

What to do if fiber optic cable splicing has high loss



AI Overview

Fusion splicing is the preferred method for minimizing loss in fiber optic cables, while mechanical splicing offers a practical alternative for temporary or field repairs.

Fusion Splicing for Low-Loss Connections

Fusion splicing involves permanently joining two fiber ends by precisely aligning their cores and using an electric arc to melt and fuse them into a single continuous fiber. This method is ideal for high-performance networks and long-haul applications because it produces extremely low insertion loss, typically around 0.02 dB, and minimal back reflection, ensuring optimal signal integrity . Key Steps for High-Quality Fusion Splicing:

- Strip 3-5 cm of the outer jacket and carefully remove the fiber coating without damaging the glass core .
- Clean the bare fiber with isopropyl alcohol to remove contaminants .
- Use a precision fusion splicer to automatically align the fiber cores using optical or mechanical alignment systems .
- Apply an electric arc to fuse the fibers, creating a seamless joint .
- Protect the splice with a heat-shrink sleeve to restore mechanical strength and prevent environmental damage . Best Practices to Reduce Loss:
- Maintain a bending radius greater than 30 mm during handling to avoid microbends .
- Use manufacturer-recommended consumables and splice sleeves to prevent long...

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Many high fiber count cables today are made from ribbons of fibers, usually 12 fibers per ribbon. Splitting all those fibers out to splice

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Optical Fiber Splice Loss and Methods to Reduce It

When splicing loss of multiple optical fibers are large, we can cut off a section of the fiber optic cable and reopen the

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High Optical Loss in Main Fiber Networks: A Critical Splicing Mistake ...

By combining proper testing, planning, and field experience, engineers can reduce loss, improve project efficiency,

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How to Fix High Splice Loss in Fusion Splicing | CMW

Experiencing high splice loss with your fusion splicer? Find out the possible causes and how to fix it with this guide.

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Optical Fiber Splicing: The Complete Technical Guide to Methods ...

This guide breaks down the fundamentals of optical fiber splicing, compares fusion and mechanical techniques, explains factors that

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What are the most common fiber optics problems?

Avoiding signal loss in fiber optics Fiber optic communication uses pulses of light to transmit

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Optical Fiber Splice Loss and Methods to Reduce It

It is rather important to keep the minimum optical fiber splice loss when setting up an optical communication line. Here

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The FOA Reference For Fiber Optics

Fiber optic joints or terminations - where cables are terminated - are made two ways:
1) connectors that mate two fibers to create a

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Fiber Optic Troubleshooting Guide: Problems, Tools & Solutions

Fiber optic networks are the backbone of modern data centers and communication systems, valued for their high

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Fiber Optic Fusion Splicing Guide: From Safety to Troubleshooting

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

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Factors affecting fiber splice loss and how to reduce it

Fiber splice loss is caused by core mismatch, contamination, and misalignment. Reduce loss with proper cleaning,

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Fiber Optic Cable Splicing Methods: A Practical Guide

According to authoritative guides from the Fiber Optic Association, a poor cleave angle is a primary cause of high

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Optical Time Domain Reflectometer (OTDR) Download free OTDR Trainer Software for PCs After you study this page, you can

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Fiber Optic Cable Splicing Methods: A Practical Guide

While this guide provides a solid overview of fiber optic cable splicing, the successful execution of these methods

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Guidelines On What Loss To Expect When Testing Fiber Optic Cables

To be able to judge whether a fiber optic cable plant is good, one does a insertion loss test with a light source and power meter and

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How to Splice Fiber Optic Cable – Step-by-Step Fusion Splicing Guide

Splicing fiber optic cable is an extremely important phase for making dependable, high-speed communication

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Why Fiber Splicing Fails — And How to Fix It. A Practical ...

In this edition of our LinkedIn Newsletter, we break down the four biggest reasons fiber splicing fails and how you can

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It is mandatory to minimize stress and/or stress changes on the fiber when making measurements. If the fiber or cable is spooled, it

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The Complete Step-by-Step Guide to Fiber Optic Splicing

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

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FOA Guide To Fiber Optics

Online Learning: FOA has a online learning site called Fiber U with many free self-study courses based on technical material in the

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Common Fusion Splicer Problems and How to Fix Them

Struggling with fibre fusion splicer problems? Learn how to fix high splice loss, misalignment, electrode issues, and

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Understanding Splice Loss: Causes and Fixes – DBtek

While some loss is unavoidable, excessive loss can compromise network performance. Understanding its causes and solutions is

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Insertion Loss Definition, Formula, Causes, Troubleshooting | Fluke ...

Learn about insertion loss causes, measurement, budgets, troubleshooting tips, testing, fixing, and what to look for in

Feb 08, 2026

How to Avoid Common Fiber Optic Splicing Errors

Learn how to splice fiber optic cables with precision and quality. Avoid splicing errors that can affect network performance and safety.

Sep 06, 2025

White Paper: Troubleshooting Fiber

After permanent link testing, which doesn't include the fiber jumpers and is considered best practice for

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How to Fix a Cut Fiber Optic Cable

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

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What is Optical Fibre Splice Loss?

The portion of the optical power that does not pass through the splice and is radiated out of

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Measuring Reflectance or Return Loss Reflectance Reflectance (which has also been called "back reflection" or optical return loss) of

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Everything you need to know about fiber optic termination

Different connectors and splice termination procedures are used for singlemode and multimode

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Optical Transceiver Insertion Loss: Definition, Measurement, and Impact

This article explains what insertion loss is, how it is measured, what typical values look like, and why it matters for the

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How Anyone Can Splice Fiber Optic Cable | BroadbandSearch

Fiber optic splicing focuses on creating low loss connections that support high-speed data transmission. Fusion

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Why is the acceptable loss on a splice so low?

I feel like the correct answer here is “optical design”. Fiber engineers will design a build and account for losses. Typical cable

Contact Us

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