

**European Technical
Assessment****ETA-20/0284
of 28/05/2020***English translation prepared by CSTB - Original version in French language***General Part**Trade name of the construction
product:

ELEMATIC T66

Product family to which the
construction product belongs:Plastic anchor for multiple use in masonry under seismic action,
for fixing facade claddings through angle brackets

Manufacturer:

ITW Construction Products Italy S.r.l.
V.le Regione Veneto, 5
35127 PADOVA (PD)
ITALY

Manufacturing plants:

ITW Construction Products Italy S.r.l.
V.le Regione Veneto, 5
35127 PADOVA (PD)
ITALYThis European Technical
Assessment contains:12 pages including 9 pages of annexes which form an
integral part of this assessmentThis European Technical
Assessment is issued in
accordance with Regulation (EU)
No 305/2011, on the basis of:

Draft EAD DP 16-33-1151-06 04

This version replaces:

-

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such. Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may be made, with the written consent of the issuing Technical Assessment Body. Any partial reproduction has to be identified as such.

Specific Part

1 Technical description of the product

The frame anchor ELEMATIC T66 is a plastic anchor consisting of a plastic sleeve made of polyamide and an accompanying specific screw of galvanised steel or of stainless steel. The plastic sleeve is expanded by screwing in the specific screw which presses the sleeve against the wall of the drilled hole.

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

2 Specification of the intended use

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

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the anchor channel of at least 50 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)

Essential characteristic	Performance
Characteristic resistance to tension loading including seismic	See Annex C1
Characteristic resistance to shear loading including seismic	See Annex C2

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class (A1) according to EN 13501-1

3.3 Hygiene, health and the environment (BWR 3)

Regarding dangerous substances contained in this European technical approval, there may be requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Directive, these requirements need also to be complied with, when and where they apply.

3.4 Safety in use (BWR 4)

For Basic requirement Safety in use the same criteria are valid as for Basic Requirement Mechanical resistance and stability.

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)

For the sustainable use of natural resources, no performance was determined for this product.

3.8 General aspects relating to fitness for use

Durability and Serviceability are only ensured if the specifications of intended use according to Annex B1 are kept.

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

In accordance with EAD No. 16-33-1151-06.04, the applicable European legal act is: [97/463/EC].
The system to be applied is: 2+.

