

RISE TO THE CHALLENGE: AITEX AND TEX-PETREL

Textile technology institute Aitex and footwear component manufacturer Tex-Petrel, both from the footwear-manufacturing province of Alicante in Spain, have combined to produce a new shoe-lining material, Gootex. Based on bamboo fibre, the new product offers high levels of antimicrobial properties, plus a range of other benefits.

Bamboo lining for sweet-smelling shoes

Spanish textile technology institute Aitex announced earlier this year that it has worked with footwear components manufacturer Tex-Petrel to develop a new product called Gootex Bamboo. The product, made from bamboo fibre, has natural antimicrobial and anti-odour properties, to which the two partners have added aromatherapy and moisturising functionality through microcapsule technology. Aitex believes Gootex will work best as a footwear lining material and says microcapsule technology in textiles is an area with "huge potential". Bamboo fibre is an attractive raw material for Gootex, it continues, because it is biodegradable and comes from renewable resources. "It's completely respectful of the environment," Aitex says.

Microcapsule technology involves taking tiny particles of any substance footwear brands might want (substances with antibacterial, anti-odour, hydrating, aromatherapy oils and other properties) to use and wrapping them in a different type of material to isolate them and protect them from the outside environment. Friction between the shoe and the foot activates these substances, which also means that their properties will only be consumed when the wearer has the shoes on.

Examples of the substances available initially in Gootex lining material include aloe vera, which hydrates the skin. In terms of odour control, scents inside some versions of the product include strawberry, apple, rose, lavender, menthol and eucalyptus.

Over time, shoes can take on unpleasant odour from our feet.

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The Gootex project was developed with financial support from the European Commission and from the Valencian regional government.

Close contact

Tex-Petrel director Alfonso Morant took on the role of project manager for his company for the Gootex initiative. For him, the technically enhanced footwear lining material that the partners have begun to make is a good way to add value to finished footwear. "The lining is the part of the shoe that has the highest level of contact with the skin," he says, "so endowing shoe lining with these additional properties brings added value to the footwear."

According to the two organisations, unpleasant smelling feet and shoes are "a bit more common than you might think". Dead skin flakes off the foot every day, releasing bacteria that are the cause of odour. This is part of being human, but because most of us wear shoes most days, our footwear can acquire an unpleasant aroma as a result. Heat and moisture inside the shoe can exacerbate the problem, as can certain types of shoe upper and lining material.

In helping consumers overcome the problem of foot and shoe odour, Gootex respects humanity as well as nature. Both are qualities that can help footwear brands improve their

sales pitch, the project partners have said. Aitex quotes a recent survey by a European textile retail association that found that 44% of today's consumers are willing to pay more for products that respect society and the environment. Using raw materials that "are in harmony" with nature is an important part of meeting this need, the Alicante-based organisation says. "Bamboo is undoubtedly one of the best sustainable resources in the world," it continues, "with a growth rate of a metre or more each year; it's a world-record holder in terms of quick-growing plants. The fibres are ready for processing after four or five years, in contrast to other trees, which can take between 25 and 70 years to reach maturity."

No-pollution push

For textiles, the parts of the plant that matter are the fibre and starch (processed by a process of hydrolisis and alkanisation of the plant's leaves) it produces. All the processes used to make bamboo for Gootex and to make the material itself are non-polluting, Aitex insists. The organisation said that another quality that attracted it and Tex-Petrel to bamboo is its natural resistance to pests, which means it grows easily without the use of pesticide. It explains: "Studies have shown that this is because the

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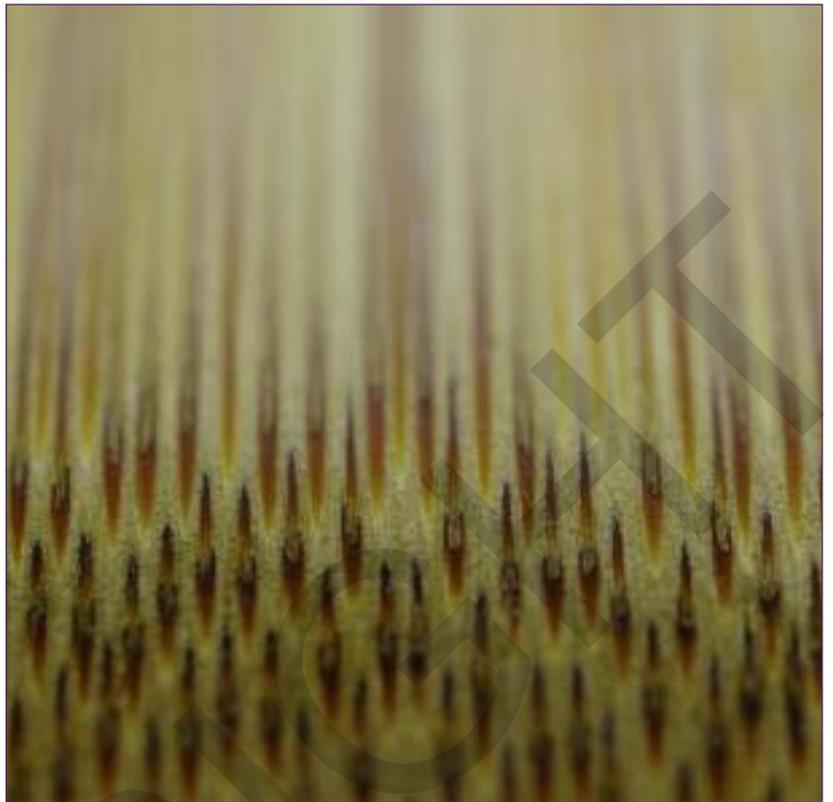
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plant contains a bacteriostatic bioagent, which is known as kun."

Also appealing were the findings of a study by the Japanese Textile Association, that even after 50 washes, textiles made from bamboo fibre still retain this natural antimicrobial property, enough to eliminate 70% of bacteria cultivated in the textile itself. The fibre also has inherent moisture management capabilities, thanks to the presence of tiny holes and a non-parallel micro-structure. "It can absorb and discharge sweat in an instant," Aitex claims. Furthermore, the analysis it carried out with Tex-Petrel showed fabric woven from the fibre to have a softness close to that of viscose, as well as high levels of durability, stability, abrasion resistance and tensile strength, and a good capacity for mercerisation. "Yarns and fabrics produced from fibres of this kind tick all the boxes for first rate in terms of quality," Aitex says. Fabrics made from it show good levels of moisture absorption, a soft hand and good dyeability.

"From our results, what we can say is that Gootex is an innovative fabric that is perfectly suited to footwear linings," Aitex says in conclusion, adding that its functional properties promise to bring benefits to the makers and wearers of any shoe that contains the material. 



Aitex and Tex-Petrel have worked together to create Gootex from bamboo fibre. The two Spanish organisations say the product is ideal for footwear lining.

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