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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 ETA-05/0209

Trade name:

Scanflax insulation boards

Holder of approval:

Fibre Tech A/S
Maltrup Vænge 10
DK-4990 Sakskøbing
Tel. +45 70 20 06 77
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Generic type and use of construction product:

Thermal and/or acoustic insulation made from flax fibres

Valid from:
to:

2007-01-09
2012-01-09

Manufacturing plant:

Fibre Tech A/S
Maltrup Vænge 10
DK-4990 Sakskøbing

This European Technical Approval contains:

10 pages



European Organisation for Technical Approvals

Europæisk Organisation for Tekniske Godkendelser

I LEGAL BASIS AND GENERAL CONDITIONS

- 1 This European Technical Approval is issued by ETA-Danmark A/S 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, as amended by Council Directive 93/68/EEC of 22 July 1993² and Regulation no. 1882/2003 of the European Parliament and of the Council³.
 - Bekendtgørelse 559 af 27-06-1994 (afløser bekendtgørelse 480 af 25-06-1991) om ikrafttræden af EF direktiv af 21. december 1988 om indbyrdes tilnærmelse af medlemsstaternes love og administrative bestemmelser om byggevarer.
 - Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex to Commission Decision 94/23/EC⁴.
 - Common understanding of assessment procedure for Factory made thermal insulation material and/or acoustic insulation material made of vegetable or animal fibres, edition June 2003
- 2 ETA-Danmark A/S is authorized 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, or manufacturing plants other than those indicated on page 1 of this European Technical Approval.
- 4 This European Technical Approval may be withdrawn by ETA-Danmark A/S pursuant 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 ETA-Danmark A/S. 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 This European Technical Approval is issued by ETA-Danmark A/S in Danish. 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° L40, 11 Feb 1989, p 12.

2 Official Journal of the European Communities N° L220, 30 Aug 1993, p 1.

3 Official Journal of the European Union no. L 284, 31.10.2003, p. 1

4 Official Journal of the European Communities N° L 17, 20 Jan 1994, p 34.

II SPECIAL CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product and intended use

1.1 Definition of the products

This European Technical Approval applies to the following insulation product:

Scanflax isoleringsmåtte af hør:

This product is manufactured in the form of boards of:

Nominal thickness:	50 mm and 100 mm
Nominal length:	900 mm
Nominal width:	600 mm

The product consists of 95 % flax fibres with a content of synthetic fibre/polypropylene/polyethylene binder of approx. 5 %. The product does not contain a flame retardant.

The insulation material is not faced.

1.2 Intended use

The flax insulation boards Scanflax Isoleringsmåtte af hør are used as non loadable thermal and acoustic insulating material mainly for the following intended uses:

Area of application for walls

- Insulation material for external walls in light wood constructions (nogging piece construction, timber frame construction) and log houses
- Solid construction with external insulating system (external fixed wooden load-bearing system with intermediate insulating wool and panelling)
- Partition-insulation as thermal and acoustic insulation

Area of application for roofs

- Pitched roofs with ventilation
- Pitched roofs without ventilation (full rafter insulation)
- Flat roof with upper covering ($\mu.d \leq 0,2$ m) and ventilated cavity under the waterproofing
- Pitched roof construction with insulation under the load bearing rafters

Area of application for ceilings / floors

- Ceilings with thermal insulation between or above the load-bearing structure
- Insulation material between floor-joists under floor constructions
- Acoustic and thermal insulation material in intermediate ceilings

The insulation products shall not be used in structures where it will be exposed to wetting or weathering and in such with direct contact to soil.

The provisions made in this ETA are based on an assumed intended working life of the insulation product of 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 product in relation to the expected economically reasonable working life of the works.

2 Characteristics of products and methods of verification

2.1 Composition and manufacturing process

The insulation product shall as far as its composition and manufacturing process is concerned, correspond the product subject to the approval tests. Details of composition and manufacturing process are deposited at ETA-Danmark A/S.

2.2 Dimensions

The thickness of the products is determined according to EN 823⁵. The test is carried out with a load of 50 Pa

The deviation from nominal thickness does not exceed:

- 5 % or -5⁶ mm
+15 % or +15⁷ mm

The length of the products is determined according to EN 822⁸. The deviation from the nominal length does not exceed ± 2 %.

The width of the products is determined according to EN 822. The deviation from the nominal width does not exceed $\pm 1,5$ %.

