

Like other lovers of the mountains, six-time world mountain running champion, Jonathan Wyatt, wants to carry as little weight as possible.

Suunto

Garment manufacturers and brands continue to shout about their achievements in making fabrics, components and finished products lighter. Product weight is now a mega-trend in the industry.

Why we can't take weight off our minds

Something we've been mentioning for a number of years, the decreasing weight of sports and outdoor clothing, is now being talked about in the industry as a "mega-trend", a major change to which everyone must pay attention now. To have clothes and fabrics as light in weight as possible quickly made sense to consumers, especially as airlines keep lowering the weight limit of our "free" baggage allowance (included in the fare sometimes, but not free). Then, when walkers, climbers, cyclists, runners, hikers and most other sports and outdoor enthusiasts found that they could carry extra warmth and weather protection around to be able to adapt to variable conditions without making their backpacks unmanageably heavy, there was no turning back. Sometimes, they are finding they don't even need a backpack.

Innovations to allow garment brands to tap into this trend have since come thick and fast and continue to be part of ingredient brands' stories for 2012.

Outdoor Tencel

Specialist Italian fabric manufacturer Calamai, for example, has a new range called Airshell, which includes material as light as 32 grammes per square-metre. The new development combines nylon with Tencel fibre from Lenzing

in 70-30 and 80-20 proportions, and, according to Calamai co-owner, Bernardo Calamai, outdoor buyers are impressed with what they have seen of the idea so far. "Tencel has the image of being eco-friendly," he explains, "so that is one advantage. It's a fibre that has mostly been associated with indoor clothing until now, though, and it has taken us to come up with this new idea to show that it can be outdoor too. Many buyers want lightweight fabrics and that's another reason why they like these."

Machines make the difference

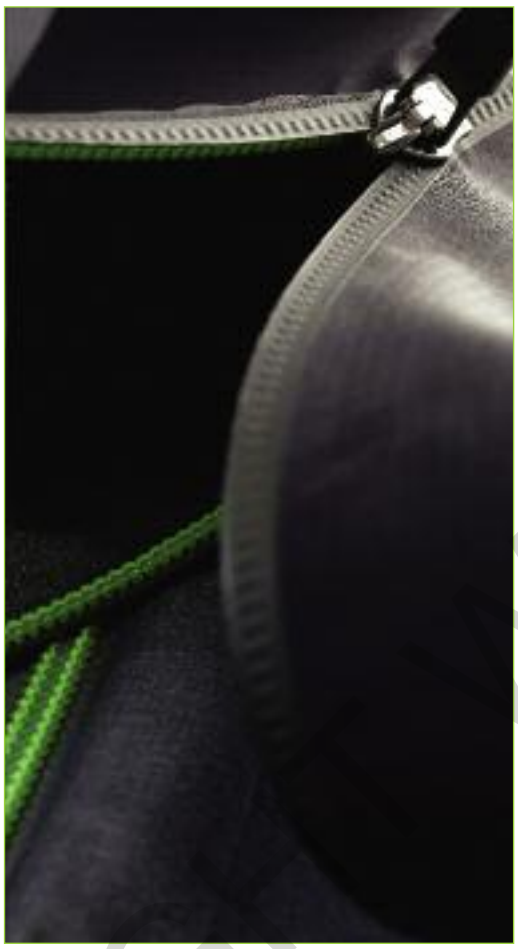
At fellow-Italian manufacturer, circular knit fabric producer Maglificio Ripa, company chairman, Luca Bianco, confirms the lightweight *leitmotiv*, but makes it clear that, in asking for fabrics to be light in weight, customers have no desire to compromise on functionality. For his company, the best way to respond to demands for reduced weight fabrics that are still highly technical has been to invest in a new circular knit machine from Brescia-based Pilotelli, the first machine of its kind to be produced in Italy, Mr Bianco says.

The first example he gives of the technical requirements garment makers are looking for is extra elasticity. Maglificio Ripa has used the machine to launch a new line of fabrics, which Mr Bianco describes as stretchable fabrics with a tulle effect. "We have some as light as 60 grammes per square-metre," he says, "but customers want high levels of elasticity performance, up to 40% elastane in the fibre mix, and those fabrics weigh a bit more. I would say 80 grammes per square-metre would be the lightest we could offer for sports clothing. That product is a fabric that is 88% polypropylene and 12% elastane and garment manufacturers can use it to make things like technical baselayer tops. Heavier fabrics, such as one we have at 140 grammes per square-metre, have 40% elastane and are suited to cycling shorts or running suits."

Until recently, he explains, the fabric for suits such as the ones that sprinters wear would have been much heavier. "The new machines allow the fabric to be lighter," Mr Bianco continues. "The balance between elasticity and strength is better now. The suit that's 140 grammes per square-metre offers the same strength as recent alternatives weighing 240 grammes per square-metre. That development is the fruit of recent research. The challenge is to be able to engineer in a high percentage of elastane content and better machines are the key to finding an answer."

Zip it

The mega-trend is naturally affecting components as well as fabric. Fastening products manufacturer YKK, for example, launched "a new zipper concept" at ispo 2012



YKK can apply the new zip directly onto three-layer fabric, removing the need for stitching and taping and reducing the weight of the finished product.
YKK

at the end of January. Ultra Light Zipper, the self-explanatory name of the new product, has been developed in response to the ongoing lightweight trend in sports and outdoor apparel, the company has made clear. It's seamless, with the zipper chain being directly applied to fabric, helping to decrease the weight of finished garments.

Johnny de Boer, marketing manager for the European high-tech division at YKK, said after ispo: "We have been working on this product to answer our customers' key demand for lighter weight apparel, and we are very happy with garments that are already developed using the Ultra Light Zipper concept by Mammut and Millet. We are hoping to roll out this concept in the market soon."

You hardly notice it

Swiss outdoor brand Mammut put the Felsturm, the jacket it has made with the Ultra Light Zipper, in the spotlight at ispo 2012. It has spoken favourably of being able to send its chosen fabrics to YKK for the specialist zip manufacturer to work on, referring to the system as "one of the big innovations in terms of workmanship" because it is attached directly to the outer material. This approach avoids unnecessary tapes and lots of perforated seams that would require sealing. "You hardly notice it is there," Mammut continues. To save additional

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Mammut's new lightweight Felsturm jacket uses the new Ultra Light Zipper concept from YKK to keep weight down.

Mammut

weight the jacket has been designed with only a half zip at the front. For the mountaineer, this offers the added benefit of making the jacket smaller and easier to compress for packing. There are also front access pit zips for temperature regulation while the front reach sleeves and elastics at the hems are ergonomically tailored to climbing movements.

It says the Felsturm jacket, made from Gore-Tex Active Shell laminate with a lightweight three-layer construction, is ideal for highly aerobic, done-in-a-day activities. It is built for extreme breathability and durability and provides waterproof and windproof protection for comfort in all conditions.

YKK's market manager for the French market, Pascal Lochet, says that if outdoor brands such as Millet and Mammut want to offer their customers high-performing jackets that weigh only 200 grammes, components like the Ultra Light Zipper are important parts of the solution. "All the big brands are waiting for this," he says, "but we have to prepare our production lines and we've only been able to choose about ten brands to work with in the first instance. We've had to be careful. We've not necessarily chosen the biggest, but creative, technical partners who have a history with YKK. They send us their fabric and allow us to work with it, to test resistance to make sure it is strong enough. We need to know this works, and that's why we need partners."

Attention to detail needs to be this high because ingredient brands and finished product manufacturers cannot take the question of weight lightly.

