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

GB/T 22906.4-2025

Replacing GB/T 22906.4-2008

Testing of cores - Part 4: Measurement of dimensions

纸芯的测定 第4部分：尺寸的测定

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 4 of GB/T 22906 "Determination of Paper Core". GB/T 22906 has already published the following parts.

- Part 1: Sample Taking (GB/T 22906.1);
- Part 2: Temperature and Humidity Treatment of Specimens (GB/T 22906.2);
- Part 3: Determination of Moisture Content (Oven Drying Method) (GB/T 22906.3);
- Part 4: Determination of dimensions (GB/T 22906.4);
- Part 5: Determination of coaxial rotational properties (GB/T 22906.5);
- Part 6: Determination of flexural strength (three-point method) (GB/T 22906.6);
- Part 7: Determination of elastic modulus (three-point method) (GB/T 22906.7);
- Part 8: Determination of natural frequency and elastic modulus (experimental model analysis method) (GB/T 22906.8);
- Part 9: Determination of compressive strength (GB/T 22906.9).

This document replaces GB/T 22906.4-2008 "Determination of Paper Cores - Part 4: Determination of Dimensions", and is consistent with GB/T 22906.4-2008.

In comparison, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) The methods for determining the inner diameter and wall thickness have been modified, and calculation is now listed as one of the methods for determining the inner diameter (Method D) and wall thickness (Method J) (see...).

(6.1, 6.5, 8.1 and 8.4, 2008 editions of 6.1, 6.5, 8.1 and 8.4)

b) The calibration requirements and applicable scope of the three-point micrometer method for inner diameter have been added (see 6.2.2);

c) The requirements for solid skeletons in the step-by-step skeleton calibration method for inner diameter determination have been changed (see 6.4.1, 2008 version of 6.4.1);

d) The scope of the step-by-step skeleton calibration method in inner diameter determination has been expanded (see 6.4.2);

e) The reading requirements for the micrometer method and the vernier caliper method have been changed (see 7.2.2 and 7.3.2, 2008 edition of 7.2.2 and 7.3.2).

7.3.2);

f) The outer diameter micrometer method for wall thickness determination was changed to the wall thickness micrometer method, and the requirements for the incus diameter were modified (see 8.1 and).

8.2.1 (8.1 and 8.2.1 in the 2008 edition);

g) Added instructions for cases where the measurement length is less than 500mm (see 9.1);

h) The sampling time and location have been removed (see Chapter 10 of the 2008 edition).

This document is modified to adopt ISO 11093-4:2022 "Paper and paperboard - Determination of cores - Part 4: Determination of dimensions".

The technical differences between this document and ISO 11093-4:2022, and the reasons therefor, are as follows.

a) The scope description has been changed (see Chapter 1) to conform to the drafting rules for national standardization documents in my country;

b) ISO 11093-1 (see Chapter 4) has been replaced with the normatively referenced GB/T 22906.1 to adapt to my country's technical conditions;

c) ISO 11093-2 (see Chapter 5) has been replaced with the normatively referenced GB/T 22906.2 to adapt to my country's technical conditions.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China National Light Industry Council.

This document is under the jurisdiction of the National Technical Committee on Standardization of Paper Industry (SAC/TC141).

Introduction

GB/T 22906 "Determination of Paper Cores" will improve the quality level of paper core products in my country and provide guidance for their production.

It consists of 9 parts.

---Part 1: Sample Taking. The purpose is to specify the method for taking paper core samples.

---Part 2: Temperature and Humidity Treatment of the Specimens. The purpose is to specify the standard atmospheric conditions used during paper core testing.

---Part 3: Determination of Moisture Content (Oven Drying Method). The purpose is to specify the method for determining the moisture content of paper core samples using the oven drying method.

content.

---Part 4: Determination of Dimensions. The purpose is to specify the methods for determining the dimensions (inner diameter, outer diameter, wall thickness, and length) of the paper core.

---Part 5: Determination of Coaxial Rotation Characteristics. The purpose is to specify the minimum wall thickness (5mm) and minimum outer diameter for rotary paper machines.

A method for determining the coaxial rotational characteristics of a paper core with a diameter of 60 mm and a maximum length of 3200 mm.

---Part 6: Determination of Bending Strength (Three-Point Method). The purpose is to specify the method for determining bending strength for inner diameters of 50mm to 300mm using the three-point method.

A method for determining the bending strength of a cylindrical paper core with a minimum wall thickness of 5 mm and a minimum measurement length of 1100 mm.

---Part 7: Determination of Elastic Modulus (Three-Point Method). The purpose is to specify the minimum wall thickness for inner diameters of 50mm to 350mm.

Measurement of the elastic modulus of paper cores with an inner diameter of 0.02 mm or not less than 2.0 mm and a minimum length of 8 mm or not less than 1000 mm.

Determine the method.

---Part 8: Determination of Natural Frequency and Elastic Modulus (Experimental Model Analysis Method). The purpose is to specify the use of a transverse [mechanism] with both ends free.

The vibration test model was used to determine the inner diameter of the device, which is

50mm~350mm, with a minimum wall thickness of 0.02 times the inner diameter or not less than 2.0mm.

Method for determining the natural frequency and elastic modulus of paper cores with a minimum length of 8 times the inner diameter.

---Part 9: Determination of Flat Crush Strength. The purpose is to specify the method for determining the flat crush strength of paper cores.

Paper core measurement, Part 4: Dimensional measurement

1 Scope

This document describes the methods for determining the dimensions (inner diameter, outer diameter, wall thickness, and length) of the paper core.

This document applies to the determination of core dimensions for various paper and paperboard materials.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 22906.1 Determination of paper cores - Part 1: Sample taking (GB/T 22906.1-2008, ISO 11093-1:1994) IDT) GB/T 22906.2 Determination of paper cores - Part 2: Temperature and humidity treatment of test specimens (GB/T 22906.2-2008, ISO 11093-2.

1994, MOD)

3 Terms and Definitions

The following terms and definitions apply to this document.

inner diameterinternaldiameter the measured internal width of the cylindrical paper core (see Figure 1).

Figure 1.Schematic diagram of paper core dimension lines

outer diameterexternaldiameter the measured outer width of the cylindrical paper core (see Figure 1).

Wall thickness