



Sustainable Composites says its material can be used for accessories, shoes, homeware and seating.

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New possibility for recycling leather scraps



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Leather scraps have often been used to manufacture new leather products. A newcomer to the sector, however, believes it has found a way to create a new material entirely from the fibres in the leather offcuts. The leather industry is right to be wary when a company launches a product that seems to claim the same properties of leather, but which is not made from whole hides. But Sustainable Composites, a US company that creates new material from leather waste, insists it does not want to compete with leather, but rather be part of the chain, partnering tanneries and leathergoods manufacturers to turn their waste into a value-added product.

Its founders, Tom Tymon and Frank Fox, had previously worked in an engineering company that dealt with composites and waste and an opportunity arose to research uses for leather's leftovers. "We had technology and manufacturing capability that seemed to be relevant and we worked on that project for a number of years, we never made a product that was viable commercially," says Mr Tymon of the initial research period. But they believed there could be

A US company has coined a way of turning tanneries' waste into a new material without bonding with polymers; interested parties include Timberland, which is using it for a footwear collection.

interest in a product if they could find a way to boost its properties, so the pair left their former business and set up a small lab to work on prototypes. Once these had progressed, they scaled up to their current premises, spending "millions of dollars" on R&D in the process. "We have five patents, so it took a lot of invention, not only with the chemistry but how to develop the material and the mechanics. It was an intense and long process to get us where we are now."

He says the material, called Enspire Leather, contains about the same leather fibre content as traditional leather, and the only fibre is the leather fibre that's derived from the waste material, although processing materials and performance-enhancing materials are added. Compared with bonded leather, where the leather-derived component is ground to a fine size and bonded with a polymer, here mechanical and chemical processes have been developed to extract the leather fibres to preserve the microstructure. "Our material is not exactly the same as traditional hide leather, it has some differences," he admits. "We are continuing to work on the technology and look at advanced materials that will expand the market options."

Timberland tie-up

The Timberland connection was formed when a partner introduced the material to VF's outdoor division, who were 'intrigued'. "They saw something that was unique and they thought it had potential," says Frank. At the time, however, was not deemed to have sufficient properties. Timberland gave the desired specifications and asked them to match it, and the companies have now been working together for around three years.

Timberland's creative director, Christopher Raeburn, is known for choosing recycled materials in his collections, and he discussed the recycled leather project with *World Leather* when we caught up with him in summer 2019. He told us that one of the reasons for looking at this was to reduce waste, as with recycled leather on a roll the yield is 97%. And unlike the Flyleather bonded product that Nike has used, it will not be backed with, or glued together with, plastics: "That would be counterintuitive, I need to be quite clear on that," he told us.

The material has initially been used for a men's casual footwear collection but there is scope for expanding it to other collections, and has been touted as helping the group to meet its circularity targets. At the end of 2019, VF Corp published targets for materials as part of its sustainability report, Made for Change. By said by 2030, all its top nine materials (90% of materials-related carbon emissions) will originate from regenerative, responsibly sourced renewable or recycled sources.

Timberland's target is to have a "net-positive impact on nature" by 2030, and a large part of its strategy will be to source all natural materials from regenerative agriculture. Products will also be designed for circularity (recyclable), and be made using materials that would have otherwise gone to waste, such as plastic bottles, scrap wool and – where Enspire comes in – scrap leather.

Football off-cuts

For Sustainable Composites, its major source of leather waste is the Wilson Football Factory in Ohio, as well as some tanneries and other leathergoods manufacturers. While the focus is currently the US, the plan is to scale up, and it is in discussion with some European leathergoods companies about supplying the material to them – at which point a European processing facility might be necessary. Footwear companies are seen as its major clientele, making up around half of the potential market; furniture manufacturers could make up about 12%, it suggests, with trials at two US companies under way, while leathergoods prototypes are under construction in other facilities.

But what about tanners who might say the marketing of

Founders Frank Fox and Tom Tymon have transferred their technical know-how.



Enspire Leather could be seen as painting real leather as wasteful, or that it wants to take their market share? Mr Tymon says they have a good relationship with some tanners in the US; it collects their dry waste, paying for the freight. "There's a strong belief within the tanning community that leather has durability and luxury attributes that haven't been reproduced by any faux leather or leather alternatives, and that while the market might not be as strong as it had been, there's a belief that when marketed properly, it can return to the levels it used to. We believe our product is part of that, we fit into tanneries' stories because we take their waste that would go to landfill or incineration and we convert it into a value-added product."

The product does have some other limitations at the moment, such as colour. "There are limits on what we can do depending on the original material, but we can put it through a process and dye it to another colour," he says, with darks colours working better. A paint finish can be added but "that's not going to be applicable to all markets". Using the word leather could cause problems in places like Italy and Brazil where the word can only be associated with real leather, but the company hasn't addressed this matter yet.

As the company moves from R&D into commercial sphere, Mr Tymon believes the future is bright. "There are huge quantities of leather waste that's created," he adds, "and we believe we'll be able to have a significant impact on converting that into a product that's going to be desirable." 🌱