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European Technical Assessment

ETA-22/0294
of 13. 6. 2022

English version prepared by ZAG

General Part

Technical Assessment Body issuing the European Technical Assessment	**ZAG Ljubljana**
Trade name of the construction product	**ISOPLUS**
Product family to which the construction product belongs	**33: Screwed-in plastic anchor for fixing of external thermal insulation composite systems with rendering on concrete, masonry and autoclaved aerated concrete**
Manufacturer	**SAS ATELIERS LR ETANCO** **PARC DES ERABLES - BATIMENT 1.** **66 Route de Sartrouville-BP49** **FR-78231 Le Pecq Cedex** **France** www.etanco.fr
Manufacturing plant	**PLANT 1**
This European Technical Assessment contains	16 pages including 13 annexes, which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 330196-01-0604, edition July 2017

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Specific parts

1 Technical description of the product

The ISOPLUS is a screwed-in anchor which consists of a plastic sleeve with a plate made of virgin polypropylene, galvanized zinc coated steel screw and two types of insulation covers – internal insulation cover (EPS plug) for mounting on the surface of the insulation material and external insulation cover for deep mounting of an anchor in the insulation material. Additionally 3 types of additional plates can be used - Ø 100 in PPL Ø 140 for mounting on the surface of the insulation material and PPV Ø 110 for deep mounting in the insulation material. They are made of virgin polypropylene.

The anchor is installed in drilled hole by a special installation tool on a hand driller. The expansion of the anchor and consequent anchorage is applied by screwing the nail into the sleeve.

Product description is given in Annex A.

2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

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

The provisions made in this European Technical Assessment are based on an assumed working life of the anchor of 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, 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 in case of fire (BWR 2)

Not assessed based on EAD 330196-01-0604.[1]

3.3 Safety in use (BWR 4)

Essential characteristic		Performance
Characteristic load bearing capacity		
Characteristic resistance under tension load	N_{Rk} [kN]	See Table C1, Annex C1
Minimum edge distance	c_{min} [mm]	See Table B2, Annex B2
Minimum spacing	s_{min} [mm]	
Displacement		
Tension load with partial factor γ_M, γ_F	N [kN]	See Table C4, Annex C2
Displacement	$\Delta\delta_N$ (N) [mm]	
Plate stiffness		
Diameter of the anchor plate	[mm]	See Table C3, Annex C2
Load resistance of the anchor plate	[kN]	
Plate stiffness	[kN/mm]	

3.4 Energy economy and heat retention (BWR 6)

Essential characteristic		Performance
Thermal transmittance		
Point thermal transmittance of an anchor	χ [W/K]	See Table C2, Annex C2
Insulation layer thickness of the ETICS	h_D [mm]	

3.6 General aspects relating to fitness for use

Durability and serviceability are only ensured if specifications of intended use according to Annex B are kept.

[1] Requirements with respect to safety in case of fire are given in ETAG 004 and ETAG 017.

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

According to the decision 97/463/EC of the European Commission[2] the system of assessment and verification of constancy of performance (see Annex V to regulation (EU) No 305/2011) **2+** apply.

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

Technical details necessary for the implementation of the AVCP system are laid down in Chapter 3 of EAD 330196-01-0604.

