Designated according to The Construction Products (Amendment etc.) (EU Exit) Regulations 2020

UK Technical Assessment	UKTA-0836-23/6746 of 28/02/2023
Technical Assessment Body issuing the UK Technical Assessment:	British Board of Agrément
Trade name of the construction product:	LTX-8, LMX-8, LGX-8, LTX-10, LMX-10, LGX-10
Product family to which the construction product belongs:	33 - Nailed-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 POLAND
Manufacturing plant(s):	Plant 1, Plant 2
This UK Technical Assessment contains:	20 pages including 3 Annexes which form an integral part of this assessment
This UK Technical Assessment is issued in accordance with The Construction Products (Amendment etc.) (EU Exit) Regulations 2020 on the basis of:	UKAD 330196-00-0604 *Plastic anchors for fixing of ETICS with rendering*

1. Technical description of the product

The nailed-in anchor LTX-8, LMX-8, LGX-8, LTX-10, LMX-10, LGX-10 consists of an anchor sleeve with an enlarged shaft, spreading zone, an insulation plate made of polyethylene and an accompanying specific nail of galvanized steel for the type LMX and LGX, and an accompanying specific nail of polyamide for the type LTX. The serrated expanding part of the anchor sleeve is slotted.

In addition, the anchor may be combined with the anchor plates TDX-P-90 / TDX-90 and TDX-P-140 / TDX-140.

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

2. Specification of the intended use(s) in accordance with the applicable UK Assessment Document (hereinafter UKAD)

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 UK 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 4: Safety in use.

3.2. Safety in case of fire (BWR 2)

Not relevant.

3.3. Health, hygiene and the environment (BWR 3)

Regarding dangerous substances, there may be additional legislative requirements falling outside of the scope of this document. These requirements must be complied with as appropriate.

3.4. Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic tension resistance	See Annex C1, C2
Edge distances and spacing	See Annex B 2
Point thermal transmittance	See Annex C 3
Plate stiffness	See Annex C 3
Displacements	See Annex C 4

3.5. Protection against noise (BWR 5)

Not relevant.

3.6. Energy economy and heat retention (BWR 6)

Not relevant.

3.7. Sustainable use of natural resources (BWR 7)

No performance assessed.

4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied

4.1. System of assessment and verification of constancy of performance

According to UKAD No. 330196-00-0604 and Annex V of the Construction Products Regulation (Regulation (EU) 305/2011) as brought into UK law and amended, the system of assessment and verification of constancy of performance (AVCP) 2+ applies.

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with the British Board of Agrément and made available to the UK Approved Bodies involved in the conformity attestation process.

5.1. UKCA marking for the product/ system must contain the following information:

- Identification number of the Approved Body
- Name/address of the manufacturer of the product/ system
- Marking with intention of clarification of intended use
- Date of marking
- Number of certificate of constancy of performance (where applicable)
- UKTA number.

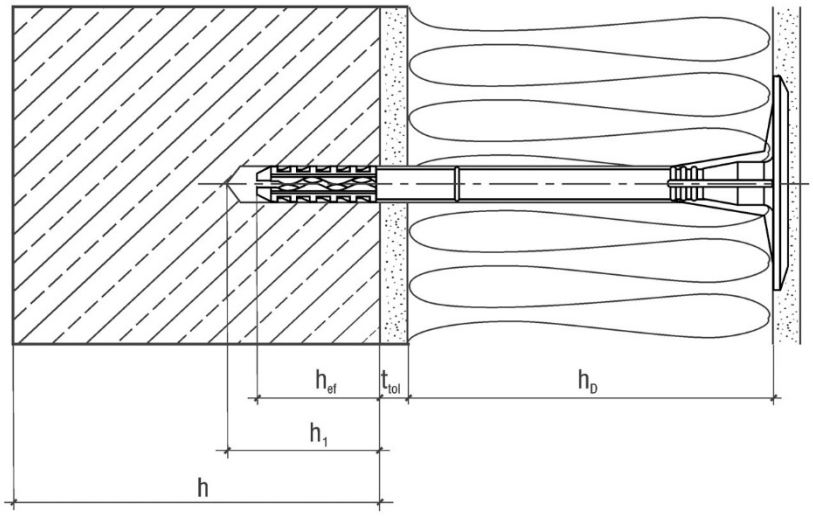
On behalf of the British Board of Agrément

Date of Issue: 28 February 2023	**Hardy Giesler** Chief Executive Officer

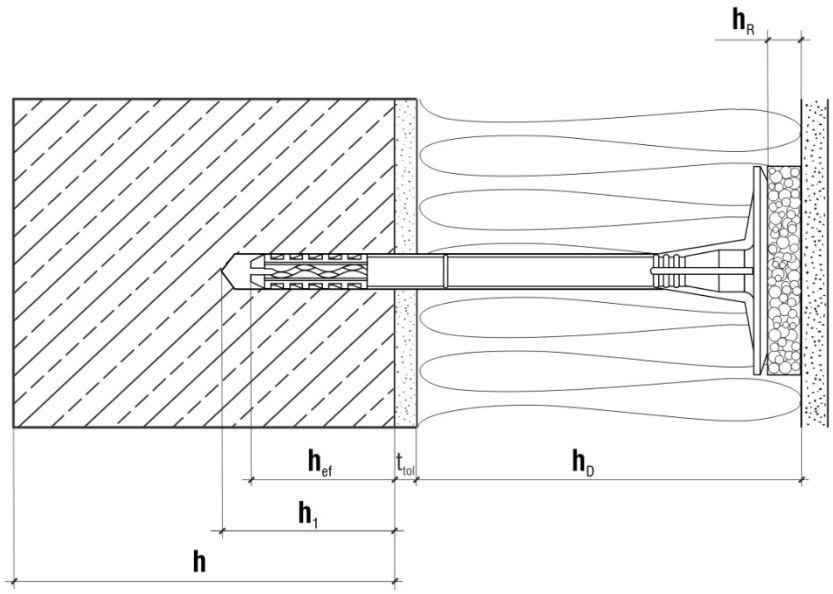
British Board of Agrément,
1st Floor Building 3,
Hatters Lane,
Croxley Park
Watford
WD18 8YG

