

TEXTILE INTELLIGENCE

The Global Textile Market With An American Point Of View • Vol. 2, No. 6 • A Formula4 Media Publication

**Ideas, Technologies &
Products That Are
Changing The Business**

INNOVATORS

**Supply Chain, Part 1:
FiberVisions' CoolVisions**

First in a series on how new technologies are developed and brought to market.

Supply Chain

BY KARLA MAGRUDER

Keepin' Cool, Fiber-wise

FiberVisions' CoolVisions Dyeable Polypropylene Fiber



This is the first in a series of articles about how new technologies are developed, adopted and brought through the supply chain. This particular story is about the path of a fiber we all know — polypropylene.

FiberVisions has given new life to this fiber by creating the ability to pressure dye both yarn and fabric made out of CoolVision fiber. From my personal experience trying to re-invigorate a polypropylene product at an outdoor brand, problems abound when fiber has to be solution dyed. One of the biggest problems was the high minimums on this fiber. Let's take a look at FiberVisions' CoolVisions path through the supply chain.

FiberVisions, a Georgia-based company, has been supplying polypropylene to the industrial and hygiene market for years. The company recognized early that an idea brought to them by an independent inventor had the potential to enhance polypropylene's functionality and diversify its business.

After a three-year period of development, the firm turned out CoolVisions, the world's first dyeable polypropylene yarn. As CoolVisions was being developed, FiberVisions had these major goals: to change the dye chemistry, keep the performance characteristics of polypropylene, and remake the fiber.

The resulting 1.5 denier yarn is dyeable, and has a soft hand. It also has all the typical characteristics of polypropylene, such as lightweight, stain resistance, moisture management, and water resistance.

Overcoming Obstacles

As in any developmental process, FiberVisions had some obstacles to overcome. To make CoolVisions, the company found a way to affix dye

sites to the polypropylene fiber. The primary obstacle was getting enough of these dye sites on the fiber to reach the required depth of shade.

Another concern was to end up with a fiber that, once dyed, would be soft and attractive. This was accomplished by designing the inside of the fiber structure. Once these technical issues were resolved, FiberVisions set up partnerships with spinners.

It took the new product to Carolina Mills. This was logical because Carolina had the ability to piece dye fabrics. Additionally, it had the practical experience of spinning fine denier polypropylene ring spun yarn from FiberVisions, on previous underwear programs. It would have been very helpful for the spinning and dyeing to be done by one company, but Carolina has decided to exit the yarn spinning, dyeing and finishing part of their business.

Meanwhile, Pharr Yarns was developing practical experience in running polypropylene fine denier staple yarns. It bought a facility from United Spinners that primarily produced polypropylene. So, fortunately FiberVisions was able to turn to Pharr Yarns as its spinning partner.

As it happened, FiberVisions' target markets were those in which Pharr Yarns was already working. Together they worked through the normal commercialization process of developing crimp levels and cut lengths, as well as modifying finishes.

"We do multiple yarn counts and concentrate on small batches made to customer requirements," says Charlie Hancock of Pharr. "This new polypropylene yarn fit right into our core competency. CoolVisions polypropylene is unique and different because of the finer denier, softer hand, and finishes that are unlike anything Pharr has ever run. It required a lot of trial and error to get up to speed commercially."

Once garments are made they will be tested for washing, shrinkage and color fastness. As the garment is proved out through the entire supply chain, it will be ready to be adopted and launched to retailers.

The two companies worked together to engineer the fiber to fit Pharr Yarn systems for the required yarn types. As with any new development, improvements are expected as the processes are fine tuned.

Taking The Next Step

Once the yarn was ready it was possible to start developments on package dyeing and fabrics. Spectrum Yarns, its package dyeing partner, and two of its mills, Starensier and Deercreek Fabrics, were chosen because they were already working and selling polypropylene fabrics.

Spectrum and FiberVisions put together their partnership about six months ago. Spectrum Yarns has been working on the development of yarn dye procedures. CoolVisions generally dyes the same way as regular polyester; however, the dyestuffs normally used to create a particular color on polyester didn't create the same shade in CoolVisions. Changes in the chemical bath had to be made. Also, different lubricants had to be adapted to improve the knittability of the yarn, for sock applications.

With the above changes, the knittability has improved dramatically. Just as with yarn spinning, this product is ready for the market. Improvements to optimize the process are still in works. Spectrum in coordination with FiberVisions, has developed a colorcard showing the color range available in CoolVision yarns.

