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**Plastics - Film and sheeting - Determination of dimensional change on heating**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 11501:2004 sisaldab Euroopa standardi EN ISO 11501:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 26.10.2004 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 11501:2004 consists of the English text of the European standard EN ISO 11501:2004.</p> <p>This document is endorsed on 26.10.2004 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><b>Käsitlusala:</b> This International Standard specifies a method of determining the dimensional Change, in the longitudinal and transverse directions, of plastic films and sheeting on heating.</p>	<p><b>Scope:</b> This International Standard specifies a method of determining the dimensional Change, in the longitudinal and transverse directions, of plastic films and sheeting on heating.</p>
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**ICS** 83.140.10

**Võtmesõnad:**

ICS 83.140.10

English version

Plastics – Film and sheeting

Determination of dimensional change on heating  
(ISO 11501 : 1995)

Plastiques – Film et feuille – Détermination de la variation dimensionnelle après chauffage (ISO 11501 : 1995)

Kunststoffe – Folien und Bahnen – Bestimmung der Maßänderung bei Erwärmung (ISO 11501 : 1995)

This European Standard was approved by CEN on 2004-06-21.

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

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

Management Centre: rue de Stassart 36, B-1050 Brussels

## Foreword

International Standard

ISO 11501 : 1995 Plastics – Film and sheeting – Determination of dimensional change on heating, which was prepared by ISO/TC 61 'Plastics' 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 January 2005 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, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 11501 : 1995 was approved by CEN as a European Standard without any modification.

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

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## 1 Scope

This International Standard specifies a method of determining the dimensional change, in the longitudinal and transverse directions, of plastic films and sheeting on heating. This method may be applied to plastic sheets, whether qualified as thermoshrinking or not, up to 1 mm thick.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 291:1977, *Plastics — Standard atmospheres for conditioning and testing*.

## 3 Principle

The test consists of

- a) measuring the initial lengths of two gauge lengths marked on each specimen in the longitudinal and in the transverse direction;
- b) heating the specimens for a specified time at a specified temperature on a kaolin bed in an oven;
- c) measuring the longitudinal and transverse gauge lengths again after cooling, and subsequently calculating the changes in the gauge lengths.

## 4 Apparatus

**4.1 Circulating-air oven**, of such a size that the total volume of the test assemblies (kaolin beds plus test specimens) does not exceed 10 % of the free space in the oven. Provision shall be made for placing the test assemblies on shelves so that they are not less than 50 mm from each other and from the sides of the oven.

Provision shall be made for circulation of air through the oven at a rate which gives a minimum of six air changes per hour. The temperature of the oven shall be thermostatically controlled to maintain the temperature of the test assemblies within  $\pm 2$  °C of the specified temperature (within  $\pm 1$  °C if the specified temperature is less than 100 °C).

**4.2 Metal container**, containing a kaolin bed of depth approximately 20 mm. Its other dimensions shall be such that the specimens can be placed flat within it, without deformation, and such that it can be placed in the oven.

**4.3 Temperature-measuring device**, whose tip can be immersed in the kaolin bed.

**4.4 Graduated scale**, capable of measuring to the nearest 0,5 mm.

**4.5 Stopwatch**.

## 5 Test specimens

Samples of film or sheet shall be conditioned for a minimum of 2 h in one of the standard atmospheres specified in ISO 291 prior to cutting out and measuring test specimens.

Three specimens shall be prepared, with approximate dimensions of 120 mm  $\times$  120 mm, cut from the cen-