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Authorised and notified according to Article 10 of the 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

**MEMBER OF EOTA**

## **European Technical Approval No. ETA-12/0056**

Trade name:	Milletech Fastening System
Holder of approval:	Milles Teknikplast AB Bergsjödalen 55 S-415 23, Gothenburg Sweden
Generic type and use of construction product:	Fasteners for mechanically fastened flexible roof waterproofing systems
Valid from:	12.04.2012
to:	12.04.2017
Manufacturing plant:	Milles Teknikplast AB Bergsjödalen 55 S-415 23, Gothenburg Sweden
This European Technical Approval contains:	9 pages including 2 Annexes which form an integral part of the document



European Organisation for Technical Approvals

## I LEGAL BASIS AND GENERAL CONDITIONS

- 1 This European Technical Approval is issued by SINTEF Building and Infrastructure in the following called SINTEF, 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<sup>1</sup>, modified by the Council Directive 93/68/EEC<sup>2</sup> and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council<sup>3</sup>
  - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex of Commission Decision 94/23/EC<sup>4</sup>.
  - ETA Guideline No. 006 edition March 2000, 6<sup>th</sup> amended draft 2007-01-05 for Systems of mechanically fastened flexible roof waterproofing membranes, paragraph 2.2 iii.
- 2 SINTEF 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 manufacturers other than those indicated on page 1 of this European Technical Approval.
- 4 This European Technical Approval may be withdrawn by SINTEF in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.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 SINTEF. 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 in EOTA. Translations into other languages have to be designated as such.

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<sup>1</sup> Official Journal of the European Communities N° L40, 11.2.1989, p. 12

<sup>2</sup> Official Journal of the European Communities N° L 220, 30.08.1993, p. 1

<sup>3</sup> Official Journal of the European Union N° L 284, 31.10.2003, p. 1

<sup>4</sup> Official Journal of the European Communities N° L17, 20.1.1994, p. 34

## **II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL**

### **1 Definition of the fasteners and intended use**

#### **1.1 Definition of the product**

Milletech Fastening System is used for mechanical fastening of bituminous and polymeric roofing membranes on flat, compact roofs. The supporting roof structure shall be of steel as defined in ETA Guideline 006. The system consist of screw and tube washers for fixing of membrane roofing to metal sheets as illustrated in [Annex 1](#).

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

#### **1.2 Intended use**

##### *1.2.1 General*

The fasteners may be used for all types of flexible membranes. The Quadro T tube washer with barbs is preferably used together with polymeric membranes and the Quadro tube washer without barbs is preferably used together with bituminous membranes. The supporting roof structure shall consist of profiled steel decks and the Milletech Fastening System may be used with membranes installed on a thermal insulation material or directly to the supporting roof underlay.

##### *1.2.2 Assumed working life*

The provisions made in this European Technical Approval are based on an assumed intended working life of 10 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.

### **2 Characteristics of the product and methods of verification**

#### **2.1 Mechanical resistance and stability (ER1)**

Not relevant.

#### **2.2 Safety in case of fire (ER2)**

No performance determined. The reaction to fire of roof waterproofing kits is determined for the complete kits including the membrane.

#### **2.3 Hygiene, health and environment (ER3)**

According to the manufacturer's declaration the screw with corrosion protection contains no chromium 6 compounds. Consequently the products do not contain any dangerous substances according to the EU database<sup>5</sup>.

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<sup>5</sup> In addition to the specific clauses relating to dangerous substances contained in this European Technical Approval, there may be other requirements applicable to the product 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 and where they apply.

#### **2.4 Safety in use (ER4)**

The fasteners have been tested for wind uplift according to ETA Guideline 006, edition March 2000. Axial pull out performance from substrates and resistance to unwinding are shown in Annex 2. The wind uplift performance of roof waterproofing kits is mainly determined by the roofing membranes. Wind load tests with bituminous and polymeric membranes have been executed. The membranes are fixed with tube washers and screws to a substrate of steel. The complete test reports may be obtained from Milles Teknikplast AB.

#### **2.5 Protection against noise (ER5)**

Not relevant

#### **2.6 Energy consumption and heat retention (ER6)**

Not relevant

#### **2.7 Aspects of durability**

The plastic fasteners produced of polypropylene and polyamide satisfy the aspects of durability according to ETAG 006 ch. 5.3.7, see Annex 2. The Milletech tube washers made of polypropylene have an acceptable resistance to brittleness according to ETAG 006 ch. 5.3.4, see Annex 2.

The carbon steel screw fastener has a corrosion-protection of Ruspert coating. The screw corresponds to corrosion protection according to ETAG 006 ch.5.3.7, see Annex 2. Test procedure is 15 cycles Kesternich (2L SO<sub>2</sub>).

