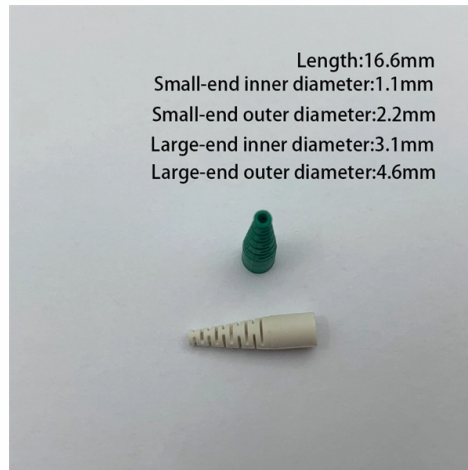


Fiber optic cable inspection shows only jagged edges



Overview

Inspecting & Diagnosing Fiber Optic Connections In pecting & Diagnosing Fi 1. Visual Inspection Scope must be carried out prior to all cable testing. Minor.

Key Takeaways

Jagged edges on a fiber optic end face indicate severe physical defects that can compromise signal transmission and typically require re-polishing or replacement.Understanding Jagged Edges

Jagged edges on a fiber end face are usually the result of improper termination, mechanical damage, or poor polishing during connector preparation . Unlike minor scratches or dust, jagged edges are physical deformations of the ferrule or core, which can prevent proper mating, cause high insertion loss, back reflections, or even damage mating connectors . The critical area is the core zone, where light travels; any jagged or chipped edges here are unacceptable .

Causes

- Improper cleaving or cutting of the fiber before termination
- Excessive force during connector assembly
- Contamination baked onto the end face that was not removed before polishing



- Repeated mating with dirty or damaged connectors Even if the ferrule appears clean, jagged edges indicate that the surface geometry is compromised, which cannot be corrected by cleaning alone .

Inspection and Standards

Fiber end faces should be inspected using a fiber optic microscope at 100–400x magnification for single fibers, or wide-field microscopes for MPO connectors . The IEC 61300-3-35 standard defines acceptable defects in the core and cladding zones. Jagged edges in the core zone fail the standard and are considered major defects .

Corrective Actions

- Re-polishing the connector: If the fiber is terminated in a field connector, re-polishing may restore a smooth end face.
- Replacing the connector or patch cord: If the jagged edges are severe or the fiber is pre-terminated, replacement is often the safest option.
- Avoid using the fiber in its current state: Connecting a fiber with jagged edges can damage other connectors and degrade network performance .

Preventive Measures

- Always inspect before mating connectors.
- Use proper cleaving and polishing tools.
- Follow cleaning procedures with lint-free wipes and isopropanol to remove dust and contaminants before inspection .
- Handle connectors carefully to prevent mechanical damage. In summary, jagged edges are a serious defect that cannot be corrected by cleaning alone. The fiber should be re-polished or replaced to ensure reliable optical performance and compliance with IEC standards.

Article Content

Inspection and Cleaning Procedures for Fiber-Optic Connections

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Connector Inspection Technique
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Cleaning Techniques For Bulkheads and Receptacles
Vendor-Specific Cleaning Techniques
Appendix D - Sample Connectors and Accessories
This inspection technique is done with the use of fiberscopes in order to view the endface. A fiberscope is a customized microscope used in order to inspect optical fiber components. The fiberscope should provide at least 200x total magnification. Specific adapters are needed to properly inspect the endface of most connector types, for example: 1.2...
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Fiber Optics inspection, cleaning and testing

First step is to make an accurate inspection of the ferrule, using a video microscope. Simply connect the fiber optic connector to the

Related Video Reference

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