Starensier, has always been one of FiberVisions polypropylene customers. It now is working on customer-driven, CoolVisions development.

Peter Lucier of Starensier talked about past problems with polypropylene. Color and dyeability were major issues. As the original performance fabric, it was considered expensive. On top of all this, it couldn't be thrown in the drier.

Now that people are returning to the eco-friendly practice of hang drying clothes, polypropylene is seen as a quick drying fabric. Color is not an issue for the new fiber, so it can be merchandised with the entire

CoolVisions will be marketed to the activewear, golf, ready-to-wear, childrenswear and hosiery markets.

It will be positioned as a branded high-end product providing dyeability, light weight, and a soft hand. The products will be supported with the new CoolVisions hangtags.

line. Other benefits in this new fiber to Starensier are FiberVisions' global capabilities. If the product were only available in the U.S., it would be too limiting. The next step is taking the product overseas.

With everything lining up, Starensier was quick to put the product into work. The first trial was done to show the customer color possibilities; the next trial showed a good step toward recreating the existing fabric; and



the third trial will tighten up the specifications on weight and finishing.

Normally, when recreating a product with known yarn you would need to go through at least two trials. To get close to recreating a product with only three trials, on a brand new product, is exceptional. Lucier says that "FiberVisions folks have been great. They have given solid recommendations on knitting and finishing all along the way. This has been a particularly good and supportive process."

In another example, Steve Lucier of Deercreek explains that his company has been buying polypropylene yarns for more than 29 years. It originally bought polypropylene yarns from Hercules, which morphed over the years into FiberVisions.

"Working on CoolVisions has been a very positive experience," he says. "The FiberVisions team has had a can-do attitude and has been there every step of the way. Their technical people have always been there to answer questions on dyeing and finishing. It's been a good case study on how things should work."

Overcoming the Technical Challenges

For some time, Deercreek had been buying polypropylene from FiberVisions, frequently asking for new colors. Deercreek and FiberVisions starting discussing CoolVisions at Outdoor Retailer Summer Market last year. After the usual non-disclosure agreement was worked out, the two companies began developing a CoolVisions/Lycra blend.

For a first-time trial on a new fiber, they faced some serious difficulties. When Lycra is combined with polypropylene, heat setting is always an issue. On top of this, a new fiber always presents unknown problems and in this case only the fabric construction was a known. The first trial came out as good as possible, for something that is fundamentally new. At this stage Deercreek will go back and run additional trials to make sure the processes are repeatable and that the specifications are what is required.

Deercreek has already shown the fabric to various brands, whose comments have ranged from disbelief that polypropylene could have such a soft hand, to glee that they could now get piece-dyed fabrics in it. In fact, the fabric has already been sent to a garment maker for sample making.

Once garments are made they will be tested for washing, shrinkage and color fastness. As the garment is proved out through the entire supply chain, it will be ready to be adopted and launched to retailers.

CoolVisions will be marketed to the activewear, golf, ready-to-wear, childrenswear and hosiery markets. It will be positioned as a branded high-end product providing dyeability, light weight, and a soft hand. The products will be supported with the new CoolVisions hangtags.

FiberVisions' new CoolVisions fiber will really make a difference to the polypropylene users. This fiber is a vast improvement from what has been in the marketplace and it is now possible to coordinate polypropylene fabrics with the rest of a collection, get a soft hand and have the inherent performance features of polypropylene. This combination makes it a truly unique fiber. ■

A Revolutionary New Fiber



CoolVisions™
dyeable polypropylene

Cool, Smart, Clean and Easy...
The Fiber With Visions

- Lightweight and comfortable
- Cottony soft
- Moisture management
- Durable
- Breathable
- Thermally insulating
- Stain resistant

FiberVisions, one of the world's largest producers of polyolefin staple fibers, is launching a revolutionary new fiber into the apparel market — **CoolVisions™ dyeable polypropylene** — the industry's first disperse dyeable polypropylene for apparel.

Experience the many advantages of **CoolVisions™ dyeable polypropylene**: cottony soft hand, low density, inherent stain resistance, excellent insulation properties, superior moisture transport, chemical inertness, and it's easy care, easy wear.

www.cool-visions.com

For more information,
please contact:

Phyllis Freedman
Sales/Marketing Manager Apparel
phyllis.freedman@fibervisions.com
Tel: (732) 617-7702
Cell: (732) 598-9820

Susan McGreal
Sales/Marketing Manager Apparel
susan.mcgreal@fibervisions.com
Tel: (636) 936-0299
Cell: (636) 578-8999