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 9 February 2023

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	Plastic anchor for fixing of external thermal insulation composite systems with rendering
Manufacturer	Klimas Sp. z o.o. Kuznica Kiedrzynska ul. Wincentego Witosa 135/137 42-233 MYKANÓW POLEN
Manufacturing plant	Plant 1, Plant 2 Poland
This European Technical Assessment contains	14 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	EAD 330196-01-0604 Edition 10/2017
This version replaces	ETA-13/0107 issued on 3 March 2015

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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 (virgin material) and an accompanying specific screw of steel with zinc coating.

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 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 verifications 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 C1 See Annex B2
Displacements	See Annex C2
Plate stiffness	See Annex C2

3.2 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Point thermal transmittance	See Annex C2

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+

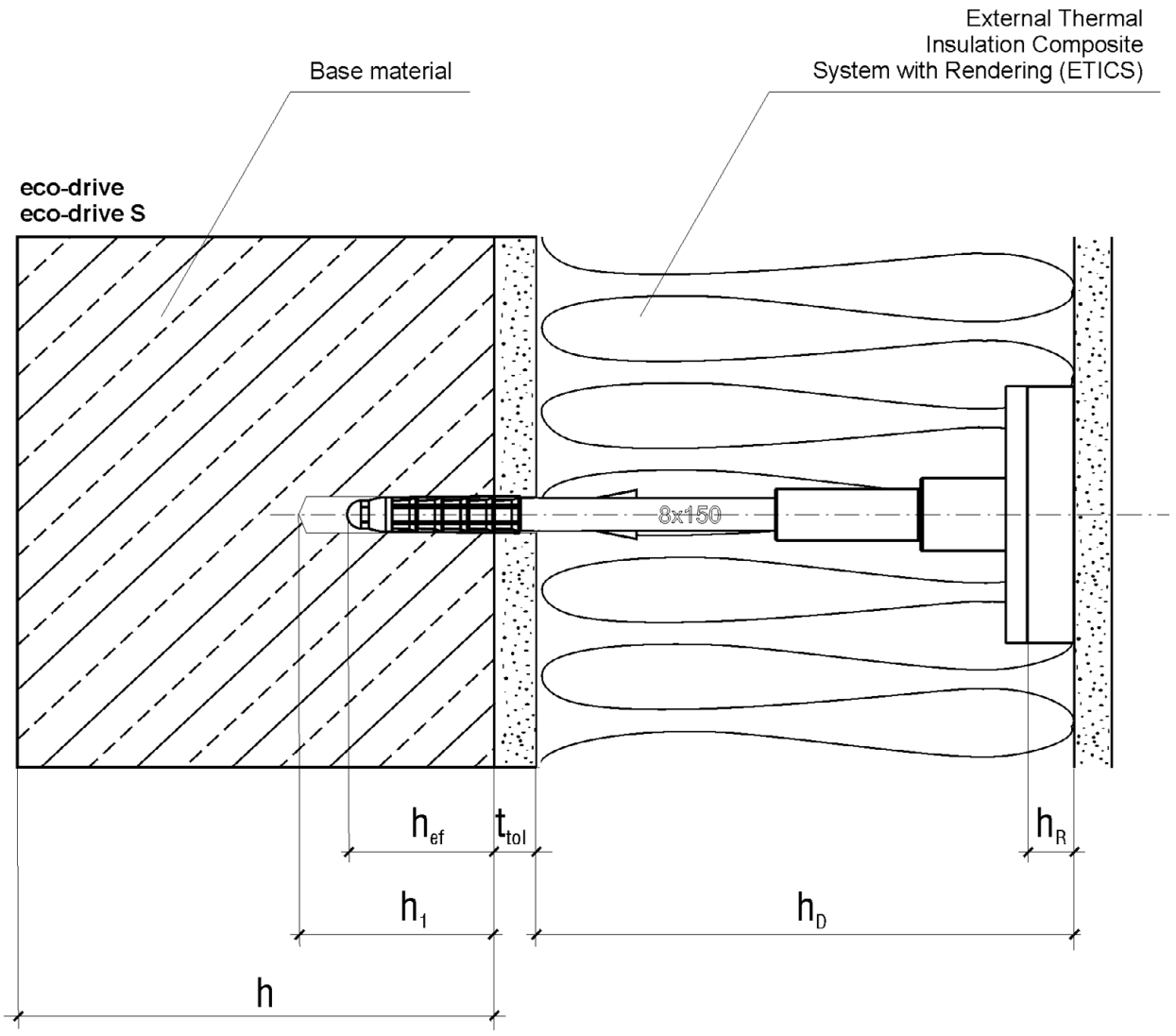
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

