



SLOVENSKI STANDARD
SIST EN ISO 899-1:2000
01-maj-2000

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Plastics - Determination of creep behaviour - Part 1: Tensile creep (ISO 899-1:1993)

Kunststoffe - Bestimmung des Kriechverhaltens - Teil 1: Zeitstand-Zugversuch (ISO 899-1:1993)

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Plastiques - Détermination du comportement au fluage - Partie 1: Fluage en traction (ISO 899-1:1993)

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Ta slovenski standard je istoveten z: **EN ISO 899-1:1996**

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ICS:

| | | |
|-----------|--------------------------------|---------------------|
| 83.080.01 | Polimerni materiali na splošno | Plastics in general |
|-----------|--------------------------------|---------------------|

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en

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EUROPEAN STANDARD

EN ISO 899-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 1996

ICS 83.080

Descriptors: Plastics, rigid plastics, tests, creep tests, determination, creep properties, tension

English version

**Plastics - Determination of creep behaviour - Part
1: Tensile creep (ISO 899-1:1993)**

Plastiques - Détermination du comportement au
fluage - Partie 1: Fluage en traction
(ISO 899-1:1993)

Kunststoffe - Bestimmung des Kriechverhaltens
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This European Standard was approved by CEN on 1994-12-22. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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EN ISO 899-1:1996

Foreword

The text of the International Standard from Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) has been taken over as an European Standard 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 June 1997, and conflicting national standards shall be withdrawn at the latest by June 1997.

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

Endorsement notice

The text of the International Standard ISO 899-1:1993 has been approved by CEN as a European Standard without any modification.

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

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Annex ZA (normative)
Normative references to international publications
with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

| <u>Publication</u> | <u>Year</u> | <u>Title</u> | <u>EN</u> | <u>Year</u> |
|--------------------|-------------|--|--------------|-------------|
| ISO 527-1 | 1993 | Plastics - Determination of tensile properties - Part 1: General principles | EN ISO 527-1 | 1996 |
| ISO 527-2 | 1993 | Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics | EN ISO 527-2 | 1996 |

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INTERNATIONAL
STANDARD

ISO
899-1

First edition
1993-12-15

**Plastics — Determination of creep
behaviour —**

Part 1:
Tensile creep

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Plastiques — Détermination du comportement au fluage —

Partie 1: Fluage en traction

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Reference number
ISO 899-1:1993(E)

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.

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.

International Standard ISO 899-1 was prepared by Technical Committee ISO/TC 61, *Plastics*, Sub-Committee SC 2, *Mechanical properties*.

Together with ISO 899-2, it cancels and replaces ISO 899:1985 and ISO 6602:1985, which have 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*

Annexes A and B of this part of ISO 899 are for information only.

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International Organization for Standardization
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Plastics — Determination of creep behaviour —

Part 1: Tensile creep

1 Scope

1.1 This part of ISO 899 specifies a method for determining the tensile creep of plastics in the form of standard test specimens under specified conditions such as those of pretreatment, temperature and humidity.

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.

1.3 The method is intended to provide data for engineering-design and research and development purposes.

1.4 Tensile 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 tensile-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.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 899. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 899 are encouraged to investigate the

possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 291:1977, *Plastics — Standard atmospheres for conditioning and testing*.

ISO 472:1988, *Plastics — Vocabulary*.

ISO 527-1:1993, *Plastics — Determination of tensile properties — Part 1: General principles*.

ISO 527-2:1993, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*.

3 Definitions

For the purposes of this part of ISO 899, the definitions given in ISO 472 and the following definitions apply.

3.1 creep: The increase in strain with time when a constant force is applied.

3.2 initial stress, σ : The tensile force per unit area of the initial cross-section within the gauge length.

It is given by the equation

$$\sigma = \frac{F}{A}$$

where

F is the force, in newtons;

A is the initial cross-sectional area of the specimen, in square millimetres.

The stress is expressed in megapascals.