SLOVENSKI STANDARD
SIST EN 15101-2:2013

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Toplotnoizolacijski proizvodi za stavbe - Razsuti celulozni proizvodi (LFCI) za oblikovanje na mestu vgradnje - 2. del: Specifikacija za vgrajene proizvode

Thermal insulation products for buildings - In-situ formed loose fill cellulose (LFCI) products - Part 2: Specification for the installed products

Wärmedämmstoffe für Gebäude - An der Verwendungsstelle hergestellter Wärmedämmstoff aus Zellulosefüllstoff (LFCI) - Teil 2: Spezifikation für die eingebauten Produkte

Produits isolants thermiques destinés aux applications du bâtiment - Isolation thermique formée en place à base de cellulose (LFCI) - Partie 2: Spécifications des produits mis en oeuvre

Ta slovenski standard je istoveten z: **EN 15101-2:2013**

ICS:

91.100.60	Materiali za toplotno in zvočno izolacijo	Thermal and sound insulating materials

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English Version

Thermal insulation products for buildings - In-situ formed loose fill cellulose (LFCI) products - Part 2: Specification for the installed products

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This European Standard was approved by CEN on 8 August 2013.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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Foreword

This document (EN 15101-2:2013) has been prepared by Technical Committee CEN/TC 88 “Thermal insulating materials and products”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2014, and conflicting national standards shall be withdrawn at the latest by March 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This European Standard consists of two parts which form a package. The first part, which is the harmonised part, satisfying the mandate and the Construction Products Directive (CPD) and is the basis for the CE marking, covers the products which are placed on the market. The second part, which is the non-harmonised part, covers the specification for the installation checks for the installed products.

Part 1 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports the essential requirements of EU Directives.

Attention is drawn to the need to take into account any complementary member state rules (e.g. installation rules) which together with this European Standard ensures the fitness for purpose of the installed product.

This European Standard is one of a series of standards that include mineral wool, expanded clay, expanded perlite, exfoliated vermiculite, polyurethane/polyisocyanurate, cellulose and bound expanded polystyrene in-situ formed insulation products used in buildings, but this standard may be used in other areas where appropriate.

The reduction in energy used and emissions produced during the installed life of insulation products exceeds by far the energy used and emissions made during the production and disposal processes.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies requirements for in-situ formed loose-fill cellulose insulation (LFCI) products when installed as thermal insulation into walls, floors, galleries, roofs, lofts and ceilings.

This Part 2 is a specification for the installation checks for the installed products.It specifies the checks and tests to be used for the declarations made by the installer of the product.

This European Standard does not specify the required level of all properties to be achieved by a product to demonstrate fitness for purpose in a particular application. The required levels are to be found in regulations or non-conflicting standards.

Products with a declared thermal conductivity at 10 °C (mean temperature) greater than 0,060 W/(m × K) or a declared thermal resistance lower than 0,25 m^2 × K/W are not covered by this European Standard.

This European Standard does not cover factory made cellulose mats, bats or quilts intended to be used for the insulation of buildings or in-situ cellulose products for the insulation of building equipment and industrial installations. Nor does it specify performance requirements.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15101-1, *Thermal insulation products for buildings — In-situ formed loose-fill cellulose (LFCI) products — Part 1: Specification for the products before installation*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
open blow applications
all the horizontal applications where the final upper surface of the installed insulation products remains uncovered

EXAMPLE Galleries, lofts, ceilings and floors.

3.1.2
cavity applications
applications where the installed insulation product is created in an enclosed space

EXAMPLE Frame wall, roof and floor constructions.

3.1.3
floor
horizontal division between two storeys, over a crawl space or a floor directly on the ground

3.1.4
settlement
decrease of installed insulation thickness in lofts or height in cavities and frame constructions with vibrations, humidity, cyclic climate conditions and time, expressed as a percentage of the initial installed thickness

3.1.5
coverage
mass of insulation per unit area

3.1.6
performance chart
table giving thickness and coverage requirements for different values of declared thermal resistance

3.1.7
system
particular type of loose-fill cellulose insulation used in conjunction with a blowing machine with a blowing hose and nozzle

3.1.8
blowing hole
hole, cut or formed, in a wall or frame construction, through which the cellulose is blown

3.1.9
declared installed thickness for open blow applications
thickness as installed by the installer, prior to any settlement

3.1.10
loose-fill cellulose insulation (LFCI)
fibre, fibrous or granulated insulation products derived from paper, paper stock and/or wood, leave or stalk strings with or without binders which are blown, injected or applied with or without moisture

3.1.11
frame wall, roof and floor constructions

walls with wood or metal studs, sloping roof with insulation between and above rafters, as well as stud girders and internal and external insulation on solid masonry construction

3.2 Symbols and abbreviations

3.2.1 Symbols used in this standard:

K	is the declared installed insulation density	Kg/m^3
R	is the thermal resistance	m^2 × K/W
SH	is the declared class for settlement for open blow applications	
SC	is the declared class of settlement for cavity applications	
R_D	is the declared installed thermal resistance	m^2 × K/W
W_p	is the short-term water absorption	kg/m^2
d	is the declared installed insulation thickness	m
s	is the relative reduction in thickness, due to settlement	%
λ_D	is the declared thermal conductivity	W/(m × K)

3.2.2 Abbreviations used in this standard

LFCI **L**oose-**F**ill **C**ellulose **I**nsulation

4 Requirements

4.1 General

The installer shall use an insulation product that conforms to EN 15101-1.

