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How to reassemble optical fiber after ODF fusion splicing



Overview

This article covers the typical steps required to repair and/or re-terminate a damaged fiber optic cable.

Key Takeaways

After fusion splicing, optical fibers should be carefully placed into splice trays, secured with protective sleeves, and organized within the ODF to ensure low-loss, safe, and durable connections.Step 1: Protect the Fusion Splice

Once the fibers are fused, slide a heat-shrink splice sleeve over the splice point and shrink it using a heat source or the splicer's built-in heater. This protects the splice from mechanical stress and environmental factors, preventing microbends or breakage during handling and reassembly .

Step 2: Place Fibers in Splice Trays
• Open the splice tray in the ODF.

• Carefully lay the spliced fibers into the tray's routing channels, following the tray's bend radius guidelines (typically >30 mm) to avoid stress on the fiber .

• Use the tray's fiber clips or holders to secure the fibers, ensuring the splice sleeve sits in the designated splice holder to prevent movement .
Step 3: Organize and Route Fibers
• Route the fibers neatly along the tray's channels, avoiding sharp bends or crossing fibers.

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• Maintain minimum bend radius for both the incoming and outgoing fibers to prevent attenuation or breakage.

• If multiple fibers are spliced, organize them in layers or loops according to the tray design, keeping fibers separated to simplify future maintenance .
Step 4: Close and Secure the Splice Tray
• Once all fibers are properly routed and secured, close the splice tray cover.

• Ensure the tray is locked or latched to prevent accidental opening.

• Place the tray back into the ODF rack, aligning it with the designated slot and securing it with screws or clips as required .
Step 5: Test and Verify
• After reassembly, perform optical testing using an OTDR or power meter to verify splice integrity and ensure no additional loss occurred during handling .

• Label the fibers and trays clearly for future identification and maintenance.
Best Practices
• Always handle fibers with care, avoiding tension or contact with sharp edges.

• Keep the workspace clean and free of dust or debris to prevent contamination of splice points .

• Follow manufacturer guidelines for splice trays and ODF installation to maintain warranty and performance standards. By following these steps, your fusion-spliced fibers will be securely reassembled in the ODF, maintaining optimal performance and protecting the delicate splices from mechanical or environmental damage .

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