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

Issued in Berlin on 9 February 2023 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

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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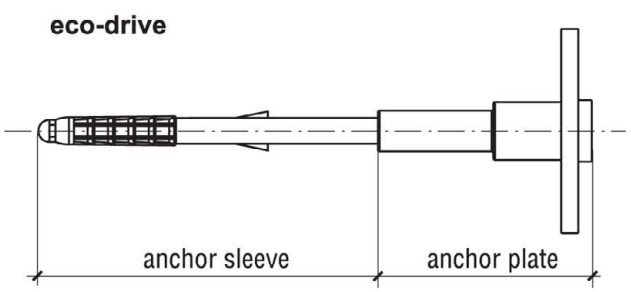
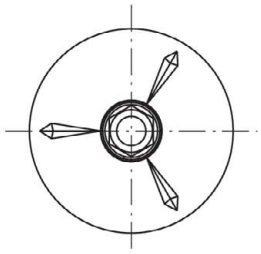
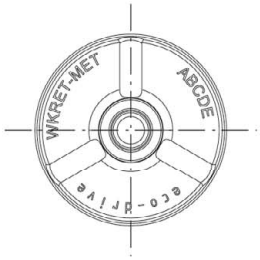
Types of the anchor sleeve

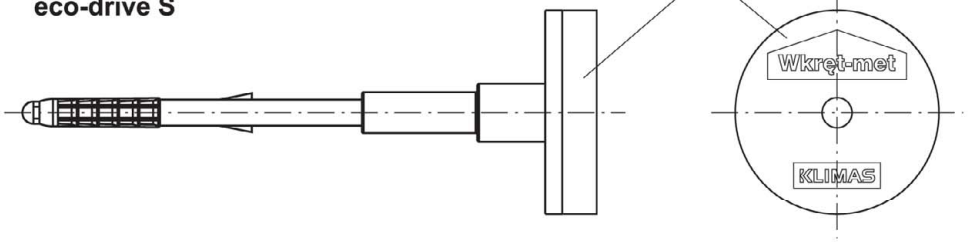
eco-drive





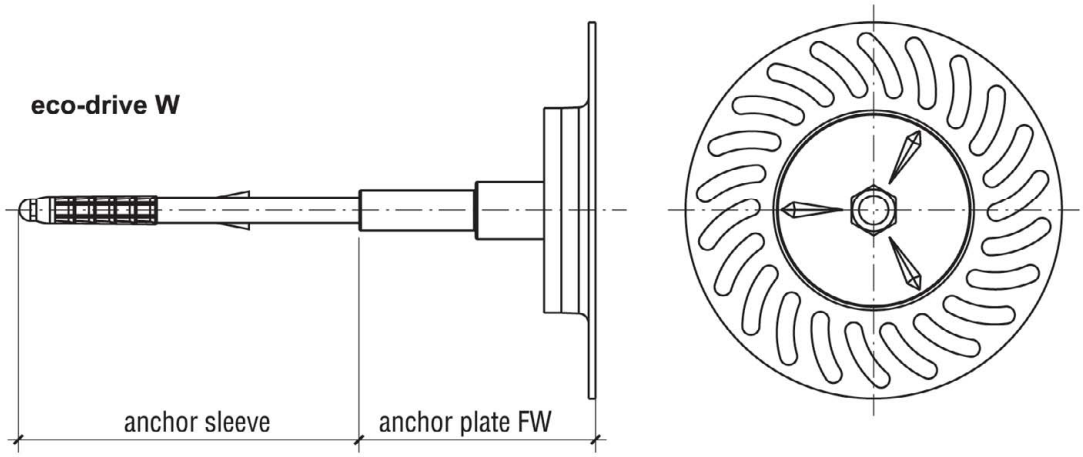


eco-drive S



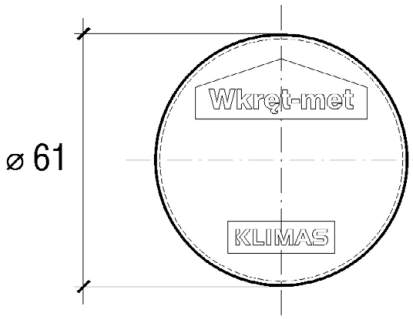
Marking (anchor plate)