Annex A1
Product description
Installed condition – surface mount, immerged mount

LTX-8 / LMX-8 / LGX-8 / LTX-10 / LMX-10 / LGX-10



surface mount



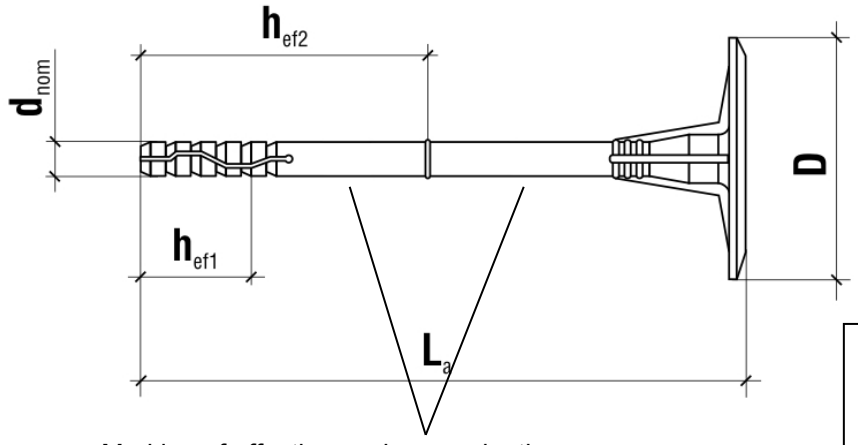
immerged mount

Legend:

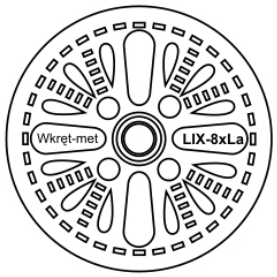
h_D	=	thickness of insulation material
h_{ef}	=	effective anchorage depth
h	=	thickness of member (wall)
h_1	=	depth of drilled hole to deepest point
t_{tol}	=	thickness of equalizing layer or non-load-bearing coating
h_R	=	thickness of insulation cover

Annex A 2
Product description
LTX-8 - marking and dimension of the anchor sleeve LIX Expansion element TTX

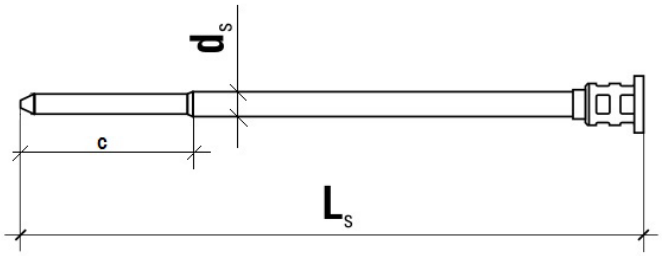
LTX-8



Marking of effective anchorage depth



Marking:
Identifying Mark (Wkręt-Met)
Anchor sleeve – LIX
Anchor size – 8xLa



Accompanying specific nail TTX-4,8

Table A1: Dimensions

Anchor Type	Colour	Anchor Sleeve			Specific nail		
		d_{nom} [mm]	h_{ef} [mm]	min L_a max L_a [mm]	d_s [mm]	c [mm]	min L_s max L_s [mm]
LTX-8	natural	8	h_{ef1} = 25 h_{ef2} = 65*	95 195	4,8	44	100 200

*) for category E

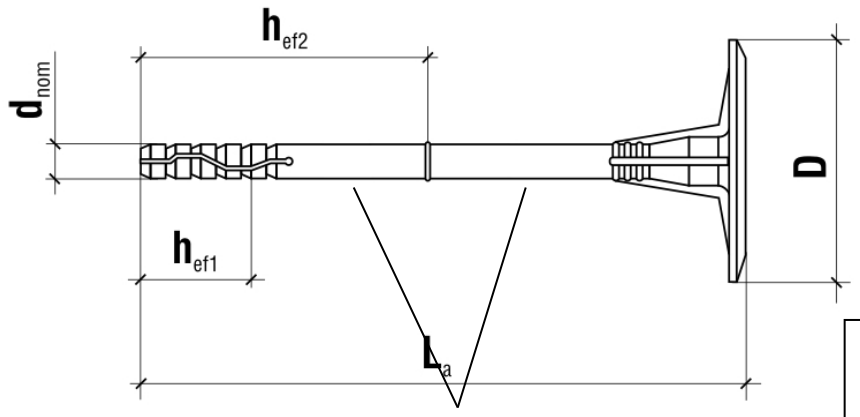
Determination of maximum thickness of insulation h_D [mm] for LTX-8:

	h_D	= L_a – t_{tol} – h_{ef}	(La = e.g. 95; t_{tol} = 10)
e.g.	h_D	= 95 – 10 – 25	
	h_{Dmax}	= 60	

