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

GB/T 43556.1-2023

**Maintenance technology of optical fibre and cable line - Part 1:
Optical fibre identification based on leaky light**

光纤光缆线路维护技术 第1部分：基于泄漏光的光纤识别

(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 1 of GB/T 43556 "Optical fiber and cable line maintenance technology": GB/T 43556 "Optical fiber and cable line maintenance technology Technique has published the following parts:

---Part 1: Fiber identification based on leaked light;

---Part 2: Water immersion monitoring of underground joint boxes using optical monitoring systems:

This document is modified to adopt ITU-TL:314:2018 "Optical Fiber Identification for Optical Access Network Maintenance":

Compared with ITU-TL:314:2018, this document has many adjustments in structure: A comparison of the structure number changes between the two documents is shown below:

See Appendix A for the table:

Compared with ITU-TL:314:2018, there are many technical differences between this document and the clauses involved in the outer margin of the page:

Straight single lines (|) are marked: A list of these technical differences and their causes is provided in Appendix B:

The following editorial changes have been made to this document:

---In order to coordinate with the existing standards, the name of the standard is changed to "Optical fiber and cable line maintenance technology - Part 1: Optical fiber based on leakage light" Identification":

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

With the in-depth implementation of Broadband China and smart cities, optical fiber and cable networks have become an important part of various industries such as communications, security, transportation, municipal administration, and national defense:

The most important medium for industrial information transmission, in the face of massive optical fiber and cable resources, it is necessary to improve the management, operation and maintenance methods and efficiency of optical fiber and cable and other dumb resources:

efficiency to better ensure the safe and efficient operation of fiber optic cable networks: Fiber identification technology is an important means for fiber optic cable line maintenance: According to optical fiber Regarding the different technologies used in optical cable line maintenance, GB/T 43556 "Fiber Optic Cable Line Maintenance Technology" is planned to consist of three parts:

---Part 1: Fiber identification based on leaked light: The purpose is to specify fiber identification technology for use in fiber optic cable line maintenance:

---Part 2: Water immersion monitoring of underground joint boxes using optical monitoring systems: The purpose is to specify optical monitoring systems based on Water immersion

monitoring technology for underground joint boxes:

---Part 3: Optical cable identification for optical cable network construction and maintenance based on optical sensing technology: The aim is to specify optical sensing based technology, optical cable identification technology for optical network construction and maintenance:

Fiber optic cable line maintenance technology Part 1: Fiber identification based on leaked light

1 Scope

This document defines the terms and definitions of optical fiber identification technology in optical fiber and cable line maintenance, and stipulates the optical fiber identification technology in optical fiber and cable line maintenance:

Identify the functional requirements, testing requirements and applications of the technology:

This document is applicable to the identification of single-mode optical fibers in the construction and maintenance of communication optical fiber cable lines:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 9771 (all parts) Single-mode optical fiber for communications GB/T 33845-2017 Access network technical requirements Gigabit Passive Optical Network (GPON) GB/T 39577-2020 Access network technical requirements 10Gbit/s Passive Optical Network (XG-PON) YD/T 3691.1-2020 Access network technical requirements 10Gbit/s symmetric passive optical network (XGS-PON) Part 1: General Physical requirements signals) ITU-TL:302/L:40:2000 Optical fiber outside facility maintenance support, monitoring and testing system (Optical fiber outside works)

3 Terms and definitions

The following terms and definitions apply to this document:

Technology that detects specific optical features to locate target optical fibers to avoid incorrect cutting and/or incorrect connections of optical fibers at the operating site:

Technology to confirm whether the target optical fiber carries the service optical signal

status: