



Salted hides in front of soaking/liming drums awaiting delivery to service mezzanine for drum loading.

Tannery of the Year: Heller-Leder, Hehlen, Germany

Automotive and furniture upholstery leather specialist Heller-Leder has been a prominent presence in the quiet Lower Saxony town of Hehlen for 90 years. Its commitment to keeping all aspects of production on its home turf is as strong as ever.

Heller-Leder runs a full-service tannery on the outskirts of Hehlen in the German region of Lower Saxony. The facility has been there since 1920 and is now in the hands of fourth-generation owner, Thomas Strebost. He runs the company as joint-managing director, along with industry veteran Rudolf Ebeling and Frank Fiedler (who also takes charge of sales operations). The company currently has 165 employees, making the tannery the biggest source of jobs in the local area, and a turnover of around €30 million.

It has the capacity to process up to 1,500 hides a day and deals only with bovine hides from European sources (Ireland, the UK, Denmark, the Czech Republic, Germany and France) to capitalise on the advantages this material offers compared to hides from, for example, South America. The European ones are bigger and tend to have fewer scars and brand marks.

Heller-Leder runs chrome and free-of-chrome tanning operations, with roughly 40% of its output going to other tanneries for retanning and finishing, tanneries that perhaps don't have the capacity or a beamhouse of their own, 40% going to its own furniture customers and 20% to automotive customers, the most prominent of which is Porsche. Across all markets, around 55% of the tannery's output ships to clients in Germany. The company is growing its share of the Porsche interiors business and has won the contract to supply leather for the interior of the new 911 Carrera GTS Cabriolet and for the new 2011 Cayenne S. It has the necessary accreditation to carry out this work, to ISO 9001 for business processes and to ISO/TS 16949, specific to quality management for companies in the automotive industry. Heller-Leder's quality manager, Günther Berger, explains that the automotive-specific standard is by far the more rigorous: while the



The Heller-Leder leadership team. From l to r: Thomas Strebst, Frank Fiedler and Rudolf Ebeling.

documentation for ISO 9001 contains the word 'must' 100 times, the same word appears 400 times in the paperwork for the automotive standard, with even more demand for evidence than ISO 9001.

A further achievement the tannery has made in recent years is its involvement with the Leather Working Group—the multi-stakeholder group that assesses the environmental performance of tanneries and awards gold, silver and bronze status to those achieving the best results. In February, 2010, Heller-Leder became the first European tannery to achieve gold status, which it will hold for 18 months before undergoing a fresh audit. The company is also the first tanner to receive Blauer Engel (Blue Angel) certification for products and services that have environmentally friendly aspects. "That happened in 2009," Mr Berger explains. "At first Blauer Engel applied only to finished products, so furniture in our case, but then they decided to look at components, too. Everyone in Germany knows what this is. When they see the logo, they know the sofa cover or whatever is made of real leather and has not come into contact with substances such as dimethyl fumarate."

Heller has laid out its whole corporate social responsibility (CSR) code of conduct and has made the document available to important customers, including furniture chain Ikea, who need reassurance from their suppliers to meet their own declared standards. The code of conduct is based on conventions, definitions, principles and declarations that have come from bodies such as the United Nations and the International Labour Organisation. It lays out clearly

the company's commitment to treating its employees and the environment as well as it can, aiming to have a positive impact on both and to do good business while being a good business.

Part of this is running an effective waste water treatment plant at Hehlen. Official findings show that the plant has the capacity to process the domestic waste water of a town with a population of 87,500. By comparison, Hehlen has a population of 2,000 and nearby Bodenwerder just over triple that number. Treated effluent goes into a channel that flows into the River Weser 1.5 kilometres away. The public has access to walkways and cycle-paths on the surrounding farmland, which is open and ruggedly attractive, and the management team at the tannery knows for certain that in the event of any sign of an environmental problem their phones would start ringing very quickly. The company is here for the long haul and wants strong, long-lasting relationships with its neighbours.

