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

DIBt

Mitglied der EOTA
Member of EOTA

European Technical Approval ETA-09/0023

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung *Trade name*	Flachshaus Wärmedämmplatte DP, Naturaflax, HAGA-Flachsdämmplatte, Dämmplatte DP
Zulassungsinhaber *Holder of approval*	Flachshaus GmbH Werk für Vliesstoffe Tannenkoppelweg 1 16928 Falkenhagen DEUTSCHLAND
Zulassungsgegenstand und Verwendungszweck *Generic type and use of construction product*	Wärmedämmstoff aus Flachsfasern *Thermal insulation product made of flax fibres*
Geltungsdauer: vom *Validity: from* bis *to*	8 July 2010 5 January 2014
Herstellwerk *Manufacturing plant*	Flachshaus GmbH Werk für Vliesstoffe Tannenkoppelweg 1 16928 Falkenhagen DEUTSCHLAND Waldviertler Flachshaus GmbH Oberwaltenreith 10 3533 Friedersbach ÖSTERREICH DEUTSCHLAND

Diese Zulassung umfasst *This Approval contains*	8 Seiten *8 pages*
Diese Zulassung ersetzt *This Approval replaces*	ETA-09/0023 mit Geltungsdauer vom 06.01.2009 bis 05.01.2014 *ETA-09/0023 with validity from 06.01.2009 to 05.01.2014*

I LEGAL BASES AND GENERAL CONDITIONS

1 This European technical approval is issued by Deutsches Institut für Bautechnik 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 Council Directive 93/68/EEC[2] and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council[3];
- Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998[4], as amended by law of 31 October 2006[5];
- Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC[6].

2 Deutsches Institut für Bautechnik 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 Deutsches Institut für Bautechnik, 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 Deutsches Institut für Bautechnik. 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 L 40, 11 February 1989, p. 12
2 Official Journal of the European Communities L 220, 30 August 1993, p. 1
3 Official Journal of the European Union L 284, 31 October 2003, p. 25
4 *Bundesgesetzblatt Teil I 1998*, p. 812
5 *Bundesgesetzblatt Teil I 2006*, p.2407, 2416
6 Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product and intended use

1.1 Definition of the construction product

This European technical approval applies to the thermal insulation boards with the designations "Flachshaus Wärmedämmplatte DP", "Naturaflax", "HAGA-Flachsdämmplatte" and "Dämmplatte DP".

The thermal insulation boards are made of flax fibres, potato starch as binding agent and a fire protection equipment based on borat which also serves for the protection against mould growth.

The thermal insulation boards are made with the following dimensions:

Nominal thickness: minimum 30 mm to 200 mm maximum

Nominal length: 700 mm to 1500 mm

Nominal widths: 300 mm to 1000 mm

The information concerning the dimensions corresponds to the manufacturer's delivery program.

The thermal insulation boards are not coated.

1.2 Intended use

The thermal insulation boards, not exposed to compression loads, can be used for the following intended uses:

Area of application: Walls

- Cavity insulation of external walls of timber frame constructions and similar structures
- Internal insulation of external walls between a supporting structure
- Cavity insulation in internal walls

Area of application: Roofs and ceilings/floors

- Insulation between rafters and timber beams as well as in cavities of corresponding structures
- Insulation on non-walkable but accessible top storey ceilings
- Internal insulation of ceiling or roof, e. g. insulation beneath the loadbearing construction (e. g. rafters), suspended ceiling
- Cavity insulation between flooring joist battens and similar substructures

The thermal insulation boards shall only be installed in structures where they are protected from precipitation, weathering and moisture.

In external walls, which towards the outside end with a curtain wall (ventilated façade), the thermal insulation boards shall be built in only, if they are protected by a covering towards the ventilation plane. An application directly behind the ventilation plane is inadmissible.

As to the application of the insulation product, the respective national regulations shall in addition be observed.

The provisions made in this European technical approval are based on an assumed working life of the thermal insulation boards of 50 years, provided that the conditions laid down in sections 4.2, 5.1 and 5.2 for packaging, transport, storage, installation and use 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

2.1 Composition and production methods

With regard to composition and production method the thermal insulation boards shall correspond to those which were the basis for the approval tests. Composition and production methods are deposited with Deutsches Institut für Bautechnik. See also clause 4.1.

