



INSTYTUT TECHNIKI BUDOWLANEJ



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European Technical Assessment

**ETA-12/0437
of 25/09/2023**



General Part

Technical Assessment Body issuing the European Technical Assessment

Instytut Techniki Budowlanej

Trade name of the construction product

TACO SUPER INCO

Product family to which the construction product belongs

Plastic anchors for fixing of external thermal insulation composite systems (ETICS)

Manufacturer

Desarrollos Especiales de Sistemas de Anclaje S.A. (Grupodesa)
C/ Basters 29, Pol. Ind. Palau de Reig
43800 Valls (Tarragona), Spain

Manufacturing plant

Manufacturing plant no.3

This European Technical Assessment contains

21 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-12/0437 issued on 29/05/2018



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Specific Part

1 Technical description of the product

The TACO SUPER INCO nailed-in plastic anchor consists of an anchor sleeve with a plate made of virgin polypropylene and an accompanying specific nail as an expansion pin made of the glass fibre reinforced polypropylene.

The plastic anchor sleeve is expanded by hammering a nail, which press the sleeve against the wall of the drilled hole.

The TACO SUPER INCO anchor may in addition be combined with the plates Arandela 90, Arandela PP 90, Arandela PP 110 and Arandela 140.

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 Annex C 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 and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance under tension load	Annex C1
Edge distances and spacings	Annex B2
Plate stiffness	Annex C2
Displacements	Annex C3

3.1.2 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Point thermal transmittance	Annex C2

3.2 Methods used for the assessment

The assessment has been made in accordance with EAD 330169-01-0604.

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, the system 2+ of assessment and verification of constancy of performance applies (see Annex V to regulation (EU) No 305/2011).

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.

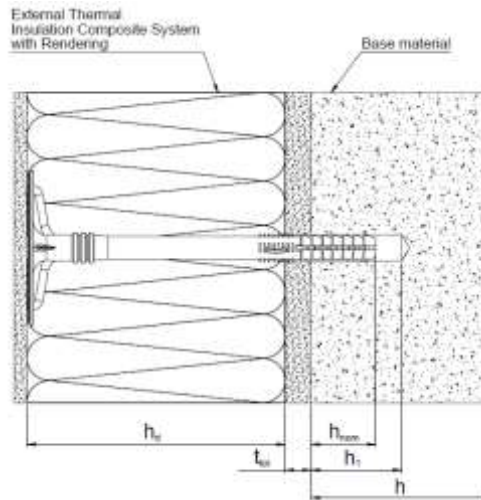
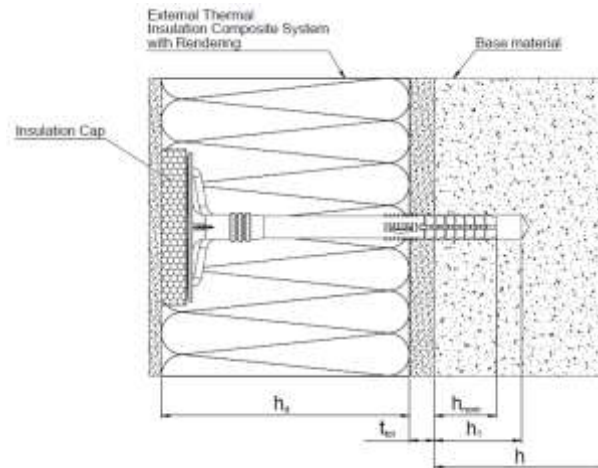
For type testing the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between Instytut Techniki Budowlanej and the notified body.

Issued in Warsaw on 25/09/2023 by Instytut Techniki Budowlanej

A handwritten signature in blue ink, appearing to read 'Anna Panek'.

Anna Panek, MSc

Deputy Director of ITB

Surface assembly:

Countersunk assembly:

Intended Use:

Fixing of external thermal insulation composite systems in concrete and masonry

Legend:

