



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

GB/T 7424.22-2021

**Optical fibre cable generic specification - Part 22: Basic optical
cable test procedures - Environmental test methods**

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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 Cables and Optical Fiber Units for Air Blown Installation.

This part is part 22 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 21 to Chapter 28 in GB/T 7424.2-2008.This part and GB/T 7424.2-2008

Compared with Chapter 21~Chapter 28, the main technical changes are as follows.

---Modified method F1 temperature cycle sample pretreatment [see 3.4.2,.2008 edition of 21.4b)];

---Added method F1 temperature cycle program suitability requirements [see 3.4.3h)];

---Added the requirements of the heating rate and cooling rate in the method F1 temperature cycle (see 3.4.3);

--- Added Table 1 "The minimum thermal equilibrium time t_1 for a given sample mass" (see Table 1);

--- Deleted "Method F3.Sheath Integrity" (see Chapter 22 of the.2008 edition);

---Added "Method F5C" (see 4.2.3);

---Added the requirements for water in method F5 (see 4.3.2);

---Added the content of "Method F9.Aging" (see Chapter 7);

---Added the content of "Method F11.Shrinkage of the sheath (optical cable used to connect the flexible cord)" (see Chapter 9);

---Added the content of "Method F12.Temperature Cycle of Optical Cable for Terminal Assembly" (see Chapter 10);

---Added the content of "Method F13.Microtubes withstand air pressure" (see Chapter 11);

---Added the content of "Method F14.UV resistance" (see Chapter 12);

---Added the content of "Method F15.External Freezing of Optical Cable" (see Chapter 13);

--- Change the method number of compound trickle from F6 to F16 (see Chapter 14, Chapter 24 of the.2008 edition);

---Modified the number and length of the composite trickle sample (see 14.2.2, 24.2 in the.2008 edition);

---Modified the sample preparation requirements of the compound trickle [see 14.2.3a), 24.2c) 1) of the.2008 edition];

--- Added the content of "Method F17.Cable shrinkage (fiber extension)" (see Chapter 15);

---Added the content of "Method F18.Straight through loose tube temperature cycle in splicing device" (see Chapter 16);

---The normative Appendix B "Persistence of Color" has been added.

This part uses the redrafting method to modify and adopt IEC 60794-1-22.2017 ``Optical Cable Part 1-22.General Specification Optical Cable Basic Test

Environmental performance test method."

Compared with IEC 60794-1-22.2017, this part has more structural adjustments. Appendix A lists this part and IEC 60794-1-22.

The.2017 chapter number comparison list.

The technical differences between this part and IEC 60794-1-22.2017 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 60793-1-40 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;

* Replace IEC 60793-1-54 with GB/T 15972.54 which is modified to adopt international standards;

* Replace ISO 4892-2 with GB/T 16422.2 which is equivalent to adopting international standards;

* Replace ISO 4892-3 with GB/T 16422.3, which is equivalent to adopting international standards;

* Removed IEC 60304;

* Removed IEC 60794-1-1;

* Removed IEC 60811-503;

* Added reference to GB/T 6995.2;

* Added reference to GB/T 7424.20-2021;

* Added reference to GB/T 26168.1.

--- In 4.1, "F5C can choose one of the 3 methods".

---4.5 added "within the specified test time".

--- In 8.3, the "minimum length" is changed to the "tested length".

--- "(Jumper)" is added in 9.1.

---9.3 Modify the "minimum resolution 0.1%" to "minimum resolution not greater than 0.5mm".

--- In 9.5, the "shrinkage rate of the sheath shall not exceed the specified value of the detailed specification" is revised to "the 5 samples after the last cycle are relative to the initial

The average sheath shrinkage of the initial length shall not exceed the value specified in the detailed specification".

--- 13.2 "The diameter of the loop is specified by the detailed specification" is added.

---13.6 Add "loop diameter" to the details to be specified.

---Added Figure 11.

This section has made the following editorial changes.

--- Change the standard name to "General Specification for Optical Cables Part 22.Basic Test Methods for Optical Cables and Environmental Performance Test Methods."

1 Scope

This part of GB/T 7424 specifies the purpose, samples, equipment, procedures, requirements and to be specified of the test methods for the environmental performance of optical cables

detail.

This section applies to optical cables, including optical fiber units, micro-tube optical fiber units, etc., and also applies to photoelectric hybrid cables.