

How to splice fiber optic cables using fiber optic patch cords



Article Overview

Splicing patch cords to fiber optic cables is typically done using either fusion splicing for a permanent, low-loss connection or mechanical splicing for a temporary or quick join.

Overview of Splicing Methods

Fusion Splicing: This method uses an electric arc to precisely melt and fuse the ends of two fibers, creating a continuous optical path with minimal signal loss (around 0.1 dB). It is the most reliable and widely used method, especially for single-mode fibers and long-haul networks. Fusion splicing requires a fusion splicer, cleaving tools, and careful alignment of fiber cores. It is ideal for permanent installations and high-performance networks . **Mechanical Splicing:** This method aligns the fiber ends within a specialized housing and uses an index-matching gel to bridge the microscopic gap. Mechanical splices are faster, require no power, and are less expensive, but they introduce slightly higher signal loss (typically 0.2-0.75 dB) and are less durable over time. They are suitable for temporary connections, emergency repairs, or short-distance multimode networks .

Step-by-Step Process for Splicing Patch Cords

- **Prepare the Fiber Ends:** Strip the protective coating from both the patch cord and the fiber cable to expose the bare glass fiber. Clean the fibers thoroughly with isopropyl alcohol to remove dust and debris .
- **Cleaving:** Use a precision fiber cleaver to create a flat, perpendicular end on each...

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