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Product Guideline No.15

Coatings applied by pneumatic spraying of mineral wools with binder

ASSOCIATION POUR LA CERTIFICATION DES MATERIAUX ISOLANTS

4, avenue du Recteur-Poincaré, 75782 Paris Cedex 16 – Tel. 33.(0)1.64.68.84.97 – Fax. 33.(0)1.64.68.83.45

ASSOCIATION DÉCLARÉE (LOI DU 1ER JUILLET 1901) ORGANISME CERTIFICATEUR AGRÉÉ N° 19 (LOI 7823 DU 10 JANVIER 1978)

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1 Purpose

This Product Guideline supplements the measures in the General Guidelines.

This Product Guideline relates to thermal insulation coatings applied by pneumatic spraying of products based on mineral wools with binder and adjuvant on the walls or structures of buildings. All surfaces of the walls, structures and ducts not exposed to the weather are concerned.

The finished product¹ is defined by a thickness, a density range and a mode of application defined in the technical file.

The mixture for spraying is composed of mineral wools, binder and adjuvant. It includes at least 50% by weight of mineral wool. It satisfies the technical manufacturing specifications subject to control under the responsibility of the manufacturer².

The products concerned by these regulations must meet the following specifications:

- For mineral wools

Mineral wools are those defined by standard NF EN ISO 9229.

The industrialist manufacturing mineral wool supplies the industrialist manufacturing the mixture for spraying with the following identification parameters:

- Compliance with the European Directive 97/69 CE (amended by EC regulation 1272/2008)
- Humidity level expressed as a percentage/weight
- Oil level expressed as a percentage/weight
- Non-fibrous content expressed as a percentage/weight
- Colour value range according to the L.a.b method
- Packaging in bales, expressed in kg

- For the binders

The binders used are:

- Hydraulic binders including:
 - Common cements compliant with the standard NF EN 197-1
 - Masonry cement compliant with the standard NF EN 413-1
 - Building lime compliant with the standard NF EN 459-1
 - Natural quick-setting cement compliant with the standard NF P 15-314
 - Alumina cement compliant with the standard NF P15-315
- Resin-based binders in aqueous dispersion
- Dispersible polymer powder binders

¹ Finished product: Product sprayed onto walls.

² In these regulations, the term "manufacturer" is used to refer to the processor of mineral fibres, binder and adjuvant for the purpose of making them into a semi-finished product by a bulk mixture.



Primer and any finishing products must be clearly defined. These specifications must appear in the technical file supplied by the manufacturer to the ACERMI lead member.

Certification of bulk insulation products relates to the products leaving the factory and not the product once applied. However, the certified thermal performances indicated on the packaging correspond to the performances that are likely to be obtained under normal conditions of application, providing that the application conditions defined in either the NF DTU 27.1 standard, or a "Proof of fitness for use" document as described in §2 below, whichever applies, are complied with.

Note: Products coming under the ETA procedure according to EAD 350140-00-1106 must provide proof of their CE marking certificate of conformity.

2 Additional elements of the certificate application technical file

The technical file defined in paragraph 2.2 of the General Guidelines must include the additional following items if the product is *not* to be applied according to NF DTU 27.1 standard.

- Proof of fitness for use: Valid favourable Technical Assessment, Technical Application Document or type A ATEX, Pass'innovation.

3 Characteristics which can be certified

According to §1.6 of the General Guidelines, Thermal Resistance (R) or Thermal Conductivity (λ) is always certified.

Additionally, for all products certified according to this Product Guideline, Adhesion/Cohesion is always certified.

3.1 Products applied according to NF DTU 27.1 standard

The following additional characteristics may be certified:

- Reaction to fire
- Acoustic absorption
- Specific heat capacity



3.2 Products applied according to a Proof of fitness-for-use as described in §2

The following additional characteristics may be certified:

- Reaction to fire
- Acoustic absorption
- Specific heat capacity
- Compressive strength or compressive resistance
- Dimensional Stability at specific temperature and humidity conditions
- Perpendicular Tensile strength
- Short-term water absorption
- Long-term water absorption
- Water vapor transmission

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.

The test specimens are prepared at the holder's factory, according to Technical Specification n°8.

4.1 Thermal conductivity

The measures in Technical Specification No.1 apply.

4.2 Thermal resistance

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

4.3 Reaction to fire

The measures in Technical Specification No.3 apply.

4.4 Adhesion and Cohesion

Adhesion and cohesion are always certified.

The adhesion and cohesion coefficient must be determined according to annex D NF DTU 27.1 standard.



4.5 Acoustic absorption

The acoustic absorption coefficient may be certified.

Determination of the acoustic absorption coefficient according to standard EN ISO354/A1: cf § 4.3.11 of standard NF EN 13162.

The minimum level of acoustic absorption must be determined in accordance with Technical Specification No.9.

4.6 Specific heat capacity

The measures in Technical Specification No.10 apply.

