



**SLOVENSKI STANDARD**  
**kSIST FprEN 14707:2012**

**01-april-2012**

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**Toplotnoizolacijski proizvodi za opremo stavb in industrijske inštalacije -  
Ugotavljanje najvišje temperature servisiranja predoblikovanih cevnih izolacij**

Thermal insulating products for building equipment and industrial installations -  
Determination of maximum service temperature for preformed pipe insulation

Wärmedämmstoffe für die Haustechnik und für betriebstechnische Anlagen -  
Bestimmung der oberen Anwendungsgrenztemperatur von vorgeformten  
Rohrdämmstoffen

Produits isolants thermiques pour l'équipement du bâtiment et les installations  
industrielles - Détermination de la température maximale de service des coquilles  
isolantes préformées

**Ta slovenski standard je istoveten z: FprEN 14707**

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**ICS:**

91.100.60	Materiali za toplotno in zvočno izolacijo	Thermal and sound insulating materials
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**kSIST FprEN 14707:2012**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**FINAL DRAFT**  
**FprEN 14707**

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ICS 91.100.60

Will supersede EN 14707:2005+A1:2007

English Version

## Thermal insulating products for building equipment and industrial installations - Determination of maximum service temperature for preformed pipe insulation

Produits isolants thermiques pour l'équipement du bâtiment et les installations industrielles - Détermination de la température maximale de service des coquilles isolantes préformées

Wärmedämmstoffe für die Haustechnik und für betriebstechnische Anlagen - Bestimmung der oberen Anwendungsgrenztemperatur von vorgeformten Rohrdämmstoffen

This draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 88.

If this draft becomes a European Standard, 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.

This draft European Standard 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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COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (FprEN 14707:2012) has been prepared by Technical Committee CEN/TC 88 “Thermal insulating materials and products”, the secretariat of which is held by DIN.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 14707:2005+A1:2007.

The main technical changes that have been made in this new version of EN 14707 are the following ones:

- a) 6.1, Dimensions of test specimens has been modified;
- b) B.3, Dimension of test specimens has been completed.

This European Standard is one of a series of European Standards which specify test methods for determining dimensions and properties of thermal insulating materials and products. It supports a series of product standards for thermal insulating materials and products which derive from the Council Directive of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (Directive 89/106/EEC) through the consideration of the essential requirements.

This European Standard has been prepared for products used to insulate building equipment and industrial installations, but it may also be applied to products used in other areas.

A similar standard is available for testing of flat products EN 14706, *Thermal insulating products for building equipment and industrial installations — Determination of maximum service temperature*.

## FprEN 14707:2012 (E)

### 1 Scope

This European Standard specifies the equipment and procedures for determining the maximum service temperature for preformed pipe insulation. It is applicable to thermal insulating products.

### 2 Normative references

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

EN 12429, *Thermal insulating products for building applications — Conditioning to moisture equilibrium under specified temperature and humidity conditions*

EN 13467, *Thermal insulating products for building equipment and industrial installations — Determination of dimensions, squareness and linearity of preformed pipe insulation*

EN 14706, *Thermal insulating products for building equipment and industrial installations — Determination of maximum service temperature*

### 3 Terms and definitions

For the purposes of this document, the following term and definition applies.

#### 3.1

##### **maximum service temperature**

highest temperature to which a thermal insulation product may be exposed at a given thickness and at which it will continue to function within specified limits of performance

[EN ISO 9229:2007]

NOTE 1 The required performance may be in the areas of dimensional stability, thermal properties, and mechanical properties as well as changes in appearance and resistance against creation of hazards such as internal self-heating (see annexes and requirements in the relevant product standard).

NOTE 2 In the present test procedure, which is used as a reference, the test specimen is exposed to a temperature difference going from ambient to the maximum service temperature. This may not reflect the actual application conditions when products are exposed to different temperatures on the two main faces, e.g. in multi-layer systems or for faced products where the facing may limit the maximum service temperature.

### 4 Principle

Measure thickness and length after one sided heat treatment for a specified time period, at the maximum service temperature, achieved using a specified rate of temperature increase. The thickness of the test specimen is measured during heat treatment and the length only after cooling to ambient temperature.

NOTE The procedure may be an iterative process.

Additional requirements for assessing the maximum service temperature of specific materials are described in normative annexes to this European Standard or the relevant product standard or any other European technical specification.

### 5 Apparatus

A general arrangement of the apparatus is indicated in Figure 1 and comprises of:

**5.1 Hot pipe**, with a uniform temperature distribution in the measuring zone on the hot surface and a heat flux perpendicular to the surface of the pipe within the measuring zone (two pipes are required, with diameters that fulfil the requirements of 6.1).

The hot pipe shall be linear to within  $\pm 1$  mm in the measuring zone at ambient temperature.

The hot pipe shall be capable of being controlled to within  $\pm 2$  % of a predetermined temperature  $\pm 10$  °C whichever is smaller over the central 60 % of the total pipe length.

The hot pipe shall be capable of being heated at 50 °C/h and/or 300 °C/h.

**5.2 End insulation**, with a gap as small as possible between end insulation and guard piece of the test specimen (e.g.  $\leq 3$  mm) which will permit free movement during the test of the test specimen.

**5.3 Temperature sensors** (e.g. thermocouples) capable of recording the hot surface temperature of the test pipe to the nearest  $\pm 1$  % in centigrade but not less than  $\pm 1$  °C, which are placed within grooves on the hot pipe.

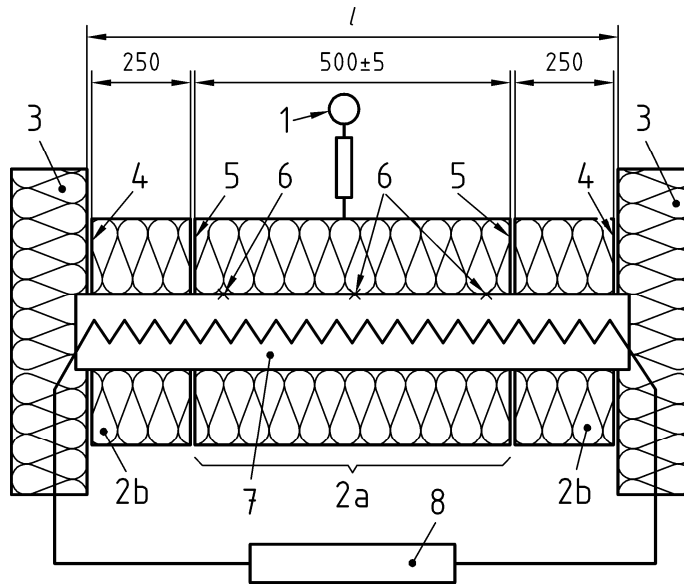
**5.4 Flexible metal foil, 3 pieces**, (e.g. brass) capable of exerting a uniform pressure of 500 Pa on the upper surface of the test specimen along its testing length of  $(500 \pm 5)$  mm and the two end guards, length  $(250 \pm 5)$  mm.

The pressure shall be calculated using the area: e.g. the test length of 500 mm times the diameter of the hot pipe.

**5.5 Device**, e.g. electromechanical for measuring the thickness of the test specimen during the test to the nearest 0,1 mm.

When determining the thickness of the test specimen the thermal movement of the apparatus (e.g. quartz rod) shall be taken into account up to the maximum service temperature.

Dimensions in millimetres



**Key**

- 1 Device for measuring thickness, e. g. electromechanical device
- 2a Test length of the test specimen
- 2b Test specimen end guard
- 3 End insulation
- 4 Small gap
- 5 Circumferential joints
- 6 Thermocouples
- 7 Hot pipe
- 8 Power supply and temperature control

**a) General arrangement**