



**Technical and Test Institute for
Construction Prague**
Prosecká 811/76a
190 00 Prague
Czech Republic
tel.: +420 286 019 400
www.tzus.cz

Member of



www.eota.eu

European Technical Assessment

**ETA 15/0445
of 10/02/2016**

I General Part

**Technical Assessment Body issuing the
ETA and designated according to Article
29 of the Regulation (EU) No 305/2011:
Trade name of the construction product**

Technical and Test Institute for Construction
Prague

POWERBLOW

**Product family to which the construction
product belongs**

**In-situ formed loose fill thermal
insulation product made of cellulose
fibres**

Holder of the assessment

**POWERCELL-ISOLATION
Z.I UTIQUE, 5060 BIZERTE, TUNISIE**

Manufacturing plant

**POWERCELL-ISOLATION
Z.I UTIQUE, 5060 BIZERTE, TUNISIE**

**This European Technical Assessment
including 1 annex contains**

9 pages

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

European Assessment Document (EAD)
No. 040138-00-1201 for "In-situ formed
loose fill thermal and/or acoustic insulation
products made of vegetable fibres", edition
November 2015

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 (excepted the confidential Annex (es) referred to above). However, partial reproduction may be made, with the written consent of the issuing Technical Assessment Body. Any partial reproduction has to 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This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission according to Article 25 Paragraph 3 of regulation (EU) No 305/2011.

II Specific part

1 Technical description of the product (definition of the product)

This European technical assessment applies to the insulating material made of loose, free cellulose fibres **POWERBLOW**.

The cellulose fibres are produced from the sorted recycled waste paper by mechanical crushing. The waste paper used in manufacturing process has to fulfill the quality criteria given by the manufacturer.

The product is intended to be used for the production of insulation layers (which serve as thermal and acoustic insulation) by means of machine processing at the place of use. The reaction to fire classification of the product is improved during the production process by adding of fire retardant on the basis of *boric acid* with antiseptic function.

Detailed information about the fire retardant are deposited with the TZÚS Praha,s.p.-branch 0100 Prague.

Note: The insulation has to be covered to avoid direct contact with the user of the building. Boric acid is an existing biocidal active substance.

The machine processing is carried out in dry conditions (99% of all applications) or under the addition of water (1% of all applications).

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

2.1 Intended use

The insulating material can be used for the application for walls (closed cavities of external and interior walls), roofs (closed cavities between rafters and timber beams etc.), ceilings, floors etc.

The insulation product is depending on the area of application and processing produced with different densities (**density range 28-65 kg/m³**).

Density 28 kg/m³ is determined only for free blowing in order to put one more layer to existing ones.

The insulation material shall only be installed in structures where it is protected from wetting, weathering and moisture, soil.

The insulating material can be used as no load-bearing insulating material for intended uses where vertical or horizontal cavities are completely filled or horizontal, arched or moderately pitched exposed areas are covered.

The ETA is issued for the above mentioned product on the basis of agreed data/information, deposited with the Technical Assessment Body - Technical and Test Institute for Construction Prague, which identifies the products that have been assessed.

Table No. 1: Recommended density of the materials regarding the area of application

Area of application	Recommended density of the material [kg/m ³]
Vertical surface: masonry cavity walls; wall frame constructions	45-65
Slope(pitched) applications: mansards, roof cavities	40-50
Horizontal surface: attics and indoor floors	28-35
Spray applied surfaces: steeply sloped, open vertical cavities)	40-50

Notes:

In case of application to masonry cavity walls the products must be covered from both sides to avoid risk of moisture.

Regarding the fact the product has not been assessed for free placing for use in horizontal surfaces this area of application does not cover this intended use in the ETA.

2.2 Assumed working life

The provisions made in this European technical assessment are based on an assumed working life of the products for 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 products and references to the methods used for their assessment

The characteristics of product and methods of verification of the thermal insulation were carried out in compliance with the EAD concerning "In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres".

Table No. 2: POWERBLOW

No	Essential characteristic and method of verification and assessment	Expression of product performance	
Essential Requirement 1: Mechanical resistance and stability*			
Not relevant			
Essential Requirement 2: Safety in case of fire			
1	Reaction to fire (EN 13501-1 + A1)	Class E	
Essential Requirement 3: Hygiene, health and environment			
1	Content, emission and/or release of dangerous substances	Product contains boric acid *)	
2	Biological resistance - growth of mould fungus (Annex F of EN 15101-1)	No performance assessed	
Essential Requirement 4: Safety in use			
Not relevant			
Essential Requirement 5: Protection against noise			
1	Sound absorption (EN ISO 354, EN ISO 11654)	No performance assessed	
Essential Requirement 6: Energy economy and heat retention			
1	Thermal conductivity**: (EN 12667, EN ISO 10456 and EAD 040138-00-1201) $\lambda_{10, dry}$ [W/m.K] $\lambda_{D, 23,50}$ [W/m.K] $\lambda_{10, dry, 90/90}$ [W/m.K] $\lambda_{10(23,50)}$ [W/m.K] $\lambda_{10(23,80)}$ [W/m.K] For conversion of humidity the following applies: - mass-related moisture contents $U_{23,50}$ $U_{23,80}$ -mass related moisture conversion factors $f_{u,1}$ $f_{u,2}$ -moisture conversion factors F_{m1} F_{m2}	Density	
		30 [kg/m ³]	60 [kg/m ³]
		0.0383	0.0387
		0.0430	0.0430
		0.0402	0.0405
		0.0430	0.0430
		0.0450	0.0460
		0.11	
		0.18	
		0.50	
		0.50	
		1.05	
		1.06	