The product meets the product type 2 according to the EOTA assessment criteria ("Factory-made thermal insulation material and/or acoustic insulation material made of vegetable or animal fibres", Edition June 2003, Rev. 1 June 2005, Rev. 2 October 2009)[7].

2.2 Dimensions

The thickness is determined according to the standard EN 823:1994-07. The test is performed with a load of 50 Pa.

The deviation from the nominal thickness does not amount to more than:

-5 % or[8] –5 mm or +15 % or[9] +15 mm.

On the basis of the standard EN 13162:2008-11, Table 1, the class for thickness tolerances is T2.

Length and width of the thermal insulation boards are determined according to the standard EN 822:1994-07. The deviation from the nominal length is not more than ± 2 %. The deviation from the nominal width does not exceed the value of ± 1.5 %.

The squareness is determined according to the standard EN 824:1994-07. The deviation from the squareness in the direction of length and width does not amount to more than 5 mm/m.

The flatness is determined according to the standard EN 825:1994-07. The deviation from the flatness does not exceed the value of 6 mm.

2.3 Density

The density of the thermal insulation boards is determined according to the standard EN 1602:1996-11. It amounts to at least 30 kg/m^3 and does not exceed the value of 50 kg/m^3.

2.4 Water absorption

The water absorption of the thermal insulation boards is determined according to the standard EN 1609:1996 + A1:2006, method A. The mean value of water absorption for a board with a thickness of 110 mm at a checked density of 42 kg/m^3 was 1.05 kg/m^2.

2.5 Dimensional stability under specified temperature and humidity conditions

Dimensional stability of the thermal insulation boards is determined according to the standard EN 1604:1996 + A1:2006. The test is performed after a 48 h storage at (70 ± 2) C° and (50 ± 5) % relative humidity.

The dimensional changes in lengths and widths amount to a maximum of ± 1 %.

The dimensional changes in thickness amount to a maximum of ± 2 %.

2.6 Tensile strength

The tensile strength of the thermal insulation boards parallel to faces according to the standard EN 1608:1996-11 suffices to support twice the self-weight of the product.

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7 Deposited with Deutsches Institut für Bautechnik

8 Whichever gives the greatest numerical tolerance

9 Whichever gives the smallest numerical tolerance

2.7 Thermal conductivity

The thermal conductivity of the thermal insulation boards is determined at a reference temperature of 10° C according to EN 12667:2001-01. The declared value of thermal conductivity, determined according to the standard EN ISO 10456:2007-12 for a moisture content of the insulation product at 23 °C/50 % relative air humidity, amounts to

Category 1: λ_D = 0.039 W/(m·K)

Category 2: λ_D = 0.038 W/(m·K)

The declared value of category 1 is representative for at least 90 % of the production with a confidence level of 90 %.
For the admissible deviation of an individual value of the thermal conductivity from the declared value the method described in EN 13172:2001+A1:2005, Annex F applies.

The declared value of category 2 is based on a limit value, which must not be exceeded during production. The limit value of the thermal conductivity under dry conditions is $\lambda_{10,dry}$ = 0.0374 W/(m·K).

The declared values of thermal conductivity apply to the density range given in section 2.3.

For conversion of humidity the following applies:

- mass-related moisture content at 23 °C/50 % relative air humidity: u = 0.064 kg/kg
- mass-related moisture content at 23 °C/80 % relative air humidity: u = 0.138 kg/kg
- mass-related moisture conversion coefficient: $f_{u1(dry-23/50)}$ = 0.229
- mass-related moisture conversion coefficient: $f_{u2(23/50-23/80)}$ = 0.399
- moisture conversion factor: $Fm_{(dry-23/50)}$ = 1.015
- moisture conversion factor: $Fm_{(23/50-23/80)}$ = 1.03

2.8 Reaction to fire

The reaction to fire of the thermal insulation boards is tested according to the standard EN ISO 11925-2:2002-02 and classified according to the standard EN 13501-1:2007. The thermal insulation boards meet the criteria of class E according to EN 13501-1.

