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

GB/T 7424.3-2025

Replacing GB/T 7424.3-2003

**Optical fibre cables - Part 3: Sectional specification - Outdoor
cables**

(English Translation)

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Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative References	
3 Terms, Definitions, Symbols, and Abbreviations	
4 Optical fibers	
4.1 General Rules	
4.2 Attenuation	
4.3 Cutoff wavelength	
4.4 Fiber Coloring	
4.5 Polarization Mode Dispersion (PMD)	
4.6 Bandwidth	
5 Optical cable components	
5.1 General Rules	
5.2 Tight-buffered secondary coated optical fiber or optical fiber with buffer layer	
5.3 Enhanced Optical Fiber	
5.4 Skeleton Cable Core	
5.5 Polymer sleeve	
5.6 Fiber optic ribbon	
5.7 Metal Pipe	
6 Optical cable structure	
6.1 General Rules	
6.2 Composition of Optical Cable Components	
6.3 Cable core filling	
6.4 Reinforcing Components	
6.5 Moisture-proof layer	
6.6 Optical cable sheath and armor	
6.7 Sheath Markings	
7 Installation and Usage Conditions	
8 Characteristics of optical fiber cable components 7.	
9 Optical cable testing 8.	
10 Quality Assurance	

Appendix A (Informative) Technical Differences between this Document and IEC 60794-3:2022 and the Reasons Therefor

Reference

Table 1. Chromatographic Recognition Methods

Table 2 Characteristics of different types of optical cable components

Table 3 Mechanical and Environmental Adaptability Tests

Table A.1 Technical differences between this document and IEC 60794-3:2022 and their reasons

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 3 of GB/T 7424 "Optical Cables". GB/T 7424 has the following parts published.

- Optical Cable General Specification Part 1: General Provisions (GB/T 7424.1);
- Optical Cable General Specification Part 2: Basic Test Methods for Optical Cables (GB/T 7424.2);
- Optical Cable Part 3: Specifications for Outdoor Optical Cables (GB/T 7424.3);
- Optical Cable Part 3-70. Standard for Outdoor Fast/Multiple-Layer Optical Cables (GB/T 7424.370);
- Optical Cable Part 4: Specifications for Fiber Optic Composite Overhead Ground Wire (GB/T 7424.4);
- Optical Cables Part 5: Specifications for Miniature Optical Cables and Fiber Optic Units for Air-blown Installation (GB/T 7424.5);
- Optical Cable General Specification Part 20: General Rules and Definitions of Basic Test Methods for Optical Cables (GB/T 7424.20);
- General Specification for Optical Cables, Part 21: Basic Test Methods and Mechanical Performance Test Methods for Optical Cables (GB/T 7424.21);
- General Specification for Optical Cables, Part 22: Basic Test Methods and Environmental Performance Test Methods for Optical Cables (GB/T 7424.22);
- General Specification for Optical Cables, Part 23: Basic Test Methods for Optical Cables, Test Methods for Optical Cable Components (GB/T 7424.23);

---General Specification for Optical Cables, Part 24: Basic Test Methods and Electrical Test Methods for Optical Cables (GB/T 7424.24).

This document supersedes GB/T 7424.3-2003 "Optical Cables Part 3: Specifications for Outdoor Optical Cables" and is consistent with GB/T 7424.3-2003.

Compared to previous versions, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) The term "single-mode optical cable" in the scope has been changed to "outdoor optical cable" (see Chapter 1, Chapter 1 of the 2003 edition), and has been expanded to include applications for "fast..." High-speed/multi-deployment optical cables, as well as optical cables specifically designed for sewage pipes and gas pipelines (see Chapter 1);
- b) Changes have been made to the terminology, definitions, symbols, and abbreviations (see Chapter 3, Chapters 3 and 4 of the 2003 edition);
- c) Added requirements for multimode fiber types and performance (see 4.1, 4.2, 4.6);
- d) The measurement method for polarization mode dispersion (PMD) has been changed (see 4.5, 5.5 in the 2003 edition);
- e) Measurement of the cutoff wavelength of patch cord optical cables has been removed (see 5.6 in the 2003 edition);
- f) The term "loose tube fiber" was changed to "polymer tube" (see 5.5, 6.4 of the 2003 edition);
- g) Increased requirements for polymer casing hardness, flexibility, etc., and improved methods for measuring oil separation and evaporation of the composite material filled in the casing (see...).
- h) The structural and dimensional requirements for the fiber optic ribbon have been changed to "comply with IEC 60794-1-31" (see 5.6, 6.5 of the 2003 version), and the following has been added.

The fiber optic guidance system for chromatographic identification is described in section 5.6.

- i) Increased requirements for metal tubing (see 5.7);
- j) Added longitudinal water permeability tests for the cable core and compound drip tests for the optical cable (see 6.3);
- k) The dimensions and peel strength requirements of the aluminum strip in the moisture barrier have been changed (see 6.5, 7.5 in the 2003 version), and the continuity of the electrical charge on the metal strip in the moisture barrier has been added.

Sexual requirements (see 6.5);

l) Additional tests and requirements have been added for the tensile strength, elongation at break, and resistance to environmental stress cracking of the optical cable outer sheath (see 6.6.3);

m) Added requirements for sheath marking content, character spacing, and fiber optic cable length marking (see 6.7);

n) Added content regarding installation and usage conditions (see Chapter 7);

o) The lightning test (see Chapter 9 in the 2003 edition) has been removed, and fiber stripping, flexibility, UV resistance, external freezing, and immersion tests have been added.

Mineral oil testing (see Chapter 9).

This document is modified to adopt IEC 60794-3:2022 "Optical cables - Part 3: Outdoor optical cables".

This document has undergone the following structural adjustments compared to IEC 60794-3:2022.

---Increased by 4.6;

---Appendix A has been added.

This document differs significantly from IEC 60794-3:2022. The relevant clauses are indicated in the margins using vertical markers.

Straight lines (|) are marked. A summary of these technical differences and their reasons can be found in Appendix A.

The following editorial changes have been made to this document.

---To align with existing standards, the standard name has been changed to "Optical Cable Part 3: Specification for Outdoor Optical Cables";

---Added support for "rapid/multiple fiber optic cable deployment";

---Change descriptive content in the scope to comments.

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 and is under the jurisdiction of the Ministry of Industry and Information Technology of the People's Republic of China.

Introduction

Optical fiber, as the core medium for optical signals, is widely used in transmission and access networks, data centers, power transmission, and security monitoring.

Fiber optic signal transmission is the cornerstone of building modern communication