$h_{nom} = h_{ef}$ = effective anchorage depth

h_1 = depth of drill hole in base material

h = thickness of base material

h_d = thickness of insulation material

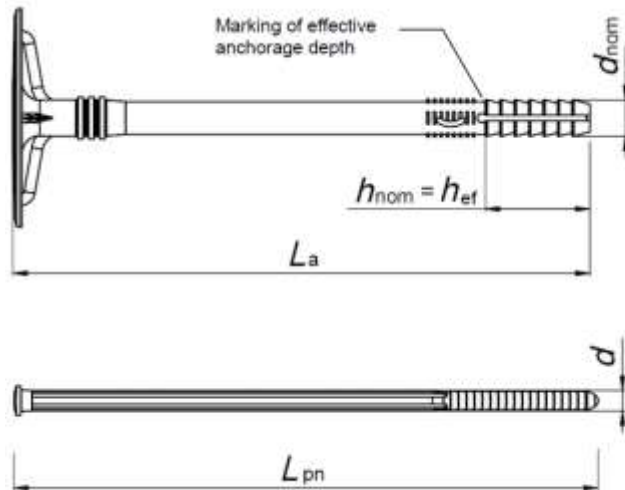
t_{tol} = thickness of equalizing and/or non-load-bearing layer

TACO SUPER INCO

Product description
Installation conditions

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TACO SUPER INCO:



Marking:

Identifying mark:



Sleeve type:

TACO SUPER INCO

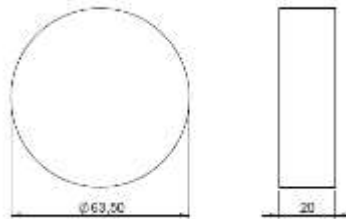
Length of anchor:

e.g. 220

Nominal diameter:

d_{nom} ($\phi 10$)

Insulation cap:



TACO SUPER INCO

Product description

Marking of the anchor sleeve and expansion element of the TACO SUPER INCO anchor

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Table A1: TACO SUPER INCO anchor types and dimensions [mm]

Anchor type	Anchor sleeve			Expansion pin	
	$d_{nom} \pm 0,1$	$L_a \pm 2$	$h_{ef} = h_{nom}$	$D \pm 0,1$	$L_{mn} / L_{mn} \pm 2$
TACO SUPER INCO (d_{nom}) x L_a	10	70 - 220	25	6,2	70 - 220

Determination of maximum thickness of insulation material:

For surface assembly: $h_d = L_a - t_{tol} - h_{ef}$

For countersunk assembly: $h_d = L_a - t_{tol} - h_{ef} + 20 \text{ mm}$

TACO SUPER INCO

Product description

Types and dimensions of the anchor sleeve and expansion element of the TACO SUPER INCO anchor

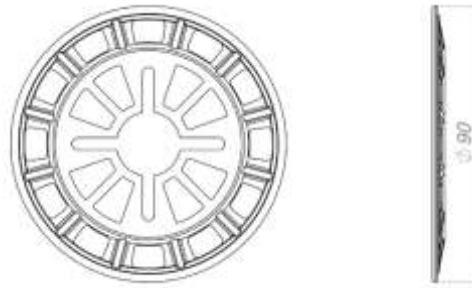
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Table A2: Materials

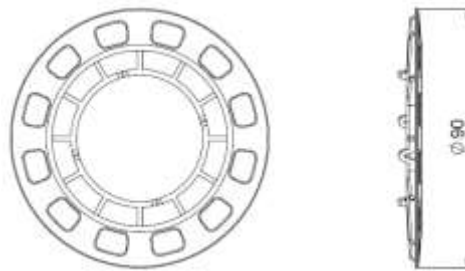
Designation	Material
Anchor sleeve	Virgin plastic: polypropylene, of different colours ¹⁾
Expansion pin made of plastic	Virgin plastic: glass fibre reinforced polypropylene PPHGF30 nature
¹⁾ nature, blue, brown, red, white, black, green, yellow, grey	

TACO SUPER INCO**Product description**
Materials**Annex A4**
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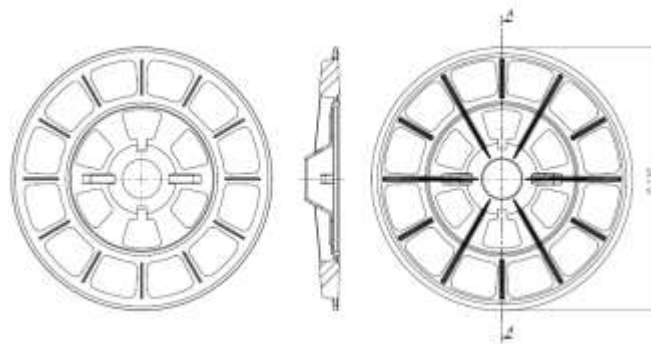
Arandela 90:



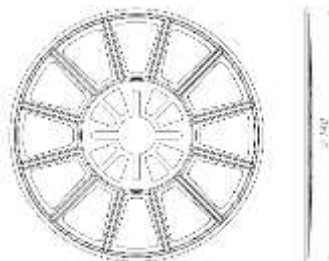
Arandela PP 90:



