

AS 1301.405:2021



Methods of test for pulp and paper

**Method 405: Grammage of non-creped paper and board
(ISO 536:2019, MOD)**



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Preface

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee PK-019, Methods of Test for Pulp and Paper, to supersede AS/NZS 1301.405s:2004, *Methods of test for pulp and paper, Part 405s: Grammage of non-creped paper and board*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this document is to specify a method for determining the grammage of paper and board.

A list of all parts in the AS(AS/NZS) 1301 series can be found in the [Standards Australia online catalogue](#).

This document is an adoption with national modifications, and has been reproduced from, ISO 536:2019, *Paper and board — Determination of grammage*. The modifications are additional requirements and are set out in [Appendix ZZ](#), which has been added at the end of the source text.

[Appendix ZZ](#) lists the variations to ISO 536:2019 for the application of this Standard in Australia.

As this document has been reproduced from an International Standard, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

Contents

Preface	ii
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Apparatus	1
6 Sampling	2
7 Conditioning	2
8 Procedure	2
9 Calculation and expression of results	3
10 Test report	3
Annex A (normative) Determination of grammage on an “oven-dry” and “as-taken” basis	5
Annex B (informative) Precision	6
Bibliography	8
Appendix ZZ (normative) Variations to ISO 536:2019 for Australia	9

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document 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 536:2012), which has been technically revised. The main changes compared to the previous edition are as follows:

- several inconsistencies and imprecisions have been addressed e.g. [5.1](#) permits the nominal area of test pieces cut by the cutter to be used in calculating grammage rather than for the area of each test piece to be determined, in certain circumstances, but this was not recognised in subsequent clauses;
- sharper wording in [Clause 8](#) when a reduced test area is used;
- additional information required in [Clause 10](#);
- a more accurate description of the determinate of “as-taken” grammage near top of a reel in [A.2](#).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Australian Standard®

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1 Scope

This document specifies a method for determining the grammage of paper and board.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 287, *Paper and board — Determination of moisture content of a lot — Oven-drying method*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

grammage

mass per unit area

mass of a unit area of paper or board determined by a specific method of test

Note 1 to entry: Grammage is expressed in grams per square metre.

4 Principle

The area of the test pieces and their masses are determined and the grammage is calculated.

For details regarding the test method precision, see [Annex B](#).

5 Apparatus

5.1 Cutting device, capable of repeatedly cleanly cutting test pieces to within $\pm 1,0$ % of the same nominal area, for most paper and board products. This shall be checked frequently by measurement. Provided that the above accuracy is attained, the nominal area shall be used for calculating grammage.

With certain types of paper and board it will be found, after carrying out this determination of area, that test pieces cannot be cut to within $\pm 1,0$ % of the nominal area. In such instances the dimensions of each test piece shall be determined to the nearest 0,5 mm and its area calculated.