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

GB/T 451.3-2002

**Paper and board -- Determination of thickness
(English Translation)**

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Table of Contents

Foreword...	3
ISO Foreword...	4
1 Scope...	5
2 Normative references...	5
3 Definitions...	5
4 Principle...	6
5 Apparatus determination requirements...	6
6 Sampling...	7
7 Conditioning...	7
8 Calibration of thickness gauge...	7
9 Test procedures...	7
10 Expression of results...	8
11 Test report...	9
Annex A (Normative) Calibration of thickness gauge...	11

Foreword

This Standard is a revision to GB/T 451.3-1989 Paper and board -
Determination of thickness.

This Standard equivalently adopts ISO 534.1988 Paper and board -
Determination of thickness and apparent bulk density or apparent sheet
density.

Annex A of this Standard is normative.

Since the date of implementation of this Standard, it shall replace GB/T
451.3-1989 simultaneously.

This Standard was proposed by China Light Industry Federation.

This Standard shall be under the jurisdiction of National Technical Committee
on Paper Industry of Standardization Administration of China.

The drafting organization of this Standard. China Pulp and Paper Research

Institute.

Main drafters of this Standard. Chen Xi, Li Lanfen, Wang Huajia, Song Chuan.

This Standard entrusts National Technical Committee on Paper Industry of Standardization Administration of China for interpretation.

Paper and board - Determination of thickness

1 Scope

This Standard specifies the method of measuring the thickness of paper and board.

This Standard applies various single-sheet or bulk-sheet papers and boards but corrugated board.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

GB/T 450-2002, Paper and board - Sampling for testing (eqv ISO 186.1994)

GB/T 451.2-2002, Paper and board - Determination of grammage (eqv ISO 536.1995)

GB/T 10739-2002, Paper, board and pulps - Standard atmosphere for conditioning and testing (eqv ISO 187.1990)

3 Definitions

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

3.1 thickness

The paper and board are subjected to a certain pressure between the two measuring faces to measure the distance between the faces of the paper or board of which the results are expressed in millimeters or microns.

3.2 single sheet thickness

Distance between one face of a paper or board and the other, determined under an applied static load, using the standard method of test.

Annex A

(Normative)

Calibration of thickness gauge

A.1 Flatness of the measured faces

Carefully wipe the surfaces of the measured faces. And make them slightly away from each other. Facing the bright light, gap shall be seen. When looking at the measuring face from two mutually perpendicular directions, the gap shall be very uniform.

A.2 Pressure exerted between pressure faces

Any suitable means of verifying the accuracy and uniformity of the pressure exerted between the pressure faces may be used.

A.3 Thickness block gauge

For special or standard block gauge of which the thickness value equals to 10%, 30%, 50%, 70% and 90% of full range of thickness gauge, the thickness error of each block gauge shall not exceed $\pm 1 \mu\text{m}$.

A.4 Indication error and repeatability of measurement

A.4.1 With the pressure faces in contact with one another, set the micrometer reading to zero. Do not reset the zero reading during the following procedure.

A.4.2 Open the gap between the pressure faces, allow it to close gain (see 9.4) so that the pressure faces make contact with one another, and note the

micrometer reading. Repeat this procedure at least five times.

A.4.3 Take one of the thickness gauges specified in A.3, interpose the gauge, allow the faces to close upon the gauge and note the micrometer reading. Repeat this procedure at least five times.

A.4.4 Repeat the procedure described in A.4.3, using, in run, each of the remaining thickness gauges.

NOTE: The thickness gauges are used singly, not in combination.

A.4.5 Repeat the procedure described in A.4.2.

A.4.6 For each gauge thickness at which micrometer readings are taken,

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