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Product Guideline No.14

Bulk cellulose based products



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1 Purpose

This Product Guideline supplements the measures in the General Guidelines.

This Product Guideline concerns cellulose based products according to EN 15101-1 made from paper cellulose wadding, loose-filled cotton fibers, and wood fibers, intended to be:

- blown using a pneumatic machine onto the floor of roof spaces;
- injected using a pneumatic machine into a space between two walls;
- sprayed against a wall by adding water and using a machine.

In the case of a product made of a mixture of cellulose fibers, a specific studies is required to assess the applicability of these guidelines.

The loose-filled insulating products certification covers the product as delivered from the factory, but do not imply certification of installed product. However, the certified thermal performances indicated on the package corresponds to performances likely to be obtained in normal application conditions, according to conditions defined in NF DTU 45.11, or the document proving the fitness for use as detailed §2 below, and this document.

2 Additional elements of the certificate application technical file

The technical file defined in paragraph 2.2 of the General Guidelines is supplemented by the following items.

2.1 Proof of fitness for use

- DTU 45.11 for loose-filled paper cellulose wadding installed by blowing on attics, for which declared characteristics, tests, production controls of insulating materials, are compliant with NF EN 15101-1 requirements.
- Technical Assessment (Avis Technique), Technical Application Document (DTA) or case A ATEX (Appreciation Technique d'EXpérimentation) in force with favorable review for other loose-filled products and other application techniques within the scope of this document.

2.2 Description of the product

- Technical sheet for the product including the description and mass content of the various constituents of the product, in particular fungicide treatments, fire-proofing, etc.
- The finished product thickness, density range, and application technique(s) are defined in the technical file.

2.3 Additional justification

Other elements can be indicated, in particular those given under the Technical Assessment procedure, e.g.:



- Declaration of compliance with the regulatory measures, in particular with the Biocide Directive and Regulation (EU) No. 528-2012 concerning the marketing of biocide products, and the proof of this.
- Questionnaire filled in according to the following model:
 - Description of the manufacturing process:
 - Raw materials:
 - geographical origin
 - nature and specifications
 - transport and storage
 - treatments
 - production process
 - description
 - treatments and adjuvants
 - traceability of the components
 - control programme

Provide explicit elements concerning the quality and traceability of each material and the related means of verification (e.g. the geographical origin of each raw material on the delivery slip and the associated batch numbers given on the labels of the packages of this raw material delivered. This information is permanently available in the factory registers).

For cellulose wadding, loose-filled cotton fibers, and wood fibers, the maximum thickness of certified products is limited to 600mm before settlement, unless the applicant can provide with a study, or have the product pass the settlement test at a higher maximum thickness. In the latter case, the maximum certified thickness is the thickness used during such test.

3 Characteristics which can be certified

According to §1.6 of the General Rules, the thermal resistance R or the thermal conductivity λ is always certified.

Moreover, for any product within the scope of this document, the settlement must be certified if the application technique requires it.

Certified characteristics are associated with a density range.

The characteristics likely to be certified are according to the characteristics listed below:

- Reaction to fire
- Water absorption in the short term by partial immersion
- Resistance to air flow
- Specific heat capacity.
- Resistance to water vapour diffusion



4 Methods of determination of the certified characteristics by the pilot laboratories

The test methods applied by the pilot laboratory for each of the characteristics are defined below.

Taking into account the specific installation technique of loose-filled cotton fibers products, a specific machine may be required. In the event of a specific requirements not being available within the testing laboratory, tests may be carried out using the machine of the certificate holder. Results will then be valid only for this specific machine. In that case, the machine type is indicated on the certificate as detailed in the Technical Assessment (Avis Technique), Technical Application Document (DTA) or case A ATEX (Appreciation Technique d'EXpérimentation) in force with favorable review. Requirements of Technical Specification n°8 are applicable, including test sample preparation for density and thermal conductivity measurement.

4.1 Density

The density is determined using requirements of Technical Specification n°8.

Note: The density range indicated on the certificate is not certified as such, but instead sets the limits within which the thermal conductivity and/or resistance remains certified.

4.2 Thermal conductivity

The measures of paragraph 4.2 of Technical Specification No.1 apply.

For sampling preparation, requirements of Technical Specification n°8 are applicable.

In case of the injection technique, 2 methods are possible:

- The method described in §3.3 of Technical Specification n°8 (§H.2.2. of EN 15101-1), used by default by the pilot laboratory
- The method described in §3.2 of Technica Specification n°8 (§C.2.2. of EN 14064-1), used only if the applicant request it.

4.3 Thermal resistance

Certified thermal resistance is defined according to the procedures in Technical Specification No.2.

The thickness of the thermal resistance test specimens is equal to the height of the frames used for the measurements.

4.4 Settling

The settling class for products installed by a blowing technique is defined according to the procedures in Technical Specification No.4, §2.2.

The settling class for products installed by an injection technique is defined according to the procedures in Technical Specification No.4, §3.1 (Settlement by vibrations).



