

A game changer in the leather industry

As sustainability is becoming increasingly important in all industries, how can practices that have been built through centuries of tradition keep up? **Silvateam** brings its innovative Ecotan technology to the market and, as the first bio-circular leather, with it a shift towards a greener future.

Silvateam has developed an innovative tanning technology to obtain high-performance leathers that are 100% free of metals, glutaraldehyde and other potentially hazardous substances, while they are high in biogenic carbon. The company aims to produce finished articles in harmony with human health and the environment. These formulations start from nature, using plant-based tannins that are combined with biopolymers and man-made tannins. The hides can be finished in many ways to make a wide range of leather goods, from footwear to bags, to applications in furniture and automotive.

Ecotan strives to provide a concrete response to environmental protection through a bio-circular system that does not produce waste. This technology revolves around the upcycling of leather items at the end of their life cycle, as well as leather scraps and cuttings, turning them into biofertilizers for organic farming through a hydrolysis process.

The ground-breaking Ecotan concept was developed thanks to Silvateam's partnership with Fertilizzanti Certaldo, a leading Italian producer of fertilizers from organic matrices. In this way, the leather industry can close the loop by returning unused materials to become natural useful resources, such as nitrogen and biocarbon – nutrients that increase agricultural yield and, consequently, promote the growth of the livestock from which the raw hides come.

While the upcycling of leather waste is already available, take-back programmes to recycle spent products will understandably take longer time, as a coordinated effort is needed to create a supply chain in line with the principles of a full circular economy.

The next challenges for Ecotan will be pursuing and fine-tuning new recycling models such as the biodegradability and compostability of leathers – some articles produced by Ecotan partners with Ecotan technology are already tested accordingly.

Returning to nature

In order to facilitate the transition to the eco-design, in partnership with Italian designers, a new shoe concept has been developed: the first 100% shreddable sneaker “fit for rebirth”. Designed in layers, this zero-waste shoe is totally free of fillers, plastic or other synthetic polymers, thus proving to be a safe, clean and healthy solution for consumers and the environment. At the end of its life, the product returns to nature in form of biofertilizer, thus transforming waste in a valuable ingredient.

Ecotan is based on scientific evidence and metrics. All statements and claims made by the company are supported by certifications. Silvateam was the first in the tannin production sector to certify a ‘deforestation free’ supply chain, according to the PEFC standards; responsibly sourcing wood from chestnut and quebracho forests used as a source of raw material. PEFC certification is a seal of attention and care for the environment, the protection of the woods and the communities that are part of it. It is no coincidence that Silvateam has been operating in compliance with the forest law within the same territories for almost 170 years, and those woods continue to flourish.

Before being launched on the market, all Ecotan leathers developed with its tannery partners are tested by its recycling specialist, who certifies their suitability to become a fertiliser. And again, the different tanning formulations applied to finished leather have been certified by means of the radiocarbon carbon-14 method measuring their bio-based content, which reached 96% of biological origin (leaving only 4% of fossil material) with a short-term goal of achieving 100%.

Ecotan technology makes it possible to reduce the percentage of tanning agents, dyes and fatliquors in residual processing baths through the recycling of water for the following pickling stage,

resulting in a low COD value and high wastewater biodegradability.

Thanks to the use of natural performing tannins, the leathers are tear-resistant, with high light and heat fastness, while at the same time presenting excellent feel and offering healthy, hypoallergenic benefits for the body. In addition to positively influencing the hygroscopic properties of leather, tannins safeguard the balance of bacterial flora, creating an unfavourable environment for the proliferation of bacteria causing odours. This is why Ecotan leathers are particularly suitable for insoles and shoe linings, or any other application where objects come into direct contact with skin, such as mobile phone covers, bags, car seats and more.

Ecotan has revolutionised the classic business model of the world of leather, shifting from a product-focused mentality to a sustainable and environmentally integrated process mentality. Working closely with brands and more than 40 tanneries to develop new products, Ecotan transforms its partners into strategic players to drive innovation in the market.

This evolution is expressed through initiatives such as the Ecotan Tour, an educational roadshow that has already reached various markets, including Korea, China, Argentina, Brazil, Mexico, the US, France, Portugal and, of course, Italy. The event brings together tanneries, fashion manufacturers, designers, product developers, scholars and students who are concerned with sustainability and interested in a more value-driven fashion approach.

The Ecotan Tour therefore represents an opportunity to create moments of encounter and collaboration between all players in the leather supply chain, helping to spread and promote sustainable innovation and a more environmentally friendly lifestyle. ●

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