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imenovan in priglašen skladno z 10. členom direktive Sveta z dne 21. decembra 1988 o približevanju zakonov, podzakonskih predpisov in drugih upravnih aktov držav članic,ki se nanašajo na gradbene proizvode (89/106/EGS)

član EOTA

European Technical Approval ETA-10/0190

[English translation prepared by ZAG – Original version in Slovenian language]

Komercialno ime *Trade name*	**TSS-TPP-TBB (Tapco)**
Imetnik soglasja *Holder of approval*	**FRIULSIDER S.p.A.** **via Trieste, 1** **33048 San Giovanni al Natisone (UD)** **Italy**
Tip gradbenega proizvoda in njegova predvidena uporaba *Generic type and use of construction product*	**Zabito plastično sidro za pritrjevanje toplotno izlolacijskih sistemov z ometi na podlagi iz betona** *Nailed-in plastic anchor for the fixing of external thermal insulation composite systems with rendering in concrete*
Veljavnost *Validity* od *from* do *to*	**26.01.2011** **23.06.2015**
Proizvodni obrat *Manufacturing plant*	**FRIULSIDER S.p.A.** **via Trieste, 1** **33048 San Giovanni al Natisone (UD)** **Italy**
To soglasje zamenjuje: *This Approval replaces*	ETA-10/0190 veljavno od 23.06.2010 do 23.06.2015 *ETA-10/.0190 with validity from 23.06.2010 to 23.06.2015*
To Evropsko tehnično soglasje vsebuje *This European Technical Approval contains:*	13 strani vključno s 4 prilogami, ki so sestavni del tega soglasja. *13 pages including 4 annexes which form an integral part of the document.*

I LEGAL BASES AND GENERAL CONDITIONS

1. This European Technical Approval is issued by the Slovenian National Building and Civil Engineering Institute (ZAG) in accordance with:

   – Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products[1], modified by the Council Directive 93/68/EEC[2] and regulation (EC) N°1882/2003 of the European Parliament and of the Council[3],

   – Zakon o gradbenih proizvodih – ZGPro (Ur. List, št. 52/00 in 110/02) "Construction Product Act – ZGPro (OG RS N° 52/00 and 110/02)",

   – Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex of Commission Decision 94/23/EC[4],

   – Guideline for European Technical Approval of "Plastic Anchors for Fixing of External Thermal Insulation Composite Systems with Rendering", ETAG 014, edition January 2002, amended December 2008 .

2. The Slovenian National Building and Civil Engineering Institute (ZAG) is authorised to check whether the provisions of this European Technical Approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products with the European Technical Approval and for their fitness for the intended use remains with the holder of the European Technical Approval.

3. This European Technical Approval is not to be transferred to manufacturers or agents of manufacturer other than those indicated on page 1; or manufacturing plants other than those indicated on page 1 of this European Technical Approval.

4. This European Technical Approval may be withdrawn by the Slovenian National Building and Civil Engineering Institute (ZAG), in particular pursuant to information by the Commission according to Article 5 (1) of the Council Directive 89/106/EEC.

5. Reproduction of this European Technical Approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of the Slovenian National Building and Civil Engineering Institute (ZAG). In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European Technical Approval.

6. The European Technical Approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

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1 Official Journal of the European Communities N° L 40, 11.2.1989, p.12
2 Official Journal of the European Communities N° L 220, 30.8.1993, p.1
3 Official Journal of the European Union N° L 284, 31.10.2003, p.1
4 Official Journal of the European Communities N° L 17, 20.1.1994, p.34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product and intended use

1.1 Definition of product

The plastic anchor TSS-TPP-TBB (Tapco) consists of a plastic expansion sleeve with a collar for fixing the profiles for thermal insulation systems and a metallic nail as an expansion element. The anchor sleeve is made of polyamide PA6. The nail is made of zinc plated steel or of stainless steel. The collar is made in three versions (countersunk, cylindrical head and large rim), whereas nail head is made in two versions (regular shape and nail screw with threaded part).

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 1.

