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European Technical Assessment ETA-18/0728 of 20/02/2023

General Part

Technical Assessment Body issuing the European Technical Assessment	Instytut Techniki Budowlanej
Trade name of the construction product	S-IPH 10/p and S-IPH 10/s
Product family to which the construction product belongs	Nailed-in plastic anchors for fixing of external thermal insulation composite systems with rendering in concrete and masonry
Manufacturer	pgb-Polska Sp. z o.o. ul. Fryderyka Wilhelma Redena 3 PL 41-807 Zabrze Poland
Manufacturing plant	pgb-Polska Sp. z o.o. ul. Fryderyka Wilhelma Redena 3 PL 41-807 Zabrze Poland
This European Technical Assessment contains	19 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	European Assessment Document EAD 330196-01-0604 "Plastic anchors made of virgin or non-virgin material for fixing of external thermal insulation composite systems with rendering"
This version replaces	ETA-18/0728 issued on 28/09/2018

Specific Part

1 Technical description of the product

The S-IPH 10/p nailed-in plastic anchor consists of plastic sleeve with a plate made of polypropylene (virgin material) and an accompanying nail as an expansion pin made of the fiberglass reinforced polyamide.

The S-IPH 10/s nailed-in plastic anchor consists of plastic sleeve with a plate made of polypropylene (virgin material) and an accompanying nail with threaded end as an expansion pin made of galvanized steel with head coated of fiberglass reinforced polyamide.

The S-IPH 10/p and S-IPH 10/s anchors may be combined with the additional plates IWP ϕ90 mm and ϕ140 mm, made of the fibreglass reinforced polyamide or polypropylene.

The description of the products is given in Annex A.

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

The performances given in clause 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 producer or Technical Assessment Body, 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 Performance of the product

3.1.1 Safety in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance	Annex C1
Edge distance and spacing	Annex B2
Plate stiffness	Annex C2
Displacements	Annex C3

3.1.2 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal transmittance	Annex C2

3.2 Methods used for the assessment

The assessment has been made in accordance with the EAD 330196-01-0604.

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

According to the Decision 97/463/EC of the European Commission, system 2+ of assessment and verification of constancy of performance (see Annex V to the regulation (EU) No 305/2011) applies.

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

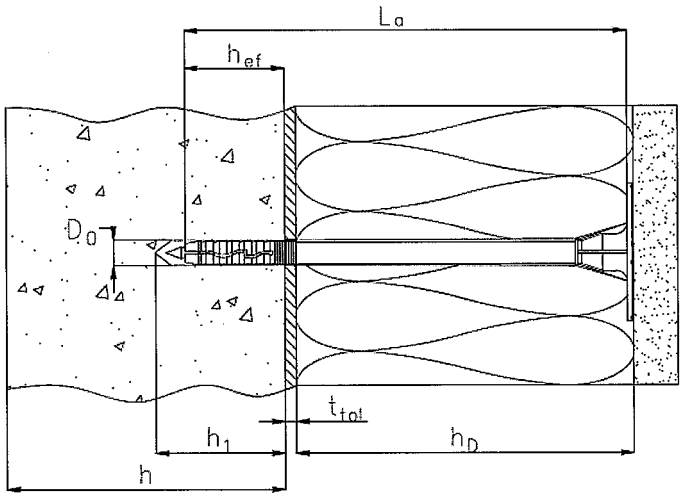
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited in Instytut Techniki Budowlanej.

For the type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between Instytut Techniki Budowlanej and the notified body.

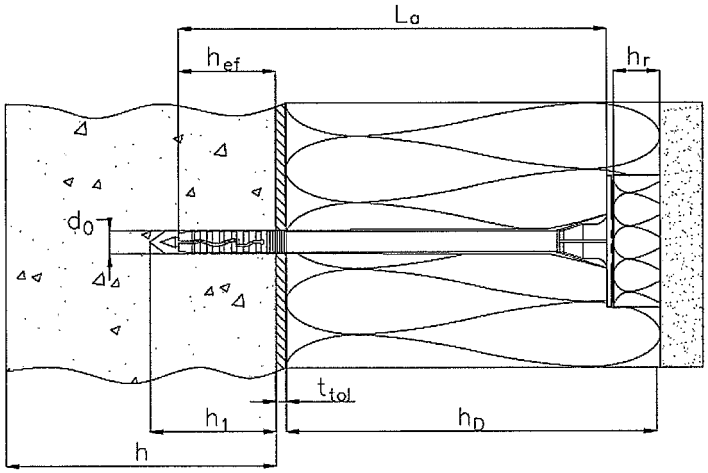
Issued in Warsaw on 20/02/2023 by Instytut Techniki Budowlanej

