

Texon's Ecoline insole material is produced in Dongguan, China.

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Rethinking innovation

Texon has been producing materials for the footwear industry ever since it first introduced its revolutionary cellulose insole board more than 70 years ago. The materials it has subsequently developed and the components they have been converted into, continue to play a fundamental part in the comfort, longevity and overall performance of footwear all over the world. The company is now redoubling its efforts to ensure that these various materials also play their part in the sustainability and recyclability of that footwear. To this end, in February it announced its intention to become a zero waste organisation by 2025 and that to achieve this it was aiming to reduce its carbon footprint by 50%, cut the use of virgin materials by 50%, ensure 90% of

its waste is recyclable or reusable, and reduce water usage and waste by 20%.

The manufacture of insoles, box toe puffs and heel counters is not an area of the footwear industry that one would naturally associate with too much innovation. However, the work currently being carried out by Texon might begin to make us change our minds with regard to this less than glamorous but nevertheless crucial area of footwear manufacture. Boyd Mulder, appointed Group Director for Marketing, Product Development and Innovation earlier this year, explains why.

"Today's consumers are more concerned than ever about where their products come from and how they've been made. Many want full disclosure about the materials used in the products they buy and their impact on the environment. As this trend increases,

more and more companies are looking to minimise their use of non-sustainable plastics. In line with this, we're constantly looking for new ways to deliver exceptionally high-performance materials using methods underpinned by a sustainable approach to research, development and production, which create a feel-good factor for our customers, end-consumers and the planet as a whole." This need to make new advances that can have a positive impact on the planet is the driving force that now keeps the team at Texon innovating.

To achieve its ultimate goal of zero waste, Texon is striving to reduce its use of virgin materials by 50%. That means scaling down the use of less recyclable substances such as synthetic latex and, instead, focusing on taking less from the planet by



Texon Halo contains a minimum of 50% recycled content.

finding pioneering new solutions that allow it to optimise what it already has. This makes it necessary to look at existing products to see if they can be re-engineered to include more bio-based or recycled content. This commitment also involves taking a close look at production processes to make sure nothing goes to waste and to ensure materials are recyclable at the end of their useful life. To help it achieve this goal, the company is now embedding the five Rs of sustainability into everything it does: Rethink, Reduce, Reuse, Recycle and Recover.

RETHINKING RECYCLING

Texon has in fact had a long history of creating materials utilising recycled content, typical items being blister packs and water bottles. It was the first to use recycled cellulose fibres in 1992 and in 1998 introduced Texon Reform, the world's first 100% recyclable and 'closed-loop' non-woven heel counter material. There have been countless other innovations since then, culminating most recently with Texon Halo, which was launched in 2019. Used to create heel counters, it contains a minimum of 50% recycled content and, although primarily designed for use in athletic and sports shoes, it is also suitable for providing structural support in most types of footwear. This high-performance, powder moulded reinforcement material is said to have excellent

sustainability and to deliver distinct and measurable performance advantages. It is also said to be stiffer than competitor products at an equivalent thickness making it ideal for lighter shoes while still providing a well fitting and supportive heel. In addition, it is also supplied as a net zero counter material, meaning there is no material waste to store or handle and so offers manufacturers a further saving on costs.

Boyd Mulder feels that recycled materials are the perfect solution when it comes to creating sustainable performance footwear, but only if perceptions can be changed around what perfect looks like. He cites, for example, the fact that recycled materials are not always uniform in appearance, that textures may vary and colours are rarely consistent. What does matter, however, is the ability to deliver the same level of quality and performance in ever more sustainable ways. "Texon's focus is always on balancing sustainability with performance and if we can turn waste materials into something new without compromising performance, we will. If the final component is able to offer the same level of performance with the added benefit of being sustainable and consumers can see no visible difference, it makes even more sense for us prioritise sustainability over aesthetics for our structural components."