Identifying mark (Wkret-met)
Anchor type (eco-drive)
Base material group
(A, B, C, D, E)

eco-drive W

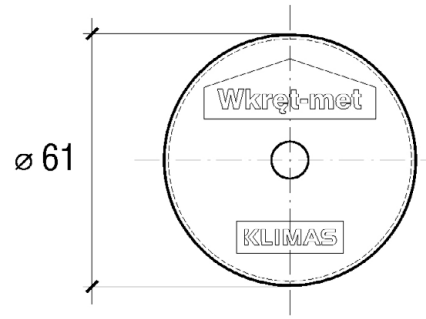


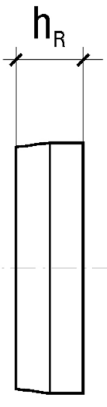
Insulation cover

eco-drive



eco-drive S





Klimas Wkret-met screw-in plug eco-drive	**Annex A 2**
Product description Types of the anchor sleeve, insulation cover	

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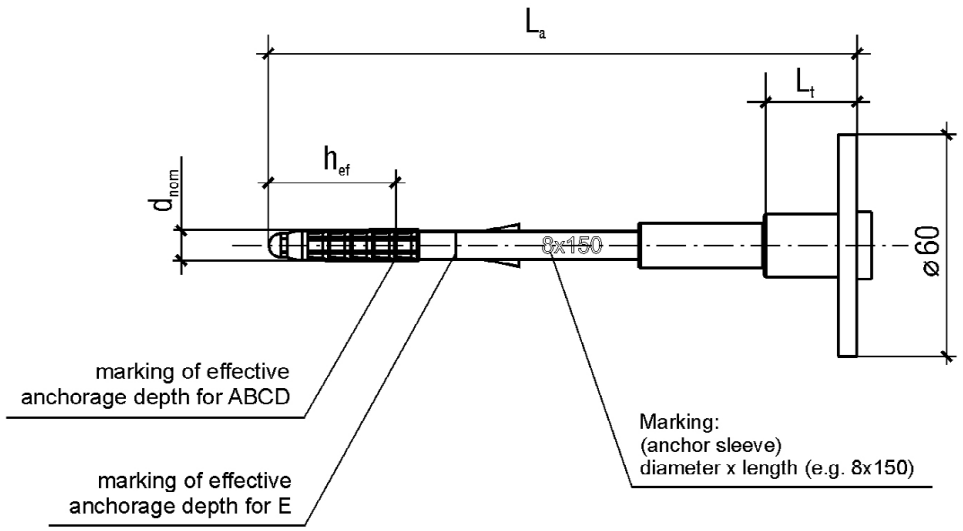
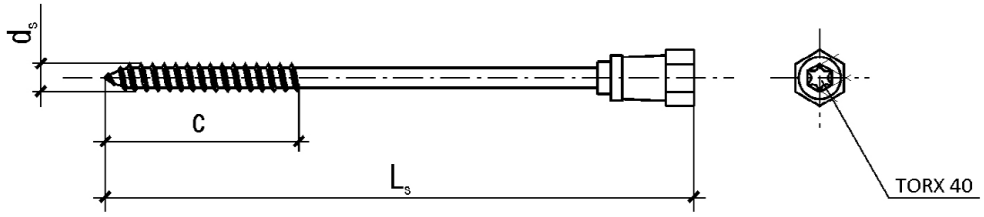
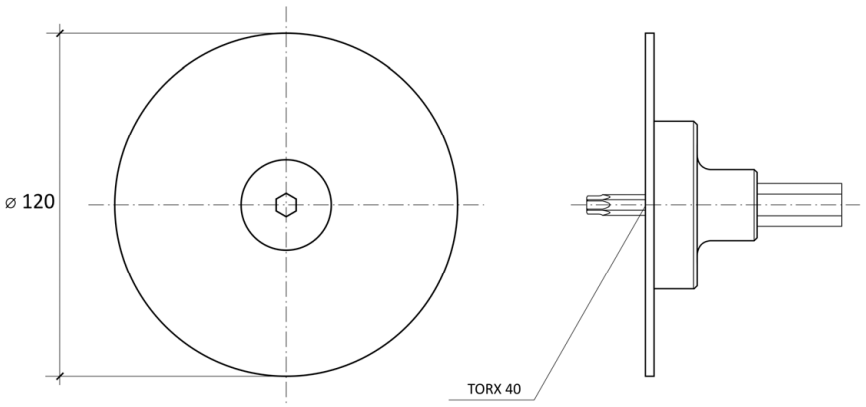
Marking of the anchor sleeve
Marking of effective anchorage depth