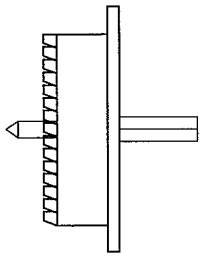
Anna Panek, MSc
Deputy Director of ITB

a) Flush installation – without styrofoam disc



b) Countersunk installation – with styrofoam disc





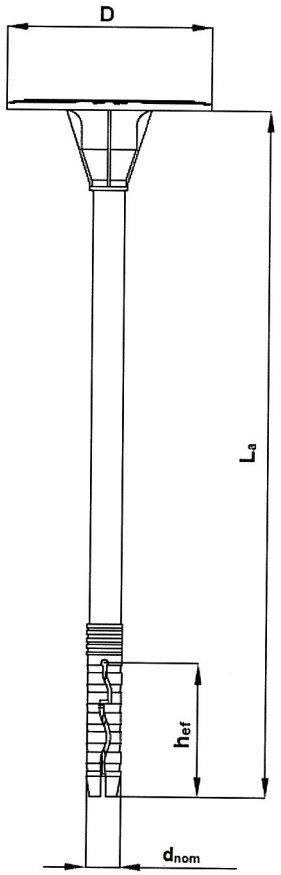
Special drill for installation

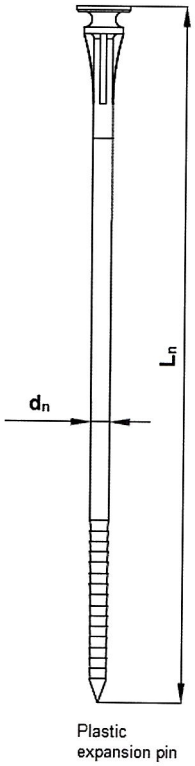
Intended Use
Fixing of external thermal insulation composite systems with rendering in concrete and masonry.

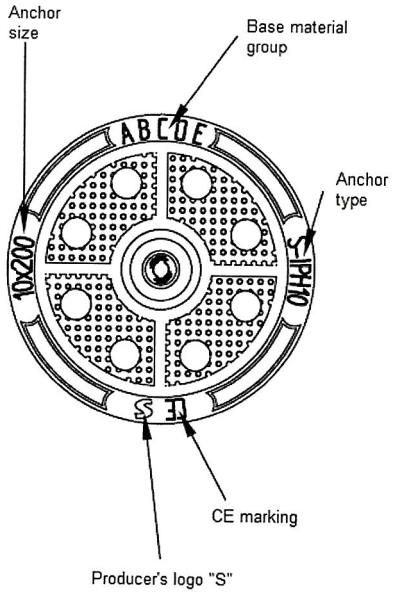
Legend

d_0	=	drill hole diameter
h_{ef}	=	effective anchorage depth
h_1	=	depth of drill hole to deepest point (in base material)
h	=	thickness of base material (wall)
h_D	=	thickness of insulation material
t_{tol}	=	thickness of equalizing layer for compensation of tolerance or non-load-bearing coating
h_r	=	thickness of styrofoam disc
L_a	=	length of plastic anchor

S-IPH 10/p and S-IPH 10/s	**Annex A1** of European Technical Assessment ETA-18/0728
Product description Installation conditions	







Marking:

Identifying mark (producer's logo):

S

Length of anchor:
(e.g. 200)

Nominal diameter d_{nom}:
(ϕ10)

Base material group:
(A, B, C, D, E)

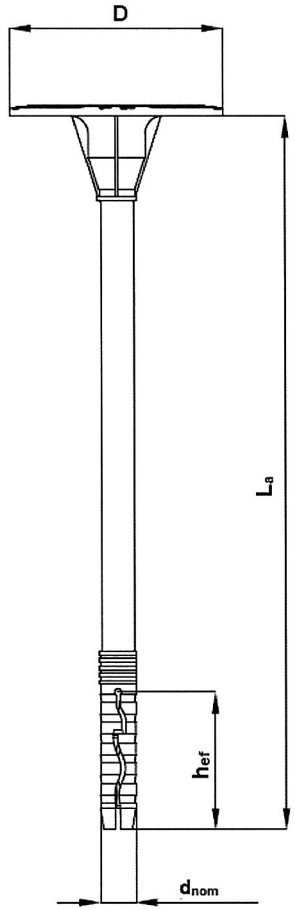
Table A1: S-IPH 10/p anchor dimensions [mm]