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

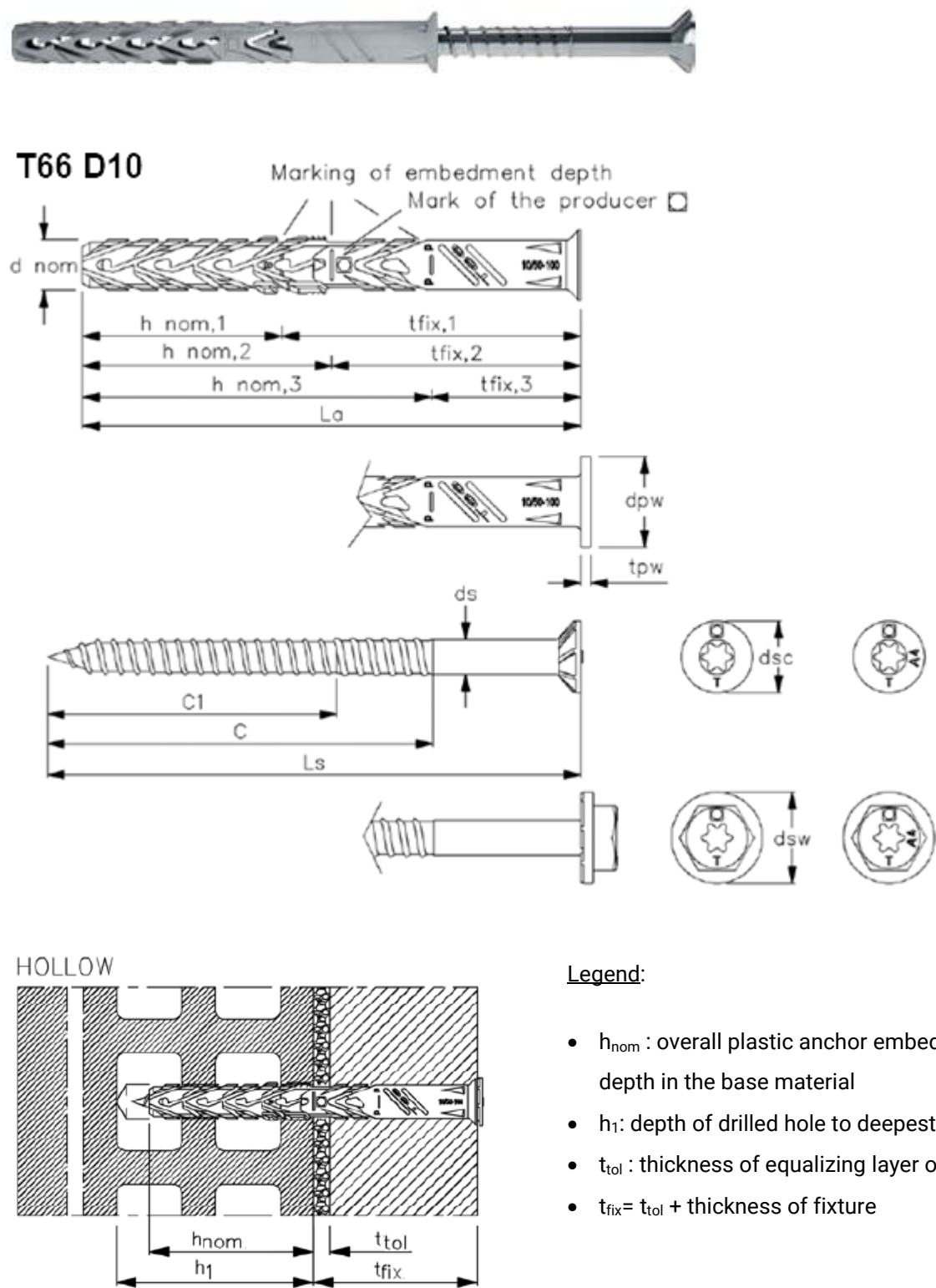
Technical details necessary for the implementation of the Assessment and verification of constancy of performance (AVCP) system are laid down in the control plan deposited at Centre Scientifique et Technique du Bâtiment.

The manufacturer shall, on the basis of a contract, involve a notified body approved in the field of anchor channels for issuing the certificate of conformity CE based on the control plan.

The original French version is signed by

La cheffe de division

Anca CRONOPOL



ELEMATIC T66

Product Description
Anchor types, specific screw and installed condition

Annex A1

Table A1: Dimensions [mm]

Anchor size	Anchor sleeve				Specific screw			
	d_{nom}	h_{nom}	min L_a	max L_a	d_s	c_1	c	L_s
T66 10	10	50	60	300	7	57	77 ¹⁾	67-307

¹⁾ not valid for $L_s = 67$ mm

Table A2: Materials

Designation	Material
Anchor sleeve	Polyamide, colour grey
Specific screw	Steel, zinc coated (electro galvanized) $\geq 5 \mu m$ according EN ISO 4042 : 2001-01 $f_{yk} \geq 480 \text{ N/mm}^2$; $f_{uk} \geq 600 \text{ N/mm}^2$
	stainless steel, material number 1.4401 / 1.4404 / 1.4571 / 1.4578 (A4 according to ISO 3506 - 01: 2010-04) $f_{yk} \geq 600 \text{ N/mm}^2$; $f_{uk} \geq 800 \text{ N/mm}^2$

ELEMATIC T66

Product Description
Dimensions and materials

Annex A2

Specifications of intended use

Anchorage subject to:

- Connect angle brackets with bending stiffness in the range (0,03 / 0,10) kN/mm and for claddings subjected to a maximum in plane acceleration equal to $16,5 \text{ m/s}^2$.
- Used only as statically indeterminate fixing (more than two supports) under static loading or seismic loading for the anchorage of façade claddings through angle brackets in concrete or masonry. Examples of arrangements for brackets to base material connection are reported Figure 1-1 and Figure 1-2.

