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Authorised and notified according to Article 10 of the Council Directive 89/106/EC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products

MEMBER OF EOTA

European Technical Approval ETA-12/0090

(English language translation, the original version in Czech language)

Obchodní název: *Trade name:*	**Scell-it Nylon Hammer-Screw YZZY**
Držitel schválení: *Holder of approval:*	Scell-it 329 rue de l'industrie 59113 Seclin France
Typ a použití výrobku: *Generic type and use of construction product:*	Plastové kotvy pro kotvení vnějších kontaktních tepelně izolačních systémů s omítkou do betonu a zdiva *Plastic nailed-in anchors for fixing of external thermal insulation composite systems with rendering in concrete and masonry*
Platnost od: *Validity from:* do: *to:*	02.02.2012 16.01.2017
Výrobna: *Manufacturing plant:*	Scell-it plant 4
Toto evropské technické schválení obsahuje: *This European Technical Approval contains:*	13 stran včetně 4 příloh *13 pages including 4 Annexes*

I. LEGAL BASES AND GENERAL CONDITIONS

1. This European Technical Approval is issued by the Technical and Test Institute for Construction Prague (Technický a zkušební ústav stavební Praha, s.p.) 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) No.1882/2003 of the European Parliament and of the Council[3];
   - the Government Decree No. 190/2002 Collection of Laws [4], as amended;
   - Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex to Commission Decision 94/23/EC[5];
   - Guideline for European Technical Approval of „Plastic Anchors for Fixing of External Thermal Insulation Composite Systems with Rendering“, ETAG 014, Edition January 2002.

2. The Technical and Test Institute for Construction Prague 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 to 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 laid down in the context of this European Technical Approval.

4. This European Technical Approval may be withdrawn by the Technical and Test Institute for Construction Prague 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 Technical and Test Institute for Construction Prague. 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.

[1] Official Journal of the European Communities N^{o} L 40, 11.02.1989, p. 12
[2] Official Journal of the European Communities N^{o} L 220, 30.08.1993, p. 1
[3] Official Journal of the European Union no. L 284, 31.10.2003, p. 1
[4] Collection of Law of the Czech Republic Vol.79 No190 , 21.5.2002
[5] Official Journal of the European Communities N^{o} L 17, 20.01.1994, p. 34

II. SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product and intended use

1.1 Definition of product

The nailed-in plastic anchors Scell-it Nylon Hammer-Screw YZZY consist of a plastic sleeve with a collar for fixing the profiles for thermal insulation system (ETICS) and an expansion screw. The anchor sleeve is made of polyamide PA 6 and the accompanying specific expansion screw is made of zinc plated steel or of stainless steel.

The anchor is installed in drilled hole by hammering in the expansion screw.

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 would 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 and masonry. The base material shall consist of reinforced or unreinforced normal weight concrete of strength class C12/15 at minimum and C50/60 at maximum according to EN 206-1:2000-12 and of masonry walls made of solid clay bricks according to EN 771-1 or calcium silicate units according to EN 771-2.

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 bonding of the thermal insulation composite system.

The anchor may be used with the accompanying specific screw of stainless steel or with a thermal insulation cover of at least 50 mm and the accompanying specific screw of galvanised steel.

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 producer, but are to be regarded only as a means for choosing the products in relation to the expected economically reasonable working life of the works.

2 Characteristics of the product and methods of verification

2.1 Characteristics of the product

The anchor corresponds to the drawings and information given in Annexes 2 - 4. 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[6] of this European Technical Approval.

The characteristic values for the design of the anchorages are given in Annexes 3 - 4.

Each anchor is to be marked with the producer name, type, the diameter and the length of the anchor.

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

[6] The technical documentation of this Europen Technical Approval is deposited at the Technický a zkušební ústav stavební Praha, s.p, as far as relevant for the tasks of the approved bodies involved in the attestation of conformity producer, is handed over to the approved bodies.

2.2 Methods of verification

The assessment of the fitness of the anchor for the intended use in relation to the requirements for safety in use in the sense of Essential Requirement 4 has been made in compliance 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 categories A, B.

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 Construction Products Directive, these requirements need also to be complied with, when and where they apply.

3 Evaluation of conformity of the product and CE marking

3.1 System of attestation of conformity

According to the decision 97/463/EC of the European Commission the system 2+ of attestation of conformity applies. This system of attestation of conformity is described in Annex III, 2(ii), first possibility to the Construction Products Directive as follows.

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

(a) Tasks of 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 control plan.

(b) Tasks of 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 Responsibility

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 shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European Technical Approval.

The manufacturer may 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 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 TZÚS Praha s.p[7].

