Sealing of fiber optic splice boxes

Overview

Fiber Splice Closure Sealing Methods: Pros & Cons ExplainedDiscover the pros and cons of heat-shrink, mechanical, and gel sealing in fiber splice closures.

Key Takeaways

Properly sealing a fiber optic splice box involves cleaning, inserting sealing strips, securing cables, and applying protective sleeves or heat-shrink tubing to ensure environmental protection and fiber integrity.

Step-by-

Step Sealing Procedure1.

Prepare the Splice Closure and Cables

Clean the sealing groove of the splice box with alcohol wipes to remove dust and debris. Strip the outer jacket of the fiber optic cable according to manufacturer guidelines, exposing the loose tubes and strength members. Abrade the cable jacket slightly to ensure a clean surface for sealing.

2.

Insert Sealing Components

Place the sealing strip into the groove of the lower half of the splice closure, ensuring it fits tightly. Wrap any unused fiber ports with sealant, keeping the height slightly above the cross block by 2–3mm. Select sealing rings that match the cable diameter and place them on the cable before insertion.

3.

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Secure the Cable

Insert the cable into the designated entry port of the closure and connect/ground the shield layer if present. Wrap self-adhesive sealing tape between the sealing rings to create a tight seal. Use a hose clamp or provided clamps to secure the cable to the base of the closure, tightening evenly to prevent movement.

4.

Organize and Protect Splices

Place spliced fibers into splice trays, coiling any excess fiber with a minimum diameter of 1 meter to avoid stress. Use fiber optic splice protection sleeves (heat-shrink or mechanical) over each fusion splice to provide mechanical and environmental protection. Heat the sleeve in a fusion splicer oven to shrink it around the splice, forming a rigid, water-resistant seal.

5.

Close and Seal the Splice Box

Align the upper and lower halves of the closure carefully, ensuring no fiber is pinched or twisted. Tighten the closure bolts in a diagonal pattern, starting from the center and moving outward, checking for fiber movement during the process. Wrap the closure with protective plastic if required, especially for buried installations.

6.

Final Checks

Inspect all entry points to ensure they are sealed against dust and moisture. Verify that fibers are properly organized and strain-relieved within the trays. Document the installation and schedule periodic inspections to maintain long-term network reliability.

Following these steps ensures that the fiber optic splice box is waterproof, dustproof, and mechanically secure, maintaining signal integrity and extending the lifespan of the network.

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Article Content

Fiber Splice Closure Sealing Methods: Pros & Cons Explained

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In this article, we will explore the various aspects of fiber optic splice closure, including its importance, types, components, splicing techniques,

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These closures provide both mechanical protection and environmental sealing, ensuring that spliced fibers are not affected by moisture, temperature fluctuations, or physical impact.

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Stacked structure splice tray and independent insulation grounding device make the optical fiber core configuration, expansion and the cable grounding flexible, convenient and safe Splicing tray is

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