SLOVENSKI STANDARD
SIST EN ISO 11403-1:2000

01-maj-2000

Polimerni materiali - Predstavitev primerljivih podatkov, pridobljenih v različnih razmerah - 1. del: Mehanske lastnosti (ISO 11403-1:1994)

Plastics - Acquisition and presentation of comparable multipoint data - Part 1: Mechanical properties (ISO 11403-1:1994)

Kunststoffe - Ermittlung und Darstellung vergleichbarer Vielpunktkennwerte - Teil 1: Mechanische Eigenschaften (ISO 11403-1:1994)

Plastiques - Acquisition et présentation de données multiples comparables - Partie 1: Propriétés mécaniques (ISO 11403-1:1194)

Ta slovenski standard je istoveten z: **EN ISO 11403-1:1999**

ICS:

83.080.01	Polimerni materiali na splošno	Plastics in general

SIST EN ISO 11403-1:2000 **en**

EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN ISO 11403-1

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English version

Plastics - Acquisition and presentation of comparable multipoint data - Part 1: Mechanical properties (ISO 11403-1:1994)

Plastiques - Acquisition et présentation de données multiples comparables - Partie 1: Propriétés mécaniques (ISO 11403-1:1994)

Kunststoffe - Ermittlung und Darstellung vergleichbarer Vielpunktkennwerte - Teil 1: Mechanische Eigenschaften (ISO 11403-1:1994)

This European Standard was approved by CEN on 16 April 1999.

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.

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 Central Secretariat has the same status as the official versions.

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

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Ref. No. EN ISO 11403-1:1999 E

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 November 1999, and conflicting national standards shall be withdrawn at the latest by November 1999.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 11403-1:1994 has been approved by CEN as a European Standard without any modification.

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

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.

Publication	Year	Title	EN	Year
ISO 179	1993	Plastics - Determination of Charpy impact strength	EN ISO 179	1996
ISO 295	1991	Plastics - Compression moulding of test specimens of thermosetting materials	EN ISO 295	1998
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
ISO 899-1	1993	Plastics - Determination of creep behaviour - Part 1: Tensile creep	EN ISO 899-1	1996
ISO 2818	1994	Plastics - Preparation of test specimens by machining	EN ISO 2818	1996
ISO 3167	1993	Plastics - Multipurpose-test specimens	EN ISO 3167	1996
ISO 6721-2	1994	Plastics - Determination of dynamic mechanical properties - Part 2: Torsion-pendulum method	EN ISO 6721-2	1996
ISO 10350	1993	Plastics - Acquisition and presentation of comparable single-point data	EN ISO 10350	1995

INTERNATIONAL STANDARD

ISO 11403-1

First edition
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Plastics — Acquisition and presentation of comparable multipoint data —

Part 1: Mechanical properties

Plastiques — Acquisition et présentation de données multiples comparables —

Partie 1: Propriétés mécaniques

Reference number
ISO 11403-1:1994(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 11403-1 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 1, *Terminology*.

ISO 11403 consists of the following parts, under the general title *Plastics — Acquisition and presentation of comparable multipoint data*:

— *Part 1: Mechanical properties*

— *Part 2: Thermal and processing properties*

— *Part 3: Environmental influences on properties*

Annex A of this part of ISO 11403 is for information only.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

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Introduction

This International Standard has been prepared because users of plastics find sometimes that available data cannot be used readily to compare the properties of similar materials, especially when the data have been supplied by different sources. Even when the same standard tests have been used, they often allow the adoption of a wide range of alternative test conditions, and the data obtained are not necessarily comparable. The purpose of this International Standard is to identify specific methods and conditions of test to be used for the acquisition and presentation of data in order that valid comparisons between materials can be made.

ISO 10350 is concerned with single-point data. Such data represent the most basic method for characterizing materials and are useful for the initial stages of material selection. The present International Standard identifies test conditions and procedures for the measurement and presentation of a more substantial quantity of data. Each property here is characterized by multipoint data which demonstrate how that property depends upon important variables such as time, temperature and environmental effects. Additional properties are also considered in this standard. These data therefore enable more discriminating decisions to be made regarding a material's suitability for a particular application. Some data are also considered adequate for undertaking predictions of performance in service and of optimum processing conditions for moulding a component, although it should be recognized that, for purposes of design, additional data will often be needed. One reason for this is that some properties are strongly dependent upon the physical structure of the material. The test procedures referred to in this standard employ, where possible, the multipurpose tensile bar, and the polymer structure in this test specimen may be significantly different from that in specific regions of a moulded component. Under these circumstances, therefore, the data will not be suitable for accurate design calculations for product performance. The material supplier should be consulted for specific information on the applicability of data.

ISO 10350 and the various parts of this International Standard together define the means for acquiring and presenting a core set of comparable data for use in material selection. Use of these standards should result in a rationalization of effort and a reduction of cost associated with provision of these data. Furthermore, reference to these standards will simplify the development of data models for the computerized storage and exchange of data concerning material properties.

Where appropriate, values for test variables have been specified by this standard. For some tests however, owing to the wide range of conditions over which different plastics perform, the standard gives guidance in the selection of certain test conditions so that they cover the operating range for that polymer. Because, in general, the properties and performance specifications for different polymers differ widely, there is no obligation to generate data under all the test conditions specified in this standard.

Data on a wide range of properties are needed to enable plastics to be selected and used in the large variety of applications to which they are suited. ISO standards describe experimental procedures which are suitable for the acquisition of relevant information on many of these properties. For other properties, however, ISO standards either do not exist or exhibit shortcomings that complicate their use at present for the generation of comparable data (see annex A). The standard has therefore been divided into parts so that each part can be developed independently. In this way, additional properties can be included as new or revised standards become available.

Plastics — Acquisition and presentation of comparable multipoint data —

Part 1:
Mechanical properties

1 Scope

This part of ISO 11403 specifies test procedures for the acquisition and presentation of multipoint data on the following mechanical properties of plastics:

Dynamic modulus

Tensile properties at constant test speed

— Ultimate stress and strain

— Tensile stress-strain curves

Tensile creep

Charpy impact strength

The test methods and test conditions apply predominantly to those plastics that can be injection- or compression-moulded or prepared as sheets of specified thickness from which specimens of the appropriate size can be machined.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 11403. 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 11403 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 179:1993, *Plastics — Determination of Charpy impact strength.*

ISO 293:1986, *Plastics — Compression moulding test specimens of thermoplastic materials.*

ISO 294:—[1], *Plastics — Injection moulding of test specimens of thermoplastic materials.*

ISO 295:1991, *Plastics — Compression moulding of test specimens of thermosetting materials.*

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.*

ISO 899-1:1993, *Plastics — Determination of creep behaviour — Part 1: Tensile creep.*

ISO 2818:1994, *Plastics — Preparation of test specimens by machining.*

ISO 3167:1993, *Plastics — Multipurpose test specimens.*

ISO 6721-2:1994, *Plastics — Determination of dynamic mechanical properties — Part 2: Torsion-pendulum method.*

1) To be published. (Revision of ISO 294:1975)