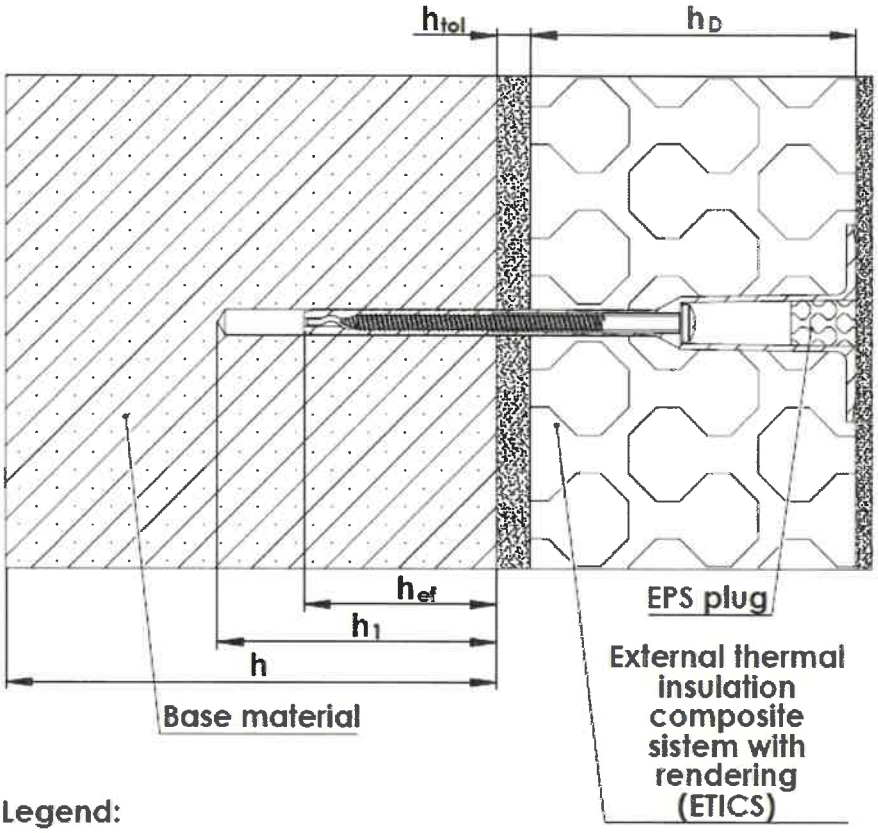
Issued in Ljubljana on 13. 6. 2022

Signed by:

Franc Capuder, M.Sc.

Head of Service of TAB

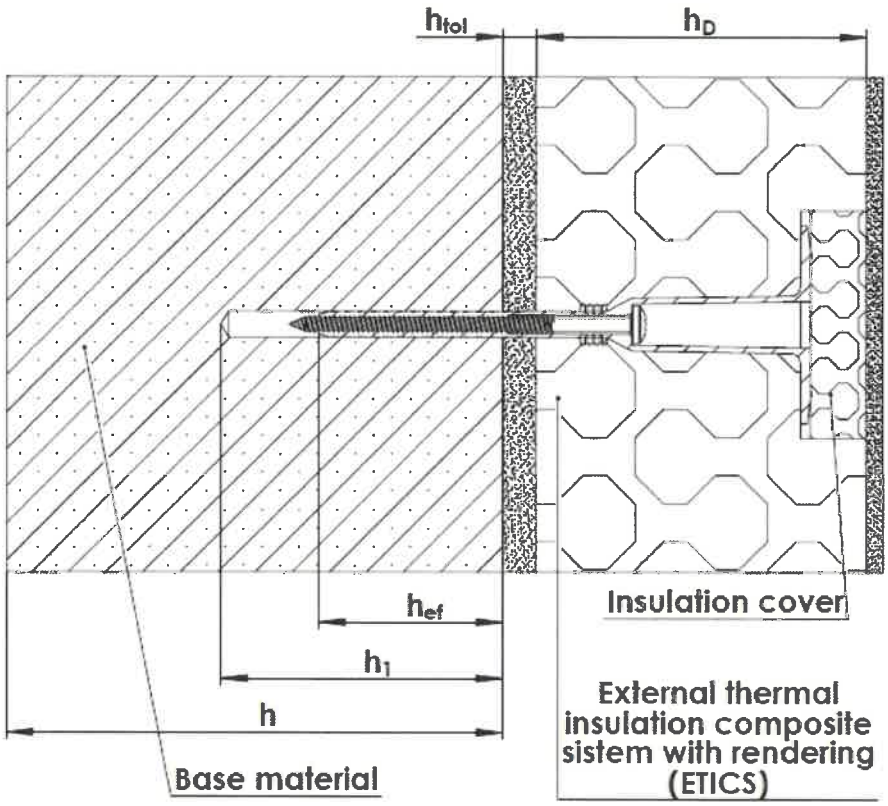
[2] Official Journal of the European Communities L 254 of 8.10.1996



