

Fabric and fibre manufacturers are making increasingly strong connections between elasticity and comfort. Some, however, have discovered more benefits than they first imagined.

Comfort: food for thought

Most consumers in the wealthy world have garments in their wardrobes that they bought based on look, but that they seldom wear because of lack of comfort.

No matter how attractive the design, no matter how 'now' the colour, people will only tolerate discomfort for the shortest time—possibly a single outing.

Fabric manufacturers and the companies whose fibres they use are coming under more pressure than ever to weave comfort into their cloth because apparel brands know this will help win them loyal customers. Now, many in the outdoor and sportswear space are pointing to the elasticity of their products as an important element of comfort.

At high levels of competition, comfort can even make a significant difference to performance. This, at least, is the belief of adidas, and is one of the reasons this athletic brand has been working closely with Dow Fibre Solutions in recent months to incorporate fabric such as XLA into new swimwear collections.

The finished products, explains Dow's marketing manager for the fabric, Bettina Grabher, are aimed at swimmers who spend hours in the pool every day. One of the principal requirements these athletes—and, by extension, adidas—have of the material is shape-retention.

"They want to avoid a 'bag and sag' effect," she explains. "We know this because we carried out detailed studies with swimmers and their coaches. We talked to them about the specialist equipment they use, what they wear for training and what they might put on to boost performance at a competition."

These studies revealed that competitive swimmers are so determined to eliminate any looseness in the fabric—sag in the material can lead to drag in the water—that they have been squeezing themselves into suits so tight that the only way to get out of them after competing is to take a pair of scissors to them and cut them to shreds.

Swimmers, and adidas, like the elasticity of Dow's XLA fibre.

 Dow Fibre Solutions / adidas.





Comfort also comes from knowing you look good, especially for the discerning customers of high-end beachwear brand, Maryan Mehlhorn.

 Maryan Mehlhorn

Lighter and higher

XLA can provide the same level of tightness, compressing an athlete's body so much that she feels lighter and higher in the water, Ms Grabher argues. Dow Fibre Solutions has also built extra chlorine resistance into it, meaning the swimwear collection adidas has put together will retain elasticity and perform for longer.

"We don't treat the fibre to give it this quality, to get it to work in this way for a short time," she continues. "It's like that naturally so it keeps working; it stays almost intact over a very long period. For this reason, we are confident that this base material can offer athletes a huge jump in performance."

Leaving sag and drag aside, any loss of shape could also compromise comfort by causing rubbing and soreness. But looking good is also linked to comfort, albeit psychological or emotional comfort rather than physical.

Dow Fibre Solutions has found this to be more true in some markets than in others. High-end beachwear brand Maryan Mehlhorn found that it was handling large numbers of product returns. The fibre it was using in its swimsuits kept suffering breaks in the places where the garments came into most contact

with sweat and sun lotion.

Breaks in the fibre may not have been visible to the naked eye, but what was obvious was a loss of elasticity that made expensive, once classy swimsuits look unappealing.

After sampling some fabric constructed with XLA, Maryan Mehlhorn is preparing to put a new range made with the Dow fibre into retail now.

Innovation equation

The senior vice-president for product development at Polartec, Doug Lumb, says his company has also been working on elasticity, enhancing this quality in a new range of material for base-layer garments.

The extra comfort this offers will, he argues, give the wearer greater mobility.

Mr Lumb, a real industry veteran, says that in his experience, innovation is always the product of a combination of function and form. And, as the XLA examples show, he agrees that it usually takes two companies to achieve this.

He explains: "We're not garment makers, and it's really up to the garment makers to state the function that's needed. Then it's our role to put that function into the form of the fabric."

One of his favourite examples comes from ARC'teryx. The Canadian outdoor brand was using Gore-Tex membrane in its jackets, but said it wanted still greater breathability, even in laminated stretch-garments. "Its Gamma series came out of that collaboration," Mr Lumb continues, "and we're still working together."

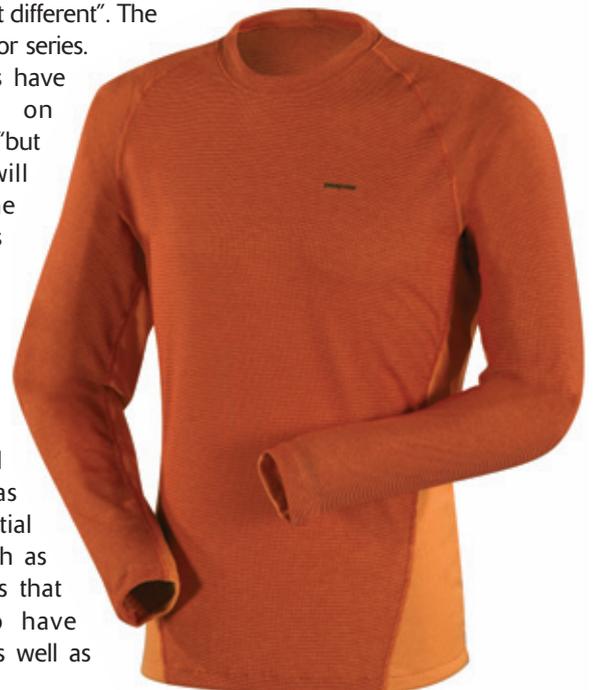
He goes on to explain that Patagonia paid great attention to this development and later told Polartec it had an innovation demand of its own, a lighter series of fabrics, but with the same elasticity and thermal value as its customers had become used to, something that packed easily and looked "a bit different". The result was the Regulator series.

