Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-13/0107 of 3 March 2015

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Klimas Wkret-met screw-in plug eco-drive
Product family to which the construction product belongs	Screwed-in plastic anchor for fixing of external thermal insulation composite systems with rendering in concrete and masonry
Manufacturer	Klimas Sp. z o.o. Kuznica Kiedrzynska ul. Wincentego Witosa 135/137 42-233 MYKANÓW POLEN
Manufacturing plant	Klimas Sp. z o.o.
This European Technical Assessment contains	15 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	Guideline for European technical approval of "Plastic anchors for fixing of external thermal insulation composite systems with rendering", ETAG 014, edition February 2011, used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011.
This version replaces	ETA-13/0107 issued on 16 May 2013

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Specific part

1 Technical description of the product

The screwed-in anchor Klimas Wkret-met eco-drive consists of an anchor sleeve made of polyamide and an accompanying specific screw of galvanised steel.

The anchor type eco-drive S is additionally combined with an insulation cover.

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 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 Mechanical resistance and stability (BWR 1)

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

3.2 Safety in case of fire (BWR 2)

Not applicable.

3.3 Hygiene, health and the environment (BWR 3)

Regarding dangerous substances contained in this European Technical Assessment, there may be 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 Regulation (EU) No 305/2011, these requirements need also to be complied with, when and where they apply.

3.4 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance	See Annex C
Edge distances and spacing	See Annex B
Point thermal transmittance	See Annex C
Plate stiffness	See Annex C
Displacements	See Annex C

3.5 Protection against noise (BWR 5)

Not applicable.

3.6 Energy economy and heat retention (BWR 6)

Not applicable.

3.7 Sustainable use of natural resources (BWR 7)

For the sustainable use of natural resources no performance was determined for this product.

3.8 General aspects

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

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

According to Decision 97/463/EC of the Commission of 27 June 1997 (Official Journal of the European Communities L 198 of 25.07.1997, p. 31–32) the system of assessment and verification of constancy of performance (AVCP) (see Annex V and Article 65 Paragraph 2 to Regulation (EU) No 305/2011) given in the following table apply.

Product	Intended use	Level or class	System
Plastic anchors for use in concrete and masonry	For use in systems, such as façade systems, for fixing or supporting elements which contribute to the stability of the systems	—	2+

