

**Elastsed poorsed polümeermaterjalid.
Pinge-deformatsiooni karakteristikute
määramine surve korral. Osa 1: Väikese
tihedusega materjalid**

Polymeric materials, cellular flexible - Determination
of stress-strain characteristic in compression - Part
1: Low-density materials

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 3386-1:2000 sisaldab Euroopa standardi EN ISO 3386-1:1997 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 3386-1:2000 consists of the English text of the European standard EN ISO 3386-1:1997.</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:</p> <p>Rahvusvahelise standardi ISO 3386 käesolev osa määrab kindlaks meetodi survejõust tekitatud pinge-deformatsiooni karakteristikute määramiseks väikese tihedusega elastsetel poormaterjalidel, mille tihedus on kuni 250kg/m³. Standard osutab ka meetodile survepinge väärtuse arvestamiseks sellistel materjalidel.</p>	<p>Scope:</p>
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ICS 83.100

Võtmesõnad: elastsed poormaterjalid, kummi, plastid, polümeerid, surveteimid, testimine

ICS 83.100

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

English version

Polymeric materials, cellular flexible

Determination of stress-strain characteristics in compression

Part 1: Low-density materials

(ISO 3386-1 : 1986)

Matériaux polymères alvéolaires
souples – Détermination de la
caractéristique de contrainte-
déformation relative en compression –
Partie 1: Matériaux à basse masse
volumique (ISO 3386-1 : 1986)

Polymere Materialien, weich-
elastische Schaumstoffe –
Bestimmung der Druckspannungs-
Verformungseigenschaften – Teil 1:
Materialien mit niedriger Dichte
(ISO 3386-1 : 1986)

This European Standard was approved by CEN on 1997-10-16.

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 3386-1 : 1986 Flexible cellular polymeric materials – Determination of stress-strain characteristics in compression – Part 1: Low-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 May 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 3386-1 : 1986 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 and field of application

This part of ISO 3386 specifies a method for the determination of the compression stress/strain characteristic of low-density flexible cellular materials up to 250 kg/m³. It also indicates a method for the calculation of the compression stress value of such materials.

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, by the shape of the compression plate and by the shape and size of the test piece.

ISO 3386/2 specifies a method for high-density materials and differs from part 1 in the following ways:

- it is mainly concerned with materials of density above 250 kg/m³;
- compression stress values have been deleted;
- it does not permit the use of a cylindrical test piece.

2 References

ISO 1923, *Cellular materials — Determination of linear dimensions*.

ISO 2439, *Polymeric materials, cellular flexible — 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 below, expressed as a function of the compression.

3.2 compression stress value (CV₄₀): The compression stress/strain characteristic for a compression of 40 %.

4 Apparatus

4.1 Test machine

The test machine shall be capable of compressing the test piece between a support surface (see 4.2) and a compression plate (see 4.3), which shall have a uniform relative rate of motion in the vertical direction of 100 ± 20 mm/min.

The test machine shall be capable of measuring the force required to produce the specified compression with a precision of ± 2 % and of measuring the test piece thickness under load with a precision of $\pm 0,2$ mm. Autographic recording of the stress-strain values is preferred.

4.2 Supporting surface

Unless otherwise specified, the test piece shall be supported on a smooth, flat, horizontal and rigid surface, larger than the test piece, which may be vented with holes about 6 mm in diam-

* 1 kPa = 10³ N/m²