



SLOVENSKI STANDARD SIST EN ISO 4590:2003

01-december-2003

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SIST EN ISO 4590:2000

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Rigid cellular plastics - Determination of the volume percentage of open cells and of closed cells (ISO 4590:2002)

Harte Schaumstoffe - Bestimmung des Volumenanteils offener und geschlossener Zellen (ISO 4590:2002)

Plastiques alvéolaires rigides - Détermination du pourcentage volumique de cellules ouvertes et de cellules fermées (ISO 4590:2002)

Ta slovenski standard je istoveten z: EN ISO 4590:2003

ICS:

83.100 Penjeni polimeri Cellular materials

SIST EN ISO 4590:2003 en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 4590

May 2003

ICS 83.100

Supersedes EN ISO 4590:1995

English version

Rigid cellular plastics - Determination of the volume percentage of open cells and of closed cells (ISO 4590:2002)

Plastiques alvéolaires rigides - Détermination du pourcentage volumique de cellules ouvertes et de cellules fermées (ISO 4590:2002)

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This European Standard was approved by CEN on 11 March 2003.

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.

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.

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

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

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

EN ISO 4590:2003 (E)**Foreword**

The text of ISO 4590:2002 has been prepared by Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) has been taken over as EN ISO 4590:2003 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 November 2003, and conflicting national standards shall be withdrawn at the latest by November 2003.

This document supersedes EN ISO 4590:1995.

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 4590:2002 has been approved by CEN as EN ISO 4590:2003 without any modifications.

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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 (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 1923	1981	Cellular plastics and rubbers - Determination of linear dimensions	EN ISO 1923	1995

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INTERNATIONAL STANDARD

ISO
4590

Second edition
2002-03-01

Rigid cellular plastics — Determination of the volume percentage of open cells and of closed cells

*Plastiques alvéolaires rigides — Détermination du pourcentage volumique
de cellules ouvertes et de cellules fermées*

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ISO 4590:2002(E)

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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.ch
Web www.iso.ch

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ISO 4590:2002(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.

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 4590 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 10, *Cellular plastics*.

This second edition cancels and replaces the first edition (ISO 4590:1981), which has been technically revised.

Annex A forms a normative part of this International Standard.

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Rigid cellular plastics — Determination of the volume percentage of open cells and of closed cells

1 Scope

This International Standard specifies a general procedure for the determination of the volume percentage of open and of closed cells of rigid cellular plastics, by measurement first of the geometrical volume and then of the air-impenetrable volume of test specimens. The procedure includes the correction of the apparent open-cell volume by taking into account the surface cells opened by cutting during specimen preparation. Two alternative methods (method 1 and method 2), and corresponding apparatus, are specified for the measurement of the impenetrable volume. The results obtained from method 2 (see clause 9) are intended to be used for comparison purposes only.

2 Normative reference

The following normative document contains 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 edition of the normative document 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 1923:1981, *Cellular plastics and rubbers — Determination of linear dimensions*

3 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

3.1

surface area

S

the total surface area of the test specimen determined by measuring its geometrical dimensions

3.2

geometrical volume

V_g

the volume of the test specimen determined by measuring its geometrical dimensions

3.3

surface/volume ratio

r

the ratio $\frac{S}{V_g}$ for the test specimen