Legend:

h_D.....thickness of insulation
h_{ef}.....effective anchorage depth
h.....thickness of base material
h_1.....depth of drill hole
h_{tol}.....thicness of equalizing, layer or non-load bearing coating

ISOPLUS	
Product description Installed condition – mounting on the surface of the insulation material with EPS plug	**Annex A1**



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h_D.....thickness of insulation
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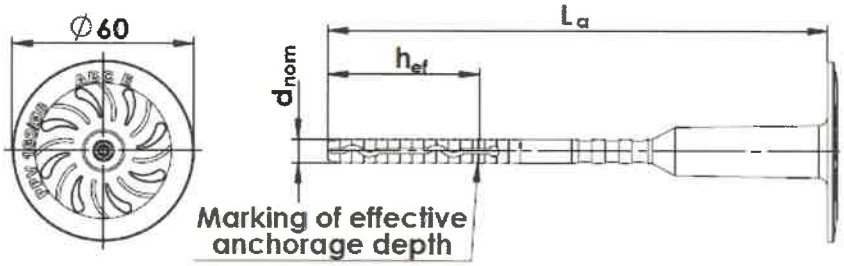
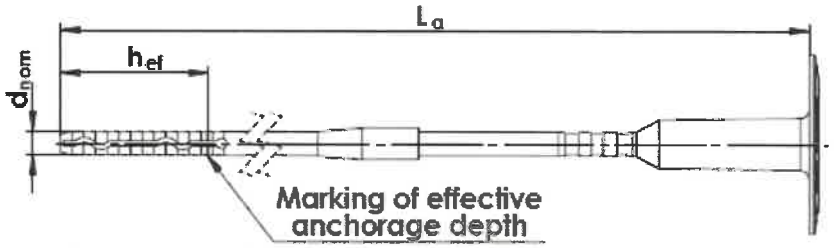
h.....thickness of base material
h_1.....depth of drill hole
h_{tol}.....thicness of equalizing, layer or non-load bearing coating

ISOPLUS	
Product description Installed condition – deep mounting in the insulation material with external insulation cover	**Annex A2**

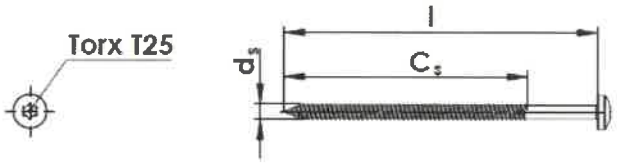


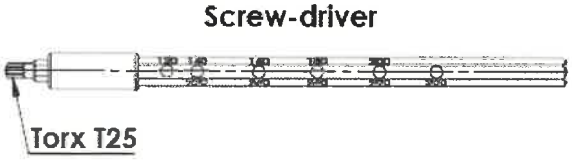
Marking:
Anchor type (ISOPLUS)
Length and diameter of an anchor (e.g. 160/Ø8)
Use category (ABCE)

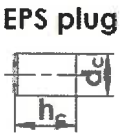


Geometry of the anchor of length 420 to 500

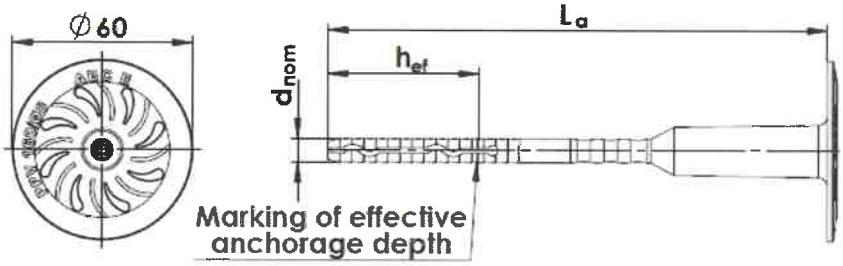
Marking:
Anchor type (ISOPLUS)
Length and diameter of an anchor (e.g. 160/Ø8)
Use category (ABCE)



