

VTT Expert Services Oy
PL 1001
02044 VTT
Puh. +358 20 722 4911
Telekopio +358 20 722 7003



Rakennustuotedirektiivin (89/106/EEC) artiklan 10,
neuvoston direktiivi 21. joulukuuta 1988,
mukaisesti notifioitu tuotehyväksyntälaitos

EOTAN JÄSEN

Eurooppalainen tekninen hyväksyntä ETA-12/0495 European Technical Approval

Kauppanimi:

Trade name

Croco A-110, Croco B-110 and Croco-512 kiinnikkeet

Croco A-110, Croco B-110 and Croco-512 fasteners

Hyväksynnän haltija:

Holder of approval:

SK Tuote Oy

Kauppatie 9

FI-65610 Mustasaari

Finland

Tuotetyyppi ja sen käyttötarkoitus:

Generic type and use of construction
product:

Mekaanisesti kiinnitettyjen kermikatteiden kiinnikkeet

Fasteners for mechanically fastened flexible waterproofing
systems

Voimassaoloaika:

Validity from/to

From December 10, 2012 to December 9, 2017

Valmistuspaikat:

Manufacturing plants:

SK tuote Oy, Mustasaari

Tämä hyväksyntä sisältää

This European Technical Approval
contains

sivuja/liitteitä

pages/annexes

9 sivua, joissa 1 liite

9 pages including one annex



Eurooppalainen tekninen hyväksyntäorganisaatio
European Organisation for Technical Approvals

I LEGAL BASES AND GENERAL CONDITIONS

1. This European Technical Approval is issued by VTT Expert Services Ltd 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 products¹, modified by the Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³,
 - Laki rakennustuotteiden hyväksynnästä (230/2003) luvut 3 ja 10, Ympäristöministeriön asetus rakennustuotteiden hyväksynnästä 3 § sekä Ympäristöministeriön 18.12.2009 antama valtuutuspäätös (19/629/2009).
 - Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex of Commission Decision 94/23/EC⁴;
 - ETA guideline 006 edition March 2000, 6th amended April 2007 for Systems of mechanically fastened flexible roof waterproofing membranes paragraph 2.2 iii.
2. The VTT Expert Services Ltd is authorised to check whether the provisions of this European Technical Approval are met. Checking may take place in the manufacturing plant(s). 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 Annex 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 VTT Expert Services Ltd pursuant 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 VTT Expert Services Ltd. 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 VTT Expert Services Ltd in English. This version corresponds to the version circulated within EOTA. Translations into other languages have to be designated as such.

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. 25

⁴ Official Journal of European Communities N° L 17, 20.1.1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1. Definition of the product and intended use

1.1 Definition of the construction product

Croco fasteners are composed of coloured polypropylene plastic washers and steel screws or concrete nails depending into which substrate they will be fastened. The dimensions of the fastener and screw or nail are chosen depending on the thickness on roof insulation. The length of the fastener can vary between 20 – 660 mm. Figures of the products are in the annex 1.

The fastening system is introduced to the market separately from other components of roof waterproofing membrane kit, and this ETA covers only performance characteristics of the fastening systems. A separate ETA according to ETAG 006 is necessary to cover an entire kit for mechanically fastened roof waterproofing membranes.

1.2 Intended use

The products are intended to be used for fastening of mechanically fastened flexible roof waterproofing and roof insulation into the load bearing roof substrate. The fasteners may be used for bituminous, rubber or plastic membranes.

The provisions made in this ETA are based on an assumed working life of the mechanical fastenings of 10 years provided that the conditions laid down in this section and sections 4.2, 5.1 and 5.2 for the packaging, transport, storage, installation, use maintenance and repair are met.

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.

2. Characteristics of product and methods of verification

The methods of verification and characteristics of the mechanical fastenings evaluated in this ETA are as follows:

