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Plastics - Test specimens (ISO 20753:2023)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Plastics - Test specimens (ISO 20753:2023)

Plastiques - Éprouvettes (ISO 20753:2023)

Kunststoffe - Probekörper (ISO 20753:2023)

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European foreword

This document (EN ISO 20753:2023) 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 SIS.

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of an identical text or by endorsement, at the latest by June 2024, and conflicting national standards shall be withdrawn at the latest by June 2024.

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.

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The text of ISO 20753:2023 has been approved by CEN as EN ISO 20753:2023 without any modification.

INTERNATIONAL STANDARD

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Third edition
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Plastics — Test specimens

Plastiques — Éprouvettes



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ISO 20753:2023(E)

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 document 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).

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical behavior*, 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 20753:2018), which has been technically revised.

The main changes are as follows:

- Clarified overview of dimensions for reduced-scale dumb bell specimen type A.
 - That it contains harmonization of all tolerances for radii, widths and lengths, calculation of the total tolerance for l_2 (the length l_1 including radii), which now includes the summary of tolerances of the single dimensions.
 - That dimension l_2 is most important for a testing lab, as it needs to be observed to ensure distance between grips at tensile test.
- Change of dimension of test specimen type CP. The dimension is now consistent with type 3 of ISO 8256. The former dimension refers to type 2 of ISO 8256. However, the new dimension tends to be used for high-speed tensile tests for crash simulation.

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.

Introduction

Information on plastics test specimens has been specified in several different locations: in test method standards (e.g. ISO 527-2), in ISO 3167 (for multipurpose test specimens) and in ISO 294-1, ISO 294-2, ISO 294-3 and ISO 294-5 (for moulding conditions). The aim of this document is to give the designations and dimensions of test specimens used for the acquisition of comparable data, and also of other frequently used specimens, in one document for ease of reference. Other International Standards that have hitherto used different designations for the same specimen type will also be revised to bring the designations into line with those in this document.

Plastics — Test specimens

1 Scope

This document specifies dimensional requirements relating to test specimens prepared from plastics materials intended for processing by moulding, as well as to test specimens prepared by machining from sheets or shaped articles. It compiles the designations and dimensions of test specimens used for the acquisition of comparable data and of other frequently used specimens.

The following types of test specimen are specified:

- A Tensile specimen, multipurpose or reduced-scale
- B Bar specimen
- C Small tensile specimen
- D Square plate specimen
- F Rectangular plate specimen

NOTE If a particular type of test specimen is not mentioned in this document, this does not mean that there is any intention to exclude the use of the specimen. Additional specimen types can be added in future if they are commonly used.

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 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 294-5, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 5: Preparation of standard specimens for investigating anisotropy*

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

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

ISO 10724-1, *Plastics — Injection moulding of test specimens of thermosetting powder moulding compounds (PMCs) — Part 1: General principles and moulding of multipurpose test specimens*

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