NATURAL FIBRES: SILK

How silk began to make an impression on fabric mixes for outdoor apparel

By Shari Shallard

Dinner is over, the Oscars start in an hour. Striding to the front of the restaurant, your lavender gown clings and flows in all the right places. As you enter the evening air, rain starts to fall and you step quickly back inside—the limo can wait. Let your $3,000 silk Gucci dress get wet? Not a chance.

So why are mountaineers, skiers and runners heading out into nature's drizzling, muddy, treacherous conditions, donning apparel made with this most exquisite of materials? Because silk is getting rebranded. This 5,000 year-old textile, coaxed from pampered caterpillars by nimble-fingered artisans, is heading outside. Already appearing as part of glove liners and winter undergarments, silk is now even weaving its way into active outerwear.

Hiking in silk?

On its own, silk is not a logical choice for athletic apparel. Although it's one of nature's strongest fibres, silk loses up to 20% of its strength when wet and can also be weakened by too much sun. It has poor elasticity: a little tug on silk will keep it permanently stretched. Sweat turns silk yellow. And yet, it has appeal that is irresistible to the performance wear industry.

Silk's good absorbency makes it comfortable to wear when it's warm outside, and its low conductivity keeps warm air close to the skin during colder weather. Blended with elastane, silk is better fitting and more comfortable; throw wool into the mix and gentle silk becomes a warm, heavy material.

"We have chosen silk because of its interesting combination of being lightweight yet having warming properties. Silk is a comfortable, soft and noble fibre that is very kind to the skin," says Dagmar Signer, press spokesperson for Schoeller Textiles. The Switzerland-based company's autumn-winter 2009 collection, naturetec, reflects a move towards utilising silk's innate temperature-regulating properties.

Naturetec combines silk with Schoeller's skifans and stretchlight fibres, which already include wool and cotton. For example, the company's own WB-400—a three-layer fabric designed to repel dirt and water while wicking perspiration and moderating temperature—now uses silk in the lining layer, rendering it useful for both winter and summer clothing. "We're also presenting various naturetec items in polyamide or Cordura with a silk content," says Ms Signer. "Due to their temperature-regulating, moisture-transporting properties, they are ideal for comfortable outdoor stretch pants." Pointing out that Schoeller's silk fabrics comply with the bluesign ecological standard, she adds: "Human beings long for a native, honest, natural product. Silk fits this need."

Italy-based Frizza has developed a "natural proposal" of its own, introducing silk into some of its performance materials, according to Marco Rimoldi of Frizza's export department. The new offerings feature fabrics made with natural and ecological fibres, which also include bamboo and corn. While he anticipates seeing these combinations used principally in jackets, pants and raincoats, Mr Rimoldi acknowledges that time will tell how the consumer receives these premium materials. "A new and innovative product," he says, "can't [yield] interesting results before two or three seasons [have passed]."

Another Italian fabric manufacturer, Maglificio Ripa, has a whole variety of products in its Light range that use Dow XLA in combination with other fibres. Dow's polypropylene is the component that will come into contact with the wearer's skin—for wicking away sweat—when the Light fabrics are turned into finished garments. But on the reverse side of the fabric, the manufacturer has begun experimenting with a range of materials, including silk.

Sales manager, Francesco Bonvento, explains



A cycling vest in Schoeller's skifans material. The fabric manufacturer has combined skifans with silk and other natural fibres in its new naturetec collection.

Schoeller

that cotton is working well for base-layer garments and that his company envisages its customers using silk, cashmere or merino in similar applications at the luxury end of the market. Using it with membrane technology to make waterproof jackets is another possibility.

Up close and personal

While silk is finally getting more play outside, its most prolific performance remains where you can't see it. Headquartered in New York, Terramar is built around the philosophy that optimal performance outdoors begins with the right undergarments: in this instance the right undergarments include base layers made of wool, synthetics and silk. Terramar, said to be the world's largest importer of silk knitted underwear, imports its goods from China (and they are not alone; the UN says that more than 50% of the world's silk is produced in China). The company's Thermasilk line comes with EC2 Qwik-Dri Electrostatic Comfort Control technology, which lifts away moisture molecules and breaks them down for rapid evaporation.

Rather than applying chemicals to make this possible, according to Russ Pitman, vice president of sales and marketing, the silk goes through an application whereby the fabric is charged negatively. The wicking ability is then achieved because the actual molecular structure of the silk has been changed. "The result," Mr. Pitman says, "is similar to how iron fillings work with a magnet."

Mr. Pitman's praise for silk reiterates its complexity: "It's lightweight, warm without bulk, and great for layering." Such layers can take the form of everything from long sleeve tops and long pants, to camisoles, to sock and glove liners—even balaclavas and sleeping bag liners. The proportion of silk varies from item to item, but Terramar always treats it with its comfort control technology.

The filament silk Spandex glove liner, for example, brings together 95% filament silk and 5% Spandex to ward off cold and dampness, whereas the balaclava is 100% pure filament 1X1 rib silk. The company's silk/lambswool crew top is made up of 80% spun silk and 20% lambswool thermal knit, providing what the company describes as "the luxurious feel of silk with the itch-free warmth of soft lambswool".

Wool and silk meet each other in Terramar's TheraTX2 line as well, but with the two textiles working side by side rather than as a blend. "TheraTX2 is a two-layer fabric," says Mr Pitman. "The silk is knitted on the inside and the wool on the outside with a layer of warm air trapped in the middle. The two fabrics are tacked together as one."

Although Terramar has not mentioned plans for any imminent silky releases, the company is "always looking at ways to innovate," says Mr Pitman: "It's what keeps you alive. Our philosophy is to design garments from the inside out , [for]what makes sense to the body."

A new metamorphosis

The multifaceted silk is quickly becoming one of the industry's new staples, and its cachet doesn't hurt silk's popularity within manufacturing and sporting communities. "Silk typifies sportive elegance; [it's where] sport and fashion meet each other," says Ms Signer. She predicts that the movement towards increased silk in performance apparel will only continue. "Silk is a natural fibre of simple beauty and valuable natural properties," she says, "it is also very pleasant to wear."