2.3 Squareness

The squareness of the boards is determined according to EN 824⁹. The deviation from squareness on length and width does not exceed 5 mm/m.

2.4 Density

The density of the products is determined according to EN 1602¹⁰. The density is at least 25 kg/m³ and does not exceed 30 kg/m³.

2.5 Water absorption

No performance determined

2.6 Water vapour diffusion factor

No performance determined

5 EN 823: 1994 Thermal insulation products for building applications – Determination of thickness

6 The highest value is relevant

7 The lowest value is relevant

8 EN 822: 1994 Thermal insulation products for building applications – Determination of length and width

9 EN 824:1994 Thermal insulation products for building applications – Determination of squareness

10 EN 1602:1996 Thermal insulation products for building applications – Determination of the apparent density

2.7 Dimensional stability under specified temperature and humidity

The dimensional stability of the products is determined according to EN 1604¹¹. The test is carried out after conditioning at a temperature of $80\text{ °C} \pm 2$ and $50\% \text{ RH} \pm 5$ for 48 h.

The change of dimensions in length $\Delta\varepsilon_l$ is $\pm 0,2\%$

The change of dimensions in width $\Delta\varepsilon_b$ is $\pm 0,2\%$

The change of dimensions in thickness $\Delta\varepsilon_d$ is $\pm 1,2\%$

2.8 Tensile strength parallel to the faces

The tensile strength of the products is tested in accordance with EN 1608¹². The tensile strength of the insulation products is sufficient to support twice the weight of the product.

2.9 Airflow resistance

The airflow resistance of the products is determined according to EN 29053 – Method A¹³. The mean longitudinal airflow at a density of approx. 29 kg/m^3 is $3,1 \pm 0,5\text{ kPas/m}^2$ (minimum value $2,7\text{ kPas/m}^2$).

2.10 Sound absorption

The sound absorption coefficient is determined according to EN ISO 354¹⁴ with a mounting depth of 50 mm and 100 mm respectively (type A mounting) and the sound absorption characteristics are calculated according to EN ISO 11654¹⁵.

Scanflax boards, thickness 50 mm	
Frequency, f Hz	α_p
125	$0,25 \pm 0,15$
250	$0,50 \pm 0,10$
500	$0,70 \pm 0,05$
1000	$0,80 \pm 0,10$
2000	$0,85 \pm 0,10$
4000	$0,90 \pm 0,10$
α_w	0,75

11 EN 1604: 1996 Thermal insulation products for building applications – Determination of dimensional stability under specified temperature and humidity conditions

12 EN 1608: 1996 Thermal insulation products for building applications – Determination of tensile strength parallel to faces

13 EN 29053:1993 Acoustics – Materials for acoustical applications – Determination of airflow resistance

14 EN ISO 354:2003 Acoustic measurement of sound absorption in a reverberating room

15 EN ISO 11654: 1997 Sound absorbers for use in buildings – Rating of sound absorption

Scanflax boards, thickness 100 mm	
Frequency, f Hz	α_p
125	0,50 ± 0,15
250	0,80 ± 0,10
500	0,95 ± 0,05
1000	0,95 ± 0,10
2000	1,00 ± 0,10
4000	1,00 ± 0,10
α_w	1,00

2.11 Thermal conductivity

The thermal conductivity of the products is determined according to European standard EN 12667¹⁶. The declared value of thermal conductivity is determined according to EN 10 456¹⁷.

The fractile value of thermal conductivity for the density range of 25 – 30 kg/m³ is $\lambda_{(10, \text{dry}, 90/90)} = 0,042$ W/(mK) representing at least 90 % of the production with a confidence limit of 90 %.

The fractile value of thermal conductivity for the density range of 25 – 30 kg/m³ is $\lambda_{D(23, 50)} = 0,042$ W/(mK) determined by conversion of the $\lambda_{(10, \text{dry}, 90/90)}$ – value.

For conversion of humidity the following applies:

The moisture content mass by mass at 23 °C/50 % RH

$$u_{23, 50} = 0,0639 \text{ kg/kg}$$

The moisture content conversion coefficient mass by mass

$$f_{u1(\text{dry} - 23/50)} = -0,0586 \text{ kg/kg}$$

No performance is determined for the conversion factor to high moisture content.

2.12 Reaction to fire

The reaction to fire classification of the product is declared as **class F** according to EN 13501-1¹⁸.

