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European Technical Assessment

ETA-06/0076
of 08.05.2018

General part

Technical Assessment Body issuing the European Technical Assessment

Österreichisches Institut für Bautechnik (OIB)
Austrian Institute of Construction Engineering

Trade name of the construction product

Clima-super, Isocell, trendisol, Isodek, Dobry -
Ekovilla, Fibra-Natur, Domexcell, Naturafloc,
Renocell, Isolare, Poesis; isECO, ISOCELL F,
greenwool

Product family to which the construction product belongs

Insulation material made of loose, free cellulose
fibres

Manufacturer

ZELLULOSEDÄMMSTOFFPRODUKTION CPH
Beteiligungs GmbH & Co KG
Am Ökopark 6
8230 Hartberg
AUSTRIA

Manufacturing plant

Plant 1, Plant 2, Plant 3

This European Technical Assessment contains

10 pages

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

European Assessment Document (EAD) "In-situ
formed loose fill thermal and/or acoustic
insulation products made of vegetable fibres",
EAD 040138-00-1201

This European Technical Assessment replaces

European Technical Approval ETA-06/0076 with
validity form 08.05.2013 to 07.05.2018

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Specific part

1 Technical description of the product

1.1 Definition of the construction product

This European technical assessment applies to insulation materials with the designation:

“Clima-super, Isocell, trendisol, Isodek, Dobry - Ekovilla, Fibra-Natur, Domexcell, Naturafloc, Renocell, Isolare, Poesis; isECO, ISOCELL F, greenwool”

This product consists of cellulose fibres and serves for the production of insulation layers by means of machine processing.

The machine processing is carried out in dry conditions.

The cellulose fibre insulation material is installed with different densities (density range **28 - 65 kg/m³**) depending on the area of application.

1.2 Manufacturing

The cellulose fibres are made from waste paper by mechanical crushing.

The waste paper used in the manufacturing process has to fulfil the following quality criteria:

Paper according to the European list of standard grades of recovered paper and board – recovered paper grade EN 643-2-01-00.

During this manufacturing process the fibres are provided with a fire protection equipment.

The European Technical Assessment is issued for the product on the basis of agreed data/information, deposited with the Österreichisches Institut für Bautechnik, which identifies the product that has been assessed and judged.

Changes to the product or manufacturing process, which could result in this deposited data/information being incorrect, should be notified to the Österreichisches Institut für Bautechnik before the changes are introduced.

The Österreichisches Institut für Bautechnik will decide whether or not such changes affect the European Technical Assessment and consequently the validity of the CE marking on the basis of the European Technical Assessment and if so whether further assessment or alterations to the European Technical Assessment, shall be necessary.

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

2.1 Intended use

“Clima-super, Isocell, trendisol, Isodek, Dobry - Ekovilla, Fibra-Natur, Domexcell, Naturafloc, Renocell, Isolare, Poesis; isECO, ISOCELL F, greenwool” made of cellulose fibres are used as non-loadable insulating material mainly for intended uses where vertical or horizontal cavities are completely filled or horizontal, arched or moderately pitched ($\leq 10^\circ$) exposed areas are covered.

Area of application for walls

- Machine processed cavity insulation material for exterior, density range: 38 – 65 kg/m³.
- Machine processed cavity insulation material for interior walls, density range: 38 – 65 kg/m³.

Area of application	Nominal thickness
<u>Vertical:</u> machine processed cavity insulation in exterior-, interior walls,	clear span of the filled cavity
<u>Pitched:</u> machine processed cavity insulation in roofs (pitch >10°)	clear span of the filled cavity
<u>Horizontal:</u> machine processed cavity insulation in flat roofs and floor constructions	clear span of the filled cavity
<u>Horizontal:</u> machine processed exposed insulation not subject to foot traffic on ceiling constructions (pitch ≤ 10°)	up to 25 cm 10 % and over 25 cm installation thickness 15% insulation thickness shall be added to the nominal thickness

For horizontal machine processed installation of exposed insulation not subject to foot traffic the insulation layer shall have a constant installation thickness taking into account the nominal thickness. For that purpose suitable height marks shall be arranged in sufficient distances before the processing.

When blowing into closed cavities it shall be made sure by appropriate measures (e.g. control drillings) that the cavity is completely filled with the insulating material.

In case of installation on pitched or arched areas slipping of the thermal insulation product is to be prevented by suitable measures.

The construction shall be designed and installed in such a way that no harmful condensation occurs within the works.