Heller history

The original tannery here was owned by Georg Sander, a local businessman. Thomas Strebst's great-grandfather, Julius Heller, went to work there at the start of the twentieth century and took over the business in 1920. The current owner's grandfather, Emil Heller, carried the business on, as did his parents. His father, Hans-Wilhelm Strebst, is the person who led a move into chrome-tanning in the 1960s (before then all the leather was veg-tanned) and began an important redevelopment of the facility in the 1970s. Only the ground floor of the current building belonged to the

original structure. Redevelopment of the first and second floors took place between 1972 and 1976. A redeveloped beamhouse came into operation in 1986 and a new dyeing and finishing department was completed in 2000. The finished set-up is a long, straight building running for some 450 metres beside the Hehlen-Bodenwerder road on one side and a disused railway line on the other.

Good relationships with suppliers are also critical. On the evening of the first Thursday of every month, a popular social event takes place at a different venue in the local area with representatives of the senior management team and of the different sections of the tannery in attendance. It's common for representatives of supplier companies to come, too, at the invitation of their contacts at Heller-Leder. Ongoing contact with individuals helps a lot, Thomas Strebst says, rather than having a new person to deal with at the supplier company every one or two years. "You have to be able to take and to give," he adds. "If someone wants only to take, you would have to end that relationship."

Without naming names, the Heller-Leder owner says that, in his opinion, what sets the best apart from the rest is innovation. When these companies come up with a new idea, it works and often makes a genuine difference to the way the tannery functions. He gives an example from a decade ago: when the roller-coater system came in, it represented an important and lasting innovation. Not all new products can make this much impact, and Mr Strebst says a sizable proportion of new market offerings bring "more words than results", but sometimes companies' new ideas make a real difference and this, for his money, is what makes the best the best

Open relationships

For Günther Berger, another important contribution the supplier community can make is in keeping tanners up to date with changes in legislation, additional controls, new demands and other events that can have an impact on their customers' operations. "Some suppliers work proactively on this," he says, "while others just do what they have to do. And you can see the difference. Good suppliers can hear the grass grow when possible restrictions are in the pipeline and they work in advance on alternatives for us."

Many of the same principles apply to relationships with customers. The company's head of sales, Frank Fiedler, says one of the important things is knowing whom not to sell to. He explains: "This is an



Tannery of the Year Europe 2011: Finalist



The tannery in open countryside, near to the town of Hehlen.



Inspection of sample leathers from development trials.

important lesson to learn. It would be easy for us to sell more in the automotive market at the moment, but we know how much pressure automotive companies can put on their suppliers. The customer we have and want to keep, Porsche, is a relatively small automotive company, but a high-class one. We will sell a maximum of 30% of our leather to them. We know each

other and it is a stable relationship, but we know we would survive if they said they were pulling out. There are companies that are 80% dependent on one customer and they have found themselves in a situation of losing money, of operating at a loss just to stay in business."

At this point, Thomas Strebst makes it clear that Heller-Leder's main aim is to stay

in Hehlen and to continue to produce there, with a full-size tannery that is able to work from raw hide to finished leather. He is convinced the industry in Europe will need the capacity for operations like his in the near future, especially if pressure intensifies for the move to tan hides close to source (at least to wet blue). Outside observers have questioned his determination to keep the Heller-Leder beamhouse operation running, but he says he has always been sure this is the right thing to do. It's difficult to set up new tanneries these days on green-field sites, Mr Strebst says; encouraging established companies to stay in the industry and grow is much easier.

