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## European Technical Assessment

**ETA-23/0687  
of 23. 1. 2024**

*English version prepared by ZAG*

### General Part

**Technical Assessment Body issuing the  
European Technical Assessment:**

**ZAG**

**Trade name of the construction  
product**

**MAX-ISO**

**Product family to which the construction  
product belongs**

**33: Nailed-in plastic anchor for fixing of  
external thermal insulation composite  
systems with rendering on concrete  
and clay bricks**

**Manufacturer**

**SAS ATELIERS LR ETANCO PARC DES  
ERABLES - BATIMENT 1  
66 ROUTE DE SARTROUVILLE-BP49  
78231 LE PECQ CEDEX  
France  
[www.etanco.fr](http://www.etanco.fr)**

**Manufacturing plant(s)**

**LR ETANCO - Manufacturing plant n.1  
Slovenia**

**This European Technical Assessment  
contains**

9 pages including 6 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 July 2017

**This version is a corrigendum to**

ETA-23/0687, issued on 16. 11. 2023

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## Specific parts

### 1. Technical description of the product

The nailed-in anchor MAX-ISO for the fastening of external thermal insulation composite systems (ETICS) consists of a plastic sleeve with a plate made of polypropylene and an expansion element, a special nail made of galvanised steel.

The anchor is installed in drilled hole by hammering in the expansion nail. The expansion of the anchor applies the anchorage.

The installed anchor is shown in Annex A1.

### 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.<sup>1</sup>

#### 3.2 Safety in use (BWR 4)

The basic work requirements for safety in use are listed in Annexes C1 and C2.

#### 3.3 General aspects relating to fitness for use

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

### 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<sup>2</sup> the system of assessment and verification of constancy of performance (see Annex V to regulation (EU) No 305/2011) **2+** apply.

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<sup>1</sup> Requirements with respect to safety in case of fire are given in EAD 040083-00-004 and EAD 040914-00-0404.

<sup>2</sup> Official Journal of the European Communities L 198 of 25.07.1997

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

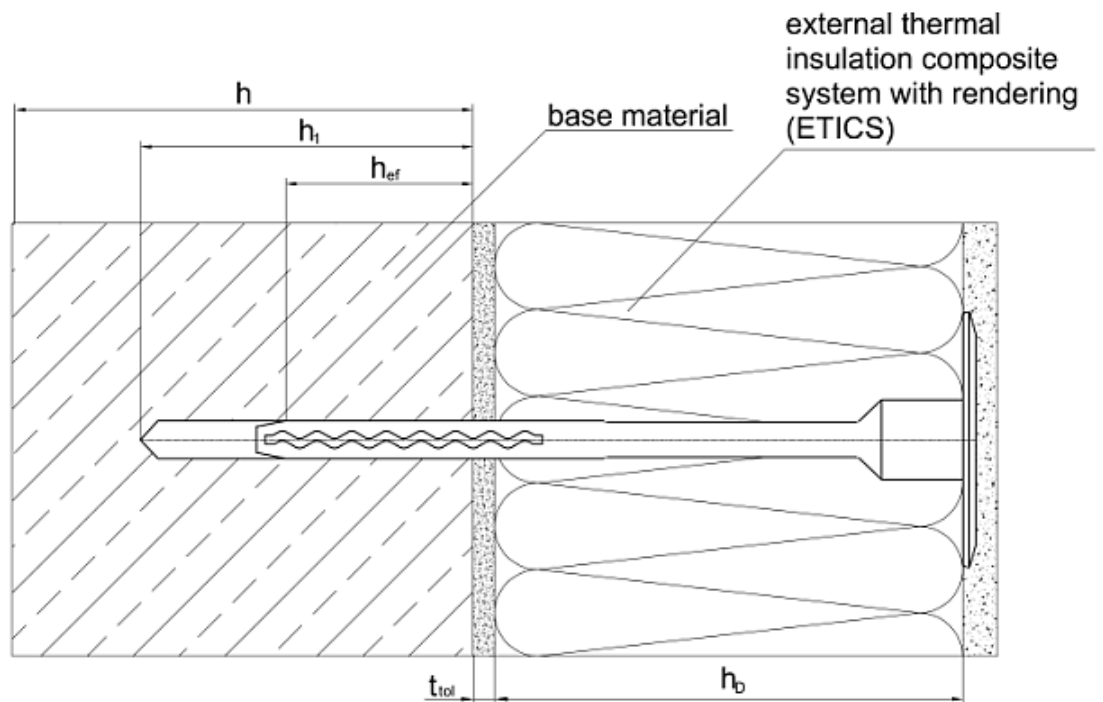
Technical details necessary for the implementation of the AVCP system are laid down in Chapter 3 of EAD 330196-01-0604.

