

Opening a window for fusion splicing optical cables



Overview

Fiber Optic Cables - Fusion Splicing This virtual hands-on page will take you through the steps involved in the process.

Key Takeaways

Opening a splicer window is a critical step in fusion splicing, allowing precise placement of fibers in the V-grooves for alignment and low-loss splicing. Preparing the Fiber

Before opening the splicer window, you must strip the outer jacket of the fiber cable using a cable stripper, exposing the buffer tube. For tight-buffered fibers, carefully strip the 250µm coating without bending the fiber, maintaining a bending radius greater than 30 mm to prevent damage (). Clean the exposed fiber with an isopropyl alcohol (IPA) swab to remove oils and dust, as contamination can weaken the splice ().

Cleaving the Fiber

Use a precision cleaver to create a flat, mirror-like end face. A poor cleave, such as a chipped or angled end, can cause high splice loss or failure. Inspect the cleaved fiber under a microscope to ensure the surface is smooth and properly aligned ().

Opening the Splicer Window

- Open the splicer's windshields or covers gently to access the V-grooves ().



- Place each fiber in the V-groove, ensuring clamps face upward. Do not force the fiber; let it rest naturally to avoid damaging the cleave ().

- Close the covers gently to secure the fibers in place. This step ensures the fibers are correctly aligned for the fusion arc.

Safety Considerations

- Wear high-rated safety goggles and cut-resistant shoes to protect against the fusion arc and glass shards ().

- Dispose of fiber shards immediately in a dedicated fiber waste container.

- Avoid static electricity by using anti-static wrist straps or mats, especially in dry environments ().

Additional Tips

- Re-clean fiber ends if splicing for extended periods, typically every 5-10 splices, to maintain low-loss performance ().

- Ensure the splicer is properly calibrated, electrodes are in good condition, and power supply is stable before starting ().

- For ribbon or multi-fiber splicing, follow mass fusion procedures, checking alignment, end-face quality, and arc settings before initiating the splice (). By carefully preparing the fiber, opening the splicer window correctly, and following safety protocols, you can achieve high-quality, low-loss fusion splices that are reliable for long-term optical network performance ().

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