"People want quality and will pay for it," he insists. "Furniture manufacturers that have sourced everything as cheaply as possible have ruined their reputations. It can't be good for anyone's standing to offer only low-end products. We have attended events such as the Interzum design exhibition in Cologne showing specially developed, expensive aniline leathers specifically for furniture and we saw that the demand is there. We want to stay here. Labour is between 15% and 20% of our cost and we believe that good service, high quality and care for the environment are more important than saving 5% in cost by moving production to a lower-cost economy. Getting rid of our finishing plant or of our wet blue production would be cutting off a limb. We'd earn more money by making only wet blue, but we would only be able to employ 30 or 40 people here and we think we have a responsibility to the wider community."

The question of what the leather industry can do, collectively, to keep appreciation of the material high in the eyes of the buying public prompts Frank Fiedler to think about the people who deal directly with the consumer. "We need sales people who can show the difference between leather and plastic," he says. "It's wrong to try to change leather's characteristics [to make it look too uniform]. We need to go back to our roots and accept the natural look of the material. We need to teach the sales person at the end to explain the difference."

The amount of high-quality leather that goes to waste in the cutting plants run by furniture and car seat manufacturers is another thing that upsets him. He believes the yield in these facilities is often 20:80, with 80% going to waste. On hearing any objection, these customer companies are quick to point out that they have paid for all the material (which is the same as saying that what they then choose to do with it is



From a technical point of view

(1) Overview of operations

Heller-Leder was founded in 1920, and is located in open countryside in the area of the Weser Hills, near to the town of Hehlen. The company employs 165 people, and is a fully integrated tannery processing 1,500 raw and salted bovine hides per day using wet blue and wet white tannages. 40% of the production is mainly for top end furniture and 20% for automotive leather, both to the finished condition. The balance is contract tanning to the wet blue, wet white and crust conditions for shoe upper and automotive leathers. Together with sister company Sud Leder, the company has the greatest raw hide processing capacity in Germany.

(2) Manufacture and processing

Fresh hides are stacked and palletised for input, with fresh hides placed in reinforced cardboard containers set on pallets, before lifting by forklift onto the overhead servicing mezzanine. This is located between two rows of three soaking/liming drums: three are new drums manufactured by Pajusco and were installed this year, with three more planned for installation in 2011. The input load is standard at 10 tonne batches.

This servicing mezzanine extends to serve the adjacent tanning drums. It is fitted with a red-tiled floor, and the central drainage ensures that the whole area is easily kept clean and free from any chemical spillage. All of the chemicals are moved, and all of the hides are loaded into the soaking/liming drums using a forklift operating on the mezzanine. A Hüni system installed in 1986 and card operated is used for water additions. It is housed in the control office on the mezzanine, and has not been replaced as it is proven and trouble free.

Heller-Leder has operated a hair-saving process and recovery system since the early 1990s. This reduces the strength of the effluent by 30%, and the solids from effluent treatment by 30%.

The drums are elevated, and when the limed hides are dumped, a chute fitted in front of each drum ensures that the entire load with their final wash float is directed into an open concrete trough constructed between the two drum rows. The hides then flood into a rectangular reception pit of sufficient size to hold a full load of goods and float near to the fleshing machines.

A reciprocating mechanical rake gently pushes the floating hides to one side of the pit, where they are clipped to a manipulator, which then lifts each hide vertically through a stainless steel chute. This ensures that the operative loading the manipulator is not splashed with lime washings.

The manipulator delivers the hides using an overhead track to the fleshing/splitting line, and part lowers the hide into the first of two fleshing machines positioned on an elevated platform. These two machines face each other, and the operatives stand in front of the first machine. They open the hides for fleshing hide-centre to butt as the first part of the fleshing cycle.

Handling limed hides



Limed hides are discharged into a holding sump, and then mechanically pushed towards an operative who clamps individual hides to the manipulator. The hides are then raised through the chute for overhead delivery to the fleshing operation.



The operatives open the hide as offered from the overhead feed into the first of two fleshing machines that are positioned to face each other. After fleshing the first half of the hide, it is then slid into the second machine for the remaining area to be fleshed.