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}	min L_a	max L_a	h_{ef} ABCD / E	d_s	min L_s	max L_s
	[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

Base material group ABCD: $h_D = L_a – 70$ mm

Base material group E: $h_D = L_a – 90$ mm

Table A2: Materials

Element	Material
Anchor plate	Polyamide PA6 – GF (virgin material), colour nature or grey
Anchor sleeve	Polyamide PA6 (virgin material), colour nature or grey
Insulation cover	EPS (expanded polystyrene); mineral wool
Screw	Steel galvanized zinc plated ≥ 5 µm according to EN ISO 4042:2018, 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:

- Compacted normal weight concrete without fibres (base material group A) according to Annex C 1
- Solid masonry (base material group B), according to Annex C 1
- Hollow or perforated masonry (base material group C), according to Annex C 1
- Lightweight aggregate concrete (base material group D), according to Annex C 1
- autoclaved aerated concrete (base material group E), according to Annex C 1
- For other base materials of the base material groups A, B, C, D or 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)

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 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 ETICS.

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	

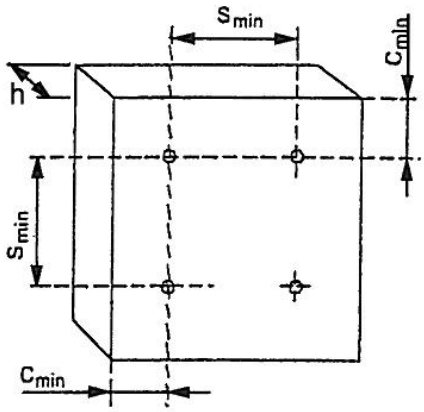
Table B1: Installation parameters

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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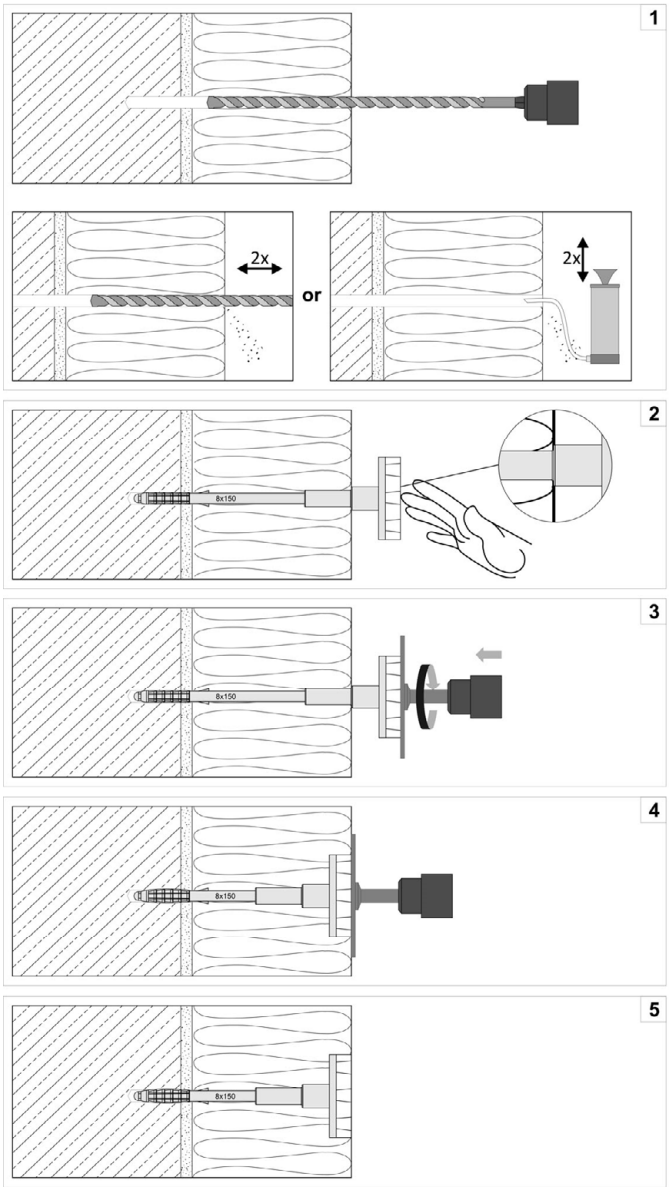
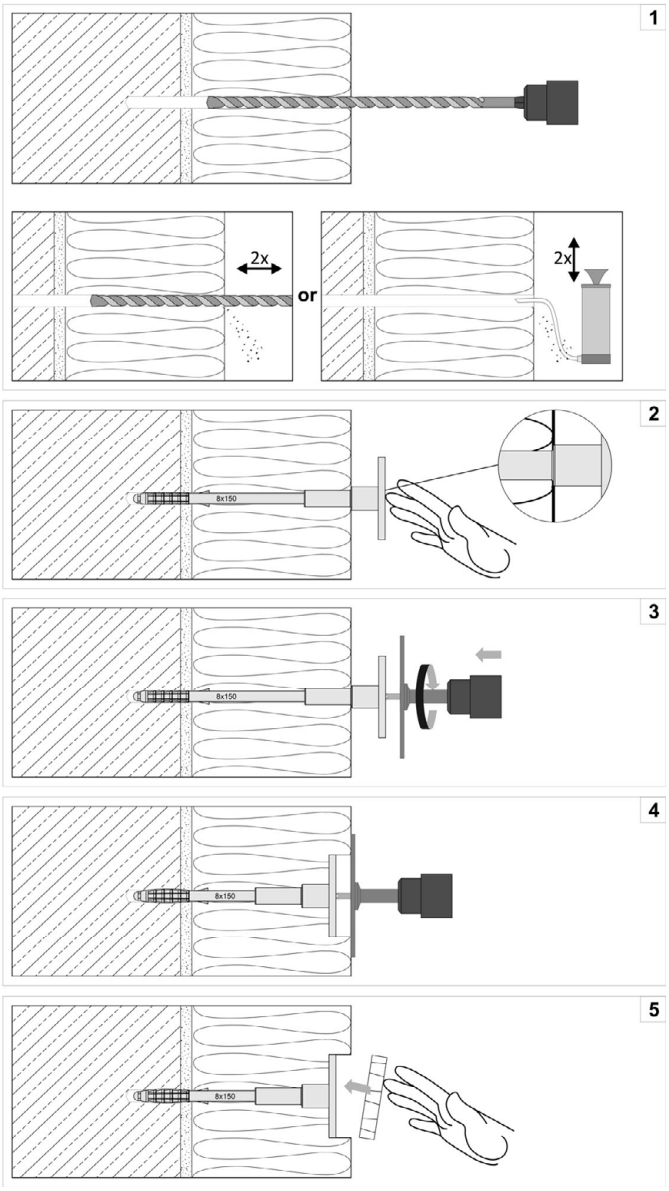
Installation instructions