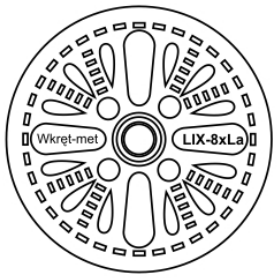
Annex A 3

Product description
LMX-8 - marking and dimension of the anchor sleeve LIX
Expansion element TMX

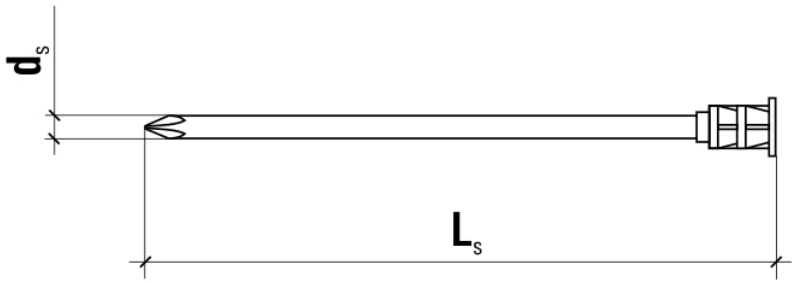
LMX-8



Marking of effective anchorage depth



Marking:
Identifying Mark (Wkręt-Met)
Anchor sleeve – LIX
Anchor size – 8xLa



Accompanying specific nail TMX-4,4

Table A2: Dimensions

Anchor Type	Colour	Anchor Sleeve			Specific nail	
		d_{nom} [mm]	h_{ef} [mm]	min L_a max L_a [mm]	d_s [mm]	min L_s max L_s [mm]
LMX-8	natural	8	h_{ef1} = 25 h_{ef2} = 65*	95 295	4,4	100 300

*) for category E

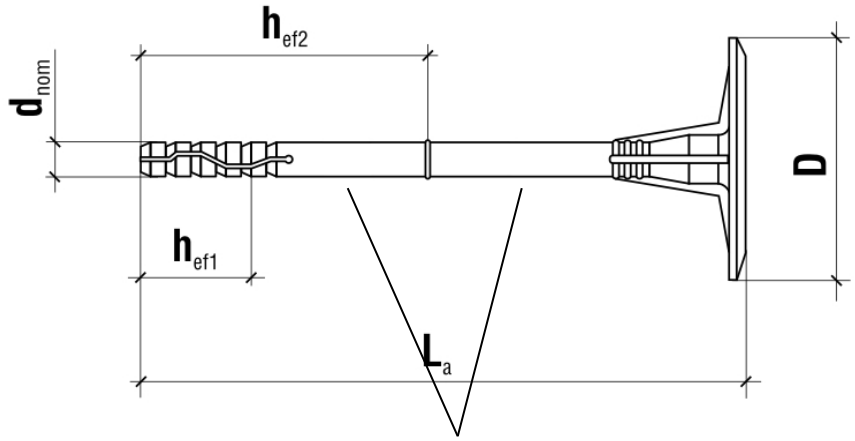
Determination of maximum thickness of insulation h_D [mm] for LMX-8:

	h_D	= L_a – t_{tol} – h_{ef}	(L_a = e.g. 95; t_{tol} = 10)
e.g.	h_D	= 95 – 10 – 25	
	h_{Dmax}	= 60	

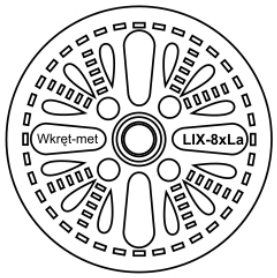
Annex A 4

Product description
LGX-8 - marking and dimension of the anchor sleeve LIX
Expansion element TGX

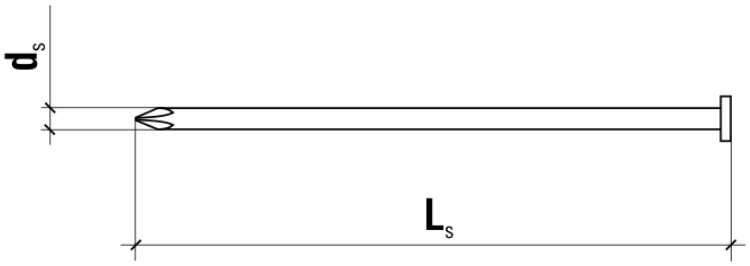
LGX-8



Marking of effective anchorage depth



Marking:
Identifying Mark (Wkręt-Met)
Anchor sleeve – LIX
Anchor size – 8xLa



Accompanying specific nail TGX-4,4

Table A3: Dimensions

Anchor Type	Colour	Anchor Sleeve			Specific nail	
		d_{nom} [mm]	h_{ef} [mm]	min L_a max L_a [mm]	d_s [mm]	min L_s max L_s [mm]
LGX-8	natural	8	h_{ef1} = 25 h_{ef2} = 65*	95 295	4,4	100 300

*) for category E

Determination of maximum thickness of insulation h_D [mm] for LGX-8:

$h_D = L_a - t_{tol} - h_{ef}$ (L_a = e.g. 95; t_{tol} = 10)

