

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-13/0410
of 4 January 2022

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

ARBOCEL CLIMASAFE and Profi - Floc

Product family
to which the construction product belongs

Insulating material made of loose, free cellulose fibres

Manufacturer

J. Rettenmaier & Söhne GmbH + Co. KG
Holzmühle 1
73494 Rosenberg
DEUTSCHLAND

Manufacturing plant

See Annex B

This European Technical Assessment
contains

8 pages including 2 annexes 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

EAD 040138-01-1201

This version replaces

ETA-13/0410 issued on 8 November 2017

European Technical Assessment

ETA-13/0410

English translation prepared by DIBt

Page 2 of 8 | 4 January 2022

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

Specific Part

1 Technical description of the product

The European Technical Assessment applies to the thermal insulation product made of loose, free cellulose fibres with the designations:

"ARBOCEL CLIMASAFE" and "Profi - Floc".

The cellulose fibres are produced from waste paper by mechanical crushing. During the manufacturing process the product is provided with a fire protection equipment.

The European Technical Assessment has been issued for the products 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 insulating material serves for the production of insulation layers, not exposed to compression loads, by means of machine processing at the place of use. The machine processing is carried out in dry conditions or under the addition of water.

The thermal insulation product 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 and 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 manufacture's installation instructions, used in compliance with the specifications and conditions given in Annex A and if they are protected from precipitation, wetting or weathering in built-in state and during transport, storage and installation.

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 products 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 040138-01-1201 "In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres" apply.

3.1 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 13501-1:2018

3.2 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

3.3 Protection against noise (BWR 5)

Essential characteristic	Performance
Sound absorption	No performance assessed

3.4 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 ¹ :
Density 30 kg/m ³ to ≤ 50 kg/m ³	$\lambda_{D(23,50)} = 0.038 \text{ W/(m} \cdot \text{K)}$
Density > 50 kg/m ³ to ≤ 60 kg/m ³	$\lambda_{D(23,50)} = 0.039 \text{ W/(m} \cdot \text{K)}$
Conversion of humidity acc. to EN ISO 10456:2007+AC:2009	
mass-related moisture content at 23 °C/50 % rel. humidity:	$u_{23,50} = 0.07 \text{ kg/kg}$
mass-related moisture content at 23 °C/80 % rel. humidity:	$u_{23,80} = 0.12 \text{ kg/kg}$
mass-related moisture conversion coefficient (dry to 23 °C/50 % rel. humidity):	$f_{u1} = 0.29$
mass-related moisture conversion coefficient (23 °C/50 % rel. humidity to 23 °C/80 % rel. humidity):	$f_{u2} = 0.29$
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):	$F_{m2} = 1.02$
Water vapour diffusion resistance coefficient test acc. to EN 12086:2013, climate condition C	$\mu = 1 \text{ bis } 2^2$
Water absorption	No performance assessed
Corrosion developing capacity	No performance assessed

¹ 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 ranges.

² The most unfavourable value for the construction work shall be applied each.

Essential characteristic	Performance
Settlement	
Settling under impact excitation	$\leq 13\%$ at a minimum density of 30 kg/m^3 and a maximum thickness of 330 mm
Settling under vibration in wall cavity	SC 0 acc. to EN 15101-1:2013 ($\leq 1\%$) at a minimum density of 45 kg/m^3 and a maximum thickness of 160 mm
Settling under defined climatic conditions	$\leq 14\%$ bei $(40\pm 2)^\circ\text{C}$ / $(90\pm 5) \text{ r.F.}$ at a minimum density of 30 kg/m^3
Critical moisture content	No performance assessed
Airflow resistance ³ Test acc. to EN 29053:1993, Procedures A	$\geq 2.0 \text{ kPa.s/m}^2$
Hygroscopic sorption properties	No performance assessed

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

In accordance with the European Assessment Document EAD No. 040138-01-1201, 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 4 January 2022 by Deutsches Institut für Bautechnik

Frank Iffländer
Head of Section

beglaubigt:
Meyer

³ Also relevant concerning BWR 5.

ARBOCEL CLIMASAFE and Profi - Floc

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	45 - 60
Cavity insulation in pitched roofs, cavity insulation in floors in case of subsequent blowing into closed cavities	40 - 60
Cavity insulation in floors, exposed insulation on horizontal and moderately pitched areas ($\leq 10^\circ$)	30 - 50

- 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 %

- The requirements concerning ventilation openings and the ventilation section above the thermal insulation layer are considered.
- 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 installation instructions given by the manufacturer shall be taken into account. Machine installation of the insulating materials shall be performed by companies trained by the manufacturer. In case of processing under the addition of water it shall be ensured that the main share of water is evaporated before closing the cavity. The time period necessary for this depends on the climatic conditions of the surroundings. Only building materials allowing an evaporation of moisture may be used as facing.
- 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 cellulose fibres according to ETA-13/0410
 - trade names
 - executing company
 - building project and building component
 - date of installation
 - processing procedure
 - installation thickness

ARBOCEL CLIMASAFE and Profi - Floc

Annex B

Manufacturing plants

- 1.) J. Rettenmaier & Söhne GmbH + Co. KG
Holzmühle 1
73494 Rosenberg
- 2.) Hahn GmbH & Co. KG
Am Bahnhof
24796 Bredenbek
- 3.) JRS Prozesstechnik
Calenberger Mühle 1
30982 Pattensen
- 4.) Celltechnik Lodenau
Hauptstraße 40
02929 Rothenburg
- 5.) Rettenmaier UK Manufacturing Ltd
Robin Hood House
Strawberry Way
Forresttown
Mansfield
NG 190FY
ENGLAND