1.2 Intended use

The anchor is intended to be used for anchorages for which requirements for safety in use in the sense of the Essential Requirement 4 of Council Directive 89/106/EEC shall be fulfilled and failure of anchorages made with these products cause low risk to human life.

The anchor is to be used only as multiple fixing for the anchorage of profiles for bonded thermal insulation composite systems (ETICS) according to ETAG 004 in concrete. The base material shall be of reinforced or unreinforced normal weight concrete of strength classes C 16/20 at minimum and C20/25 at maximum according to SIST EN 206-1:2003.

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

The provisions made in this European Technical Approval 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.

2 Characteristics of product and methods of verification

2.1 Characteristics of product

The anchor corresponds to the drawings and information given in Annex 1 and 2. The characteristic material values, dimensions and tolerances of the anchor not indicated in these Annexes shall correspond to the respective values laid down in the technical documentation[5] of this European Technical Approval. The characteristic anchor values for the design of anchorage are given in Annex 4.

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[5] The technical documentation of this European Technical Approval is deposited at the Slovenian National Building and Civil Engineering Institute (ZAG) and, as far as relevant for the tasks of the approved bodies involved in the attestation of conformity procedure, is handed over the approved bodies.

Each anchor is to be marked with the identifying mark of the producer, type, the diameter and the length of the anchor: e.g. FM TSS $\phi 8 \times 60$.

The minimum anchorage depth shall be marked.

The anchor shall only be packaged and supplied as a complete unit.

2.2 Methods of verification

The assessment of fitness of the anchor for the intended use in relation to the requirements for safety in use in the sense of the Essential Requirement 4 has been made in accordance with the Guideline for European Technical Approval of "Plastic Anchors for Fixing of External Thermal Insulation Composite Systems with Rendering" (ETAG 014), based on the use category A.

In addition to the specific clauses relating to dangerous substances contained in this European Technical Approval, there may be other 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 EU Construction Products Directive, these requirements need also to be complied with, when they apply.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the decision 97/463/EC of the European Commission[6] the system 2+ of attestation of conformity applies.

This system of attestation of conformity is defined as follows:

System 2+: Declaration of conformity of the product by the manufacturer on the basis of:

a) tasks for the manufacturer:
   (1) initial type-testing of the product;
   (2) factory production control;
   (3) testing of samples taken at the factory by the manufacturer in accordance with a prescribed test plan.

b) tasks for the approved body:
   (4) certification of factory production control on the basis of:
      - initial inspection of factory and of factory production control;
      - continuous surveillance, assessment and approval of factory production control.

3.2 Responsibilities

3.2.1 Tasks of the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer are documented in a systematic manner in the form of written policies and procedures, including records of results performed. This

[6] Official Journal of he European Communities L 198/31 of 25.7.1997

production control system ensures that the product is in conformity with the European technical approval.

The manufacturer shall only use raw materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the "Control Plan of dd.mm.2010 relating to the European technical approval ETA–10/0190 issued on 23.06.2010" which is part of the technical documentation of this European technical approval. The "Control Plan" is laid down in the context of the factory production control system operated by the manufacturer and deposited at the Slovenian National Building and Civil Engineering Institute (ZAG).

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the "Control Plan".

3.2.1.2 Other tasks of the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in a section 3.1 in the field of anchors in order to undertake the actions laid down in section 3.3. For this purpose the "Control Plan" referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved body or bodies involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of the European technical approval ETA–10/0190 issued on 23.06.2010.

3.2.2 Tasks of approved bodies

The approved body shall perform the:

- initial inspection of factory and of factory production control,
- continuous surveillance, assessment and approval of factory production control,

in accordance with the provisions laid down in the "Control plan of dd.mm.2010 relating to the European technical approval ETA–10/0190 issued on 23.06.2010".

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the factory production control stating the conformity with the provisions of this European technical approval.

In cases where the provisions of the European technical approval and its "Control Plan" are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform the Slovenian National Building and Civil Engineering Institute (ZAG) without delay.

