Deutsches Institut für Bautechnik

Zulassungsstelle für Bauprodukte und Bauarten

Bautechnisches Prüfamt

Eine vom Bund und den Ländern gemeinsam getragene Anstalt des öffentlichen Rechts

Kolonnenstraße 30 B
D-10829 Berlin
Tel.: +49 30 78730-0
Fax: +49 30 78730-320
E-Mail: dibt@dibt.de
www.dibt.de

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-12/0011

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung *Trade name*	STEICO zell
Zulassungsinhaber *Holder of approval*	STEICO Aktiengesellschaft Hans-Riedl-Straße 21 85622 Feldkirchen DEUTSCHLAND
Zulassungsgegenstand und Verwendungszweck *Generic type and use of construction product*	Wärmedämmstoff aus losen, ungebundenen Holzfasern *Thermal insulation material made of loose, free wood fibres*
Geltungsdauer: *Validity:* vom *from* bis *to*	1 February 2012 1 February 2017
Herstellwerk *Manufacturing plant*	STEICO SA Ul. Przemyslowa 2 64-700 Czarnkow POLEN

Diese Zulassung umfasst *This Approval contains*	9 Seiten *9 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 thermal insulation material made of loose, free wood fibres with the designation:

"STEICO zell"

The wood fibres are produced from pinewood chips by mechanical crushing under addition of fire retardants.

1.2 Intended use

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

The insulation material is used for thermal insulation. For the eventual use for airborne sound insulation see sections 2.7 and 4.2.1.4.

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

Area of application for walls

- Space-filling insulation in closed cavities of external and interior walls of timber frame constructions and similar structures

Area of application for roofs and ceilings/floors

- Insulation in closed cavities between rafters or timber beams as well as in cavities of corresponding structures
- Exposed insulation on horizontal or moderately pitched areas (≤ 10°), e. g. insulation of topmost storey ceilings which are not subjected to foot traffic, however, are accessible
- Cavity insulation between flooring joist battens and similar substructures

The thermal 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 thermal 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 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 the 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.

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 Density

The density of the thermal insulation material is determined according to ISO/CD 18393[8]. Depending on the area of application the minimum densities stated in Table 1 are to be observed.

Table 1: Minimum densities depending on the area of application

Area of application	Minimum density [kg/m³]
Cavity insulation in walls	35
Cavity insulation in pitched roofs, cavity insulation in floors in case of subsequent blowing into closed cavities	35
Cavity insulation in floors, exposed insulation on horizontal and moderately pitched areas (≤ 10°)	30

Independent of the area of application the density shall not exceed the value of 60 kg/m³.

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	15
Method C – Settling of wall cavity insulation by vibration	0
Method D – Settling by specified climatization	10

2.4 Thermal conductivity

The thermal conductivity of the thermal 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 for a moisture content of the insulating material at 23 °C/50 % relative humidity, amounts to

Category 1: λ_D = 0.038 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.

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

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 $\lambda_{10,dry}$ = 0,0370 W/(m·K).

The declared values of thermal conductivity apply to the density range given in section 2.2 from 30 kg/m³ to 60 kg/m³.

Concerning conversion for the humidity the following applies:

- mass-related moisture content at 23 °C/50 % relative humidity: u = 0.09 kg/kg
- mass-related moisture content at 23 °C/80 % relative humidity: u = 0.15 kg/kg
- conversion coefficient for the mass-related moisture content : $f_{u1(dry-23/50)} = 0.20$
- conversion coefficient for the mass-related moisture content : $f_{u2(23/50-23/80)} = 0.35$
- moisture conversion factor: $Fm_{(dry-23/50)} = 1.02$
- moisture conversion factor: $Fm_{(23/50-23/80)} = 1.02$

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 according to the standard EN 13501-1:2007+A1: 2009-09. The thermal 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 Airflow resistance

The airflow resistance of the thermal insulation material is determined according to the standard EN 29053:1993-03, Method A. The mean value of the airflow resistance per unit length at a density of 30 kg/m³ is 5.0 kPa·s/m² or more.

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[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 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.

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.

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.

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 European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

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.

3.3 CE marking

The CE marking shall be affixed on the packaging or the accompanying commercial document, e.g. the EC declaration of conformity. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and 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 depending on the area of application,
- filling weight,
- declared value of thermal conductivity for Category 1 and/or Category 2,
- reaction to fire: class E according to EN 13501-1.

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

The installation instructions given by the manufacturer shall be taken into account. The installation of the thermal insulation material shall be performed by companies trained by the manufacturer.

In case of exposed insulation on pitched areas (≤ 10°) slipping of the thermal insulation material shall be avoided by appropriate measures.

The product shall be protected from moisture during installation. The thermal insulation material 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 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 insulation layer according to Table 4 shall be applied.

Table 4: Nominal thickness depending on processing

Processing of the insulation material	Nominal thickness
Cavity insulation in walls	clear span of the filled cavity
Cavity insulation in pitched roofs, cavity insulation in floors in case of subsequent blowing into closed cavities	clear span of the filled cavity
Cavity insulation in floors, exposed insulation on horizontal, and moderately pitched areas (≤ 10°)	installation thickness of the insulation material minus 20 %

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.

When blowing in into 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.

4.2.1.3 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 $\mu = 1$ and/or 3 shall be used for calculating.[12]

4.2.1.4 Use as insulation material for airborne sound insulation

When the insulation material is used for airborne sound insulation (cavity damping), the airborne sound insulation shall be determined in accordance with the relevant technical rules in force for the construction work at the place of use concerned.

4.2.1.5 Installation density

Depending on the area of application the densities at built-in stage stated in Table 5 are to be observed.

Table 5: Densities depending on the area of application

Area of application	Installation density kg/m³
Cavity insulation in walls	35 - 60
Cavity insulation in pitched roofs, cavity insulation in floors in case of subsequent blowing into closed cavities	35 - 60
Cavity insulation in floors, exposed insulation on horizontal and moderately pitched areas (≤ 10°)	30 - 60

The 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 density.

4.2.2 Executing companies

The thermal insulation material may only be machine processed by 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.

12 The most unfavourable value for the construction work shall be applied each.

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.

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, 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 trained companies according to 4.2.2 only) and that it is to be protected from moisture during transport, storage and installation.

Uwe Bender
Head of Department

beglaubigt:
Iffländer