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Zulassungsstelle für Bauprodukte und Bauarten
Bautechnisches Prüfamt
Eine vom Bund und den Ländern gemeinsam getragene Anstalt des öffentlichen Rechts

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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-12/0179

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung *Trade name*		ISOWOOD
Zulassungsinhaber *Holder of approval*		holz & raum GmbH & Co. KG Therecker Weg 18 57413 Finnentrop-Rönkhausen DEUTSCHLAND
Zulassungsgegenstand und Verwendungszweck *Generic type and use of construction product*		Wärmedämmstoff aus losen Holzspänen *Thermal insulation material made of loose wood shavings*
Geltungsdauer: *Validity:*	vom *from* bis *to*	25 May 2012 25 May 2017
Herstellwerk *Manufacturing plant*		Domat Sp.z.o.o. ul. Szkolna 9 64-426 Lowyn POLEN

Diese Zulassung umfasst *This Approval contains*	7 Seiten *7 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 product and intended use

1.1 Definition of the construction product

This European technical approval applies to the thermal insulation material made of loose, mineral-encased wood shavings with the designation:

"ISOWOOD"

The thermal insulation material consists of machine-made wood shavings with dimensions between 4 mm and 32 mm.

1.2 Intended use

The thermal insulation material may be used as space-filling insulation in closed cavities of wall elements of timber frame and wood panel constructions.

The thermal insulation material is not resistant to compression.

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

During the building phase it shall be ensured that the thermal insulation material and the structural timbers are not inadmissibly moistened

As to the application of the insulation material, the respective national provisions shall in addition be observed.

The provisions made in this European technical approval are based on an assumed working life of the thermal 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 processes

With regard to composition and production process the thermal insulation material shall correspond to that which was the basis for the approval tests. Composition and production processes are deposited with Deutsches Institut für Bautechnik. On this point, see also clause 4.1.

2.2 Density

Each single value of the density of the thermal insulation material at built-in state shall be at least 105 kg/m³ and 125 kg/m³ at the most. The density is determined by way of calculation as a quotient from the mass of the material brought in and the volume occupied.

2.3 Settlement

Testing the settlement is performed following ISO/CD 18393[7] according to the test methods stated in Table 1. The maximum values of settlement stated in Table 1 are not being exceeded taking account of the density according to clause 2.2.

Table 1: Settlement depending on the test method

Test method according to ISO/CD 18393	maximum settlement in %
Method C - Settling in the wall cavity by vibration	0
Method D - Settling under defined climatic conditions	1

2.4 Thermal conductivity

The thermal conductivity of the thermal insulation material at a reference temperature of 10 °C is determined according to the standard EN 12667:2001-01. The declared value of the thermal conductivity, determined following the standard EN ISO 10456:2007-12 for a moisture content of the insulation material at 23 °C/50 % relative humidity is λ = 0.048 W/(m · K).

The declared value of the thermal conductivity is representative for at least 90 % of the production with a confidence level of 90 % and applies to the range of density of 105 kg/m³ to 125 kg/m³ given in clause 2.2.

Concerning the conversion for the moisture the following applies:

- mass-related moisture content at 23 °C/50 % relative humidity: u = 0.036 kg/kg
- mass-related moisture content at 23 °C/80 % relative humidity: u = 0.082 kg/kg
- conversion coefficient for the mass-related moisture content: $f_{u1\ (dry - 23/50)}$ = 2.04
- conversion coefficient for the mass-related moisture content: $f_{u2\ (23/50 - 23/80)}$ = 0.61

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

2.5 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 following 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 mould growth

The verification of the resistance to mould growth was carried out according to the EOTA test method ("Wood shavings in bulk to be used for thermal insulation", October 2003)[8]. Assessing the mould growth following the standard EN ISO 846:1997-06, Table 4, resulted in the evaluation level 0.

2.7 Metal corrosion-developing capacity

No performance determined.

2.8 Water absorption

The short-term water absorption by partial immersion is determined according to the standard EN 1609:1996-11, Method A. The mean value of the water absorption is 6 kg/m².

2.9 Water vapour diffusion

The determination of the water vapour permeability is carried out following the standard EN 12086:1997-06. The water vapour diffusion resistance coefficient is μ = 3.

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 Release 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[9] of the European Commission 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 obtained. The factory production control shall ensure that the product is in conformity with this European technical approval.

The manufacturer may only use raw materials listed 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.

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 according to sections 3.2.1.1 and 3.2.2 shall be handed over to the approved body by the manufacturer.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

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 body involved in the procedure of attestation of conformity. See chapter 3.2.2.

3.2.2 Tasks for the approved bodies

The approved body shall perform the following tasks in accordance with the provisions of the control plan:

- initial type-testing of the product.

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,
- number of the European technical approval,
- trade name,
- declared value of thermal conductivity,
- reaction to fire: class E 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 and 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 the deposited data and information being incorrect, shall 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 may only be installed in structures where it is protected from precipitation, weathering and moisture.

The thermal insulation material is placed in dry condition into the cavity to be filled. The thermal insulation material shall be sufficiently compacted so that the range of density as stated in clause 2.3 will be reached. The executing company shall check the density.

When applying the thermal insulation material in prefabricated wall elements the thermal insulation material shall be placed into the horizontal elements with the topside open by adding an adhesive and compacted dynamically. Immediately afterwards the internal planking shall be applied.

When installing in closed cavities of walls it shall be made sure by appropriate measures (e.g. control drillings) that the cavity is completely filled with the thermal insulation material.

It is necessary to ensure that the thermal insulation material can dry out at built-in state until having reached its equilibrium moisture content.

During installation the installation instructions supplied by the manufacturer shall be taken into account.

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

4.2.2.1 Design value of thermal conductivity

The design value of thermal conductivity shall be determined according to the relevant national regulations.

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 equal to the clear span of the filled cavity.

4.2.2.3 Water vapour diffusion resistance coefficient

For determining the diffusion-equivalent air layer thickness of the thermal insulation material calculations shall be carried out with the water vapour diffusion resistance coefficient $\mu = 3$.

4.2.3 Executing companies

The thermal insulation material may only be processed by specialized companies stated in a list by the manufacturer which have sufficient experience in installing the material. The manufacturer shall train these companies in this regard.

The executing company shall issue a certificate for every place of application which, by reference to this European technical approval, contains the following information:

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

5 Indications to the manufacturer

5.2 Packaging, transport and storage

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

5.3 Use, maintenance, repair

In an information accompanying the CE marking the manufacturer shall state that the product shall be installed following the manufacturer's installation instructions (by trained specialized companies only according to 4.2.3) and shall be protected from moisture during transport, storage and installation.

Uwe Bender
Head of Department

beglaubigt:
Iffländer