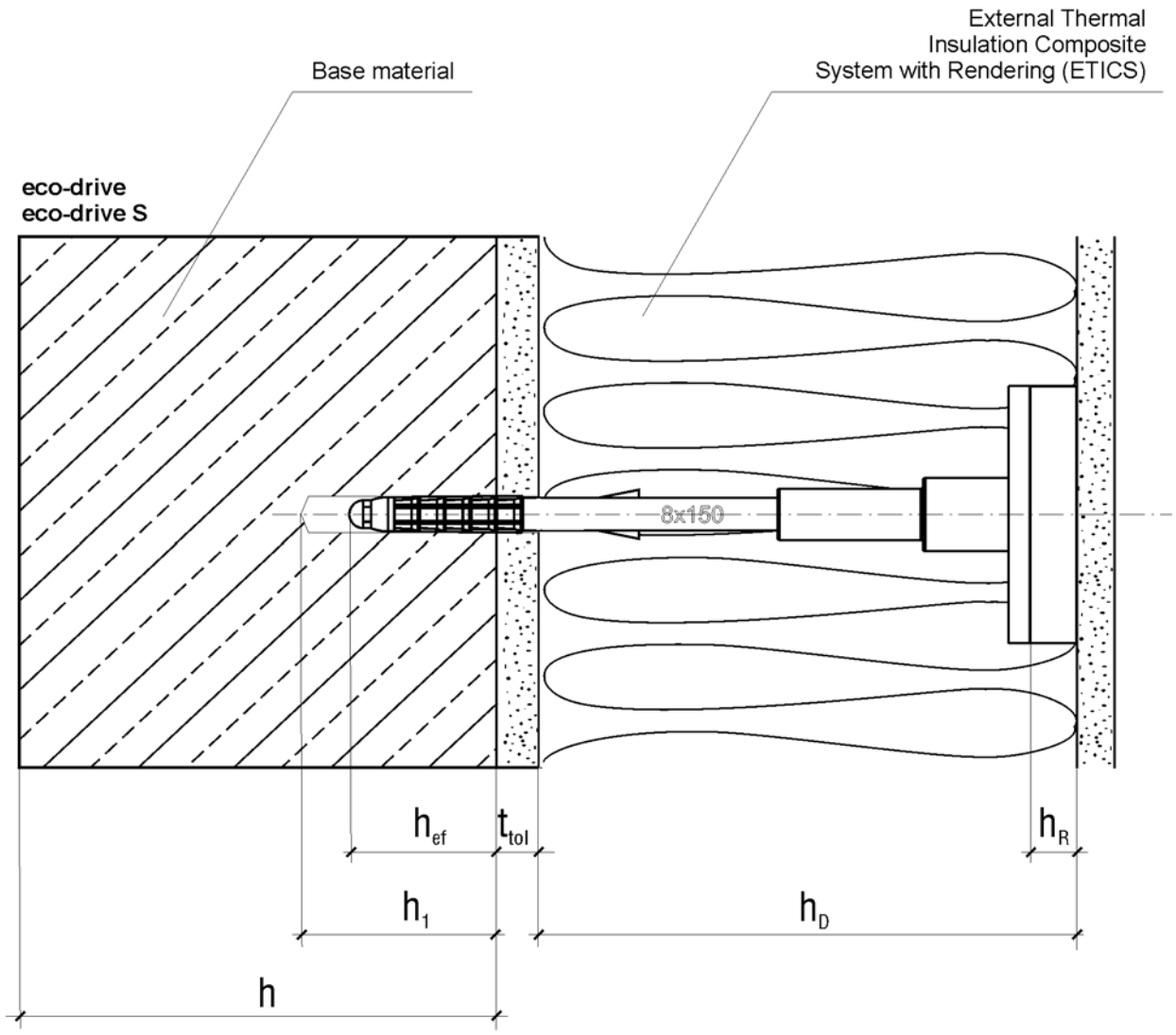
5 Technical details necessary for the implementation of the AVCP system, as provided in the applicable EAD

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

Issued in Berlin on 3 March by Deutsches Institut für Bautechnik

Uwe Bender
Head of Department

beglaubigt:
Ziegler



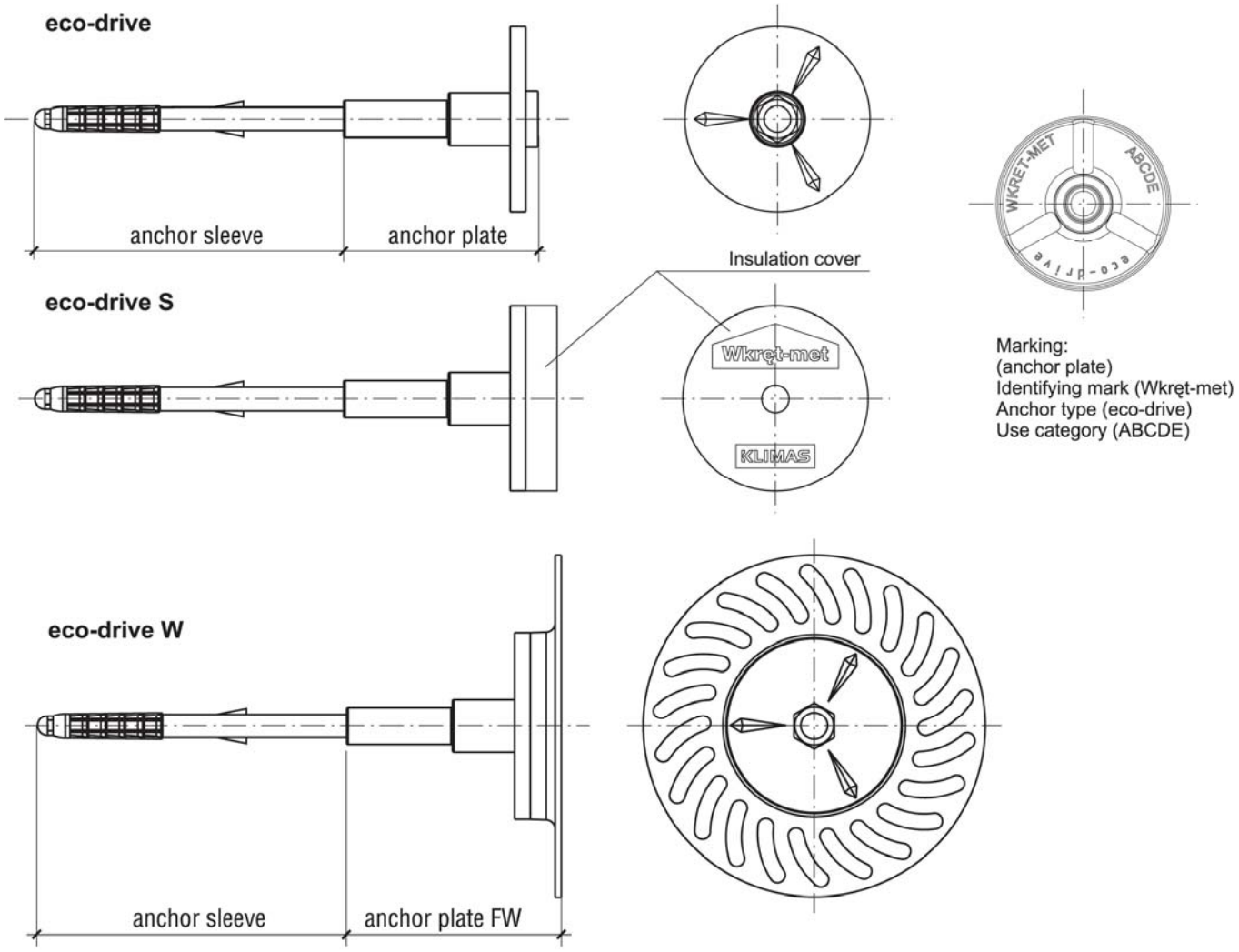
Intended use
Anchorage of ETICS in concrete, masonry and in autoclaved aerated concrete

