

**Plastics - Poly(methyl methacrylate)  
(PMMA) moulding and extrusion materials -  
Part 2: Preparation of test specimens and  
determination of properties**

Plastics - Poly(methyl methacrylate) (PMMA)  
moulding and extrusion materials - Part 2:  
Preparation of test specimens and determination of  
properties

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 8257-2:2006 sisaldab Euroopa standardi EN ISO 8257-2:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 29.05.2006 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 8257-2:2006 consists of the English text of the European standard EN ISO 8257-2:2006.</p> <p>This document is endorsed on 29.05.2006 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 part of ISO 8257 specifies procedures for moulding test specimens of PMMA materials in a specified state, and methods for measuring their properties. Any property listed in this part of ISO 8257 and referred to in combination with ISO 8257-1 shall be determined by the method referred to in this part of ISO 8257.</p>	<p><b>Scope:</b></p> <p>This part of ISO 8257 specifies procedures for moulding test specimens of PMMA materials in a specified state, and methods for measuring their properties. Any property listed in this part of ISO 8257 and referred to in combination with ISO 8257-1 shall be determined by the method referred to in this part of ISO 8257.</p>
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Võtmesõnad:

English Version

Plastics - Poly(methyl methacrylate) (PMMA) moulding and  
extrusion materials - Part 2: Preparation of test specimens and  
determination of properties (ISO 8257-2:2001)

Plastiques - Poly(méthacrylate de méthyle) (PMMA) pour  
moulage et extrusion - Partie 2: Préparation des  
éprouvettes et détermination des propriétés (ISO 8257-  
2:2001)

Kunststoffe - Polymethylmethacrylat (PMMA)-Formmassen  
- Teil 2: Herstellung von Probekörpern und Bestimmung der  
Eigenschaften (ISO 8257-2:2001)

This European Standard was approved by CEN on 16 March 2006.

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.

This European Standard exists 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.

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



EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## Foreword

The text of ISO 8257-2:2001 has been prepared by Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 8257-2:2006 by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

### Endorsement notice

The text of ISO 8257-2:2001 has been approved by CEN as EN ISO 8257-2:2006 without any modifications.

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(PMMA) moulding and extrusion  
materials —**

**Part 2:  
Preparation of test specimens and  
determination of properties**

*Plastiques — Poly(méthacrylate de méthyle) (PMMA) pour moulage et  
extrusion —*

*Partie 2: Préparation des éprouvettes et détermination des propriétés*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 8257 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 8257-2 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

This second edition cancels and replaces the first edition (ISO 8257-2:1990), which has been technically revised.

ISO 8257 consists of the following parts, under the general title *Plastics — Poly(methyl methacrylate) (PMMA) moulding and extrusion materials*:

- Part 1: Designation system and basis for specifications
- Part 2: Preparation of test specimens and determination of properties

In this corrected version of ISO 8257-2:2001, Table 3 has been amended to remove the meaningless “less than” (<) signs in the dimensions of the specimens for Charpy unnotched impact strength, Charpy notched impact strength and temperature of deflection under load (sixth, seventh and eighth properties in table).



# Plastics — Poly(methyl methacrylate) (PMMA) moulding and extrusion materials —

## Part 2:

## Preparation of test specimens and determination of properties

### 1 Scope

**1.1** This part of ISO 8257 specifies procedures for moulding test specimens of PMMA materials in a specified state, and methods for measuring their properties. Any property listed in this part of ISO 8257 and referred to in combination with ISO 8257-1 shall be determined by the method referred to in this part of ISO 8257.

**1.2** No values are quoted for these properties. Those required for the designation of PMMA materials for moulding and extrusion are given in ISO 8257-1. Other properties shall be determined by the appropriate methods referred to in this part of ISO 8257.

**1.3** The values determined in accordance with this part of ISO 8257 will not necessarily be identical to those obtained using specimens of different dimensions and/or prepared by different procedures. They may also be influenced by colorants and other additives. The values obtained for the properties of a moulding depend on the moulding compound, the shape of test specimen, the test method and the state of anisotropy. The last-mentioned depends on the gating and the moulding conditions, for example temperature, pressure or injection rate. Any subsequent treatment must also be considered, for example conditioning or annealing.

**1.4** The thermal history and the internal stresses of the specimens may strongly influence thermal and mechanical properties and resistance to environmental stress cracking, but exert less effect on the electrical properties, which mainly depend on the chemical composition of the moulding compound.

### 2 Conformance

In clause 3, the year of publication of each normative reference has been specifically stated. In order to be able to claim conformity with this part of ISO 8257, it is essential that the user use only those editions given, and not earlier or more recent editions.

### 3 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 8257. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 62:1999, *Plastics — Determination of water absorption*

ISO 75-2:1993, *Plastics — Determination of temperature of deflection under load — Part 2: Plastics and ebonite*

ISO 175:1999, *Plastics — Methods of test for the determination of the effects of immersion in liquid chemicals*

ISO 178:1993, *Plastics — Determination of flexural properties*

ISO 179:1993, *Plastics — Determination of Charpy impact strength*

ISO 180:1993, *Plastics — Determination of Izod impact strength*

ISO 294-1:1996, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 1: General principles, and moulding of multipurpose and bar test specimens*

ISO 306:1994, *Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)*

ISO 489:1999, *Plastics — Determination of refractive index*

ISO 527-2:1993, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

ISO 604:1993, *Plastics — Determination of compressive properties*

ISO 1133:1997, *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics*

ISO 1183:1987, *Plastics — Methods for determining the density and relative density of non-cellular plastics*

ISO 1628-6:1990, *Plastics — Determination of viscosity number and limiting viscosity number — Part 6: Methyl methacrylate polymers*

ISO 2039-1:1993, *Plastics — Determination of hardness — Part 1: Ball indentation method*

ISO 2039-2:1987, *Plastics — Determination of hardness — Part 2: Rockwell hardness*

ISO 3167:1993, *Plastics — Multipurpose test specimens*

ISO 6721-2:1994, *Plastics — Determination of dynamic mechanical properties — Part 2: Torsion-pendulum method*

ISO 8257-1:1998, *Plastics — Poly(methyl methacrylate) (PMMA) moulding and extrusion materials — Part 1: Designation system and basis for specifications*

ISO 10350-1:1998, *Plastics — Acquisition and presentation of comparable single-point data — Part 1: Moulding materials*

ISO 13468-1:1996, *Plastics — Determination of the total luminous transmittance of transparent materials — Part 1: Single-beam instrument*

## 4 Preparation of test specimens

### 4.1 General

It is essential that specimens are always prepared by the same procedure, using the same processing conditions. The procedures to be used depend on the PMMA material concerned and are indicated in the following subclauses.

### 4.2 Treatment of the material before moulding

Before processing, the moulding compound shall be predried for 24 h in an oven at 80 °C. In cases of dispute, the manufacturer's instructions shall be followed.