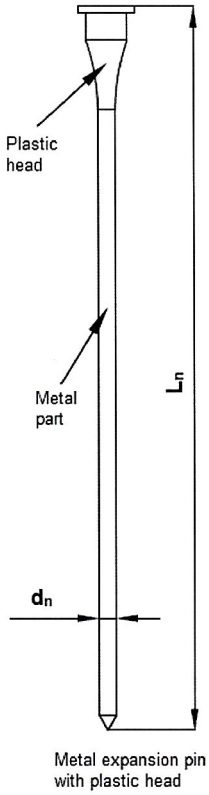
Anchor designation	S-IPH 10/p anchor sleeve					S-IPH 10/p expansion pin	
	d_{nom}	L_a	D	$h_{ef\ (ABCD)}$	$h_{ef\ (E)}$	d_n	L_s
S-IPH 10/p x 70	10	70	60	30 / 50 [1)]	50	5,10	75
S-IPH 10/p x 90	10	90	60	30 / 50 [1)]	50	5,10	95
S-IPH 10/p x 120	10	120	60	30 / 50 [1)]	50	5,10	125
S-IPH 10/p x 140	10	140	60	30 / 50 [1)]	50	5,10	145
S-IPH 10/p x 160	10	160	60	30 / 50 [1)]	50	5,10	165
S-IPH 10/p x 180	10	180	60	30 / 50 [1)]	50	5,10	185
S-IPH 10/p x 200	10	200	60	30 / 50 [1)]	50	5,10	205
S-IPH 10/p x 220	10	220	60	30 / 50 [1)]	50	5,10	225
S-IPH 10/p x 260	10	260	60	30 / 50 [1)]	50	5,10	265
S-IPH 10/p x 300	10	300	60	30 / 50 [1)]	50	5,10	305

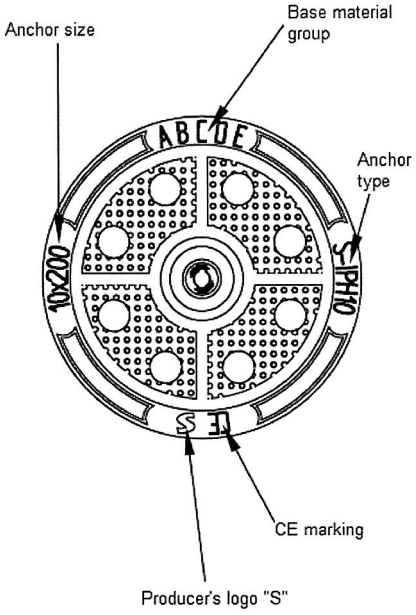
[1)] according to Table C1 and C2

$h_{ef\ (ABCD)}$ – for anchors in the base material group A, B, C and D
$h_{ef\ (E)}$ – for anchors in the base material group E
Determination of maximum thickness of insulation material: $h_D = L_a - t_{tol} - h_{ef}$

S-IPH 10/p and S-IPH 10/s	Annex A2
Product description Marking and dimensions of the S-IPH 10/p anchors	of European Technical Assessment ETA-18/0728







Marking:

Identifying mark (producer's logo):

S

Length of anchor:
(e.g. 200)

Nominal diameter d_{nom}:
(ϕ10)

Base material group:
(A, B, C, D, E)

Table A2: S-IPH 10/s anchor dimensions [mm]

Anchor designation	S-IPH 10/s anchor sleeve					S-IPH 10/s expansion pin	
	d_{nom}	L_a	D	$h_{ef(ABCD)}$	$h_{ef\ (E)}$	d_n	L_s
S-IPH 10/s x 70	10	70	60	30 / 50 [1)]	50	5,00	75
S-IPH 10/s x 90	10	90	60	30 / 50 [1)]	50	5,00	95
S-IPH 10/s x 120	10	120	60	30 / 50 [1)]	50	5,00	125
S-IPH 10/s x 140	10	140	60	30 / 50 [1)]	50	5,00	145
S-IPH 10/s x 160	10	160	60	30 / 50 [1)]	50	5,00	165
S-IPH 10/s x 180	10	180	60	30 / 50 [1)]	50	5,00	185
S-IPH 10/s x 200	10	200	60	30 / 50 [1)]	50	5,00	205
S-IPH 10/s x 220	10	220	60	30 / 50 [1)]	50	5,00	225
S-IPH 10/s x 260	10	260	60	30 / 50 [1)]	50	5,00	265
S-IPH 10/s x 300	10	300	60	30 / 50 [1)]	50	5,00	305

[1)] according to Table C1 and C2

$h_{ef\ (ABCD)}$ – for anchors in the base material group A, B, C and D
$h_{ef\ (E)}$ – for anchors in the base material group E
Determination of maximum thickness of insulation material: $h_D = L_a - t_{tol} - h_{ef}$

S-IPH 10/p and S-IPH 10/s	**Annex A3** of European Technical Assessment ETA-18/0728
Product description Marking and dimensions of the S-IPH 10/s anchors	

Table A3: Materials

Designation	Material
Anchor sleeve S-IPH 10/p and S-IPH 10/s	Virgin material: polypropylene (gray or natural)
Expansion pin S-IPH 10/p	Fiberglass reinforced polyamide (black)
Expansion pin S-IPH 10/s	Carbon steel ($f_{y,k} \geq 220$ MPa, $f_{u,k} \geq 360$ MPa), galvanized ≥ 5 µm according to EN ISO 4042, with fiberglass reinforced polyamide (black) coated head

