How to coil the end fiber in a meltblown fiber tray



Overview

Moisten the fibres with alcohol, that will make them stick together and coil nicely. The alcohol will evaporate leaving them clean for the next splicer to pull them out.

Key Takeaways

Coiling meltblown fibers in a tray requires controlling fiber deposition, airflow, and cooling to form uniform loops without tangling.

Understanding Fiber Behavior

Meltblown fibers are extremely fine (1–30 microns) and are formed by extruding molten polymer through fine nozzles while high-velocity air stretches them into microfibers. As fibers exit the die, they are still partially molten and highly sensitive to airflow. The fibers initially move downward as straight segments, but as they travel further from the die, they bend and form loops due to airflow turbulence and velocity differences.

These loops are the basis for coiling in a tray.

Key Factors for Coiling

Airflow Control: The velocity and direction of the air significantly influence fiber motion. High-velocity air near the die (up to 130–160 m/s) causes fibers to stretch and oscillate, forming loops as they cool. Adjusting the airflow or using a suction fan under the tray can help guide fibers into controlled loops.

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Tray Positioning: Place the fiber tray at an optimal distance from the die. Too close, and fibers are too straight; too far, and fibers may tangle excessively. Typical distances allow fibers to bend naturally into loops while still being soft enough to coil without breaking.

Cooling and Solidification: Fibers must cool sufficiently to retain their shape. Using a tray with slight airflow or a warm cooling profile ensures fibers remain pliable long enough to form loops but solidify before excessive entanglement occurs. Deposition Pattern: Move the tray or use a mechanical guide to distribute fibers evenly.

Controlled motion prevents dense clumping and allows fibers to coil in a uniform pattern. Some setups use a wire mesh or perforated tray to allow air to escape and fibers to settle gently. Polymer Properties: The type of polymer (e.g., polypropylene, polyethylene, polyester) affects fiber flexibility and cooling rate.

Softer polymers may require slower deposition or additional support to maintain looped coiling.

Practical Steps

Position the tray under the die at a distance where fibers begin to loop naturally. Adjust airflow and suction to guide fibers into the tray without excessive turbulence. Allow fibers to cool partially while forming loops, ensuring they do not stick together prematurely.

If necessary, gently move or shake the tray to encourage uniform coiling. Once fibers are solidified, they can be compacted or further processed for storage or web formation. By carefully managing airflow, tray distance, cooling, and polymer properties, you can achieve consistent coiling of meltblown fibers in a tray, minimizing tangling and preserving fiber quality for downstream applications.

Article Content

Can I get some advise on cooling splices into the trays?

Moisten the fibres with alcohol, that will make them stick together and coil nicely. The alcohol will evaporate leaving them clean for the next splicer to pull them out.

Introduction of Fiber Splice Tray

With such a simple structure, you may wonder how the fiber splice tray actually works. Here is the brief introduction of its working function: The incoming

M67-111 Metal Splice Trays

Step 1: To secure bufer tubes to the tray, first adjust the crimping tool. Adjust the stop screw so the jaws of the tool are equal to the outer diameter of the bufer tube (Figure 3).

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Fiber Coiling (In a Panel Fiber Management Tray)

Coil the fiber according to the direction shown on the fiber management tray. You are advised to coil the fiber in large circles. The heat shrink tubing at the splicing point cannot be bent. If it is located at the

Fiber Splicing & Winding Tutorial – Step-by-Step Guide

Learn fiber splicing and winding in 5 steps with pro tips on stripping, cleaving, fusion, and sleeve protection. Ensure low-loss, reliable fiber connections.

Methods Of Coiling Optical Fiber After Splicing

After the communication engineers complete the optical fiber splicing in the fiber splice enclosure box, they need to coil the optical fibers one by one so that they cannot have excessive...

Figure 2. Detailed schematic of the melt-blowing die: (a)...

This study reveals that the air flow, fiber whipping, and final fiber diameter are closely related to each other.

How to Install Fiber Splice Tray

The installation procedures of fiber splice tray can be divided into five steps. Step 1 — Rout fibers into splice tray with the help of spiral transportation or fiber furcation tubes.

Fiber Cable Mechanical Splicing Guide Using Fiber Splice Trays

Learn how to perform mechanical fiber cable splicing inside fiber enclosures using fiber splice trays. This step-by-step guide covers fiber preparation, alignment, splicing, protection, and

SCF-ST-002 Splice Trays

1.1 This document describes the installation of optical fiber into the SCF-ST-002 metal splice tray (Figure 1). The splice tray accepts twelve Fibrlok® or CamSpliceTM splices.

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Ruggedized Fiber Patch Cables for Harsh Environments:The Guide for ...

Standard cables fail in the field—IP67, armored, FTTA, and military-grade ruggedized fiber patch cables don''t. Find the right type for your 5G, industrial, or outdoor deployment.

Melt Blown Process

The melt blown process (Fig. 3.7) is a one-step process that converts polymer resin into low diameter fiber nonwoven web or tow (Andreas Desch, February 2011). The melt blown process, and its

Melt Blowing Process, Properties and Application

E. Winding: The melt-blown web is usually wound onto a cardboard core and processed further according to the end-use requirement. The combination of fiber entanglement and fiber-to

Meltblown technology for production of polymeric

This work summarizes the current state of knowledge in the area of meltblown technology for production of polymeric nonwovens with specific attention to utilize

Melt Blowing

The MB procedure depends on Wente''s unique research published in the year 1956, where the nano-sized meltblown fibers with fiber diameters as reduced size as 500 nm were reported . In recent

Nonwoven Processes and Applications (MELT BLOWN NON-WOVEN)

Basically, any fiber-forming polymer that can give an acceptably low-melt viscosity at a suitably processing temperature and can solidify before landing on the collector screen ca be melt blown ...

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