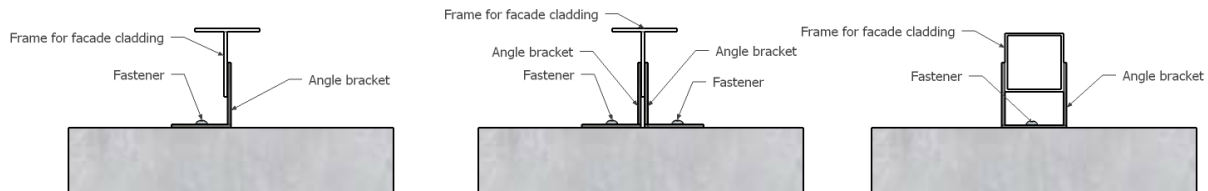


Figure 1.1- Façade cladding to masonry connections

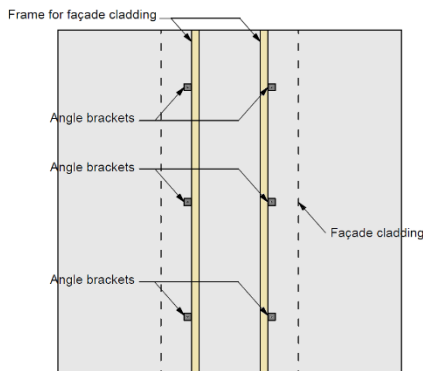


Figure 1.2 - Example of statically indeterminate fixing for the anchorage

Base material:

- Hollow brick masonry (use category c), according to Annex B3

Temperature Range:

- Range c: -40°C to $+50^{\circ}\text{C}$
(max. short term temperature $+50^{\circ}\text{C}$ and max. long term temperature $+30^{\circ}\text{C}$)
- Range b: -40°C to $+80^{\circ}\text{C}$
(max. short term temperature $+80^{\circ}\text{C}$ and max. long term temperature $+50^{\circ}\text{C}$)

Use conditions (Environmental conditions):

- Structures subject to dry internal conditions (zinc coated steel, stainless steel).
- Structures subject to external atmospheric exposure including industrial and marine environment (stainless steel).
- Structures subject to permanently damp internal conditions, if no particular aggressive conditions exist (stainless steel).
- Note: Particular aggressive conditions are e.g. permanent, alternating immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor swimming pools or atmosphere with chemical pollution (e.g. in desulphurization plants or road tunnels where de-icing materials are used).

ELEMATIC T66

Intended use
Specifications

Annex B2

Design:

- The anchorages are designed in accordance with the ETAG 020 Edition March 2012, Annex C under the responsibility of an engineer experienced in anchorages and masonry work.
- The characteristic resistance reported in the ETA for the intended use of this EAD is equal to $F_{Rk,sf}$. is evaluated analogously to F_{Rk} according to Section 6.4.3.3 of ETAG 020, Part 4, respectively, by replacing N_{Rk1} and $V_{Rk,s}$ with $N_{Rk,sf}$ and $V_{Rk,sf}$, respectively.

Installation:

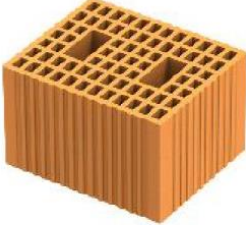
- Hole drilling by the drill modes given in Annexes B4 and B5 for use category c; the influence of other drilling methods may be determined by job side tests according to ETAG 020 Edition March 2012, Annex B.
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person.
- Responsible for technical matters of the site.
- Installation temperature from -5°C to +40°C.
- Exposure to UV due to solar radiation of the anchor not protected ≤ 6 weeks.