Arandela PP 110:



Arandela 140:



TACO SUPER INCO

Product description

Additional plates Arandela 90, Arandela PP 90, Arandela PP 110 and Arandela 140

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Table A3: Additional plates Arandela 90, Arandela PP 90, Arandela PP 110 and Arandela 140

Plate type	Outer diameter [mm]	Material
Arandela 90	90	Glass fibre reinforced polyamide PA6 GF30, nature or polypropylene, nature
Arandela PP PP	90	
Arandela PP 110	110	
Arandela 140	140	

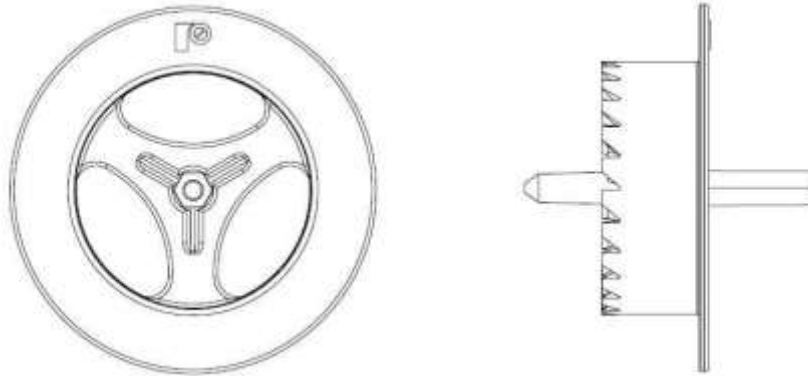
TACO SUPER INCO

Product description

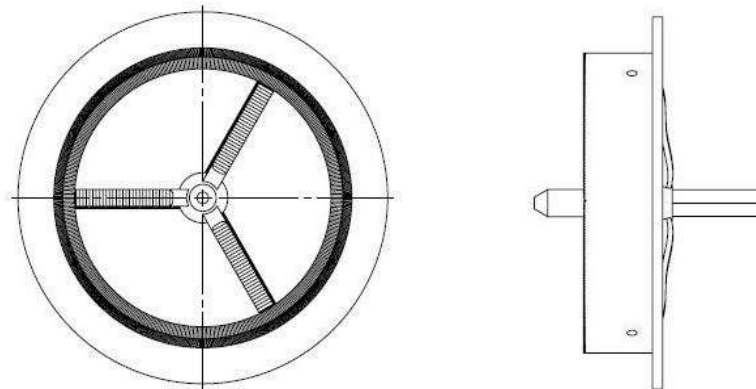
Additional plates Arandela 90, Arandela PP 90, Arandela PP 110 and Arandela 140

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Cutter AI-P for countersunk assembly:



Cutter AI-M for countersunk assembly:



TACO SUPER INCO

Product description
Cutters AI-P and AI-M for countersunk assembly

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Specification of intended use

Anchorage 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 (ETICS).

Base materials:

- Normal weight concrete (base material group A), according to Annex C1.
- Solid masonry (base material group B), according to Annex C1.
- Hollow or perforated masonry (base material group C), according to Annex C1.
- Lightweight aggregate concrete (base material group D), according to Annex C1.
- Autoclaved aerated concrete (base material group E), according to Annex C1.
- 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 $\gamma_M = 2,0$ and $\gamma_F = 1,5$, 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 external thermal insulation composite system (ETICS), according to EAD 330196-01-0604.

Installation:

- Hole shall be drilled by the drill modes 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 by the mortar shall not exceed ≤ 6 weeks.

TACO SUPER INCO

**Intended use
Specifications**

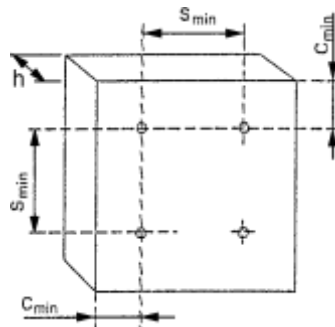
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Table B1: Installation characteristics

Anchor type		TACO SUPER INCO		
		A, B, C	D	E
Base material group		A, B, C	D	E
Nominal diameter of drill bit	d_o [mm]	10		
Cutting diameter of drill bit	d_{cut} [mm]	$\leq 10,45$		
Depth of drill hole	h_1 [mm]	≥ 35	≥ 50	≥ 70
Effective anchorage depth	$h_{ef} = h_{nom}$ [mm]	≥ 25	≥ 40	≥ 60