[7] The control plan is a confidential part of the documentation of the European Technical Approval, but not published together with the ETA and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

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 manufacture

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 in the field of anchors in order to undertake the actions laid down in section 3.2.2. 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 involved. The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European Technical Approval.

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.

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 factory production control of this European Technical Approval.

In cases where the provisions of the European Technical Approval and its control plan are no longer fulfilled the approved body shall withdraw the certificate of conformity and inform TZÚS Praha, s.p. without delay.

3.3 CE marking

The CE-marking[8] shall be affixed on each packaging of the anchor. The symbol "CE" shall be accopanied by the following information:
- name or identifying mark of producer and manufacturing plant;
- identifying mark of product;
- identification number of an approved body;
- the last two digits of the year in which the CE-marking was affixed;
- the number of the European Technical Approval;
- the number of the guideline for European Technical Approval;
- the number of EC certificate of FPC;
- use categories (A, B).

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

4.1 Manufacturing

The anchor is manufactured in accordance with the provisions of the European Technical Approval using the semi automated and automated manufacturing process as verified by the inspection of the plant performed by the Technický a zkušební ústav stavební Praha, s.p. as laid down in the technical documentation.

The European Technical Approval is issued for the product on the basis of agreed data/information, deposited with TZÚS Praha, s.p, 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

[8] Notes on the CE marking are stated in Guidance Paper D „CE marking under the Construction Products Directive", Brussels, 01 August 2002

approved to TZÚS Praha, s.p before the changes are introduced. TZÚS Praha, s.p 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 alterations 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 load on the anchor is not subject of this European Technical Approval.

Fitness for the intended use of the anchor 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 Systems with Rendering“ under the responsibility of an 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 as well as of the relevant tolerances.

Proof of direct local application of load on the base material shall be 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 thermal insulation composite system.

4.2.1.2 Resistance

The characteristic values of the tension resistance of the anchor are given in Table 5, Annex 4. If there is a difference to the given characteristic values of the base material or use of similar base material of category B supposed; the job-site tests according to 4.2.3 shall be carried out and the characteristic tension resistance shall be determined.

4.2.1.3 Characteristic values, spacing and dimensions of anchorage member

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

4.2.1.4 Displacement behavior

The displacement are given in the following table

	Concrete C16/20 - C50/60		**Solid clay brick**		**Calcium silicate solid units**	
	Tension load N_{Sk} [kN]	**Displacement** $\Delta\delta_N$ [mm]	**Tension load** N_{Sk} [kN]	**Displacement** $\Delta\delta_N$ [mm]	**Tension load** N_{Sk} [kN]	**Displacement** $\Delta\delta_N$ [mm]
YZP/YZF/YZPX 5.0	0,3	0,69	0,3	0,59	0,3	0,52
YZP/YZF/YZPX 6.0	0,5	0,77	0,4	0,49	0,5	0,63
YZP/YZF/YZPX 8.0	0,5	0,67	0,5	0,62	0,5	0,81

4.2.2 Installation of anchor

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

- Anchor installation carried out by appropriately qualified personnel under the supervision of the person responsible for technical matters on site.
- Use of the anchor only as supplied by the manufacturer without exchanging any component of the anchor.

- Anchor installation in accordance with the manufacturer's specifications and drawings using the appropriate tools.
- 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.
- Anchor installation such that the effective anchorage depth is complied with. This compliance is ensured, when the fixture thickness is chosen that the effective embedment depth as shown in Annex 1 is ensured.
- Placing drill holes without damaging the reinforcement
- Temperature during installation of the anchor ≥ 0℃.
- Exposure to UV due to solar radiation of the anchor not protected by rendering ≤ 6 weeks.

4.2.3 Job site tests

The characteristic tension resistance of the anchor may be determined by means of job site pull-out tests carried out on the material actually used, if a characteristic resistance of the base material does not exist (for example masonry made of other solid masonry units).

The characteristic resistance of the anchor shall be determined by carrying out at least 15 centric tension load pull-out tests on site. These tests are also possible under the same conditions in a laboratory.

Execution and evaluation of the tests as well as the issue of the test report and the determination of the characteristic resistance should be under the responsibility of approved testing laboratories or the supervision of the person responsible for the execution of the works on site.

Number and position of the anchors to be tested shall be adapted to the relevant special conditions of the site and, for example, to be increased in the case of hidden and larger areas, such that reliable information about the characteristic resistance of the anchor in the base material in question can be derived. The tests shall take into account the most unfavourable conditions of the practical execution.

4.2.3.1 Assembly

The anchor to be tested shall be installed (e.g. preparation of drill hole drilling tool to be used, drill bit) and the spacing and the edge distances shall be in the same way as planned for the fixing of the external thermal insulation composite system.

