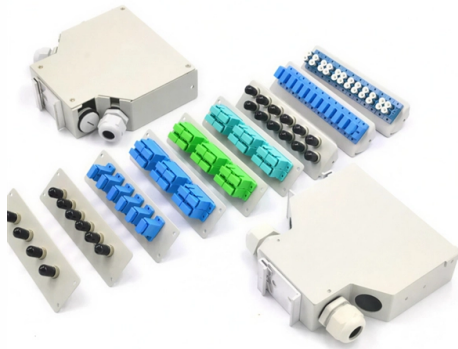


Protection Measures for Optical Cable Lines



Article Overview

Optical cable lines require careful protection through proper installation, handling, environmental safeguards, and adherence to safety standards to ensure network reliability and personnel safety.

Mechanical Protection

Optical cables are sensitive to bending, pulling, and torsion. Cables must never be bent below their minimum bending radius, typically greater than 20 times the cable diameter, to prevent internal fiber breaks and signal loss (). Pulling tension should not exceed the specified limits in the cable datasheet, and swivel pulling grips with compatible lubricants should be used to reduce mechanical stress (). Sharp edges, rocks, or crossing points should be avoided, and figure-8 loops are recommended to prevent twisting during installation ().

Environmental Protection

Cables exposed outdoors or during storage should be protected from UV, moisture, and temperature extremes. Protective sheaths should remain in place until installation, and LSZH (Low Smoke Zero Halogen) cables are particularly sensitive to mechanical stress at high temperatures (). Submerged or submarine cables require specialized standards, but terrestrial cables must also consider soil conditions, water ingress, and potential rodent damage ()....

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