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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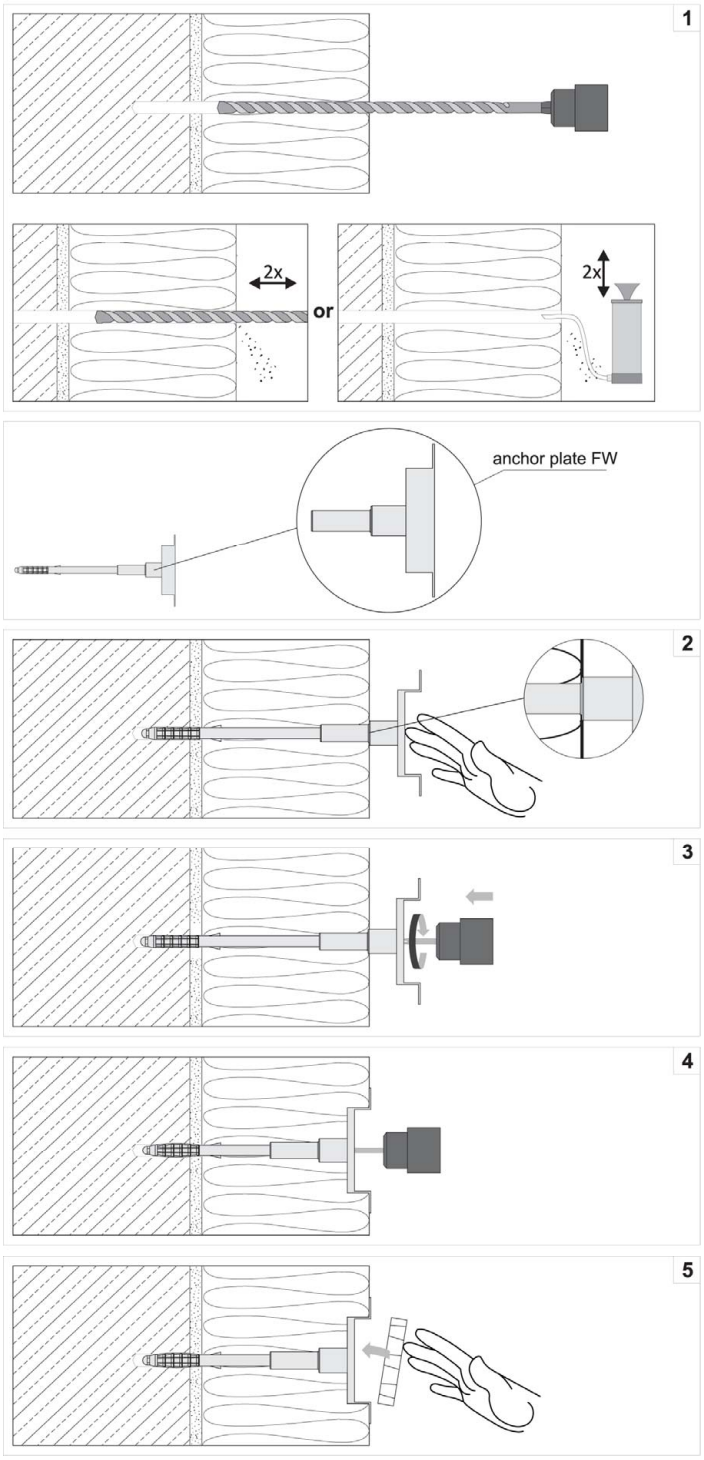
Installation instructions

