How to splice a dual-core drop fiber optic cable

Overview

How to Splice Dual Core Fiber Optic Cable | Fusion Splicing Both Cores Step by Step |In this video, you''ll learn how to splice a dual core fiber optic cable ...

Key Takeaways

Dual-core drop fiber optic cables can be spliced reliably using fusion splicing, following careful preparation, precise cleaving, and proper alignment to ensure minimal signal loss.

Tools and Safety Equipment

Fusion splicer: For permanent, low-loss splices. Fiber stripper: Multi-hole strippers for 250µm or 900µm coatings. Precision cleaver: Ensures flat, mirror-like fiber ends.

Isopropyl alcohol (IPA) and lint-free wipes: For cleaning fibers. Protective gear: Safety goggles, cut-resistant gloves, and anti-static wrist strap to prevent injury and static damage.

Step-by-

Step Fusion Splicing Process

Prepare the CableStrip 3–5 cm of the outer jacket to expose the dual-core fibers. Carefully remove the buffer coating from each fiber without bending or stressing the glass. Clean the exposed fibers with IPA-soaked wipes to remove oils and debris.

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Cleaving the Fibers

Use a precision cleaver to cut each fiber end straight. Inspect under a microscope to ensure a flat, mirror-like surface; angled or chipped ends increase splice loss.

Aligning and Splicing

Open the fusion splicer's clamps and place each fiber in the V-groove. Ensure the fibers are straight and properly aligned. Activate the fusion splicer to melt the fiber ends together using an electric arc, creating a continuous light path.

Protecting the Splice

Slide a splice sleeve over the joint and heat-shrink it to protect the splice from mechanical stress and environmental factors. Coil the protected splice carefully to avoid bending below the minimum radius (typically >30 mm),.

Testing

Use an optical power meter or OTDR to verify splice loss and ensure signal integrity. Acceptable loss for dual-core drop cables is typically around 0. 1 dB per splice.

Best Practices

Handle fibers gently to avoid microfractures. Perform stripping, cleaving, and splicing consecutively to prevent contamination. Use manufacturer-recommended consumables to reduce long-term failure rates.

Maintain a clean, static-free workspace to protect both fibers and splicing equipment. By following these steps, dual-core drop fiber optic cables can be spliced with low attenuation, high reliability, and long-term durability, suitable for telecom or data network deployments.

Article Content

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Cladding Alignment Splicers — align fibers by their outer cladding diameter, faster and more affordable, suitable for multimode fiber and basic FTTH drop cable work. All five splicers in this guide

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