#### **2.8 Identification**

The characteristic values of detailed product dimensions and respective tolerances are stated in the manufacturer's technical dossier and form a part of the control plan for the factory production control. Both tube washers are marked with milletech®. All packaging must be marked with product type and time of production.

### **3 Evaluation of Conformity and CE marking**

#### **3.1 System of Attestation of Conformity**

According to Decision 98/143/EC by the European Commission the system 2+ of attestation of conformity applies. This system of attestation of conformity is defined as follows:

- (a) Tasks of the manufacturer: - Factory production control;
  - Initial type testing of the product;
  - testing of samples taken at the factory in accordance with a prescribed test plan
  
- (b) Tasks of the notified body: certification of factory production control on the basis of:
  - Initial inspection of the factory and factory production control (FPC);
  - Continuous surveillance, assessment and approval of factory production control.

## **3.2 Responsibilities**

### **3.2.1 Tasks of the manufacturers**

#### *Factory production control*

The manufacturer shall exercise permanent internal control of the production. All the elements, requirements and provisions adopted by the manufacturers shall be documented in a systematic manner in the form of written policies, procedures and a control plan, including records of results performed. This production control system shall ensure that the products are in conformity with this European technical approval. The factory production control includes checking of incoming materials and process controls.

The manufacturer shall use raw materials or components that comply with the specifications in the control plan. The results of the factory production control shall be recorded and evaluated. The records shall include at least the following information:

- Name of the product and the raw materials
- Type of inspection or control
- Date of manufacture, batch number, and date of inspection or control of the product
- Results of inspections or controls and, as far as applicable, comparison with requirements
- Signature of the person responsible for factory production control

The records shall be kept for at least five years. Further information concerning tests, their frequency and tolerances, is included in the control plan which is deposited at SINTEF.

#### *Initial type-testing of the product*

Approval tests have been conducted by SINTEF and other notified testing bodies in Europe in accordance with ETA Guideline N° 006 . SINTEF has assessed the results of these tests in accordance with ETAG 006 ch. 6, and the product characteristics determined by the initial test programme have been found acceptable to serve as initial type-testing.

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

#### *Other tasks of the manufacturer*

The manufacturer shall, on the basis of a contract, involve a body/bodies which is/are notified for the tasks referred to in section 3.1 in the field of the product in order to undertake the actions laid down in section 3.2.2. For this purpose, the control plan referred to in section 3.2.2 shall be handed over by the manufacturer to the notified body/bodies involved.

The manufacturer shall make a declaration of conformity, stating that the product is in conformity with the provisions of this ETA.

### **3.2.2 Tasks of notified bodies**

#### *Initial inspection of 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 initial inspection of factory and factory production control. The notified body has to control the devices and equipments and the documentation of the factory production control of the manufacturer when starting the production or starting a new production line.

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 factory and factory production control shall be repeated. The notified body shall issue a new EC certificate of conformity of the factory control stating the conformity with the provisions of this ETA.

#### *Continuous surveillance, assessment and approval of factory production control*

The notified body shall perform continuous surveillance and assessment of the manufacturer's factory production control, and confirm that the controls are made in conformity with the established control plans approved by SINTEF.

The notified body 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 SINTEF without delay.

### **3.3 CE marking**

The CE mark shall be affixed to the components, an attached label, the packaging, or the accompanying commercial documents. The symbol "CE" shall be followed by the following additional information:

- name and address or identifying mark of the manufacturer
- last two digits of the year in which the CE marking was affixed
- number of the EC certificate for the factory production control
- number of the European Technical Approval
- ETAG 006

## **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 SINTEF, 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 SINTEF before the changes are introduced. SINTEF 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 and design**

#### *General*

The fasteners must be installed according to the manufacturer's instructions. It is the manufacturer's responsibility to provide correct information about the application of the products to the users. The insulation material should have a compressive strength  $\geq 60$  kPa at 10% deformation according to EN 826.

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. Likewise, use of insulation materials containing substances which can affect the performance of the fasteners must be avoided.

*Fastening in metal decks*

Load bearing decks made of profiled steel sheets shall have a minimum thickness of 0.7 mm. In particularly exposed areas the recommended minimum thickness is 0.8 mm for fixing roofing membranes to the steel decks. Thickness 0,65 mm is acceptable in some countries when the yield strength of the steel is minimum 350 MPa.

**5 Indications to the manufacturer****5.1 Packaging, transport and storage**

The fasteners shall be handled and stored with care and be protected from accidental damage.

**5.2 Use, maintenance, repair**

It is the responsibility of the manufacturer to ensure that proper information for the use of the Milletech Fastening System is available at each delivery, including general guidance on the basis of this ETA. The assessment of the fitness for use is based on the assumption that a normal maintenance of the fasteners is performed. Further details about maintenance is stated in the manufacturer's installation guide.

SINTEF Building and Infrastructure  
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