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

The performance of the product only applies if the insulation material is installed according to the manufacture's installation instructions and if they are protected from precipitation, wetting or weathering in built-in state and during transport, storage and installation.

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.

Basic requirements for construction works	Essential characteristics	Method of verification	Performance
BWR 2	Reaction to fire	EN 13501-1:2009	Clause 3.1.1 of the ETA
BWR 3	Biological resistance	EAD "In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres", Annex B	Clause 3.2.1 of the ETA
BWR 5	Sound absorption	No performance assessed	
BWR 6	Thermal conductivity	EAD "In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres", Annex A	Clause 3.4.1 of the ETA
	Water vapour diffusion resistance	EAD " In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres ", clause 2.2.4, last paragraph	Clause 3.4.2 of the ETA
	Water absorption	EN 1609, Method A	Clause 3.4.3 of the ETA
	Corrosion developing capacity	EN 15101-1, Annex E	Clause 3.4.4 of the ETA
	Settlement / density	EN 15101-1, Annex B and EAD	Clause 3.4.5 of the ETA
	Critical moisture content	No performance assessed	
	Specific airflow resistivity	EN 29053, Method A	Clause 3.4.7 of the ETA
	Hygroscopic sorption properties	No performance assessed.	

3.1 Safety in case of fire (BWR 2)

3.1.1 Reaction to fire

The reaction to fire of “Clima-super, Isocell, trendisol, Isodek, Dobry - Ekovilla, Fibra-Natur, Domexcell, Naturafloc, Renocell, Isolare, Poesis; isECO, ISOCELL F, greenwool” is classified according to EN 13501-1.

End use application	Class according to EN 13501-1
<ul style="list-style-type: none"> - installation density of the cellulose fibre insulation material is 28 kg/m³ to 65 kg/m³ - insulation layer thickness ≥ 100 mm, - end use application without air gap - end use application substrates defined in EN13238 for the following standard substrate: “wood based panel”: density of the board ≥ 680 ± 50 kg/m³, board thickness ≥ 12 ± 2 mm, reaction to fire of the board: class D; “calcium silicate board”: density of the board 870 ± 50 kg/m³, board thickness ≥ 11 ± 2 mm, reaction to fire of the board: class A2-s1,d0 	B-s2,d0
<ul style="list-style-type: none"> - installation density of the cellulose fibre insulation material is 28 kg/m³ to 65 kg/m³, - insulation layer thickness ≥ 40 mm 	E

3.2 Hygiene, health and the environment (BWR 3)

3.2.1 Biological resistance

The test and the assessment of the resistance to growth of mould fungus has been verified according to the EOTA testing procedure (Annex B of EAD “In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres”; issued November 2015.). The reached **class** of “Clima-super, Isocell, trendisol, Isodek, Dobry - Ekovilla, Fibra-Natur, Domexcell, Naturafloc, Renocell, Isolare, Poesis; isECO, ISOCELL F, greenwool” is **0**.

3.3 Protection against noise (BWR 5)

3.3.1 Sound absorption

No performance assessed.

3.4 Energy economy and heat retention (BWR 6)

3.4.1 Thermal conductivity

The assessment of the thermal conductivity of the cellulose fibre insulation material is carried out according to Annex A of EAD “In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres”. The declared value of thermal conductivity is determined according to EN 10456.

The fractile value of thermal conductivity for the density range of 28 kg/m³ - 65 kg/m³ is $\lambda_{(10,dry,90/90)} = 0,0368 \text{ W/(m}\cdot\text{K)}$ representing at least 90 % of the production with a confidence limit of 90%

The declared value of thermal conductivity for the density range of 28 kg/m³ - 65 kg/m³ is $\lambda_{D(23,50)} = 0,037 \text{ W/(m}\cdot\text{K)}$ determined by conversion of the $\lambda_{(10,dry,90/90)}$ value.

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For conversion of humidity the following applies:

- the mass related moisture content at 23 °C/50 % relative humidity:
 $u_{23,50} = 0,081 \text{ kg/kg}$
- the mass related moisture content at 23 °C/80 % relative humidity:
 $u_{23,80} = 0,130 \text{ kg/kg}$
- the mass related moisture conversion coefficient:
 $f_{u1(\text{dry} - 23/50)} = 0,076 \text{ kg/kg}$
 $f_{u2(23/50 - 23/80)} = 0,256 \text{ kg/kg}^1$
- the moisture conversion factor dry to 23 °C/50 % relative humidity
 $F_{m1} = 1,006$
- the moisture conversion factor 23 °C/50 % relative humidity to 23 °C/80 % relative humidity
 $F_{m2} = 1,013$

3.4.2 Water vapour diffusion resistance

The water vapour diffusion resistance is **3**

3.4.3 Water absorption

The water absorption of the cellulose fibre insulation material is assessed according to EN 1609, method A. The mean water absorption at a density of 29 kg/m³ did not exceed **14,1 kg/m²**.

