

## European Technical Assessment

**ETA-20/0114  
of 13/03/2020**

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

Nom commercial  
**Trade name**

**CELLAOUATE, BREIZHOATE, GIGAOUATE**

Famille de produit  
**Product family**

Isolant thermique en fibres de cellulose  
**Thermal insulation material made of loose, free  
cellulose fibres**

Titulaire  
**Manufacturer**

**SAS CELLAOUATE  
ZI de KERIVEN  
33 RUE MARCELIN BERTHELOT  
29600 SAINT MARTIN DES CHAMPS  
FRANCE**

Usine de fabrication  
**Manufacturing plant**

**SAS CELLAOUATE  
ZI de KERIVEN  
33 RUE MARCELIN BERTHELOT  
29600 SAINT MARTIN DES CHAMPS  
FRANCE**

Cette évaluation contient :

5 pages incluant 0 annexes qui font partie intégrante de  
cette évaluation

**This Assessment contains**

**5 pages including 0 annexes which form an integral part of  
this assessment**

Base de l'ETE

Document d'Evaluation Européen (DEE) (EAD 040011-00-  
1201) « Panneaux d'isolation sous vide (VIP) avec enveloppe  
de protection, juillet 2017 »

**Basis of ETA**

**European Technical Assessment (EAD) (040138-00-1201)  
“In-situ formed loose fill thermal and/or acoustic insulation  
products made of vegetable fibres, 2015”**

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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 "CELLAOUATE", "BREIZHOUATE" and "GIGAOUATE".

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 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 "CELLAOUATE", "BREIZHOUATE", et "GIGAOUATE" is composed of:

- 90 (+/- 2) % mass of paper,
- 10 (+/- 2) % mass of adjuvants:
  - 3 (+/- 0,5) % mass of boric acid,
  - 7 (+/- 1,5) % 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 tank supplying raw material to a first fragmentation station where they are reduced. The pieces obtained pass two metal detectors 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 lost.

**Sloping or inclined walls of attic**

- By insufflation in boxes/coffered of sloping/inclined 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 laid down 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 "Vacuum insulation panels (VIP) with factory applied protection layers, December 2017"

**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 <sup>3</sup>
On floors of Attic lost by Blowing		25-35
Vertical walls	by insufflation	50-60
	By wet projection	35-45
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	25 – 60 kg/m <sup>3</sup> 50 – 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	<b>Class: 0</b>

**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 lost by Blowing	25 à 40 kg/m <sup>3</sup>	$\lambda_{D(23,50)} = 0,039 \text{ W/(m} \cdot \text{K)}^*$
Vertical walls by wet projection	35 à 45 kg/m <sup>3</sup>	$\lambda_{D(23,50)} = 0,041 \text{ W/(m} \cdot \text{K)}^*$
Vertical walls by insufflation	50 à 60 kg/m <sup>3</sup>	$\lambda_{D(23,50)} = 0,041 \text{ W/(m} \cdot \text{K)}^*$

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

- Mass related moisture content:
  - for 23 °C/50 % related moisture of air:  $u_{23,50} = 0,069 \text{ kg/kg}$
  - for 23 °C/80 % related moisture of air:  $u_{23,80} = 0,111 \text{ kg/kg}$
- Mass related moisture conversion factor:
  - for 23 °C/50 % related moisture of air:  $f_{u1} = 0,47$
  - for 23 °C/80 % related moisture of air:  $f_{u1} = 0,58$
- 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:  $F_{m1} = 1,01$
  - for 23 °C/80 % related moisture of air:  $F_{m1} = 1,02$

\* 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 lose attics	25 à 40 kg/m <sup>3</sup>	Setting under impact excitation: <b>≤ 15 %</b>
		Setting in cyclical variation of temperature and humidity according to EN 15101: <b>Class: SH20</b>
Insufflation on vertical walls	50 à 60 kg/m <sup>3</sup>	Setting under vibration in wall cavity according EN 15101-1: 2013: <b>SC 0 (≤ 1 %)</b>

Essential characteristic	Performance
Water vapor diffusion resistance coefficient according to EN 12086, climate condition C	$\mu = 1$
Airflow resistance Résistance according to EN 29053, method A	$\geq 5 \text{ kPa.s/m}^2$
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, 2015", 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**

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