Issued in Ljubljana on 23. 1. 2024

Signed by:

Franc Capuder, M.Sc.

Head of Service of TAB



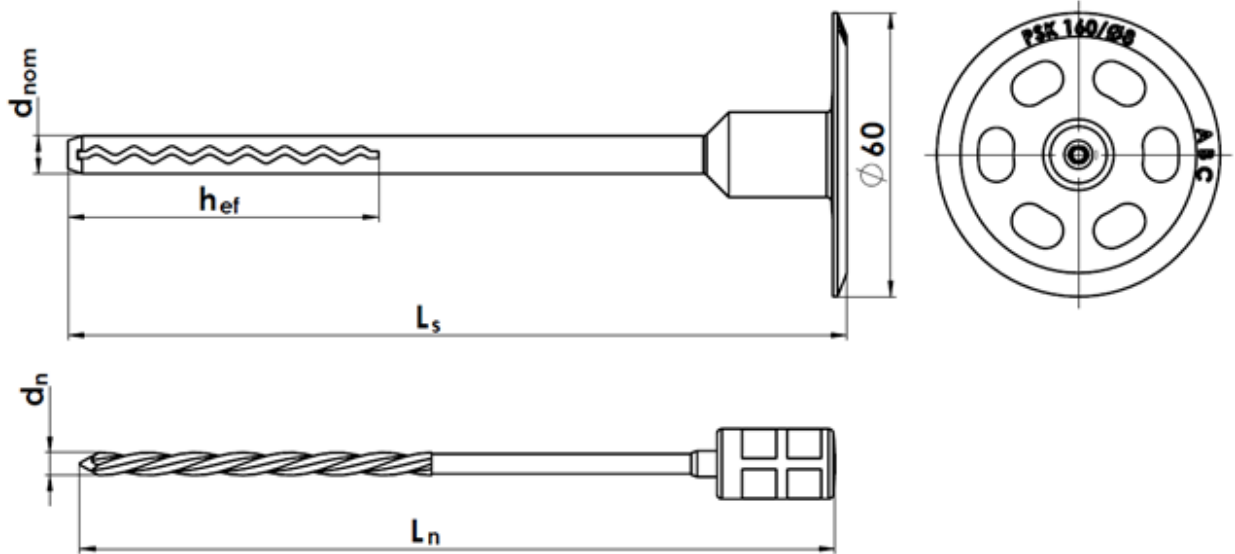
Intended use

-Anchorage of ETICS in concrete and masonry

Legend:

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

<b>MAX-ISO</b>	<b>Annex A1</b>
<b>Product description</b> Installed condition	



**Table A1: Dimensions**

Anchor type	Anchor sleeve		Accompanying expansion nail
	$d_{nom}$ [mm]	$h_{ef}$ [mm]	$d_N$ [mm]
MAX-ISO	8	55	5

Various lengths of the anchor are permissible  $L_{a\ min} = 100\text{ mm}$ ;  $L_{a\ max} = 400\text{ mm}$

Determination of maximum thickness of insulation:

$$h_d = L_a - t_{tol} - h_{ef} \quad \text{e.g. } L_a = 160\text{ mm}$$

$$t_{tol} = 10\text{ mm}$$

$$h_d = 160\text{ mm} - 0\text{ mm} - 55\text{ mm}$$

$$h_d = 105\text{ mm}$$

**Table A2: Materials**

Name	Materials
Anchor sleeve	Polypropylene, Copolymer
Expansion nail	Steel, electro-galvanised $\geq 5\ \mu\text{m}$ $f_{u,\min} = 490\text{ N/mm}^2$

<b>MAX-ISO</b>	<b>Annex A2</b>
<b>Product description</b> Dimensions and Materials	

## Specifications of intended use

### Anchorage 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 Annex C1.
- Solid masonry (use category B), according to Annex C1.
- Hollow or perforated masonry (use category C) according to Annex C1.
- For other base materials of the use categories A, B and C the characteristic resistance of the anchor may be determined by job site tests according to EOTA TR 051, edition December 2016.