The installer shall inspect the building in accordance with manufacturer's technical information and national rules in order to determine whether it is suitable for the application of the product. In the absence of any national rules, the inspection shall be in accordance with the information given in Annex E.

Properties of the installed product shall be assessed in accordance with Clause 5. To conform to this standard, products shall meet the requirements of 4.2 and 4.3 as applicable.

One test result on a product property is the average of the measured values on the number of test specimens given in Table 1.

The installer is not responsible for calculating the declared thermal values. These are given in the appropriate product suppliers performance charts. Accordingly, the installer can only check whether the installed insulation product is within the declared density and thickness range.

4.2 Declared installed insulation thickness and declared installed insulation density for open blow applications (e.g. lofts)

The declared installed insulation thickness (d) and declared installed density (k) shall be assessed by measurement of the:

— declared installed insulation thickness according to 5.2;

— declared installed insulation density according to 5.3.

The mean value for the installed thickness to cover a declared thermal resistance shall not be less than the minimum value given by the relevant manufacturer's performance chart for loft insulation (the performance chart shows the relationship between the declared thermal resistance, the declared density range and the installed thickness).

The installed number of bags and the declared installed insulation density shall be within the specified density range for the specific application.

4.3 Declared installed insulation thickness and declared installed insulation density for cavity applications (e.g. frame wall, roof and floor constructions)

The declared installed insulation thickness and declared installed insulation density shall be assessed by measurement of the:

— installed thickness;

— installed density.

The installed number of bags and the declared installed insulation density shall be within the specified density range for the specific application.

5 Test methods

5.1 General

Table 1 gives the dimensions of the test specimens, the minimum number of test specimens required to get one test result and any specific conditions which are necessary.

Table 1 — Test methods, test specimens and conditions

Clause	Title	Test method	Test specimen		Specific conditions
			Dimensions	Number to get one test result	
4.2	Installed insulation thickness of open blow applications	5.2 and 5.3	—	5 per 100 m^2	Thickness and number of bags
			≥ 0,16 m^2	1	Frame method in case of dispute
4.3	Installed insulation thickness of cavity applications	5.5.1 and 5.5.3	—	10 per 100 m^2	
			≥ 0,5 × 0,5 m^2 x 0,06 m		In case of dispute

5.2 Declared installed insulation thickness

At least five thickness measurements in different places shall be made for each 100 m^2 of loft area. A pin or ruler graduated in millimetres shall normally be used for these measurements.

In case of dispute, the thickness shall be measured with the pin and plate method in accordance with Annex A.

5.3 Declared installed insulation density

The installed insulation density shall be calculated by dividing the total weight of product installed by the area of the installation. The total weight of the product shall be obtained from the number of bags used. In case of dispute, the installed density and coverage shall be determined according to 5.4.

5.4 Frame method for the determination of declared installed density

The specimen thickness shall be measured in accordance with Annex A. A circular or square frame with an area of at least 0,16 m^2 shall be carefully pressed through the insulation after installation. The insulation product inside the frame shall be taken out as a specimen and weighed. The installed density shall be calculated by dividing the installed coverage with the installed thickness.

5.5 Declared installed declared insulation density of cavity applications

5.5.1 Average cavity width

The average width of the cavity shall be measured in accordance with the method given in Annex C.

5.5.2 Machine output

The blowing machine shall be set in accordance with the insulation product manufacturer's technical information. The machine output shall be adjusted to fill the density test box in accordance with Annex D to the value specified by the manufacturer.

5.5.3 Declared installed insulation density

The installed declared insulation density of the product shall be calculated in accordance with Annex B.

In case of dispute, the following procedure shall be used.

Remove and weigh a section of wall approximately (0,5 × 0,5) m^2. Calculate the density of the product from the weight of the cellulose and the dimensions of the area where the specimen was removed. The density shall not be less than the minimum value specified by the manufacturer.

6 Guidelines for installation

National Practice, National Standards, National Regulations or Local Rules may exist, covering for example the application conditions. In the absence of national regulations, national standards or any local rules, the manufacturer's technical information shall be followed together with the procedure given in Annex E.

7 Installer's declaration

The installer shall declare to the customer that the work has been carried out in accordance with the requirements of this standard using an insulation product that conforms to EN 15101-1.

The installer shall also state at least the following information for the appropriate application:

— trade name and designation code for the installed product;

— number of EC certificate of conformity for the insulation product, if applicable;

— the declared installed thermal resistance;

— the declared installed insulation thickness;

— declared installed insulation density;

— the quantity of insulation product used for the installation (number of bags or kg);

— the place and date of installation;

Further information may be declared as in the examples given in Annex E.