

Major step forward for environmentally friendly leather tanning

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Chrome-based processes in leather tanning have long been a concern in terms of their potential environmental impact. Chrome is used in more than 90 percent of leather tanning operations worldwide, producing stretchable leather which is excellent for use in handbags and garments.

Under certain conditions, however, trivalent chromium, the form most commonly used in tanning, can oxidise into hexavalent chromium, which is carcinogenic and can harm humans and animals when it leaches into the water supply.

The EU-funded project TILEATHER ('Ecofriendly Leather Tanned with Titanium') was aimed at developing a new chrome-free leather

tanning method that would reduce the potential risk to humans and the environment.

TILEATHER researchers, led by Spain's Technological Institute for Footwear and Related Industries (INESCOP), hit upon the idea of using [titanium](#) as an alternative to chrome. Like chrome, titanium produces leather that is light and strong, but unlike chrome, it is biocompatible with human tissues - innocuous, hypoallergenic and biodegradable.

Project partners say the widespread use of chromium tanning processes is particularly worrying due to the large volumes of residual liquid and [solid waste](#) produced.

The new process eliminates chromium completely, while producing leather with similar properties.

Having established and tested the new process, the project team quickly moved on to full-scale manufacturing, marketing their titanium-tanned leather under the trade name SANOTAN and supplying producers with a variety of footwear products.

TILEATHER has already produced and sold more than two million square feet of SANOTAN leather, enough to manufacture more than a million pairs of shoes.

Over two years, project partners say they managed to eliminate 25.5 tonnes of [chromium](#) compounds from their tanning processes while reducing CO2 emissions by 35 tonnes.

TILEATHER researchers also carried out successful tests to ensure SANOTAN leather complies with EU Ecolabel requirements, an environmental standard that could help boost its appeal in the marketplace.

The project's budget was EUR 786 918 with the EU providing 50 percent of the funding. TILEATHER ran from 2010 to 2012.

More information: www.tileather.eu

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