

LEATHER GOES GREEN

Sustainable consumption has become a major concern, and consumers are looking for greater transparency about how their clothing and accessories are made. Many fashion labels and designers are now adopting an environmentally-friendly approach to the creative process: Using natural or local raw materials, less polluting production methods, recycling, etc. Leather was already subject to strict controls throughout the production

process, but is taking things to a new level with synthetic tanning emerging as an alternative to tanning with chrome. Innovation, upcycling of waste products, recycling and biodegradable leather; the tanneries exhibiting at Première Vision Leather are not short on solutions to help to reduce their environmental footprint. This greening of the industry is not always visible to the end client, but it represents real progress for the environment.



Environment: the French example

Ecology is fully incorporated into the tanning industry and forms an integral part of the drive for quality that is a core concern for professionals, suppliers and buyers alike, and a focus for their investments.

Ensuring that French leather is innocuous and safe is one of the priorities of the country's tanneries. The application of best practices, both at the purchasing and the manufacturing stage, ensures the respect of European standards on chemical substances (**REACH**).

In addition, checks are conducted by specialist organisations, including **CTC – the worldwide leader in Quality Assurance and Sustainability for Footwear, Leather Goods and Apparel**.

Companies are subject to French and European legislation on classified facilities for the protection of the environment (ICPE) and are audited by regional state inspectors (**DREAL**) as well as the Ministry for Work and Employment and various other government units.

The methods and technology used by the **Tannerie Mégisserie française** guarantee

respect for the natural environment. Waste is sorted, upcycled and sometimes eliminated. Water is also protected thanks to a system of separate sewer systems and suitable processing plants, while aqueous formulae have been developed to reduce emissions of organic solvents in order to safeguard air quality.

There is continual investment to improve the industrial process and machinery in order to reduce even further the environmental impact of tanning.

Thanks to these ongoing efforts, a number of tanneries have been awarded the “**sustainable and responsible business**” label, by the **National Centre for Industrial Risks**.

Similarly it should not be forgotten that the tanning industry is primarily a recycling activity, adding value to the millions of tons of skins generated each day by the slaughter of animals destined to be eaten as meat. What would happen to this waste if it were not recycled by the tanning industry?



Managing waste and effluent:

Interview with Arnaud Colombier of the Colombier tannery at Saint Junien, France

P.V.L.: How do you deal with solid waste and effluent?

A.C.: Each stage in the leather production process requires specific management of waste and effluent.

Solid waste (bits of skin) which is the residue of the preparatory stages can be composted or burned, which is what we do at **Colombier** or they are sent to Class II landfill site, according to what is available where the tanneries are located. The organic pollution (mainly nitrogen) is processed by the municipal wastewater treatment works, such as the one in St Junien where our tannery is located.

Effluents from the tanning process transit via a de-chroming plant before they feed into the municipal network. The chrome is extracted from the water and gathered in the form of a sludge which is dried into plates.

These are then analysed by industrial waste companies to verify their compatibility with

the waste removal chains. Providing they are within approved limits they are sent to class 2 landfill sites, just like household waste.

Lastly, colorants used to dye the skins undergo a biological process to break them down in the municipal water treatment plants, as is the case in Saint Junien. When finishing products are sprayed onto the leather, the air is extracted and drawn through a filter.

P.V.L.: Which official bodies supervise this process?

A.C.: In France, the **DREAL** (Regional directorate for the environment, land development and housing) monitors the application of pollution standards and visits tanneries to audit whether production processes are being correctly applied.

In addition, the **water companies** often send service providers to companies to analyse effluents (looking for dangerous substances).



The benchmark standard: Gruppo Dani shows the way to zero impact

Gruppo Dani is well aware of the ecological challenges facing the industry in general and the tannery sector in particular, and has placed the environment at the heart of its development strategy. After more than twenty years of working to protect the environment, its efforts are now bearing fruit. With its long list of labels and certifications, the company has an undeniable head start for taking on its competitors and satisfying its customers.

Since its creation in 1950, the Italian tannery has sought to find the best way to satisfy its customers from the automobile, upholstery, footwear and leathers goods sectors. But not only does the company seek to constantly improve its product design, it has also revised its production methods to make them as environmentally-friendly as possible. Having already earned **ISO 9001** certification in 1997 and **ISO TS 16949**: 2009 (automobile division)

in 2009, thanks to the “**leather from Italy – full cycle**” label, this family company with more than 600 employees received **ISO 14067** certification in 2011 for the small size of its carbon footprint throughout its production chain. It earned Germany’s

Blue Angel award and was then rewarded with the **Innovation Prize**, which was presented by the Italian President in person. It has to be said that the company spares no efforts to improve its manufacturing conditions, investing 1.5% of each year’s turnover in research & development (208 million euros in 2013 of which 80% came from export earnings). And the company is not lacking in ambition, with projects such as the development of a sulphur-free hair-removal process, tanning methods based on enzymes or polysaccharides and new solvent-free finishes. A programme worthy of such unrivalled expertise!