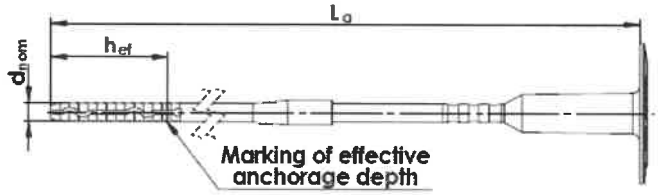




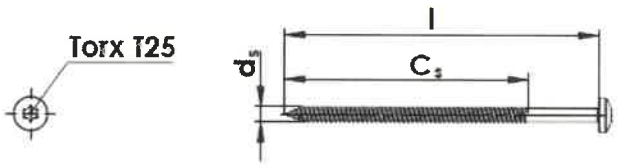
ISOPLUS	
Product description Dimensions - components mounting on the surface of the insulation material	**Annex A3**



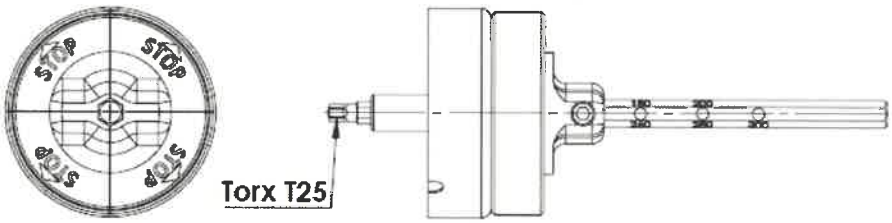
Marking:
Anchor type (ISOPLUS)
Length and diameter of an anchor (e.g. 160/Ø8)
Use category (ABCE)



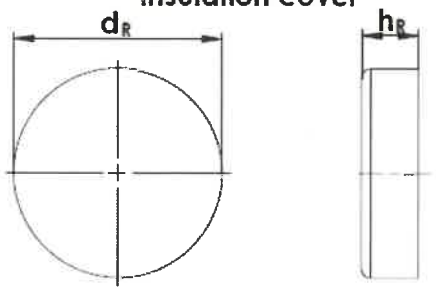
Geometry of the anchor of length 420 to 500



ISOPLUS mounting tool



insulation cover



ISOPLUS	
Product description Dimensions - components for deep mounting in the insulation material	**Annex A4**

Table A1: Dimensions

Anchor type	d_{nom} [mm]	h_{ef} [mm]	L_a [mm]	L_S [mm]	d_S [mm]	d_R [mm]	h_R [mm]	d_c [mm]	h_c [mm]
ISOPLUS	8	50	120 - 500	104 - 380	5,1	70	20	14	20

Determination of maximum thickness of insulation: $h_d = L_a - t_{tol} - h_{ef}$ e.g. L_a = 160 mm

t_{tol} = 10 mm

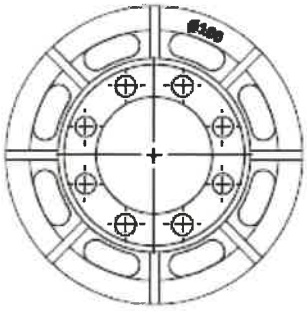
h_d = 160 mm – 10 mm - 50 mm

h_d = 100 mm

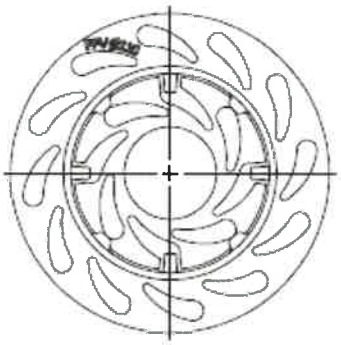
Table A2: Materials

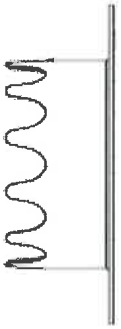
Name	Materials
Anchor sleeve	Polypropylene, Copolymer
Expansion nail	Steel, electro-galvanised ≥ 5 µm
Additional plate	Polypropylene, Copolymer

