Fancy a Tan?

David Kenyon talks to deer leather expert John Avery

Philip Moss produces a range of high quality deer skin garments

Whilst at the Westcountry Game Fair in March I got into conversation with Philip Moss who is a trader of high quality leather goods. Philip was very excited about a range of deer leather goods which he was producing and which were selling well from his stand. My interest aroused, Philip gave me the contact details of his supplier, John Avery of ALC Ltd, who produces this superb quality leather, and John took me through the processes which the deer skin must undergo to produce this product.

The tanning process is fundamentally a chemical means of turning the collagen protein in the skins, which is unstable and which will rot, into a material that is stable and will not end up falling apart. The nature of the specific application of the process governs the properties of the resulting leather. Tanning hides and skins to make leather has been around since prehistoric times and the commercial methods applied today are scientifically well understood and controlled.

Tanning

Salted skins are taken to a commercial tannery, where the fundamental preservation (tanning process) will take place. Over several days, using large quantities of water to remove and wash away unwanted protein constituents such as hair and fats that prevent the tanning solution getting full effect on the collagen protein of the skins, together with carefully measured amounts of chemicals, the skins are converted into the first 'rough-tanned' stage. Making lightweight leathers that will be soft and flexible uses a quantity of Chromium Sulphate as the main tanning agent. Approximately 85% of the leather made in the world is Chrome-tanned.

The Chrome imparts a blue colouration to the skins and the material is referred to as 'wet-blue' at this stage. The skins are put through a samming machine, which is effectively an industrial mangle, to remove excess water and reduce the weight for transport, then the skins are taken to the next stage in the dressing plant.

Dressing

This is the point at which the actual customer specifications for thickness, colour and feel can be achieved. The skins are shaved on the flesh side to achieve an accurate tolerance, giving the desired thickness, then they go into the dyeing process, again over several days. In the dyeing vessel, a 5-stage chemical process prepares the skins for dyeing. It firstly allows the dyes to be mixed, to match a specific colour requirement and penetrate evenly through the thickness of the skin. Next a particular blend of extra tanning agents (special proprietary chemicals) is used to modify the ultimate feel of the leather, once dried. Specific types are selected for a firmer-dress shoe or bag leather and different ones

for clothing or glove leather, depending on the needs of the customer.

The dye shade is adjusted using additional dye or perhaps a mild bleaching agent, to make sure that the customer's desired colour is reached within a fine tolerance. Next, a special blend of oils is added to the vessel. These will provide the necessary degree of flexibility in the leather, without making it feel greasy, because their molecules chemically bond to the leather fibres at the microscopic level. These materials can be selected to provide water resistance in the finished product that is engineered-in to the leather. Lastly, careful adjustment of the final pH of the system, switches-on the 'fixation' reaction, by which all of the materials become stable and chemically bound to the leather fibres.

Drying

Careful control of the drying process is critical to the appearance and feel of the leather. If you have ever dried a chamois leather on a radiator or put a pair of wet leather gloves on the hot water tank in the airing cupboard, you know that the result is leather that is hard, even crispy. As a natural fibrous material, leather is best dried slowly, under accurately controlled conditions, to become soft and pliable with the desired amount of stretch. Trying to accelerate this process will produce a hard or firm product that will not give as long a life in service. If the skins are to be produced as suede, the nap is prepared at this stage. Mechanical softening follows and the leather is put through a series of machines to gently flex and separate the fibres, imparting a soft, supple feel, to the customer's specifications. A forced-dried leather does not respond well to this action and instead of flexing, the fibres tend to fracture, giving an internal weakness at the microscopic level. Once dried and softened, the leather can be sold as 'full aniline' with no surface finish coating. Depending on the specific selection of dyes and other materials which are 'extra-fast', the leather could be produced, at extra cost, as either hand or machine washable.

Finishing

The optional use of specially formulated polymers and pigments can provide extra protection for the surface of the leather. The colour can be adjusted at this stage and the final appearance of the degree of gloss or mattness can be regulated. In addition, the leather can be embossed under heat & pressure with a wide range of designs, depending on the customer's requirement. Some are very natural looking and some might be considered inappropriate for deer leather.

Warehouse

The deer leather is now complete. It is sold to the customer by unit area, so needs to be measured and packed, ready for transport. Before this, the skins are inspected, graded and trimmed as necessary, to improve the presentation and ensure that any process damage that might have been caused in the factory does not go to the customer at full price.