eco-drive W



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

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

Base material	Bulk density [kg/dm³]	Minimum compressive strength [N/mm²]	General remarks	Drill method	N_{Rk} [kN]
Concrete C12/15 as per EN 206:2013+A1:2016	-	-	Concrete without fibres	hammer	1.2
Concrete C16/20 - C50/60 as per EN 206:2013+A1:2016	-	-	Concrete without fibres	hammer	1.5
Solid clay brick Mz as per EN 771-1:2011+A1:2015	≥ 2.0	≥ 20.0	Vertically perforation[1)] ≤ 15%	hammer	1.5
Sand-lime solid bricks KS (e.g. KS NF 20-2.0) as per EN 771-2:2011+A1:2015	≥ 2.0	≥ 20.0	Vertically perforation[1)] ≤ 15%	hammer	1.5
Vertically perforated sand-lime bricks KSL (e.g. KSL-R(P) 8DF) as per EN 771-2:2011+A1:2015	≥ 1.6	≥ 12.0	Vertically perforation[1)] > 15 % and ≤ 50 % Exterior web thickness ≥ 30 mm	hammer	1.5
Vertically perforated clay bricks HLz (e.g. Hlz B – 1.0 NF 12-1) as per EN 771-1:2011+A1:2015	≥ 1.2	≥ 12.0	Vertically perforation[1)] > 15 % and ≤ 50 % Exterior web thickness ≥ 13 mm	rotary	1.5
Lightweight concrete hollow blocks Hbl as per EN 771-3:2011+A1:2015	≥ 0.8	≥ 2.0	Vertically perforation[1)] > 15 % and ≤ 50 % Exterior web thickness ≥ 30 mm	rotary	1.5
Lightweight aggregate concrete LAC as per EN 1520:2011 / EN 771-3:2011+A1:2015	≥ 1.05	≥ 5.0		rotary	0.9
Autoclaved aerated concrete AAC 2 as per EN 771-4:2011+A1:2015	≥ 0.35	≥ 2.0		rotary	0.6
Autoclaved aerated concrete AAC 7 as per EN 771-4:2011+A1:2015	≥ 0.65	≥ 3.5		rotary	1.2

[1)] Cross section reduced by perforation vertically to the resting area

Klimas Wkret-met screw-in plug eco-drive	**Annex C 1**
Performances Characteristic resistance	

Table C2: Point thermal transmittance according EOTA Technical Report TR 025:2016-05

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 026:2016-05

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 ρ [kg/dm³]	Minimum compressive strength f_b [N/mm²]	Tension load N [kN]	Displacements $\Delta\delta_N$ [mm]
Concrete C12/15 EN 206:2013+A1:2016	-	-	0,4	2,9
Concrete C16/20 - C50/60 EN 206:2013+A1:2016	-	-	0,5	3,2
Solid clay brick, Mz EN 771-1:2011+A1:2015	≥ 2,0	20	0,5	3,6
Sand-lime solid bricks, KS EN 771-2:2011+A1:2015	≥ 2,0	20	0,5	3,2
Kalksandlochstein, KSL EN 771-2:2011+A1:2015	≥ 1,6	12	0,5	4,2
Vertically perforated sand-lime bricks HLz EN 771-1:2011+A1:2015	≥ 1,2	12	0,5	5,4
Lightweight concrete hollow blocks Hbl EN 771-3:2011+A1:2015	≥ 0,8	2	0,5	4,6
Lightweight aggregate concrete LAC EN 1520:2011 / EN 771-3:2011+A1:2015	≥ 1,05	5	0,3	3,6
Autoclaved aerated concrete AAC 2 EN 771-4:2011+A1:2015	≥ 0,35	2	0,2	2,8
Autoclaved aerated concrete AAC 7 EN 771-4:2011+A1:2015	≥ 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