



European Technical Approval ETA-07/0085

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung
Trade name

HOIZ

Zulassungsinhaber
Holder of approval

Bau-Fritz GmbH & Co. KG seit 1896
Alpenstraße 25
87746 Erkheim
DEUTSCHLAND

Zulassungsgegenstand
und Verwendungszweck
*Generic type and use
of construction product*

Lose Hobelspäne als Wärmedämmstoff

Loose wood shavings as thermal insulation material

Geltungsdauer:
Validity:

vom
from
bis
to
verlängert
extended
vom
from
bis
to

10 April 2007

10 April 2012

11 April 2012

11 April 2017

Herstellwerk
Manufacturing plant

Bau-Fritz GmbH & Co. KG seit 1896
Alpenstraße 25
87746 Erkheim
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 products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *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 1998⁴, as amended by law of 31 October 2006⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
- 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.
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- 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 material made of loose, free wood shavings with the designation:

"HOIZ"

The thermal insulation material consists of machine strands with the dimensions of up to a maximum of 50 mm x 25 mm x 2 mm. During the manufacturing process the wood shavings are provided with a fire protection equipment.

1.2 Intended use

The thermal insulation material may be used as space-filling insulation in closed cavities of walls in wood panel constructions and comparable cavities (e. g. in timber joist floors and between rafters).

The thermal insulation material may not be exposed to compression loads.

The thermal insulation material shall only be installed in structures where it is protected from precipitation, weathering and moisture.

During the building phase it must be guaranteed that both the thermal insulation material and the structural timbers are not inadmissibly moistened.

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 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 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.

2.2 Dimensions of the wood shavings

The dimensions of the wood shavings may not exceed the following values:

50 mm x 25 mm x 2 mm

2.3 Density

At built-in state each single value of the density of the thermal insulation material shall be at least 50 kg/m³ and 90 kg/m³ at the most. The density is determined by calculation as a quotient from the mass of the material brought in and the filled volume.

2.4 Settlement

The settlement is determined according to ISO/CD 18393⁷ following the test methods stated in Table 1. In consideration of the density according to clause 2.3 the maximum values of settlement stated in Table 1 are not exceeded.

Table 1: Settlement depending on the test method

Test method according to ISO/CD 18393	maximum settlement in %
Method A – Settling by impact excitation	5
Method C – Settling of wall cavity insulation by vibration	0
Method D – Settling by specified climatization	2

2.5 Thermal conductivity

The thermal conductivity of the thermal insulation material is determined at a reference temperature of 10° C according to the standard 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 material at 23 °C/50 % relative humidity, amounts to $\lambda = 0.047$ W/(m · K).

The declared value of thermal conductivity is representative for at least 90 % of the production with a confidence level of 90 % and applies to the density range given in clause 2.3. of 50 kg/m³ to 90 kg/m³.

Concerning the conversion of the humidity the following applies:

- the mass-related moisture content at 23 °C/50 % relative humidity: $u = 0.080$ kg/kg
- the mass-related moisture content at 23 °C/80 % relative humidity: $u = 0.147$ kg/kg
- the conversion coefficient for the mass-related moisture content : $f_{u1(\text{dry} - 23/50)} = 0.36$
- the conversion coefficient for the mass-related moisture content : $f_{u2(23/50 - 23/80)} = 0.756$

For the admissible deviation of a single value of the thermal conductivity from the declared value the method described in EN 13172:2001+A1:2005, Annex F applies.

2.6 Reaction to fire

The reaction to fire of the thermal insulation material is tested according to the standard EN ISO 11925-2:2002-02 and classified according to the standard EN 13501-1:2007+A1:2009-09. The insulating material meets the criteria of class E according to EN 13501-1.

2.7 Resistance to the growth of mould

Verification of the resistance to the growth of mould was performed according to the EOTA testing procedure⁸ ("Wood shavings in bulk to be used for thermal insulation", October 2003). The assessment of the growth of fungi according to the standard EN ISO 846:1997-06, Table 4, resulted in the evaluation level 1.

2.8 Corrosion-developing capacity

No performance determined.