As the hides begin to feed from the second fleshing machine, the operatives hook the leading hide-edge onto a manipulator that automatically pulls the hide over the top of the fleshing machine onto a conveyor for trimming.



After fleshing, the hides are limed trimmed on a conveyor as they are delivered to the lime splitting operatives.



After lime splitting, the grain splits are conveyed from the area for tanning, and the flesh splits conveyed to the split trimming area.



The conveyor line for delivery to the tanning drums rises above the service mezzanine for the tanning drums. The system then delivers the goods to the selected tanning drum.

The out-feed is onto a table set at working height between the two machines, and this helps the operatives to slide the part fleshed hide into the second fleshing machine for centre-neck fleshing. The cycle is completed by the operatives placing the leading edge of the butt over two blunt hooks; as the hide feeds out from the second fleshing machine it is pulled automatically over the top of the second fleshing machine, then onto a conveyor for on-line trimming, before offer to the lime splitting machine.

The lime splitting machine is an Autosplit-D3. Instead of being fitted with a conventional sectioned bottom roller to accommodate variations in hide thickness, it uses a single pneumatic tube fitted beneath the top feed roller. This is one of only three machines using this innovative feed system.

The grain splits for tanning are continuously moved from the splitting operation by conveyor, weighed, and then delivered to an overhead conveyor belt located above the tanning drums. This transports the hides above the drums and onto one of the service conveyors fitted above each of the 10 drums for loading.

The input weight for tanning is mainly 8 tonne, although this weight varies according to splitting substances. The tannages are suited for soft furniture and automotive leather, but are sufficiently flexible to allow modification for contract tannage to meet the needs of customers and various leather types.

A through-feed samming machine is positioned in this department. In addition there is a splitting machine, shaving machine, and a splitting machine used for dry splitting.

A similar mezzanine to the one in the soaking/liming and tanning department serves the retanning and dyeing drums. These are set in a single line of 15 drums, and are of two different sizes to best accommodate loads of varying size.

After samm/setting the dyed leathers are either vacuum dried, followed by natural drying using an overhead conveyor system, or hand toggled using a through-feed drying unit. This is followed by a set of tumbling drums and a buffing machine for nubuck and corrected leathers.

There are two finishing departments and both are equipped with double-headed spraying units and roller presses. One department is mainly used for leathers that require lighter finish applications, the other is equipped with a roller coating machine mounted on rails for positioning in front of the spraying unit when heavier finishes are being applied.

The company still keeps an old press as embossing plates are held that were used years ago. As these patterns come back into fashion, new samples can be produced, and if commercially successful new embossing rollers can be made for full scale production. All of the pigment mixing and dispensing is under conventional computer control, but the binders are added manually.

In addition to these leather making operations there is a split finishing unit that provides specialised coatings and textures for use in the automotive and footwear sectors. There is also a cutting department to service the automotive sector. These operations are located on site, both separate companies and not owned by Heller-Leder.



(3) Co-products and solids management

The trimmed limed flesh splits are processed on site to the crust condition, and then sold to other companies for shoe upper leather production and for the automotive sector.

About 30 tonnes of hair is recovered per month from the hair saving process. This is collected by an external company who heat-sterilise the hair before mixing with other organic wastes for composting, to create fertilisers for land applications.

Shavings from wet blue and wet white production and buffing dust are collected and processed by an external company. This is for standard leather board manufacture, but also for free-of-chrome leather board for use in automotive construction.

All of the limed fleshings, hide trimmings, and waste from lime split trimming are separated at source and then sold for commercial gelatine manufacture.

The dewatered sludge from effluent treatment has a low level of chrome. It is taken by a specialist company, mixed with other solid waste materials, and then used as top cover on landfill sites as part of reclaiming these sites.

All other types of waste—paper, plastics and wood—are separated at source and stored outside the tannery until collection.