ETAG 006 Paragraph	Characteristic (ETAG part 5 paragraph)	Assessment of the characteristic
5.1.1	Mechanical resistance and stability	Not relevant
5.1.2.	Safety in case of Fire	NPD
5.1.3	Hygiene, health and environment	* According to the manufacturers declaration no dangerous substances
5.1.4	Safety in use	
	- Wind uplift resistance, (5.1.4.1)	Fastenings are tested with bitumen membranes according to ETAG 006. The wind uplift performance is mainly determined by roofing membranes. The results of specific kits may be obtained from the ETA holder.
	- Axial pull out performance (Annex D 2.1. of ETAG 006) characteristic values	
	-Steel substrate, 0,72 mm	1,68 kN**
	-Steel substrate 1,25 mm	1,55 kN**
	- Plywood substrate, 18 mm	1,59 kN**
	- Concrete substrate, C 25/30	1.20 kN**
	- Resistance to unwinding	No problems due to unwinding are found to take place in practice
	- Mechanical resistance/brittleness of the plastic fastener(Annex D 2.3 of the ETAG 006)	Meet the drop height of 1700 mm
5.1.5	Protection against noise	Not relevant
5.1.6	Energy economy and heat retention	Not relevant
5.1.7	Aspects of Durability	
	- Corrosion resistance (Annex D 3.1. of ETAG 006)	Meet the requirement (15 cycles)
	- Mechanical resistance of the plastic fastener after heat ageing (Annex D 3.2 of ETAG 006)	No breakage in the drop test (1700 mm)

*In addition of 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 compiled with, when and where they apply.

** Valuaes counted using $\alpha=1$, $k= 1,92$ (acc. Table D1 in EN 1990-2002) and 10 test results and the formula $X_m = \alpha(X_m - k \times s)$

Material properties of the components as well as dimensions and tolerances are laid down in technical information to this ETA which is deposited to VTT Expert Services Ltd.

3. Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the decision 98/143/EC of the European Commission the system 2+ of attestation of conformity applies, since reaction to fire classification is E.

This system of attestation of conformity 2+ is defined as follows:

- (a) Tasks for the manufacturer:
 - (1) initial type-testing of the product;
 - (2) factory production control;
 - (3) testing of samples taken at the factory in accordance with a prescribed test plan;
- (b) Tasks for the notified body:
 - (4) certification of the factory production control on the basis of:
 - initial inspection of factory and of factory production control;
 - continuous surveillance, assessment and approval of the 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 shall be documented in a systematic manner in the form of written policies and procedures, including records of results. This production control system shall ensure that the product is in conformity with this European technical approval.

The manufacturer may only use initial materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the control plan of 16.11.2012 relating to the European Technical approval ETA -12/0495 issued on December 10, 2012 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 with VTT Expert Services Ltd⁵.

The manufacturer may only use initial materials according to the MTD. Manufacturer shall inspect or control the initial materials for acceptance according to the control plan.

The factory production control follows the identifying properties of the components and the example of the control plan is given in ETAG 006.

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

The records shall include at least the following information:

- Names of the products and of initial raw materials,
- Type of inspection or control,
- Date of manufacturing, batch number, if needed, the date of inspection or control,
- Results and as far as applicable, comparison with requirements,
- Signature of the person responsible of the task.

⁵The "control plan" is a confidential part of the European Technical Approval and only handed over to the approved body or bodies involved in the procedure of attestation of conformity. See section 3.2.2.

3.2.1.2 Initial type testing of the product

The initial type testing refers to the product properties stated in the appropriate part of the control plan to this ETA. It follows the example of the control plan as given in the ETAG 006.

If the verifications underlying this ETA have been furnished on samples from the current production, these will replace the initial type testing.

Otherwise the necessary initial type testing shall be carried out in accordance with the provisions of the control plan and observance of the required property values shall be ascertained by the manufacturer.

After changing the production process or starting the production in another manufacturing plant the initial type testing shall be repeated.

3.2.1.3 Other tasks of the manufacturer

The manufacturer shall on the basis of contract involve a body which is notified for the tasks referred to in section 3.1 in the field of insulating materials 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 products are in conformity with the provisions of this ETA and shall mark the product with CE mark according to the clause 3.3.

3.2.2 Tasks of approved bodies

3.2.2.1 Initial inspection of the factory and factory production control

The appropriate part of the control plan states the information on the properties which have to be controlled by the notified body involved for the initial inspection of the factory and factory production control. The notified body shall control devices and equipments and the documentation of the factory production control of the manufacturer when starting the production.

The notified 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 notified 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 ETA,

After changing the production process or starting the production in another manufacturing plant the initial inspection of the factory and factory production control shall be repeated. The notified body shall issue a new certificate of conformity of the factory production control stating the conformity with the provisions of this ETA.

3.2.2.2 Continuous surveillance assessment and approval of the factory and factory production control

The appropriate part of the control plan states the information on the properties which have to be controlled by the notified body involved. The frequency of this task should be once a year.

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

In cases where the provisions of this ETA and its control plan are no longer fulfilled the certification body involved shall withdraw the certificate of conformity and inform VTT Expert Services Oy without delay.

