ADD VALUE TO YOUR FIBER COMPONENTS & ASSEMBLIES BY "COLOR CODING" THEM

Color coding (v): the application of permanent, UV-curable inks to the optical fibers in an assembly, enabling the user to quickly and easily identify each fiber as to its type, size, or performance characteristics.

In today's increasingly competitive market for optical fiber components – couplers, DWDMs, patch panels, assemblies and the like – manufacturers are looking for every opportunity to add value to the products they supply to their customers. However, many companies overlook the value of a simple process – **color coding** of optical fiber – that can save their customers time and money.

If you're a component manufacturer, put yourself in the place of your customer. In front of you is a component with several fiber leads. Each fiber may have a different wavelength, core diameter or performance function, but **they all look exactly alike**. What's the operator to do? Too often, he or she will rely on a home-made, haphazard system of identifying each fiber, and perhaps will be required to spend valuable time performing characterization tests. How much more efficient it would be for them if **you** supplied the component with fibers already identified by a distinctly recognizable color coding system.

Fluid Coating Technology (FCT) provides the technology and know-how to make this possible. Based on more than ten years of technical expertise in the fiber industry, the company has developed an affordable process to color-code spools of fiber for use in your component. FCT applies permanent, UV-curable colored inks for quick and easy identification of each fiber in the assembly. For your customer, it means savings in time and money. For you, it's an added value that plays a critical role in ensuring customer satisfaction and building long-term relationships.

The Need for Color Coding

It's a challenge that's as old as the fiber optic industry: the need to distinguish one fiber from the next. Years ago, suppliers of fiber optic cable recognized the value of a quick, reliable method of visual identification. They adopted an industry-standard color coding system that has served the industry well.

Now, component suppliers can take advantage of the same type of solution. This has increasing importance as optical components become more complex, and the industry undergoes a number of trends in the use of fiber components. First, ever-larger numbers of individual fibers are being specified into the components found in today's networks. In addition, with the adoption of technologies such as DWDM, increasingly large numbers of fibers are going into any one outlet.

Lacking any guidance from their component supplier, many customers fall back on their own, "home-made" fix. It may be a colored felt-tip marker run along the length of the fiber. It may be tiny labels or tabs made from adhesive paper. Whatever the system, it's probably a time-consuming process that, in the end, does not provide the professional results they would hope for.

Many component manufacturers simply aren't aware of the ease and effectiveness of the color coding process. In part, that's because major optical fiber suppliers do not provide a color coding service; after all, it's not their core business. Most components use fiber lengths of a meter or less. Big fiber manufacturers simply don't have the flexibility to produce colored fiber in small quantities. And yet the need is there.

Why use the FCT process to color-code fiber?

- Easy to identify fibers
- Color-coding is permanent
- Coding *adds value* to the assemblies you sell

The FCT Solution

It's a need that was recognized by Fluid Coating Technology, the only independent fiber coloring facility in North America.
By designing the technology and investing in the capital equipment needed, FCT is able to supply color coding services in a process that is fast, flexible and cost-effective, even for small quantities.

FCT recognized a number of major advantages to color-coding of fiber:

- Color coding enables you to distinguish between fibers of different types, wavelengths, locations and performance characteristics.
- Color coding is permanent.
- Color coding is easy to understand because it is intuitive – in other words, people are accustomed to using color to identify things. They "get it" immediately.

FCT's unique process for color coding optical fibers is based on decades of industry and engineering experience of the company's founders and technical staff. However, like many highly effective technological processes, it's remarkably simple.

Usually, customers have their fibers shipped directly to FCT's facility in Putnam, Conn. Because FCT does not make fiber and is not aligned with any one manufacturer, customers can control the specifications on the fiber they need. **FCT can color conventional single-mode or multimode fiber as well as the highly specialized fiber** required for some component manufacturers.

With the flexibility of the FCT process, orders can range in size from one reel to 300 or more. Customers can specify from 16 standard colors available in the FCT process.

FCT uses a "rewind process" in which the fiber is first loaded on a pay-off reel. The fiber passes through a coater, where a thin (5 – 10 microns) film of ink is applied. Next, the fiber passes through one or two UV lamps; the light heat energy from the lamps causes a chemical reaction that cures the coating. The fiber passes on to a take-up reel for inspection.

Each Fiber Is Inspected for Quality

Throughout the FCT color coding process, a number of quality assurance steps are taken to ensure the quality and reliability of the color coding process. As orders come in, FCT measures every fiber – top and bottom. The company maintains coating dies in a number of sizes; the coater to be used for a particular order depends on the size of the fiber, ensuring that the correct ink thickness is applied.

Critical quality measurements include the industry-standard MEK (methyl ethyl ketone) rub test. FCT's high standards call for the ink on each fiber to withstand 400 strokes with no ink removal. (This is **twice the durability** recommended by coating manufacturers.) The test is done on a sampling basis.

All coloring techniques used in the FCT process comply with the industry's GR-20 (Telcordia) standards.

For each order, FCT records and maintains a record of all critical process data including:

- inks used & batch number
- rub test results
- machine parameters
- maintenance schedules

The availability of this critical data ensures that results are traceable to each fiber processed through the system.

You Can Rely on FCT

As the only independent fiber coloring house in North America, FCT has invested more than a decade in color coding technology. It is their primary business, and they've enjoyed long-term relationships with all major cable manufacturers. The company's founders have more than 40 years' combined

experience in the fiber optic cable industry, working for major manufacturers in both telecom and datacom markets.

As a small, privately owned company, FCT can offer the fast turn-around and flexible service that is rapidly disappearing from the fiber industry. Call FCT today for answers to your color coding questions.

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FCT customers include:
Cable assembly houses
Coupler manufacturers
Optical switch manufacturers
Optical component manufacturers
What can we do for you?