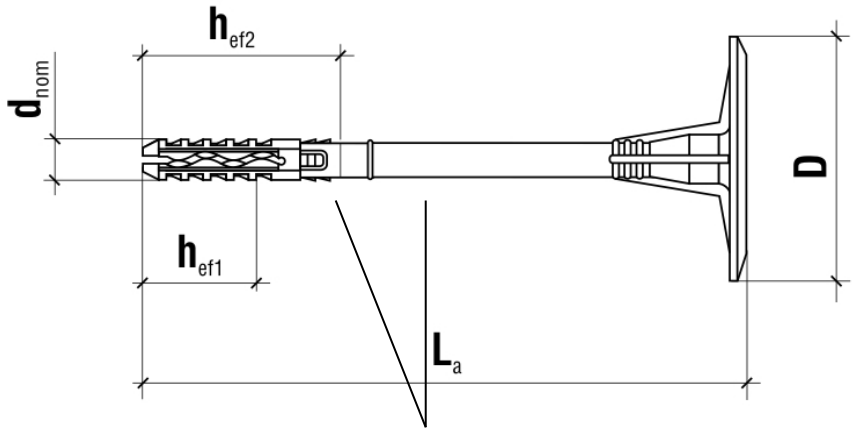
e.g. $h_D = 95 - 10 - 25$

$h_{Dmax} = 60$

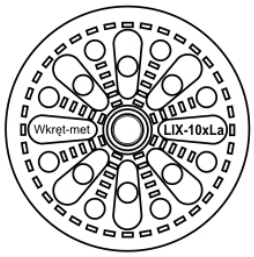
Annex A 5

Product description
LTX-10 - marking and dimension of the anchor sleeve LIX
Expansion element TTX

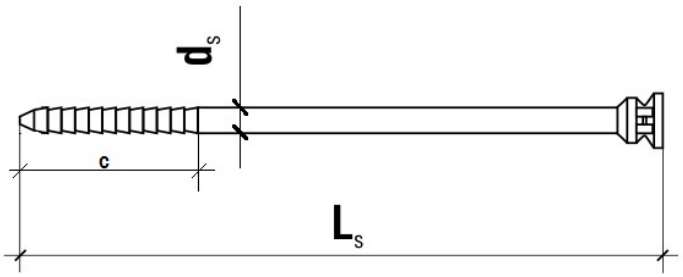
LTX-10



Marking of effective anchorage depth



Marking:
Identifying Mark (Wkręt-Met)
Anchor sleeve – LIX
Anchor size – 10xLa



Accompanying specific nail TTX-5,5

Table A4: Dimensions

Anchor Type	Colour	Anchor Sleeve			Specific nail		
		d_{nom} [mm]	h_{ef} [mm]	min L_a max L_a [mm]	d_s [mm]	c [mm]	min L_s max L_s [mm]
LTX-10	natural	10	h_{ef1} = 30 h_{ef2} = 50*	70 260	5,5	44	75 265

*) for category E

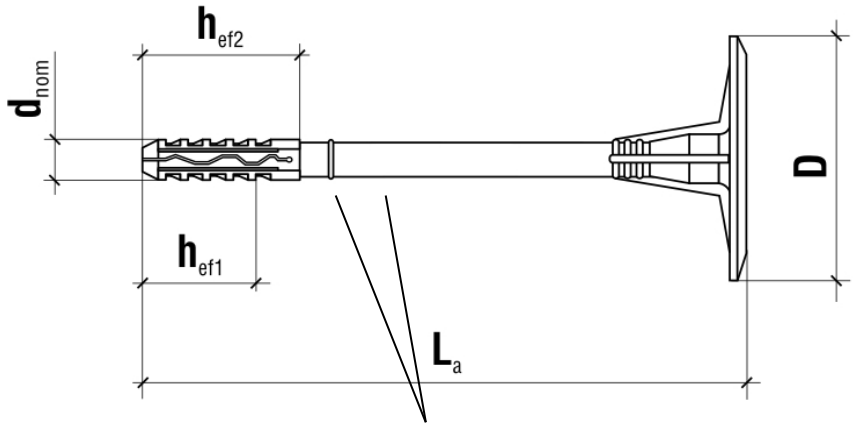
Determination of maximum thickness of insulation h_D [mm] for LTX-10:

$h_D = L_a – t_{tol} – h_{ef}$ (L_a = e.g. 70; t_{tol} = 10)
e.g. $h_D = 70 – 10 – 30$
$h_{Dmax} = 30$

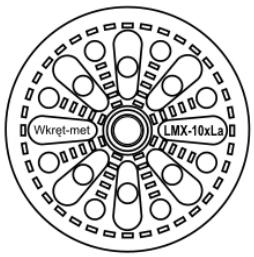
Annex A 6

Product description
LMX-10 - marking and dimension of the anchor sleeve LMX
Expansion element TMX

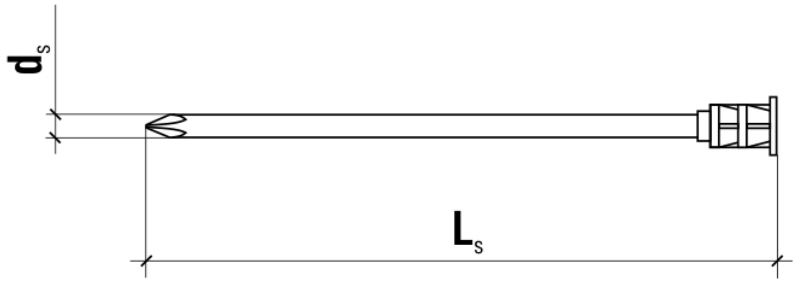
LMX-10



Marking of effective anchorage depth



Marking:
Identifying Mark (Wkręt-Met)
Anchor sleeve – LMX
Anchor size – 10xLa



Accompanying specific nail TMX-4,4

Table A5: Dimensions

Anchor Type	Colour	Anchor Sleeve			Specific nail	
		d_{nom} [mm]	h_{ef} [mm]	min L_a max L_a [mm]	d_s [mm]	min L_s max L_s [mm]
LMX-10	natural	10	h_{ef1} = 30 h_{ef2} = 50*	70 300	4,4	70 300