3.3 CE-marking

The CE-marking shall be affixed on the each packaging or on the delivery tickets put into the packages. The symbol "CE" shall be accompanied by the following additional information:

- Identification of the product: Commercial trade name as indicated in this ETA
- Name and address of the ETA holder (legal entity responsible for the manufacture)
- 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,
- The number of the European Technical Approval, ETA-12/0495

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

4.1 Manufacturing

Manufacturing of the products is based on the defined production method, use of defined raw materials and tolerances. If changes take place the manufacturer is responsible before the changes are introduced to clarify to VTT Expert Services Ltd, if the changes have influence on the properties of the product. VTT Expert Services Ltd 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 assessments or alterations of the ETA shall be necessary.

4.2 Installation

The products shall be installed on to the building according to the instructions of the manufacturer. It is the manufacturer's responsibility to provide correct information about the application of the products to the users.

If there is doubt about the suitability of the substrate, e.g. on a construction site, a pullout test on site should be performed to verify the performance of the fastener (see ETAG 006 Annex C). Furthermore, care should be taken during design to ensure that bimetallic corrosion, between metal parts, especially between substrate and screw, does not occur. Also insulation materials, containing substances which can affect the performance of the fasteners must be avoided.

5. Indications to the manufacturer

5.1 Packaging transport and storage

The products are transported to the building site in plastic bags locating in cardboard boxes. The products shall be stored protected from rain and at temperatures between – 40 and + 80 °C before the installation.

5.2 Use, maintenance and repair

In the information accompanying the CE marking the manufacturer shall specify that the product shall be installed following the installation instructions given by the manufacturer.

Note

It is the responsibility of the manufacturer to ensure that the information on the specific conditions according to 1, 2 and 4 is given those concerned. The information may be given by copying of the ETA. In addition all installation data shall be shown clearly on the package and/or separate instruction sheet.

On behalf of VTT Expert Services Ltd

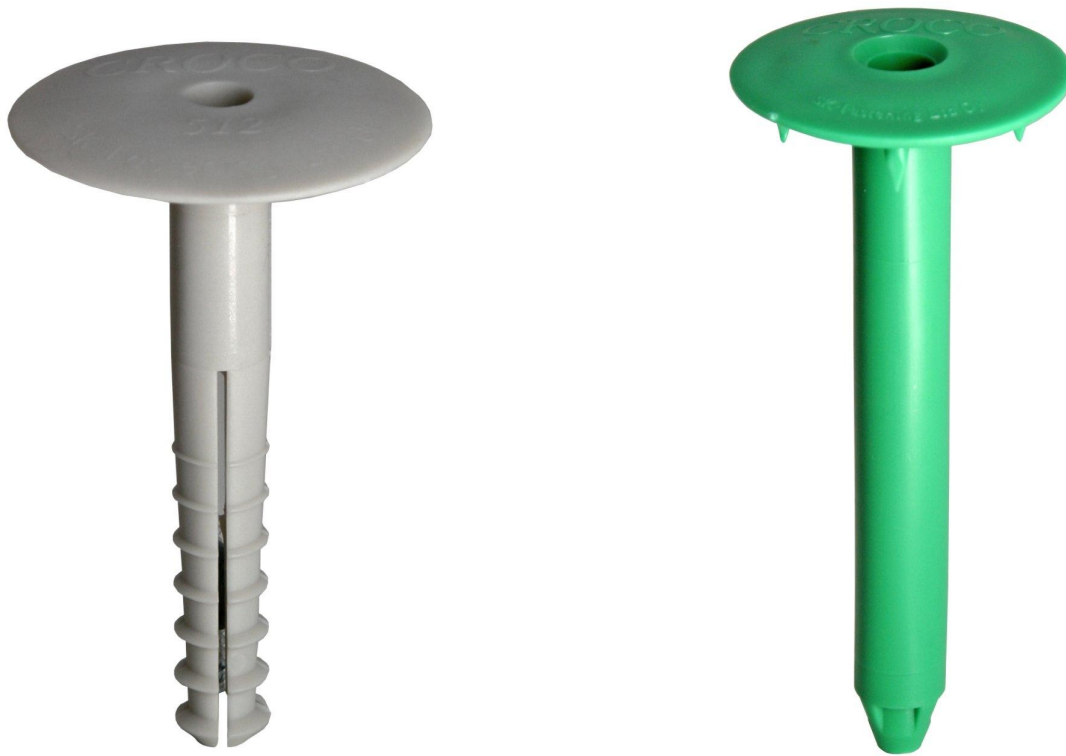
Espoo December 10, 2012



Lina Markelin-Rantala
Team Manager



Liisa Rautiainen
Assessment Manager



Picture 1. Croco 512 and Croco A washers



Picture 2. Croco B washer