

Inconsistent thickness of pigtail splices

Article Overview

Inconsistent thickness in fiber optic pigtail splices is usually caused by core diameter mismatch, misalignment, or improper splicing technique, leading to increased optical loss and reduced network performance.

Causes of Inconsistent Thickness

Core Diameter Mismatch: When the core diameters of the pigtail and the incoming fiber differ, the splice may appear thicker or uneven at the joint. This mismatch can cause light to scatter into the cladding, increasing insertion loss and back reflection .

Lateral Misalignment: If the fibers are not perfectly aligned laterally, the cores do not overlap completely. This misalignment can create a thicker splice region and result in higher optical loss .

End Separation and Air Gaps: Even if fibers are aligned, a small gap between the fiber ends can cause inconsistent thickness and Fresnel reflections, which reduce signal quality .

Contamination and Dirt: Microscopic particles on the fiber ends can prevent proper fusion or mechanical splicing, leading to uneven splice thickness and higher loss .

Splicing Technique: Inconsistent heating during fusion splicing or improper pressure in mechanical splicing can create irregularities in the splice, affecting both thickness and optical performance .

Effects on Network Performance

- **Increased Insertion Loss:** Uneven splices reduce the amount of light transmitted through the fiber, impacting signal strength .
- **Higher Back Reflection:** Irregular splices can reflect light back toward the source, potentially interfering with sensitive equipment

Article Content

Jul 27, 2025

Comprehensive Fiber Optic Pigtail Wiki and Guidance

There is some loss and attenuation while building an optic fiber system. Correct fiber optic

Dec 26, 2025

What Is Fiber Optic Pigtail and How to Splice It?

Fiber Optic Pigtail Splicing: Easy and Fast Fiber Termination The quality of fiber pigtail is typically high because the

Feb 05, 2026

SIMPLEX FIBER OPTIC PIGTAILS DATASHEET

Fiber optic pigtail is an important component commonly used in fiber optic networks. It has fiber connector at one end, and the other

Aug 01, 2025

The Ultimate Guide to Fiber Pigtail

Identifying Potential Problems with Fiber Pigtail Splices Identifying potential problems with

Nov 03, 2025

12 Fibers Pigtails Datasheet | FS

12 Fibers Pigtails Fiber optic pigtail is a tight buffered fiber cable with connectors pre-terminated on one end and exposed fiber on the

Feb 11, 2026

Can someone explain why one method is used over the other and

Electrician here. Assuming we're not talking about GFCI vs no GFCI, the question is to how we're splicing power through to the next

Apr 07, 2026

What Is It and How to Splice It

What Is It and How to Splice It In fiber optic cable installation, how cables are attached to the system is vital to the success of

Mar 14, 2026

pigtails / splices

This refers to another question that I asked in the Canadian Code section about a tech cable run. Relevant info: 120

Dec 04, 2025

An Introduction to Fiber Optic Pigtails

Learn more about fiber optic pigtails and how they can help you build a reliable and secure

Sep 14, 2025

Tutorial on how to do the Rat Tail or Pig Tail Joint

In this video, I am going to show on how rat tail or pig tail joint is made.

Mar 14, 2026

Rat Tail and Pigtail Wire Joints Explained

This document provides information on common wire splices and joints used in electrical installation, including the rat tail splice, Y

May 02, 2026

Pigtails

The part number always starts with the letters PIG to denote that it is a pigtail. This is followed by a dash and then a three dig-it code

Nov 16, 2025

Fiber Optic Pigtail: The Complete Guide to Types,

Mixing singlemode and multimode pigtails in the same link is a common and costly mistake.

Aug 13, 2025

TE Connectivity

Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

Sep 29, 2025

#0003: Basic techniques for connecting wires – A

#0003: Basic techniques for connecting wires Connections discussed: Straight solder

Oct 23, 2025

Fiber Optic Splicing: Examining the Factors that Affect ...

Mechanical splices struggle to meet the alignment tolerances of singlemode fibers. Mechanical splices are only used

Sep 25, 2025

Pigtails

Standard color-coded pigtail kits contain 12 color-coded 900 μm fibers, 2 m in length.

Jun 09, 2026

Fiber Optic Pigtail: Types, Splicing Guide, Specs & Price

Order the wrong buffer diameter or fiber grade and your splice tray turns into a mess. Use the wrong connector polish

Jun 16, 2026

Common Electrical Wire splices and Joints

Common Electrical Wire splices and Joints As a student in Electrical Installation and Maintenance you should acquire

Nov 07, 2025

Tutorial Passive Fiber Optics, Part 6: Fiber Joints

In mechanical splices and connections based on fiber couplers, a tiny air gap can be formed between the two endfaces. One might

Oct 07, 2025

pigtails electrical connection

Understand the importance of pigtails electrical connection in electronics. Follow our step-by-step guide to

Aug 10, 2025

What Is Fiber Optic Pigtail and How to Splice It?

Similarly, 4, 6, 8, 12, 24, 48 and more than 48 fibers fiber optic pigtails have their

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Comprehensive Guide to Fiber Optic Pigtails | Gezhi Photonics

Dive into the world of fiber optic pigtails, their types, applications, and splicing methods. Enhance your network's

Apr 15, 2026

Fiber Patch Cord & Pigtail: Types, Specifications & Selection | Opelink

Introduction This article is a selection guide for Fiber patch cords and pigtails, which systematically introduces the

Sep 29, 2025

Improving Connector Loss and Splice Loss OTDR Measurement

Nonetheless, as this paper demonstrates, an OTDR of sufficiently high resolution and dynamic range, and depending somewhat on

Nov 22, 2025

electrical

I normally make any pigtails at an outlet or switch box about six inches, same as the requirement found in 300.14 for

Oct 31, 2025

Splice with pigtails vs. using the two screws as a splice point

Surely I cannot be the only one that will change this setup to a splice with a single pigtail to the new receptacle when changing

Contact Us

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