

In the optical cable classification code



Overview

The standard defines several link/channel classes and cabling categories of copper interconnects, which differ in the maximum frequency for which a certain channel performance is required:

- Class A: Up to 100 kHz using and connectors
- Class B: Up to 1 MHz using and connectors.

Key Takeaways

Optical cables are classified by structure, application, and standardized codes, with each code indicating specific design, protection, and deployment characteristics.

Classification by Application

Optical cables are generally categorized based on their network role:

- Core/Backbone cables: Used for long-haul inter-provincial or inter-city trunks, designed for high fiber counts and robust protection.
- Metro/Relay cables: Deployed within cities or between exchanges, balancing flexibility and durability.
- Access/FTTx cables: Serve last-mile connections, often smaller, flexible, and easier to install in buildings or neighborhoods .

Structural Classification and Codes

Optical cable codes, such as GYTA53, GYTY53, GYFTCY, follow Chinese and international standards to indicate construction and protective features:

- GYTA53: Double jacket with corrugated steel tape armor, suitable for direct-buried backbone applications .
- GYTY53: Double thick polyethylene jacket without aluminum tape, offering higher crush resistance.
- GYXTW / GYDXTW: Steel-PE bonded sheath or ribbon fibers in central loose tubes, often for high fiber counts.
- GYTS / GYTA: Classic stranded loose-tube design with steel or aluminum tape armoring.
- GYFTCY: All-dielectric self-supporting (ADSS) cable with aramid yarn strength members, ideal for aerial deployment near high-voltage lines.
- GYTC8S: Figure-8 aerial cable with integrated steel messenger wire.
- GYDTS: High-density ribbon in slotted-core design with steel tape armor . These codes provide a quick reference to cable structure, armoring, and intended installation environment, helping engineers select the right cable for specific network conditions.

Fiber Type Classification

Fiber optic cables are also classified by the type of fiber they contain:

- Single-mode fibers (SMF): Optimized for long-distance, high-bandwidth transmission, typically ITU-T G.652, G.657 standards.
- Multimode fibers (MMF): Designed for shorter distances, often in data centers or campus networks, with OM1, OM2, OM3, OM4, and OM5 classifications under ISO/IEC standards .

Color Coding

Fiber identification within cables follows the TIA-598-C standard, which assigns a 12-color sequence for fibers in a tube:

- Blue
- Orange
- Green
- Brown
- Slate
- White
- Red

- Black
- Yellow
- Violet
- Rose
- Aqua For cables with more than 12 fibers, the sequence repeats with stripes or tube-based identification to maintain unique identification for each fiber . This ensures error reduction, operational safety, and global consistency.

Summary

Optical cable classification combines application type, structural design, fiber type, and color coding. Standardized codes like GYTA53 or GYFTCY provide engineers with a clear understanding of cable construction, protection, and deployment suitability, while fiber color codes ensure accurate installation and maintenance across complex networks .

Article Content

Fiber Optic Cable Guide: Codes, Types & Structures Explained

Complete fiber optic cable handbook: decode GYTA53, GYFTCY, ADSS & all Chinese codes, full construction types, standards,

ISO/IEC 11801

OverviewClasses and categoriesAbbreviations for twisted pairs2017 editionVersionsFurther reading

The standard defines several link/channel classes and cabling categories of twisted-pair copper interconnects, which differ in the maximum frequency for which a certain channel performance is required: • Class A: Up to 100 kHz using Category 1 cable and connectors• Class B: Up to 1 MHz using Category 2 cable and connectors

The Complete List Of Fiber Optic Cable Standards (Iso/Iec) For

Importing fiber cable? Don't get stuck at customs. We explain the Standardsessential IEC 60793, 60794, and Fire Safety standards

Do you know this optical fiber cable code from NEC 2020

In the latest National Electrical Code 2020, there are Optical fiber cables with the following classification: OFNP, OFCP, OFNR,

TIA-598-C

It defines identification schemes for fibers, buffered fibers, fiber units, and groups of fiber units within outside plant and premises

Cables Containing Optical Fibers | UpCodes

Explore a searchable database of US construction and building code. Code regulations are consolidated by state and city for easier

HS Code 85447000

Optical fibre cables made up of individually sheathed fibres, whether or not containing electric conductors or fitted with connectors.

Handbook Optical fibres, cables and systems

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

Classification of Optical Fiber (The Complete Guide 2020)

Optical cable is made of one or more optical fibers or optical fiber bundles to meet the chemical, mechanical and environmental

Fiber Optic Cable Types Explained

Our comprehensive guide to types of fiber optic cables. Learn all about the differences between single mode and multimode cables,

Major Recommendations: Optical

G.656The characteristics of a single-mode optical fibre and cable which has the positive value of the chromatic dispersion coefficient

The Complete List Of Fiber Optic Cable Standards (Iso/Iec) For

If you are importing Fiber optic cables into Europe, Asia, or South America, “good quality” is not enough. You need the right fiber

Fiber Optic Cable Types: Comprehensive Guide

Explore the different types of fiber optic cables and understand which type suits your specific needs for speed, distance,

Optical Fiber Cables

Optical fiber cables must comply with specific identification and marking standards, including a minimum temperature rating of 60°C

Fiber Color Code: A Simple Guide for Beginners (2024)

Fiber optic cables for external plants and premises, such as fiber optic distribution cables and fiber optic patch cables,

Cable Selection Guide for Hazardous Locations

The permissible wiring methods are selected by the Code-Making Panel, with safety being the most critical consideration. Along with

Choosing the right fiber cable to meet the National Electrical Code

What UL standards fiber cable network planners and installers need to look for to ensure compliance with the US National Electrical

HS Code 90011090

Optical fibres, optical fibre bundles and cables (excl. made up of individually sheathed fibres of heading 8544 and image conductor

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