ISOPLUS	
Product description Dimensions and materials	**Annex A5**

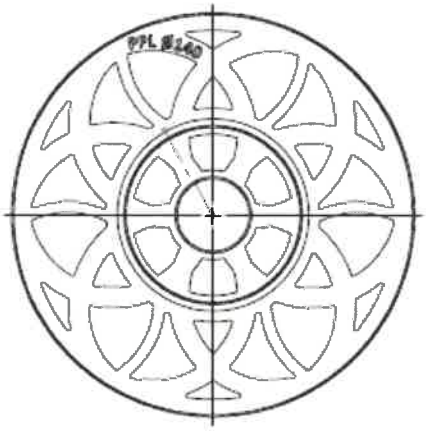


Fixing plate ∅ 100	
Colour	Natur
Material	PP





Fixing plate for deep mounting PPV ∅ 110	
Colour	Natur
Material	PP GF30%



Fixing plate PPL ∅ 140	
Colour	Natur
Material	PP GF30%

ISOPLUS

Product description

Additional plates

Annex A6

Specifications of intended use

Anchorages subject to:

- The anchor shall only be used for the transmission of wind suction loads and shall not be used for the transmission of dead loads of thermal insulation composite system. The dead loads have to be transmitted by the bonding of the thermal insulation composite system.

Base materials:

- Normal weight concrete C16/20 to C50/60 (use category A) according to Annex C1;
- Solid clay masonry (use category B), according to Annex C1;
- Hollow clay brick (use category C) according to Annex C1;
- Autoclaved aerated concrete (use category E) according to Annex C1;
- For other base materials of the use categories A, B, C and E the characteristic resistance of the anchor may be determined by job site tests according to EOTA TR 051, edition December 2016.

Application temperature range:

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

Design:

- If there is no other national regulations, partial safety factors γ_M = 2,0 and γ_F = 1,50 shall be considered.
- The anchors are designed under responsibility of an engineer experienced in anchorages in concrete and masonry.
- Verifiable calculation notes and drawings shall be prepared taking account of the loads to be anchored. The position of the anchor shall be indicated on the design drawings.
- Fasteners are only to be used for multiple non-structural application according to EAD 330196-01-0604, edition July 2017.

Installation:

- Drilling method shall comply 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.
- Ambient temperature during the installation of the anchor 0°C to 40°C.
- Exposure to UV due to solar radiation of the anchor not protected by rendering ≤ 6 weeks.

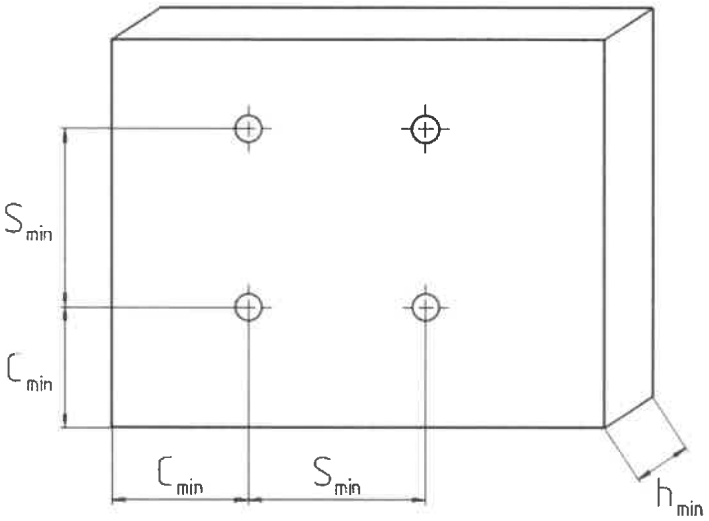
ISOPLUS	
Intended use Specifications	**Annex B1**

Table B1: Installation parameters

				ISOPLUS
Nominal drill bit diameter	d_0	=	[mm]	8
Drill bit cutting diameter	d_{cut}	≤	[mm]	8,45
Depth of drilled hole to deepest point	h_1	≥	[mm]	75
Embedment depth	h_{nom}	≥	[mm]	50