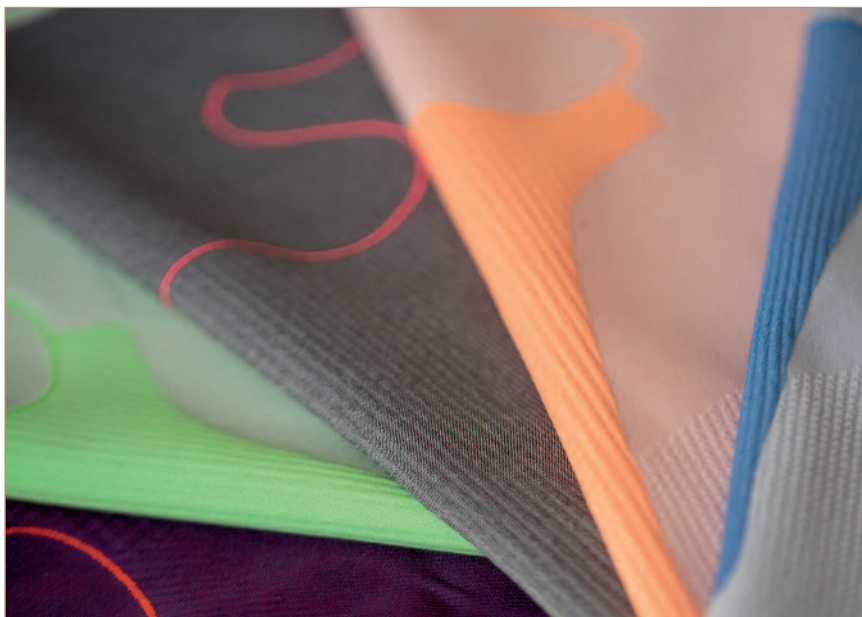
RE-ENGINEERING PRODUCTS

Texon is also actively reviewing its existing product portfolio to see if there are materials that can be re-engineered to make them more sustainable. Two examples are Sportflex and Runek. Sportflex is an extruded material that is used to make soft, flexible, box toe puffs for lightweight and deconstructed athletic footwear. The original Sportflex material contained up to 4% recycled content by total product weight. Keeping in line with customers' sustainability requirements, the company's technical team has been working on a second-generation Sportflex solution that contains more recycled content while, at the same time, retaining the same resilience and shape retention. Runek is another box toe puff product designed to blend with knitted and light synthetic uppers to provide a seamless look and feel. Similar redevelopment work is also taking place with this product. Further information on both of these projects will soon be available but Texon has said that new iterations of the products will now contain a minimum of 50% sustainable input.

Last year, in response to consumer demand for products that are made



Texon materials are typically used to create insoles, box toe puffs and heel counters.



Texon ProWeave offers the option to use fully recycled yarns and materials without compromising functionality or aesthetics.

name brands. The main way products are transported is via ocean shipping with as little air and road freight as possible. Over the years, this decision has influenced where Texon's sites are located, typically close to shipping routes, close to its raw materials supply base or close to its major customers. With many of these customers' factories located in the south east Asia, the company uses freight forwarders that offer a take back service from Europe to Asia. This means containers do not have to make needless empty journeys. Furthermore, this enables it to take advantage of competitive rates. Ocean freight is considerably more cost-effective because, unlike airfreight which is costed by weight, it is costed by volume.

In addition, Texon has started to provide closed loop solutions so that products can be delivered to customers and waste materials returned to be re-used in the next production cycle, so creating a true zero waste cycle. A product at the heart of this take back scheme is its Ecoline, an innovative insole material that combines strength and sustainability. Ideal for all types of footwear, it uses fusion-bonding technology to reduce both the consumption of water and the use of chemicals in order to create a highly sustainable material. Containing 85% recycled PET it can be supplied in net form, with customers able to return any solid waste for conversion into rPET staple fibres.

The company's approach to sustainability and its ambition of becoming a zero waste business by 2025 is truly multi-faceted and Boyd Mulder sums it up by saying that, "Every day, millions of people step out to play, train, compete and explore wearing garments and footwear based on our materials. Sustainability has always driven how we think, what we produce, and who we work with. It is in our DNA and today is no different. Imagine if we can get to the point where all performance footwear is made using materials and components created from things we'd otherwise throw away and, at the same time, is incredibly easy to recycle? Here at Texon, we're trying really hard to make this a reality. Not least because every year, hundreds of millions of pairs of shoes are thrown into landfill sites." 🌱

from more sustainable alternatives, the company made a significant investment in a brand new pulper for its cellulose-based products. This state-of-the-art machine now enables fibres to be recycled from more sources than ever before, even so far as being able to process napkins and toilet roll ends. Because the latter come from factory cut-offs, they would normally simply go to waste. Instead, they are now being used to create products such as Texon Stride, an innovative cellulose insole material.

Texon has also made strides into the manufacturing of speciality woven materials and products for footwear, clothing and accessories. Texon ProWeave combines the company's technical expertise in structural components with its patented weaving and surface finishing technologies to provide customers with unique functionalities and aesthetic design freedom. With this product, customers have the option to use fully recycled yarns and materials without any compromise on functionality or aesthetics, while reducing material waste in the weaving process to practically zero—it is a win-win in marketing terms as far as environmentally conscious consumers are concerned.

Alongside the use of more recycled content, Texon is actively exploring the possibilities that are opened up by plant-based materials and looking to

develop new biopolymer materials made up of plant scraps such as corn stover, the inedible part that would otherwise go to waste. However, Boyd Mulder says that "Increased demand for plant-based consumer products comes with its own challenges. As the global population increases, it's vital that enough land is prioritised for food. At Texon, our end-to-end approach means that sustainability is factored into every part of the development process. Because we only use the parts of the plant that are left behind, there's no competition with the food chain and we're not taking up valuable land that could otherwise be used to grow food. Plus we are also careful to avoid using waste from GMO food sources."

GOING BEYOND RECYCLING

As well as rethinking what it bases its products on, Texon has also been reviewing the natural resources it uses to produce its materials and how it then transports them to its customers. One aspect of this work is focused on water consumption. The company says that at its Mockmuhl site in Germany, where it produces cellulose products such as Texon Vogue and Texon Stride, it is now able to return water back to its source in an even cleaner state than when it was taken out.

In terms of product distribution, sustainable transport has long been a key area of focus, not least because many customers are big household