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

General Part

Technical Assessment Body issuing the European Technical Assessment:	CSTB Centre Scientifique et Technique du Bâtiment
Trade name of the construction product	**Ouattitude, Cloudy cellulose**
Product family	Thermal insulation material made of loose, free cellulose fibres
Manufacturer	OUATTITUDE SAS PAE de la Baume 34290 SERVIAN FRANCE
Manufacturing plant	OUATTITUDE SAS PAE de la Baume 34290 SERVIAN FRANCE
This European Technical Assessment contains	5 pages including 0 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, based on	European Technical Assessment (EAD) (040138-01-1201) “In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres, 2018”
This version replaces	ETA-19/0729 of 27/12/2019

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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 “Ouattitude” et “Cloudy cellulose”.

It is also marketed under the name “IGLOO France S”.

The cellulose fibres (hereinafter referred to as thermal insulation products) are produced from selected paper by mechanical grinding with the addition of flame-retardant proofing agents. The thermal insulation product serves to produce 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 Manufacturing process

Product referred « Ouattitude » or « Cloudy cellulose» is manufactured from selected papers. During the manufacturing process, magnesium sulphate and boric acid are added as flame retardants.

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 dosing of the adjuvants is ensured by a continuous weighing method. At the machine outlet, the material is bagged, weighed, marked, and palletized.

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

2.1 Intended use

The thermal insulation product made of cellulose fibres is used as non-loadable insulating material. for intended uses in vertical, sloped, or horizontal cavities or where horizontal exposed areas are covered.

Depending on the intended application, the product must be installed with a density between 25 and 35 kg/m^3 (open blowing), between 35 and 45 kg/m^3 (spraying with addition of water) or between 50 and 60 kg/m^3 (blowing into cavities).

Fields of application for walls:

- In cavities in exterior or interior walls in timber frame construction and similar structures

- by blowing into closed cavities Density range: 50 - 60 kg/m^3
- by spraying with addition of water Density range: 35 - 45 kg/m^3

- In cavities between partition on exterior or interior walls in masonry or concrete constructions
  - by blowing into closed cavities Density range: 50 - 60 kg/m^3
  - by spraying with addition of water Density range: 35 - 45 kg/m^3
- In cavities of partitioning walls
  - by blowing into closed cavities Density range: 50 - 60 kg/m^3
  - by spraying with addition of water Density range: 35 - 45 kg/m^3

Field of application for floors and ceilings

- Blowing on floors/ceilings under non habitable attics (thermal insulation layer under, between and/or above the load-bearing structure):
  - Density range: 25 - 35 kg/m^3
- Blowing into closed cavities in floors or ceilings:
  - Density range: 50 - 60 kg/m^3

Field of application for roofs

- Blowing into cavities in pitched roofs (full rafter insulation):
  - Density range: 50 - 60 kg/m^3

2.2 General assumptions

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

National regulations on dangerous substances may require verification and declaration on release, and sometimes content, when construction products covered by this standard are placed on those markets.

National regulations on the sustainable use of natural resources may require declaration and verification, when construction products covered by this standard are placed on those markets

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.

It is assumed that the product is installed according to the instructions of the manufacturer or (in the absence of such instructions) according to the usual practice of building professionals to ensure precise compaction of cellulose fibres.

The density of the product is determined according to EN 15101. The density specifications for density according to the field of application are mentioned in 2.1 and must be observed and verified by the installer.

For horizontal machine processed installation of exposed insulation the thermal insulation layer has a constant installation thickness considering the nominal thickness. For that purpose, suitable height marks must be arranged by the executing company in sufficient distances before the processing. The executing company check the installation thickness and the density.

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.

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 necessary for this depends on the climatic conditions of the surroundings.

For blowing applications on a horizontal support, the thickness of the insulation laid must be regular and consider the useful thickness. For that, height markers are placed with sufficient spacing before the installer start to blow. The installer must check the thickness and density installed.

The requirements concerning ventilation openings and the ventilation section above the thermal insulation layer must be considered.

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 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 040011-01-1201 for "In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres", 2018.

The density specifications according to the field of application are mentioned in 2.1.

3.1 Mechanical resistance and stability (BWR1)

Not applicable

3.2 Safety in case of fire (BWR2)

Intended use	**Named range of density**	**Reaction to fire** **Reaction to fire** According to EN 13501-1:2018
Open blowing and blowing into cavities	25 – 60 kg/m^3	**Euroclass: B s2,d0**
Spraying with addition of water in walls	35 – 45 kg/m^3	**Euroclasse : E**

3.3 Hygiene, health, and environment (BWR3)

Essential characteristic	**Performance**
Biological resistance: Resistance to a growth of mould According to EAD "In-situ formed loose fill thermal and/or acoustic insulation products made of vegetable fibres", 2018 and to EN 15101 – annex F	**Class: 0**

3.4 Safety and accessibility (BWR4)

Not applicable

3.5 Protection against noise (BWR5)

Not applicable

3.6 Energy economy and heat retention (BWR6)

Intended use	**Named rang of density**	**Thermal conductivity**: According to EN 12667 at 10°C and conditioning at 23°C and 50%HR (humidity relative)
Open Blowing	25 to 35 kg/m^3	**$\lambda_{D(23,50)}$ = 0.039 W/(m.K)***
Blowing into cavities in floors/ceilings	50 to 60 kg/m^3	**$\lambda_{D(23,50)}$ = 0.041 W/(m.K)***
Blowing into cavities in pitched roofs	50 to 60 kg/m^3	**$\lambda_{D(23,50)}$ = 0.041 W/(m.K)***
Blowing into cavities in walls	50 to 60 kg/m^3	**$\lambda_{D(23,50)}$ = 0.041 W/(m.K)***
Spraying with addition of	35 to 45 kg/m^3	**$\lambda_{D(23,50)}$ = 0.041 W/(m.K)***

water in walls		

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 kg/kg**
  - for 23°C/80 % related moisture of air: $u_{23,80}$ **= 0.111 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_{u2} **= 0.58**
- Moisture conversion factor of thermal conductivity (dry to 23°C/50 HR and 23°C/50 HR to 23°C/80 RH):
- Moisture conversion factor of thermal conductivity (dry to 23°C/50 HR and 23°C/50 HR to 23°C/80 RH):
  - for 23°C/50 % related moisture of air: F_{m1} **= 1.01**
  - for 23°C/80 % related moisture of air: F_{m2} **= 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**
Open blowing on floors under attics	25 à 35 kg/m^3	Settlement under impact excitation: **s_v ≤ 15 %**
		Settlement in cyclical variation of temperature and humidity according to EN 15101: **Class : SH25**
Blowing into closed cavities of walls and between rafters	50 à 60 kg/m^3	Settlement under vibration in wall cavity according EN 15101-1: 2013: **SC 0 (≤ 1 %)**

Essential characteristic	**Performance**
Water vapor diffusion resistance coefficient	**μ = 2**
Airflow resistance according to EN 29053, method A	**NPD**
Corrosion developing capacity according to EN 15101-1, clause 4.3.5	**CR 0** **No perforation**

3.7 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 (hereinafter AVCP) system applied, with reference to its legal base

In accordance with the European Technical Assessment (EAD) (040138-01-1201) “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

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CSTB