

## **Plastid. Tõmbe-löögitugevuse määramine**

Plastics - Determination of tensile-impact strength

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 8256:2004 sisaldab Euroopa standardi EN ISO 8256:2004 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 8256:2004 consists of the English text of the European standard EN ISO 8256:2004.</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></p> <p>This International Standard specifies two methods (method A and method B) for the determination of the tensile-impact strength of plastics under defined conditions. The tests can be described as tensile tests at relatively high strain rates. These methods can be used for rigid materials (as defined in ISO 472), but are especially useful for materials too flexible or too thin to be tested with impact tests conforming to ISO 179 or ISO 180.</p>	<p><b>Scope:</b></p> <p>This International Standard specifies two methods (method A and method B) for the determination of the tensile-impact strength of plastics under defined conditions. The tests can be described as tensile tests at relatively high strain rates. These methods can be used for rigid materials (as defined in ISO 472), but are especially useful for materials too flexible or too thin to be tested with impact tests conforming to ISO 179 or ISO 180.</p>
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**English version**

**Plastics**

**Determination of tensile-impact strength  
(ISO 8256:2004)**

Plastiques – Détermination de la résistance au choc-traction (ISO 8256:2004)      Kunststoffe – Bestimmung der Schlagzugzähigkeit (ISO 8256:2004)

This European Standard was approved by CEN on 2004-06-01.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
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## Foreword

International Standard

ISO 8256:2004 Plastics – Determination of tensile-impact strength, 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 8256:2004 was approved by CEN as a European Standard without any modification.

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## 1 Scope

**1.1** This International Standard specifies two methods (method A and method B) for the determination of the tensile-impact strength of plastics under defined conditions. The tests can be described as tensile tests at relatively high strain rates. These methods can be used for rigid materials (as defined in ISO 472), but are especially useful for materials too flexible or too thin to be tested with impact tests conforming to ISO 179 or ISO 180.

**1.2** These methods are used for investigating the behaviour of specified specimens under specified impact velocities, and for estimating the brittleness or the toughness of specimens within the limitations inherent in the test conditions.

**1.3** These methods are applicable both to specimens prepared from moulding materials and to specimens taken from finished or semi-finished products (for example mouldings, laminates, or extruded or cast sheets).

**1.4** Results obtained by testing moulded specimens of different dimensions may not necessarily be the same. Equally, specimens cut from moulded products may not give the same results as specimens of the same dimensions moulded directly from the material. Test results obtained from specimens prepared from moulding compounds cannot be applied directly to mouldings of any given shape, because values may depend on the design of the moulding and the moulding conditions. Results obtained by method A and method B may or may not be comparable.

**1.5** These methods are not suitable for use as a source of data for design calculations on components. Information on the typical behaviour of a material can be obtained, however, by testing different types of test specimen prepared under different conditions, and by testing at different temperatures. The two different methods are suitable for production control as well as for quality control.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 179-1, *Plastics — Determination of Charpy impact properties — Part 1: Non-instrumented impact test*

ISO 179-2, *Plastics — Determination of Charpy impact properties — Part 2: Instrumented impact test*

ISO 180, *Plastics — Determination of Izod impact strength*

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

ISO 293, *Plastics — Compression moulding of test specimens of thermoplastic materials*

ISO 294-1, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 1: General principles, and moulding of multipurpose and bar test specimens*

ISO 294-2, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 2: Small tensile bars*



ISO 294-3, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 3: Small plates*

ISO 295, *Plastics — Compression moulding of test specimens of thermosetting materials*

ISO 472, *Plastics — Vocabulary*

ISO 1268 (all parts), *Fibre-reinforced plastics — Methods of producing test plates*

ISO 2602, *Statistical interpretation of tests results — Estimation of the mean — Confidence interval*

ISO 2818, *Plastics — Preparation of test specimens by machining*

ISO 3167, *Plastics — Multipurpose test specimens*

ISO 10350-1, *Plastics — Acquisition and presentation of comparable single-point data — Part 1: Moulding materials*

ISO 11403-3, *Plastics — Acquisition and presentation of comparable multipoint data — Part 3: Environmental influences on properties*

ISO 13802, *Plastics — Verification of pendulum impact-testing machines — Charpy, Izod and tensile impact-testing*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

#### 3.1

##### **tensile-impact strength of unnotched specimens**

$a_{tU}$

energy absorbed in breaking an unnotched specimen under specified conditions, referred to the original cross-sectional area of the specimen

NOTE It is expressed in kilojoules per square metre ( $\text{kJ/m}^2$ ).

#### 3.2

##### **tensile-impact strength of notched specimens**

$a_{tN}$

energy absorbed in breaking a notched specimen under specified conditions, referred to the original cross-sectional area of the specimen at the notch

NOTE It is expressed in kilojoules per square metre ( $\text{kJ/m}^2$ ).

### 4 Principle

A specimen is broken by a single impact at the bottom of the swing of the pendulum of a tensile-impact machine. The specimen is horizontal at the moment of rupture. One end of the specimen, at impact, is held either by the frame or the pendulum and the other end by the crosshead. The two methods described are based on two different ways of positioning the specimen held by the crosshead: the specimen may be either mounted stationary on the support frame (method A) or carried downward together with the pendulum (method B).

The energy to fracture is determined by the kinetic energy extracted from the pendulum in the process of breaking the specimen. Corrections are made for the energy to toss (method A) or bounce (method B) the crosshead.