



European Technical Approval ETA-03/0035

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung <i>Trade name</i>	Alchimea lana Dämmvlies
Zulassungsinhaber <i>Holder of approval</i>	Alchimea Naturwaren GmbH Wellesweilerstraße 51e 66450 Bexbach
Zulassungsgegenstand und Verwendungszweck <i>Generic type and use of construction product</i>	Dämmstoff aus Schafschurwolle für die Wärme- und Schalldämmung im Hochbau <i>Thermal and/or acoustic insulation product made of sheep's wool for building applications</i>
Geltungsdauer: <i>Validity:</i>	vom <i>from</i> 13 June 2013 bis <i>to</i> 13 June 2018
Herstellwerk <i>Manufacturing plant</i>	Alchimea Naturwaren GmbH Wellesweilerstr. 51e 66450 Bexbach

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This Approval replaces

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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 Article 2 of the law of 8 November 2011⁵;*
 - 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.
- 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 2011*, p. 2178
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 and/or acoustic insulating product "Alchimea lana Dämmvlies" made of sheep's wool and produced in form of mats or sheets.

The sheep's wool is hardened and provided with a protection against fire within the manufacturing procedure.

The mats or sheets are produced in nominal thicknesses of 40 mm up to 120 mm and in nominal widths of 200 mm up to 850 mm.

The insulating product is not faced.

1.2 Intended use

The insulating product, not exposed to compression loads, can be used for the following intended uses:

Area of application for walls

- insulation in cavities of external and internal walls of timber frame constructions and similar structures
- internal insulation of walls
- insulation in cavities of internal walls

Area of application for roofs and ceilings/floors

- insulation between rafters and timber beams as well as in cavities of corresponding structures
- insulation on the uppermost storey ceilings which are not subjected to foot traffic, however, are accessible
- internal insulation of ceiling or roof, e.g. insulation beneath the loadbearing construction (e.g. rafters), suspended ceiling.

The insulating product shall only be installed in structures where it is protected from wetting, weathering and moisture.

In external walls provided to the outside with a curtain wall (ventilated facade) the product may only be used, if is protected by a cover (e.g. made of particle boards) towards the ventilation plane. It must not be used directly behind the ventilation plane.

For use of the product for acoustic insulation (airborne sound insulation) in constructions mentioned above see sections 2.7 and 4.2.2.

Furthermore, consideration shall also be given to the relevant national provisions concerning the applicability of the insulating product.

The provisions made in this European technical approval are based on an assumed working life of the insulating product of 50 years, provided that the conditions laid down in sections 4.2, 5.1 und 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 manufacturing process

With regard to composition and manufacturing process, the insulating product shall correspond to the product subjected to the approval tests. Composition and manufacturing process are deposited with the Deutsches Institut für Bautechnik. See also clause 4.1.

2.2 Dimensions

The thickness is determined according to the standard EN 823:2013. The test is carried out with a load of 50 Pa.

The deviation from nominal thickness, based on the standard EN 13162:2012, table 1, does not exceed:

$$-5 \% \text{ or } ^7 -5 \text{ mm or } +15 \% \text{ or } ^8 +15 \text{ mm.}$$

The class for thickness tolerances is T2.

The length and width of the product are determined according to the standard EN 822:2013. The deviation from nominal length does not exceed -2 %. The deviation from nominal width does not exceed $\pm 1.5 \%$.

2.3 Density

The density of the product is determined according to the standard EN 1602:2013. The density is at least 25 kg/m^3 and does not exceed 70 kg/m^3 .

2.4 Water absorption

The water absorption of the product is determined according to the standard EN 1609:2013, method A. The mean value of water absorption at the checked density of 29 kg/m^3 was 1.8 kg/m^2 .

2.5 Dimensional stability under specified temperature and humidity

The dimensional stability of the product is determined according to the standard EN 1604:2013. The test is carried out after conditioning at a temperature of $(70 \pm 2) \text{ }^\circ\text{C}$ and $(50 \pm 5) \%$ relative humidity for 48 h.

The change of dimensions in length and width is $\pm 1.5 \%$ or less.

The change of dimensions in thickness is $\pm 2.5 \%$ or less.

2.6 Tensile strength parallel to faces

The tensile strength is determined according to the standard EN 1608:2013. The tensile strength of the product is sufficient to support twice the weight of the product.

