



SLOVENSKI STANDARD
oSIST prEN ISO 20753:2017
01-julij-2017

Polimerni materiali - Preskušanci (ISO/DIS 20753:2017)

Plastics - Test specimens (ISO/DIS 20753:2017)

Kunststoffe - Probekörper (ISO/DIS 20753:2017)

Plastiques - Éprouvettes (ISO/DIS 20753:2017)

Ta slovenski standard je istoveten z: prEN ISO 20753

ICS:

<https://standards.iteh.ai/> [SIST EN ISO 20753:2019](https://standards.iteh.ai/standards/sist-en-iso-20753-2019)
[83.080.01](https://standards.iteh.ai/standards/sist-en-iso-20753-2019) Polimerni materiali na splošno [6082810](https://standards.iteh.ai/standards/sist-en-iso-20753-2019) Plastics in general [0c5745ac7/sist-en-iso-20753-2019](https://standards.iteh.ai/standards/sist-en-iso-20753-2019)

oSIST prEN ISO 20753:2017

en,fr,de

DRAFT INTERNATIONAL STANDARD

ISO/DIS 20753

ISO/TC 61/SC 2

Secretariat: SAC

Voting begins on:
2017-05-11Voting terminates on:
2017-08-02

Plastics — Test specimens

Plastiques — Éprouvettes

ICS: 83.080.01

iTeh Standards (<https://standards.iteh.ai>) Document Preview

[SIST EN ISO 20753:2019](https://standards.iteh.ai/catalog/standards/sist/16082810-b9f5-447f-a7d0-2d00c5745ac7/sist-en-iso-20753-2019)<https://standards.iteh.ai/catalog/standards/sist/16082810-b9f5-447f-a7d0-2d00c5745ac7/sist-en-iso-20753-2019>

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING



Reference number
ISO/DIS 20753:2017(E)

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

SIST EN ISO 20753:2019

<https://standards.iteh.ai/catalog/standards/sist/16082810-b9f5-447f-a7d0-2d00c5745ac7/sist-en-iso-20753-2019>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword.....	iii
Introduction	iv
1 Scope	1
2 Normative references	2
3 Terms and definitions	2
4 Preparation of test specimens	3
4.1 General.....	3
4.2 Injection moulding of test specimens	4
4.3 Compression moulding of test specimens	4
4.4 Preparation of test specimens by machining	4
5 Types of test specimen and their dimensions.....	4
5.1 Types of test specimen	4
5.2 Tensile test specimens with parallel-sided central section	6
5.2.1 Multipurpose test specimens (type A1 and type A2)	6
5.2.2 Reduced-scale test specimens	7
5.3 Bar test specimens (type B)	8
5.4 Small tensile specimens (type C).....	8
5.5 Plate specimens (type D)	10
6 Report on preparation of test specimens	10
Annex A (informative) Recommended applications for multipurpose test specimens or parts thereof.....	12
Annex B (normative) Designation system for test specimens	13
Bibliography.....	15

[SIST EN ISO 20753:2019](https://standards.iteh.ai/catalog/standards/sist/16082810-b9f5-447f-a7d0-2d00c5745ac7/sist-en-iso-20753-2019)

<https://standards.iteh.ai/catalog/standards/sist/16082810-b9f5-447f-a7d0-2d00c5745ac7/sist-en-iso-20753-2019>

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 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 20753 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical properties*.

This second edition cancels and replaces the first edition (ISO 20753:2008).

Changes made relative to the first edition are:

- Updating and amending the normative references
- Introducing the plate 128 mm x 80 mm x 2mm after it was specified in ISO 294-5: 2017

[SIST EN ISO 20753:2019](https://standards.iteh.ai/catalog/standards/sist/16082810-b9f5-447f-a7d0-2d00c5745ac7/sist-en-iso-20753-2019)

<https://standards.iteh.ai/catalog/standards/sist/16082810-b9f5-447f-a7d0-2d00c5745ac7/sist-en-iso-20753-2019>

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 International Standard is to give the designations and dimensions of test specimens used for the acquisition of comparable data, and also other frequently used specimens, in one document for ease of reference. This will be followed by a revision of the ISO 294 series, which will define only the injection-moulding conditions and will refer to this International Standard for the dimensions of the specimens. 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 International Standard.

