

Plastics - Poly(methyl methacrylate) sheets - Types, dimensions and characteristics - Part 3: Continuous cast sheets (ISO 7823-3:2021)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

| | |
|---|--|
| See Eesti standard EVS-EN ISO 7823-3:2021 sisaldab Euroopa standardi EN ISO 7823-3:2021 ingliskeelset teksti. | This Estonian standard EVS-EN ISO 7823-3:2021 consists of the English text of the European standard EN ISO 7823-3:2021. |
| Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. | This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation. |
| Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 23.06.2021. | Date of Availability of the European standard is 23.06.2021. |
| Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest. | The standard is available from the Estonian Centre for Standardisation and Accreditation. |

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 83.140.10

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Plastics - Poly(methyl methacrylate) sheets - Types,
dimensions and characteristics - Part 3: Continuous cast
sheets (ISO 7823-3:2021)

Plastiques - Plaques en poly(méthacrylate de méthyle)
- Types, dimensions et caractéristiques - Partie 3:
Plaques coulées continues (ISO 7823-3:2021)

Kunststoffe - Tafeln aus Polymethylmethacrylat -
Typen, Maße und Eigenschaften - Teil 3:
Endlosprodukte (ISO 7823-3:2021)

This European Standard was approved by CEN on 8 June 2021.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 7823-3:2021) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 "Plastics" the secretariat of which is held by NBN.

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 December 2021, and conflicting national standards shall be withdrawn at the latest by December 2021.

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

This document supersedes EN ISO 7823-3:2007.

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

Endorsement notice

The text of ISO 7823-3:2021 has been approved by CEN as EN ISO 7823-3:2021 without any modification.

Contents

Page

| | |
|---|-----------|
| Foreword | iv |
| 1 Scope | 1 |
| 2 Normative references | 1 |
| 3 Terms and definitions | 2 |
| 4 Composition | 2 |
| 5 General requirements | 2 |
| 5.1 Protective coverings | 2 |
| 5.2 Appearance | 3 |
| 5.2.1 Surface defects | 3 |
| 5.2.2 Inclusion defects | 3 |
| 5.2.3 Classification of defects | 3 |
| 5.2.4 Distribution of defects | 3 |
| 5.3 Colour | 3 |
| 5.4 Dimensions | 3 |
| 5.4.1 Length and width | 3 |
| 5.4.2 Thickness | 4 |
| 5.4.3 Tolerances for other sheet sizes | 4 |
| 5.4.4 Conditions of measurement | 4 |
| 5.5 Basic and other properties | 4 |
| 5.5.1 Basic properties | 4 |
| 5.5.2 Other properties | 4 |
| 6 Test methods | 5 |
| 6.1 General | 5 |
| 6.1.1 Sampling | 5 |
| 6.1.2 Conditioning and testing atmospheres | 5 |
| 6.1.3 Preparation of test specimens | 5 |
| 6.1.4 Specimen thickness | 5 |
| 6.2 Appearance | 5 |
| 6.3 Colour | 6 |
| 6.4 Dimensions | 6 |
| 6.5 Mechanical properties | 6 |
| 6.6 Thermal properties | 6 |
| 6.7 Flammability | 6 |
| 6.8 Optical properties | 7 |
| 6.9 Other properties | 7 |
| 7 Retest and rejection | 7 |
| Annex A (normative) Determination of dimensional change on heating (shrinkage) | 8 |
| Bibliography | 10 |

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 7823-3:2007), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- the normative references clause has been updated.

A list of all parts in the ISO 7823 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Plastics — Poly(methyl methacrylate) sheets — Types, dimensions and characteristics —

Part 3: Continuous cast sheets

1 Scope

This document specifies requirements for non-modified flat poly(methyl methacrylate) (PMMA) continuous cast sheets for general-purpose use. The sheets can be colourless or coloured, and can be transparent, translucent or opaque.

The thickness range of the sheets covered by document is 1 mm to 10 mm.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 62, *Plastics — Determination of water absorption*

ISO 75-2:2013, *Plastics — Determination of temperature of deflection under load — Part 2: Plastics and ebonite*

ISO 178, *Plastics — Determination of flexural properties*

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

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

ISO 306:2013, *Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)*

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

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

ISO 877-1, *Plastics — Methods of exposure to solar radiation — Part 1: General guidance*

ISO 877-2, *Plastics — Methods of exposure to solar radiation — Part 2: Direct weathering and exposure behind window glass*

ISO 877-3, *Plastics — Methods of exposure to solar radiation — Part 3: Intensified weathering using concentrated solar radiation*

ISO 1183-1, *Plastics — Methods for determining the density of non-cellular plastics — Part 1: Immersion method, liquid pycnometer method and titration method*

ISO 1183-2, *Plastics — Methods for determining the density of non-cellular plastics — Part 2: Density gradient column method*

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

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

ISO 4582, *Plastics — Determination of changes in colour and variations in properties after exposure to glass-filtered solar radiation, natural weathering or laboratory radiation sources*

ISO 4892-2:2013, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps*

ISO 4892-4, *Plastics — Methods of exposure to laboratory light sources — Part 4: Open-flame carbon-arc lamps*

ISO 11359-2, *Plastics — Thermomechanical analysis (TMA) — Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature*

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

ISO 13468-2, *Plastics — Determination of the total luminous transmittance of transparent materials — Part 2: Double-beam instrument*

ISO 14782, *Plastics — Determination of haze for transparent materials*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

non-modified flat cast poly(methyl methacrylate) sheet

sheet with two plane, substantially parallel surfaces, based on homopolymers of MMA, or copolymers of MMA with acrylic or methacrylic monomers, produced by bulk polymerization in the presence of suitable initiators

4 Composition

The amounts of plasticizing ingredients (materials that do not undergo chemical reaction to become a part of the polymer), other monomers and crosslinking agents (materials that produce the links between the chains of polymers) present shall be such that the basic properties are not changed from the values given in [Table 3](#). These amounts are in most cases less than a mass fraction of 5 %.

Other additives, such as colorants, UV absorbers and pigments, may be included to give specific properties.

Requirements regarding additives are given in national environmental legislation and regulations.

5 General requirements

5.1 Protective coverings

Unless otherwise agreed upon by the interested parties, the surfaces of the sheet, as delivered, shall be protected by suitable materials, for example kraft paper secured with a water-soluble or pressure-sensitive adhesive, or a polyethylene film, which are readily removable without causing surface contamination or damage.