Depending on the drilling tool and according to ISO 5468, hard metal hammer-drill bits or hard metal percussion drill bits, respectively, shall be used. The cutting diameter shall be at the upper tolerance limit.

4.2.3.2 Execution of tests

The test rig used for the pull-out test shall provide a continuous slow increase of the load, controlled by calibrated load cell. The load shall be applied perpendicularly to the surface of the base material and shall be transmitted to the anchor via an hinge. The reaction force shall be transmitted into the base material at a distance of at least 150 mm from the anchor. The load shall be increased continuously in a way that the ultimate load is reached after about 1 minute. The load is measured when the ultimate load (N_1) is achieved.

4.2.3.3 Test report

The test report shall include all information necessary to assess the resistance of the tested anchor. It shall be included in the construction dossier.

The minimum data required are:

- Construction site, owner of building; date and location of the tests, air temperature; type of member (ETICS) to be fixed
- Masonry (type of brick, strength class, all dimensions of bricks, mortar group); visual assessment of masonry (flush joints, joint clearance, regularity)
- Plastic sleeve and special expansion screw, value of the cutting diameter of hard metal hammer-drill bits, measured before and after drilling
- Test rig; results of tests including the indication of value N_1
- Tests carried out or supervised by; Signature.

4.2.3.4 Evaluation of test results

The characteristic resistance N_{Rk1} is derived from the measured values N_1 as follows

N_{Rk1} = 0,6 • N_1 ≤ 1,5 kN
N_1 = the mean value of the five smallest measured values at ultimate load

4.2.4 Responsibility of 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(s).

The minimum data required for manual are:

- base material for the intended use (A, B)
- 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.

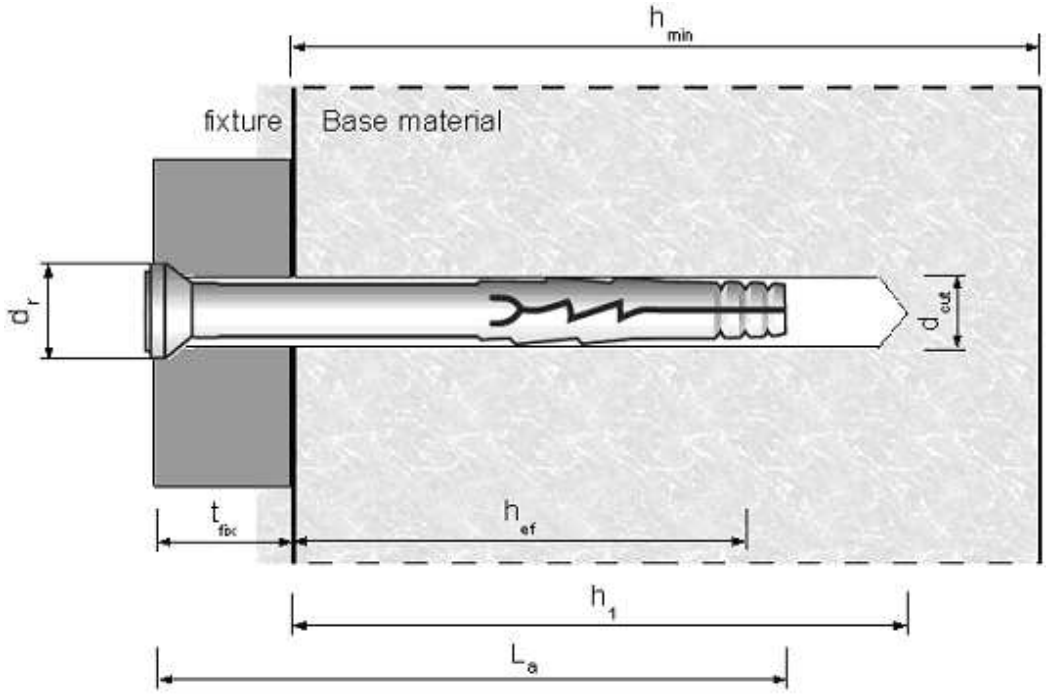
5 Recommendations for the manufacturer

5.1 Recommendations on packaging, transportation and storage

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

The anchor shall be stored under normal climatic conditions in its original light-proof packaging. Before installation, it shall neither be extremely dry nor frozen.

Ing. Jozef Pôbiš
Head of the Approval Body



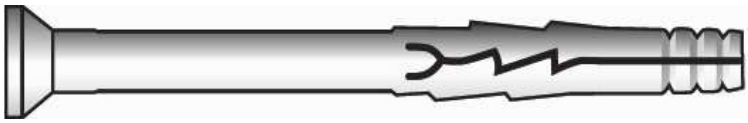
Intended use
Fixing of profiles for external thermal insulation composite systems in categories A and B.

