

Methods for Removing Optical Cable Coating



Overview

The recently released Fujikura PCS-100 is a novel stripping tool for removing polyimide coating from optical fibers.

Key Takeaways

Optical cable coatings can be removed using mechanical, chemical, thermal, or non-contact methods, each tailored to the fiber type and coating material. Mechanical Stripping

Mechanical stripping involves using precision fiber strippers or blades to physically remove the coating from the fiber. This method is widely used for standard telecommunication fibers with acrylate coatings. Handheld or automated strippers can remove a defined length of coating (typically 30–40 mm) without nicking the glass cladding, and some tools allow mid-span “window stripping” for applications like fiber Bragg gratings. Coaxial and loose tube cable strippers are also available for larger buffer tubes and armored cables, with adjustable blades to prevent fiber damage.

Thermal Stripping



Thermal methods use controlled heat to soften or melt the polymer coating, allowing it to be removed cleanly. High-strength thermal mechanical strippers combine heat with mechanical blades to strip coatings like acrylate down to the 125 µm cladding diameter, which is ideal for fusion splicing . Thermal methods are precise and reduce the risk of mechanical damage.

Chemical Removal

Chemical stripping uses solvents or specialized cleaning agents to dissolve the coating. This is particularly useful for lightly cross-linked acrylate coatings or when preparing fibers filled with water-blocking gels. Solvents must be applied carefully with lint-free wipes to avoid swelling, delamination, or weakening of the fiber. Commonly tested agents include Fiber-Clean™, d'Gel, and HydraSol®, while harsh chemicals like ammonia, bleach, or paint remover should be avoided .

Non-Contact and Laser-Based Methods

Advanced techniques such as laser ablation or super-heated air/nitrogen bursts can remove coatings without physical contact. Laser ablation vaporizes the coating with high precision, while 3SAE's Burst™ Technology uses super-heated air to cleanly burst away acrylate coatings. These methods are ideal for high-strength applications, specialty fibers, or when avoiding mechanical stress is critical .

Best Practices

- Select the method based on coating type and fiber material to prevent damage.
- Avoid soaking fibers in solvents to prevent delamination.
- Use lint-free wipes and minimal solvent when chemical methods are applied.
- Practice proper alignment and controlled pull when using mechanical strippers.
- Ensure safety and ventilation when using thermal or chemical methods. By combining the appropriate technique with careful handling, optical fiber coatings can be removed efficiently while maintaining fiber integrity, preparing the cable for splicing, connectorization, or recoating .

Article Content

Care of Optical Fibers During Splice Preparation

The methods, techniques, and agents used during fiber cleaning and coating removal must be carefully chosen and controlled to

US20230038299A1

Embodiments of the present invention provide improved systems and methods for removing coatings from coated optical fibers (e.g.,

US12571964B2

Embodiments of the present invention provide improved systems and methods for removing coatings from coated optical fibers (e.g.,

Removal of Coatings from Short Fiber in Certain Sections

We provide fiber optic stripping tools for fiber coating removal, including end-stripping and mid-span tools, ideal for

Stripping Techniques For Your Fiber Optic Cable Assembly Process ...

Good fiber optic stripping techniques in your cable assembly process are crucial. See best practices for how to strip

Fiber and Cable Stripper – Types, Uses & Guide

Learn how to use fiber strippers, cable cutting scissors, and armored cable slitters. Discover their applications in fiber

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:

Stripping Optical Fibers utilizing the Fujikura

The recently released Fujikura PCS-100 is a novel stripping tool for removing polyimide coating from optical fibers. Extensive testing

(PDF) A method to remove optical fibers coating

The study demonstrates effective optical fiber coating removal using a 40 W CO₂ laser at 10.6 μm. Optimal scanning speeds range

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

Simple Method for Stripping Polyimide-Coated Optical Fiber

The new method we present here involves preparing a section of polyimide-coated optical fiber to be stripped by

How to Strip And Clean Fiber-Optic Cable | FleetOwner

Whether it is indoor or outdoor fiber-optic (FO) cable, using a step-by-step approach reduces the chance of fiber

Mastering Optical Coating Removal: A Comprehensive Guide

Mastering the process of optical coating removal requires a combination of theoretical knowledge, practical skills, and

A novel method of removing optical fiber coating with hot air stream

We discuss a new non-contact technique of removing optical fiber coating in a continuous and uninterrupted manner with hot air

Optical Fiber Coatings Explained

This article continues FOC's latest series on optical fiber manufacturing processes, providing an overview of coatings

US20150346452A1

A method of removing a tight buffer coating from an optical fiber involves positioning an end section of the optical fiber next to an end

Removing Protective Plastic Coating

Removing Protective Plastic Coating A protective plastic coating protects a variety of our flat optics, such as optical windows, optical

Removing method of primary coating of optical fiber core

Abstract PURPOSE:To remove a primary coating more rapidly and precisely and to obtain a connection part with less connection

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