Performance properties for Prêt-á-Porter

Athletes and outdoor enthusiasts have always expected a lot from the apparel, footwear and equipment they use. Benefits such as moisture management, four-way stretch, lightweightness and breathability have almost become minimum requirements for many. However, demand for technical properties is no longer limited to active and performance wear; it is increasingly common for ready-to-wear producers to incorporate technical elements in their collections. It seems technical fabrics are being used more and more in everyday wear, work wear and even children's wear.

Exploring new applications

One example of this is the use of Dry Touch in non-sport apparel. Dry Touch is a high-tech fabric made from polyester fibre with a channelled structure. According to the company that produces it, Turkish yarn specialist Korteks, the five-channel cross-section filaments increase surface area, offering better moisture management and comfort. In recent years it has been used in a number of sports-related apparel items such as football, rugby and Gaelic football shirts. The company currently supplies teams in the Irish rugby league, three Turkish premier league football teams and two football teams in Germany's second division.

According to business development manager, Murat Sagdic, demand for the fabric has grown rapidly since its launch in 2006. He claims production has tripled each year since it was introduced. And, while it is meeting with success in the sports sector, it is also meeting with approval in other clothing applications including workwear and special pilgrimage apparel.

The company is now working with a well-known designer in Turkey, Arzu Kaprol, who is using the fabric in a wide range of applications including corporate wear for airport ground staff, hotel workers and chefs. Having studied fashion design in Istanbul and Paris, Ms Kaprol launched her first clothing line in 1998 and now has her own workwear collection called A Korporatewear.



Dry Touch has been used in new workwear and pilgrimage apparel items, among other clothing items.

Korteks

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With an interest in both couture and ready-to-wear, Ms Kaprol has been using Dry Touch in a range of work-related items in order to transport sweat away from the body, making the wearer more comfortable and reducing the build-up of bacteria and bad odours.

Furthermore, the Turkish government's ministry for religious affairs recently offered Korteks a contract to supply its Dry Touch fabric for apparel worn by approximately 100,000 Muslim pilgrims travelling from Turkey to Mecca. According to Mr Sagdic, the government issued plain cotton garments in 2008, but this year it decided to incorporate the performance fabric into the garments in order to offer better comfort and breathability.

He adds that, with growing demand from the ready-to-wear segment, Korteks is continually exploring new ways of adding functional properties to its fabric range. Dry Touch is now available with UV protection, flame retardancy, anti-microbial benefits, with a cottonlike feel, with quick dry capabilities and with an effective moisture management system.

"There are new things every month. The company is really supporting the Dry Touch brand so it can move forward even further," says Mr Sagdic. As a relatively new brand, he says innovation is particularly important for Korteks as it is up against some really well-established firms. "You have to be more original, new and different. If you see two brands you buy the one you know, so the newer one has to attract attention," he says. Rather than offering cheaper fabrics, it has decided to focus on quality and to keep adding functionality.

Mr Sagdic also explains that people sometimes turn up their noses about polyester, both in the sport and ready-to-wear fields. The key, he says, is to show customers the fabric first and then, when they recognise the benefits it offers, tell them what it is made from.

High-tech children's clothing

Meanwhile, Austria-based cellulose fibre producer Lenzing has been exploring new end-uses for its Tencel technology. Tencel has excellent moisture and temperature regulation properties. The fibre acts like a natural phase change material (PCM) that can either cool or warm depending on the prevailing conditions.

Dry Tencel fibre releases energy when water vapour is being absorbed to give a feeling of warmth, while damp Tencel provides a cooling effect when water is released from the fibre. According to the company, the fibre's 'natural intelligence' comes down to its nano-structure; submicroscopic channels between the nanofibrils in the fibre that regulate the absorption and release of moisture and maintain the environment at the surface of the body.



Tencel is said to be strong, comfortable and easy-care, important properties for children's apparel.

Lenzing

One new area of application for the company is children's wear, for which it claims Tencel is "perfect". Because children have sensitive skin, the company believes the fibre is particularly suitable for children's clothing because its smooth fibre surface prevents irritation and it is not contaminated with any agricultural chemicals. It is able to absorb 50% more moisture than cotton, which prevents the growth of bacteria.