Legend:
h_{ef} = effective anchorage depth
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 cover

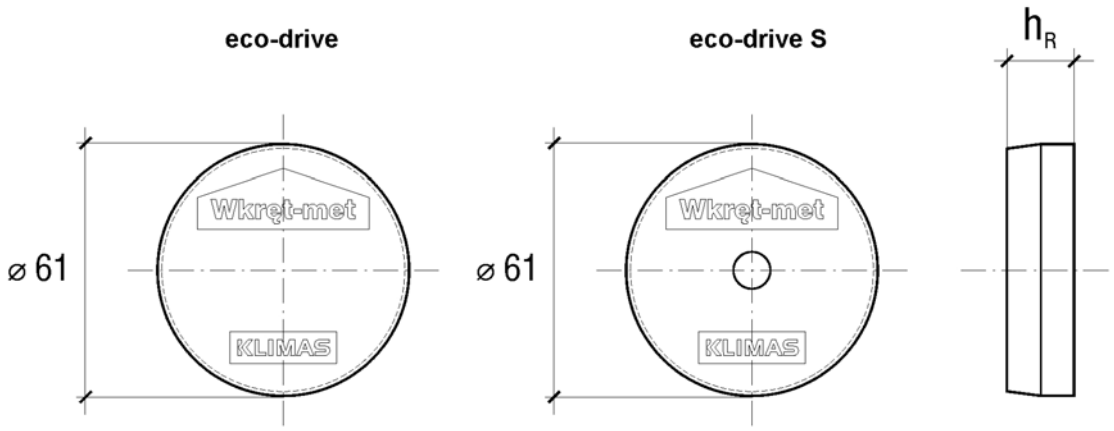
Klimas Wkret-met screw-in plug eco-drive	**Annex A 1**
Product description Intended use	

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Types of the anchor sleeve



Insulation cover



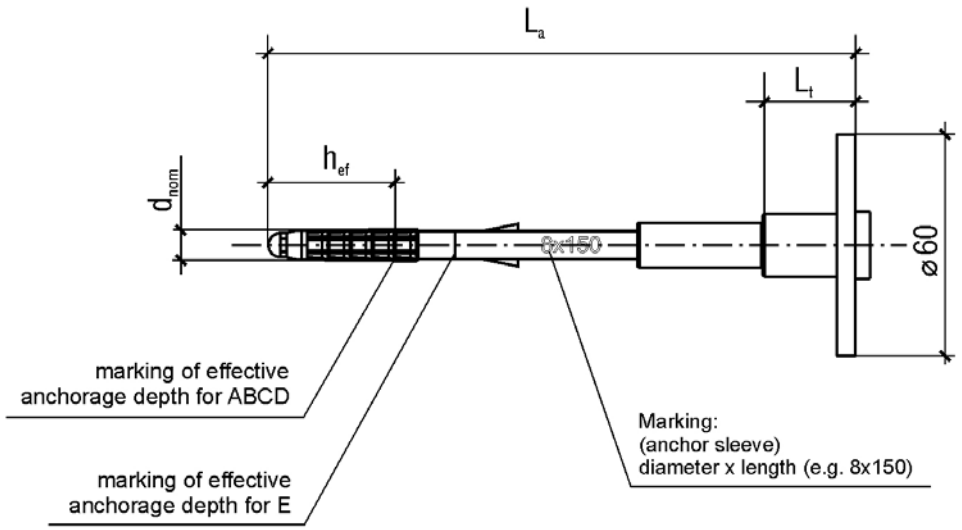
Klimas Wkret-met screw-in plug eco-drive

Product description
Types of the anchor sleeve, insulation cover

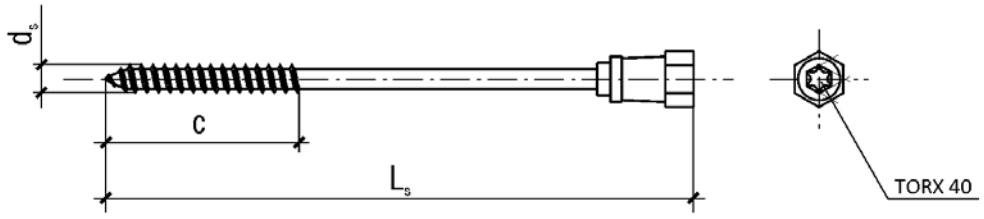
Annex A 2

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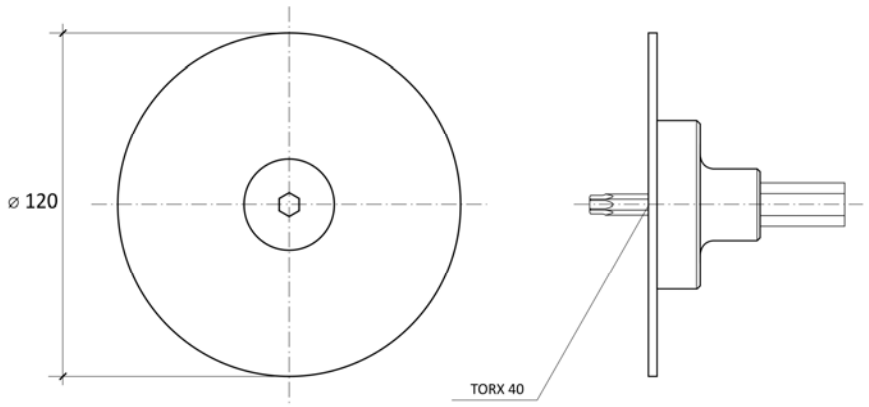
Marking of the anchor sleeve
Marking of effective anchorage depth



Screw with an additional coating of the screw head



Setting tool



Klimas Wkret-met screw-in plug eco-drive	**Annex A 3**
Product description Marking of the anchor sleeve, special screw, setting tool	

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Table A1: Dimensions

Anchor type	Anchor sleeve				Specific screw		
	d_{nom} ±0,1	min L_a ±2	max L_a ±2	h_{ef} ABCD / E	d_s ±0,1	min L_s ±2	max L_s ±2
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
eco-drive	8	130	490	35 / 55	5,7	90	450

L_t = 25 mm (see figure on Annex A 3)

Determination of maximum thickness of insulation h_D:

$h_D = L_a - t_{tol} - h_{ef} - L_t$ (e.g. L_a = 150 mm, t_{tol} = 10 mm)

e.g. $h_D = 150 – 10 – 35 – 25$

h_{Dmax} = 80 mm

Use category ABCD: $h_D = L_a – 70$ mm

Use category E: $h_D = L_a – 90$ mm

Table A2: Materials

Element	Material
Anchor plate	Polyamide PA6 - GF, colour nature or grey
Anchor sleeve	Polyamide PA6, colour nature or grey
Insulation cover	EPS (expanded polystyrene); mineral wool
Screw	Steel galvanized zinc plated ≥ 5 µm according to EN ISO 4042, screw head coated with Polyamide PA6-GF, colour nature or red