The chosen method must be compliant with the one described in the Technical Assessment (Avis Technique), Technical Application Document (DTA) or case A ATEX (Appreciation Technique d'Expérimentation) in force with favorable review applicable for the product.

The SH class describing the settlement is defined in EN 15101-1 (non harmonized): It does not allow products covered by this standard to claim a class according to this definition. Therefore, the settlement indicated on certificate of such products is a value in percentage (without SH) as obtained during the real test.

The value for such products is then indicated as a value from 1 to 30% using 5% steps.

4.5 Reaction to fire

The measures in Technical Specification No.3 apply.

4.6 Water absorption

Short-term water absorption by partial immersion can be certified. It is determined according to standard NF EN 1609: method A.

4.7 Resistance to air flow

The resistance to air flow can be certified. It is determined according to standard NF EN 29053.

4.8 Specific heat capacity

The measures in Technical Specification No.10 apply.

4.9 Resistance to water vapour diffusion

Resistance to water vapour diffusion may be certified. It is determined according to EN 12086, climatic conditions A, then EN ISO 12572 (acc. to EN 15101-1 and EAD)

By default, a value may be justified using one of the following reference documents: EN 15101-1, EN 10456 or EAD. In that case, the value is verified by a test according to §6 of this document.



5 Factory production control

Production control in the production unit, performed on test specimens in each density range claimed, satisfies the requirements below.

Parameter	Direct tests	Indirect tests	
		Test method	frequency
Weight of the bags (1)	All of the bags	----	----
Density (2)	Once a day	----	----
Thermal conductivity and resistance	Twice a week	----	----
Humidity level (3)	Once a week	----	----
Mechanical settling (according to Technical Specification No.4)	Once every 3 months	----	----
Reaction to fire	See Technical Specification No.3		
Short-term water absorption (optional)	Once a week	----	----
	and indirect test	Manufacturer method	Once/day
Resistance to fungal growth	Type testing	----	----
	and indirect test	Manufacturer method	Once/day
Resistance to air flow (optional)	Once a year	----	----
	and indirect tests	Manufacturer method	Once/day
Corrosion resistance	Type testing	----	----
Resistance to water vapour diffusion	Type testing or default value	----	----

N.B.: (1) The quantity of material in a sales unit must not be less than the nominal weight of the sales unit.

(2) if several applications are targeted, the tests must be performed on one type of application. The test method is described in §4.8 ; the dimensions of test container indicated in §4.8 of TS n°8



may be reduced down to 1m x 1m x 0.2m. For smaller dimensions, a relation to a container of 2m x 1m x 0.2m must be demonstrated.

(3) determination of the humidity level of the manufactured product which has not be stabilised beforehand at equilibrium moisture content 23°C, 50% RH



6 Tests performed during follow-up

For characteristics requiring monitoring, random tests are conducted at least once a year according to the table below when relevant to the product in question.

The tests are conducted in accordance with the measures in paragraph 3, supplemented if applicable by the procedures described in the Technical Specifications corresponding to the characteristics tested.

Characteristics (Paragraph 3)	Test methods	Place of performance of the tests
Thermal resistance – Thermal conductivity	NF EN 12667 NF EN 12939	Pilot laboratory
Weight of the sales unit		Production unit and pilot laboratory
Reaction to fire ¹	NF EN 13501-1	Pilot laboratory
Other characteristics or criteria	Test methods	Place of performance of the tests
Density applied (or covering power)	Technical Specification n°8	Production unit and Pilot laboratory for blowing

The certifying body may also perform verification tests to verify other characteristics not listed in the table below, in particular if there is any doubt as to the compliance of the certified values.

If a product is certified for more than one application technique (blowing, injecting, spraying), the surveillance tests are performed each year fully on 1 application and 4 dates (batches) by rotating the application, and an additional date (batch) is tested for each additional application.

Random testing is performed for each line in the case of products in Euroclass A, B or C, once every two years for each plant, for a given group of products and according to a sampling plan drawn up by the lead member in collaboration with the industrial manufacturer concerned, unless the manufacturer supplies a test report produced by other laboratories, with whom recognition agreements have been made or by notified laboratories after assessment of the test report.

¹ The reaction to fire classification is monitored by conducting random tests once every two years.



7 Certificate maintenance rules

The certificate maintenance rules are defined in paragraph 4 of the General Guidelines.

Based on the results of the tests performed by the pilot body, product compliance is verified:

- For the density applied (or covering power), according to the specifications of the technical file;
- For the thermal performance according to the procedures in Technical Specification E:
 - Paragraph 2.1 for one density range;
 - Paragraph 2.2 for several density ranges;
- For the following characteristics certified under these regulations and described in detail in the various Technical Specifications, according to the conditions stipulated in these Technical Specifications:
 - Reaction to fire

8 Marking Rules

The marking rules laid out in Technical Specification D apply.

In particular, the information label complies with the measures in paragraph 3.2 of this Technical Specification.