INTERNATIONAL STANDARD

ISO 899-2

Second edition
2003-06-01

Plastics — Determination of creep behaviour —

Part 2: Flexural creep by three-point loading

Plastiques — Détermination du comportement au fluage —

Partie 2: Fluage en flexion par mise en charge en trois points

Reference number
ISO 899-2:2003(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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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 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 899-2 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical properties*.

This second edition cancels and replaces the first edition (ISO 899-2:1993), which has been technically revised.

ISO 899 consists of the following parts, under the general title *Plastics — Determination of creep behaviour*:

— *Part 1: Tensile creep*

— *Part 2: Flexural creep by three-point loading*

Plastics — Determination of creep behaviour —

Part 2: Flexural creep by three-point loading

1 Scope

1.1 This part of ISO 899 specifies a method for determining the flexural creep of plastics in the form of standard test specimens under specified conditions such as those of pretreatment, temperature and humidity. It applies only to a simple freely supported beam loaded at mid-span (three-point-loading test).

1.2 The method is suitable for use with rigid and semi-rigid non-reinforced, filled and fibre-reinforced plastics materials (see ISO 472 for definitions) in the form of dumb-bell-shaped test specimens moulded directly or machined from sheets or moulded articles.

NOTE The method may be unsuitable for certain fibre-reinforced materials due to differences in fibre orientation.

1.3 The method is intended to provide data for engineering-design and research and development purposes. Data for engineering-design purposes requires the use of extensometers to measure the gauge length of the specimen. Data for research or quality-control purposes may use the change in distance between the grips (nominal extension).

1.4 Flexural creep may vary significantly with differences in specimen preparation and dimensions and in the test environment. The thermal history of the test specimen can also have profound effects on its creep behaviour (see Annex A). Consequently, when precise comparative results are required, these factors must be carefully controlled.

1.5 If flexural-creep properties are to be used for engineering-design purposes, the plastics materials should be tested over a broad range of stresses, times and environmental conditions.

1.6 The method may not be suitable for determining the flexural creep of rigid cellular plastics (attention is drawn in this respect to ISO 1209-1, *Cellular plastics, rigid — Flexural tests — Part 1: Bending test*, and ISO 1209-2, *Cellular plastics, rigid — Flexural tests — Part 2: Determination of flexural properties*).

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 62:1999, *Plastics — Determination of water absorption*

ISO 178:2001, *Plastics — Determination of flexural properties*

ISO 291:1997, *Plastics — Standard atmospheres for conditioning and testing*

ISO 472:1999, *Plastics — Vocabulary*