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

GB/T 26332.4-2026

Replacing GB/T 26332.4-2015

**Optics and photonics - Optical coatings - Part 4: Test methods
of abrasion, adhesion and resistance to water**

光学和光子学 光学薄膜 第4部分：摩擦、附着力和耐水性的试验方法

(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 26332 "Optics and Photonics - Optical Thin Films". GB/T 26332 has published the following...

part.

---Part 1: Terminology;

---Part 2: Optical Properties;

---Part 3: Environmental Adaptability;

---Part 4: Test methods for friction, adhesion and water resistance;

---Part 5: Basic Requirements for Anti-reflective Coatings;

---Part 6: Basic Requirements for Reflective Films;

---Part 7: Basic Requirements for Neutral Bundle Membranes;

---Part 8: Basic Requirements for Laser Optical Thin Films this document supersedes GB/T 26332.4-2015 "Optical and Photonics - Optical Thin Films - Part 4: Prescribed Test Methods" and is consistent with...

Compared with GB/T 26332.4-2015, apart from structural adjustments and editorial

changes, the main technical changes are as follows.

- a) A description of the cleaning and drying methods for the coated samples has been added to the "Preparation before the test" section (see Chapter 4);
- b) In the test conditions of "Test Method 03", change "rotate sample" to "rotate sample approximately 90°" (see 7.2.1, 2015 edition).

Section 7.2.1) clarifies the operational methods for the experimental conditions;

- c) Change the name of "Test Method 04" from "Solubility Test" to "Water Resistance Test. Immersion in Water" (see Chapter 9, 2015 edition).

Chapter 8);

- d) A "Tension Break Test (Test Method 05)" has been added (see Chapter 8);
- e) Added instructions for "environmental test codes" that can be annotated on optical drawings (see Chapter 10);
- f) The figure "Friction test fixture and installed rubber" has been changed (see Figure A.1, Figure A.1 in the 2015 edition).

This document is modified to adopt ISO 9211-4:2022 "Optics and photonics - Optical thin films - Part 4: Test methods specified. friction, Adhesion and water resistance.

This document has undergone the following structural adjustments compared to ISO 9211-4:2022.

---Merge sections "7.4" and "7.2" in ISO 9211-4:2022, renumber them as "7.2.3", and combine the content describing the test conditions.

Furthermore, to enhance the logical coherence of the standard content (see 7.2.3);

---Chapters 8 and 9 have been swapped to group similar types of testing methods together, thereby enhancing the logical coherence of the standard content.

The technical differences between this document and ISO 9211-4:2022, and the reasons therefor, are as follows.

---Move the content from paragraph 1 of Chapter 1 of ISO 9211-4:2022 to the "Introduction" section, as this section describes...

The content of GB/T 26332 (all parts) is not the content of this document (see Chapter 1);

---ISO 9211-1 (see Chapter 3) has been replaced with the normatively referenced GB/T 26332.1 to adapt to my country's technical conditions;

---The normative reference to ISO 10365:2022 (see 8.2.5) has been added to adapt to my country's technical conditions.

The following editorial changes have been made to this document.

---To harmonize with existing standards, the standard name has been changed to "Optics and Photonics. Optical Thin Films Part 4: Tribulation, Adhesion and Resistance".

"Test Methods for Water Properties";

---Note has been added to the "Medium Friction Test" section (see 5.2.2);

---Note has been added to the "Severe Friction Test" section (see 5.2.3);

---A structural diagram has been added to the test conditions of "Test Method 05" (see Chapter 8);

---In the "Environmental Testing Codes", change "Figure 1" in ISO 9211-4:2022 to "Figure 2" (see Chapter 10);

---Examples of test codes have been added to the "Environmental Test Codes" section (see Chapter 10);

---In Appendix A, the error in Figure A.1 of ISO 9211-4:2022 has been corrected.

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 Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Optics and Photonics (SAC/TC103).

Introduction

Optical thin-film elements are widely used in various scientific and technological fields related to optics and photonics to achieve reflection, beam splitting, and filtering.

Optical thin-film devices, with their various optical functions such as light transmission, are an irreplaceable and crucial component of optical systems. With continuous advancements in technology, optical thin-film devices are increasingly being developed...

The technology is developing in a direction with higher performance requirements and more diverse needs. Therefore, it is necessary to develop a specific technical set for optical thin film technology.

National standards with content aligned with international standards. This will not only promote the standardized and orderly development of my country's optical thin film industry, but also better facilitate related [development].

Trade, exchange, and technological cooperation in this field. GB/T 26332, "Optical and Photonic Thin Films," was drafted against this backdrop.