



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 451.2-2023

Paper and board - Part 2: Determination of grammage

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Table of Contents

Foreword...	3
Introduction...	6
1 Scope...	7
2 Normative References...	7
3 Terms and Definitions...	7
4 Principle...	8
5 Instruments...	8
6 Sampling...	8
7 Specimen Treatment...	9
8 Test Procedures...	9
9 Expression of Results...	9
10 Test Report...	11

Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1. Rules for the Structure and Drafting of Standardizing Documents.

This Document is Part 2 of GB/T 451. GB/T 451 consists of the following parts.

- Paper and Board - Determination of Size and Deviation (GB/T 451.1);
- Part and Board - Determination of Grammage (GB/T 451.2);
- Paper and Board - Determination of Thickness (GB/T 451.3).

This Document replaced GB/T 451.2-2002 Part and Board - Determination of Grammage.

Compared with GB/T 451.2-2002, the major technical changes of this Document are as follows

besides the structural adjustments and editorial modifications.

- a) Add the terms and definitions of "oven-dry grammage" and "as-taken grammage" (see Clause 3 of this Edition);
- b) Change the calculation method of the area when the cutting area of the sample cutting equipment reaches the accuracy (see 5.1 of this Edition, 5.1 of the 2002 edition); add the

accuracy requirements for the measurement size of each specimen when the cutting area accuracy of the sample cutting equipment does not reach the specified requirements (see

5.1 of this Edition);

- c) Delete the instrument calibration (see 5.3 of the 2002 Edition);
- d) Add paper and board grammage determination instruments and drying ovens (see 5.3 and

5.4 of this Edition);

- e) Change sampling quantity of the sample (see Clause 6 of this Edition; Clause 6 of the

2002 Edition); and add the sampling requirements for as-taken grammage determination

(see Clause 6 of this Edition);

- f) Change the description of the standard operation when the available sample area is limited

(see 8.1 of this Edition; 8.1 of the 2002 Edition);

- g) Add grammage calculation using paper and board grammage tester (see 9.2 of this Edition);

- h) Add calculation of grammage deviation (see 9.3 of this Edition);

- i) Change test report (see Clause 10 of this Edition; Clause 10 of the 2002 Edition);

- j) Add determination of oven-dry grammage and as-taken grammage (see Appendix B of this Edition).

This Document modified and adopted ISO 536.2019 Part and Board - Determination of Grammage.

Compared with ISO 536.2019, this Document has more structural adjustments. See Appendix

A for a comparison of the structure number changes between the two documents.

The technical differences and causes between this Document and ISO 536.2019 are as follows.

- a) Change the description of the Scope (see Clause 1 of this Document; Clause 1 of ISO 536.2019) to comply with the drafting rules of China's national standardization

documents;

b) Add the terms and definitions of "oven-dry grammage" and "as-taken grammage" (see Clause 3 of this Document) to facilitate user understanding;

c) Change the requirements for balance accuracy selection (see 5.2 of this Document; 5.2 of

ISO 536:2019) to facilitate operation;

d) Deleted the area requirements for the paper and board grammage measuring instrument to weigh a single piece of specimen (see 5.3 of ISO 536:2019) to adapt to the current situation of the industry in China;

e) Add instrument oven (see 5.4 of this Document) to facilitate operation;

f) Change the normative references for the sampling of paper and board and the measurement of the longitudinal and transverse directions and the front and back of the specimens; and replace ISO 186 with GB/T 450 (see Clause 6 of this Document) to facilitate industry operation;

g) Change the description of sampling, sampling area and test steps (see Clause 6 and 8.1 of

this Document; Clauses 6 and 8 of ISO 536:2019) to be consistent with the specifications of the commonly used standard samplers in laboratories and adapt to the current situation of the industry in China;

h) Change the normative references of standard atmospheric conditions for the processing and testing of paper, board and pulp specimens; and replace ISO 187 with GB/T 10739 (see Clause 7 of this Document) to facilitate industry operation;

i) Add the determination and result expression of the cross-section grammage difference (see 8.3 and 9.4 of this Document) to meet the needs of the industry;

j) Add the result expression of the grammage deviation (see 9.3 of this Document) to facilitate operation;

k) Change the description of the test report (see Clause 10 of this Document; Clause 10 of ISO 536:2019) and adapt to the current situation of the industry China;

l) Change the normative references for the determination of moisture content of paper,

board

and pulp analysis specimens, and replace ISO 287 (see B.1.1 of this Document) with GB/T 462 to facilitate industry operations;

m) Change the expression of grammage sampling (see B.2.1 of this Document) to facilitate user understanding.

This Document made the following editorial modifications.

--- Delete Appendix B (Informative) "Precision" of ISO 536:2019.

Please note some contents of this Document may involve patents. The issuing agency of this

Document shall not assume the responsibility to identify these patents.

This Document was proposed by China National Light Industry Council.

This Document shall be under the jurisdiction of National Technical Committee on Papermaking Industry of Standardization Administration of China (SAC/TC 141).

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The historical editions replaced by this Standard are as follows.

--- GB 451-1964 was first-time published in 1964; first-time revised in 1979;

--- Second-time revise din 1989; revised the Part 4.Determination of Grammage into GB/T 451.2-1989; third-time revised in 2002;

--- It is fourth-time revised hereby.