Ehituses kasutatavad soojustusmaterjalid. Surveroome määramine

Thermal insulating products for building applications - Determination of compressive creep

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1606:1999 sisaldab Euroopa standardi EN 1606:1996 + AC:1997 ingliskeelset teksti.	This Estonian standard EVS-EN 1606:1999 consists of the English text of the European standard EN 1606:1996 + AC:1997.
Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

Käsitlusala: See standard määrab kindlaks seadmed ja moodused proovikehade surveroome määramiseks erinevates pingetingimustes. Standard kehtib soojustustoodete kohta.	**Scope:**

ICS 91.100.60

Võtmesõnad: hooned, roometeimid, soojaisolatsioon, soojustusmaterjalid, surveteimid, teimitingimused

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1606

November 1996

ICS 91.100.99

Descriptors: Thermal insulation, insulating materials, compressive creep, testing.

English version

Thermal insulating products for building applications
Determination of compressive creep

Produits isolants thermiques destinés aux applications du bâtiment – Détermination du fluage en compression

Wärmedämmstoffe für das Bauwesen – Bestimmung des Langzeit-Kriechverhaltens bei Druckbeanspruchung

This European Standard was approved by CEN on 1996-10-05.

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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

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

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Contents

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 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 has 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 interrelated 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

prEN 12085
Thermal insulating products for building applications – Determination of linear dimensions of test specimens

prEN 12086
Thermal insulating products for building applications – Determination of water vapour transmission properties

prEN 12087
Thermal insulating products for building applications – Determination of long-term water absorption by immersion

prEN 12088
Thermal insulating products for building applications – Determination of long-term water absorption by diffusion

prEN 12089
Thermal insulating products for building applications – Determination of bending behaviour

prEN 12090
Thermal insulating products for building applications – Determination of shear behaviour

prEN 12091
Thermal insulating products for building applications – Determination of freeze-thaw resistance

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, by May 1997 at the latest, and conflicting national standards shall be withdrawn by December 1997 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, 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 the compressive creep of specimens under various conditions of stress. It is applicable to thermal insulating products.

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 any 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 826
Thermal insulating products for building applications – Determination of compression behaviour

prEN 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 thickness: Linear dimension measured perpendicular to the length and width plane.

3.1.1 thickness d: Original product thickness.

3.1.2 thickness d_S: Thickness of the specimen.

3.1.3 thickness d_L: Thickness of the specimen under the basic compressive stress of the loading device ('dead weight').

3.1.4 thickness d_0: Thickness of the specimen 60 s after the beginning of the loading process.

3.1.5 thickness d_t: Thickness of the specimen at a given time, t.

3.2 compressive stress, σ_c: Ratio of the compressive force to the initial surface area of the cross section of the specimen.

3.3 deformation, X: Reduction in thickness of the specimen.

3.4 relative deformation, ε: Ratio of the deformation of the specimen, X, and its thickness d_S, measured in the direction of loading.

3.5 compressive creep, X_{ct}: Increase in deformation of the specimen under a constant stress with time under specified conditions of temperature and humidity.

$$X_{ct} = X_t - X_0$$

where

X_t is the deformation at time t;

X_0 is the initial deformation (after 60 s from the beginning of loading).

An illustration of the different thicknesses and deformations is given in figure 1.

4 Principle

The compressive creep is determined by measuring the increase in deformation of a specimen under constant compressive stress and specified conditions of temperature, humidity and time.

5 Apparatus

5.1 Loading device, consisting of two flat platens, one of which shall be movable, so arranged that they compress the specimen in a vertical direction. The movable platen shall be guided in such a manner as to be self-aligning. The platens shall be capable of being loaded smoothly and without distortion so that, during the test, the static stress does not change by more than ± 5 %.

5.2 Measuring device (e.g. dial gauge), capable of determining the distance between the two platens, i.e. the deformation of the specimen, to an accuracy of 0,01 mm.

5.3 Suitable damping measures, to minimize the effects of external vibration (e.g. substantial foundation of the apparatus support).

Examples of the testing apparatus are given in figure 2.