Klimas Wkret-met screw-in plug eco-drive	**Annex A 4**
Product description Dimensions of the anchor sleeve, special screw materials	

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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 (use category A) according to Annex C 1
- Solid masonry (use category B), according to Annex C 1
- Hollow or perforated masonry (use category C), according to Annex C 1
- Lightweight aggregate concrete (use category D), according to Annex C 1
- autoclaved aerated concrete (use category E), according to Annex C 1
- For other base materials of the use categories A, B, C, D or E the characteristic resistance of the anchor may be determined by job site tests according to ETAG 014 Edition February 2011, Annex D.

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 the ETAG 014 Edition February 2011 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 anchor is indicated on the design drawings.
- Fasteners are only to be used for multiple fixings of thermal insulation composite systems.

Installation:

- Hole drilling by the drill modes according to Annex C 1
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of 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

Klimas Wkret-met screw-in plug eco-drive	**Annex B 1**
Intended use Specifications	

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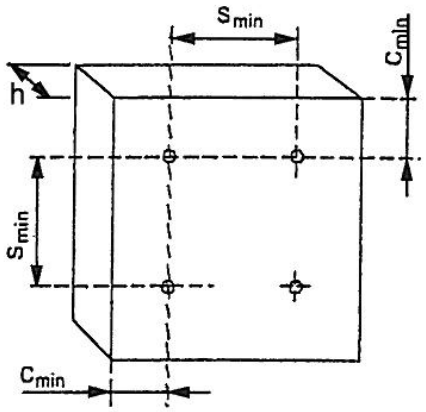
Table B1: Installation parameters

Anchor type		eco-drive	eco-drive
Use category		ABCD	E
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]	≥ 45	≥ 65
Overall embedment depth in the base material	h_{ef} [mm]	≥ 35	≥ 55

Table B2: Minimum thickness of member, spacing and edge distance

Anchor type		eco-drive
minimum thickness of member	h_{min} = [mm]	100
minimum spacing	s_{min} = [mm]	100
minimal edge distance	c_{min} = [mm]	100

Scheme of spacing and edge distances



Klimas Wkret-met screw-in plug eco-drive

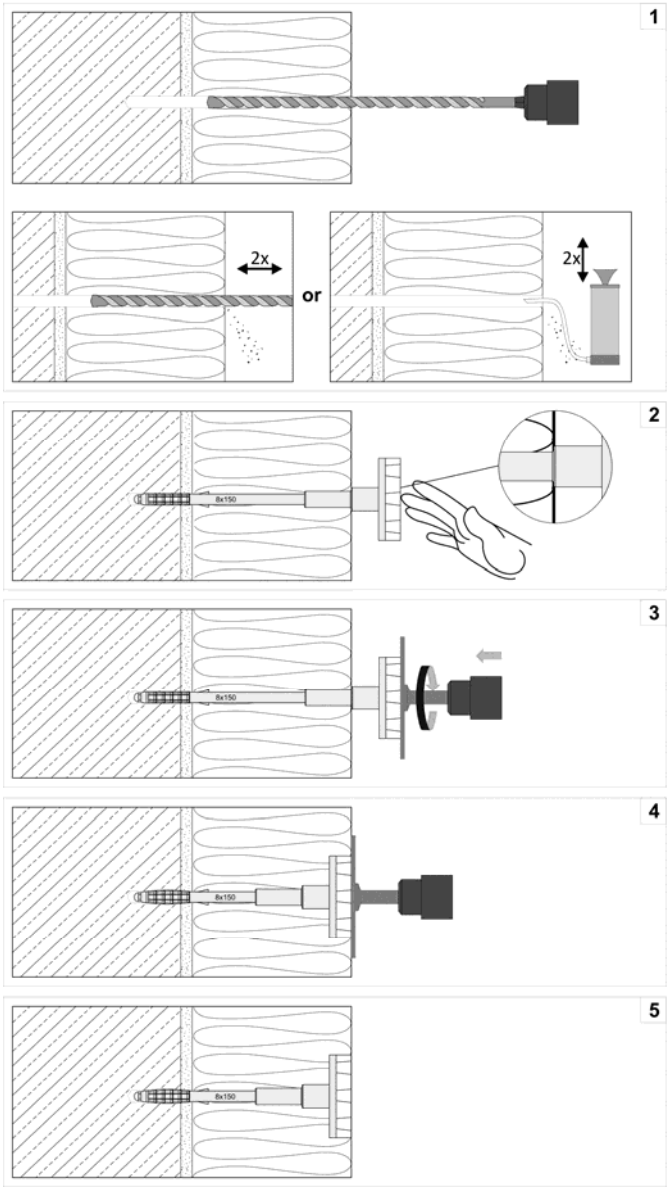
Intended use
Installation parameters, minimum thickness of member, spacings and edge distances