4.7 Other Characteristics

Characteristics	Test Method	Test sample length and width (mm)	Minimum number of measurements to obtain test result	Minimum number of measurements to validate the class	Specific conditions
Compressive Strength or Compressive resistance	EN 826	200X200 300X300	5 3	4	
Dimensional stability at specific temperature and humidity	EN 1604	200X200	3	4	
Perpendicular tensile strength	EN 1607	200X200 300X300	5 3	4	
Short-term water absorption	EN ISO 29767 (formerly EN 1609)	200X200	4	4	Method A
Long-term water absorption	EN 12087	200X200	4	4	
Water vapor transmission	EN 12086	See §6.1 of NF EN 12086	3	4	



5 Factory production control

5.1 Products applied according to NF DTU 27.1 standard

Production control in the production unit, performed on test specimens in each density range claimed, between the minimum and maximum minus 20 kg/m³, satisfies the requirements below.

Parameter	Direct tests	Test method	Indirect tests	
			Test method	frequency
Density of the sprayed product*	Once a week	EN 1602	Manufacturer method	Once every 5 hours
Apparent density of the bulk product	Once every 5 hours	----	----	----
Thermal conductivity and resistance in the dry state* (matured and dried)	Once a week	EN 12 667 or EN 12939	Manufacturer method	-----
Humidity level of the product in the bag	Once a week	----	----	----
Adhesion/Cohesion	Once a month	EGOLF method (Annex D of NF DTU 27.1)	----	----
Weight in the bags	Once an hour	----	----	----
Acoustic absorption	Type testing	Technical Specification No.9	–	–

* With a correlation with the 23°C and 50% RH state.

Note: The quantity of material in a sales unit must not be less than the nominal weight of the sales unit.

In addition to these measures, for the following certified characteristics for the purposes of these regulations and described in detail in the various Technical Specifications, the procedures (methods and minimum test frequencies) provided for in this Technical Specification apply:

- Reaction to fire



5.2 For products subject to a proof of fitness-for-use according to §2

Production control in the production unit, performed on test specimens in each density range claimed, between the minimum and maximum minus 20 kg/m³, satisfies the requirements below.

Parameter	Direct tests	Test method	Indirect tests	
			Test method	frequency
Density of the sprayed product*	Once a week	EN 1602	Manufacturer method	Once every 5 hours
Apparent density of the bulk product	Once every 5 hours	----	----	----
Thermal conductivity and resistance in the dry state* (matured and dried)	Once a week	EN 12 667 or EN 12939	Manufacturer method	-----
Humidity level of the product in the bag	Once a week	----	----	----
Adhesion/Cohesion	Once a month	EGOLF method (Annex D of NF DTU 27.1)	----	----
Weight in the bags	Once an hour	----	----	----
Acoustic absorption	Type testing	Technical Specification No.9	-	-
Perpendicular Tensile Strength	Once a month and indirect test	EN 1607	Manufacturer method	Once a week
Dimensional stability at specific temperature and humidity conditions	Type test	EN 1604	-	-
Compressive strength or compressive resistance	Once a month and indirect test	EN 826	Manufacturer method	Once a week
Water vapor transmission	Once a year	EN 12086	-	-



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Short-term water absorption	Once a year	EN ISO 29767 (formerly EN 1609)	-	-
Long-term water absorption	Once a year	EN 12087	-	-

* With a correlation with the 23°C and 50% RH state.

Note: The quantity of material in a sales unit must not be less than the nominal weight of the sales unit.

In addition to these measures, for the following certified characteristics for the purposes of these regulations and described in detail in the various Technical Specifications, the procedures (methods and minimum test frequencies) provided for in this Technical Specification apply:

- Reaction to fire



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.

6.1 For products applied according to NF DTU 27.1

Characteristics	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 ³	NF EN 13501-1	Pilot laboratory
Other characteristics or criteria	Test methods	Place of performance of the tests
Density	NF EN 1602	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.

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.

³ The reaction to fire classification is monitored by conducting random tests once every two years.



6.2 For products subject to a proof of fitness-for-use according to §2

Characteristics	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 ⁴	NF EN 13501-1	Pilot laboratory
Other characteristics or criteria	Test methods	Place of performance of the tests
Density	NF EN 1602	Production unit and Pilot laboratory for blowing
Compressive strength or compressive resistance	NF EN 826	Pilot laboratory
Dimensional stability at specific temperature and humidity	NF EN 1604	Pilot laboratory
Water vapor transmission	NF EN 12086	Pilot laboratory
Short-term water absorption	NF EN ISO 29767 (formerly EN 1609)	Pilot laboratory
Long-term water absorption	NF EN 12087	Pilot laboratory
Perpendicular tensile strength	NF EN 1607	Pilot laboratory

⁴ The reaction to fire classification is monitored by conducting random tests once every two years.



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.

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.

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 density, 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
- For the following characteristics, according to methods described in §5:
 - Compressive strength or compressive resistance
 - Perpendicular tensile strength
 - Water vapor transmission
 - Short-term water absorption
 - Long-term water absorption
 - Dimensional stability at specific temperature and humidity

8 Marking Rules

The marking rules laid out in Technical Specification D apply.

In particular, the information label complies with the measures in paragraph 3.3 of this Technical Specification.