



Leading tanneries prove integral link in the automotive chain

It's not easy to cope with the demands of car makers, which request high quality, flexibility and large volumes at competitive costs, but tanners work hard to stay one step ahead by using innovative techniques and developing more effective working methods.

As part of the Tannery of the Year awards programme, *World Leather* visits nominated tanneries from each of the global regions to share stories of best practice and social responsibility. For the 2014 awards we visited four tanneries providing leather for the top auto manufacturers and which focus on innovation, sustainability and quality.

Portugal's Couro Azul has been supplying the sector since 1993, when it won a contract to supply steering wheel leather to Opel, and now 70% of its turnover comes from the automotive industry. It recently extended its beamhouse and is set to open a cutting plant this year to meet demand: the company's sales increased by 8% in 2011 and by 40% in 2012.

"In steering wheels and gear sticks, there is increasing use of leather because leather adds value, much more value than the automotive companies have to pay tanners," explains its CEO, Pedro Carvalho. "It's a small investment for them and they get a lot in return. As a result, leather is becoming more and more popular, even in medium-range cars. An important volume of

these cars now have some leather in their interiors, even if it's split [leather]."

Steering wheel leather accounts for between 65% and 70% of Couro Azul's automotive output, most of it going to customers as complete cut kits. Around 47% of this heads to Romania, an important centre for automotive production in Europe.

One innovation in the cutting plant is a machine that allows it to group cut pieces based on elasticity, which helps it to meet customers' demands on elongation. "This is based on our knowledge of our leather and of how each steering wheel works, knowledge we have built up from previous projects," says Antonio Carvalho, the tannery's technical director and Pedro's cousin. "It benefits us because we want to have fewer rejections. If the different pieces in one kit have different elongations, it can be harder for a tier-one worker to make the kit fit."

The company processes 1,600 hides per day, and there are plans to acquire more tanning drums and push production up to 2,000 hides per day. Between 90% and 95% of the hides Couro



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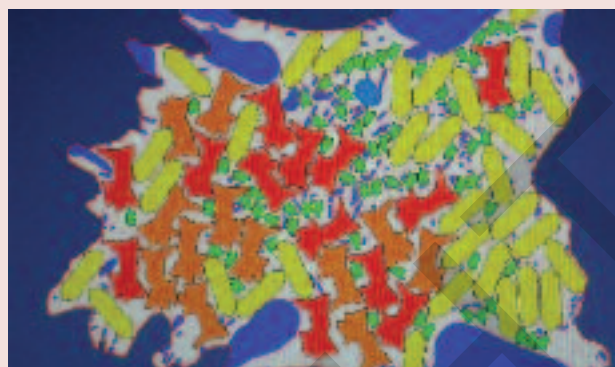
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*Within the cutting plant at **Couro Azul**, the leather is scanned, and the cutting arrangements for the steering wheel components optimised by computer. This takes into account both the pre-marked defects identified in the tannery, and the direction of minimum stretch as required in the final component.*

Azul sources are from Europe, mainly from Spain, where it has a dozen or more regular suppliers. Mr Carvalho feels the leather industry should have global guidelines for farmers, abattoirs and hide traders to ensure animals are well looked after to generate hides of the best possible quality. "Tanners can almost perform miracles by transforming by-products into luxury material," he says, "but there are limits."

The company is hoping to extend its business to include seat covers, an area which it says should show labels so customers are aware of the content. "For a long time, shoes have had labels showing which parts are leather and which parts are synthetic," says Pedro. "We should use the same principles in car seats." He thinks at least 70% of the upholstery should be real leather if it is claimed to be so, as the sides are often made of a polyurethane alternative, and questions how Alcantara can have come to be presented in catalogues as a more expensive extra. "There are still lots of opportunities to improve leather," he adds, "improvements supported by the chemicals industry, such as natural, soft-touch leathers that meet the technical requirements of automotive original equipment manufacturers (OEMs)."

Flexibility and quality

German tannery Wollsdorf Leder – Tannery of the Year winner 2014 – also classes steering wheel leather as its main income stream, and agrees hide quality is all important. "Quality starts in the abattoir," says its managing director, Andreas Kindermann. "We are working with our suppliers to increase knowledge of the best trimming practice and to make sure we can stick to the breeds and the origins that we know will give us the grain quality and the yield we need."



At **Wollsdorf Leder**, all of the leathers designated for steering wheels are dry split for complete control of the thickness. Softening is provided by combinations of through-feed vibration staking and dry milling both in the pre-finished state and within finishing. The components are then cut by an oscillating cutting blade.

