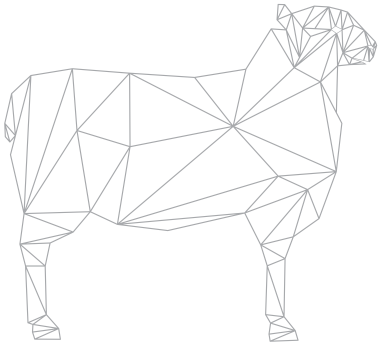
ACTIVE WOOL



For centuries, outdoor adventurers have layered up in wool for its warmth-trapping, water-repelling, sweat-wicking and odour-fighting properties. But this age-old textile continues to evolve. Over the past two decades, wool has re-entered the performance market in the form of base layers and workout apparel, often designed with varying fabric weights to accommodate activity needs for every season.

Wool is increasingly being touted as a performance fibre. Indeed, it does perform well as an inherently thermal-regulating, moisture-wicking, antimicrobial, insulating, water-repellent, breathable, comfortable, durable, biodegradable material.

Many manufacturers of high-end athletic apparel use Merino wool because of its superior performance over conventional synthetic fabrics. Unlike coarser wools, Merino wool is extremely soft and can be worn directly against the skin.

Studies by the Clothing and Textile Sciences Department at New Zealand's University of Otago, a group of significantly fitter than average athletes were monitored during a range of exercises in varying conditions. To determine the extent to which the fabric worn when exercising affected performance, the athletes were tested first wearing Merino garments and subsequently wearing performance garments made of 100% polyester. In an effort to prove the versatility of wool, athletes and garments were tested in cold and hot conditions, 8 and 32°C respectively.

The results were striking. While all the athletes displayed a lower heart rate during periods of exertion wearing Merino compared with polyester in cold conditions, their heart rates in hot weather were lower too. Similarly, the onset of sweating happened much sooner when the polyester garments were worn, although, interestingly, the difference was more pronounced in cold conditions than hot. Lastly, the percentage increase in core body temperature was lower for the test subjects wearing Merino than synthetics, markedly so in hot conditions.

Breathability

One of the attributes of Merino wool breathing life into the outdoor apparel market is its ability to absorb and transfer large quantities of moisture vapour away from the body, meaning wearers of wool garments are less prone to clamminess.

Merino wool can absorb up to 35% of its dry weight in moisture vapour and is reactive to temperature. In hot climates or during strenuous exercise, a Merino wool garment close to the skin actively transfers moisture vapour molecules away from the body, allowing the wearer to keep their cool.

WHAT DOES BREATHABILITY MEAN?

It is the ability to dissipate moisture vapour so that the wearer doesn't feel clammy or uncomfortable. During exercise or in hot climates, the evaporation of moisture from the skin's surface produces a very efficient cooling effect. However, clothing can obstruct this process, resulting in the microclimate above the skin becoming saturated with vapour, which will make individuals clammy unless their clothing can transport this moisture away from the skin.

The chemical bonding within Merino fibre allows fibres to pull moisture vapour into them. This causes the microclimate above the skin to become less saturated with vapour, thereby making the wearer less clammy and it is less likely for the vapour to form sweat droplets on the skin's surface. The Merino wool fabric will release the moisture into the atmosphere, which has lower humidity.

Compared to clothing made from other fibres, Merino wool's process of vapour transfer results in cooler muscles that are able to work at higher intensity levels.

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Odour management

Merino wool's breathability also helps in minimising body odour. Without the fibres' effective dispersal system, the vapour is more likely to condense to form sweat droplets on the skin's surface which can cause unpleasant body odour when the sweat degrades.

Furthermore, the complex chemical structure of Merino wool actually locks away any unpleasant odour molecules from degraded sweat, to be released when the garment is washed, thus Merino wool clothes will remain fresher for longer than cotton or synthetic garments.

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(Photos: courtesy of CORE Merino)

BKB's CORE Merino brand includes a casual range. The neutral colours of the garments adds to their versatility to combine them in any outfit.

The multipurpose and functional CORE Merino sport range provides style and optimum next-to-skin comfort, perfect for both the lifestyle and active-wear markets.

Temperature control

With unique moisture and temperature regulation properties, Merino wool garments protect the wearer from temperature extremes. Merino fibres also have natural crimp, which provides the garment with superior insulation and breathability. These garments offer protection from temperature extremes – keeping you warm when the mercury plummets, yet cool when the temperature is hot.

Easy care and stain resistant

Merino wool stays cleaner for longer and is easy to wash. Unlike synthetic fibres, Merino fibre has a natural pro-

tective outer layer that prevents stains from being absorbed and makes cleaning easier. Even when they do need washing, many garments can now be machine washed and tumble-dried for easy-care convenience.

High UV resistance

Merino wool clothing provides naturally good protection from the sun. As a natural fibre, evolved over thousands of years to protect sheep against the elements, Merino wool absorbs UV radiation, making it a good choice for a wide range of outdoor activities.

Who needs socks anymore? The new adidas Ultra Boost footwear incorporates wool in the upper, enhancing performance by temperature regulation and antimicrobial properties.

Innovation race

Various companies have built entire brands on the concept of wool as a technical material for fitness and performance apparel. Now that the industry has recognised wool as a durable and functional fabric, brands are striving to come up with new ways to use the material and its properties to the fullest. It has become a race to innovate.

At the IWTO congress in China earlier this year, Craig Vanderoef, senior director of running apparel and customisation at adidas, elaborated on wool's history on the pitch of yesteryear and its return today. He said the first athletic apparel was presented by the ancient Olympians who competed naked.

"The ancient games gave us our first insights into performance apparel. We have spent 3 000 years trying to create uniforms that can outperform the human body and more recently we have been trying for six decades to create fabrics that can enhance athletic performance."

The human skin is waterproof and breathable, it regulates temperature and adapts to the environment – that is quite hard to beat in the synthetic realm. "All of this begs the question: Can we outperform nature? The answer is that we can work with nature and natural fibres to enhance an athlete's performance, which is what adidas strives to do. Therefore, adidas uses the performance and style qualities of Merino wool."

He says adidas strives to be the industry leader in innovation and performance. The brand has created a performance running collection using Merino wool. "Our Primeknit short-sleeved T-shirt blends the natural properties of

wool with lightweight, moisture-transfer polyester into beautiful seamless technology engineered to enhance a runner's performance." He says the other benefit added by wool is the inherent value and luxury of the fibre which compels runners and athletes to wear the gear beyond the run. The comfort and performance added to the antimicrobial effects give runners confidence that is hard to beat.

Vanderoef says the most innovative use of wool at adidas has been the addition of a wool upper on the Ultra Boost footwear. "The engineered performance upper that sits atop the energy return of Ultra Boost footwear will feature wool for a special edition in September 2015. The luxurious fit and feel of the shoe is without parallel in the industry and again the performance benefits to the runner are enhanced by wool via temperature regulation and antimicrobial properties. Who needs socks anymore?

"What is best for the athlete of tomorrow? It's hard to say, but wool has been part of sport performance since we have had sport and its tradition of performance will continue."