

Clothing that moves seamlessly from city streets to the gym and back is expected to look good and perform as needed. If they are to crossover successfully from active sportswear to everyday wear, technical textiles will need to hide their functional features under urban aesthetics.

Athleisure: stretching the limits of performance fabrics

Be it from an economic or a practical point of view, consumers are finding active sportswear increasingly appealing, and wearing it outside of the gym, as market data in the United States seems to indicate*. Workout clothing now represents 17% of the total apparel market says market research company NPD Group. US consumers spent \$323 billion on apparel, footwear and accessories in 2014. The increase (1% compared to 2013) was driven primarily by higher sales of activewear, athletic performance footwear and bags, the organisation said. "Casual and 'athleisure' have taken on a life of their own. This is no longer a trend – it is now a lifestyle that is too comfortable, for consumers of all ages, for it to go away anytime soon," said Marshal Cohen, chief industry analyst in an NPD Group report. Yoga pants are even eating into denimwear, as sales of jeans in the US fell by 6% to \$16 billion in the 12 months up to June 2015, while yoga pants and other activewear were up by 7% to \$33.6 billion, again according to NPD Group.

Translating these sales trends into product styles, Roberto Ramos, vice-president at Doneger Group, a trend consultancy, says comfort is a common denominator throughout the many facets of athleisure. "We're seeing softer fabrics and looser silhouettes," he pointed out in a presentation at Outdoor Retailer in August 2015.

Coolness and softness

Arguably more popular in ready-to-wear than in performance clothing, wood pulp-derived fibres, such as Tencel, Modal (both made by Austrian company Lenzing) and even bamboo viscose, are gaining ground in active sportswear thanks to their performance properties. The ability of these regenerated cellulose fibres to absorb humidity produces a cooling effect. This function is promoted by Polartec in a new fabric range called Delta, based on a blend of polyester and Tencel. The fleece and knit maker presented the first two Delta fabric references at Outdoor Retailer, both featuring a two-tonal honeycomb pattern that highlighted their dual composition. Delta fabrics are said to wick better than a 100% polyester knit would and dry faster than a pure Tencel fabric. The moisture that remains close to the skin will generate a cooling effect when it evaporates. Fluidity and drape may also be a plus point for these textiles. They are

New Orleans-based Tasc performance has made bamboo viscose its signature fibre, playing up its crossover qualities in fitness and everywhere.

 Tasc performance



(Left) Men's athleisure brand Qôr uses many Polartec fabrics, including a Thermal Pro fleece used to make a blazer.

(Right) Women's cycling brand Velocio, a Polartec Apex award winner, presents a sporty biker-inspired jacket made in Polartec NeoShell.

 Polartec

products that could help wearers stay cool in warm weather and thus reduce the need for air conditioning in office buildings. Merino wool brands such as Ortovox and Icebreaker have chosen wool-Tencel blends for their summer clothing ranges.

A DriRelease innovation prize at the 2015 Outdoor Retailer Summer Market exhibition was awarded for a surfwear top made by Snikwah in a Tencel, polyester and spandex blend. The Tencel provides moisture wicking and soft drape, a company representative said. DriRelease is a performance textile concept developed by Optimizer Brands and based on intimate blends of polyester with various other fibres. The Chicago-based company doesn't actually spin the yarns, but considers itself a "solution provider".

Bamboo viscose is a fibre that lost much of its appeal when consumers and brands discovered that though the plant may be environmentally friendly, transforming it into a fibre can, in certain cases, be far from green. The material is returning in the yogawear sphere and was featured on the Tasc performance booth at the Outdoor Retailer show. This family-owned New Orleans-based active sportswear company has made bamboo viscose its signature fibre, and sources the material from sustainably managed FSC-certified suppliers in China. The fibre is used alone and in blends with organic cotton or merino wool. Spandex is the only other man-made yarn the company uses in its collections. Tasc claims bamboo viscose is antibacterial and UV blocking. "It has natural moisture management and odour control properties," says sales manager Cindy Andrews. These properties make bamboo viscose an ideal athleisure fabric, she says, singling out a women's romper the brand is introducing for spring-summer 2016.

Softness and drapeability, as well as natural origins, are a few of the properties that Flocus is putting forward in the upcoming launch of its fillers, yarns and fabrics made with kapok. The company is exhibiting its products at the Performance Days show in Munich (November 3-4). Used mainly as a filler, kapok has not up till now been seen much in apparel. This is due to its very short fibres that measure 1 to 2 cm. The Shanghai-based company says it has found a way to spin kapok fibres with other fibres to make a yarn suitable for knitting and weaving. To date, Flocus produces yarns containing 20 to 40% kapok. "This makes it possible to produce a fabric with 15 to 30% kapok, enough to obtain a specific hand feel and benefit from the fibre's properties," says chief executive, Jeroen Muijsers. The company currently blends kapok with cotton and Tencel, considered ideal combinations for brands looking for "natural" fibre fabrics. It can also be spun with polyester or polyamide. For thermal insulation, the fibre is blended with PLA (sugarcane or corn-based) or with polyester, to achieve higher loft. The long-term goal is to produce a 100% kapok yarn, but Flocus is not there yet.

