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

GB/T 40277-2021

**Paper, board and pulps - Measurement of diffuse blue
reflectance factor(ISO brightness) - Indoor daylight conditions**

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Foreword

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

This standard uses the redrafting method to amend and adopt ISO 2470-1.2016

“Determination of Blue Light Diffuse Reflectance Factor of Paper, Paperboard and Pulp No.

Part 1. Indoor daylight conditions (ISO brightness)”.

Compared with ISO 2470-1.2016, this standard has structural adjustments. The content of 5.4 is merged into 5.3, and Chapter 8 is added.

Compared with ISO 2470-1.2016, the main technical differences and reasons for this standard are as follows.

--- Regarding normative reference documents, this standard 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", with specific adjustments as follows.

- * Replace ISO 186 with GB/T 450, which is modified to adopt international standards;
- * Replace ISO 7213 with GB/T 740 which is equivalent to adopting international standards;
- * Replace ISO 3688 with GB/T 8940.2, which is equivalent to the international standard;
- * Added reference to GB/T 10739.

--- Deleted the terms and definitions of radiance factor, consistent with the relevant standards of optical performance in the existing paper industry standard system.

---The chapter content of "Instrument Calibration and Calibration of Working Standards" has been added to improve the operability of standard technical content.

This standard has made the following editorial changes.

---Modified the standard name.

1 Scope

This standard specifies the method for measuring the blue diffuse reflection factor (ISO brightness) of paper, paperboard and pulp under indoor sunlight conditions.

This standard applies to white and nearly white paper, cardboard and pulp. When testing samples containing fluorescent whitening agents, use a fluorescent reference standard

The test can only be carried out when the ultraviolet (UV) radiation energy level of the instrument is adjusted to be consistent with the CIE illuminator C. C light source

There is a certain proportion of UV content, which is equivalent to indoor sunlight conditions.

Note. The brightness of D65 is tested by adjusting the instrument to comply with the CIE standard illuminating body D65.

Much higher. The test method standard of D65 brightness is GB/T 7974.

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 reference documents, the latest version (including all amendments) is applicable 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)

The collection of GB/T 740 pulp samples (GB/T 740-2003, ISO 7213.1981, IDT)

Preparation of GB/T 8940.2 pulp brightness (whiteness) sample (GB/T 8940.2-2002, eqvISO 3688.1999)

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

1990)

ISO 2469 Determination of diffuse reflectance factor of paper, paperboard and pulp [Paper,boardandpulp- Measurementofdif-

fuseradiancefactor(diffusereflectancefactor)]

ISO 4094.Appointment and acceptance of international calibration laboratories and authorized laboratories for paper, paperboard and pulp testing instruments

(Paper, board and pulps-International calibration of testing apparatus-Nomination and acceptance of standardizing and authorized laboratories)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Diffuse reflection factor

The ratio of the radiation reflected and excited by an object to the reflection of a fully reflective diffuser under the same light source and viewing conditions.

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

Note 2. If the object is translucent, the diffuse reflection factor is affected by the backing.

Note 3. This standard specifies the light source and observation conditions of the instrument after calibration in accordance with the relevant provisions.