ALC Deer Leather is made from the skins of farmed animals, reared for commercial venison sales. The meat, from the Defra-licensed abattoir goes off to the restaurant kitchens of renowned chefs, hotels and premium supermarket ranges and the skins are salted to preserve them for tanning.

All in all a fascinating process and if you get the opportunity to see Philip's products at the shows you will be impressed with the beauty of deer leather.

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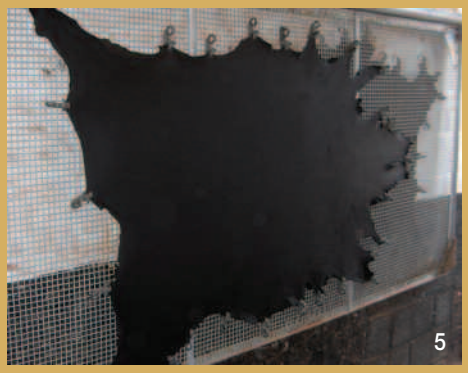

1. A pallet of wet blue skins arrives at the dressing plant from the tannery, where the basic tanning has been completed. The hair is removed in the process, exposing the grain of the leather.
2. A good quality wet blue skin spread out for inspection prior to shaving and dyeing.
3. A typical dye drum vessel. The skins go inside and the process water and chemicals are added through a hollow axle. Water volume, time, temperature and pH are carefully controlled to ensure consistent processing.
4. After dyeing, the preparation for drying includes a setting machine which reduces the amount of moisture in the skins, thereby reducing the energy requirement for evaporating water out of the skins during drying.
5. Toggle frame drying. The frame hangs in a heated room with fans and air movement. Drying under tension allows the compound curvature of the deer body shape to be removed, encouraging the leather to dry flat, for further processing.
6. Mechanical softening by staking machine. The skins are also tumbled in a dry drum and the tumbling action imparts supreme softness and a very pleasing 'crushed' grain surface appearance, unique to deer skin.
7. Automatic spraying machine, typical for applying the fine, elegant surface coating that provides protection for the leather and easy cleaning of a garment.

And you can do it yourself…

says Graham Downing

It is something of a point of principle with me to make good use of as much of a deer carcass as possible and it has always pained me to dispose of perfectly good deer skins. So, whilst walking around the Midland Game Fair, I was intrigued to find that it is quite possible for the average deer stalker to convert a fresh skin into a very presentable tanned deerskin rug. In fact, as you will see, it's as easy as ABC.

The secret lies with a natty little tanning kit call 'K-Tan' offered by Snowdonia Taxidermy Supplies. This comprises a selection of chemicals packaged in a polythene wrapper together with full instructions for use. All that you require in addition is a freshly shot deer skin, some salt and a bit of patience.

Having removed the skin from the carcass, it should immediately be dressed on the flesh side with liberal quantities of ordinary cooking salt, after which the flesh sides are folded in on one another and the skin bundled up to await a suitable opportunity for preparation.

The first stage of the preparation process is to carefully de-flesh the skin, removing as much flesh, fat and membrane as is possible, after which the skin is thoroughly rinsed to remove all the salt, dirt and other debris. Then the skin is pickled using a solution of the white crystals marked 'A' in your kit. This leaves it feeling distinctly 'sharp' in texture, and the skin must again be folded away and left for 24 hours for pickling to be accomplished. After this comes the tanning process itself, in which you use a solution of the dark powder marked 'B'. Like the pickling solution, this is liberally painted on to the flesh side of the skin with a suitable paintbrush and within moments the skin stops looking like the by-product of a deer larder, turns blue-grey and starts to become leather. After yet a further rest period, the tanning process is halted with the application of chemical 'C' and the preparation of the skin is almost complete.

All that is required now is for the skin to be washed once more and treated with the oil which is supplied in the kit, after which it is dried. I have found that the simplest way of doing this is to nail it to a suitable board, fur side uppermost so that it dries slowly, and to leave it for a few weeks in an airy shed or outbuilding.

The result of all your labours should be a supple and well-preserved deerskin. While the K-Tan kit does not pretend to imitate the product of a commercial tannery, it will, however make either a perfectly presentable rug or a splendid decoration for the wall of any deer stalker's 'den'.

The finished product: a home-tanned fallow skin

The K-Tan kit costs £26.20 plus p&p. For information visit *www.snowdoniasupplies.co.uk*