Annex B 2

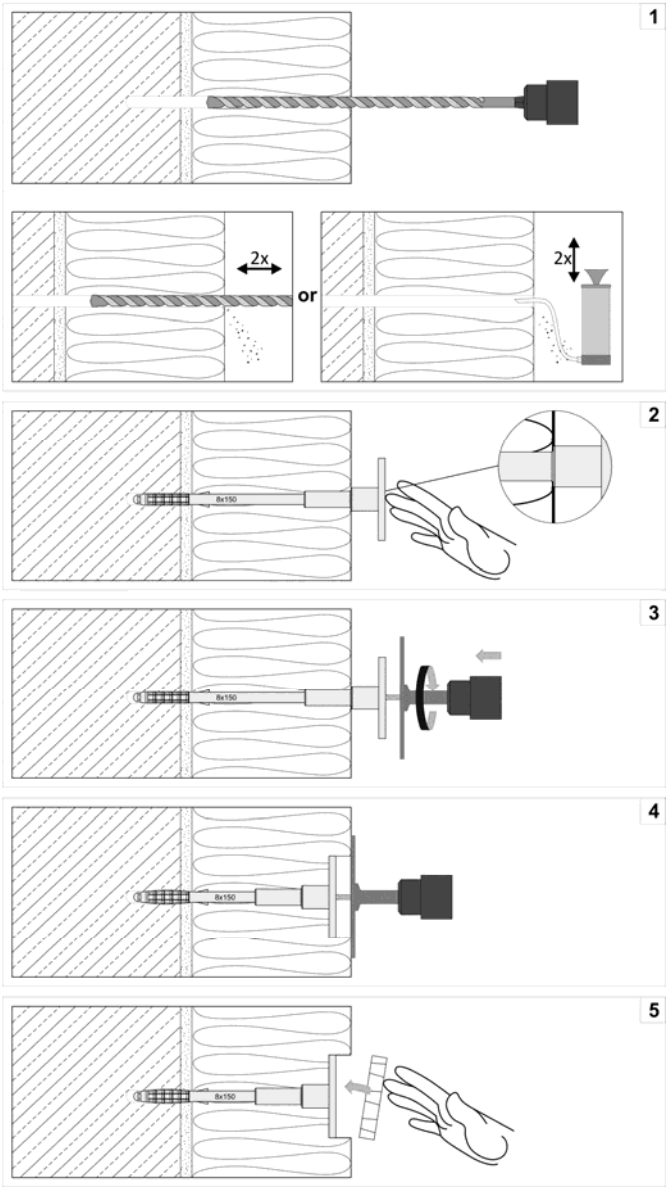
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Installation instructions

