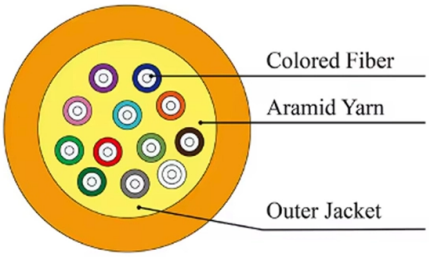
How to connect the fiber optic fusion splice tray and the optical splitter



Overview

Guide for proper splicing of fiber optic fibers Splicing has become an integral part, especially in the field of electrical installations.

Key Takeaways

To connect a fiber optic fusion splice tray to an optical splitter, prepare, splice, and organize the fibers carefully, then route them into the splitter while ensuring protection and minimal signal loss.Step 1: Prepare the Fiber Cables
• Strip the Fiber Jacket: Use a fiber stripper to remove the outer jacket and coating, exposing the bare fiber cores without causing microfractures or bending damage (recommended strip length: 10–20 mm) .

• Clean the Fibers: Wipe the fiber ends with lint-free wipes and isopropyl alcohol to remove dust, oils, or contaminants .

• Cleave the Fibers: Use a precision cleaver to create a smooth, perpendicular end face, essential for low-loss fusion splicing .
Step 2: Fusion Splicing
• Align the Fibers: Place each fiber in the fusion splicer's V-groove, ensuring proper orientation and alignment .

• Perform the Fusion: Activate the splicer to weld the fibers together using an electric arc, creating a continuous optical path with minimal reflection and attenuation .

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• Protect the Splice: Insert the fused fiber into a splice protection sleeve and place it securely in the splice tray's designated holder .
Step 3: Organize Fibers in the Splice Tray
• Route Fibers Carefully: Coil any excess fiber length in the tray's intra-pan fiber loops to prevent bending stress and maintain minimum bend radius .

• Secure Cables: Use cable tie-downs or clamps to fix incoming and outgoing fibers, preventing movement that could compromise the splice .

• Label Fibers: Clearly label each fiber to match the corresponding port on the optical splitter for easy identification and maintenance .
Step 4: Connect to the Optical Splitter
• Prepare Splitter Ports: Ensure the splitter's input and output ports are clean and free of dust. Use a fiber cleaning kit if necessary .

• Insert Fibers: Connect the spliced fibers from the tray to the splitter ports, maintaining proper orientation and avoiding sharp bends. For PLC splitters, ensure the input fiber aligns with the designated input port .

• Secure Connections: Use the splitter's built-in clamps or adapters to hold fibers in place, preventing accidental disconnection or stress on the splices .
Step 5: Testing and Verification
• Check Signal Integrity: Use an OTDR (Optical Time Domain Reflectometer) or a power meter to verify the spliced fibers and splitter connections for low insertion loss and minimal reflection .

• Document Results: Record the test results and ensure all fibers are properly labeled and organized for future maintenance. By following these steps, the fiber optic fusion splice tray can be effectively connected to an optical splitter, ensuring stable, low-loss, and well-protected fiber connections suitable for backbone or access network deployments.

Article Content

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