### Application temperature range:

- 5°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  $\gamma_M = 2,0$  and  $\gamma_F = 1,50$  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 5°C to 40°C.
- Exposure to UV due to solar radiation of the anchor not protected by rendering  $\leq 6$  weeks.

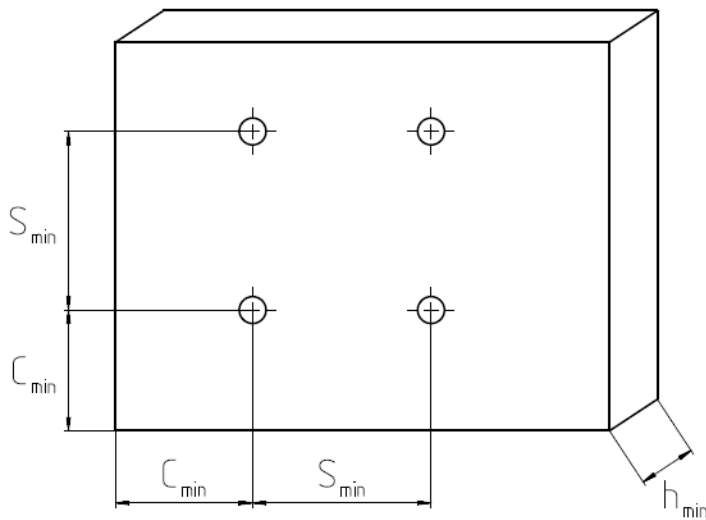
<b>MAX-ISO</b>	<b>Annex B1</b>
<b>Intended use</b> Specification	

**Table B1:** Installation parameters for base material category A, B and C

		<b>MAX-ISO</b>
Nominal drill bit diameter	$d_0 =$ [mm]	8
Drill bit cutting diameter	$d_{cut} \leq$ [mm]	8,45
Depth of drilled hole to deepest point	$h_1 \geq$ [mm]	70
Embedment depth	$h_{nom} \geq$ [mm]	55

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

		<b>MAX-ISO</b>
Minimum thickness of base material	$h_{min} =$ [mm]	100
Minimum spacing	$S_{min} =$ [mm]	100
Minimum edge distance	$C_{min} =$ [mm]	100



**MAX-ISO**

**Intended use**

Installation parameters, minimum thickness, edge distance and spacing

**Annex B2**

**Table C1:** Characteristic resistance to tension loads  $N_{Rk}$  in concrete and masonry for a single anchor in kN

Base material	Bulk density class [kg/dm <sup>3</sup> ]	Minimum compressive strength [N/mm <sup>2</sup> ]	Remarks	Drilling method	$N_{Rk}$ [kN]
<b>Concrete</b> C16/20 - C50/60 acc. EN 206-1				hammer	<b>0,4</b>
<b>Solid clay brick</b> acc. EN 771-1	≥ 1600	28	cross section vertically to resting area reduced by perforation up to 15%	hammer	<b>0,4</b>
<b>Vertically perforated clay brick</b> Modularec acc. EN 771-1	≥ 1770	13	cross section vertically to resting area reduced by perforation more than 15% and less than 50%	rotating	<b>0,3</b>
<b>Vertically perforated clay brick</b> Poroterm acc. EN 771-1	≥ 1770	12		rotating	<b>0,3</b>

<b>MAX-ISO</b>	<b>Annex C1</b>
<b>Performance</b> Characteristic resistance	

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

Anchor type	Base material category	Insulation thickness $h_D$ [mm]	Point thermal transmittance [W/K]
MAX-ISO	A, B	45-345	0,003
	C	45-345	0,002

**Table C3:** Plate stiffness acc. EOTA Technical Report TR 026

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

**Table C4:** Displacements

Base material	Bulk density class [kg/m <sup>3</sup> ]	Minimum compressive strength [N/mm <sup>2</sup> ]	Tension load N [kN]	Displacement $\delta_m$ (N) [mm]
<b>Concrete C16/20 - C50/60</b> acc. EN 206-1			0,13	1,08
<b>Solid clay brick</b> acc. EN 771-1	≥ 1600	28	0,13	1,08
<b>Vertically perforated clay brick</b> Modularec acc. EN 771-1	≥ 1770	13	0,10	2,11
<b>Vertically perforated clay brick</b> Poroterm acc. EN 771-1	≥ 1770	12	0,10	0,51

<b>MAX-ISO</b>	<b>Annex C2</b>
<b>Performance</b> Point thermal transmittance, plate stiffness and displacements	