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

GB/T 10810.5-2025

**Uncut finished spectacle lenses - Part 5: Abrasion-resistant of
surfaces test methods**

眼镜镜片 第5部分：表面耐磨试验方法
(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is part 5 of GB/T 10810 "Spectacle lenses". GB/T 10810 has published the following parts.

- Part 1: Single focal and multifocal;
- Part 2: Gradual zoom;
- Part 3: Transmittance test method;
- Part 4: Test methods for anti-reflection coatings;
- Part 5: Surface wear test method.

This document replaces GB 10810.5-2012 "Spectacle lenses - Part 5: Requirements for lens surface wear resistance" and is compatible with GB 10810.5-2012 Compared with the previous version, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The wear resistance requirements for the lens surface (convex surface) have been deleted (see Chapter 4 of the 2012 edition);
- b) Added the falling sand test method (see Chapter 6).

This document is modified from ISO 8980-5:2005 "Ophthalmic optics - Uncut spectacle lenses - Part 5: Spectacle lenses with indicated surface resistance to abrasion" Minimum Requirements for Films.

This document has made the following structural adjustments compared to ISO 8980-5:2005.

- Deleted Chapter 4 of ISO 8980-5:2005;
- Move the content about test environment temperature in 5.2 of ISO 8980-5:2005 to 4.1 "Test conditions", and the content about sample cleaning Content moved to 4.4 "Test Procedures";
- Adjust Figure A.1 in Appendix A and Figure C.1 in Appendix C of ISO 8980-5:2005 to Figure 1 and Figure 2 in 4.2.1;
- Move Figures 1 and 2 in 5.1.5 of ISO 8980-5:2005 to Appendix A;
- Deleted Appendix B of ISO 8980-5:2005.

The technical differences between this document and ISO 8980-5:2005 and their reasons

are as follows.

- Replaced ISO 13666 and ISO 8980-4 with the normative reference GB/T 26397, and deleted the term and definition of "wear-resistant" (see Chapter 3) to adapt to my country's technical conditions and increase operability;
- Replaced ISO 48:2010 (see 4.2.2) with the normative reference GB/T 6031 to adapt to my country's technical conditions and increase the Operability;
- Added surface enhanced wear test and falling sand test methods (see Chapter 5 and Chapter 6) to enrich the test methods and increase the test The selectivity of the method;
- Added a quantitative percentage "haze value" to characterize abrasion resistance (see 5.6) to increase the operability of the test method;
- Added a simplified diagram of steel wool and friction meter (see Appendix B) to improve intuitiveness and facilitate viewing and use. The following editorial changes were made to this document.
- In order to coordinate with the existing standards in my country, the name of the standard is changed to "Spectacle Lenses Part 5: Surface Abrasion Test Method";
- Deleted the informative appendix "Verification of test sites" (see Appendix B of ISO 8980-5:2005).

Introduction

The main function of lenses is to correct vision and protect eyes. They are an important part of glasses and can meet the needs of users in different occasions.

The visual needs of people are of great significance to their vision health. GB/T 10810 "Spectacle Lenses" aims to standardize the production and use of lenses and improve The quality and safety of the lenses.

GB/T 10810, as a recommended national standard supporting the mandatory national standards, consists of five parts.

- Part 1: Monofocal and multifocal lenses. The purpose is to ensure the quality of monofocal and multifocal lenses by standardizing the requirements and test methods. Price criteria.
- Part 2: Progressive lenses. The purpose is to ensure the quality evaluation criteria by standardizing the requirements and test methods for progressive lenses.
- Part 3: Transmittance test method. The purpose is to establish the test method for the transmittance performance of lenses and to establish its quality evaluation criteria.
- Part 4: Test methods for anti-reflection coatings. The purpose is to establish test methods for anti-reflection coatings on lenses and to establish quality evaluation standards.

Guidelines.

--- Part 5: Surface abrasion test methods. The purpose is to establish multiple abrasion test methods for lenses and establish their quality evaluation criteria. Glasses lenses Part 5:

Test methods for surface wear resistance

1 Scope

This document describes the instruments, samples, test procedures and test data processing for the surface wear resistance test of lenses.

This document applies to the test of the wear resistance of lens surfaces.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 6031 Determination of hardness of vulcanized rubber or thermoplastic rubber (10IRHD~100IRHD) (GB/T 6031-2017,ISO 48:2010,IDT)

GB/T 26397 Ophthalmic Optics Terminology (GB/T 26397-2011, ISO 13666:1998, MOD)

JJF1106 Calibration specification for transmittance measurement devices for eyewear products

JJF1303-2011 Haze Meter Calibration Specification

JJG178 UV, Visible, Near Infrared Spectrophotometer

3 Terms and definitions

The terms and definitions defined in GB/T 26397 apply to this document.

4.1 Test conditions

The test environment temperature is $23^{\circ}\text{C}\pm 5^{\circ}\text{C}$.

4.2.1 Friction tools

The friction tool has a slide bar that can move along the sleeve inside the sleeve. There is a spring in the slide bar that maintains a pressure of $5\text{N}\pm 1\text{N}$.

The end of the rod can be fixed with a rubber head. During the test, the friction tool is kept