Table B2: Minimum thickness of base material, edge distance and anchor spacing

				ISOPLUS
Minimum thickness of base material	h_{min}	=	[mm]	100
Minimum spacing	s_{min}	=	[mm]	100
Minimum edge distance	c_{min}	=	[mm]	100

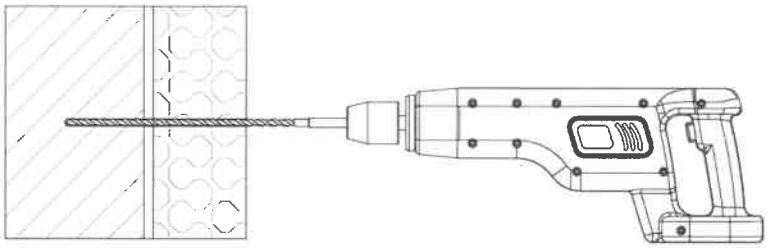


ISOPLUS

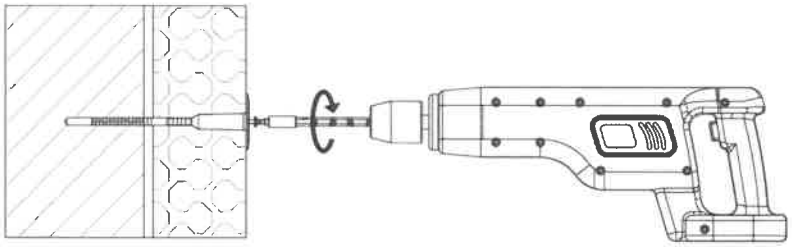
Intended use

Installation parameters, minimum thickness, edge distance and spacing

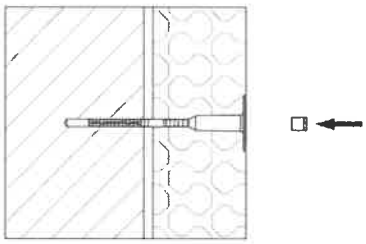
Annex B2



Drill a hole

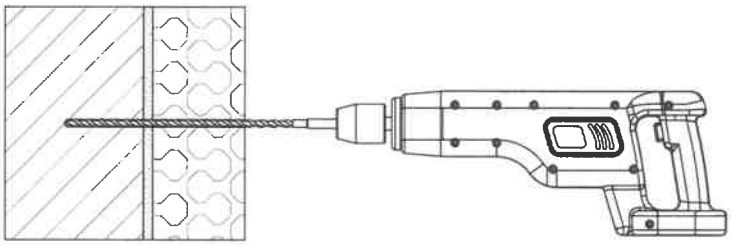


Insert an anchor and screwing it in with screw driver with TX 25 adapter

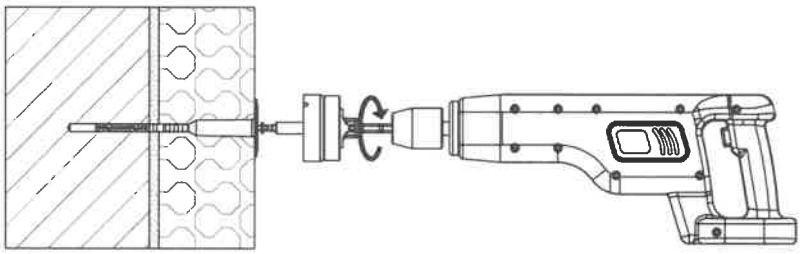


Insert EPS plug in plate's hole

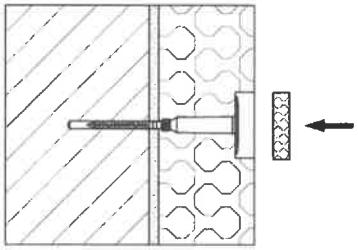
ISOPLUS	
Intended use Installation procedure – mounting on the surface of the insulation material	**Annex B3**