3.4.4 Corrosion developing capacity

The test and the assessment of the corrosion developing capacity on metal products has been verified according to EN 15101, Annex E. No corrosion developing potential of “Clima-super, Isocell, trendisol, Isodek, Dobry - Ekovilla, Fibra-Natur, Domexcell, Naturafloc, Renocell, Isolare, Poesis; isECO, ISOCELL F, greenwool” was determined. The reached **class** is **CR**.

3.4.5 Settlement / density

The assessment of the settlement of the cellulose fibre insulation material is carried out according to the test methods stated in EN 15101-1, Annex B.

Test method according to EN 15101-1, Annex B and EAD	Settlement (%)	Class	Max. thickness (mm)	Min density (kg/m ³)
Settling in ceilings acc. Annex B3 and EAD clause 2.2.8.1a	$s_v = 4$	-	550	28
Settling in cavities of walls and between rafters acc. Annex B2	$s_d = 0$	SC 0	240/100	38/33
Settling under impact excitation and constant temperature and humidity condition acc. Annex B3	Not required	-	-	-
Settling under cyclical temperature and cyclic humidity acc. Annex B1	$S_{cyc} = 20$	SH 20	-	28
	$S_{cyc} = 9$	SH 10		40

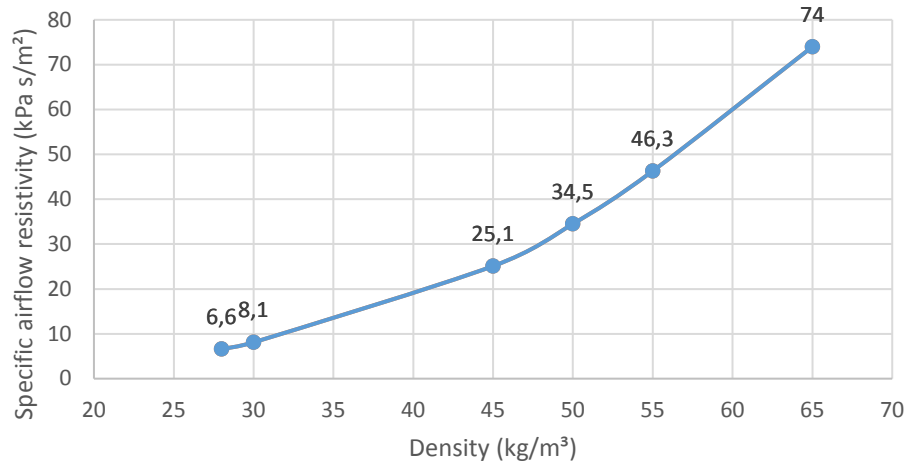
3.4.6 Critical moisture content

No performance assessed.

3.4.7 Specific airflow resistivity

The airflow resistance of the cellulose fibre insulation material is assessed according to EN 29053, method A. The mean longitudinal airflow resistance is at least

Specific airflow resistivity



3.4.8 Hygroscopic sorption properties
No performance assessed

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

According to the Decision 1999/91/EC¹, as amended, the system of assessment and verification of constancy of performance (according to Annex V of Regulation (EU) No 305/2011) is 3.

In addition, according to the Decision 1999/454/EC, amended by Decision 2001/596/EC of the European Commission the system(s) of assessment and verification of constancy of performance, with regard to reaction to fire class B, is 1.

5 Technical details necessary for the implementation of the AVCP system, as provided for the applicable European Assessment Document

5.1 Tasks of the manufacturer

At the manufacturing plant the manufacturer has to implement and continuously maintain a factory production control system.

All elements, requirements and provisions adopted by the manufacturer in this respect are documented in a systematic manner in the form of written policies and procedures.

The records shall be kept at least for ten years and presented to Österreichisches Institut für Bautechnik on request.

The factory production control system ensures that the performance of the product is in conformity with the European Technical Assessment.

If test results are unsatisfactory, the manufacturer shall immediately implement measures to eliminate the defects. Construction products not in conformity with the requirements shall not be CE marked.

¹ Official Journal of the European Communities no. L 178, 14.7.1999, p. 52

