

Fiber optic cold splice works well



Overview

Optical fiber cold splice technology is based on the use of mechanical connectors to join two fiber-optic cables.

Key Takeaways

SC/APC mechanical (cold) connectors are widely regarded as the best choice for reliable fiber optic cold splicing, offering low insertion loss and high return loss for FTTH and PON networks. What is a Cold Splice?

A cold splice, also known as a mechanical splice or fiber fast connector, allows fiber optic cables to be joined without fusion splicing. It aligns the bare fiber with a short fiber stub inside the connector using index-matching gel or mechanical clamping, enabling optical signal transmission quickly and without heat. Cold splices are ideal for small-scale deployments, emergency repairs, and on-site terminations where fusion splicing is impractical.

Recommended Connector Types

- **SC/APC Cold Connectors:** These feature an 8-degree angled endface polish, providing return loss ≥ 60 dB, which minimizes back reflection. They are the standard for GPON, EPON, and CATV networks, making them the most widely adopted choice for FTTH deployments. The green housing follows industry-standard color coding for APC connectors.
- **SC/UPC Cold Connectors:** These use ultra-physical contact polish with return loss ≥ 50 dB. They are suitable for general-purpose fiber connections but are less optimal for PON systems due to higher back reflection.

Recommended Cold Splice Kits

For field installations, several fiber optic splice kits include tools for cold splicing:

- **SAIVXIAN FTTH Kit:** Compact and portable, includes a fiber cleaver, OPM, stripping pliers, cleaning supplies, and a fixed-length device. Supports fibers from 0.25 to 3.0 mm, suitable for on-site cold splicing and terminations .
- **Multi-function FTTH Toolkit:** Combines an optical power meter, visual fault locator, cleaver, and fiber splicing tools. Designed for rapid assembly and testing of single-mode and multi-mode fibers .
- **Moocci Kit:** Includes OPM, visual fault locator, fiber cleaning pen, cleaver, and stripper. Emphasizes cleanliness and quick fault detection, ideal for field maintenance .

Advantages of Cold Splices

- **Fast installation:** No fusion splicer required, reducing setup time.
- **Lower tool cost:** Minimal equipment needed compared to fusion splicing.
- **Field-friendly:** Ideal for emergency repairs, drop cable terminations, and small-scale FTTH deployments.
- **Reliable performance:** High-quality SC/APC connectors ensure low insertion loss and long-term network stability .

Conclusion

For the best fiber optic cold splice, SC/APC mechanical connectors are recommended due to their superior return loss and compatibility with PON networks. Pairing these connectors with a portable FTTH splice kit like SAIVXIAN or Moocci ensures efficient, accurate, and reliable field installations .

Article Content

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The Difference Between Optical Fiber Cold Splicing and Optical Fiber

When installing a fiber optic network, connectors are required to connect both ends of the fiber optic cable. Common

Fusion-splice basics

Fusion splicing is used for joining cables during network installation projects, repairing cables, mounting pre-polished

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Poor fiber splicing, on the other hand, can lead to performance issues and increased maintenance costs. This guide breaks down the

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This lab is designed to introduce the student to the theory and practice of fusion splicing fiber optics. The student will learn what a

Just performed my first splice (and have two questions)

I've always had an interest in fiber optics and this past summer I installed a network at a local marina (for WiFi access) using pre

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Optical fiber cold splicing and hot melting steps

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