iTeh Standards (<https://standards.iteh.ai>) Document Preview

[SIST EN ISO 20753:2019](https://standards.iteh.ai/catalog/standards/sist/16082810-b9f5-447f-a7d0-2d00c5745ac7/sist-en-iso-20753-2019)

<https://standards.iteh.ai/catalog/standards/sist/16082810-b9f5-447f-a7d0-2d00c5745ac7/sist-en-iso-20753-2019>

Plastics — Test specimens

1 Scope

1.1 This International Standard 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 gives, in one document, the designations and dimensions of test specimens used for the acquisition of comparable data and also 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 corresponds to the ISO 3167:2002 type 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 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 International Standard, this does not mean that there is any intention to exclude the use of the specimen. Additional specimen types may be added in future if they are commonly used.

ISO/DIS 20753:2017(E)

2 Normative references

The following referenced documents are indispensable for the application 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 10350-1, *Plastics — Acquisition and presentation of comparable single-point data — Part 1: Moulding materials*

ISO 10350-2, *Plastics — Acquisition and presentation of comparable single-point data — Part 2: Long-fibre-reinforced plastics*

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*

ISO 11403-1, *Plastics — Acquisition and presentation of comparable multipoint data — Part 1: Mechanical properties*

ISO 11403-2, *Plastics — Acquisition and presentation of comparable multipoint data — Part 2: Thermal and processing properties*

ISO 11403-3, *Plastics — Acquisition and presentation of comparable multipoint data — Part 3: Environmental influences on properties*

3 Terms and definitions

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

3.1

multipurpose test specimen

type A1 or type A2 tensile test specimen as shown in Figure 1 and specified in Table 1 and Table 2, respectively

NOTE 1 Although ISO 3167:2002 refers to both the type A and type B specimens, defined in that International Standard, as multipurpose test specimens, for the purposes of this International Standard it is the type A1 specimen which is the preferred specimen for the acquisition of comparable data and hence the true multipurpose test specimen.

NOTE 2 The type A1 specimen can be made suitable for a variety of tests by simple cutting, because the length l_1 of the narrow parallel-sided section is $80 \text{ mm} \pm 2 \text{ mm}$.

3.2 l_1

length of the narrow parallel-sided section (central section) of the type A and type CP tensile test specimens, the length of the type B bar specimen and the length of the side of the type D plate specimen

3.3 l_2

distance between the broad parallel-sided sections (tabs) of the type A and type CP tensile test specimens

3.4 l_3

overall length of the type A and type C tensile test specimens

3.5 b_1

width of the narrow parallel-sided section (central section) of the type A tensile test specimen, the minimum width of the type C test specimen and the length of the side of the type D plate specimen

3.6 b_2

width of the broad parallel-sided sections (tabs) of the type A and type C tensile test specimens

3.7 r

radius of the shoulder region of the type A and type C tensile test specimens

3.8 h

thickness of the test specimen

4 Preparation of test specimens**4.1 General**

Test specimens shall be prepared in accordance with the relevant material specification. When none exists, specimens shall be either directly compression or injection moulded from the material in accordance with ISO 293, ISO 294-1, ISO 294-2, ISO 294-3, ISO 294-5, ISO 295 or ISO 10724-1, as appropriate, or machined in accordance with ISO 2818 from sheets that have been compression or injection moulded from the compound, extruded from the compound or polymerized and cast.

Strict control of all the specimen preparation conditions is essential to ensure that all test specimens in a set are in the same state.

All surfaces of the test specimens shall be free from visible flaws, scratches or other imperfections. With moulded specimens, any flash present shall be completely removed, taking care not to damage the moulded surface.

The broad sides of multipurpose test specimens shall be suitably marked (see Note), for injection-moulded specimens to distinguish between the sides formed by the cavity plate and the fixed plate of the mould (see ISO 294-1 or ISO 10724-1), for compression-moulded and machined specimens to identify any asymmetry resulting from the underlying moulding process.

For injection-moulded specimens, the sides can be identified by the impressions of the ejection pins and by the draft angle. Compression-moulded and machined specimens shall be marked at their shoulders. ISO bars taken from the central section of multipurpose test specimens shall be marked outside their central 64 mm section, which is loaded during flexural testing.