Traceability

From the arrival of the raw hides at the tannery to the delivery of the finished leathers, traceability is a guarantee of quality but it requires precise and rigorous organisation.

So raw hides are given a number as soon as they arrive, explains by François Halty, traceability manager for **Tannerie Rémy Carriat**. « *Each batch is given a physical code, made up of the supplier code and the arrival number. 98% of our skins come from four or five suppliers, all from Europe, which gives us real guarantees about the place where the animals were slaughtered* ».

At the end of the chain, the skins are measured and labelled with their batch number. Should there be any complaints or doubts, it is a simple task to find out where they came from.



© Marie Carriat



Marking made using a hammer by the staff in charge of sorting the raw materials. ©Tannerie Rémy Carriat



Label placed at the end of the production cycle, when the skin is measured; showing the batch number, the number of the skin within its batch, the article and the colour. © Tannerie Rémy Carriat

Focus on three types of tanning and their environmental impact

Chrome 3 vs. chrome 6: an explanation of mineral tanning

The chrome sulphate used for Chrome 3 tanning, which can be found as a trace element in nature, is not a dangerous substance. Chrome 6, which is carcinogenic by inhalation, toxic by ingestion and allergenic by cutaneous contact, is never used in tanneries nor found in their effluents. It can however form on the leather through the oxidation of chrome 3, in the same way as iron can rust, and the presence of chrome 6 in leather that is in contact with the skin may cause cutaneous allergies. This is one of the reasons why the tanning industry is so closely regulated, to ensure that all leather respects the currently applicable standards.

Vegetable tanning: Leather with a good nature

Although for a long time overshadowed by the unrivalled softness of chrome tanning, these days vegetable-tanned leather is growing in

popularity with consumers and designers who are increasingly aware of environmental issues. This has been seen by the Belgian tannery, **Masure**, which is specialised in the vegetable tanning of bovine hides.

Since ancestral times, it has been known that immersing hides in baths of plant-based substances rendered them rot-resistant. Today, for all the progress and discoveries that have been made, this is still the basic technique. *“Around one quarter of our vegetable-tanned leather receives a finish which can further the ecological argument in favour of vegetable-tanning”*, explains Philippe Alfonsi, managing director of **Fortier Beaulieu** for whom the production of vegetable-tanned bovine leather, representing some 80% of its global activity, makes it the leading French specialist in the field with its BCS subsidiary. Vegetable tanning represents 70% of the production from **Arnal**, which is used on a number of markets, particularly orthopaedic articles, for which the harmlessness and hypoallergenic properties of the leather are vital.





© Fortier Beaulieu

Vegetable tanned leather is stiffer, firmer and very strong, holds its shape well and absorbs humidity better, making it an ideal material for protective clothing, moulded objects, saddlery, hunting and horse riding accessories, the inner and outer soles of shoes, belts and luggage.

Where it once took up to two years to tan certain hides, the soaking times have been considerably reduced: it now takes just 24 – 48 hours to achieve a similar result. The use of powders with concentrated extracts of quebracho and mimosa rather than traditional oak bark accelerates the effect of the tannin. As does the use of rotating drums rather than pits and vats. But its light sensitivity, which renders it more and more beautiful over time with an almost living patina, means that the colour possibilities of vegetable-tanned leather are limited. It was also noted that: *“it would be unimaginable to revert to only using vegetable tanning. Although the technique has improved, it is still delicate and complicated to perform, and the fervour for this tanning*

technique is tempered by the industrial reality.” Which undoubtedly contributes to its value.

Synthetic tanning, another alternative

Having been alerted, sometimes erroneously, to the dangers of chrome as a leather tanning agent, labels are now calling for chrome-free leather, to remove any risk – and any potential controversy – for consumers.

Just like with vegetable tanning, synthetic tanning has the great advantage of not using heavy metals. Thanks to synthetic polymers, such as those offered by **Kemia Tau**, it is possible to obtain leathers that can be used for all usual applications: leather goods, clothing, and shoes – particularly for children – upholstery and even automobiles. All finishes are possible, from smooth to suede or nubuck. *“The finishing products we offer are also chrome-free”*, says the company representative. The ultimate objective is to produce chrome-free leather, such as those that **Lider Deri** is already making.

So what is the difference in the finish between vegetable tanning, chrome tanning and synthetic tanning?

While the leathers obtained from vegetable or synthetic tanning cannot be used in as many ways as chrome tanned leather, performance is improving. *“Our chrome-free lamb leather is less resistant to UV light at the moment,”* acknowledges **Conceria Tre Emme**. *“Our synthetic tanned double-sided leather is slightly less supple than the chrome tanned equivalent and the leathers shrink by about 10%,”* **Selina Leather** tells us.