eco-drive S



eco-drive

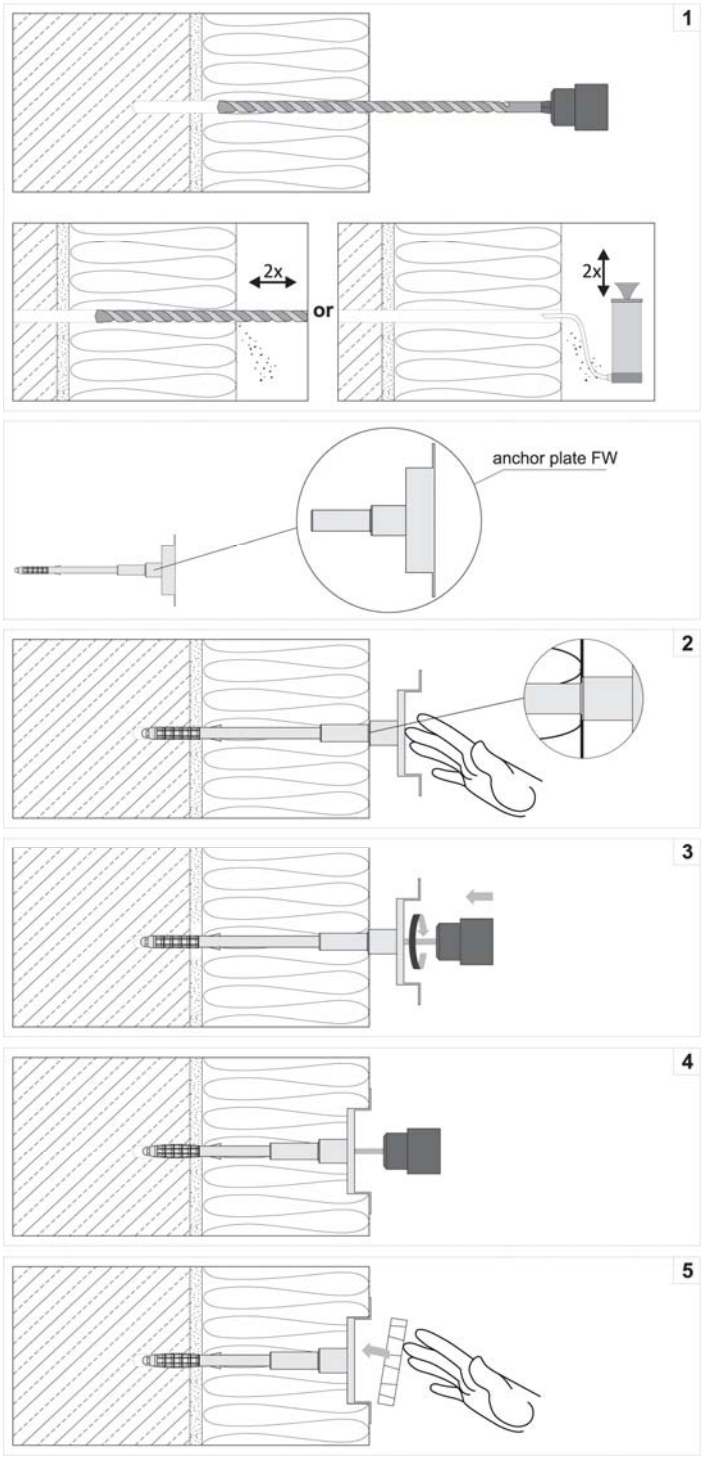


Klimas Wkret-met screw-in plug eco-drive	**Annex B 3**
Intended use Installation instructions eco-drive, eco-drive S	

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Installation instructions

eco-drive W



Klimas Wkret-met screw-in plug eco-drive	**Annex B 4**
Intended use Installation instructions eco-drive W	

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Table C1: Characteristic resistance N_{Rk} for use in concrete and masonry each anchor

Base material	Bulk density class [kg/dm³]	Minimum compressive strength [N/mm²]	General remarks	Drill method	N_{Rk} [kN]
Concrete C12/15 EN 206-1:2000-12	-	-		hammer	1.2
Concrete C16/20 - C50/60 EN 206-1:2000-12	-	-		hammer	1.5
Solid clay brick Mz EN 771-1:2011-07 / DIN 105-100:2012-01	≥ 2.0	≥ 20.0		hammer	1.5
Sand-lime solid bricks KS (e.g. KS NF 20-2.0) EN 771-2:2011-07 / DIN V 106:2005-10	≥ 2.0	≥ 20.0		hammer	1.5
Vertically perforated sand-lime bricks KSL (e.g. KSL-R(P) 8DF) EN 771-2:2011-07 / DIN V 106:2005-10	≥ 1.6	≥ 12.0	Minimum outer web thickness a = 30 mm	hammer	1.5
Vertically perforated clay bricks HLz (e.g. Hlz B – 1.0 NF 12-1) EN 771-1:2011-07 / DIN 105-100:2012-01	≥ 1.2	≥ 12.0	Minimum outer web thickness a = 13 mm	rotary	1.5
Lightweight concrete hollow blocks Hbl EN 771-3:2011-07 / DIN 18151-100:2005-10	≥ 0.8	≥ 2.0	See Annex C 3	rotary	1.5
Lightweight aggregate concrete LAC EN 1520:2011-06 / EN 771-3:2011-07	≥ 1.05	≥ 5.0		rotary	0.9
Autoclaved aerated concrete AAC 2 EN 771-4:2011-07 / DIN V 4165-100/2005-10	≥ 0.35	≥ 2.0		rotary	0.6
Autoclaved aerated concrete AAC 7 EN 771-4:2011-07 / DIN V 4165-100/2005-10	≥ 0.65	≥ 3.5		rotary	1.2