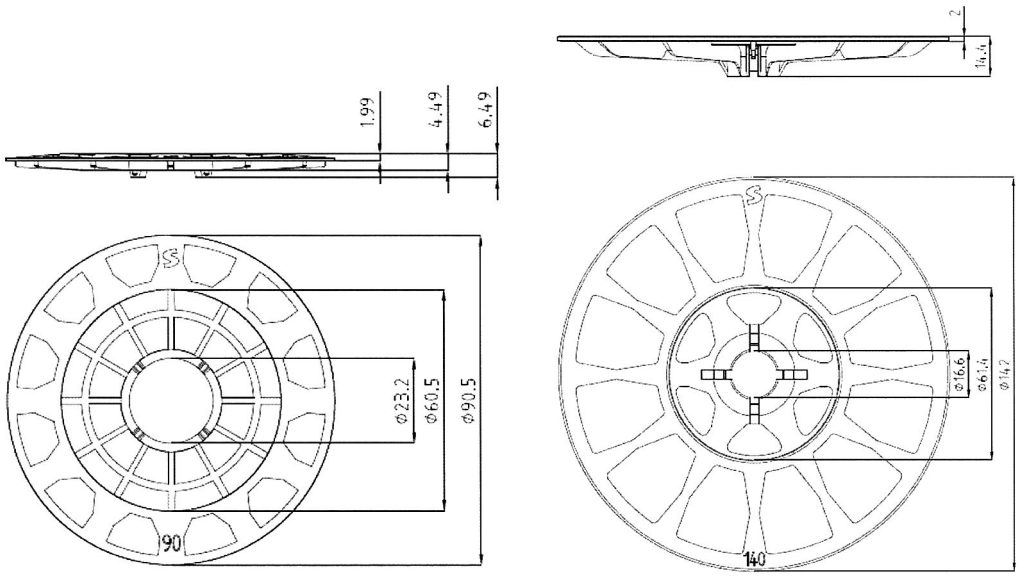


Table A4: Additional plate IWP ϕ90 mm

Plate type	Outer diameter [mm]	Material
IWP ϕ90	90	Fibreglass reinforced polyamide (gray) or polypropylene (natural)

Table A5: Additional plate IWP ϕ140 mm

Plate type	Outer diameter [mm]	Material
IWP ϕ140	140	Fibreglass reinforced polyamide (gray) or polypropylene (natural)

Specification of intended use

Anchorages subject to:

- Wind suction loads.
  Note: The anchor shall not be used for the transmission of dead loads of the external thermal insulation composite system.

Base materials:

- Reinforced or unreinforced normal weight concrete (base material group A), according to Annex C1 and C3.
- Solid masonry (base material group B), according to Annex C1 and C3.
- Hollow or perforated masonry (base material group C), according to Annex C1 and C3.
- Lightweight aggregate concrete (base material group D), according to Annex C1 and C3.
- Autoclaved aerated concrete (base material group E), according to Annex C1 and C3.
- 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 December 2016.

Application 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, if there are no other national regulations.
- Verifiable calculation notes and drawings with anchor positions are prepared taking into account of the loads to be anchored.
- Fasteners are only to be used for multiple fixings of thermal insulation composite system (ETICS).

Installation:

- Hole shall be drilled by the drill methods according to Annex C1.
- Anchor installation shall be carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Installation shall be executed in temperature from 0°C to +40°C.
- Exposure to UV due to solar radiation of the anchor not protected by rendering shall not exceed 6 weeks.

S-IPH 10/p and S-IPH 10/s	**Annex B1**
Intended use Specifications	of European Technical Assessment ETA-18/0728

Table B1: Installation characteristics

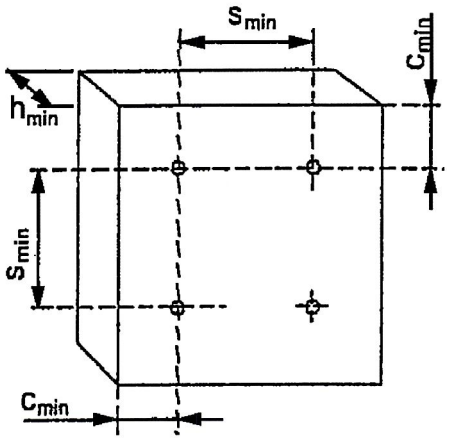
Anchor type		S-IPH 10/p	S-IPH 10/s
Nominal diameter of drill bit	d_0 [mm]	10	10
Cutting diameter of drill bit	d_{cut} [mm]	≤ 10,45	≤ 10,45
Depth of drill hole for base material group A, B, C, D	h_1 [mm]	≥ 60 / ≥ 40	≥ 60 / ≥ 40
Effective anchorage depth for base material group A, B, C, D	h_{ef} [mm]	≥ 50 / ≥ 30 [1)]	≥ 50 / ≥ 30 [1)]
Depth of drill hole for base material group E	h_1 [mm]	≥ 60	≥ 60
Effective anchorage depth for base material group E	h_{ef} [mm]	≥ 50	≥ 50

