SLOVENSKI STANDARD
SIST EN 16012:2012/kFprA1:2014

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Toplotnoizolacijski proizvodi za stavbe - Odsevni izolacijski proizvodi - Ugotavljanje nazivnih toplotnih lastnosti

Thermal insulation for buildings - Reflective insulation products - Determination of the declared thermal performance

Wärmedämmstoffe für Gebäude - Reflektierende Wärmedämm-Produkte - Bestimmung der Nennwerte der wärmetechnischen Eigenschaften

Isolation thermique des bâtiments - Produits d'isolation réfléchissants - Détermination de la performance thermique déclarée

Ta slovenski standard je istoveten z: **EN 16012:2012/FprA1**

ICS:

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

SIST EN 16012:2012/kFprA1:2014 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

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FINAL DRAFT
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English Version

Thermal insulation for buildings - Reflective insulation products - Determination of the declared thermal performance

Isolation thermique des bâtiments - Produits d'isolation réfléchissants - Détermination de la performance thermique déclarée

Wärmedämmstoffe für Gebäude - Reflektierende Wärmedämm-Produkte - Bestimmung der Nennwerte der wärmetechnischen Eigenschaften

This draft amendment is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 89.

This draft amendment A1, if approved, will modify the European Standard EN 16012:2012. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 16012:2012/FprA1:2014) has been prepared by Technical Committee CEN/TC 89 “Thermal performance of buildings and building components”, the secretariat of which is held by SIS.

This document is currently submitted to the Unique Acceptance Procedure.

1 Modification to Clause 2

After EN 823, delete the reference to the date "1994".

2 Modification to 3.2

Add the following symbols:

1) In the Table of Symbols:

Symbol	Quantity	Unit
"*R*	thermal resistance	m²·K/W"

2) In the Table of Subscripts:

Subscripts	
"90/90	90 % fractile with a confidence level of 90 %"

3 Modifications to Clause 5

3.1 Modification to 5.2, Thickness measurement

In the second line of 5.2 delete the reference ":1994" *after* EN 823.

At the end of the first sentence, add after "… air gaps", *the following:* ", except that the minimum weight of plate may be reduced from 50 Pa to 25 Pa."

3.2 Modification to 5.3, Conditioning and specimen preparation

Replace the title of 5.3 with the following:

"5.3 Test Specimens"

Add the following new subclause:

"5.3.1 Size and number of specimens

The specimen size shall be appropriate to the apparatus being used. In the absence of harmonised product specifications for any product type and to permit statistical calculation of the thermal performance, a minimum of 3 samples shall be tested, taken from at least 3 different production batches wherever possible. Where a harmonised product specification exists, the rules from that standard should be followed."

Renumber the original text of 5.3 as subclause:

"5.3.2 Conditioning and specimen preparation"

3.3 Modification to 5.4, Determination of thermal resistance – outline

Add to the end of 5.4 a new final paragraph:

"The declared thermal resistance, R_D shall be given as limit values representing at least 90 % of the production, determined with a confidence level of 90 % according to the calculation rules given in EN ISO 10456."

4 Modifications to Clause 7

4.1 Modification to 7.1, Results derived from hot plate and emissivity measurements (Products Type 1 & 2)

Delete the existing text in 7.1 and replace it with the following:

"The thermal performance determined in accordance with this standard shall be established from a minimum of 3 test results and calculated using the 90/90 fractile rules according to EN ISO 10456 as:

a) the 90/90 fractile value of the thermal resistance of the core as determined in Clause 5, rounded downwards to the nearest 0,01 m²·K/W, together with;

b) the 90/90 fractile value of the emissivity of the surface or surfaces (if different) as determined by D7, expressed to two decimal places, and

c) optionally, depending upon the intended application, the 90/90 fractile value of the thermal resistance of the core together with the thermal resistance of one or two adjacent (vertical) airspace(s) and the specification of the air space(s), rounded downwards to the nearest 0,05 m²·K/W by:

1) Calculating the thermal resistance of the air cavities adjacent to the product using standardized calculation procedures specified in EN ISO 6946;

2) Using the emissivity of the surfaces from the procedure specified in 5.9;

3) Using the core thermal resistance determined from the procedures specified in 5.5 or 5.6;

4) Using a temperature difference across each air cavity of 5 K, if this calculation is being carried out for the purpose of product comparison. Alternatively, the air cavity thermal resistance may be calculated using a temperature difference suitable for the application. The temperature difference used shall be stated with the declared thermal resistance.

NOTE This calculation will not be able to take account of the effects of overlapping the products (where the foil surface on the cold side is brought directly through to the warm side)."

4.2 Modification to 7.2, Results derived from hot box and emissivity measurements (Product Types 1, 2 & 3)

Delete the existing text in 7.2 and replace it with the following

"The thermal performance determined in accordance with this standard shall be established from a minimum of 3 test results and calculated using the 90/90 fractile rules according to EN ISO 10456 as:

a) the 90/90 fractile value of the thermal resistance of the core together with the thermal resistance of the vertical air space(s), rounded downwards to the nearest 0,05 m^2K/W, and the specification of the air space(s), together with,

b) the 90/90 fractile value of the measured emissivity of the surfaces expressed to two decimal places, and

c) the 90/90 fractile value of the thermal resistance of the core as determined in 5.7, rounded downwards to the nearest 0,01 m²·K/W."

4.3 Modification to 7.3 Results derived from emissivity measurements only (product Type 4)

Delete the existing text in 7.3 and replace it with the following:

"The thermal performance determined in accordance with this standard shall be established using a minimum of 3 test results and calculated using the 90/90 fractile rules according to EN ISO 10456 as:

a) the 90/90 fractile value of the measured emissivity of the surface (or surfaces) expressed to two decimal places, together with;

b) the calculated thermal resistance of associated (vertical) air space(s), rounded downwards to the nearest 0,05 m²·K/W, the specification of the air space(s), the temperature differences used and the calculation method used."

5 Modifications to Annex D, Measurement of emissivity using a Thermal Infra-Red apparatus

5.1 Modification to D.5.2, Dimensions and numbers of specimens

Delete the existing text in D.5.2 and replace it with the following:

"A minimum of three specimens should be taken from the sample to be representative of the length and width of the product to include a representative area of any printing or perforation where relevant. If the faces of the product differ then a minimum of three specimens shall be taken from each face. The specimen size should be adapted to the size of the specimen holder and to the fixing system of the specimen holder (see D.6), but shall be at least 250 mm by 250 mm."

5.2 Modification to D.7, Expression of results

Delete the existing text in D.7 and replace it with the following:

"The emissivity of the specimen shall be expressed to 2 decimal places. All single measurements resulting in an emissivity < 0,02 or > 0,94 (measurement range of the apparatus) should be set to 0,02 or 0,94 respectively. The emissivity mean value, all the single values per specimen and the standard deviation of the results from the tested product shall be included on the test report. The emissivity mean-value shall be rounded to two decimal places.

The mean value (one test result) from any one sample shall be derived from a minimum of 3 specimens taken from the sample with five measurements being taken on each specimen. The declared value for a product shall be based upon a minimum of 3 test results (wherever possible from at least 3 different production batches) calculated using the 90/90 fractile rules from EN ISO 10456. The manufacturer may use a higher number of test results (samples) in the calculation. A mean value below 0,05 is declared as 0,05."