

What is the splicing sequence for a 96-core optical cable



Overview

Fiber Optic Color Code: The Ultimate TIA-598-C Guide By adopting the TIA/EIA-598C standard, you gain a universal “language” of colors that speeds Splicing.

Key Takeaways

Splicing a 96-core optical cable involves identifying fibers using the tube-and-fiber color code, organizing them in splice trays, and performing fusion splicing sequentially by tube and fiber. Fiber Identification and Color Coding

For a 96-core cable, fibers are organized into multiple buffer tubes, each containing up to 12 fibers. The TIA-598-C standard defines a 12-color sequence for fibers: Blue, Orange, Green, Brown, Slate (Gray), White, Red, Black, Yellow, Violet, Rose (Pink), Aqua (Light Blue). This sequence repeats for each tube. The tubes themselves are also color-coded in a 12-tube standard: Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua. To identify a specific fiber, divide the fiber number by 12 to determine the tube, then locate the fiber within that tube using the 12-color sequence (e.g., Fiber #34 is Violet in the Green tube) .

Splicing Procedure

- Prepare the Splice Tray or MUFF: Open the splice tray and organize the 96 fibers into their respective tubes. Ensure the tray has enough space for all fibers and splice protection sleeves .
- Install Splice Protection Sleeves: Place a sleeve on each fiber before stripping or cleaving to prevent damage during splicing .

- **Strip and Clean Fibers:** Strip the outer 900 µm and inner 250 µm coatings in one step. Clean the bare fiber with isopropyl alcohol to remove debris .
 - **Cleave Fibers:** Use a precision cleaver to cut fibers at a 90° angle. Proper cleaving is critical for low-loss splices .
 - **Insert Fibers into Fusion Splicer:** Place fibers into the V-grooves of the splicer, ensuring correct alignment. Some splicers allow direct connector splicing with pre-polished pigtails .
 - **Perform Fusion Splice:** Select the appropriate fiber type in the splicer menu and start the automated fusion process. The splicer generates an arc to weld the fiber cores together .
 - **Test Splice Quality:** Use an OTDR or insertion loss meter to verify splice integrity. Ensure minimal attenuation and proper alignment .
 - **Organize and Protect Splices:** Place spliced fibers into the splice tray or MUFF, maintaining large bending radii. Secure splice protection sleeves and close the tray .
- Sequence Strategy**
- **Splice by Tube:** Start with the first tube (Blue) and complete all 12 fibers before moving to the next tube. This ensures systematic organization and reduces errors.
 - **Label and Document:** Clearly label each fiber and tube in the tray for future maintenance.
 - **Maintain Fiber Order:** Follow the color-coded sequence strictly to match connectors and network design. By following this tube-first, fiber-second approach, technicians can efficiently splice all 96 fibers while maintaining proper identification, minimizing loss, and ensuring long-term reliability.

Article Content

Reference Guide to Fiber Optic Splicing

The principle of fiber optic splicing is to melt, or join, two optical fibers together end-to-end using heat created with a machine called a

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