ELEMATIC T66

Intended use
Specifications

Annex B2

Table B1: Geometry and dimensions of hollow brick

Base material	Dimensions L x l x H [mm]		Reference	Compressive strength [MPa]
Wienerberger Porotherm Bioplan 30-25/24,9 ETICS cod. 18203081		300x250x249	NF EN 771-1	12,0
DANESI Poroton P800		250x300x190	NF EN 771-1	10,5

ELEMATIC T66

Intended use
Geometry and dimensions of hollow or perforated brick

Annex B3

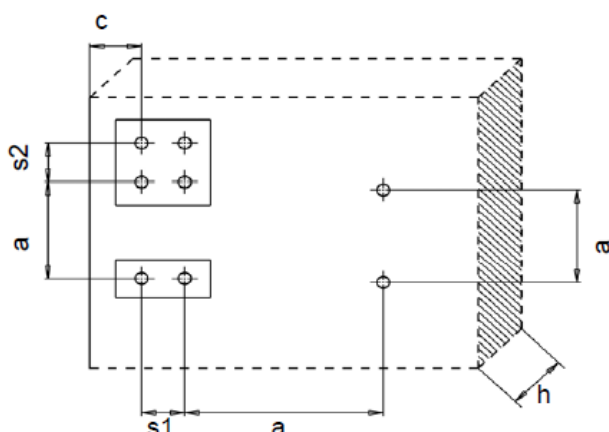
Table B2: Installation parameters

Anchor type			T66 10
Use category			b, c
Drilling hole diameter	[mm]	$d_0 =$	10
Cutting diameter of drill bit	[mm]	$d_{cut} \leq$	10,45
Depth of drilled hole to deepest point	[mm]	$h_1 \geq$	60
Overall plastic anchor embedment depth in the base material	[mm]	$h_{nom} \geq$	50
Diameter of the clearance hole in the fixture	[mm]	$d_f \leq$	10,5

Table B2: Installation parameters

Anchor type			T66 10
Minimum thickness of member	[mm]	h_{min}	110
Single anchor			
Minimum allowable spacing	[mm]	a_{min}	250
Minimum allowable edge distance	[mm]	c_{min}	100
Anchor group			
Minimum allowable spacing perpendicular to free edge	[mm]	$s_{1,min}$	200
Minimum allowable spacing parallel to free edge	[mm]	$s_{2,min}$	400
Minimum allowable edge distance	[mm]	c_{min}	100

Scheme of distances and spacings in masonry

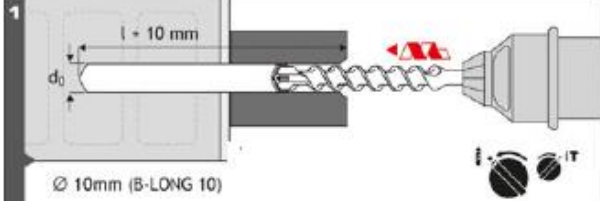
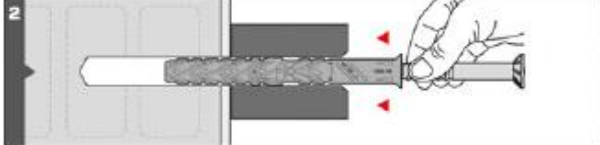
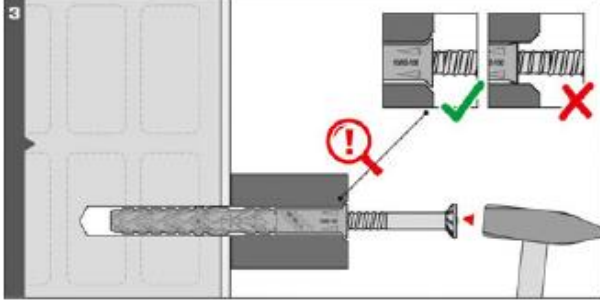
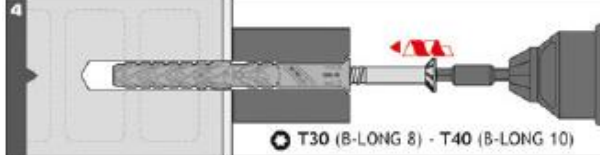
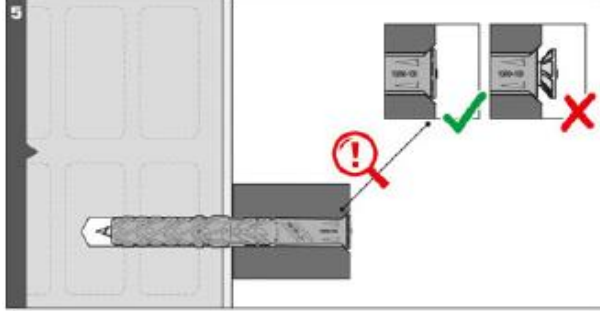
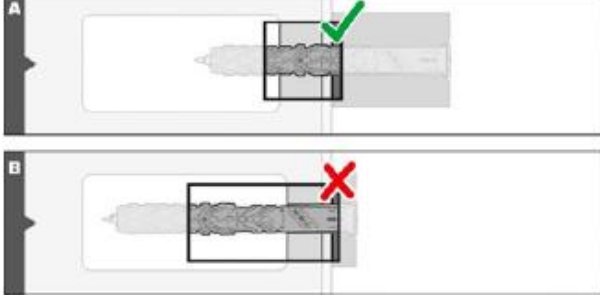


