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European Technical Assessment

ETA-20/0378 of 03/08/2020

(English language translation, the original version is in French language)

Nom commercial **Trade name**	**UNIVERCELL +,** **THERMACELL, THERMÉO OUATE DE CELLULOSE, PAVAFLOC, PAVACELL, SOPRACELL, VALOCELL, DOUCELL**
Famille de produit **Product family**	Isolant thermique en fibres de cellulose **Thermal insulation material made of loose, free cellulose fibres**
Titulaire **Manufacturer**	**SOPREMA SAS** **14 rue de Saint-Nazaire CS60121** **6702 STRASBOURG cedex** **FRANCE**
Usine de fabrication **Manufacturing plant**	**CSI SAS** **Z.I. Auguste III** **4, chemin des Arrestieux** **33160 CESTAS** **FRANCE**
Cette évaluation contient : **This Assessment contains**	5 pages incluant 0 annexes qui font partie intégrante de cette évaluation **5 pages including 0 annexes which form an integral part of this assessment**
Base de l'ETE **Basis of ETA**	Document d'Evaluation Européen (DEE) (EAD 0401381-00-1201) « Produits isolants thermiques et / ou acoustiques en vrac, formés en vrac, en fibres végétales, 2018 » **European Technical Assessment (EAD) (040138-00-1201) "In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres, 2018"**

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SPECIFIC PART

1 Technical: definition of product and intended use

1.1 Definition of product

The European Technical Assessment applies to thermal insulation products made of loose, free cellulose fibres, with the designations “UNIVERCELL +, THERMACELL, THERMÉO OUATE DE CELLULOSE, PAVAFLOC, PAVACELL, SOPRACELL, VALOCELL, DOUCELL”.

The cellulose fibres made from newspaper by mechanical grinding with the addition of flame-retardant proofing agents (hereinafter referred to as thermal insulation products) are used to manufacture thermal insulation layers by means of machine processing at the place of use.

The European Technical Assessment does not apply for a manual processing application of thermal insulation products.

The European Technical Assessment has been issued for the products based on agreed data/information, deposited with the CSTB, which identifies the product that has been assessed. The European Technical Assessment applies only to products corresponding to this agreed data/information.

1.2 Composition and manufacturing-process

Product referred ““UNIVERCELL +, THERMACELL, THERMÉO OUATE DE CELLULOSE, PAVAFLOC, PAVACELL, SOPRACELL, VALOCELL, DOUCELL”.” is composed of:

- 89 (+/- 1) % mass of paper,
- 11 (+/- 1) % mass of adjuvants:
    - 4 (+/- 0,5) % mass of boric acid,
    - 7 (+/- 0,5) % mass of magnesium sulphate.

The composition of adjuvants (nature and content) is the subject of a technical sheet given to CSTB.

The production unit comprises a receiving belt supplying raw materials to a first fragmentation station where they are grinded. The pieces obtained pass one metal detector and arrive at a second grinding station which transforms them into fibres. The adjuvants are dosed and incorporated continuously on this second station. On leaving the machine, the material is weighed, bagged, marked, palletized, then filmed

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

The cellulose fibres insulation is used in cases where the insulating material must not be subjected to loads. It is implemented for insulation from the inside:

Walls:

- By insufflation or wet spraying in exterior wall coffered in timber frame constructions
- By insufflation or wet projection between partitions on masonry wall of constructions
- By insufflation or wet projection of partition walls

On floors of Attic lost

- Blowing on the attic floors.

Sloping or inclined walls of attic

- By insufflation in boxes/coffered of sloping/inclined roofs in timber frame constructions

Cellulose insulation should not be used in buildings where the insulation is exposed to rain and weather, or in buildings built on the ground.

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

This European Technical Approval does not cover the complete or finished system of insulation. As for the application of all products insulating, the national codes of practice and regulations must be respected for design and implementation of construction systems.

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

The identification tests and the assessment for the intended use of this product according to the Essential Requirements were carried out in compliance with the European Assessment Document EAD 040011-00-1201 for “In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres, 2018”.

3.1 Density

The density of the product is determined according to EN 15101. The density specifications according to the field of application mentioned in table 1 must be observed and verified by the applicators:

Table 1: Specification of density according to the Intended use applications

Intended use applications		Density in kg/m^3
On floors of Attic by Blowing		23-35
Vertical walls	by insufflation	50-60
	by wet projection	40-50
Sloping or inclined walls of attic under roofs by insufflation		50-60

3.2 Mechanical resistance and stability (BWR1)

Not applicable

3.3 Safety in case of fire (BWR1)

Essential characteristic	**Named range of density**	**Performance**
Reaction to fire According to EN ISO 11925-2:2010	23 – 60 kg/m^3 30 – 450 mm	Euroclass: E According to EN 13501-1:2007+A1:2009

3.4 Hygiene, health and environment (BWR3)

Essential characteristic	Performance
Resistance to a growth of mould According to EAD « In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres, 2015» et à EN 15101 – annex F	**Class: 0**

3.5 Safety and accessibility (BWR4)

Not applicable

3.6 Protection against noise (BWR5)

Not applicable

3.7 Energy economy and heat retention (BWR5)

Intended use applications	Named rang of density	**Thermal conductivity**: According to EN 12667 at 10°C and conditioning at 23°C and 50 %HR (humidity relative)
On floors of Attic by Blowing	23 à 35 kg/m³	$\lambda_{D(23,50)}$ = **0,039 W/(m · K)***
Vertical walls by wet projection	40 à 50 kg/m3	$\lambda_{D(23,50)}$ = **0,041 W/(m · K)***
Vertical walls by insufflation	50 à 60 kg/m3	$\lambda_{D(23,50)}$ = **0,042 W/(m · K)***

Conversion factors for all applications: blowing, wet projection and insufflation:

- Mass related moisture content:
  - for 23 °C/50 % related moisture of air: $\mathbf{u_{23,50}}$ **= 0,058 kg/kg**
  - for 23 °C/80 % related moisture of air: $\mathbf{u_{23,80}}$: not assessed
- Mass related moisture conversion factor:
  - for 23 °C/50 % related moisture of air: $\mathbf{f_{u1}}$ **= 0,36**
  - for 23 °C/80 % related moisture of air: $\mathbf{f_{u1}}$: not assessed
- Moisture conversion factor of thermal conductivity (dry to 23°C/50 HR or 23°C/80 HR) :
  - for 23 °C/50 % related moisture of air: $\mathbf{F_{m1}}$ **= 1,02**
  - for 23 °C/80 % related moisture of air: $\mathbf{F_{m1}}$: not 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 is described in EN 13172, annex F.

Application	Named density range	Settlement
Blowing on floor of attics	23 à 35 kg/m³	Settlement under impact excitation: **≤ 15 %**
		Settlement in cyclical variation of temperature and humidity according to EN 15101: **Class: SH25**
Insufflation on vertical walls	50 à 60 kg/m³	Settlement under vibration in wall cavity according EN 15101-1: 2013: **SC 0 (≤ 1 %)**

Essential characteristic	Performance
Water vapor diffusion resistance coefficient according to EN 12086, climate condition C	**μ = 2**
Airflow resistance Résistance according to EN 29053, method A	**NPD**
Corrosion developing capacity	**No potential corrosion development**

3.8 Release of dangerous substances

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 the European Technical Assessment (EAD) (040138-00-1201) “In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres, 2018”, 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 CSTB.

The original French version is signed By

Head of Hygro-Thermal properties of constructions unit

Building Envelope Direction

CSTB