How to fix the fiber optic cable splice tray

Overview

Fiber Splice Tray Organization Best PracticesSix months later, the next tech who needs to repair a fiber spends hours untangling instead of minutes Essenti.

Key Takeaways

Fiber optic cables are fixed to a splice tray by carefully preparing, cleaving, splicing, and securing the fibers in designated tray slots to ensure protection and optimal signal transmission.Step 1: Prepare the Fiber Cable

Begin by stripping the outer jacket and protective coating of the fiber cable using a fiber cable stripper, exposing the bare fiber cores. Clean the exposed fibers with lint-free wipes and isopropyl alcohol to remove dust, dirt, or contaminants, which is essential for low-loss splicing . Handle fibers carefully to avoid breakage or injury.

Step 2: Cleave the Fiber

Use a high-quality fiber cleaver to create a smooth, perpendicular end face on each fiber. A precise cleave ensures proper alignment and minimal signal loss during splicing .

Step 3: Splice the Fibers
• Mechanical Splicing: Align the fiber ends in a mechanical splice connector, using an index-matching gel or epoxy to facilitate light transmission. This method is faster and allows temporary connections if needed, with typical loss around 0.3 dB .

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• Fusion Splicing: Use a fusion splicer to weld the fiber ends together with heat or an electric arc, producing a permanent, low-loss connection (typically 0.01–0.1 dB), . After splicing, protect the joint with a heat-shrink sleeve.
Step 4: Place Fibers in the Splice Tray

Carefully lay the spliced fibers into the designated slots or compartments of the splice tray. Organize excess fiber length in loops to prevent stress or bending beyond the minimum bend radius. Secure the fibers using the tray's built-in clips or holders to prevent movement .

Step 5: Protect and Close the Tray

Once all fibers are secured, cover the splice tray with its protective lid. If the tray is inside a fiber enclosure, ensure the enclosure is properly sealed to protect against dust, moisture, and mechanical damage .

Step 6: Test and Verify

After installation, test the spliced fibers using an OTDR (Optical Time Domain Reflectometer) or a power meter to verify signal integrity and ensure minimal insertion loss . Proper testing confirms that the fibers are correctly aligned and secured. By following these steps, fiber optic cables can be securely fixed to a splice tray, ensuring long-term reliability, organized cable management, and optimal network performance.

Article Content

First fiber installation (how to organize splice tray)

I started my first fiber installation and my first job is an enclousure for 48 fibers with two splice trays that should hold 24 splices each.

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