2.9 Water absorption

The short-term water absorption by partial immersion is determined according to the standard EN 1609:1996-11+A1:2006-09, method A. The mean value of the water absorption amounts to 11 kg/m².

⁷ 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

⁸ deposited with Deutsches Institut für Bautechnik

2.10 Water vapour diffusion

The determination of the water vapour permeability is carried out according to the standard EN 12086:1997-06. The water vapour diffusion resistance coefficient amounts to $\mu = 2$.

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.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to decision 1999/91/EC of the European Commission⁹ amended by decision 2001/596/EC¹⁰ the system 3 of 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 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.

⁹ Official Journal of the European Communities L 29/44 of 3.2.1999

¹⁰ Official Journal of the European Communities L 209/33 of 2.8.2001

¹¹ The control plan is a confidential part of the documentation of this European technical approval and only handed over to the approved bodies involved in the procedure of attestation of conformity. See section 3.2.2.

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 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 packaging or 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,
- trade name,
- declared value of thermal conductivity,
- reaction to fire: class according to EN 13501-1,
- filling weight.

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

4.2.1 Processing

The conditions according to clause 1.2 shall be observed.

The thermal insulation material shall only be installed in structures where it is protected from precipitation, weathering and moisture.

The thermal insulation material shall be installed with not more than 18 % mass-related humidity. It shall be ensured that the thermal insulation material at built-in state can dry up to its moisture equilibrium.

The thermal insulation material is placed manually or by machine into the cavity to be filled. The thermal insulation material shall be sufficiently compacted so that the density range given in section 2.3 is reached. The executing company has to check the density.

When applying the thermal insulation material in "VOLL-WERT-Konstruktionen"¹² the thermal insulation material shall be placed into the horizontal wood panels, top side open, and compacted dynamically. Immediately afterwards the planking on the room side shall be applied.

To avoid settlements two "standing" sheets of hardboard strips shall be installed in "VOLL-WERT-Konstruktionen"¹² and "Kernwand-Außenbauteilen"¹² in the thermal insulation material per bay, with the parting of the upper sheet having to be placed approx. 150 mm away from the head rib. The second sheet should be placed in the lower third point of the wall element. Equivalent constructive measures to avoid settlements are permissible.

If in the area of the thermal insulation material built-in illuminators, air conditioning systems or other heat generating installations are intended or available an alarming heat accumulation in the fire protection sense is to be avoided by constructive measures.

When installing in closed cavities it shall be made sure by appropriate measures (e.g. control drillings) that the cavity is completely filled with the thermal insulation material. In case of vertical cavities with clear widths ≤ 12 cm the filling height shall not exceed 3.5 m.

The installation instructions given by the manufacturer shall be taken into account during installation.

4.2.2 Parameters for the design of construction works or parts of construction works

4.2.2.1 Design value of thermal conductivity

The design value of thermal conductivity shall be laid down according to relevant national provisions.

4.2.2.2 Nominal thickness

When calculating the thermal resistance, the nominal thickness of the insulation layer shall be applied. The nominal thickness is the clear width of the filled cavity.

4.2.2.3 Water vapour diffusion resistance coefficient

For the determination of the diffusion-equivalent air layer thickness of the thermal insulation material the water vapour diffusion resistance factor $\mu = 2$ shall be used for calculating.

4.2.3 Executing companies

The thermal insulation material may only be installed by specialized companies stated in a list of the manufacturer which have adequate experience in installing the material. Concerning this matter the manufacturer has to train these companies.

The executing company shall issue a certificate which contains the following information with reference to this European technical approval for each application place:

- identification of the product (trade name),
- number of the European technical approval,
- executing company,
- building project and building component,
- date of installation,
- installation thickness and installation density.

¹²

Constructions of the firm Bau-Fritz GmbH & Co., seit 1896; the constructions shall correspond to the information deposited with Deutsches Institut für Bautechnik.

5 Indications to the manufacturer

5.1 Packaging, transport and storage

Packaging of the product shall be performed such that the thermal insulation material is 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 shall be installed following the installation instructions given by the manufacturer (by specialized companies according to 4.2.3 only) and that it is to be protected from moisture during transport, storage and installation.

Georg Feistel
Head of Department

beglaubigt:
Iffländer