

8-core fiber optic cable and 12-core pigtail splicing method



Article Overview

Splicing an 8-core fiber optic cable to a 12-core pigtail is best done using fusion splicing with careful strand mapping and proper preparation to ensure low-loss, reliable connections.

Overview

When connecting an 8-core fiber cable to a 12-core pigtail, the goal is to create a permanent, low-loss joint. Since the number of fibers differs, not all pigtail fibers will be used; typically, the first 8 fibers of the pigtail are matched to the 8 fibers of the cable, leaving the remaining 4 fibers unused or reserved for future expansion. Fusion splicing is preferred for singlemode fibers due to its low insertion loss (~ 0.1 dB) and minimal back reflection, while mechanical splicing can be used for temporary or multimode connections (~ 0.3 dB loss), .

Preparation Steps

- **Organize Fibers by Color Code:** Follow the standard fiber color code (blue, orange, green, brown, slate, white, red, black, yellow, violet, rose, aqua) to ensure correct strand mapping. For an 8-core cable, match the first 8 colors to the corresponding pigtail fibers.
- **Strip and Clean Fibers:** Remove the outer jacket and buffer coating carefully. Clean the bare fibers with high-purity alcohol to remove dust and debris.
- **Cleaving:** Use a precision fiber cleaver to create a flat, perpendicular end on each fiber. Proper cleaving is critical for low-loss fusion splicing

Article Content

May 11, 2026

Fiber-Optic Cable Splicing

The article discusses the methods, tools, and challenges involved in fiber-optic cable splicing, including

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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

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Understanding Fiber Optic Pigtails: Key Specifications, Classifications and Splicing Methods Modern networking

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Fiber Optic Splicing Types, Methods, and Applications

Fiber optic splicing is essential for building and maintaining reliable, high-speed communication networks.

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Different connectors and splice termination procedures are used for singlemode and multimode connectors, so make sure you know

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How to choose fiber optic pigtails?

Applications Fiber optic pigtails are used to terminated fiber optic cables via fusion splicing or mechanical splicing as shown in the

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How Do You Splice Fiber with a Fusion Splicer?

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

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Fiber Optic Splicing: A Complete Guide | Jonard Tools

In the ever-evolving world of high-speed connectivity, fiber optic technology serves as the backbone of

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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

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Splicing Fiber Optic Cables | A Beginner's Guide

Fiber splicing is a vital technique in cable maintenance. Knowing how to splice fiber optic cables is key for data communications with

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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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Everything you need to know about fiber optic termination

We terminate fiber optic cable two ways - with connectors that can mate two fibers to create a temporary joint and/or connect the

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The FOA Reference For Fiber Optics

Most field singlemode terminations are made by splicing a factory-made pigtail onto the installed cable rather than terminating the

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Splicing can be used to mix a number of different types of cables such as connecting a 48 fiber cable to six

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Fiber Optic Cable Splicing Explained

Splicing in optical fiber is the joining two fiber optic cables together. There are 2 methods of cable splicing, mechanical

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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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The FOA Reference For Fiber Optics

Since OTDRs have directional errors, testing may be required from both directions and averaged. Generally long concatenated

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FOA Lesson Plan: #7, Terminations and Splices

In this lesson, a long and very important one, you will learn about fiber splicing and termination. Fiber optic joints or terminations are

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Fiber Optic Cable Splicing Methods: A Practical Guide

The two primary industry-accepted methods for fiber optic cable splicing are fusion splicing and mechanical splicing.

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

A fiber optic pigtail is a short fiber cable with a factory-installed connector on one end and a bare fiber end on the

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Fiber cable termination

Fiber Optic cable termination is the addition of connectors to each optical fiber in a cable. The fibers need to have connectors fitted

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Fiber Optic Cable Splicing Explained

Infield installations, splicing is a faster and more efficient method and is used to restore fiber optic cables when a

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How to Splice fiber pigtails?

Waterproof pigtail cable boosts good toughness, tensile and reliable performance, facilitating the use in outdoor connections.

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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

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