*) for category E

Determination of maximum thickness of insulation h_D [mm] for LMX-10:

$h_D = L_a - t_{tol} - h_{ef}$ (L_a = e.g. 70; t_{tol} = 10)

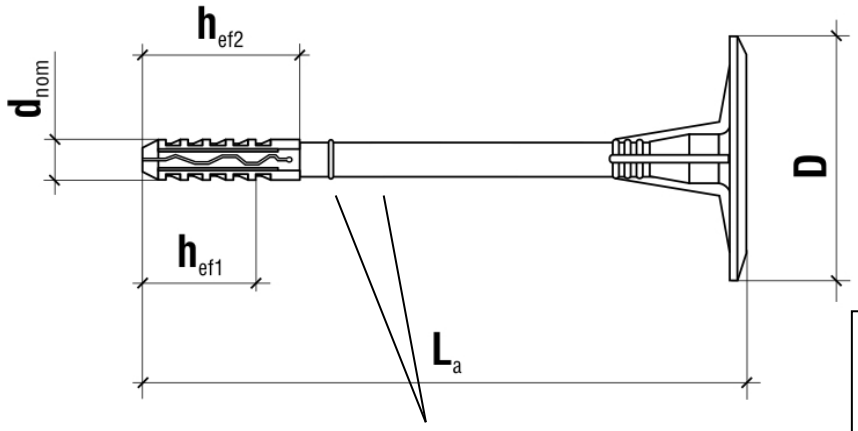
e.g. $h_D = 70 - 10 - 30$

$h_{Dmax} = 30$

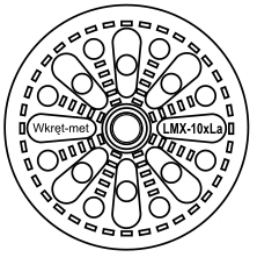
Annex A 7

Product description
LGX-10 - marking and dimension of the anchor sleeve LMX
Expansion element TGX

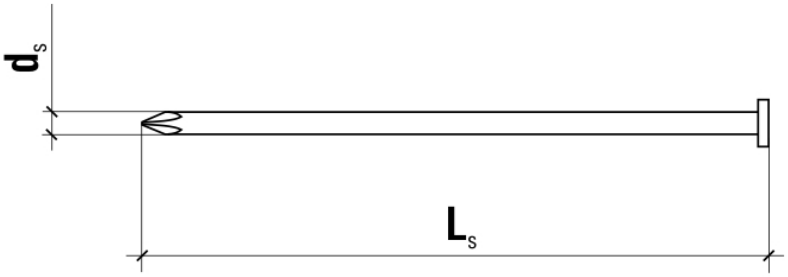
LGX-10



Marking of effective anchorage depth



Marking:
Identifying Mark (Wkręt-Met)
Anchor sleeve – LMX
Anchor size – 10xLa



Accompanying specific nail TGX-4,4

Table A6: Dimensions

Anchor Type	Colour	Anchor Sleeve			Specific nail	
		d_{nom} [mm]	h_{ef} [mm]	min L_a max L_a [mm]	d_s [mm]	min L_s max L_s [mm]
LGX-10	natural	10	h_{ef1} = 30 h_{ef2} = 50*	70 300	4,4	70 300

*) for category E

Determination of maximum thickness of insulation h_D [mm] for LGX-10:

$h_D = L_a - t_{tol} - h_{ef}$ (L_a = e.g. 70; t_{tol} = 10)

e.g. $h_D = 70 - 10 - 30$

$h_{Dmax} = 30$

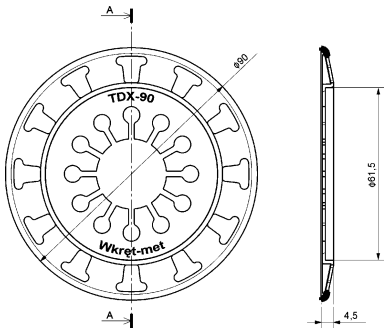
Annex A 8

Product description
Materials,
Slip on plates with LTX-8 / LMX-8 / LGX-8 / LTX-10 / LMX-10 / LGX-10

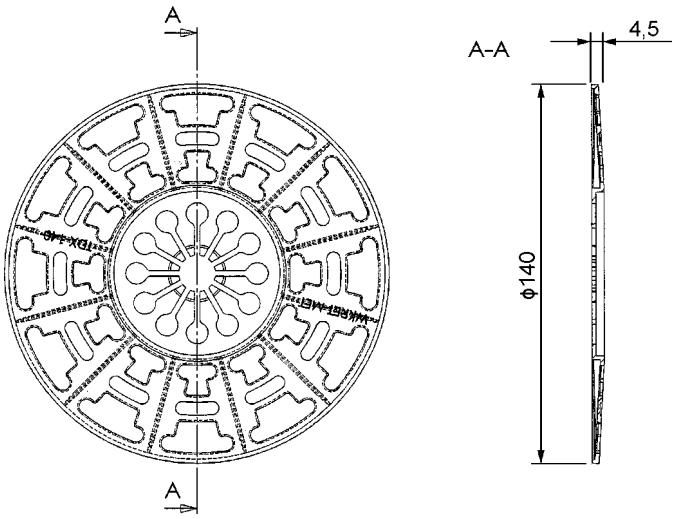
Table A7: Materials	
Name	Materials
Anchor sleeve	Polyethylene, colour: natural
Specific nail TTX	Polyamide + GF, colour: black or natural
Specific nail TMX, TGX	Steel, electro galvanized ≥ 5 µm according to EN ISO 4042:2001, white passivated, f_{yk} ≥ 420 N/mm²