2.9 Resistance to mould growth

Verification of the resistance to mould growth was performed according to the EOTA testing procedure ("Factory-made thermal insulation material and/or acoustic insulation material made of vegetable or animal fibres", Edition June 2003, Rev. 1 June 2005, Rev. 2 October 2009)[7]. The assessment of the fungoid growth according to the standard EN ISO 846:1997-06, Table 4, resulted in the evaluation level 0.

2.10 Corrosion-developing capacity

No performance determined.

2.11 Retention of additives

The verification of the retention of additives according to the EOTA testing procedure ("Factory-made thermal insulation material and/or acoustic insulation material made of vegetable or animal fibres" Edition June 2003, Rev. 1 June 2005, Rev. 2 October 2009)[7] was passed.

2.12 Emission of dangerous substances or radiation

Note: 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.

With regard to health protection the product meets the product type 2 according to the EOTA assessment criteria ("Factory-made thermal insulation material and/or acoustic insulation material made of vegetable or animal fibres", Edition June 2003, Rev. 1 June 2005, Rev. 2 October 2009)[7].

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the Decision 1999/91/EC of the European Commission[10] amended by decision 2001/596/EC[11] system 3 of the attestation of conformity applies.

This system of attestation of conformity is defined as follows:

System 3: Declaration of conformity of the product by the manufacturer on the basis of:

(a) Tasks for the manufacturer:

(1) factory production control;

(b) Tasks for the approved body:

(2) initial type-testing of the product.

Note: Approved bodies are also referred to as "notified bodies".

3.2 Responsibilities

3.2.1 Tasks for 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 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 8 July 2010 relating to the European technical approval ETA-09/0023 issued on 8 July 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 with Deutsches Institut für Bautechnik.[12]

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 for the manufacturer

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 insulation products 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 the European technical approval ETA-09/0023 issued on 8 July 2010.

10 Official Journal of the European Communities L 29/44 of 03.02.1999

11 Official Journal of the European Communities L 209/33 of 02.08.2001

12 The control plan is a confidential part of the documentation of this European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

3.2.2 Tasks for the approved bodies

The approved body shall perform the

- initial type-testing of the product

in accordance with the provisions laid down in the control plan.

For initial type-testing the results of the test carried out as part of the assessment for the European technical approval shall be used, provided nothing changes in the production or at the factory. Otherwise the necessary initial type-testing shall be agreed on between Deutsches Institut für Bautechnik and the approved bodies involved.

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.

3.3 CE marking

The CE marking shall be affixed on the product, on a label attached to the product, on the packaging or on the accompanying commercial documents, e. g. the EC declaration of conformity. The letters "CE" shall be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE marking was affixed,
- the number of the European technical approval,
- identification of the product (trade name),
- product type 2 with regard to health protection,
- nominal dimensions of length, width and thickness,
- thickness tolerance,
- density,
- declared value of thermal conductivity for Category 1 and/or Category 2,
- reaction to fire: class E according to EN 13501-1,
- dimensional stability under specified temperature and humidity conditions

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 Deutsches Institut für Bautechnik, 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 Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Installation

The thermal insulation boards shall only be installed in structures where they are protected from precipitation, weathering and moisture.

When installed the installation instructions given by the manufacturer shall be taken into account.

The conditions according to clause 1.2 shall be observed.

The reaction to fire of class E according to EN 13501-1 is not proved if the thermal insulation boards are supplementary provide with coatings, laminations or the like.

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 laid down according to relevant national provisions.

4.2.1.2 Nominal thickness

When calculating the thermal resistance, the nominal thickness of the thermal insulation boards shall be applied.

4.2.1.3 Water vapour diffusion resistance coefficient

For the determination of the diffusion-equivalent air layer thickness of the insulation layer the water vapour diffusion resistance factor μ = 1 and/or 2 shall be applied for calculating[13].

5 Indications to the manufacturer

5.1 Packaging, transport and storage

Packaging of the product shall be performed such that the thermal insulation boards are protected from moisture during transport and storage, unless other measures are foreseen by the manufacturer for this purpose.

5.2 Use, maintenance, repair

In the information accompanying the CE marking the manufacturer shall specify that the product is to be installed according to the installation instructions of the manufacturer and protected from moisture during transport, storage and installation.

Dipl.-Ing. Bender
Deutsches Institut für Bautechnik
Berlin, 8 July 2010

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13 The more unfavourable value for the construction works shall be applied each.