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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 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).

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical behaviour*.

This second edition cancels and replaces the first edition (ISO 20753:2008) which has been technically revised.

The main changes compared to the previous edition are as follows:

— updating and amending the normative references in Clause 2;

— introducing the plate with dimensions 120 mm × 80 mm × 2 mm.

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.

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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.

ISO 3167 is intended to be withdrawn after reference to ISO 3167 in International Standards is gradually replaced with the appropriate test specimen defined in this document.

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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 also of other frequently used specimens.

The following types of test specimen are specified:

a) Type A1 and type A2 specimens (1 = injection moulded, 2 = machined from a sheet or shaped article)

These are tensile test specimens from which, with simple machining, specimens for a variety of other tests can be taken (see Annex A).

The type A1 specimen is a multipurpose test specimen. The principal advantage of a multipurpose test specimen is that it allows all the test methods mentioned in Annex A to be carried out by all test laboratories on the basis of comparable mouldings. Consequently, the properties measured are coherent as all are measured using similar specimens prepared in the same way. In other words, it can be expected that test results for a given set of specimens will not vary appreciably due to unintentionally different moulding conditions. On the other hand, if desired, the influence of moulding conditions and/or different states of the specimens can be assessed without difficulty for all of the properties measured.

Also described are reduced-scale test specimens designated type A*xy*, where *x* is the number indicating the method of specimen preparation (1 = injection moulded, 2 = machined from a sheet or shaped article) and *y* is a number indicating the scale factor (1:*y*). These can be used e.g. when full-sized test specimens are not convenient or when sample material exists in small quantities only.

b) Type B specimens

These are bar specimens which can be directly moulded or can be machined from the central section of type A1 specimens or from sheets or shaped articles.

c) Type C specimens

These are small tensile test specimens which can be directly moulded or machined, e.g. from plates (Type D or type F specimens), from the central section of type A1 specimens or from sheets or shaped articles.

d) Type D1 and type D2 specimens

These are square plates of thickness 1 mm and 2 mm, respectively.

e) Type F specimens

These are rectangular plates intended for use in the analysis of mechanical anisotropy.

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.

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