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

GB/T 24328.12-2020

**Tissue paper and tissue products - Part 12: Determination of
optical properties--Determination of opacity--Diffuse
reflectance method**

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Foreword

GB/T 24328 "Toilet Paper and Its Products" is divided into the following 12 parts.

---Part 1.Terminology guidelines;

---Part 2.Determination of thickness, laminate thickness, apparent laminate tightness and bulk;

---Part 3.Determination of tensile strength, elongation at maximum force and tensile energy absorption;

---Part 4.Determination of wet tensile strength;

---Part 5.Quantitative determination;

---Part 6.Determination of water absorption time and water absorption capacity basket immersion method;

---Part 7.Determination of the burst resistance of the spherical shape;

---Part 8.Determination of optical properties, determination of brightness and color D65/10° (outdoor daylight conditions);

---Part 9.Determination of the burst resistance of the wet spherical shape;

---Part 10.Determination of the tensile strength of the punching line and calculation of the punching efficiency;

---Part 11.Determination of optical properties, determination of brightness and color C/2° (indoor daylight conditions);

--- Part 12.Determination of optical properties. Determination of opacity. Diffuse reflectance method.

This part is Part 12 of GB/T 24328.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the redrafting law to amend and adopt ISO 12625-16:2015 "Toilet paper and

its products Part 16.Measurement of optical properties

Fixed opacity (paper backing) diffuse reflection method."

The technical differences between this part and ISO 12625-16:2015 and the reasons are as follows.

--- The explanatory content in the scope has been deleted to adapt to my country's technical conditions.

---Regarding normative reference documents, this section has made adjustments with technical differences to adapt to my country's technical conditions and adjustments.

The situation is collectively reflected in Chapter 2 "Normative Reference Documents".

* Replace ISO 186 with GB/T 450 which is modified to adopt international standards;

* Replace ISO 2469 with non-equivalent adopting international standard GB/T 7973;

* Replace ISO 187 with GB/T 10739, which is equivalent to the international standard;

* Added reference to GB/T 1543-2005;

* ISO 2470-1 is deleted.

--- Modified the definition of 3.1 reflection factor to be consistent with the definition of the same term in the existing standard.

--- Modified the definition of 3.2 brightness factor, deleted part of the note, in order to be consistent with the definition of the same term in the existing standard.

--- Replace "CIE standard illuminator C and CIE1931 standard with "standard illuminator D65 and CIE1964 supplement standard colorimetric system"

Quasi-chromaticity system" (3.2, 5.1.2, 5.1.3) to adapt to my country's national conditions.

---The letter code Op (3.5, 10.1) for opacity has been added to facilitate application.

---Modified the requirement of fluorescence reference standard sample (5.2.2) to adapt to my country's national conditions.

--- Added a reference to GB/T 1543-2005 Appendix A (5.1.3) to adapt to changes in lighting and observation conditions.

--- In 9.1, GB/T 7973 is used instead of ISO 2470-1, and D65 condition is used instead of UV(C) condition to adapt to my country's national conditions.

--- Part of the content in 9.3 and 9.4 is expressed in the form of notes to facilitate the understanding of the standard content.

---The spectral characteristics given in this appendix are no longer applicable due to changes in lighting and observation conditions, and the normative appendix A is deleted.

--- Increased "Precision" (Appendix A) to adapt to changes in test conditions.

This section also made the following editorial changes.

---Modified the standard name;

---Appendix B is deleted.

Please note that certain contents of this document may involve patents. The issuing agency of this document is not responsible for identifying these patents.

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

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

Drafting organizations of this section. Sichuan Changjiang Paper Instrument Co., Ltd., China Pulp and Paper Research Institute Co., Ltd., Wanfangri, Jingde County

Supplies Co., Ltd., Leshan City Product Quality Supervision and Inspection Institute, Deqing County Hongfeng Paper Co., Ltd.

1 Scope

This part of GB/T 24328 specifies the method for measuring the opacity (paper backing) of toilet paper and its products using the diffuse reflection method.

This section applies to white or nearly white toilet paper and its products, including toilet paper and its products containing fluorescent whitening agents.

This section does not apply to colored toilet paper and its products containing fluorescent dyes or pigments.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

The collection of GB/T 450 paper and paperboard samples and the determination of the longitudinal and transverse directions, front and back sides of the samples (GB/T 450-2008, ISO 186.

2002, MOD)

GB/T 1543-2005 Determination of opacity of paper and paperboard (paper backing) (diffuse reflection method) (ISO 2471.1998, MOD)

GB/T 7973 Determination of diffuse reflection factor of paper, paperboard and pulp (diffuse/vertical method) (GB/T 7973-2003, ISO 2469.

1994, NEQ)

GB/T 10739 Standard atmospheric conditions for handling and testing of paper, paperboard and pulp samples (GB/T 10739-2002, eqvISO 187.

1990)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Reflection factor

Under the same illumination and observation conditions, the ratio of the radiant flux reflected by an object to the radiant flux reflected by a fully reflective diffuser.

Note 1. The reflection factor is expressed as a percentage.

Note 2. For translucent bodies, the reflection factor is affected by the backing.

3.2

Brightness factor

R_y

Using a reflectance photometer that meets the requirements of GB/T 7973, it is measured under the conditions of the spectral characteristics of the CIE1964 supplementary standard color system

The reflection factor.

Note. The brightness factor was previously known as the luminous reflectance factor (luminous reflectance factor).

3.3

Single-sheet luminance factor

R_0

The brightness factor of the single-layer pattern backing black tube.