Plastid. Surveomaduste määramine

Plastics - Determination of compressive properties

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 604:2003 sisaldab Euroopa standardi EN ISO 604:2003 ingliskeelset teksti. Käesolev dokument on jõustatud 26.11.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 604:2003 consists of the English text of the European standard EN ISO 604:2003. This document is endorsed on 26.11.2003 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This International standard specifies a method for determining the compressive properties of plastics under defined condition	**Scope:** This International standard specifies a method for determining the compressive properties of plastics under defined condition

ICS 83.080.01

Võtmesõnad: castings, properties, single-axle, squeezing stress, strain, stress, stresses, test equipment, test reports, test specimens, testing, tests, thermoplastic polymers, thermosetting polymers, thermosetting resins, upsetting, vocabulary, voltage measurement

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 604

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ICS 83.080.01

Supersedes EN ISO 604 : 1996.

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 2003-06-26.

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 Management Centre 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 Management Centre has the same status as the official versions.

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

CEN

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

Management Centre: rue de Stassart 36, B-1050 Brussels

Ref. No. EN ISO 604 : 2003 E

Foreword

International Standard

ISO 604 : 2002 Plastics – Determination of compressive properties,

which was prepared by ISO/TC 61 'Plastics' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 249 'Plastics', the Secretariat of which is held by IBN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by January 2004 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 604 : 2002 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

Contents

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 $\leqslant$ 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.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

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

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

ISO 294-1:1996, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 1: General principles, and moulding of multipurpose and bar test specimens*

ISO 295:—[1], *Plastics — Compression moulding of test specimens of thermosetting materials*

ISO 2602:1980, *Statistical interpretation of test results — Estimation of the mean — Confidence interval*

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

ISO 3167:—[2], *Plastics — Multipurpose test specimens*

ISO 5893:—[3], *Rubber and plastics test equipment — Tensile, flexural and compression types (constant rate of traverse) — Specification*

ISO 10724-1:1998, *Plastics — Injection moulding of test specimens of thermosetting powder moulding compounds (PMCs) — Part 1: General principles and moulding of multipurpose test specimens*

3 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply (see also Figure 1).

3.1
gauge length
L_0
initial distance between the gauge marks on the central part of the test specimen

NOTE It is expressed in millimetres (mm).

3.2
test speed
v
rate of approach of the plates of the test machine during the test

NOTE It is expressed in millimetres per minute (mm/min).

3.3
compressive stress
σ
compressive load, per unit area of original cross-section, carried by the test specimen

NOTE 1 It is expressed in megapascals (MPa).

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1) To be published. (Revision of ISO 295:1991)

2) To be published. (Revision of ISO 3167:1993)

3) To be published. (Revision of ISO 5893:1993)