Table A8: Insulation discs, diameters and material

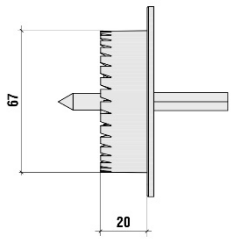
Plate type	Outer diameter [mm]	Material
TDX-P-90	90	Polyethylene, natural or grey
TDX-90	90	Polyamide +GF, natural or grey
TDX-P-140	140	Polyethylene, natural or grey
TDX-140	140	Polyamide + GF, natural or grey



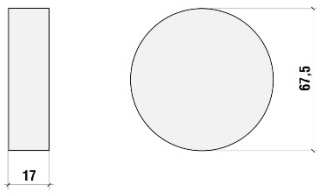
TDX-P-90/TDX-90



TDX-P-140/TDX-140



Special drill tool WK-FT
for immerged installation



Insulation cover KS and KSG

Annex B 1

Intended use
Specifications

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 TR 051

Temperature Range:

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

Design:

- The anchorages are designed in accordance with the UKAD 330196-00-0604 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 C1
- 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

Annex B 2

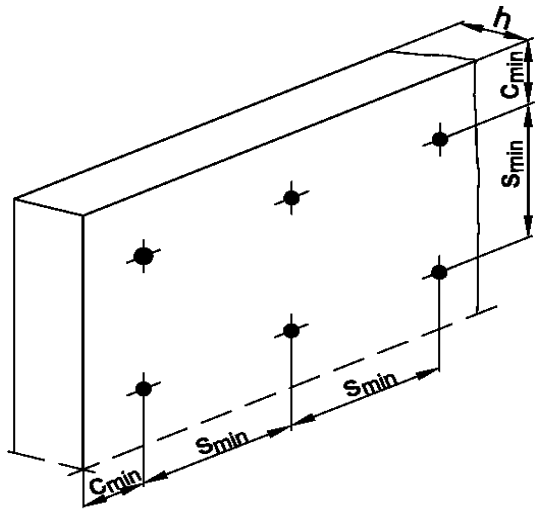
Intended use
Installation parameters,
Edge distances and spacing

Table B1: Installation parameters for LTX-8 / LMX-8 / LGX-8 /			
		A B C D	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] ≥	35	75
Effective anchorage depth	h_{ef} [mm] ≥	25	65

Table B2: Installation parameters for LTX-10 / LMX-10 / LGX-10			
		A B C D	E
Drill hole diameter	d_0 [mm] =	10	10
Cutting diameter of drill bit	d_{cut} [mm] ≤	10,45	10,45
Depth of drill hole to deepest point	h_1 [mm] ≥	40	60
Effective anchorage depth	h_{ef} [mm] ≥	30	50

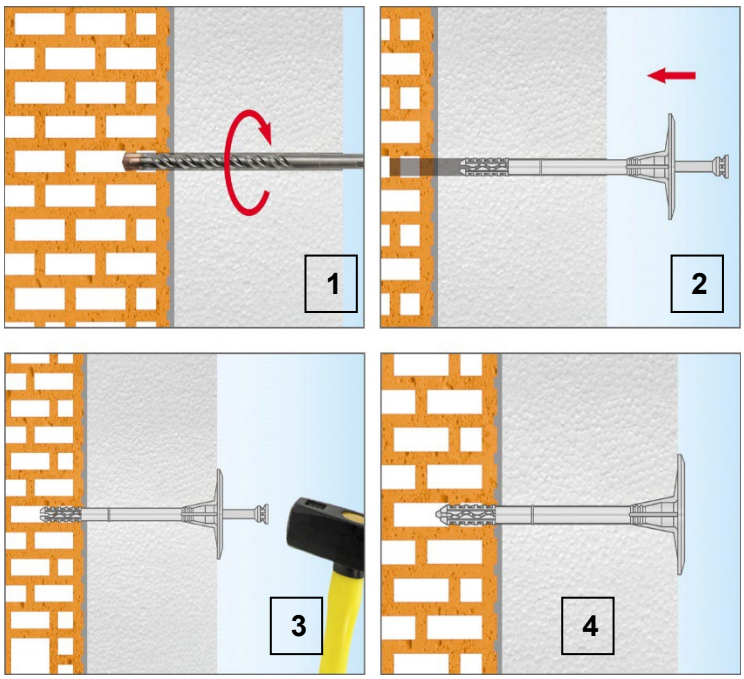
Table B3: Anchor distances and dimensions of members			
Minimum allowable spacing	s_{min} ≥ [mm]		100
Minimum allowable edge distance	c_{min} ≥ [mm]		100
Minimum thickness of member	h ≥ [mm]		100

