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## Plastics — Test specimens

*Plastiques — Éprouvettes*



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## Foreword

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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](http://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](http://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*

## 3 Terms and definitions

No terms and definitions are listed in this document.