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

Anchor type		TACO SUPER INCO
Minimum thickness of base material	h [mm]	100
Minimum spacing	s_{min} [mm]	100
Minimum edge distance	c_{min} [mm]	100

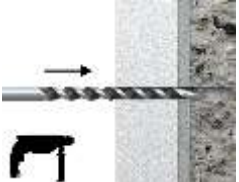


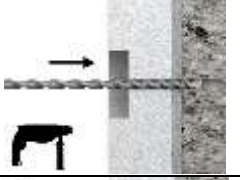






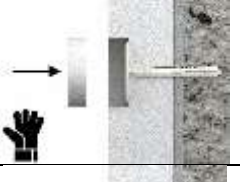
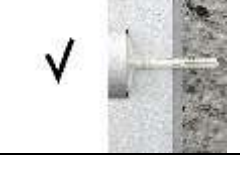


TACO SUPER INCO

Intended use
Installation characteristics, minimum thickness of base material, edge distance and spacing

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Installation instruction:



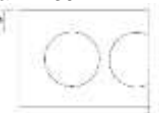
Surface assembly:		Countersunk assembly:	
	Drill hole perpendicular to substrate surface using method acc. to Annex C1.		Drill a recess in the insulation material with a cutter.
	Clean the drill hole.		Drill hole perpendicular to substrate surface using method acc. to Annex C1.
	Set-in sleeve manually.		Clean the drill hole.
	Set expansion element with hammer.		Set-in sleeve manually.
	Correctly installed anchor.		Set expansion element with hammer.
			Put the blanking plate in place.
			Correctly installed anchor.

TACO SUPER INCO

Intended use
Installation instruction of TACO SUPER INCO anchor

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Table C1-1: Characteristic resistance under tension loads N_{Rk} in concrete and in masonry for single anchor

Base material group	Base material	Bulk density [kg/dm ³]	Compressive strength [N/mm ²]	Referring standard	N_{Rk} [kN]	Drill method
A	Concrete C12/15			EN 206-1	0,5	
	Concrete C16/20 ÷ C50/60			EN 206-1	0,5	
B	Clay brick 	≥ 1,70	≥ 30,0	EN 771-1	0,5	hammer
	Calcium silicate brick (e.g. Kalksandstein KS NF 20-2.0 Vollstein according to DIN 106) 	≥ 2,00	≥ 20,0	EN 771-2	0,6	hammer
C	Calcium silicate hollow block (e.g. Kalksandstein KS L-R(P) 8 DF Lochstein according to DIN 106)  a ¹⁾ = 30 mm 	≥ 1,60	≥ 12,0	EN 771-2	0,6	rotary
	Perforated ceramic brick (e.g. Hlz B – 1.0 1NF 12-1 according to DIN 105)  a ¹⁾ = 13 mm 	≥ 0,95	≥ 12,0	EN 771-1	0,4	rotary
¹⁾ Minimum values "a". For elements with lower value of "a" the load tests on the construction are required						

TACO SUPER INCO
Performances
 Characteristic resistance

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Table C1-2: Characteristic resistance under tension loads N_{Rk} in concrete and in masonry for single anchor



Base material group	Base material	Bulk density [kg/dm ³]	Compressive strength [N/mm ²]	Referring standard	N_{Rk} [kN]	Drill method
C	Perforated ceramic brick (e.g. Hlz B – 1.0 3NF 12-1 according to DIN 105)  $a^{1)} = 13 \text{ mm}$ 	$\geq 0,95$	$\geq 12,0$	EN 771-1	0,4	rotary
	Vertically perforated porosited block (e.g. Porotherm 25 P+W)  $a^{1)} = 10 \text{ mm}$ 	$\geq 0,80$	$\geq 15,0$	EN 771-1	0,4	rotary
	Vertically perforated ceramic block (e.g. MEGA-MAX 250)  $a^{1)} = 12 \text{ mm}$ 	$\geq 0,80$	$\geq 15,0$	EN 771-1	0,3	rotary
¹⁾ Minimum values "a". For elements with lower value of "a" the load tests on the construction are required						

TACO SUPER INCO

Performances
Characteristic resistance

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Table C1-3: Characteristic resistance under tension loads N_{Rk} in concrete and in masonry for single anchor