Legend:

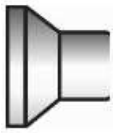
h_{ef} - effective embedment depth
h_1 - depth of drill hole in base material
h_{min} - minimum member thickness
t_{fix} - thickness fixture
L_a - total length of the plastic anchor sleeve
d_r - diameter of collar
d_{cut} - diameter of drill hole in base material

Scell-it Nylon Hammer-screw YZZY	Annex 1 of European Technical Approval ETA–12/0090
Intended use	

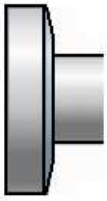
Anchor plastic sleeve



Dome head
YZP



Countersunk head
YZF



Large head
YZPX

Expansion screw

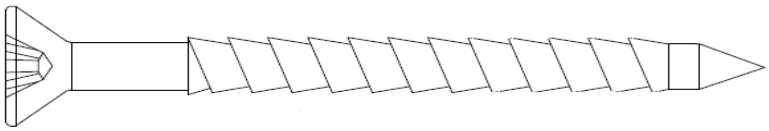


Table 1: Dimensions

Anchor type	Anchor sleeve			Expansion screw
	Ød$_{nom}$ [mm]	**h$_{ef}$ [mm]**	**L$_a$ [mm]**	**Ød [mm]**
YZP/YZF/YZPX 5.0	5	25	25 - 80	3,5
YZP/YZF/YZPX 6.0	6	30	30 - 100	3,8
YZP/YZF/YZPX 8.0	8	40	40 - 150	4,8

Scell-it Nylon Hammer-screw YZZY	Annex 2 of European Technical Approval ETA–12/0090
Dimensions	

Table 2: Materials

Designation	**Material**
Anchor sleeve YZZY	Polyamide PA 6
Expansion screw YZZY	Steel class 5.6 zinc plated or Stainless Steel grade A2/A4

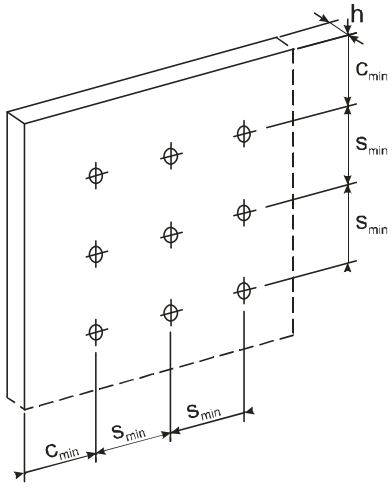
Table 3: Installation Characteristics

Anchor type	**Nominal diameter of drill bit d_o [mm]**	**Depth of drill hole $h_1 \geq$ [mm]**	**Overall embedment depth h_{ef} [mm]**
YZP/YZF/YZPX 5.0	5	35	25
YZP/YZF/YZPX 6.0	6	40	30
YZP/YZF/YZPX 8.0	8	50	40

Table 4: Minimum thickness of base material, edge distance and anchor spacing

Anchor type	**Minimum thickness of base material h_{min} [mm]**	**Minimum spacing s_{min} [mm]**	**Minimum edge distance c_{min} [mm]**
YZP/YZF/YZPX 5.0	100	100	100
YZP/YZF/YZPX 6.0	100	100	100
YZP/YZF/YZPX 8.0	100	100	100

Scheme of distance and spacing.



Scell-it Nylon Hammer-screw YZZY	Annex 3 of European Technical Approval ETA–12/0090
Anchor types, materials and installation characteristics	

Table 5: Characteristic resistance to tension loads N_{Rk} [kN] in concrete and masonry for single anchor

Base material	Use category	Bulk density class [kg/dm^3]	Min. compressive strength [N/mm^2]	General remarks	Characteristic resistance [kN]		
					5.0	**6.0**	**8.0**
Concrete C12/15 according to EN 206-1	A				0,6	0,9	1,5
Concrete C16/20–C50/60 according to EN 206-1	A				0,9	1,5	1,5
Solid clay bricks according to EN 771-1	B	≥1,7	20	Vertically perforation up to 15%	0,9	1,2	1,5
Calcium silicate solid units	B	≥1,8	12	Vertically perforation up to 15%	0,9	1,5	1,5
Partial safety factor	γ_M=		2,0*				

*in the absence of other national regulations

Scell-it Nylon Hammer-screw YZZY	Annex 4 of European Technical Approval ETA–12/0090
Characteristic resistance	