

**Elastsed poorsed polümeermaterjalid.
Pingedeformatsiooni karakteristikute
määramine surve korral. Osa 2: Suure
tihedusega materjalid**

Flexible cellular polymeric materials - Determination
of stress-strain characteristics in compression - Part
2: High-density materials

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 3386-2:2000 sisaldab Euroopa standardi EN ISO 3386-2:1998 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 3386-2:2000 consists of the English text of the European standard EN ISO 3386-2:1998.</p> <p>This document is endorsed on 11.01.2000 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: Rahvusvahelise standardi ISO 3386 käesolev osa määrab kindlaks meetodi survejõust tekitatud pinge-deformatsiooni karakteristikute määramiseks suure tihedusega elastsetel poorsetel polümeermaterjalidel, mille tihedus on üle 250kg/m³.</p>	<p>Scope:</p>
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ICS 83.100

Võtmesõnad: elastsed poormaterjalid, määramine, poormaterjalid, poorplastid, survepinge, surveteimid, testimine, vahtkummi

ICS 83.100

Descriptors: Polymers, flexible cellular materials, stress-strain, testing.

English version

**Flexible cellular polymeric materials – Determination
of stress-strain characteristics in compression**

**Part 2: High-density materials
(ISO 3386-2 : 1997)**

Matériaux polymères alvéolaires
souples – Détermination de la
caractéristique de contrainte-
déformation relative en compression –
Partie 2: Matériaux à masse
volumique élevée (ISO 3386-2 : 1997)

Polymere Materialien, weich-
elastische Schaumstoffe –
Bestimmung der Druckspannungs-
Verformungseigenschaften – Teil 2:
Materialien mit hoher Dichte
(ISO 3386-2 : 1997)

This European Standard was approved by CEN on 1998-03-09.

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.

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CEN

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

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

Foreword

International Standard

ISO 3386-2 : 1997 Flexible cellular polymeric materials – Determination of stress-strain characteristics in compression – Part 2: High-density materials,

which was prepared by ISO/TC 45 'Rubber and rubber products' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 249 'Plastics', the Secretariat of which is held by IBN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by October 1998 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, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 3386-2 : 1997 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

1 Scope

This part of ISO 3386 specifies a method for the determination of the compression stress-strain characteristics of flexible cellular polymeric materials of density greater than 250 kg/m^3 .

The compression stress-strain characteristic is a measure of the load-bearing properties of the material, though not necessarily of its capacity to sustain a long-term load.

The compression stress-strain characteristic differs from the indentation hardness characteristics (as determined in accordance with ISO 2439) which are known to be influenced by the thickness and the tensile properties of the flexible cellular material under test, the shape of the compression plate, and the shape and size of the test piece.

ISO 3386-1 specifies a method for low-density flexible materials, and differs from Part 2 in the following ways:

- Part 1 is concerned with materials of density up to 250 kg/m^3 , whilst Part 2 is mainly concerned with materials of density above 250 kg/m^3 ;
- compression stress values have been deleted from Part 2;
- Part 2 does not allow the use of a cylindrical test piece.

This part of ISO 3386 is a general method for testing denser flexible cellular materials (i.e. expanded cellular rubbers), measurements being made on one of more points on the steeply rising part of the stress-strain curve. The shape factor of the test piece is important and comparative test results can only be obtained on test pieces having the same shape factor.

NOTE 1 For comparison purposes, the method may be used for material of 150 kg/m^3 density or greater.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1923:1981, *Cellular plastics and rubbers - Determination of linear dimensions*.

ISO 2439:---¹, *Flexible cellular polymeric materials - Determination of hardness (indentation technique)*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 compression stress-strain characteristic (CC): The stress, expressed in kilopascals, required to produce a compression, at a constant rate of deformation during the fourth loading cycle of the test specified in this International Standard, expressed as a function of the compression.

NOTE 2 Stresses are usually quoted at compressions of $(25 \pm 1) \%$, $(40 \pm 1) \%$, $(50 \pm 1) \%$ and $(65 \pm 1) \%$, being designated CC25, CC40, CC50 and CC65 respectively.

3.2 shape factor: The ratio of the area of one applied force bearing face of the test piece to the sum of the areas of the four perpendicular sides of the test piece.

4 Apparatus

The apparatus comprises a test machine capable of compressing the test piece by means of a compression plate moving at a uniform rate of $(5 \pm 1) \text{ mm/min}$. Autographic recording of the stress-strain values is preferred.

The compression plate shall be maintained parallel to the base plate. The testing machine shall have means of measuring the test piece thickness under load to an accuracy of $\pm 0,1 \text{ mm}$. It shall be capable of maintaining the specified degree of compression for the period specified by the procedure appropriate to the material under test.

¹To be published (Revision of ISO 2439:1980).