The tannery uses bull hides from Alpine breeds such as the fleckvieh, but raw material from other origins can be part of the mix too. It supplies finished leather pieces to cover airbags and other components. Of the 2,300 hides it processes per day, 70% is destined for automotive clients such as BMW, Mercedes, Audi and Jaguar, while 20% is used for furniture and 10% for aviation upholstery.

Mr Kindermann says the only way for an automotive tanner to increase market share is to offer value for money, meeting car makers' strict requirements for reliability, quality and durability. "Each of our consignments is of the same high quality, meets all of customers' technical requirements, and is on time. The price of steering wheel leather per square-metre is attractive, but the demands are very high and difficult to meet consistently. You have to have a lot of flexibility."

Flexibility means keeping a high stock of crust to be able to cope with customers asking for extra sets of leather at relatively short notice. Mr Kindermann, who comes from an automotive background, found this a little difficult at first. "I used to think 'no inventory', because I had always believed that, as well as costing money, inventory disguises problems. But our customers change their orders, often without giving us much notice, and to be able to cope we have to keep a high stock of crust, material of the right quality that will give us the right yield."

Tracing the hides

Traceability of hides is one of JBS's strengths, the Brazilian meatpacking and tanning group, whose Itumbiara facility was nominated in the Tannery of the Year Americas section. The world's largest tanning group (it owns 25 tanneries employing



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10,000 people) is also part of a giant meatpacking group, from which it sources all its hides. An alpha-numeric code is stamped on to hides at raw stage, and goes all the way through to finished leather, meaning customers can know the slaughterhouse, date of slaughter and the farms from which they originate.

The leather division also has an environmental team responsible for a series of initiatives including one to produce organic compost using residues from the tanning process: nitrogen and calcium from liming baths are fed into an irrigation system for surrounding farmland.

Of the 220,000 hides Itumbiara processes per month, 60% are made into automotive leathers, a sector which is growing in Brazil. Quality counts for car makers, as well as technique: commercial manager Luis Costa says demand for chrome-free leather is increasing. Between 10% and 15% of the crust Itumbiara produces is chrome-free; a year ago the proportion was under 5%.

Chrome-free benefits

This is a trend that will grow, says Hermann Winkler, CEO of Zhejiang Mingxin Automotive Leather Company, a 100,000 square-metre tannery to the south-west of Shanghai. "Chrome-free leather has less tendency to shrink," he explains. "There are strict regulations on this from OEMs. In a laboratory, chrome-tanned leather may come out of some tests better, but in reality, in a car with the humidity, chrome-free performs better."

Zhejiang processes 3,000 hides per day and has an annual output of 60 million square-feet of finished leather. It counts FAW Group, Volkswagen, General Motors, Honda and Chrysler among its main customers with most finished leather going into seating, but also into steering wheels and door panels.

Working with a former president of the International Union of Leather Technologists and Chemists Societies, Professor Bi Shi of the University of Sichuan, the company has developed two proprietary chrome-free tanning systems, one based on phosphates and the other on glutaraldehyde. No metal means easier disposal of the leather post consumer use.

"In Europe there must be a minimum of reuse and recycling of 80% by average weight of the material in each car," says company president Jonny Zhuang. "We want to contribute to that with biodegradable leather. We will continue to work with our chemical suppliers to make this better, to find alternatives to glutaraldehydes because they are expensive and it's important to bring the cost of chrome-free leather down to be able to make it at a similar cost to chrome-tanned leather. We are proud of the contribution we have made to this and regard it as a milestone for the global industry."

A group-owned development centre being established in Munich will promote chrome-free leather to OEMs, to show them, the company president says, that chrome-free leather can meet their requirements. "This is the main reason we want to get costs to the same levels as those of chrome-tanned leather," Mr Zhuang continues. "If we can do that, the OEMs will want chrome-free leather. It's cost that is putting them off."

They also hope that consumers will take to the environmental story of chrome-free: "We want to keep making a positive impression, on the local authorities and on consumers," he says. "We believe the best way to do that is to keep being innovative, to keep being pioneers. By the end of 2016, 90% or 95% of our finished leather will be chrome-free and that will make a tremendous impression on people outside the company. The newspapers will react and government people will begin to form a new opinion of leather. Consumers will be more willing to buy and use leather if the tanning materials are more environmentally friendly." ☉



Hides being offered to one of the seven spraying lines at **JBS Couros** (above). Instead of biological treatment and discharge, the effluent is used for land irrigation. Rich in nutrients, four areas totalling 128 hectares are sprayed from rotating irrigation lines onto land next to the tannery.



There are three Mega Star Gemata roller coating machines used in the finishing department at Chinese tannery **Zhejiang Mingxin**. The roller coating drying cabinets are set in tandem with spraying lines. These can be linked together by lowering the overhead bridge arrangement.