

HOW TO CLEAN FIBER END-FACES

Because cleaning has been part of fiber maintenance for years, most people have their own approaches for cleaning end-faces. However, beware of bad habits. Many have developed in the industry over time. With an evolving base of knowledge, the industry has moved recently towards new best practices.

Canned air

One common approach to cleaning end-faces is to blast them with canned air, either on a connector inside a port. Canned air is only effective on one type of contaminant: large dust particles. Canned air is ineffective not only on oils and residues but also on smaller, charged dust particles. Moreover, canned air will tend to blow large particles around inside ports rather than carefully remove them.

Dry cleaning

Traditionally, dry cleaning is proven to be only partially effective in eliminating contaminants from fiber end-face and connectors. The challenges had been that the dry cleaning materials are either not good enough to uplift the various types of dirt or greasy contaminants over fiber end-faces, or they actually introduce static to the fiber ferrule that attract dust. Technological advancements and better dry cleaning materials introduce a new class of fiber cleaning tools that are cost effective and efficient in cleaning more than 50% of contaminants from fiber. These tools become a perfect complement to the fiber wet cleaning solution to cover the cleaning needs in almost all situations and environments.



The newly developed dry cleaning tool provides an economical and easy way to remove contaminants from fiber end-faces.

Use of solvent

Some contaminants, like greasy and sticky materials, are difficult to uplift without the use of a solvent. Solvents provide multiple benefits, the most important being their ability to dissolve dried contaminants that have adhered onto the end-face. In addition, solvents will envelop particles and debris to effectively lift them from the ferrule surface so that they can be carried away without damaging the end-face. Last, solvents will prevent a static charge from developing during cleaning with a dry wipe or reel that are not optimized for dry cleaning. There are many stories of end-faces becoming statically charged during solvent-free cleanings such that they were strongly attracting static-charged dust floating in the air. The developed charge can be so strong that static dust accumulates on the end-face during the short move from a microscope into port.

Solvent selection

Isopropyl alcohol (IPA) has been used for years in the fiber cabling industry to successfully clean end-faces and continues to find broad use today. But there are solvents specially formulated for fiber end-face cleaning that are far superior to IPA. Further, these custom solvents will dissolve non-ionic compounds such as pulling lube and buffer gel that IPA will not. With a specified lower surface tension, the specialized solvents will do a better job of enveloping debris for removal than IPA. When cleaning inside ports, evaporation rates become important as lingering solvents can become trapped during mating, resulting in a harmful residue. Fiber-specific solvents have tailored evaporation rates that give them time to work yet disappear before mating. Last, IPA is highly hygroscopic, which means it will draw water moisture from the air and onto the end-face. This water mixes with the IPA and leaves a residue if it dries on the end-face. To be safe, leave the IPA in the medicine cabinet.

Cleaning tools

There are a wide variety of tools available to clean end-faces. The most basic tools are wipes and swabs used to clean patch cords and inside ports, respectively. More involved approaches

include mechanical, hand-held tools designed to make easier work of cleaning (e.g. the IBC OneClick cleaners). The most complex devices incorporate blasted solvents or ultrasound in water to achieve the best result. While the more complex systems may achieve better results, they cost far more money. Individuals should determine the best approach for their application and budget. The one key criterion for wiping materials is that they be lint-free.

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