[1)] according to Table C1 and C2

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

Anchor type		S-IPH 10/p and S-IPH 10/s
Minimum thickness of base material	h_{min} [mm]	100
Minimum spacing	s_{min} [mm]	100
Minimum edge distance	c_{min} [mm]	100

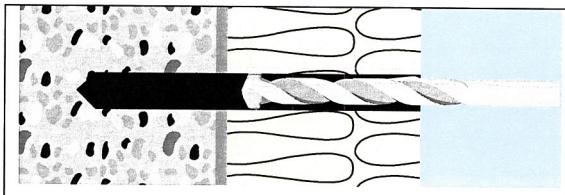
Diagram of spacing



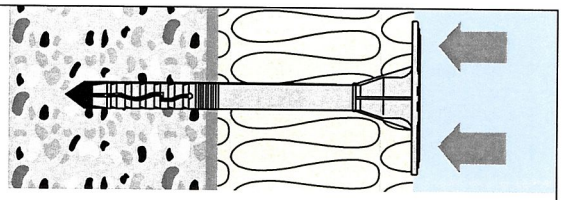
S-IPH 10/p and S-IPH 10/s	**Annex B2** of European Technical Assessment ETA-18/0728
Intended use Installation characteristics, minimum thickness of base material, spacing and edge distance	

Installation instruction

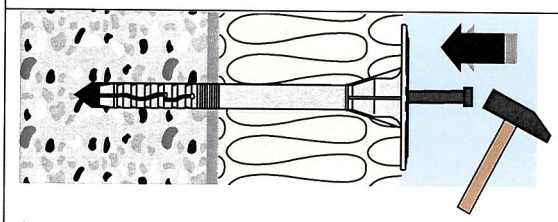
a) Flush installation – without styrofoam disc



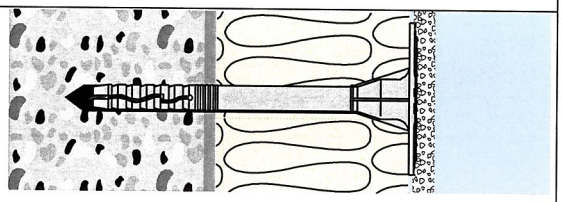
1. Drill the hole by corresponding drilling method according to Annex C1. Drill perpendicular.



2. Clean the hole. Set-in the anchor and make sure that the plate bottom is flush with the ETICS surface.

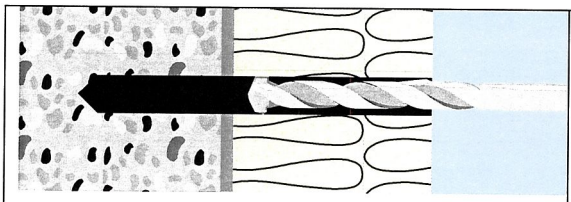


3. Nail-in the expansion pin.

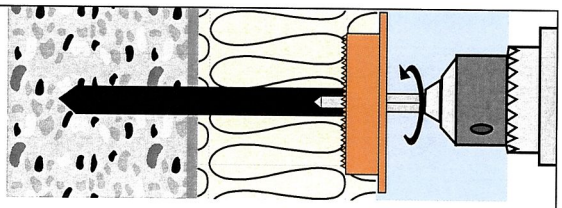


4. Correctly installed anchor.

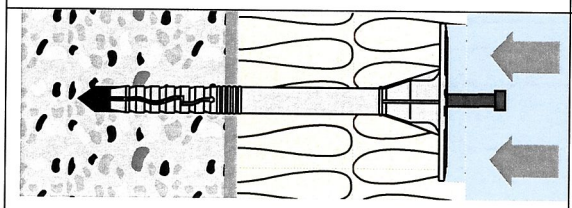
b) Countersunk installation – with styrofoam disc



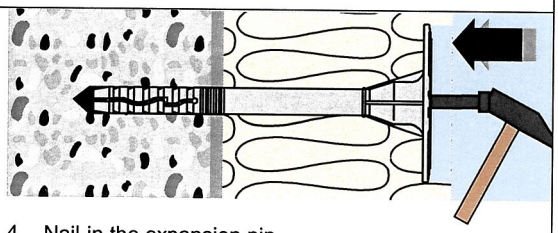
1. Drill the hole by corresponding drilling method according to Annex C1. Drill perpendicular.



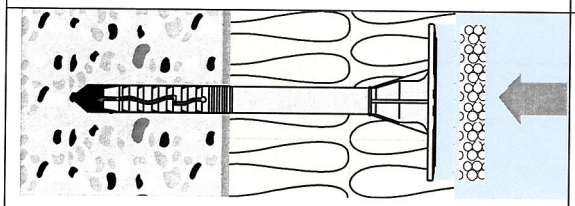
2. Clean the drill hole. Drill the recess in the installation for the installation with the corresponding tool.



