

How to install the fusion splice box for an optical power meter

Article Overview

Installing a fusion splice box involves careful cable preparation, fiber splicing, sleeve protection, and proper coil management to ensure low-loss optical connections.

Step 1: Prepare the Workspace and Safety

Before starting, ensure your workspace is clean, well-lit, and static-free. Wear safety goggles and cut-resistant gloves to protect against fiber shards and the high-temperature fusion arc . Use an anti-static mat or wrist strap to prevent damage to the fusion splicer electronics .

Step 2: Cable Preparation

- o Remove any damaged sections of the optical cable.
- o Strip the outer sheath of the cable using a specialized stripping tool, typically about 1 meter from the end .
- o Expose the buffered fibers or loose tubes and clean off any grease or debris with an ethanol-soaked cloth .
- o Install strain relief at the cable entry points to prevent fiber movement inside the splice box .

Step 3: Organize Fibers in the Splice Box

- o Separate fibers individually and pass them over PVC heat-shrinkable sleeves to protect the splices .
- o Lay service loops according to the fiber plan, maintaining proper bending radius to avoid signal loss .
- o Secure fibers with intermediate fixings to prevent slippage inside the splice box .

Step 4: Fusion Splicing

- o Turn on the fusion splicer and select the appropriate splice program .
- o Cleave the fiber ends using a high-precision fiber cutter, typically leaving 10-15 mm of bare fiber .
- o Place the fibers into the V-groove of the splicer, align them carefully, and close the windproof cover. Press the SET button to start automatic fusion .
- o Inspect the splice visually or using the splicer's image processing system to ensure proper alignment and minimal loss .

Step 5: Sleeve Protection and Heat Treatment

- o Slide the PVC heat-shrinkable sleeve over the spliced fiber.
- o Place the sleeve in the heater and apply heat according to sleeve size (e.g., 20 mm sleeve for 40 seconds, 60 mm sleeve for 85 seconds) .
- o Ensure the sleeve fully covers the splice and reinforces the fiber mechanically.

Step 6: Coil Management and Splice Box Closure

- o Coil the continuous fiber into the fiber storage tray, maintaining a gentle semi-longitudinal curve to

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minimize loss .

- o Verify that all fibers are properly secured, and no sharp bends or tension exist.
- o Close the splice box and seal it according to manufacturer instructions to protect against dust and moisture .

Step 7: Testing and Quality Control

- o Connect the fibers to an optical power meter or OTDR to measure insertion loss.
- o Acceptable splice loss is typically 0.02-0.05 dB, and any splice exceeding 0.1 dB should be reworked .
- o Perform visual inspection for bubbles, cracks, or misalignment, and clean or recalibrate the splicer if necessary . Following these steps ensures a high-quality, low-loss fiber installation suitable for integration with an optical power meter and long-term network reliability.

Tools And Materials Needed Safety Glasses ST patch cord Fiber Optic stripper Test equipment: VFL and OLTS, reference test

This guide dissects the fusion splicing process, toolchain optimization, and troubleshooting strategies to empower

Wirewerks Optical Fiber Splice-On Connectors combine the performance and reliability

The session includes a step-by-step review of how to successfully Fusion Splice and

Fiber optic cable mechanical splicing is an alternate splicing technique that does not require a fusion splicer. A

The choice between fusion and mechanical splicing for fiber optic splice module installation

Highlights Fusion splicers are essential for creating low-loss, high-performance fiber optic connections in telecom,

Learn Fiber Optic Fusion Splicing: step-by-step guide to safe, precise fiber prep, fusion, and

In this video and step by step tutorial, we take you through the basic steps on how to fusion splice pigtails

In this tutorial, we will show you how to fusion splice two fiber optic strands together in

Ensure splices are acceptable Identify problems Provide a baseline for maintenance and

It outlines the necessary tools, materials and steps for preparing the cable ends, splicing the optical fibers using fusion splicing,

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Especially in times of growing demands in fiber optic networks, the process of splicing fiber optic fibers has been increasingly applied

This guide walks through a practical, real-world installation process used in FTTH deployments. It covers not only mounting and

A note on fusion splicing: The electric arc used to splice fibers can cause explosions if flammable gasses are present! Splice in well

We cover essential steps including arc calibration, where you'll see a detailed, step-by

Web: <https://millstraining.co.za>

