

RIVO MULTITRADE OPTICAL SYSTEMS

How to make a fiber optic cable into a cable



Overview

Fiber optic splicing is the process of joining two different fiber optic cables and creating one functioning cable.

Key Takeaways

To make a fiber optic cable usable, you need to prepare the fiber, apply protective coatings, and attach connectors or splice it to patch cords. Preparing the Fiber

Start by stripping the outer plastic coating of the fiber to expose the glass core. Clean the fiber thoroughly with isopropyl alcohol to remove any debris or oils, as even tiny contaminants can cause signal loss. Cut the fiber with a precision cleaver to create a clean, 90-degree end; scissors or standard cutters are not suitable because they can damage the fiber and degrade performance.

Adding Protective Layers

Fiber optic cables are not just bare glass; they require protective layers to prevent breakage and environmental damage. Typically, the fiber is coated with a polymer layer, then enclosed in a buffer tube or resin layer. Additional sheathing may be added depending on the intended environment, such as outdoor or indoor use. This ensures durability and reduces the risk of signal interference.

Connecting or Splicing

There are two main ways to make the fiber functional:

- **Fusion Splicing:** This method joins the prepared fiber to a pre-made patch cord using a fusion splicer. The splicer aligns the fibers and fuses them with heat, creating a low-loss, permanent connection. This is ideal for long-distance or high-performance applications .
- **Connector Termination:** If you want a plug-and-play cable, attach a fiber optic connector (like SC, LC, or ST) to the prepared fiber. This involves inserting the fiber into the connector ferrule, polishing the end, and testing for signal loss. Factory-made connectors are often used for reliability, but field-installable connectors are available for on-site assembly .

Testing

After assembly, test the cable with an optical power meter or light source to ensure minimal signal loss and proper alignment. Proper testing ensures the cable will perform reliably in a network setup .

Summary

Making a fiber optic cable functional involves preparing the fiber, adding protective coatings, and attaching connectors or splicing to patch cords. Each step requires precision and care to maintain signal integrity, and specialized tools like cleavers, fusion splicers, and polishing kits are essential for high-quality results .

Article Content

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There are several steps to build fiber optic cable, including preparation and installation. There are also several tests

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Fiber optic splicing is the process of joining two different fiber optic cables and creating one functioning cable. When done correctly,

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How optical fiber is made

Background An optical fiber is a single, hair-fine filament drawn from molten silica glass. These fibers are replacing metal wire as the

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How are fiber optics made? A single fiber optic cable that might be kilometers long starts out as a glass tube of only a meter or two in

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