Plastics - Film and sheeting - Determination of tear resistance - Part 1: Trouser tear method

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 6383-1:2004 sisaldab Euroopa standardi EN ISO 6383-1:2004 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 6383-1:2004 consists of the English text of the European standard EN ISO 6383-1:2004. 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 6383 specifies a method of determining the tear resistance of plastic film or sheet less than 1 mm thick, in the form of standard trouser-shaped test specimens, tested under defined conditions of pretreatment, temperature, humidity and speed of testing	**Scope:** This part of ISO 6383 specifies a method of determining the tear resistance of plastic film or sheet less than 1 mm thick, in the form of standard trouser-shaped test specimens, tested under defined conditions of pretreatment, temperature, humidity and speed of testing

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Võtmesõnad:

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English version

Plastics – Film and sheeting

Determination of tear resistance
Part 1: Trouser tear method
(ISO 6383-1 : 1983)

Plastiques – Film et feuille – Détermination de la résistance au déchirement – Partie 1: Méthode de déchirement pantalon (ISO 6383-1 : 1983)

Kunststoffe – Folien und Bahnen – Bestimmung der Reißfestigkeit – Teil 1: Hosenreiß-Verfahren (ISO 6383-1 : 1983)

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.

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CEN

European Committee for Standardization
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Europäisches Komitee für Normung

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

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Foreword

International Standard

ISO 6383-1 : 1983 Plastics – Film and sheeting – Determination of tear resistance – Part 1: Trouser tear method, 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 6383-1 : 1983 was approved by CEN as a European Standard without any modification.

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

0 Introduction

ISO 6383 consists of the following parts :

Part 1 : Trouser tear method.

Part 2 : Elmendorf method.

1 Scope and field of application

This part of ISO 6383 specifies a method of determining the tear resistance of plastic film or sheet less than 1 mm thick, in the form of standard trouser-shaped test specimens, tested under defined conditions of pretreatment, temperature, humidity and speed of testing.

The method is applicable to film and sheeting of both flexible and rigid materials, provided that the material is not so rigid that brittle fracture occurs during the test, or so deformable, in an irreversible way, that the energy used in the deformation of the specimen legs is significant (i.e. is not negligible) with respect to the energy used in tearing.

The method may not be suitable for determining the tear properties of cellular sheet and film.

2 References

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

ISO/R 1184, *Plastics — Determination of tensile properties of films.*

ISO 4591, *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, *Plastics — Film and sheeting — Determination of thickness by mechanical scanning.*

3 Definitions

For the purpose of this part of ISO 6383, the following definitions apply.

3.1 tearing force : The average force required to propagate a tear at a constant tearing speed across a test specimen conforming to figure 1.

3.2 tear resistance : The tearing force divided by the specimen thickness.

4 Significance

4.1 This method may provide data for quality control, acceptance or rejection in accordance with the terms of specifications and for research and development.

4.2 Tear properties may vary with specimen preparation, speed of testing and environment of testing. Consequently, when precise comparative results are required, these factors shall be carefully controlled.

It is possible, in principle, to compare the tear resistance (see 3.2) of specimens of different materials, provided that their thicknesses do not differ by more than ± 10 %. However, caution is necessary in interpreting such results, since the tearing energy may vary considerably with speed of testing for different materials.

5 Principle

A rectangular test specimen having a longitudinal slit extending over half its length, is subjected to a tensile test on the "trouser legs" formed by the slit. The average force required to tear the specimen completely along its length is used to calculate the tear resistance of the material under test (see figure 1).

6 Apparatus

6.1 Tensile testing machine (not pendulum type), similar to that specified in ISO/R 1184, having the following characteristics.

6.1.1 It shall be power driven and capable of maintaining the appropriate rate of grip separation specified in clause 9. It is essential that the load measuring device is equipped with an autographic recording device to record the load applied to the specimen as a function of elapsed time from the start of the test.

6.1.2 The grips shall be equipped with chucks designed to securely hold the legs of the test specimen without slip. The chucks shall be wider than the width of the test specimen and, in order that they remain parallel to each other during a test, they shall not be mounted on swivel joints.