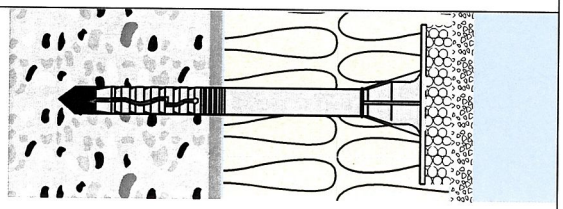
3. Set-in the anchor and make sure that the plate bottom is flush with the ETICS surface.



4. Nail-in the expansion pin.



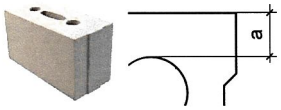
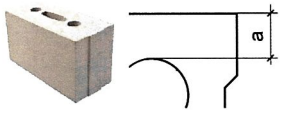
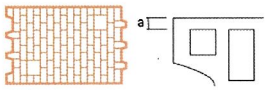
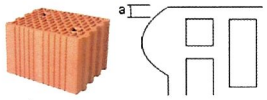
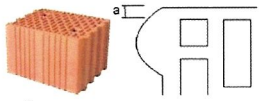
5. Place the styrofoam disc.



6. Correctly installed anchor.

S-IPH 10/p and S-IPH 10/s	**Annex B3** of European Technical Assessment ETA-18/0728
Intended use Installation instruction	

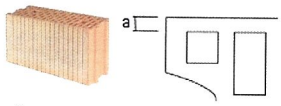
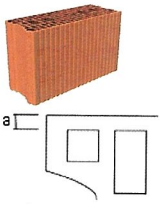
Table C1: Characteristic resistance to tension loads N_{Rk} in concrete and masonry for single S-IPH 10/p and S-IPH 10/s anchor – effective anchorage depth h_{ef} = 30 mm

Base material group	Base material	Bulk density [kg/dm³]	Compressive strength [N/mm²]	Referring standard	h_{ef} [mm]	N_{Rk} [kN]		Drill method
						S-IPH 10/p	S-IPH 10/s	
A	Concrete C12/15			EN 206	30	0,35	0,50	hammer
A	Concrete C20/25 – C50/60			EN 206	30	0,55	0,70	hammer
B	Clay bricks 	≥ 1,8	≥ 20,0	EN 771-1	30	0,50	0,85	hammer
B	Calcium silicate bricks KS 	≥ 1,8	≥ 20,0	EN 771-2	30	0,45	0,75	hammer
C	Calcium silicate hollow blocks (e.g. KSL 340 x 180 x 197 mm)  a [1] = 24 mm	≥ 1,45	≥ 15,0	EN 771-2	30	0,25	0,60	hammer
C	Calcium silicate hollow blocks (e.g. KSL 254 x 180 x 237 mm)  a [1] = 20 mm	≥ 1,45	≥ 15,0	EN 771-2	30	0,30	0,55	hammer
C	Vertically perforated porosited clay blocks (e.g. Porotherm 25)  a [1] = 10 mm	≥ 0,8	≥ 15,0	EN 771-1	30	0,35	0,55	rotary
C	Vertically perforated clay bricks (e.g. MEGA-MAX 250)  a [1] = 12 mm	≥ 0,8	≥ 15,0	EN 771-1	30	0,40	0,55	rotary
C	Perforated ceramic brick (490 x 132 x 250 mm)  a [1] = 12 mm	≥ 0,8	≥ 15,0	EN 771-1	30	0,30	0,65	rotary

[1] minimum values "a"; for elements with lower value of "a" the load tests on the construction site are required
[2] in the absence of national regulation

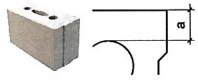
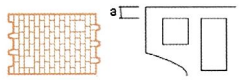
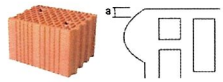
S-IPH 10/p and S-IPH 10/s	**Annex C1** of European Technical Assessment ETA-18/0728
Performances Characteristic resistance	

extension of table C1

Base material group	Base material	Bulk density [kg/dm³]	Compressive strength [N/mm²]	Referring standard	h_{ef} [mm]	N_{Rk} [kN]		Drill method
						S-IPH 10/p	S-IPH 10/s	
C	Perforated ceramic brick LODE  a [1] = 11 mm	≥ 0,65	≥ 15,0	EN 771-1	30	0,35	0,35	rotary
C	Perforated ceramic brick (e.g. Porotherm GF R20)  a [1] = 9 mm	≥ 0,6	≥ 10,0	EN 771-1	30	0,35	0,45	rotary
C	Concrete hollowed brick B40 405 x 188 x 196 mm  a [1] = 18 mm	≥ 0,8	≥ 6,0	EN 771-3	30	0,15	0,45	rotary
D	Lightweight concrete blocks LAC3 	≥ 0,88	≥ 5,0	EN 771-3	30	0,20	0,35	rotary
Partial safety factor for anchor resistance γ_M [2]		2,0						