“We are currently limiting the range of colours of our chrome-free lamb leather to just basic colours,” explains **Nuova Icos**. *“The colours are slightly less bright and metal-free articles are 10 to 20% more expensive than those using chrome”*, says **Lider Deri**. However, synthetic tanning allows white leather to be produced. This is a considerable development and means that it is possible to produce colours that have never previously been achievable with vegetable tanned leather. A solution that should generate a lot of interest!



Synthetic tanned lamb and baby calf from © Nuova Icos



Double sided lamb leather from synthetic tanning by © Selina Leather



Synthetic tanning makes it possible to produce a milky white colour without painting the skin. Sample from © Lider Deri

Upcycling or the art of adding value to all aspects of the skin

Pig split leather: a second skin

Ecology also means waste recovery and reconversion. An example of this is the lower layer that is left when thick bovine hides are split which is used.

This is the famous split leather.

It can be dyed or varnished on the split side, or buffed to give a suede finish, and is used for making shoes and bags, as a lining or an outer material. "Split leather is 50 – 60% cheaper than full grain leather," a specialist from the Italian company, **Opéra** tells us.

An important selling point!



*Dyed bovine flesh split and suede
from the © Opéra*



Bovine flank leather from © Tanneries Pechdo

Bovine flank, leather that is not left to one side!

In bovine leather, the butt is rightly known as the noblest part of the hide. But nevertheless, the other parts of the animal are not devoid of interest. The flanks in particular have very attractive qualities for certain uses, starting with their price, up to 50% cheaper than butt leather.

Flanks are no more than three metres in length and around thirty centimetres wide which, of course, limits their use. But its softness, strength and very specific texture makes it an ideal material for technical, gardening or sports gloves and for yokes on clothing. After more than fifty years specialising in this market, **Tanneries Pechdo** have perfected a finish that allows items to be machine washed. An additional quality which is further proof of the real strengths of flank leather.

Biodegradable leather: going back to nature

The production process is an essential part of the ecological approach. But the disposal of products is equally as vital, if they are not to pollute the environment once they have reached the end of their useful life. Biodegradability is the goal in this area, where nature is in charge of breaking down and assimilating harmless waste. A goal that some tanneries have succeeded in finding.

Founded in Holland in 1906 to make vegetable tanned leather for soles, **Rompa Leder** converted to chrome tanning in the 1950s to produce leather for uppers. But it never lost its original ecological bent. With a short supply chain for its bovine hides, which come from antibiotic-free herds certified by Vitelco, fully-filtered vegetable or mineral tanning, faultless hide traceability and even a biogas plant to supply the company's electricity needs, it proudly boasts a practically 100% ecological process.

Its biodegradable leather, Piuro, perfectly symbolises this commitment: Its biodegradable leather is the perfect illustration of this commitment: produced using vegetable-tanned leathers, without the use of heavy metals, acids or formaldehydes and finished with natural wax, this leather decomposes into compost in less than 20 days when it is buried underground, through the action of micro-organisms. This bull leather, designed for footwear and leather goods, is available in four colours (red, blue, taupe and natural) and in a nappa, nubuck or aniline finish.

"Some colours, such as white, are still difficult to produce. But the leather can be covered with a biodegradable pigment, given a grain or be slightly less supple depending on the desired result. We are currently working with two luxury groups who are using this product for leather goods," the company tells us proudly. A discovery which should not be hidden!



The bull leather from the tannery is fully biodegraded after being buried for less than one year © Rompa Leder



Biodegradable cow leather © Rompa Leder

Leather Smart Conversation :

Première Vision is launching the debate on responsibility and innovation in the leather sector

With its Smart Creation programme launched in September 2015 at the Paris shows, Première Vision's objective is to showcase a new generation of values and responsible approaches in order to create new strategic perspectives and new competitive advantages for the creative fashion sector.



Smart Création Première Vision is a platform for communication and learning that seeks to promote the responsible creation and production approaches of the exhibitors at Première Vision's shows. It offers new impetus and a range of measures that enable players from the sector to reach creative, innovative and responsible companies, materials and products.

Among the various tools and media used to communicate and stimulate discussions around responsible values, Première Vision regularly organises Smart Conversations, key sound bites of information and dialogue with the industry.

On 22nd June 2016, at the Four Seasons in Florence, the first **Leather Smart Conversation** was held, entirely dedicated to leather. It was deliberately organised outside of the dates of the Première Vision shows, and offered a new way to look at and communicate the values of responsible innovation in premium Italian and international leather making. Experts and entrepreneurs furthered their knowledge and held discussions in the heart of Tuscany, a region specialised in leather.

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Next edition:

The Première Vision Paris show, Parc des Expositions Paris Nord Villepinte from 7-9 February 2017

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