The firm's Tencel LF fibre for children can be blended with cotton and works particularly well when used in knitwear. Because it is so strong it produces hard-wearing apparel, according to Lenzing. It is also easy-care and offers a more ecological and comfortable approach for many textile applications including denim. "Environmental pollution creates more skin diseases," says Andreas Dorner, Lenzing Textile Fiber's marketing manager. "Dermatalogical studies show that Tencel is better because no chemicals are used for the fibre. And because the fibre is smooth there are no cavities so bacteria cannot build up."

He adds: "It's robust, easy-care, pure and healthy, all of which are important properties for children[']s clothing]." He points out that because children are so active, they tend to sweat a lot, and Tencel helps to manage this, making the wearer more comfortable. According to Mr Dorner, the result is a dry feeling without any build-up of bacteria. Furthermore, the fibre comes from a sustainable source as it is derived

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from wood and the production process is said to be very clean.

Fashion and functionality

Tessitura Taiana Virgilio has been looking at ways of combining fashion and innovation, two elements it believes have always been closely linked. Established in 1933, the firm was one of the first companies to develop stretch wovens, which it did alongside fellow Italian brand Mectex in the 1980s. The family-owned business, which is now run by the founder's grandchildren, produces a wide range of technical fabrics, although it places a strong emphasis on styling. The company believes incorporating high-tech properties into everyday wear offers something different and adds value for the consumer.

Earlier this year, Taiana introduced a new fabric prototype for swimwear that it claims is water-resistant. The company has said that the development, known as Lot'o'Dry, came about after two years of research. As well as winning approval from technical swimwear manufacturers, the firm says the new product is something that "most famous fashion houses all over the world" have requested.

According to the company, the fabric range, through a combination of submillimetric fibres and special treatments, reproduces nature's 'lotus effect', the natural water-resistant and self-cleaning properties found in lotus flowers, most famously, as well as other natural objects such as nasturtium leaves and many insects. Lot'o'Dry fabrics can be used in a range of items including high-end swimwear and trekking jackets for consumers who "want to match technical feature with fashion appeal".

Project manager, Matteo Taiana, explained that the development had come from research carried out in the world of extreme sports. He said: "It forced us to tackle two urgent issues. On the one hand, there was the requirement to offer a swimsuit with a permanent water-resistant effect, whose water-dynamics feature persists, even after regular use. And on the other hand, the fabric needed to have a high level of stretch to support athletes' muscles."

In addition, the company offers several fabric ranges including a beachwear line called Taiana Blu, an outerwear collection called Taiana Vanity and a men's shirting line, Taiana Cult. Each is designed to offer innovation and aesthetic appeal. And this fits with the firm's goal of anticipating the objectives of the "post-modern consumer and his ability to unify and to outwit traditional antithetical concepts". Its marrying of fashion and functionality goes hand-in-hand with its attempt to juxtapose new and vintage, sophisticated and basic, masculine and feminine, and concrete and ethereal elements.



Taiana's Lot'o'Dry fabric is said to be water-resistant and self-cleaning.

Taiana

Its Cult line, for example, offers a great deal of innovation. It offers an aloe vera treatment in its shirting fabrics which is said to offer a refreshing next-to-skin quality, protection from the sun, and give a softer touch to the cotton. Other finishes such as rose and mint are available in other fabric lines. However, according to Mr Taiana, stretch is one of the most important elements of the Cult collection, with around 50% of its shirt fabrics offering good stretch and recovery properties.

Mr Taiana says that the key is to invest time and money in research and to come up with an innovation that is unique and useful to the consumer. Then it can be developed for technical textile applications, or be adapted for more fashion-oriented purposes. "When you reach your goal you transfer the process from a very technical fabric to a fabric you can use everyday," he says.

He also makes it clear that offering added functionality is what sets brands apart, particularly during times of economic decline. "In periods like this, fabric innovation is very important because it gives consumers a reason to buy something," says Mr Taiana. He points out that if the customer already has three similar garments, they are unlikely to buy more of the same kind during an economic downturn. But if manufacturers can offer that little bit extra, without compromising on style, they should be able to attract the consumer's attention and stand out from the competition.

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