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

GB/T 43556.3-2025

**Maintenance technology of optical fibre and cable line - Part 3:
Cable identification by optical sensing technique**

光纤光缆线路维护技术 第3部分：基于光传感技术的光缆识别

(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 3 of GB/T 43556 "Fiber Optic Cable Line Maintenance Technology". GB/T 43556 has already published the following parts.

---Part 1: Fiber Identification Based on Leakage Light;

---Part 2: Water Immersion Monitoring of Buried Junction Boxes Using Optical Monitoring Systems;

---Part 3: Optical Cable Identification Based on Optical Sensing Technology this document

is modified to adopt ITU-T L.316.2022 "Optical cable identification for construction and maintenance of optical cable networks based on optical sensing technology".

Compared with ITU-T L.316.2022, this document has undergone many structural adjustments. A comparison of the structural numbering changes between the two documents is provided below.

See Appendix A for the table.

This document differs significantly from ITU-T L.316.2022. The relevant clauses are indicated in vertical margins on the outer pages.

Single lines (l) are indicated. A summary of these technical differences and their causes can be found in Appendix B.

The following editorial changes have been made to this document.

---To align with existing standards, the standard title has been changed to "Fiber Optic Cable Line Maintenance Technology Part 3: Based on Optical Sensing Technology" Optical Cable Identification;

---Chapter 5, which contained no content, has been deleted.

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 by the Ministry of Industry and Information Technology of the People's Republic of China.

This document is under the jurisdiction of the National Telecommunications Standardization Technical Committee (SAC/TC485).

Introduction

With the in-depth implementation of Broadband China and Smart Cities, fiber optic cable networks have become essential for various industries such as communications, security, transportation, municipal administration, and national defense.

As the primary medium for industrial information transmission, and given the massive amount of fiber optic cable resources, it is necessary to improve the management, operation, and maintenance methods and efficiency of these "dumb" resources.

To better ensure the safe and efficient operation of fiber optic cable networks. Based on the different technologies used in fiber optic cable line maintenance, GB/T 43556 "Fiber Optic Cable Line Maintenance Technology" is proposed to be divided into three parts.

---Part 1: Fiber Identification Based on Leaking Light. The purpose is to define fiber identification techniques for use in fiber optic cable line maintenance.

---Part 2: Water Immersion Monitoring of Underground Junction Boxes Using Optical Monitoring Systems. The purpose is to specify the use of optical monitoring systems for...

Water immersion monitoring technology for underground junction boxes.

---Part 3: Optical Cable Identification Based on Optical Sensing Technology. The purpose is to specify the application of optical sensing technology in the construction and maintenance of optical networks.

Fiber optic cable identification technology.

Fiber optic cable line maintenance technology Part 3: Optical Cable Identification Based on Optical Sensing Technology

1 Scope

This document specifies the basic requirements, system composition, working principle, and classification of optical fiber cable line maintenance based on optical sensing technology for cable identification.

Class and performance requirements.

This document applies to fiber optic cable identification during fiber optic cable line maintenance. Fiber optic cable identification in other scenarios can be used as a reference.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 9771 (all parts) Single-mode optical fiber for communication GB/T 43556.1 Fiber Optic Cable Line Maintenance Technology Part 1: Fiber Identification Based on Leakage Light

3 Terms and Definitions

The terms and definitions defined in GB/T 43556.1 and the following terms and definitions apply to this document.

A technique for identifying a target optical cable from a situation containing a large number of optical cables by detecting specific optical features.

manhole

An opening structure in a communication conduit for personnel to enter and exit for the construction and maintenance of optical (electrical) cables and other communication equipment.

Note: Large volume.

handhole

An opening structure in a communication conduit for the insertion of hands or tools to carry out the construction and maintenance of optical (electrical) cables and other communication equipment.

Note: The volume is relatively small.

4 Abbreviations

The following abbreviations apply to this document.

CO. Central Office