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

GB/T 15972.55-2009

**Specifications for optical fibre test methods - Part 55:
Measurement methods and test procedures for environmental
characteristics-hydrogen aging**

光纤试验方法规范 第55部分：环境性能的测量方法和试验程序-氢老化

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Foreword

GB/T 15972 "fiber test methods" consists of several components.

--- Part 10 ~ 19. Measurement methods and test procedures - General (corresponding to IEC 60793-1-10 ~ IEC 60793-1-19; Generation For GB/T 15972.1-1998);

--- Part 20 - Part 29. dimensional parameters measuring methods and test procedures (corresponding to IEC 60793-1-20 ~ IEC 60793- 1-29; instead of GB/T 15972.2-1998);

--- Part 30 - Part 39. Mechanical properties measurement methods and test procedures (corresponding to IEC 60793-1-30 ~ IEC 60793- 1-39; instead of GB/T 15972.3-1998);

--- Part 40 - Part 49. transmission characteristics and measurement methods and test procedures for optical characteristics (corresponding to IEC 60793-1-40 ~ IEC 60793-1-49; instead of GB/T 15972.4-1998);

--- Part 50 - Part 59. Environmental Performance Measurement methods and test procedures (corresponding to IEC 60793-1-50 ~ IEC 60793- 1-59; instead of GB/T 15972.5-1998). Wherein the GB/T 15972.5 x consists of the following components.

--- Part 50. Measurement methods and test procedures for environmental characteristics constant heat;

--- Part 51. Measurement methods and test procedures for environmental performance of dry heat;

--- Part 52. Measurement methods and test procedures for the environmental performance of temperature cycles;

--- Part 53. Measurement methods and test procedures for environmental characteristics of flooding;

--- Part 54. Environmental Performance Measurement methods and test procedures gamma irradiation;

--- Part 55. Measurement methods and test procedures for environmental characteristics of

hydrogen aging. This section GB/T 15972 Part 55. The reference test methods in some of the major reference IEC 60793-2-50.2008 "Fiber Part 2-50. Product specification class B single-mode fiber specification" (in English), combined with the specific circumstances of the domestic test system Given. Appendix A of this section is an informative annex. This part is proposed by the Ministry of Industry and Information Technology of the People's Republic of China. This part of the jurisdiction of the China Communications Standards Association. This section is drafted. Wuhan Research Institute of Posts and Telecommunications, Optical Fiber and Cable Co., Ltd. The main drafters of this section. Chen poetry, Li Haiqing, Li Jing, Liu Cheng, Cheng Shuling. Optical fiber test methods - Part 55. Methods of measurement of environmental performance and Hydrogen aging test procedure

1 Scope

GB/T 15972.55-2009 is the Chinese national standard on specifications for optical fibre test methods - part 55: measurement methods and test procedures for environmental characteristics-hydrogen aging, in the field of telecommunications and audio-video engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 30 September 2009 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 December 2009. Classification: ICS 33.180.10, CCS M33. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This section GB/T 15972 specifies the optical fiber in a given environment in the hydrogen-containing hydrogen aging test methods and test procedures. This part is suitable for assessing GB/T 15972.10-2008 specified in B

1.3 class extended wavelength band dispersion unshifted single-mode optical Hydrogen aging performance fiber can also be used to evaluate the B4 class hydrogen aging performance single-mode fiber.

2 Normative references

The following documents contain provisions which, through reference

GB/T 15972 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to

research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section. Non-dispersion shifted single-mode optical fiber characteristic wavelength band extension.

GB/T 9771.3-2008 communication with single-mode fiber - Part 3

GB/T 15972.10-2008 fiber test methods - Part 10. Measurement methods and test procedures - General (

IEC 60793-1-1.2002, Opticalfibres-Part 1-1.

Measurementmethodsandtestprocedures-General andguideline, MOD)

GB/T 15972.40-2008 fiber test methods - Part 40. Measuring methods for transmission and optical characteristics and testing Program attenuation (

IEC 60793-1-40.2001, Opticalfibres-Part 1-40. Measurementmethodsandtestprocedures-Attenuation, MOD)

3 Test device

3.1 Test Chamber Test device includes an environmental chamber. The chamber should be able to accommodate the size of the test sample, the sample can not be subject to direct radiant heat, It can maintain the required temperature in the specified tolerance within the available air circulation to maintain uniform conditions of the test chamber.

3.2 Fiber container Size of the container should be able to accommodate optical fiber test samples, it can maintain the desired hydrogen-containing environments. Containers should be placed in environmental test chamber, and the container Materials heat transfer performance to ensure fiber samples and environmental test chamber set temperature in the vessel to reach consensus.

3.3 Other devices Other devices necessary to complete the test and measurement, if fitted (H₂ + He) (hydrogen and helium) or (H₂ + N₂) (hydrogen and nitrogen) mixed Combined gas bottles.

4 Sample and Sample Preparation

In order to achieve the desired attenuation measurement repeatability, single-mode fiber sample length should be at least 2000m. Exposed outside the chamber light Fiber should be as short as possible, if the exposed portion of the total length of more than 10% of the sample, are advised to record instructions. There should be no impact to the environment caused by the optical fiber under measurement harm in the process of preparing a sample of. Unless otherwise specified in the detail specification, It recommended that the loose fiber samples around, rewind and cable attenuation coefficient at the wavelength of 1310nm response had no effect, rewind Zhang Liyi not more than 0.3N. The sample is placed horizontally, in order to avoid the impact of any macro bending, circling diameter should be

greater than 150mm.

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