BSI Standards Publication

Plastics – Preparation of test specimens by machining (ISO 2818:2018)

bsi.

National foreword

This British Standard is the UK implementation of EN ISO 2818:2019. It supersedes BS EN ISO 2818:1996, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/82, Thermoplastic materials.

A list of organizations represented on this committee can be obtained on request to its secretary.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN ISO 2818:2019) 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of an identical text or by endorsement, at the latest by July 2019, and conflicting national standards shall be withdrawn at the latest by July 2019.

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 2818:1996.

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Endorsement notice

The text of ISO 2818:2018 has been approved by CEN as EN ISO 2818:2019 without any modification.

Contents

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).

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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 9, *Mechanical properties*.

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.

This fourth edition cancels and replaces the third edition (ISO 2818:1994), of which it constitutes a minor revision to update the references in Clause 2. It also incorporates the Technical Corrigendum ISO 2818:1994/Cor 1:2007.

Introduction

The preparation of test specimens by machining influences the finished surfaces and, in some cases, even the internal structure of the specimens. Since test results are strongly dependent on both of these parameters, exact definitions of tools and machining conditions are required for reproducible test results with machined specimens.

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Plastics – Preparation of test specimens by machining

1 Scope

This document establishes the general principles and procedures to be followed when machining and notching test specimens from compression-moulded and injection-moulded plastics, extruded sheets, plates and partially finished or wholly finished products.

In order to establish a basis for reproducible machining and notching conditions, the following general standardized conditions are applied. It is assumed, however, that the exact procedures used are selected or specified by the relevant material specification or by the standards on the particular test methods. If sufficiently detailed procedures are not thus specified, the interested parties agree upon the conditions to be used.

2 Normative references

There are no normative references in this document.

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 Milling

NOTE In this machining operation, the tool has a circular primary motion and the workpiece a suitable feed motion. The axis of rotation of the primary motion retains its position with respect to the tool, independently of the feed motion (see ISO 3855). Complete dumb-bell and rectangular test specimens, as well as notches in finished specimens, may be prepared by milling.

3.1.1 **Geometry** (see ISO 3002-1 and Figure 1)

NOTE Only a few details of the exact geometrical conditions of the milling tool and its position with respect to the workpiece given in ISO 3002-1 are relevant to this document.

3.1.1.1
tool-cutting-edge angle
α_r
angle between the tool-cutting-edge plane, P_s, and the assumed working plane, P_f, measured in the tool back plane, P_r

3.1.1.2
tool back clearance
α_p
angle between the flank, A_α, of the cutter and the tool-cutting-edge plane, P_s, measured in the tool back plane, P_p