Scheme of distance and spacing



Annex B 3

Intended use
Installation instructions – surface mount, immerged mount



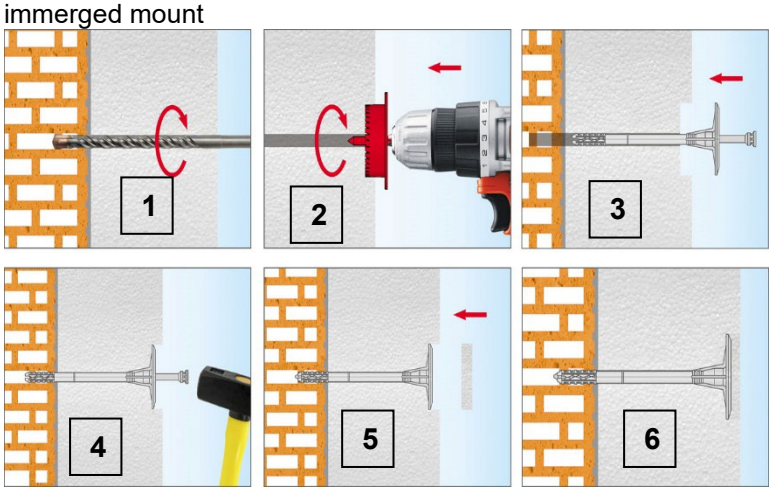
1) Drill the hole perpendicular to the substrate surface. Clean the drill hole.

2) Place the anchor into the drill hole. The bottom side of the plate must be flush with the ETICS.

3) Drive in the specific nail with the hammer.

4) Installed condition.

immerged mount



1) Drill the hole perpendicular to the substrate surface. Clean the drill hole.

2) Drill the recess for immerged installation with the special drilling tool WK-FT.

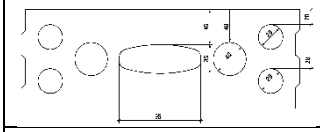
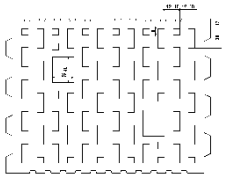
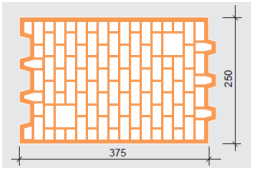
3) Place the anchor into the drill hole. The bottom side of the plate must be flush with the recess in the ETICS.

4) Drive in the specific nail with the hammer.

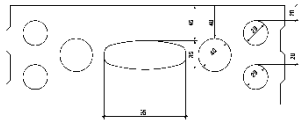
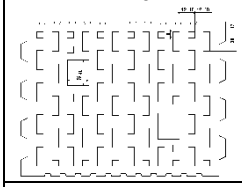
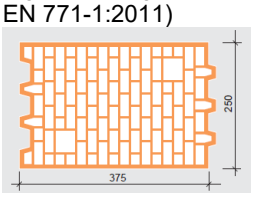
5) Insert the insulation cover.

6) Installed condition.

Annex C 1
Performances Characteristic resistance LTX-8, LMX-8, LGX-8

Table C1: Characteristic resistance to tension loads N_{Rk} in concrete and masonry for a single anchor in kN						
Anchor type					LTX-8	LMX-8 LGX-8
Base materials	Bulk density class ρ [kg/dm³]	Minimum compressive strength f_b [N/mm²]	General remarks	Drill method	N_{Rk} [kN]	N_{Rk} [kN]
Concrete C12/15 (EN 206-1:2000)	≥ 2,25	≥ 30		Hammer	0,5	0,5
Concrete C20/25 - C50/60 (EN 206-1:2000)	≥ 2,30	≥ 65		Hammer	0,75	0,75
Clay bricks MZ e.g. according to EN 771-1:2011	≥ 2,0	≥ 20		Hammer	0,75	0,75
Calcium silicate bricks KS e.g. according to EN 771-2:2011	≥ 2,0	≥ 20		Hammer	0,75	0,75
Calcium silicate hollow block KSL e.g. according to EN 771-2:2011 	≥ 1,6	≥ 12	Vertical perforation more than 15 % and less than 50 %	Hammer	0,75	0,75
Vertically perforated clay bricks HLZ e.g. according to EN 771-1:2011 	≥ 1,2	≥ 12	Vertical perforation more than 15 % and less than 50 %	Rotary	0,6	0,6
Vertically perforated clay bricks Porotherm 25 e.g. according to EN 771-1:2011 	≥ 0,8	≥ 10	Vertical perforation more than 15 %	Rotary	0,4	0,4
Autoclaved concrete blocks AAC2 e.g. according to EN 771-4:2011	≥ 0,35	≥ 2		Rotary	0,75	0,75
Autoclaved concrete blocks AAC7 e.g. according to EN 771-4:2011	≥ 0,65	≥ 3,5		Rotary	0,9	0,9
Lightweight concrete blocks LAC e.g. according to EN 1520:2011-06 / EN 771-3:2011	≥ 0,88	≥ 5		Rotary	0,6	0,75