[1] minimum values "a"; for elements with lower value of "a" the load tests on the construction site are required
[2] in the absence of national regulation

Table C2: Characteristic resistance to tension loads N_{Rk} in concrete and masonry for single S-IPH 10/p and S-IPH 10/s anchors – effective anchorage depth h_{ef} = 50 mm

Base material group	Base material	Bulk density [kg/dm³]	Compressive strength [N/mm²]	Referring standard	h_{ef} [mm]	N_{Rk} [kN]		Drill method
						S-IPH 10/p	S-IPH 10/s	
A	Concrete C12/15			EN 206	50	0,70	0,70	hammer
A	Concrete C20/25 – C50/60			EN 206	50	1,00	1,00	hammer
B	Clay bricks MZ 	≥ 2,0	≥ 20,0	EN 771-1	50	1,20	1,20	hammer
	Clay bricks MZ+H 	≥ 2,0	≥ 20,0	EN 771-1	50	0,55	0,85	hammer
B	Calcium silicate bricks 	≥ 2,0	≥ 20,0	EN 771-2	50	1,20	1,20	hammer
C	Calcium silicate hollow blocks (e.g. KSL 340 x 180 x 197 mm)  a [1] = 24 mm	≥ 1,6	≥ 12,0	EN 771-2	50	0,65	0,75	rotary
C	Vertically perforated porosited clay blocks (e.g. Porotherm 25)  a [1] = 10 mm	≥ 1,2	≥ 12,0	EN 771-1	50	0,40	0,45	rotary
C	Vertically perforated clay bricks (e.g. MEGA-MAX 250)  a [1] = 12 mm	≥ 0,8	≥ 10,0	EN 771-1	50	0,35	0,40	rotary
D	Lightweight concrete blocks LAC3 	≥ 0,88	≥ 5,0	EN 771-3	50	0,45	0,65	rotary
D	Lightweight concrete blocks LAC+H 	≥ 0,88	≥ 5,0	EN 771-3	50	0,15	0,15	rotary
E	Autoclaved concrete blocks AAC 2	≥ 0,35	≥ 2,0	EN 771-4	50	0,35	0,30	rotary
E	Autoclaved concrete blocks AAC 7	≥ 0,65	≥ 3,5	EN 771-4	50	0,40	0,40	rotary
Partial safety factor for anchor resistance γ_M [2]		2,0						

[1] minimum values "a"; for elements with lower value of "a" the load tests on the construction site are required
[2] in the absence of national regulation

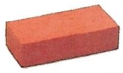
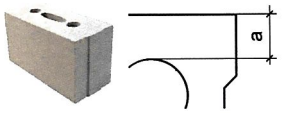
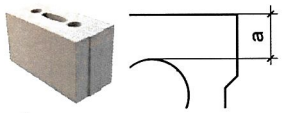
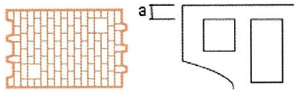
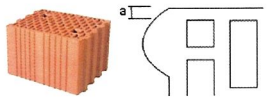
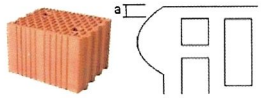
Table C3: Plate stiffness according to EOTA Technical Report TR 026

Anchor type	Diameter of the anchor plate d_{plate} [mm]	Characteristic load resistance of the anchor plate F [kN]	Plate stiffness c [kN/mm]
S-IPH 10/p and S-IPH 10/s	60	1,43	0,4

Table C4: Insulation thickness and point thermal transmittance according to EOTA Technical Report TR 025

Anchor type	Insulation thickness h_D [mm]	Point thermal transmittance χ [W/K]
S-IPH 10/p	40	0,001
	150	0,000
	230	0,000
S-IPH 10/s	40	0,002
	150	0,003
	230	0,003

Table C5: Displacements – effective anchorage depth h_{ef} = 30 mm

Base material group	Base material	Bulk density [kg/dm³]	Compressive strength [N/mm²]	h_{ef} [mm]	$\frac{N_{Rk}}{3}$ [kN]		$\delta\left(\frac{N_{Rk}}{3}\right)$ [mm]	
					S-IPH 10/p	S-IPH 10/s	S-IPH 10/p	S-IPH 10/s
A	Concrete C12/15			30	0,12	0,17	0,29	0,36
A	Concrete C20/25 – C50/60			30	0,18	0,23	0,53	0,58
B	Clay bricks 	≥ 1,8	≥ 20,0	30	0,17	0,28	0,26	0,55
B	Calcium silicate bricks KS 	≥ 1,8	≥ 20,0	30	0,15	0,25	0,20	0,49
C	Calcium silicate hollow blocks (e.g. KSL 340 x 180 x 197 mm)  a [1] = 24 mm	≥ 1,45	≥ 15,0	30	0,08	0,20	0,19	0,18
C	Calcium silicate hollow blocks (e.g. KSL 254 x 180 x 237 mm)  a [1] = 20 mm	≥ 1,45	≥ 15,0	30	0,10	0,18	0,23	0,25
C	Vertically perforated porosited clay blocks (e.g. Porotherm 25)  a [1] = 10 mm	≥ 0,8	≥ 15,0	30	0,12	0,18	0,11	0,29
C	Vertically perforated clay bricks (e.g. MEGA-MAX 250)  a [1] = 12 mm	≥ 0,8	≥ 15,0	30	0,13	0,18	0,13	0,23
C	Perforated ceramic brick (490 x 132 x 250 mm)  a [1] = 12 mm	≥ 0,8	≥ 15,0	30	0,10	0,22	0,08	0,19