2.7 Airflow resistance

The airflow resistance of the product is determined according to the standard EN 29053:1993, method A. The mean value of the longitudinal airflow resistance is $3.0 \text{ kPa} \cdot \text{s/m}^2$ or more.

2.8 Thermal conductivity

The thermal conductivity of the product is determined, with a reference temperature of $10 \text{ }^\circ\text{C}$, according to the standard EN 12667:2001. The declared value of the thermal conductivity, determined according to the standard EN ISO 10456:2007+AC:2009 for a moisture content of the product at $23 \text{ }^\circ\text{C}/50 \%$ relative humidity is $\lambda = 0.039 \text{ W}/(\text{m} \cdot \text{K})$ representing at least 90 % of the production with a confidence level of 90 %. This declared value of the thermal conductivity applies to the density range given in section 2.3.

⁷ Whichever gives the greatest numerical tolerance

⁸ Whichever gives the smallest numerical tolerance

For conversion of humidity the following applies:

- mass-related moisture content at 23 °C/50 % relative humidity: $u = 0.096 \text{ kg/kg}$
- mass-related moisture content at 23 °C/80 % relative humidity: $u = 0.166 \text{ kg/kg}$
- mass-related moisture conversion coefficient: $f_u = 0.13$
- moisture conversion factor (dry-23/50): $F_{m \text{ (dry-23/50)}} = 1.01$
- moisture conversion factor (23/50-23/80): $F_{m \text{ (23/50-23/80)}} = 1.01$

For the admissible deviation of an individual value of the thermal conductivity from the declared value, the method described in EN 13172:2012, annex F applies.

2.9 Reaction to fire

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

2.10 Resistance to biological actions

2.10.1 Resistance to the growth of mould

The resistance to the growth of mould has been verified according to the EOTA testing procedure. The assessment of the growth of fungi according to the standard EN ISO 846:1997, Table 4, resulted in level 0.

2.10.2 Resistance to the attack of vermins

The resistance to the attack of vermins has been assessed on the basis of the short-term test according to the standard ISO 3998 and the long-term test (EOTA testing procedure).

The lethal rate and the mean loss in weight after testing according to ISO 3998 are:

- clothes moth 15 %, 18.9 mg
- carpet beetle 10 %, 7.2 mg

No new generation of insects could develop with the long-term test according to EOTA testing procedure.

The insulating product is sufficiently resistant to vermins.

2.11 Corrosion developing capacity on metal construction products

No performance determined.

2.12 Retention of additives

The verification of retention of additives according to the EOTA testing procedure was performed.

2.13 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 of conformity and CE marking

3.1 Evaluation and attestation of conformity system

According to the 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 of 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 relating to the European technical approval ETA-03/0035 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 of 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 the European technical approval ETA-03/0035.

3.2.2 Tasks of 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.

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

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

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 manufacturer),
- the last two digits of the year in which the CE marking was affixed,
- number of the European technical approval,
- identification of the product (trade name),
- nominal dimensions of length, width and thickness,
- class for thickness tolerances,
- range of density,
- declared value of thermal conductivity,
- reaction to fire: class E according to EN 13501-1,
- water absorption,
- dimensional stability under specified temperature and humidity conditions,
- airflow resistance.

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 insulating product shall only be installed in structures where it is protected from wetting, weathering and moisture. The insulating product shall be installed by adequately trained personnel taking account of the installation instructions of the manufacturer. The product shall be protected from moisture during installation. The insulating product shall not be exposed to compression loads. The conditions according to clause 1.2 shall be taken into account.

4.2.1 Parameters for the design of construction works or parts thereof

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.

4.2.1.2 Nominal thickness

The nominal thickness of the insulating product shall be used for calculating the thermal resistance.

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4.2.1.3 Value of water vapour diffusion resistance

For determination of the diffusion equivalent thickness of the air layer of the insulating product the water vapour diffusion resistance factor $\mu = 1$ or 2 respectively shall be used¹².

4.2.2 Use of product for airborne sound insulation

When the insulating product is used for airborne sound insulation, the airborne sound insulation shall be determined in accordance with the relevant technical rules in force for the construction work concerned.

5 Recommendations for the manufacturer

5.1 Packaging, transport and storage

Packaging of the product has to be such that it 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 indicate that the product has to be protected from humidity during transport, storage and installation.

Dirk Brandenburger
Head of Department

beglaubigt:
Kühnmund

¹² For the construction work in question always the less favourable value shall be used.