
Perforated clay bricks e.g. acc. to ÖNORM B 6400 - EN 771-1, **HLz**	-	0,15	-	0,3
Hollow calcium silicate brick, e.g. acc. to EN 771-2:2011, **KSL**	0,25	0,20	0,2	0,4
Lightweight concrete hollow blocks, e.g. acc. to EN 771-3:2011, **Hbl**	0,15	0,15	0,4	0,3
Lightweight aggregate concrete, e.g. acc. to EN 1520:2011, **LAC 4**	-	0,10	-	0,3
Lightweight aggregate concrete, e.g. acc. to EN 1520:2011, **LAC 6**		0,15		
Autoclaved aerated concrete blocks, e.g. acc. to EN 771-4:2011, **AAC 2**	0,15	-	0,2	-
Autoclaved aerated concrete blocks, e.g. acc. to EN 771-4:2011, **AAC 4**	0,40		0,4	