



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

GB/T 7424.20-2021

**Optical fibre cable generic specification - Part 20: Basic optical
cable test procedures - General and definitions**

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Foreword

GB/T 7424 is divided into the following 9 parts.

---Optical Cable General Specification Part 1.General;

---General Specification for Optical Cables Part 20.General Principles and Definitions of Basic Test Methods for Optical Cables;

---General Specification for Optical Cables Part 21.Basic Test Methods for Optical Cables, Mechanical Performance Test Methods;

---General Specification for Optical Cables Part 22.Basic Test Methods for Optical Cables, Environmental Performance Test Methods;

---General Specification for Optical Cables Part 23.Basic Test Methods for Optical Cables Test Methods for Optical Cable Components;

---General Specification for Optical Cables Part 24.Basic Test Methods for Optical Cables, Electrical Test Methods;

---Optical Cable Part 3.Sectional Specification for Outdoor Optical Cable;

---Optical Cable Part 4.Sectional Specification Optical Fiber Composite Overhead Ground Wire;

---Optical Cable Part 5.Sectional Specification for Miniature Optical Cable and Optical Fiber Unit for Air Blown Installation.

This part is Part 20 of GB/T 7424.

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

GB/T 7424.20~GB/T 7424.24 jointly replace GB/T 7424.2-2008 "General Specification for

Optical Cable Part 2.Optical Cable Basic

experiment method". This part replaces Chapter 3 and Chapter 4 in GB/T 7424.2-2008.This part and GB/T 7424.2-2008

Compared with Chapter 3, the main technical changes are as follows.

- Modified the temperature and humidity in the standard test conditions (see 4.2.2, 3.4.1 of the.2008 edition);
- Added loose test conditions (see 4.2.3);
- Modified the sample pretreatment time (see 4.2.4, 3.4.2 of the.2008 edition);
- The title of the article "safety" is revised to "safety and environment", and specific content has been added (see 4.3, 3.6 of the.2008 edition);
- Change the title of the article "calibration" to "calibration" (see 4.4, 3.7 of the.2008 edition);
- Deleted the "optical cable test" (see Chapter 4 of the.2008 edition);
- Added "Optical Cable Verification" (see 4.5);
- Added "light injection conditions" (see 4.6);
- Added "standard light test wavelength" (see 4.7).

This part uses the redrafting method to modify and adopt IEC 60794-1-2.2017 "Optical Cable Part 1-2.General Specification Optical Cable Basic Test

General Principles of Methods.

Compared with IEC 60794-1-2.2017, this part has more structural adjustments. Appendix A lists this part and IEC 60794-1-2.

The.2017 chapter number comparison list.

The technical differences between this part and IEC 60794-1-2.2017 and the reasons are as follows.

---Regarding normative reference documents, this section 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", and the specific adjustments are as follows.

- * Replace IEC 60793-2-40 with non-equivalent adopting international standard GB/T 12357.4;
- * Replace IEC 60793-1-40 with GB/T 15972.40 which is modified to adopt international standards;

* Replace IEC 60793-1-46 with GB/T 15972.46 which is modified to adopt international standards;

* Added reference to GB/T 8170;

* Added reference to GB/T 15972.22-2008.

--- Chapter 3 lists specific terms and definitions.

---Modify the heading "standard environmental conditions" of section 4.2 of IEC 60794-1-2.2017 to "test environmental conditions and sample pre-treatment Management" and rearrange the content.

---The 4.3 "Symbols and Abbreviations" of IEC 60794-1-2.2017 is deleted.

---Move the content of 4.6 of IEC 60794-1-2.2017 to 4.2 "Sample environmental conditions and sample pretreatment".

--- 4.8 has increased the "quantity value" requirement.

---4.9 The requirement of "monitoring and inspection" has been added.

This section has made the following editorial changes.

--- Modify the standard name to "General Specification for Optical Cables Part 20.General Principles and Definitions of Basic Test Methods for Optical Cables";

---Informative Appendix B "Guidelines for Sampling of Optical Cable Verification Tests" has been added.

1 Scope

This part of GB/T 7424 specifies the general requirements for the test methods of optical cable mechanical properties, environmental properties, components and electrical properties.

Including terms and definitions, general rules.

This section applies to optical cables and optical hybrid cables used in communication equipment and devices using similar technologies. It also applies to optical fiber units, Micro-tube fiber unit, etc.

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.

GB/T 8170 Numerical rounding rules and the expression and determination of limit values

GB/T 12357.4 Multimode Optical Fiber for Communication Part 4.Characteristics of Type A4
Multimode Optical Fiber (GB/T 12357.4-2016, IEC

60793-2-40.2009, NEQ)

GB/T 15972.22-2008 Optical fiber test method specification Part 22.Measurement method
of dimensional parameters and test procedure length

(IEC 60793-1-22.2001, MOD)

GB/T 15972.40 Specification for optical fiber test methods Part 40.Measurement methods
and test procedures for transmission characteristics and optical characteristics

Attenuation (GB/T 15972.40-2008, IEC 60793-1-40.2001, MOD)

GB/T 15972.46 Specification for optical fiber test methods Part 46.Measurement methods
and test procedures for transmission characteristics and optical characteristics

Transmittance change (GB/T 15972.46-2008, IEC 60793-1-46.2001, MOD)

IEC 60794-1-1.2015 Optical fiber cable Part 1-1.General specification

(Opticalfibrecables-Part 1-1.Generic

specification-General)

3 Terms and definitions

The terms and definitions defined in IEC 60794-1-1.2015 apply to this document. For ease
of use, the following is repeated

Certain terms and definitions in IEC 60794-1-1.2015.

3.1

Nochangeinattenuation

Acceptance criteria for attenuation measurement.

Note 1.No change in attenuation includes measurement uncertainty caused by
measurement error, or calibration error caused by the lack of a suitable reference standard.

Note 2.In actual understanding, the following values are used.

a) No change in attenuation of type B single-mode fiber. the absolute value of the total
attenuation change (ΔA) is not greater than 0.05dB, or the absolute value of the
attenuation coefficient change ($\Delta \alpha$)

The value is not more than 0.05dB/km. Any measured value within this range is regarded
as "no change in attenuation".