Base material group	Base material	Bulk density [kg/dm ³]	Compressive strength [N/mm ²]	Referring standard	N_{Rk} [kN]	Drill method
C	Lightweight concrete hollow block (e.g. Hbl according to DIN 18151) a ¹⁾ = 30 [mm] 	≥ 0,80	≥ 2,0	EN 771-3	0,4	rotary
	Lightweight concrete hollow block Tekno Amerblok a ¹⁾ = 30 [mm] 	≥ 1,56	≥ 12,5	EN 771-3	0,4	rotary
D	Lightweight concrete block	≥ 1,56	≥ 20,0	EN 771-3	0,5	hammer
E	Autoclaved aerated concrete block	≥ 0,35	≥ 2,0	EN 771-4	0,1	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 are required ²⁾ Valid in absence of national regulations						

TACO SUPER INCO
Performances
 Characteristic resistance

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Table C2.1: Point thermal transmittance according to EOTA Technical Report TR 025

Anchor type	Insulation thickness H_D [mm]	Point thermal transmittance χ [W/K]
TACO SUPER INCO	45 – 195	0

Table C2.2: Plate stiffness according to EOTA Technical Report TR 026




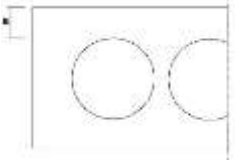
Anchor type	Diameter of the anchor plate d_{plate} [mm]	Load resistance of the anchor plate $N_{u,m}$ [kN]	Plate stiffness $N_{0,m}$ [kN/mm]
TACO SUPER INCO	60	2,1	0,5

TACO SUPER INCO

Performances
Point thermal transmittance and plate stiffness

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Table C3.1: Displacements




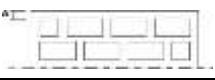


Base material group	Base material	Bulk density [kg/dm ³]	Compressive strength [N/mm ²]	$\frac{N_{Rk}}{3}$ [kN]	$\delta\left(\frac{N_{Rk}}{3}\right)$ [mm]
A	Concrete C20/25	–	–	0,18	0,78
	Concrete C50/60	–	–	0,17	0,60
B	Clay brick 	≥ 1,70	≥ 30,0	0,17	0,93
B	Calcium silicate brick (e.g. Kalksandstein KS NF 20-2.0 Vollstein according to DIN 106) 	≥ 2,00	≥ 20,0	0,20	0,86
C	Calcium silicate hollow block (e.g. Kalksandstein KS L-R(P) 8 DF Lochstein according to DIN 106)  a ¹⁾ = 30 mm 	≥ 1,60	≥ 12,0	0,20	0,73

¹⁾ Minimum values "a". For elements with lower value of "a" the load tests on the construction are required

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Performances
Displacements

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Table C3.2: Displacements

Base material group	Base material	Bulk density [kg/dm ³]	Compressive strength [N/mm ²]	$\frac{N_{Rk}}{3}$ [kN]	$\delta\left(\frac{N_{Rk}}{3}\right)$ [mm]
C	Perforated ceramic brick (e.g. Hlz B – 1,0 1NF 12-1 according to DIN 105)  a ¹⁾ = 13 mm 	≥ 0,95	≥ 12,0	0,15	0,84
	Perforated ceramic brick (e.g. Hlz B – 1,0 3NF 12-1 according to DIN 105)  a ¹⁾ = 13 mm 	≥ 0,95	≥ 12,0	0,15	0,59
	Vertically perforated porosited block (e.g. Porotherm 25 P+W)  a ¹⁾ = 10 mm 	≥ 0,80	≥ 15,0	0,15	0,56





¹⁾ Minimum values "a". For elements with lower value of "a" the load tests on the construction are required

TACO SUPER INCO

Performances
Displacements

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Table C3.3: Displacements

Base material group	Base material	Bulk density [kg/dm ³]	Compressive strength [N/mm ²]	$\frac{N_{Rk}}{3}$ [kN]	$\delta\left(\frac{N_{Rk}}{3}\right)$ [mm]
C	Vertically perforated ceramic block (e.g. MEGA-MAX 250)  a ¹⁾ = 12 mm 	≥ 0,80	≥ 15,0	0,10	0,61
	Lightweight concrete hollow block (e.g. Hbl according to DIN 18151) a ¹⁾ = 30 [mm] 	≥ 0,80	≥ 2,0	0,13	0,53
	Lightweight concrete hollow block Tekno Amerblok a ¹⁾ = 30 [mm] 	≥ 1,56	≥ 12,5	0,15	0,61
D	Lightweight concrete block	≥ 1,56	≥ 20,0	0,17	0,99
E	Autoclaved aerated concrete block	≥ 0,35	≥ 2,0	0,03	0,50

¹⁾ Minimum values "a". For elements with lower value of "a" the load tests on the construction are required

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Performances
 Displacements

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