No	Essential characteristic and method of verification and assessment	Expression of product performance
2	Water vapour diffusion resistance (EN ISO 12086) - water vapour resistance factor μ	1-4 Note: In the absence of measurement, the water vapour resistance factor of product made of vegetable fibres without mineral binding agent and with a density less than 115 kg/m ³ may be assumed to be between 1 and 4. The most unfavourable factor m depending on construction has to be used for calculation.
3	Water absorption (for specific applications only) (EN 1609, method A)	No performance assessed
4	Corrosion developing capacity (Annex E of EN 15101-1)	No performance assessed
5a	Settlement in cavities of walls and between rafters (Annex B.2 of EN 15101-1) bulk density 57.06 kg/ m ³	No settlement and cracks (settlement $\leq 1\%$) class SC O
5b	Settlement under cyclical temperature and cyclic humidity (Annex B.1 of EN 15101-1)	No performance assessed
5c	Settlement under impact excitation and constant temperature and humidity conditions (Annex B.3 of EN 15101-1)	No performance assessed
5d	Settlement of loose fill insulation applied to ceilings (Annex B.3 of EN 15101-1)	No performance assessed
6	Critical moisture content	75% Note: Testing and assessing procedures are currently not available for insulation products covered by the used EAD. Therefore the value of 75% shall at present be declared as the critical moisture content.
7	Specific airflow resistivity* (EN 29053) Note: *This characteristic also relates to BWR 5	No performance assessed
8	Hygroscopic and sorption properties (EN ISO 12571)	Hygroscopic sorption and desorption curves (see Annex 1 of the ETA)

*) The insulation product has to be covered to avoid direct contact with the user of the building. Boric acid is an existing biocidal active substance for which a decision for non-inclusion into Annex I or IA of Directive 98/8/EC has been adopted for Product Type 9 (fibre, leather, rubber and polymerised materials preservatives). Therefore the use of boric acid as a biocide active substance is prohibited for such product types according to Article 4(2) of Regulation (EC) No. 2032/2003.

In addition to the specific clauses relating to dangerous substances contained in this European Technical Assessment, 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.

**)In case of free placing (e.g. on the ceiling or between beams) a reduced insulation layer thickness for calculating the thermal resistance is to be determined from the installation thickness taking account the settlement. Reduction value for intended use in cavities of walls and between rafters is 1 % and was determined from the highest permitted value of settlement (according to Annex B.2 of EN 15101-

1) based on test results. Regarding the fact that other types of settlement were not assessed, the reduction value may be different in other cases.

Declared values of λ are representative for at least 90% of the production with a confidence level of 90% and covers the defined density range. For the admissible deviation of an individual value of thermal conductivity from the declared value the method described in annex F of EN 13172 applies.

The performances given in the ETA are only valid for the specified densities.

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

4.1. System of attestation of conformity

According to the decision 1999/91/EC of 25.01.1999 of the European Commission system of verification of constancy of performance 3 applies.

In addition according to Commission Decision 2001/596/EC of 08.01.2001 systems of assessment and verification of constancy of performance 3 applies to thermal insulation product with regard to reaction to fire.

System of assessment and verification of constancy of performance is defined as follows:

System 3:

- a) Tasks for the manufacturer:
 - factory production control (FPC),
- b) Tasks for the Notified Body:
 - type testing of the product*.

*Note: *The type testing has been conducted for issuing of this ETA. The results of the type testing performed as a part of the assessment for the ETA shall be used unless there are any changes in the production plant. In such cases the type testing shall be agreed with the Technical and Testing Institute for Construction Prague.*

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

In order to help the notified body to make an evaluation of conformity, the Technical Assessment Body issuing the ETA shall supply the information detailed below. This information shall initially be prepared or collected by the Technical Assessment Body and shall be agreed with the manufacturer. The following gives guidance on the type of information required:

1) The ETA

Where confidentiality of information is required, this ETA makes reference to the manufacturer's technical documentation which contains such information.

2) Basic manufacturing process

The basic manufacturing process is described in sufficient details to support the proposed FPC methods.

3) Product and materials specifications

The manufacturer's documentation includes:

- detailed description of the product,
- incoming (raw) materials specifications and declarations,
- references to European and/or international standards,
- technical and safety data sheets of the product.

4) Control Plan (as a part of FPC)

The manufacturer and the Technical and Test Institute for Construction Prague have agreed a Control Plan which is deposited with the Technical and Test Institute for Construction Prague in documentation which accompanies the ETA. The Control Plan specifies the type and frequency of checks/tests conducted during production and on the final product. This includes the checks conducted during manufacturing process on properties that cannot be inspected at a later stage and for checks on the final product.

It must be demonstrated to the notified body that the FPC system contains elements securing that the manufacturer of the final product use during the manufacturing process only products from his supplier(s) which conform to the Control Plan.

In cases where the provisions of the European Technical Assessment and its Control Plan are no longer fulfilled, the notified body shall withdraw the certificate and inform the Technical and Test Institute for Construction Prague without delay.

Issued in Prague on 10.02.2016



Ing. Mária Schaan

Head of the department Technical Assessment Body

Annexes:

Annex No. 1:

Hygroscopic sorption and desorption curves of the product POWERBLOW

Annex No. 1:

Hygroscopic sorption curve and desorption curve of the product POWERBLOW

Graph No. 1:

