

Ehituses kasutatavad soojustusmaterjalid. Nihkeomaduste määramine

Thermal insulating products for building applications
- Determination of shear behaviour

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12090:1999 sisaldab Euroopa standardi EN 12090:1997 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12090:1999 consists of the English text of the European standard EN 12090:1997.</p> <p>This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: See standard määrab kindlaks seadmed ja moodused nihkeomaduste määramiseks. Standard kehtib soojustustoodete kohta.</p>	<p>Scope:</p>
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ICS 91.100.60

Võtmesõnad: arvutus, hooned, moodus, määramine, nihkekindlus, nihketeimid, proovikeha, soojaisolatsioon, soojustusmaterjalid, teimitingimused

ICS 91.100.99

Descriptors: Thermal insulation, insulating materials, shear strength, testing.

English version

**Thermal insulating products for building applications
Determination of shear behaviour**

Produits isolants thermiques destinés aux
applications du bâtiment – Détermination
du comportement en cisaillement

Wärmedämmstoffe für das Bauwesen –
Bestimmung des Verhaltens bei
Scherbeanspruchung

This European Standard was approved by CEN on 1997-04-26.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Contents

Foreword	3
1 Scope	5
2 Normative references	5
3 Definitions	5
4 Principle	5
5 Apparatus	6
6 Test specimens	9
7 Procedure	10
8 Calculation and expression of results	11
9 Accuracy of measurement	13
10 Test report	13

Foreword

This European Standard 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 December 1997, and conflicting national standards shall be withdrawn at the latest by December 1997.

This European Standard is one of a series of 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 drafted for applications in buildings but it may also be used in other areas where it is relevant.

In pursuance of Resolution BT 20/1993 Revised, CEN/TC 88 have proposed defining the standards listed below as a European "package" of standards, setting December 31, 1997 as the date of withdrawal (dow) of national standards which conflict with the European Standards of this package.

The "package" of standards comprises the following group of inter-related standards on test methods for determining dimensions and properties of thermal insulation materials and products, all of which come within the scope of CEN/TC 88:

EN 822	Thermal insulating products for building applications - Determination of length and width
EN 823	Thermal insulating products for building applications - Determination of thickness
EN 824	Thermal insulating products for building applications - Determination of squareness
EN 825	Thermal insulating products for building applications - Determination of flatness
EN 826	Thermal insulating products for building applications - Determination of compression behaviour
EN 1602	Thermal insulating products for building applications - Determination of the apparent density
EN 1603	Thermal insulating products for building applications - Determination of dimensional stability under constant normal laboratory conditions (23 °C/50 % relative humidity)
EN 1604	Thermal insulating products for building applications - Determination of dimensional stability under specified temperature and humidity conditions
EN 1605	Thermal insulating products for building applications - Determination of deformation under specified compressive load and temperature conditions
EN 1606	Thermal insulating products for building applications - Determination of compressive creep

EN 1607	Thermal insulating products for building applications - Determination of tensile strength perpendicular to faces
EN 1608	Thermal insulating products for building applications - Determination of tensile strength parallel to faces
EN 1609	Thermal insulating products for building applications - Determination of short term water absorption by partial immersion
EN 12085	Thermal insulating products for building applications - Determination of linear dimensions of test specimens
EN 12086	Thermal insulating products for building applications - Determination of water vapour transmission properties
EN 12087	Thermal insulating products for building applications - Determination of long term water absorption by immersion
EN 12088	Thermal insulating products for building applications - Determination of long term water absorption by diffusion
EN 12089	Thermal insulating products for building applications - Determination of bending behaviour
EN 12090	Thermal insulating products for building applications - Determination of shear behaviour
EN 12091	Thermal insulating products for building applications - Determination of freeze-thaw resistance

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies the equipment and procedures for determining shear behaviour. It is applicable to thermal insulating products.

NOTE: The tests described in this standard do not determine pure shear behaviour, but measure the effects of applying two opposite parallel forces to the major faces of the test specimen. The test is however called shear in this text by convention. The application of a force tangentially to the major surface of the test specimen is considered to represent more closely the stresses imposed upon thermal insulation products in many building applications, particularly walls, than other methods of measuring shear performance e.g. bending tests.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 12085 Thermal insulating products for building applications - Determination of linear dimensions of test specimens

3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 shear strength, τ : The ratio of the maximum force applied to the product, which will cause rupture along a plane parallel to the direction of the applied force, to the area of the plane on which the force acts.

3.2 shear modulus, G : The shear stress divided by the corresponding relative deformation below the proportional limit, when the relationship is linear (see figure 3).

4 Principle

A test specimen is subjected to a shear stress transmitted to the test specimen through rigid supports to which it is bonded. The corresponding force-displacement curve is determined.

NOTE: Tests carried out using the single test specimen method have produced results for shear strength, which indicate the result to be dependent upon test specimen thickness, with more scattered results at greater thicknesses. Tests using the double test specimen method have also shown test specimen thickness to influence results for shear strength.