(4) Water treatment and energy management

WATER TREATMENT

The tannery normally consumes 800 m³ of water per day. Water use is tightly controlled, and there is no recycling of effluent or regeneration of materials for reuse. All of the wastewaters are discharged from the processing drums through pipe work that keeps the various discharges separate until mixing within the treatment plant.

The wastewaters are delivered to two holding tanks where they are held for one day for mixing and balancing. The pH of the effluent at this stage is pH 8.0, but any odour is contained as both of the tanks are capped. After primary settling, the effluent is delivered without any chemical dosing to three activated sludge treatment units operating in parallel where they are treated for up to 20 days.

This extended time ensures that the treated effluent reaches a very high standard. On an average, the input effluent has a COD of 5,400 mg/l, but this has already been reduced by about 30% due to the hair recovery process. The effluent treatment is consistent, and in general lowers the COD to 60 mg/l and BOD to less than 3 mg/l. Ammonia is reduced from 260 mg/l to less than 0.3 mg/l, pH is a constant 7.6, with the salinity varying between 3,000 – 4,000 mg/l. No chemicals are required within the treatment operations.

After a final secondary clarification, the effluent flows into a mature natural pond before outflow into an open ditch. This ditch runs for less than a kilometre through fields before river discharge, and is sampled and tested regularly in the laboratory. This area is open countryside, and the path alongside the drainage ditch is used by walkers.

The sludges from primary and secondary treatment are mixed together, and then filter-pressed to about 30% solids.



The tiled floor of the mezzanine with central drainage ensures that the whole service area can be readily washed to maintain the highest standards.



The blue samming team in operation.



Shaving wet white leathers. The shaving are collected and used for "free-of-chrome" leather board.



The effect of the hair recovery processes used for manufacture is to reduce the volume of this sludge by approximately 30%.

In total, the effluent treatment plant has a holding capacity of some 30 days. This ensures that the tannery can operate for a considerable period of time if any problems should occur.

ENERGY MANAGEMENT

A bio-methane plant operates adjacent the tannery. This is 30% owned by Heller-Leder together with farmers and other partners. This plant receives corn for anaerobic digestion, and the methane produced is used to generate 8 million kWh of electricity per year for the national grid. Methane is piped from this plant to the tannery for fuel, and is sufficient to provide all of the hot water required by Heller-Leder and saves 480,000 litres of heavy oil per year. Because of German legislation, only corn can be processed in this bio-methane plant, so no tannery wastes can be used for gas production at present. ☺



Part of the 15-drum dyeing department at Heller-Leder.



Hand slicking of dyed splits onto vacuum drying plates.



Part of the production is toggle dried, but overhead pole drying is also employed.



Roller coaters are used for heavy finish applications, being positioned in front of spraying machines using rail tracks.



After final clarification the treated effluent is discharged into a natural pond (top left). The outflow from this pond runs into a drainage ditch before final discharge into the nearby river.



their affair). "That doesn't compensate us for the love we put into tanning the whole hide," Mr Fiedler responds.

Consumers understand that it is better to have leather upholstery in their cars at the moment, Thomas Strebost insists, but he acknowledges that, to maintain that appreciation, the leather industry has work to do. Producing leather that looks, feels and smells like leather is part of that. He wonders why anyone should expect car-buyers to pay extra for leather upholstery if they cannot see and feel the difference. And when automotive brands and their seat manufacturer suppliers combine leather with plastic, he would like it to be clearer to the consumer which parts of the interior are leather and which are not. He concludes that it's dangerous for the leather industry to permit this to continue to be a grey area. The impetus to clarify this is hardly likely to come from the manufacturers of synthetic leather substitutes who often disguise the nature of their products by misusing the term 'leather' and by saying nothing of their dependence on hydrocarbons.

"Tell the truth to customers," says Frank Fiedler, taking up the mantle. "Let customers choose. If they know about these things, they will always choose leather."

