24-core optical cable fusion splicing method

Overview

Complete Process of 24-Core Optical Cable SplicingLearn how to splice fiber optic cable using fusion splicing with this complete step-by-step guide. Includ.

Key Takeaways

Fusion splicing a 24-core optical cable involves careful preparation, precise fiber alignment, and protective finishing to ensure low-loss, high-reliability connections.Preparation

Before starting, gather all necessary tools: a fusion splicer, 24-core fiber optic cables, protective sleeves or heat shrink tubes, alcohol wipes, and a precision cleaver . Inspect each cable for damage and cut them to equal lengths to maintain consistency during splicing . Ensure a clean, static-free workspace and wear safety goggles and cut-resistant gloves to protect against high-temperature arcs and glass shards .

Stripping and Cleaning
• Strip the outer jacket and buffer coating of each fiber using a precision stripping tool, taking care not to damage the glass core .

• Clean each fiber thoroughly with alcohol wipes to remove dust, oils, or debris that could affect signal quality .

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• For ribbon cables, use V-groove alignment to prepare fibers for simultaneous splicing .
Fusion Splicing
• Place each fiber into the fusion splicer's V-groove or ribbon holder, ensuring proper orientation .

• Use automatic core alignment (optical or LID alignment) if available, which aligns fibers based on core images or light transmission measurements .

• Initiate the fusion process: the splicer generates an electric arc that melts the fiber ends, fusing them into a seamless joint .

• After splicing, the machine may estimate splice loss to verify quality .
Protective Finishing
• Slide a heat shrink sleeve over the splice and activate the splicer's heating device to secure it .

• Ensure the sleeve fully covers the splice to protect against moisture, dust, and mechanical stress .
Quality Control and Best Practices
• Inspect each splice under a microscope for a flat, mirror-like surface .

• Maintain a minimum bending radius of 30 mm during handling to prevent microbends .

• Follow manufacturer-recommended consumables and splicer settings to reduce failure rates .

• For 24-core cables, splicing can be done fiber by fiber or using a ribbon splicer to handle multiple fibers simultaneously . By following these steps, you can achieve high-performance, low-loss splices in 24-core optical cables suitable for professional network installations .

Article Content

Reference Guide to Fiber Optic Splicing

The principle of fiber optic splicing is to melt, or join, two optical fibers together end-to-end using heat created with a machine called a

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