GB

NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

ICS 59.080.30

CCS W 04

GB/T 42698-2023

Textiles - Testing and evaluation for anti-seeing-through property

纺织品 防透视性能的检测和评价

Issued on: May 23, 2023 **Implemented on: December 1, 2023**

Issued by: State Administration for Market Regulation;
Standardization Administration of PRC.

Table of Contents

Textiles - Testing and evaluation for anti-seeing-through property

1 Scope

This document describes methods for testing and evaluating the anti-seeing-through property of textiles.

This document is applicable to all kinds of fabrics and their products.

2 Normative references

The following documents contain the provisions which, through normative reference in this document, constitute the essential provisions of this document. For the dated referenced documents, only the versions with the indicated dates are applicable to this document; for the undated referenced documents, only the latest version (including all the amendments) is applicable to this document.

GB/T 251 Textiles - Tests for colour fastness - Grey scale for assessing staining

GB/T 3978 Standard illuminants and geometric conditions

GB/T 6529 Textiles - Standard atmospheres for conditioning and testing

GB/T 9086 The white standard plate for colorimetry and photometry

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 anti-seeing-through property

The property of a fabric that makes the fabric covering part cannot or is not easy to be observed clearly by the outside due to the vision being blocked, when visible light is irradiated.

3.2 lightness

The characteristic of an object's surface that is relative to brightness and darkness. Under the same lighting conditions, the scale that is given to the visual perception characteristics of the surface of the object and based on the whiteboard. One of the three

attributes of color.

[Source: GB/T 5698-2001, 5.8]

3.3 anti-seeing-through index

It is to characterize the degree of anti-seeing-through property, the ratio of the lightness values measured when the sample is backed with a blackboard and a whiteboard.

NOTE: The larger the ratio, the better the anti-seeing-through property of the sample.

4 Principles

4.1 Method A (instrumental method)

Under the specified test conditions, a colorimeter is used to measure the lightness values when the sample is backed with a blackboard and a whiteboard, and then the anti-seeing-through index is calculated to represent the anti-seeing-through property.

4.2 Method B (visual inspection method)

Under the specified test conditions, the grey scale for staining evaluation is used to rate the color difference between the blackboard part covered by the sample and the whiteboard part covered by the sample, and the grades are used to characterize the anti-seeing-through property.

5 Instruments and materials

5.1 Colorimeter

Illumination conditions with standard illuminant D65, CIE 10° observer, and measurement geometric conditions shall comply with the provisions of GB/T 3978; specular component excluded, the wavelength range is at least 400 nm~700 nm, and the wavelength interval is 5 nm; other wavelength intervals shall be indicated in the report.

The recommended diameter range of the test hole is 1 cm~3 cm.

5.2 Whiteboard

The whiteboard used for the colorimeter calibration and the test shall comply with the provisions of GB/T 9086. There is a uniform white layer on the surface. Under the conditions of D65 standard light source, CIE 10° observer, and specular component excluded, the measured lightness value L is above 90, and the side length of a square is not less than 45 mm or the diameter of a circle is not less than 25 mm.

fluorescence first.

8.1.2 Attach the back of the sample flatly to the whiteboard (5.2), let the front of the sample face the test hole of the colorimeter, keep the warp or vertical direction upward, and measure the lightness value L_w.

8.1.3 Attach the back of the sample flatly to the blackboard (5.3), let the front of the sample face the test hole of the colorimeter, keep the warp or vertical direction upward, and measure the lightness value L_b.

8.1.4 Test the rest of the samples according to the steps 8.1.2 and 8.1.3.

8.2 Method B (visual inspection method)

8.2.1 In the standard light source box (5.4), place the whiteboard (5.2) and the blackboard (5.3) side by side on the same plane, forming an angle of about 45° with the incident light.

8.2.2 Cover the sample on the blackboard and whiteboard, and the back of the sample shall be flatly attached to the blackboard and whiteboard, with the warp or vertical direction upward.

8.2.3 The observation direction is roughly perpendicular to the surface of the sample, and the observation distance is about 30 cm. Use the grey scale for assessing staining (5.5) to evaluate the color difference between the part of the blackboard covered by the sample and the part of the whiteboard covered by the sample.

8.2.4 Test the rest of the samples according to the steps 8.2.2 and 8.2.3.

9 Calculation and presentation of results

9.1 Method A (instrumental method)

9.1.1 The anti-seeing-through index of the sample is calculated according to formula (1).

$$S = \frac{L_b}{L_w} \times 100 \qquad \cdots\cdots (1)$$

where:

S -- the anti-seeing-through index of the sample;

L_b -- the lightness value of the sample that is backed with a blackboard;

L_w -- the lightness value of the sample that is backed with a whiteboard.

This is an excerpt of the PDF (Some pages are marked off intentionally)

------ The End ------