ELEMATIC T66

Intended use
Edge distances and spacings for use in masonry

Annex B4

Installation instruction

	1) Drill the hole considering the drilling method. Holes to be cleaned of drilling dust.
	2) + 3) The plastic sleeve is inserted through the fixture by slight hammer blows
	
	4) + 5) The special screw is screwed in until the head of the screw touches the sleeve. The anchor is correctly mounted, if there is no turn-through of the plastic sleeve in the drill hole and if slightly move on turning of the screw is impossible after the complete turn-in of the screw.
	
	A) + B) Observation of the overall plastic anchor embedment depth.

ELEMATIC T66

Intended use
Installation instructions

Annex B5

Table C1: Characteristic resistance $N_{Rk,sf}^{1)}$ under tension loading including seismic, for use in hollow masonry

Base material [Supplier / Naming]	Minimum size (L x W x H)	Minimum compressive strength	Drill method	Characteristic resistance including seismic loading $N_{Rk,sf}^{1)}$ $h_{nom} = 50 \text{ mm}$	
	[mm]	f_b [N/mm²]		-40/50°C [kN]	-40/80°C [kN]
Vertically perforated clay brick EN 771-1:2011					
Wienerberger / Porotherm Bioplan 30-25/24,9 ETICS (see Annex B2)	(300x250x249)	12,0	rotary	1,66	1,11
DANESI / Poroton P800 (see Annex B2)	(250x300x190)	10,5	rotary	0,66	0,50

1) with $k_{alea} = 1,5$ included, coefficient taking account of uncertainties in the distribution of tension loads

Table C2: Displacements under tension loading in masonry

Base material [Supplier / Naming]	Displacement for serviceability limit state under tension loading $\delta_{sf,N,DLS}$
	[mm]
Wienerberger / Porotherm Bioplan 30-25/24,9 ETICS	0,21
DANESI / Poroton P800	0,09

ELEMATIC T66

Performances

Characteristic resistance to tension loading including seismic,
Displacement for serviceability limit state under tension for use in hollow masonry

Annex C1

Table C3: Characteristic resistance $V_{Rk,sf}^{1)}$ under shear loading including seismic, for use in hollow masonry

Base material [Supplier / Naming]	Minimum size (L x W x H)	Minimum compressive strength	Drill method	Characteristic resistance including seismic loading $V_{Rk,sf}^{1)}$ $h_{nom} = 50 \text{ mm}$	
	[mm]	f_b [N/mm²]		-40/50°C [kN]	-40/80°C [kN]
Vertically perforated clay brick EN 771-1:2011					
Wienerberger / Porotherm Bioplan 30-25/24,9 ETICS (see Annex B2)	(300x250x249)	12,0	rotary	0,95	0,95
DANESI / Poroton P800 (see Annex B2)	(250x300x190)	10,5	rotary	0,77	0,77

1) with $k_{alea} = 1,5$ included, coefficient taking account of uncertainties in the distribution of shear loads

Table C4: Displacements under shear loading in masonry

Base material [Supplier / Naming]	Displacement for serviceability limit state under shear loading
	$\delta_{sf,V,DLS}$ [mm]
Wienerberger / Porotherm Bioplan 30-25/24,9 ETICS	0,203
DANESI / Poroton P800	0,13

ELEMATIC T66

Performances

Characteristic resistance to tension loading including seismic
Displacement for serviceability limit state under shear for use in hollow masonry

Annex C2