

Plastics — Determination of compressive properties

The European Standard EN ISO 604:2003 has the status of a
British Standard

ICS 83.080.01

National foreword

This British Standard is the official English language version of EN ISO 604:2003. It is identical with ISO 604:2002. It supersedes BS EN ISO 604:1997 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/21, Plastics test methods, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, pages ii to iv, pages 1 to 18, the Annex ZA page and a back cover.

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English version

Plastics - Determination of compressive properties (ISO 604:2002)

Plastiques - Détermination des propriétés en compression
(ISO 604:2002)

Kunststoffe - Bestimmung von Druckeigenschaften (ISO
604:2002)

This European Standard was approved by CEN on 26 June 2003.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

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Foreword

The text of ISO 604:2002 has been prepared by Technical Committee ISO/TC 6 "Plastics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 604:2003 by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

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 January 2004, and conflicting national standards shall be withdrawn at the latest by January 2004.

This document supersedes EN ISO 604:1996.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 604:2002 has been approved by CEN as EN ISO 604:2003 without any modifications.

NOTE Normative references to International Standards are listed in Annex ZA (normative).

INTERNATIONAL STANDARD

**ISO
604**

Third edition
2002-03-01

Plastics — Determination of compressive properties

Plastiques — Détermination des propriétés en compression



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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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 604 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical properties*.

This third edition cancels and replaces the second edition (ISO 604:1993), which has been technically revised.

- a method of correcting for curvature at the beginning of the stress/strain curve is given (see 10.2.2);
- a method of correcting for the compliance of the test machine is given (see annex C).

Annexes A and C form a normative part of this International Standard. Annex B is for information only.

Plastics — Determination of compressive properties

1 Scope

This International Standard specifies a method for determining the compressive properties of plastics under defined conditions. A standard test specimen is defined but its length may be adjusted to prevent buckling under load from affecting the results. A range of test speeds is included.

The method is used to investigate the compressive behaviour of the test specimens and for determining the compressive strength, compressive modulus and other aspects of the compressive stress/strain relationship under the conditions defined.

The method applies to the following range of materials:

- rigid and semi-rigid^[1] thermoplastic moulding and extrusion materials, including compounds filled and reinforced by e.g. short fibres, small rods, plates or granules in addition to unfilled types; rigid and semi-rigid thermoplastic sheet;
- rigid and semi-rigid thermoset moulding materials, including filled and reinforced compounds; rigid and semi-rigid thermoset sheet;
- thermotropic liquid-crystal polymers.

In agreement with ISO 10350-1 and ISO 10350-2, this International Standard applies to fibre-reinforced compounds with fibre lengths $\leq 7,5$ mm prior to processing.

The method is not normally suitable for use with materials reinforced by textile fibres (see references [2] and [5]), fibre-reinforced plastic composites and laminates (see [5]), rigid cellular materials (see [3]) or sandwich structures containing cellular material or rubber (see [4]).

The method is performed using specimens which may be moulded to the chosen dimensions, machined from the central portion of a standard multipurpose test specimen (see ISO 3167) or machined from finished or semi-finished products such as mouldings or extruded or cast sheet.

The method specifies preferred dimensions for the test specimen. Tests which are carried out on specimens of different dimensions, or on specimens which are prepared under different conditions, may produce results which are not comparable. Other factors, such as the test speed and the conditioning of the specimens, can also influence the results. Consequently, when comparable data are required, these factors must be carefully controlled and recorded.