Klimas Wkret-met screw-in plug eco-drive

Performances
Characteristic resistance

Annex C 1

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Table C2: Point thermal transmittance according EOTA Technical Report TR 025:2007-06

Anchor type	Insulation thickness h_D [mm]	point thermal transmittance χ [W/K]
eco-drive	80	0.0017
eco-drive	150	0.002
eco-drive	420	0.0016

Table C3: Plate stiffness according EOTA Technical Report TR 026:2007-06

Anchor type	Diameter of the anchor plate [mm]	Load resistance of the anchor plate [kN]	Plate stiffness [kN/mm]
eco-drive	60	2,8	0,6

Table C4: Displacements

Base material	Bulk density class ρ [kg/dm³]	Minimum compressive strength f_b [N/mm²]	Tension load N [kN]	Displacements $\delta_m(N)$ [mm]
Concrete C12/15 EN 206-1:2000-12	-	-	0,4	2,9
Concrete C16/20 - C50/60 EN 206-1:2000-12	-	-	0,5	3,2
Solid clay brick, Mz EN 771-1:2011-07	≥ 2,0	20	0,5	3,6
Sand-lime solid bricks, KS EN 771-2:2011-07	≥ 2,0	20	0,5	3,2
Kalksandlochstein, KSL EN 771-2:2011-07	≥ 1,6	12	0,5	4,2
Vertically perforated sand-lime bricks HLz EN 771-1:2011-07	≥ 1,2	12	0,5	5,4
Lightweight concrete hollow blocks Hbl EN 771-3:2011-07	≥ 0,8	2	0,5	4,6
Lightweight aggregate concrete LAC EN 1520:2011-06 / EN 771-3:2011-07	≥ 1,05	5	0,3	3,6
Autoclaved aerated concrete AAC 2 EN 771-4:2011-07	≥ 0,35	2	0,2	2,8
Autoclaved aerated concrete AAC 7 EN 771-4:2011-07	≥ 0,65	3,5	0,4	4,2

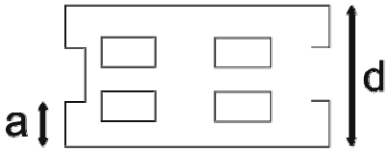
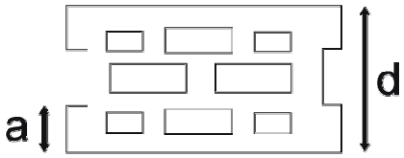
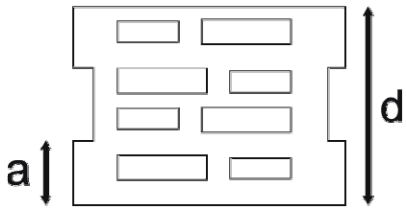
Klimas Wkret-met screw-in plug eco-drive

Annex C 2

Performances
Point thermal transmittance, plate stiffness, displacements

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Table C5: Assignment type of anchor for lightweight concrete hollow bricks according to DIN V 18151-100:2005-10

Geometry	Thickness d [mm]	Outer web in longitudinal direction a [mm]	Anchor type eco-drive eco-drive S
	175	50	■
	240 300	50	■
	175	35	■
	240 300 365	35	■
	240 300 365	30	■

The anchor shall be placed in the brick such way, that the spreading part of the expansion sleeve is located in the outer web.

Klimas Wkret-met screw-in plug eco-drive	**Annex C 3**
Leistungen Assignment type of anchor for lightweight concrete hollow bricks	