Product Guideline No.7

Factory-made wood wool products

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1 Purpose

This Product Guideline supplements the measures in the General Guidelines.

This Product Guideline concerns wood wool panels, composite wood wool panels and multi-layered insulation products in accordance with harmonized European standard NF EN 13168.

For Multi-layered insulation products, additional requirements are specified in Annex C of the harmonized European standard NF EN 13168.

All thermal insulation products used, in addition to wood wool, for the manufacture of wood wool composite panels (WW-C) must comply with the European standards of the corresponding products.

2 Additional elements of the certificate application technical file

The technical file defined in paragraph 2.2 of the General Guidelines is completed by the following elements:

-The references of the components of the composite or multi-layer product (insulated layer, type of mineral bonder for composite products, physical or chemical adhesive for multi-layer products)

-Weight per m^2 of mineral bonder for composite products, weight per m^2 of physical or chemical adhesive for multi-layer products

-The additional elements defined in paragraph §2 of the Product Referentials for each of the insulating layers used in composite panels when these layers are not subject to ACERMI certificates.

In order to demonstrate that the manufactured products can be handled, the following verifications will be carried out at the admission of the product:

-The compressive stress test at 10% strain, according to EN 826, must be greater than or equal to 20kPa

-The tensile strength test perpendicular te the faces, according to EN 1607, must be greater than or equal to 5kPa for wood wool composite panels.

The application of these provisions will be examinated by the pilot during the follow-up audit of the production unit.

3 Characteristics which can be certified

The characteristics which can be certified are the characteristics listed in paragraph 4 of standard NF EN 13168, supplemented by the following characteristics:

- Service compression strength, normal service deformation
- Emissivity
- Specific heat capacity

When a characteristics is certified on each of the insulating layers and the combination of the different components of the composite or multi-layer insulation has no influence on the characteristic of the assembly, then the least critical value or level can be used for the complete product.

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 in paragraph 5 of standard NF EN 13168, supplemented by the following measures.

4.1 Thermal conductivity

The measures of paragraph 1.1 of Technical Specification No.1 apply.

4.2 Thermal resistance

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

If each of the layers of wood wool composite panels and multi-layer insulation products are ACERMI certified and the bond between the elements does not change the thermal resistance value by more than 2%, the the certifies thermal resistance can be determined by calculation.

$$R_{Total} = \Sigma \frac{d_i}{\lambda_i}$$

With:

- R_{Total} : the total thermal resistance of the composite panel made from wood wool or tge multi-layer insulating product

- d_i : the nominal thickness of the element i

- λ_i : the certified thermal conductivity of the element i

All layers of a panel made from wood wool or a multi-layer insulating product must meet all the provisions of the relevant ACERMI reference system.

4.3 Reaction to fire

The measures in Technical Specification No.3 apply.

The reaction to fire of composite wood wool products and multi-layer insulation products is determined in its entirety in accordance with EN 13501-1 and the rules of assembly and fastening rules give in EN 15715.

4.4 Service compression strength, normal service deformation

The measures in Technical Specification No.5 apply.

4.5 Class of insulating underlayers beneath screed or floating slab and under tiles

If the class of insulating underlayers beneath screed or floating slab and under tiles defined in the DTU guidelines 26.2/52.1 is certified, the procedures in Technical Specification No.6 apply.

4.6 Emissivity

If the product has a surface coating for which the emissivity is certified, the procedures in Technical Specification No.7 apply.

4.7 Specific heat capacity

The measures in Technical Specification No.10 apply.

5 Factory production control

Production control in the production unit satisfies the requirements of appendix B of European standard NF EN 13168.

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
- Service compression strength and normal service deformation
- Class of insulating underlayers beneath screed or floating slab and under tiles
- Emissivity
- Specific heat capacity

In addition, the following special provisions must be observed.

5.1 Consumption of chemical adhesive or organic binder

For composite products based on wood wool, and multi-layer insulating products the consumption of chemical adhesive or mineral bonder is verified by difference of weight on a support of one

square meter once every 8 hours or for each batch of production. Any device that achieves the same result with at least equivalent accuracy can be used.

5.2 Compression stress at 10% strain

For composite wood wool products and multi-layer insulating products the compressive strength is checked once every 8 hours or for each batch of production. If the compressive strength is certified and greater than or equal to 20 kPa for each of the insulating layers, then the verification frequencies defined in Annex B of Standard NF EN 13168 apply.

For single-layer products, the verification frequencies defined in Annex B or Standard NF EN 13168 apply.

5.3 Tensile strength perpendicular to the faces

For composite products based on wood wool the tensile strength is checked once every 8 hours or for each batch of production.

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 European standard NF EN 13168, supplemented if applicable by the procedures described in the Technical Specifications corresponding to the characteristics tested.

Characteristics (NF EN 13168)	**Test methods**	**Place of performance of the tests**
Thermal resistance – Thermal conductivity	NF EN 12667 NF EN 12939	Pilot laboratory
Length and width	NF EN 822	Production unit and pilot laboratory
Thickness	NF EN 823 or NF EN 12431	Production unit and pilot laboratory
Squaring	NF EN 824	Production unit
Flatness	NF EN 825	Production unit
Reaction to fire[1]	NF EN 13501-1	Pilot laboratory
Other characteristics or criteria for all products	**Test methods**	**Place of performance of the tests**
Emissivity	Technical Specification No.7	Pilot laboratory
Density	NF EN 1602	Pilot laboratory
Compression stress	NF EN 826	Production unit and pilot laboratory
Service resistance (R_{CS})	Technical Specification No.5	Production unit and pilot laboratory

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

Other characteristics or criteria for composite wood wool products and multi-layer insulation	**Test methods**	**Place of performance of the tests**
Consumption of chemical adhesive or inorganic bonder	Paragraph 5.1	Production unit
Other characteristics or criteria for composite wood wool products based on wood wool	**Test methods**	**Place of performance of the tests**
Tensile resistance perpendicular to the faces	NF EN 1607	Production unit and pilot laboratory

The certifying body may also perform 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 reaction to fire in the case of products coming under conformity certificate system 1 for CE marking, in the case of the Keymark or at the manufacturer's request. In addition, for the follow-up tests, the following measures apply: one SBI test on the worst case according to the initial type testing.

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 dimensional characteristics according to the requirements of paragraph 4 of European standard NF EN 13168;
- For the thermal performance according to paragraphs 2.1 or 2.2 of Technical Specification E;
- 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
    - Service compression strength and normal service deformation
    - Emissivity

8 Marking Rules

The marking rules laid out in Technical Specification D apply.

In particular, the information label complies with the measures in paragraph 3.1.1 of this Technical Specification.