

What are the low-friction standards for optical cables

Article Overview

The BS EN IEC 60794-1-130:2025 standard defines the methods for testing and specifying the coefficient of friction for optical fiber cables, ensuring reliable installation and performance.

Overview of the Standard

The BS EN IEC 60794-1-130:2025 is the latest international standard for optical fiber cables, released in November 2025, and it provides detailed mechanical test procedures to evaluate the coefficient of dynamic friction of cable sheathing materials . This standard is recognized globally and applies to optical fiber cables used in telecommunications, including those with combined optical and electrical conductors . It replaces the previous Method E24 from IEC 60794-1-21 and constitutes a technical revision to reflect modern cable designs and testing requirements .

Testing Methods

The standard specifies Methods E30A and E30B for measuring friction:

- o E30A (Drum Test): Measures the friction when a cable is pulled over the top of other cables, simulating real-world installation over existing cable bundles .
- o E30B (Flat Plate Test): Measures friction when a cable is pulled between other cables of the same shape, representing tight conduit conditions . These methods ensure precision and repeatability, allowing manufacturers and installers to assess cable performance under various mechanical conditions.

Importance of Low Friction

Low-friction cables are critical for FTTx networks and congested conduits, where multiple cables must be installed efficiently without damage. A low coefficient of friction:

- o Reduces installation force, making it easier to push or pull cables through ducts .
- o Minimizes cable wear and damage, enhancing durability and reliability .
- o Supports higher cable density, allowing more cables in the same conduit space .

Practical Example

Some modern low-friction cables, such as KeyFibre's ultra-small-diameter cables, feature:

- o Low-friction LSZH jackets with a friction coefficient over 75% lower than conventional indoor cables .

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- o Reduced diameter (e.g., 2.2 x 1.8 mm), enabling easier installation in congested conduits .
- o Compliance with ITU-T G.657A, ensuring low bend radius and optical performance .

Conclusion

Adhering to BS EN IEC 60794-1-130:2025 ensures that optical fiber cables meet international quality benchmarks for friction, improving installation efficiency, reducing operational risks, and enhancing overall network performance. For practical applications, low-friction cables with optimized sheathing and reduced diameter are increasingly used in modern FTTx deployments to facilitate rapid and safe installation .

A TOSLINK optical fiber cable with a clear jacket. These cables are used mainly for digital audio

IEC 60794-1-130:2025: The Standard for Optical fibre cables. - Part 1-130: Generic specification. Basic optical cable test procedures.

Fiber optic joints or terminations - where cables are terminated - are made two ways: 1) connectors that

This document applies to optical fibre cables for use with telecommunication equipment and devices employing similar techniques,

Low friction indoor cable is designed for fiber-to-the-home (FTTH) networks where duct space is limited. It reduces cable size by over

Electrical properties are specified for optical ground wire (OPGW) and optical phase conductor (OPPC) cables. Hybrid

IEC 60794-1-130:2025 describes test procedures to evaluate the coefficient of dynamic friction of the sheathing material of a cable

Low Friction Cables are the ideal solution for wiring premises. The stiffness allows the cable to be installed by pushing as well as by

This document outlines the specifications for ITU-T G.657 optical fibers, which are designed for improved bending loss performance

Purpose This Standard sets forth termination and cabling requirements for optical fiber and cable assemblies.

The following language is recommended for use in project documents: Fiber optic cables shall be installed in

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accordance with the

Nowadays, optical communications are the most requested and preferred telecommunication technology, due to its large bandwidth

This document outlines the recommendations for single-mode optical fiber cables used in telecommunication networks within

OPTICAL FIBRE AND CABLE This document will provide an understanding of optical fibre, optical fibre cable (OFC), application

The simultaneous availability of compact sources and of low-loss optical fibres led to a worldwide effort for developing optical fibre

The cables are not really blown into the duct, but the blowing air floats the cable in the duct and reduces

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