3.3 CE-Marking

The CE marking shall be affixed on each packaging of anchors. The symbol "CE" shall be followed by the identification number of the approved certification body and be accompanied by the following additional information:

- the name and address of the manufacturer
- the last two digits of the year in which the CE-marking was affixed,
- the number of the EC certificate for the factory production control,
- number of the European technical approval,
- the number of the guideline for European technical approval,
- the identification number of the certification body,
- the name or identifying mark of the manufacturer and manufacturing plant,

– size of the plastic anchor,
– use category (A).

Example of CE marking and accompanying information TSS $\phi 8 \times 60$.

CE	**"CE"-symbol**
1234	*Identification number of approved certification body*
Friulsider S.p.A. via Trieste 1 33048 San Giovanni al Natisone (UD)	Name and the address of the manufacturer (legal entity responsible for the manufacturer)
10	*Two last digits of the year of affixing the CE marking*
1234-CPD-0321	*Number of EC certificate for the factory production control*
ETA-10/0190	Number of European technical approval
ETAG 014	Number of guideline for European technical approval
TSS $\phi 8 \times 60$	Size of the plastic anchor
category A	Use category

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The European technical approval is issued for the product on the basis of agreed data/information, deposited with the Slovenian National Building and Civil Engineering Institute (ZAG), which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to the Slovenian National Building and Civil Engineering Institute (ZAG) before the changes are introduced. The Slovenian National Building and Civil Engineering Institute (ZAG) will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alternations to the ETA, shall be necessary.

4.2 Installation

4.2.1 Design of anchorages

4.2.1.1 General

The ETA only applies to the manufacture and use of the anchor. Verification of stability of the external thermal insulation composite system including application of loads on the anchor are not subjects of this European Technical Approval.

The fitness of the anchors for the intended use is given under the following conditions:

The design of anchorages is carried out in compliance with ETAG 014 " Guideline for European Technical Approval of Plastic Anchors for Fixing of External Thermal Insulation Composite System with Rendering" under the responsibility of the engineer experienced in anchorages.

Verifiable calculation notes and drawings shall be prepared taking account of the loads to be anchored, the nature and strength of the base materials, the thickness of insulation and the dimensions of the anchorage members as well as of the relevant tolerances.

Proof of direct local application of load on the base material has been delivered.

The anchor shall only be used for the transmission of wind suction loads. All other loads such as dead load and restraints shall be transmitted by the adhesion of the relevant external insulation composite system.

4.2.1.2 Resistance

The characteristic values of the tension resistance of the anchor are given in Table 6, Annex 4.

4.2.1.3 Characteristic values, spacing and dimensions of anchorage member

The minimum spacing and dimensions of anchorage member according to Annex 3 shall be observed.

4.2.1.4 Displacement behaviour

When loaded to the admissible value of resistance [$N_{Rk}/(\gamma_M \times \gamma_F)$, where γ_M = 2,0 and γ_F = 1,5] in normal weight concrete a displacement of approximately 0,20 mm in load direction is expected for anchor diameter of 6 mm (M6) and a displacement of approximately 0,22 mm in load direction for anchor diameter of 8 mm (M8).

4.2.2 Installation of anchors

The fitness for use of the anchor can only be assumed if the following conditions are met:

- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters on the site.
- Use of the anchor only as supplied by the manufacturer without exchanging the components of an anchor.
- Anchor installation in accordance with the manufacturer's specifications and drawings using the tools indicated in this European Technical Approval.
- Checks before placing the anchor to ensure that the characteristic values of the base material in which the anchor is to be placed, is identical with the values, which the characteristic loads apply for.
- Placing drill holes without damaging the reinforcement.
- Temperature during the installation of the anchor ≥ 5ºC.

4.2.3 Responsibility for the manufacturer

It is in the responsibility of the manufacturer to ensure that the information on the specific conditions according to 1 and 2 including Annexes referred to 4.2.1, 4.2.2 and 5 is given to those who are concerned. This information may be made by reproduction of the respective parts of the European Technical Approval. In addition, all installation data shall be shown clearly on the packaging and/or on an enclosed instruction sheet, preferably using illustration.

The minimum data required are:

- base material for the intended use,
- drill bit diameter,
- maximum thickness of the ETICS,
- minimum effective anchorage depth,

– minimum hole depth,
– information on the installation procedure,
– identification of the manufacturing batch.

All data shall be presented in a clear and explicit form.

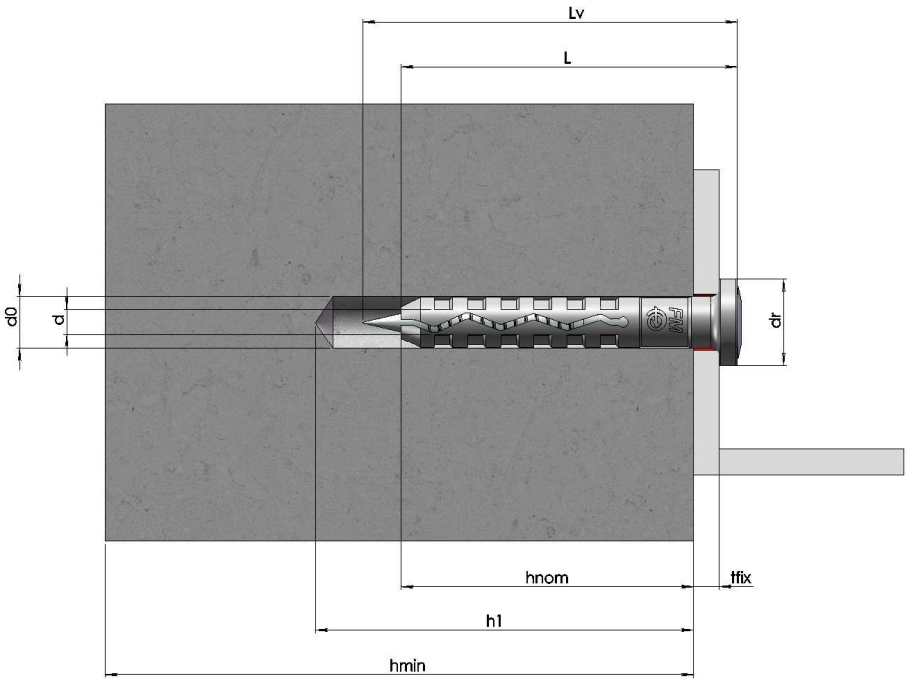
5 Indications to the manufacturer

5.1 Packing, transport and storage

The anchor shall only be supplied as a complete unit.

The anchor shall be stored under normal climatic conditions in its original light-proof packaging. Before installation, it shall not be extremely dried or frozen.

Leading expert:	Head of the Service for Technical Approvals:
Dušica Drobnič, M.Sc., Research Engineer	Franc Capuder, M.Sc.



L = total length of the plastic anchor sleeve
d_0 = nominal diameter of drill bit (= diameter of the plug)
h_1 = depth of drill hole
h_{nom} = minimum embedment depth (the same of the h_{ef} = effective anchorage depth)
d = nominal diameter of the nail screw
L_v = total length of the nail screw
d_r = diameter of the collar
h_{min} = minimum thickness of the concrete member
t_{fix} = thickness of fixture (the maximum thickness is inclusive of any non-structural layer of plaster)

Table 1: Materials

	Materials
Anchor sleeve	Polyamide Pa6 acc. to ISO 1874
Nail	Steel cass.5.8 zinc plated A2K acc. to ISO 4042 or Stainless Steel A2-50, wr.1.4567, 1.4301 or 1.4306 acc. to EN 10088-3

TSS-TPP-TBB (Tapco)	**Annex 1** of the European Technical Approval **ETA–10/0190**
Intended use and materials	