[1] minimum values "a"; for elements with lower value of "a" the load tests on the construction site are required

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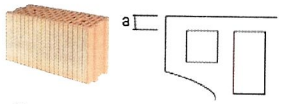
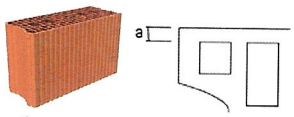
extension of table C5

Base material group	Base material	Bulk density [kg/dm³]	Compressive strength [N/mm²]	h_{ef} [mm]	$\frac{N_{Rk}}{3}$ [kN]		$\delta\left(\frac{N_{Rk}}{3}\right)$ [mm]	
					S-IPH 10/p	S-IPH 10/s	S-IPH 10/p	S-IPH 10/s
C	Perforated ceramic brick LODE  a [1] = 11 mm	≥ 0,65	≥ 15,0	30	0,12	0,12	0,17	0,15
C	Perforated ceramic brick (e.g. Porotherm GF R20)  a [1] = 9 mm	≥ 0,6	≥ 10,0	30	0,12	0,15	0,11	0,22
C	Concrete hollowed brick B40 405 x 188 x 196 mm  a [1] = 18 mm	≥ 0,8	≥ 6,0	30	0,05	0,15	0,04	0,16
D	Lightweight concrete blocks LAC3 	≥ 0,88	≥ 5,0	30	0,07	0,12	0,08	0,21

[1] minimum values "a"; for elements with lower value of "a" the load tests on the construction site are required

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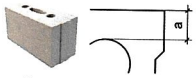
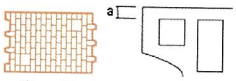
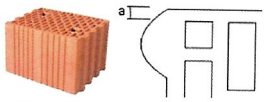
Table C6: Displacements – effective anchorage depth h_{ef} = 50 mm

Base material group	Base material	Bulk density [kg/dm³]	Compressive strength [N/mm²]	h_{ef} [mm]	$\frac{N_{Rk}}{3}$ [kN]		$\delta\left(\frac{N_{Rk}}{3}\right)$ [mm]	
					S-IPH 10/p	S-IPH 10/s	S-IPH 10/p	S-IPH 10/s
A	Concrete C12/15			50	0,23	0,23	0,08	0,11
A	Concrete C20/25 – C50/60			50	0,33	0,33	0,12	0,16
B	Clay bricks MZ 	≥ 2,0	≥ 20,0	50	0,40	0,40	0,20	0,14
	Clay bricks MZ+H 	≥ 2,0	≥ 20,0	50	0,18	0,28	0,10	0,17
B	Calcium silicate bricks 	≥ 2,0	≥ 20,0	50	0,40	0,40	0,20	0,14
C	Calcium silicate hollow blocks (e.g. KSL 340 x 180 x 197 mm)  a [1] = 24 mm	≥ 1,6	≥ 12,0	50	0,22	0,25	0,10	0,17
C	Vertically perforated porosited clay blocks (e.g. Porotherm 25)  a [1] = 10 mm	≥ 1,2	≥ 12,0	50	0,13	0,15	0,08	0,15
C	Vertically perforated clay bricks (e.g. MEGA-MAX 250)  a [1] = 12 mm	≥ 0,8	≥ 10,0	50	0,12	0,13	0,07	0,07
D	Lightweight concrete blocks LAC3 	≥ 0,88	≥ 5,0	50	0,15	0,22	0,10	0,09
D	Lightweight concrete blocks LAC+H 	≥ 0,88	≥ 5,0	50	0,05	0,05	0,10	0,09
E	Autoclaved concrete blocks AAC 2	≥ 0,35	≥ 2,0	50	0,12	0,10	0,10	0,09
E	Autoclaved concrete blocks AAC 7	≥ 0,65	≥ 3,5	50	0,13	0,13	0,10	0,09

[1] minimum values "a"; for elements with lower value of "a" the load tests on the construction site are required

S-IPH 10/p and S-IPH 10/s	**Annex C3** of European Technical Assessment ETA-18/0728
Performances Displacements	