Fiber stripping and coating

Overview

Stripping is the act of removing the protective polymer coating around optical fiber in preparation for fusion splicing.

Key Takeaways

Fiber stripping is the precise removal of protective coatings from optical fibers, using mechanical, thermal, chemical, or plasma-based methods to expose the bare glass for splicing or connectorization.

Overview of Fiber Stripping

Fiber stripping involves removing the coating or buffer from an optical fiber without damaging the underlying glass. This is essential for splicing, connectorization, or creating fiber Bragg gratings. Stripping can be performed at the fiber end (end stripping) or in the middle of the fiber (window stripping) to expose a short section of bare fiber for specialized applications.

Types of Fiber Coatings

Optical fibers are typically coated with materials such as acrylate, PVC, polyimide, carbon, or gold. Coatings protect the fiber from mechanical stress, moisture, and microbending. Some fibers have multiple layers, including tight buffers (e.g., 900 µm) or larger jackets for cable protection.

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Stripping Methods

Mechanical Stripping: Uses precision blades or hole-based strippers to remove coatings. Tools are often color-coded for different fiber diameters and can handle standard telecommunication fibers (125 µm cladding, 250 µm coating) as well as specialty fibers. Thermal Stripping: Applies controlled heat to soften the coating for removal.

Some tools allow adjustable temperature and time settings, ensuring clean stripping without damaging the fiber. Chemical Stripping: Uses solvents to dissolve the coating. While effective, chemical methods require careful handling and disposal, and are less common in modern automated systems.

Plasma-

Based Stripping: Non-contact method using gliding plasma to remove coatings, including stubborn materials like carbon or polyimide. This method reduces the risk of scratches or microfractures and can strip multiple fibers simultaneously.

Tools and Equipment

Handheld Strippers: Simple mechanical or thermal tools for small-scale or laboratory use. Automated Stripping Units: Provide precise end or window stripping for high-volume production, often with adjustable stripping lengths and no need for chemicals. Fiber Grippers and Guides: Ensure secure handling of the fiber during stripping to prevent microfractures.

Specialized Kits: Include multiple blade sets, fiber guides, and assembly tools for different fiber diameters and coating types.

Key Considerations

Fiber Diameter: Strippers must match the fiber's cladding and coating diameter for clean removal. Coating Material: Different coatings require specific stripping methods; polyimide and carbon coatings are more challenging than standard acrylate. Precision: Avoiding scratches or nicks is critical to maintain optical performance.

Application: End stripping is common for connectorization, while window stripping is used for sensors or gratings. Fiber stripping is a critical step in fiber optic preparation, and selecting the appropriate method and tool ensures high-quality, reliable optical connections while protecting the integrity of the fiber.

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Article Content

Fiber Strippers – tools, mechanical, thermal, chemical,

Fiber strippers are precision tools that reliably and cleanly remove a defined length of coating (often 30–40 mm) from a fiber end so that the bare glass is exposed

Fiber Optic Stripping

> Single Fiber Coating Structure Depending on fiber''s application, different optical fiber

Stripping (fiber)

Stripping is the act of removing the protective polymer coating around optical fiber in preparation for fusion splicing. The splicing process begins by preparing both fiber ends for fusion, which requires

NKT Photonics App notes

FIBER HANDLING, STRIPPING, CLEAVING AND COUPLING This application note addresses general handling of fibers from NKT Photonics, including how to strip the protective coating, how to cleave

Removal of Coatings from Short Fiber in Certain Sections

With several patents for fiber optic stripping, such as Burst™ Technology and the Ring of Fire®, 3SAE''s state-of-the-art non-contact,chemical free coating removal solutions are ideal for the

Jonard TK-375 Fiber Optic Kit; electricians scissors, 3 hole stripper ...

Featuring our ES-1964 Electrician''s Scissors and JIC-375 Three Hole Fiber Optic Stripper in a convenient molded pouch, the TK-375 Fiber Stripper & Scissors Kit is the essential tool kit for any

(PDF) A method to remove optical fibers coating

Although, reactive ion etching and laser machining were demonstrated to remove coating, one of the simplest method for removing the coating was mechanical stripping of the fiber

Laser Stripping | Optek Systems

Laser stripping of optical fiber is the fast and accurate way to remove acrylate and polyimide coatings, in order to access the fiber for additional processing, termination, and packaging. As a contact-free

Laser stripping of optical fibers opens up new applications

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One of the fundamental manufacturing steps in building any fiberoptic component or subassembly lies in the actual stripping of the acrylate or polyimide coating off the optical fiber,

Semiconductor Resist Stripping Process | Stable Plasma and

Resist stripping operates in demanding environments, combining plasma reactions, chemical cleaning and precise chamber control. Maintaining stability throughout this process is complex. The wafer

3SAE High Strength Thermal Stripper

3SAE THERMAL STRIPPER, HIGH STRENGTH Extended Rail The 3SAE Thermal Strippers are compact, easy-to-use optical fiber stripping units designed to thermo-mechanically remove coatings

Fiber Optic Cable Cutting Machines Stripper Tools

The Cable Cutting Machines & Stripper Tools category features a comprehensive selection of manual, semi-automatic, and fully-automated fiber cable tools designed for precision cutting and stripping of

OnePlus Ribbon Cable Stripper Portable Drop Resistant 100-240V

Excellent Aluminum Alloy Material: This fiber optic thermal stripper is made of excellent aluminum alloy material with anodic oxidation treatment, which is warm and delicate in handfeel and exquisite in

OnePlus Fiber Optic Thermal Stripper LED Display Auto Heating ...

Efficient Stripping: This fiber optic thermal stripper can handle the thermal stripping of 48 fibers at once, and can simultaneously strip multiple fibers. Precise Control: The fiber optic stripper adopts widened

Investigation of cladding and coating stripping methods for specialty ...

This study focuses on finding the cladding and coating stripping methods for four recent specialty optical fibers, namely: hard polymer-clad fiber, graded-index plastic optical fiber,

Fiber Strippers – tools, mechanical, thermal, chemical, plasma, coating ...

Fiber strippers are precision tools that remove a coating from a fiber before connectorization or splicing. There are mechanical, thermal and non-contact strippers.

The Complete Guide to Fiber Optic Tools: Splicing, Cleaving, and ...

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3.1 Professional Fiber Optic Strippers A Weunion high-precision stripper is engineered to remove the three distinct layers of a fiber cable: the outer 3mm jacket, the 900µm buffer, and the

Smart Sensor Fiber Optical Thermal Stripper Rechargeable Stripping

[Efficient Multitasking] This fiber optic stripper allows simultaneous stripping of up to 48 bare fibers, significantly boosting productivity for operating personnel working with high density cables. [Precise

Learning the Different Coating Stripping Methods

Learning the Different Coating Stripping Methods The cladding power stripper also referred to as the multimode optical power stripper is designed for amplifier applications and high

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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