Plastics film and sheeting - Determination of impact resistance by the free-falling dart method - Part 1: Staircase methods

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 7765-1:2004 sisaldab Euroopa standardi EN ISO 7765-1:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 26.10.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 7765-1:2004 consists of the English text of the European standard EN ISO 7765-1:2004. This document is endorsed on 26.10.2004 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This part of ISO 7765 specifies methods for the determination of the energy that causes plastics film and sheet less than 1 mm in thickness to fail under specified conditions of impact of a free-falling dart from a specified height that would result in failure of 50 % of the specimens tested	**Scope:** This part of ISO 7765 specifies methods for the determination of the energy that causes plastics film and sheet less than 1 mm in thickness to fail under specified conditions of impact of a free-falling dart from a specified height that would result in failure of 50 % of the specimens tested

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English version

Plastics film and sheeting

Determination of impact resistance by the free-falling dart method
Part 1: Staircase methods
(ISO 7765-1 : 1988)

Plastiques – Film et feuille en plastique – Détermination de la résistance au choc par la méthode par chute libre de projectile – Partie 1: Méthodes dites de 'l'escalier'
(ISO 7765-1 : 1988)

Kunststofffolien und -bahnen – Bestimmung der Schlagfestigkeit nach dem Fallhammerverfahren – Teil 1: Eingrenzungsverfahren
(ISO 7765-1 : 1988)

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

Ref. No. EN ISO 7765-1 : 2004 E

Foreword

International Standard

ISO 7765-1 : 1988 Plastics film and sheeting – Determination of impact resistance by the free-falling dart method – Part 1: Staircase methods,

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 7765-1 : 1988 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

1.1 This part of ISO 7765 specifies methods for the determination of the energy that causes plastics film and sheet less than 1 mm in thickness to fail under specified conditions of impact of a free-falling dart from a specified height that would result in failure of 50 % of the specimens tested.

1.2 Two methods of test are described.

1.2.1 Method A employs a dart with a 38 mm ± 1 mm diameter hemispherical head dropped from a height of 0,66 m ± 0,01 m. This method may be used for materials whose impact resistance requires masses of about 0,05 kg to about 2 kg to fracture them.

1.2.2 Method B employs a dart with a 50 mm ± 1 mm diameter hemispherical head dropped from a height of 1,50 m ± 0,01 m. Its range of applicability is from about 0,3 kg to about 2 kg.

1.3 The measurement technique is the staircase method. A uniform missile mass increment is employed during testing and the missile weight is decreased or increased by the uniform increment after test of each specimen, depending upon the result (failure or no failure) observed for the specimen.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 7765. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 7765 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

ISO 4591 : 1979, *Plastics — Film and sheeting — Determination of average thickness of a sample and average thickness and yield of a roll, by gravimetric techniques (gravimetric thickness).*

ISO 4593 : 1979, *Plastics — Film and sheeting — Determination of thickness by mechanical scanning.*

3 Significance

3.1 Methods A and B are used to establish the mass of the dart causing 50 % of the specimens to fail under the conditions specified. Data obtained by one method cannot be compared directly with those from the other method, nor with those obtained from tests employing different conditions of missile velocity, missile impinging surface diameter, effective specimen diameter, and specimen thickness. The results obtained with particular values of these test variables are highly dependent on the method of fabrication of the film or sheeting.

3.2 The results obtained by methods A and B are greatly influenced by the quality of the material under test. The confidence limits of data obtained by this procedure can, therefore, vary significantly, depending on the sample quality, uniformity of gauge, die marks, contaminants, etc.

3.3 Methods A and B have been found useful for specification purposes. Correlation between test results and field performance can usually be established.

3.4 The impact resistance of film and sheeting, while partly dependent on thickness, has no simple correlation with sample thickness. Hence, impact values cannot be normalized over a range of thicknesses without producing misleading data as to the actual impact resistance of the material. Data from these methods are comparable only for sample sets that vary by no more than ± 10 % from the nominal or average thickness of the specimens tested.

4 Definitions

For the purposes of this part of ISO 7765, the following definitions apply.