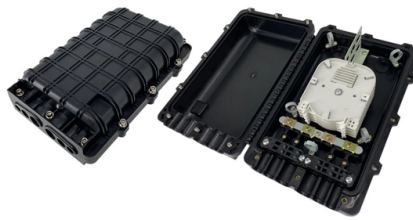


How to connect two optical fibers in a cold-joint splice



AI Overview

Cold splicing connects two optical fibers mechanically using a ferrule and connector body, without heat, providing a quick and simple on-site solution. What is Cold Splicing? Cold splicing, also called mechanical splicing, joins two optical fibers using a connector that aligns the fiber cores precisely without melting them. It is suitable for on-site construction, emergency repairs, or short-term connections, and does not require electricity or fusion equipment. Typical signal loss ranges from 0.1 to 0.3 dB per splice, which is higher than fusion splicing but acceptable for many applications.

Tools and Materials Needed

- Fiber optic stripper to remove protective coatings
- Cleaning materials (isopropyl alcohol, lint-free wipes)
- Precision cleaver to cut fiber ends smoothly
- Mechanical splice connector (ferrule and body)
- Optional index-matching gel to reduce light loss

Step-by-Step Cold Splice Procedure

Prepare the Fiber Ends Strip approximately 3 cm of the outer protective coating from each fiber. Clean the exposed glass carefully to remove dust, oil, or debris, as even small particles can increase signal loss.

Cleave the Fibers Use a precision cleaver to make a flat, perpendicular cut at the end of each fiber. Proper cleaving ensures optimal alignment and minimal attenuation.

Insert Fibers into the Ferrule Place each fiber end into the ferrule of the mechanical splice connector. The ferrule holds the fiber in place and aligns the cores precisely with the other fiber.

Secure the Ferrule in the Connector Body Once the fibers are properly aligned in the ferrule, insert the ferrule into the connector body. The body clamps the ferrule securely, maintaining alignment and protecting the splice.

Optional: Apply Index-Matching Gel Some cold splice connectors include a gel to reduce reflection and light loss at the junction. Apply it according to the manufacturer's instructions.

Test the Connection After assembly, test the splice...

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