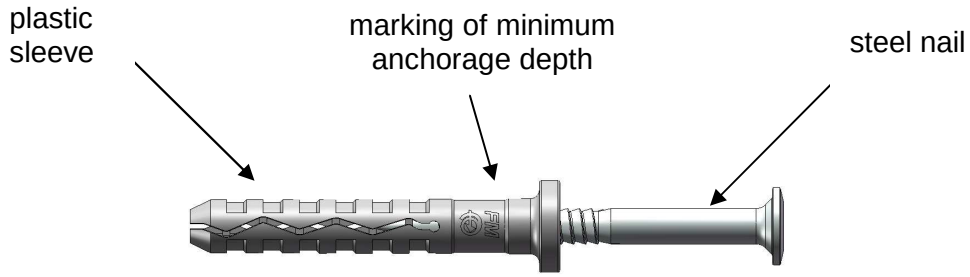


Table 2: Different sizes and combinations of plastic sleeves and steel nails

Type	Description	Schema
TSS	Countersunk head + nail screw	
	Countersunk head + nail screw with threaded part	
TPP	Cylindrical head + nail screw	
TBB	Large rim + nail screw	

TSS-TPP-TBB (Tapco)	**Annex 2** of the European Technical Approval **ETA–10/0190**
Different components of the anchor: sleeves and nails	

Table 3: Dimensions of components and installation data

Size* d_0 x L	t_{fix} mm	h_1 mm	h_{nom} mm	d mm	L_v mm	dr mm	*External thread*
TSS Countersunk head + nail screw							
6x40	10	40	30	3,8	45	10	-
6x50	20	40	30	3,8	55	10	-
6x60	30	40	30	3,8	65	10	-
6x80	50	40	30	3,8	85	10	-
8x60	20	50	40	4,8	65	12	-
8x80	40	50	40	4,8	85	12	-
8x100	60	50	40	4,8	105	12	-
8x120	80	50	40	4,8	125	12	-
8x140	100	50	40	4,8	145	12	-
TSS Countersunk head + nail screw with threaded part							
6x40	-	50	40	3,8	45	10	M6x6
6x50	-	60	50	3,8	55	10	M6x6
6x40	-	50	40	3,8	45	10	M7x6
6x50	-	60	50	3,8	55	10	M7x6
TPP Cylindrical head + nail screw							
6x40	10	40	30	3,8	45	10	-
6x50	20	40	30	3,8	55	10	-
6x60	30	40	30	3,8	65	10	-
8x60	20	50	40	4,8	65	11,5	-
8x80	40	50	40	4,8	85	11,5	-
8x100	60	50	40	4,8	105	11,5	-
8x120	80	50	40	4,8	125	11,5	-
8x140	100	50	40	4,8	145	11,5	-
TBB Large rim + nail screw							
6x40	10	40	30	3,8	45	13	-
6x50	20	40	30	3,8	55	13	-
6x60	30	40	30	3,8	65	13	-
8x80	40	50	40	4,8	85	15	-
8x100	60	50	40	4,8	105	15	-
8x120	80	50	40	4,8	125	15	-
8x140	100	50	40	4,8	145	15	-
8x160	120	50	40	4,8	165	15	-

Table 4: Minimum spacing and edge distances, dimension of members

Minimum spacing	s_{min} = [mm]	100
Minimum edge distance	c_{min} = [mm]	100

TSS-TPP-TBB (Tapco)	**Annex 3**
Dimensions and installation data Minimum spacing, edge distances and thickness of members	of the European Technical Approval **ETA–10/0190**

Table 5: Base material

Base material	Dimensions	References	Compressive strength
Concrete C 16/20 to C 50/60	SIST EN 206 - 1		

Table 6: Characteristic resistance to tension loads N_{Rk} in concrete for a single anchor in kN

Base material	**Characteristic resistance to tension loads N_{Rk} in kN**	
	M6	**M8**
Concrete C 16/20 to C 50/60	**1,2**	
Partial safety factor γ_M [1)]	2,0	

1) in absence of other regulations, see ETAG 014 point 7.1

TSS-TPP-TBB (Tapco)	**Annex 4**
Base material Characteristic resistance	of the European Technical Approval **ETA–10/0190**