

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-12/0011
of 23 January 2017

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

STEICO zell

Product family
to which the construction product belongs

Thermal insulation material made of loose, free wood
fibres

Manufacturer

STEICO SE
Otto-Lilienthal-Ring 30
85622 Feldkirchen
DEUTSCHLAND

Manufacturing plant

STEICO SA
Ul. Przemyslowa 2
64-700 Czarnkow
POLEN

This European Technical Assessment
contains

6 pages, including 1 annex, which form an integral part of
this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

European Assessment Document (EAD)
040138-00-1201

This version replaces

ETA-12/0011 issued on 1 February 2012

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Specific part

1 Technical description of the product

This European Technical Assessment 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.

The European Technical Assessment has been 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. The European Technical Assessment applies only to products corresponding to this agreed data/information.

2 Specification of the intended use in accordance with the applicable European Assessment Document

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 shall be installed in dry conditions.

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

- Space-filling insulation in closed cavities of external and interior walls of timber frame constructions and similar structures
- 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 ($\leq 10^\circ$), 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 performances given in Section 3 are only valid if the thermal insulation product is installed according to the manufacturer's installation instructions, used in compliance with the specifications and conditions given in Annex A and if it is protected from precipitation, wetting or weathering in built-in state and during transport, storage and installation.

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

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

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the thermal insulation product of at least 50 years. 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.

3 Performance of the product and references to the methods used for its assessment

For sampling, conditioning and testing the provisions of the EAD No 040138-00-1201 "In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres" apply.

3.1 Mechanical resistance and stability (BWR 1)

Not applicable

3.2 Safety in case of fire (BWR 2)

| Essential characteristic | Performance |
|--|--|
| Reaction to fire test acc. to EN ISO 11925-2:2010 | Class E acc. to EN 13501-1:2007+A1:2009 |

3.3 Hygiene, health and the environment (BWR 3)

| Essential characteristic | Performance |
|---|---|
| Resistance to the growth of mould test acc. to EAD "In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres", Annex B | Evaluation level 0 acc. to EN ISO 846:1997 |

3.4 Safety and accessibility in use (BWR 4)

Not applicable

3.5 Protection against noise (BWR 5)

Not applicable

3.6 Energy economy and heat retention (BWR 6)

| Essential characteristic | Performance |
|--|--|
| Thermal conductivity at mean reference temperature of 10 °C test acc. to EN 12667:2001 | Declared value for a moisture content of the insulation material at 23 °C and 50 % relative humidity: $\lambda_{D(23,50)} = 0,038 \text{ W/(m} \cdot \text{K)}^*$ |
| Conversion of humidity acc. to EN ISO 10456:2007+AC:2009 | |
| mass-related moisture content at 23 °C/50 % rel. humidity: | $u_{23,50} = 0,09 \text{ kg/kg}$ |
| mass-related moisture content at 23 °C/80 % rel. humidity: | $u_{23,80} = 0,15 \text{ kg/kg}$ |
| mass-related moisture conversion coefficient (dry to 23 °C/50 % rel. humidity): | $f_{u1} = 0,20$ |
| mass-related moisture conversion coefficient (23 °C/50 % rel. humidity to 23 °C/80 % rel. humidity): | $f_{u2} = 0,35$ |
| moisture conversion factor (dry to 23 °C/50 % rel. humidity): | $F_{m1} = 1,02$ |
| moisture conversion factor (23 °C/50 % rel. humidity to 23 °C/ 80 % rel. humidity): | $F_{m2} = 1,02$ |

| Essential characteristic | Performance |
|--|---|
| Water vapour diffusion resistance coefficient test acc. to EN 12086:2013, climate condition C | $\mu = 1 \text{ bis } 3^{**}$ |
| Corrosion developing capacity | No performance assessed |
| Settlement | |
| Settling under impact excitation | $\leq 15 \%$ at a minimum density of 30 kg/m ³ and a maximum thickness of 300 mm |
| Settling under vibration in wall cavity | SC 0 acc. to EN 15101-1:2013 ($\leq 1 \%$) at a minimum density of 35 kg/m ³ and a maximum thickness of 240 mm |
| Settling under defined climatic conditions | $\leq 10 \%$ bei (40 \pm 2) °C / (90 \pm 5) r.F. at a minimum density of 30 kg/m ³ |
| Critical moisture content | No performance assessed |
| Airflow resistance*** Test acc. to EN 29053:1993, Procedures A | $\geq 5 \text{ kPa}\cdot\text{s}/\text{m}^2$ |
| Hygroscopic sorption properties | No performance assessed |
| | |

* The declared value is representative for at least 90 % of the production with a confidence level of 90 % and applies to the above-named density range. 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.

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

*** Also relevant concerning BWR 5

3.7 Sustainable use of natural resources (BWR 7)

For the sustainable use of natural resources no performance was investigated for this product.

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 040138-00-1201 the applicable European legal act is: 1999/91/EC.
The system to be applied is: 3

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 23 January 2017 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe
Head of Department

beglaubigt:
Stopp

ANNEX A

The performances of the thermal insulation products given in Section 3 are valid if the following will be considered concerning installation and use:

- Densities at built-in stage:

| Area of application | Density [kg/m ³] |
|--|------------------------------|
| 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 ($\leq 10^\circ$) | 30 - 60 |

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

- The thermal insulation layer has a constant installation thickness taking account of the nominal thickness. For that purpose suitable height marks are arranged by the executing company in sufficient distances before the processing. The executing company check the installation thickness and the density.
- When calculating the thermal resistance of the construction elements, the nominal thickness of the thermal insulation layer is applied as follows:

| 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 ($\leq 10^\circ$) | installation thickness of the insulation material minus 20 % |

- In case of installation on pitched or arched areas slipping of the thermal insulation product is prevented by suitable measures.
- In case of use as space-filling thermal insulation in closed cavities it is made sure by appropriate measures (e. g. control drillings) that the cavity is completely filled with the thermal insulation product.
- The thermal insulation products are only processed by companies stated in a list of the manufacturer which have adequate experience in installing the material. Concerning this matter the manufacturer has trained these companies.
- The executing company issue a certificate which contains the following information with reference to this European Technical Assessment for each application place:
 - Thermal insulation product made of loose, free wood "STEICO zell" according to European Technical Assessment ETA-12/0011
 - executing company
 - building project and building component
 - date of installation
 - processing procedure
 - installation thickness