Annex C 2
Performances - Characteristic resistance LTX-10, LMX-10, LGX-10

Table C2: Characteristic resistance to tension loads N_{Rk} in concrete and masonry for a single anchor in kN						
Anchor type					LTX-10	LMX-10 LGX-10
Base materials	Bulk density class ρ [kg/dm³]	Minimum compressive strength f_b [N/mm²]	General remarks	Drill method	N_{Rk} [kN]	N_{Rk} [kN]
Concrete C12/15 (EN 206-1:2000)	≥ 2,25	≥ 30		Hammer	0,5	0,75
Concrete C20/25 - C50/60 (EN 206-1:2000)	≥ 2,30	≥ 65		Hammer	0,75	0,9
Clay bricks MZ e.g. according to EN 771-1:2011	≥ 2,0	≥ 20		Hammer	0,75	0,9
Calcium silicate bricks KS e.g. according to EN 771-2:2011	≥ 2,0	≥ 20		Hammer	0,6	0,9
Calcium silicate hollow block KSL e.g. according to EN 771-2:2011 	≥ 1,6	≥ 12	Vertical perforation more than 15 % and less than 50 %	Hammer	0,6	0,9
Vertically perforated clay bricks HLZ e.g. according to EN 771-1:2011 	≥ 1,2	≥ 12	Vertical perforation more than 15 % and less than 50 %	Rotary	0,6	0,9
Vertically perforated clay bricks porotherm 25 e.g. according to EN 771-1:2011) 	≥ 0,8	≥ 10	Vertical perforation more than 15 %	Rotary	0,4	0,5
Autoclaved concrete blocks AAC2 e.g. according to EN 771-4:2011	≥ 0,35	≥ 2		Rotary	0,5	0,75
Autoclaved concrete blocks AAC7 e.g. according to EN 771-4:2011	≥ 0,65	≥ 3,5		Rotary	0,6	0,9
Lightweight concrete blocks LAC e.g. according to EN 1520:2011-06 / EN 771-3:2011	≥ 0,88	≥ 5		Rotary	0,6	0,9

Annex C 3

Performances
Point thermal transmittance, plate stiffness

Table C3: Point thermal transmittance according TR 025:2016		
Anchor type	Insulation thickness h_D [mm]	Point thermal transmittance χ [W/K]
LTX-8 surface mount	60 - 160	0
LTX-8 immerged mount	80 - 160	0
LMX-8 surface mount	60 - 260	0,004
LMX-8 immerged mount	80 - 260	0,002
LGX-8 surface mount	60 - 260	0,006
LGX-8 immerged mount	80 - 260	0,003
LTX-10 surface mount	30 - 220	0,001
LTX-10 immerged mount	50 - 220	0
LMX-10 surface mount	30 - 260	0,004
LMX-10 immerged mount	50 - 260	0,002
LGX-10 surface mount	30 - 260	0,007
LGX-10 immerged mount	50 - 260	0,003

Table C4: Plate stiffness according to TR 026:2016			
Anchor type	Diameter of the anchor plate [mm]	Load resistance of the anchor plate [kN]	Plate stiffness [kN/mm]
LTX-8/LMX-8/LGX-8	60	1,09	0,5
LTX-10/LMX-10/LGX-10	60	1,02	0,5

Annex C 4

Performances
Displacements

Table C4: Displacements LTX-8 and LTX-10						
Base materials (refer Table C1, C2)	Bulk density class ρ [kg/dm³]	Minimum Compressive strength f_b [N/mm²]	Tension load N [kN]		Displacements δ(N) [mm]	
			LTX-8	**LTX-10**	**LTX-8**	**LTX-10**
Concrete C20/25	≥ 2,25	≥ 30	0,17	0,17	1,5	1,4
Concrete C50/60	≥ 2,30	≥ 65	0,25	0,25	1,5	1,8
Clay bricks MZ	≥ 2,0	≥ 20	0,25	0,25	0,5	0,6
Calcium silicate bricks KS	≥ 2,0	≥ 20	0,25	0,2	0,8	1,1
Calcium silicate hollow block KSL	≥ 1,6	≥ 12	0,25	0,2	1,0	1,5
Vertically perforated clay bricks HLZ	≥ 1,2	≥ 12	0,2	0,2	1,2	1,4
Perforated clay bricks Porotherm 25	≥ 0,8	≥ 10	0,13	0,13	0,6	0,5
Autoclaved concrete blocks AAC2	≥ 0,35	≥ 2	0,25	0,17	0,8	1,3
Autoclaved concrete blocks AAC7	≥ 0,65	≥ 3,5	0,3	0,2	1,3	1,8
Lightweight concrete blocks LAC	≥ 0,88	≥ 5	0,2	0,2	0,9	1,5

Table C4: Displacements LMX-8/LGX-8 and LMX-10/LGX-10						
Base materials (refer Table C1, C2)	Bulk density class ρ [kg/dm³]	Minimum Compressive strength f_b [N/mm²]	Tension load N [kN]		Displacements δ(N) [mm]	
			LMX-8/ LGX-8	**LMX-10/ LGX-10**	**LMX-8/ LGX-8**	**LMX-10/ LGX-10**
Concrete C20/25	≥ 2,25	≥ 30	0,17	0,25	2,1	1,3
Concrete C50/60	≥ 2,30	≥ 65	0,25	0,3	2,4	1,5
Clay bricks MZ	≥ 2,0	≥ 20	0,25	0,3	2,0	0,8
Calcium silicate bricks KS	≥ 2,0	≥ 20	0,25	0,3	0,7	1,0
Calcium silicate hollow block KSL	≥ 1,6	≥ 12	0,25	0,3	1,0	1,3
Vertically perforated clay bricks HLZ	≥ 1,2	≥ 12	0,2	0,3	1,6	1,7
Perforated clay bricks Porotherm 25	≥ 0,8	≥ 10	0,13	0,17	0,9	0,8
Autoclaved concrete blocks AAC2	≥ 0,35	≥ 2	0,25	0,25	2,7	2,4
Autoclaved concrete blocks AAC7	≥ 0,65	≥ 3,5	0,3	0,3	2,0	1,4
Lightweight concrete blocks LAC	≥ 0,88	≥ 5	0,25	0,3	1,0	1,0

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