2.13 Resistance to biological agents

The test and assessment of the resistance to growth of mould fungus have been verified according to annex C of the CUAP. The product is classified as class 5, i.e. no fungistatic effect.

2.14 Corrosion developing capacity on metal construction products

The test and assessment of the corrosion developing capacity have been verified according to annex E of the CUAP. The product shows no notches or perforations

16 EN 12667: 2001 Thermal performance of building materials and products – Determination of thermal resistance by means of guarded hot plate and heat flow meter methods – Products of high and medium thermal resistance

17 EN ISO 10456:2000 Thermal insulation – Building materials and products – Determination of declared and design values

18 EN 13501-1:2002 Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests

2.15 Retention of additives

The product does not contain any additives.

2.16 Dangerous substances

The products contain no dangerous substances. A declaration of conformity in this respect was made by the manufacturer.

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 and where they apply.

3 Evaluation of Conformity and CE marking

3.1 Attestation of Conformity system

The system of attestation of conformity specified by the European Commission the mandate for thermal insulating products is system 3 described in Council Directive (89/106/EEC), Annex III, 2(ii), *Second possibility* and is detailed as follows:

- a) Tasks for the manufacturer:
 - (1) Factory production control,
- b) Tasks for the notified body:
 - (1) Initial type testing of the product,

3.2 Responsibilities

3.2.1 Tasks of the manufacturer

3.2.1.1 Factory production control

The manufacturer has a factory production control system in the plant and exercises 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. This production control system ensures that the product is in conformity with the 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 [date] relating to the European technical approval ETA - issued on [date] 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 ETA-Danmark A/S.¹⁹

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

The results of factory production control are recorded and evaluated. The records include at least the following information:

- Designation of the product, basic material and components;
- Type of control or testing;
- Date of manufacture of the product and date of testing of the product or basic material and components;
- Result of control and testing and, if appropriate, comparison with requirements;
- Signature of person responsible for factory production control.

The records shall be presented to ETA-Danmark A/S on request

3.2.2. Tasks of notified bodies

3.2.2.1 Initial type testing of the product

For initial type-testing the results of the tests performed as part of the assessment for the European Technical Approval shall be used unless there are changes in the production line or plant. In such cases the necessary initial type testing has to be agreed between ETA-Danmark A/S and the notified body

¹⁹ The "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.

3.3 CE marking

The CE marking shall be affixed on each packaging of the product. The initials "CE" shall be accompanied by the following information:

- Name or identifying mark of the manufacturer
- The last two digits of the year in which the marking was affixed
- Number of the European Technical Approval
- Name and size of product
- Nominal dimensions of length, width and thickness
- Thickness tolerance
- Deviation from squareness
- Density range
- Declared value of thermal conductivity
- Conversion factor to high moisture content
- Class of reaction to fire
- Dimensional stability under specified temperature and humidity
- Airflow resistance
- Weighted sound absorption coefficient
- Resistance to biological actions

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 ETA-Danmark A/S, 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 ETA-Danmark A/S before the changes are introduced. ETA-Danmark A/S 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 Parameters for the design of construction works or parts of construction works

4.2.1.1 Design value of thermal conductivity

The design value of thermal conductivity shall be defined in accordance with the relevant national provisions.

The construction shall be designed and installed in such a way that no harmful condensation occurs within the works.

4.2.2 Parameters for the installation in the construction works or parts of construction works

The fitness of the flax insulation board for the intended use is given under the following condition:

- Installation carried out by appropriate personnel under the supervision of the project representative
- Installation in accordance with the manufacturer's specifications (directions of use)

4.2.3 Use of the insulation products as airborne sound insulation

In case of use of the products as airborne sound insulation it is necessary to determine the airborne sound insulation for the specific construction work in question in accordance with the relevant technical rules in force.

5 Indications to the manufacturer

5.1 Packaging, transport and storage

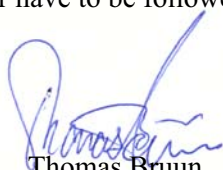
Packaging of the products has to be such that they are protected from moisture during transport and storage unless other measures are foreseen by the manufacturer for this purpose.

The insulation product shall only be stored on the cut side.

5.2 Recommendations on installation

The product has to be protected from moisture during installation.

The processing guidelines of the manufacturer have to be followed.


Thomas Bruun
Manager ETA-Danmark