Drill a hole

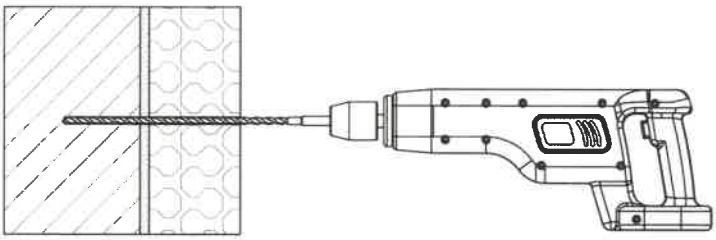


Insert an anchor and screwing it in with screw driver with TX 25 adapter on ISOPLUS mounting tool

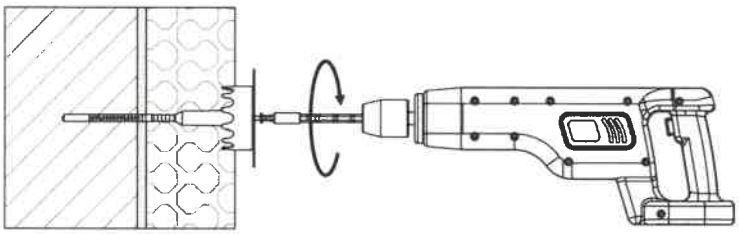


Insert an insulation cover

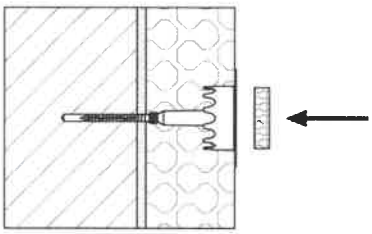
ISOPLUS	
Intended use Installation procedure – deep mounting in the insulation material	**Annex B4**



Drill a hole



Insert an anchor and screwing it in with screw driver with TX 25 adapter together with fixing plate for deep mounting PPV Ø 110



Insert an insulation cover

ISOPLUS	
Intended use Installation procedure – deep mounting in the insulation material with fixing plate	**Annex B5**

Table C1: Characteristic resistance to tension loads N_{Rk}

				ISOPLUS
Base material	**Density [kg/m³]**	**Minimum compressive strength [MPa]**	**General remarks**	**N_{Rk} [kN]**
Concrete C16/20 - C50/60 (acc. EN 206-1)			SIST EN 206 - 1	**1,3**
Solid clay brick (acc. EN 771-1)	1538	35,0		**1,3**
Hollow clay brick Modul blok 6/1 (acc. EN 771-1)	1783	14,4		**0,5**
Hollow clay brick Porotherm 38 S LD (acc. EN 771-1)	1781	13,1		**1,2**
Autoclaved aerated concrete AAC (acc. EN 771-4)	350	2,5		**0,65**
Partial safety factor [1)]		γ_M	**2,0**	

[1)] valid in absence of other national regulations

ISOPLUS	
Performance Characteristic resistance	**Annex C1**

Table C2: Point thermal transmittance acc. to EOTA TR 025

Anchor type	Insulation thickness h_D [mm]	Point thermal transmittance [W/K]
ISOPLUS	60 - 440	0,000

Table C3: Plate stiffness acc. EOTA TR 026

Anchor type	Capacity of plate [kN]	Plate stiffness [kN/mm]
ISOPLUS	1,9	0,7

Table C4: Displacements

Base material	Density [kg/m³]	Minimum compressive strength [N/mm²]	Tension load N [kN]	Displacement δ_m (N) [mm]
Concrete C16/20 - C50/60 (acc. EN 206-1)			0,43	0,71
Solid clay brick (acc. EN 771-1)	1538	35,0	0,43	0,73
Hollow clay brick Modul blok 6/1 (acc. EN 771-1)	1783	14,4	0,17	0,28
Hollow clay brick Porotherm 38 S LD (acc. EN 771-1)	1781	13,1	0,40	0,97
Autoclaved aerated concrete AAC (acc. EN 771-4)	350	2,5	0,22	0,63

ISOPLUS

Intended use

Point thermal transmittance, plate stiffness and displacements

Annex C2