Stripping of spliced optical cables

Overview

While a cut or damaged fiber optic cable can temporarily take your network down, it is possible to quickly fix the cable with the right tools.

Key Takeaways

Stripping a spliced optical cable involves carefully removing the outer jacket and coating layers to expose the bare fiber without causing damage, using specialized fiber strippers and cleaning techniques.

Tools Required

Fiber optic stripper: Precision tool for removing coatings without nicking the glass. Kevlar cutter: For cutting strength members inside the cable. Fiber cleaver: Ensures a clean, flat fiber end for splicing.

Lint-free wipes and isopropyl alcohol: For cleaning the bare fiber. Fiber protection sleeves and heat shrink oven: To protect the splice after fusion. Safety glasses: To protect eyes from fiber shards.

Step-by-

Step Process

Remove the Outer Jacket: Use a cable stripper to peel off the outer plastic layer of the optical cable. Carefully expose the inner fibers without cutting them. Cut Strength Members: Trim any aramid yarn or Kevlar strands using a Kevlar cutter to prevent interference during splicing.

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Strip the Fiber Coating: Using a fiber optic stripper, remove the coating from the fiber core. Hold the fiber perpendicular to the stripper, gently push along the fiber axis, and strip a length of about 3–5 cm (or as specified by the splicer manufacturer),. Avoid stripping more than 50 mm at a time to prevent fiber damage.

Clean the Bare Fiber: Wipe the stripped fiber with a lint-free cloth moistened with high-purity alcohol to remove any coating residue. Cleaving the Fiber: Use a fiber cleaver to create a precise, flat end on the stripped fiber. Proper cleaving is critical for low-loss splicing.

Insert Protection Sleeve: Before splicing, thread a fiber protection sleeve onto the fiber. This sleeve will cover the splice after fusion and protect the fiber. Fusion Splicing: Align the prepared fiber ends in a fusion splicer and fuse them using an electric arc.

After splicing, slide the protection sleeve over the joint and shrink it using a heat oven.

Safety and Tips

Always wear safety glasses to prevent injury from fiber shards. Avoid excessive force when stripping to prevent micro-cracks in the fiber. Inspect the fiber under a microscope for nicks or scratches before splicing.

Use professional-grade tools to ensure accuracy and minimize signal loss. By following these steps, you can safely strip and prepare a spliced optical cable for high-quality fusion splicing, ensuring minimal signal loss and long-term reliability.

Article Content

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In this guide, we cover the basics of fiber optic splicing, how to perform splicing using two different methods, and finally some best practices to perform good

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