



NSAI
Standards

Irish Standard
I.S. EN ISO 534:2011

Paper and board - Determination of thickness, density and specific volume (ISO 534:2011)

I.S. EN ISO 534:2011

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SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:
EN ISO 534:2005

This document is based on:
EN ISO 534:2011

Published:
28 November, 2011

This document was published
under the authority of the NSAI
and comes into effect on:
28 November, 2011

ICS number:
85.060

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

I.S. EN ISO 534:2011

EUROPEAN STANDARD

EN ISO 534

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2011

ICS 85.060

Supersedes EN ISO 534:2005

English Version

Paper and board - Determination of thickness, density and specific volume (ISO 534:2011)

Papier et carton - Détermination de l'épaisseur, de la masse volumique et du volume spécifique (ISO 534:2011)

Papier und Pappe - Bestimmung der Dicke, der Dichte und des spezifischen Volumens (ISO 534:2011)

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Foreword

This document (EN ISO 534:2011) has been prepared by Technical Committee ISO/TC 6 "Paper, board and pulps" in collaboration with Technical Committee CEN/TC 172 "Pulp, paper and board" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by May 2012, and conflicting national standards shall be withdrawn at the latest by May 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 534:2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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The text of ISO 534:2011 has been approved by CEN as a EN ISO 534:2011 without any modification.

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I.S. EN ISO 534:2011
**INTERNATIONAL
STANDARD**

**ISO
534**

Fourth edition
2011-11-15

**Paper and board — Determination of
thickness, density and specific volume**

*Papier et carton — Détermination de l'épaisseur, de la masse
volumique et du volume spécifique*



Reference number
ISO 534:2011(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.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 534 was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*, Subcommittee SC 2, *Test methods and quality specifications for paper and board*.

This fourth edition cancels and replaces the third edition (ISO 534:2005), which has been technically revised.

The essential changes in this International Standard are the reduction of the field of application, because now it is clearly stated that the measurement of bulking thickness is not intended for board, and the deletion of the alternative pressure $[50 \pm 5]$ kPa for the thickness measurement. In some countries, particularly in North America, the 50 kPa pressure is still widely used and different results will be obtained depending on which pressure is used. At the same time, new precision data have been inserted.

Paper and board — Determination of thickness, density and specific volume

1 Scope

This International Standard specifies two methods for measuring the thickness of paper and board:

- a) the measurement of a single sheet of paper or board as a single sheet thickness;
- b) the measurement of a pack of sheets of paper as a bulking thickness.

This International Standard also specifies calculation methods

- for the apparent sheet density and for the apparent bulk density, and
- for the apparent specific sheet volume and for the apparent specific bulk volume

from the thickness determinations.

This International Standard is not applicable to corrugated fibreboard. In addition, the measurement of bulking thickness, method b) above, is not suitable for board¹⁾.

NOTE The two methods generally lead to different results. These methods are not applicable to tissue paper and tissue products. For tissue paper and tissue products, ISO 12625-3 should be used.

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 186, *Paper and board — Sampling to determine average quality*

ISO 187, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

ISO 536, *Paper and board — Determination of grammage*

3 Terms and definitions

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

3.1

single sheet thickness

distance between one surface of a paper or board and the other, measured under an applied static load, using this test method

3.2

bulking thickness

thickness of a single sheet of paper, calculated from the thickness of several superimposed sheets in a pack, and measured under an applied static load, using this test method

1) For the definition of "board", see ISO 4046-3:2002, definition 3.16.

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