"Lots of companies have since picked up on Regulator," he notes, "but some companies will never pick up on the ideas of others because their egos won't allow them to."

Another Doug Lumb observation is that the companies that successfully combine technical functionality, such as elasticity, with essential practical qualities such as comfort are the ones that know you have to have "people with taste" as well as the "nerds".

A capilene hooded top from Patagonia.

 Patagonia





He continues: "No geek has taste. That's a given. So true innovators know that they must also have touchy, feely people who know what people really will wear."

A gymnast's view

At the Innovation for Extremes Conference at Lancaster University at the end of September, a special award went to a special student.

The conference organisers decided to give a prize of £500 plus a £500 contribution towards a trip to a European trade show next year to students, or people who have graduated in the last three years, with a specialism in performance textiles.

The prize went to Jan-Fahrenheit Betros, a former international gymnast from Sweden, who submitted a design and prototype for a new type of base-layer garment while completing a Masters degree at the University of Derby last academic year.

He said his vision was to make a base-layer garment that was more attractive and more technical, but more simple at the same time. He believes the elasticity he has managed to build into it provides that.

"Today, everything seems to have sealed seams, zippers and so on," he said on receiving the prize. "I wanted something uncomplicated. That's why there are no pockets, because if you have pockets, you're inclined to put something in them and then it sags. I felt we all had

Lycra and other elastanes allow garments to stay in shape for longer. Consumers can comfortably wear these clothes for years, lessening the industry's environmental impact.

 Invista



enough pockets with the ones in our jackets and pants.”

His design has a hood, with a high neck, making it, he explained, a combination of hood, balaclava and neck-warmer. When you move your head, the hood moves with you. It's light, so you could wear it with any jacket and it never, its creator claims, feels bulky.

He has tested it by wearing it to perform some of his own gymnastic routines. Even during a series of backward flips the garment does not pull, he insists.

“I am very happy to have won the prize,” he says. “This is the first garment I've completed on my own.”

Now based back in his native city, Stockholm, he hopes to use the award as a springboard to a career in designing performance apparel.

The curse of the MBAs

Doug Lumb approves of the entrepreneurship Jan Betros has shown so far in his career in the outdoor apparel industry. When the young Swede's project was at an early stage, he wrote to a generic Polartec email address asking for help, hardly daring to expect even a cursory reply. He received not just an answer, but advice and practical support from the senior vice-president for product development himself.

Mr Lumb despairs of the number of companies in the exciting industry he feels he helped build up that are now run by “MBAs”. “All the boards are run by MBAs now,” he says, “and they don't have a clue about fabric.”

He names a prominent athletic footwear brand, saying he knows it well and acknowledging that it makes good-quality running shoes. “But the model it has in place won't work on apparel,” he complains. “They're like the snow-board people. They make a lot of money on their main products, and they say they want high-quality apparel to go with it.

“But they seem to expect to make the same mark-up on apparel as they do on snow-boards or running shoes, which means they can't buy good fabric that would give them the elasticity and all the functionality they're looking for. Our fabric is too expensive. They have the model wrong. Yes, they make a great margin on their sneakers, but that cannot work with apparel.”

To stretch a point

Something that might start to change the minds of these board-members is the potential that fabrics with high levels of elasticity have to enhance a brand's 'green' story.

It's a thought that comes from Dr Bob Kirkwood, vice-president for technology at Invista, who, as the brand-owner of Lycra, has a vested interest in extolling elasticity, but that makes his point no less valid.

Elastanes in general, he points out, are never the main component of any garment. His figures suggest that it accounts for only 2% of all the fibre in use in the textile industry at the moment,

which is practically negligible compared to polyester (46%) and cotton (38%).

Nevertheless, its ability, through its elasticity, to prolong the life of any garment is important. “It gives a garment lasting comfort-fit and shape retention qualities,” Dr Kirkwood says, “which means the consumer will keep it for longer, rather than wear it a couple of times and throw it away. We need to start taking that into account as part of the broader debate about the impact of fibres on the environment.”

To assume that this might make an immediate impact on Mr Lumb's MBA friends may be to stretch the point too far, but they could come around in time. 

