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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)

Deutsches Institut für Bautechnik

DIBt

Mitglied der EOTA
Member of EOTA

European Technical Approval ETA-11/0204

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung *Trade name*		Thermo-Hanf Fill
Zulassungsinhaber *Holder of approval*		Hock GmbH & Co. KG Industriestraße 2 86720 Nördlingen DEUTSCHLAND
Zulassungsgegenstand und Verwendungszweck *Generic type and use of construction product*		Dämmstoff aus losen, ungebundenen Hanfschäben *Insulation material made of loose, free hemp shives*
Geltungsdauer: *Validity:*	vom *from* bis *to*	23 June 2011 22 June 2016
Herstellwerk *Manufacturing plant*		Hock GmbH & Co. KG Industriestraße 2 86720 Nördlingen DEUTSCHLAND

Diese Zulassung umfasst *This Approval contains*	8 Seiten *8 pages*

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 the product and intended use

1.1 Definition of the construction product

This European technical approval applies to the insulation material made of loose, free hemp shives with the designation:

"Thermo Hanf Fill"

The hemp shives are produced from hemp plants by mechanical crushing. During the manufacturing process the product is provided with a fire protection equipment.

1.2 Intended use

The insulation material serves for the production of insulation layers, not exposed to compression loads, by means of manual processing at the place of use.

The insulation material can be used for the following intended uses:

- Cavity insulation of floors (between timber beams or flooring joist battens)

The insulation material shall only be installed in structures where it is protected from wetting, weathering and moisture. The insulation material shall be installed in dry conditions.

As to the application of the insulation material, 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 insulation material of 50 years, provided that the conditions laid down in sections 4.2, 5.1 and 5.2 for the 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 the product and methods of verification

2.1 Composition and production methods

With regard to composition and production method the insulation material shall correspond to that which was 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 ("In situ formed loose fill thermal insulation material and/or acoustic insulation material made of vegetable or animal fibres" Edition June 2003, Revision July 2009)[7].

2.2 Bulk density

The bulk density of the insulation material is determined according to ISO/CD 18393[8]. The bulk density (individual value) amounts to at least 120 kg/m³ and does not exceed 140 kg/m³.

[7] Deposited with Deutsches Institut für Bautechnik.

[8] ISO/CD 18393:2002-08 Thermal insulation – Accelerated ageing of thermal insulation materials – Assessment of settling of loose-fill thermal insulation used in attic and closed cavity applications

2.3 Settlement

The settlement is determined according to ISO/CD 18393[8] following the test methods stated in Table 2. The maximum values of settlement stated in Table 2 are not exceeded.

Table 2: Settlement depending on the test method

Test method according to ISO/CD 18393	maximum settlement in %
Method A – Settling by impact excitation	5
Method D – Settling by specified climatization	3

2.4 Thermal conductivity

The thermal conductivity of the insulation material 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+AC:2009-12 for a moisture content of the insulation material at 23°C/50 % relative humidity, amounts to

Category 1: λ_D = 0.055 W/(m·K)

Category 2: λ_D = 0.055 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 $\lambda_{10,dry}$ = 0,051 W/(m·K).

The declared values of thermal conductivity apply to the density range given in section 2.2. from 120 kg/m³ to 140 kg/m³.

For conversion of humidity the following applies:

- mass-related moisture content at 23 °C/50 % relative humidity: u = 0.125 kg/kg
- mass-related moisture content at 23 °C/80 % relative humidity: u = 0.293 kg/kg
- conversion coefficient for the mass-related moisture content : $f_{u1(dry-23/50)}$ = 0.563
- conversion coefficient for the mass-related moisture content : $f_{u2(23/50-23/80)}$ = 1.38
- moisture conversion factor: $Fm_{(dry-23/50)}$ = 1.07
- moisture conversion factor: $Fm_{(23/50-23/80)}$ = 1.26

2.5 Reaction to fire

The reaction to fire of the insulation material is tested according to the standard EN ISO 11925-2:2010-11 and classified according to the standard EN 13501-1:2007+A1:2009-09. The insulation material meets the requirements of class E according to EN 13501-1.

2.6 Resistance to the growth of mould

Verification of the resistance to the growth of mould was performed according to the EOTA testing procedure ("In situ formed loose fill thermal insulation material and/or acoustic insulation material made of vegetable or animal fibres" Edition June 2003, Revision July 2009)[7]. The assessment of the growth of fungi according to the standard EN ISO 846:1997-06, Table 4, resulted in the evaluation level 0.

2.7 Water vapour transmission

The water vapour diffusion resistance factor, determined according to the standard EN 12086:1997-06, climatic condition A, amounts to μ = 3

2.8 Corrosion-developing capacity

No performance determined.

2.9 Retention of additives

The verification of the retention of additives according to the EOTA testing procedure ("In situ formed loose fill thermal insulation material and/or acoustic insulation material made of vegetable or animal fibres" Edition June 2003, Revision July 2009)[7] was performed.

2.10 Water absorption

No performance determined.

2.11 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 ("In situ formed loose fill thermal insulation material and/or acoustic insulation material made of vegetable or animal fibres" Edition June 2003, Revision July 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[9], amended by decision 2001/596/EC[10] 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.

[9] Official Journal of the European Communities L 29/44 of 03.02.1999
[10] Official Journal of the European Communities L 209/33 of 02.08.2001

The factory production control shall be in accordance with the control plan 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.[11]

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 for the construction product 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 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 can 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 packaging or on the accompanying commercial document, 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,
- installation density,
- filling weight
- declared value of thermal conductivity for Category 1 and/or Category 2,
- reaction to fire: class E according to EN 13501-1

[11] 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.

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.

The size of shives shall correspond to the distribution determined within the approval tests and deposited with Deutsches Institut für Bautechnik.

4.2 Installation

The insulation material shall only be installed in structures where it will be protected from wetting, weathering and moisture. The insulation material shall be installed in dry conditions.

The product shall be protected from moisture during installation. The insulation material shall not be exposed to compression loads. The conditions according to clause 1.2 shall be taken into account.

The insulation material shall be lightly compacted during installation. In doing so the installation density (see clause 4.2.1.3) shall be observed.

During installation the installation instructions of the manufacturer shall be taken into account.

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 / calculation thickness

When calculating the thermal resistance, the nominal / calculation thickness of the insulation layer shall be applied. The nominal / calculation thickness is the installation thickness reduced by 10 %.

The insulation layer shall have a constant installation thickness taking account of the nominal thickness. For that purpose suitable height marks shall be arranged in sufficient distances before the processing. The executing company shall check the installation thickness.

4.2.1.3 Installation density

The installation density shall be within the density range given in clause 2.2.

The installation density is determined by calculation as a quotient from the mass of the material brought in and the full volume. The executing company shall check the installation density.

5 Indications to the manufacturer

5.1 Packaging, transport and storage

Packaging of the product shall be performed such that the insulation material is protected from moisture during transport and storage.

5.2 Use, maintenance, repair

The manufacturer shall provide installation instructions considering the provisions of clause 4.2.

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

Uwe Bender
Head of Department

beglaubigt:
Iffländer