A kind of family

Thomas Strebost describes his company as "a kind of family", a bank if the employees need it to be a bank, and a source of a van or a truck from the pool if they need to move house, for example. He says the workers notice the difference, that people who have come to Heller-Leder from other employers have remarked on this. And when life became tough for most businesses toward the end of 2008, his workers elected not to take their Christmas bonus. "They realise we are all in the same boat," he says. Moves that the company has taken to be a good corporate citizen have ranged from funding the setting up of a museum in the house in Bodenwerder where local celebrity and eighteenth-century storyteller supreme Baron Munchausen was born, to funding for local football and swimming clubs and help for the district's firefighters. There is a trust set up in the name of Thomas Strebost's father from which this funding comes.

Separately, the company has actively encouraged employees to take part in an international bone-marrow donor matching initiative. This donor search takes place under the auspices of a not-for-profit organisation called DKMS, founded in Germany in 1991, and, as a result, a Heller-Leder employee was able to save the life of

a leukemia patient in the US.

Other gestures have made an impact on the way people inside the tannery go about their day-to-day work. After liming, the hides empty from the drums into a sump. They can weigh up to 90 kilos when wet. Working in partnership with its pension fund, whose name in German is Rentenversicherung, a combination of a custom-designed working platform and manipulators makes it much easier for a member of the team to haul the wet hides out of the vat to go to the fleshing machine. It used to be a two-person job: now one person can do it safely. All employees have access to a special offer for gym membership, set up in conjunction with a health insurance provider because keeping people fit and healthy is better than treating them when injury or ill-health hit them, prevention being better than cure. The Heller-Leder workforce can buy membership at a local gym for a third of the normal price. The company also pays a third and the health insurance company contributes the same amount.

Political influence

There is a biogas plant at the back of the property, jointly owned by Heller-Leder, a local farmers' co-operative and a private investor. Unfortunately, at the moment, waste from the tannery cannot go into the biogas plant, only corn from the farms. The biogas produces energy for the power grid and existing legislation will not allow a mix of sources if you want to be paid at the

highest rate, and the difference would work out at around €200,000 a year. Thomas Strebost has faith that legislators will change their views. The minister for the environment for the state of Lower Saxony, Hans-Heinrich Sander (no relation to the founder of the Hehlen tannery), has been to see the facility and attended a meeting at Heller-Leder with bureaucrats to discuss the matter. The laws he had to put into practice were flawed; he could see things from the tanner's perspective and has said he will try to change it. "I like the minister," Mr Strebost says. "He's independently minded, and he runs a farm of his own, and his feeling is that if his party thinks he's wrong, it can throw him out. We got help from him, in the right way, the open way. He was humble enough to change his view. He knows we are good guys."

His company has been taking care of the environment for more than 30 years, he insists. Its first waste treatment plant came into operation in the early 1980s, attempting to have the lowest impact possible. He points out that leather itself has a low impact, saying: "If you take care of leather, it is a material that can outlive you. In terms of lifecycle, the impact of leather is very small compared to other articles in your life. Plus, I think it continues to be important in our knowledge economy for there to be people who know how to make leather, the same as we need people who know how to bake bread. Making leather is almost as old as human existence, so how can it be wrong?"

Control and accreditation

The company has two laboratories. One is dedicated to routine leather testing, with special analysis performed by accredited external organisations or by sister company Sud Leder.

The second laboratory is an environmental laboratory: it overlooks the effluent treatment plant and monitors performance. It is also the centre for health and safety issues, and checks the quality of chemicals received by the tannery against approved standards.

Heller-Leder is certified to the standards ISO 9001, ISO/TS 16949, and in February 2010 was awarded the Gold standard of the International Working Group, being the first tannery in Europe to achieve this standard.

The award "Blue Angel" in accordance with RAL UZ 117 – awarded by the German Government for the most environmentally friendly produced goods and services – was presented to the company in June 2010. Heller-Leder is the first company to achieve this award for low emission upholstery leather.