The hollow fibre is said to have insulating properties and to absorb some humidity, but it will dry fast. The cellulose fibre (cellulose is said to account for 64% of its make up) resists mould, bacteria, moths and mites. "Tests have shown that it reduces bacteria by 86%, which is a high score for a natural fibre," says Mr Muijsers.

The natural fibre has many positive points from an environmental standpoint. Kapok is not a food crop and requires neither watering nor pesticides. As the fibre is grown in the tree's fruit or flowers, kapok is harvested without cutting down the tree. "It is overall a very clean fibre,"

**See also WSA July/August 2015*



Fleece and flannel fabrics made in Primaloft yarn are in development, as is a filament version of the soft micro polyester.

 Primaloft

says Mr Muijsers, who also mentions its dry and silky hand feel, and extreme lightness. FOCUS documents state that the fibre is lighter than silk and down. Altogether, these properties imply that this new fibre possesses the refined aesthetics, and technical functions, that would suit athleisure end-uses.

With the launch of a continuous filament version of its CoolVisions dyeable polypropylene, FiberVisions is giving the performance fibre a new, more sophisticated twist. Fabrics made with the filament yarn have a satiny lustre and rich slinky drape, unexpected for polypropylene, without sacrificing any of the polymer's usual performance functions (thermal insulation, lightness). CoolVisions filament yarn technology was made possible by Indorama, the Thai fibre producer that acquired the polypropylene maker in 2012, says sales and marketing manager Susan Lynn. She sees the filament yarn as a good option for running or yoga wear, athleisure as well as intimates. "Polypropylene has one of the lightest environmental footprints among synthetics and it can be dyed in the entire Pantone palette without fading," she says. Wash resistance is said to be 2A (AATCC standard). The first fabrics with the continuous filament yarn should be available by late 2015 as Taiwanese fabric manufacturers have begun to develop fabrics with the new filament.

Primaloft insulations are known for their soft and downy hand feel, and the fabrics made with the company's yarn also tend to be quite soft. New items shown in Salt Lake City in August include classic double velours fleece that feel more slippery than conventional fleece. In addition to the particular hand feel, a special finish applied to the yarn makes the fabric dry faster, says Chris Sentementes, business

development manager. They thus combine aesthetics with performance. The micro polyester yarn is often blended with merino wool, one of the more versatile and popular performance fibres. Mr Sentementes says Primaloft will be introducing longer-staple merino wool blends, which would make the fabric even softer and more durable thanks to a higher resistance to pilling. Another new yarn is in the works, which he describes as having "a cleaner, more durable aspect, as well as good level of repellency".

Natural look, synthetic performance

It is widely accepted that athleisure fabrics should fuse the urban or casual aesthetics of natural fibres with the performance features of man-made fibres. A combination of the best of both worlds can be achieved in many ways, from intimate blends to bonding two fabrics together.

Double-face constructions were one of the highlights of the new fabrics presented recently by Calamai, a knitter based in Prato, Italy. These include fleece knits with cotton faces and brushed polyester backs, merging a casual look on the outside with performance properties inside. The company's wide array of bonded

Competing with knits in the fitness and athleisure categories, Burlington promotes the fineness of its four-way stretch woven fabrics.

 Burlington



fabrics boasts contrasting textures and colours, thereby infusing novel aesthetics to the soft-shell-like materials. Some will have a recycled wool face and a high-tech spacer or mesh knit back. "These fabrics look like classic woollens on the outside but they have true sports performances inside," says export manager Bernardo Calamai. "For athleisure end-uses, fabrics should have a nice hand feel and they should also be matte," he says, mentioning a double warp knit that drapes like neoprene. "For crossover uses, either you add texture or you create something that combines a bit of tradition and function," he adds.

Targeting new markets, Cordura fabrics continue to evolve towards softer, lighter-weight styles. The Invista fibre brand asked Portland-based designer Michelle Rose to create silhouettes made in fabrics from the brand's newest Soft Comfort range. "Michelle Rose was inspired by the soft armour of martial arts uniforms," says Cindy McNaul, Invista's global Cordura brand director. "She saw a void in the product offering for the modern outdoor woman and created something that is the clear opposite of the usual 'pink it and shrink it.'" The silhouette featured mostly matte fabrics, and some Cordura-cotton blends. "Fashion is bringing more natural fibres in, while synthetic yarns provide the

performance story," says Ms McNaul.

When looking for materials that crossover from the gym to the office, woven fabrics may have an advantage over knits due to their mechanical properties and their clean and smooth surface. This is a point raised by Belinda Burt, activewear product manager at US-based Burlington Mills: "A woven fabric will be more forgiving than a knitted one, as it will have more structure. A yoga pant made in a woven fabric will be looser, feel more comfortable and look better than a knitted one."

Natural-synthetic blends and cleaner aspects are driving the trend to make active sportswear look better and therefore "perform" technically and aesthetically from work-out to work-day. Developing the fabrics that can seamlessly transition was a leitmotiv at the August Outdoor Retailer show in Salt Lake City. How this trend "transitions" to the European market could be another matter, as Ria Stern, marketing director for Korean fibre producer Hyosung, points out: "In the United States, athleisure generally implies 'dressing up', while in Europe it is associated with 'dressing down', wearing clothing that is more casual and relaxed." This adds yet another level of complexity to a product category that is in itself a challenge for technical textiles and active sportswear brands. 



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