



Where does leather finishing really begin?

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As with most manufacturing procedures in industries around the world, the typical tannery uses a chain of processes that require strict controls in order to produce a product that is consistently acceptable to the customer.

Most modern tanners have defined technical and quality controls at every stage of the tanning and finishing processes. The complex production process that converts raw collagen into a fashionable, high performance, finished leather involves passing the hides through a series of varied and specialised departments. Eventually the leather arrives at the finished leather warehouse where it receives a final inspection before shipping to the customer.

Each stage throughout the process from the arrival of the raw hide or tanned leather at the factory needs to be predetermined so as to ensure that the finished product meets the customer specifications.

Where does finishing begin?

How does the tanner decide on the process that will yield a leather to match the customer requirements?

When you order a motor car there are many options from which you may select. Interior and exterior colour, type and colour of paintwork, engine type and size, leather seats and trim, air conditioning, central locking, steering wheel design, power steering, air bags, various sports options, sunroof, CD player the choice is often quite extensive. Today the precise details of the customer's requirements may be known before the factory begins to build a particular vehicle. The same can be said of many other products and certainly for leather. The answer to the first question that needs to be known is always, "What does the customer want?"

There are, of course, many and varied decisions that a customer has to make before placing an order for leather with a chosen supplier. Colour, substance, surface feel, softness, dyed through, and dye fastness are some of the specifications, but there are many more. The end use will always determine the needs.

Where does the process design begin?

Since it is not always possible to satisfy all the parameters in the leather making process, the tanner will need to select the liming, tannage and retannage that will produce leather to the required specification and the finisher will make a compatible finish that provides the surface enhancement, selection improvement and degree of surface protection to match the customer needs. Obviously, a complete understanding of the total scope of customer requirements is essential, and must be assessed by the

technical experts who control the complete process development in all the different stages of production before any decision can be made to start the manufacturing process.

Knowledge of the customer, along with close harmony and understanding between the tanner and the finisher, are of paramount importance when the complete package of needs has to be matched efficiently and problems avoided. Many has been the time when the tanner has made a beautiful piece of leather that is impossible to finish to the required aesthetic or technical specification because it simply will not accept any sort of surface application due to lack of absorption.

Equally, a surface that is very absorbent needs to be treated with care by the finisher to avoid swelling and subsequent looseness or poor grain break that will potentially downgrade the product. Both of these simple examples highlight the need for a close working relationship between the technicians who specialise in their respective areas of control.

What do different applications require?

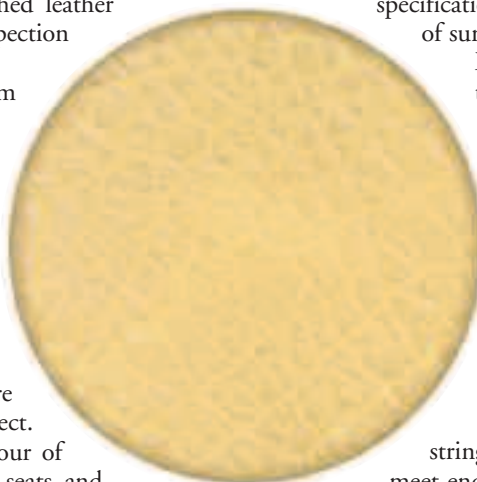
Modern leathers are processed to very stringent technical specifications so that they will meet end use requirements. As well as being capable of conversion to high quality articles at high speed they should not impose production limitations:

SHOE UPPER LEATHERS

Shoemaking can destroy a piece of leather that has been made without full regard for its exposure to the extreme conditions to which it is liable to be exposed. Surface protection is only one part of the application process and many of the features need to be designed into the earlier processes to ensure that all conditions are met. Is it necessary to re-chrome? At what pH is the leather neutralised to avoid looseness? What type of syntans and oils are selected to make leather with good fullness and soft feel whilst maintaining the integrity of tight grain? How can good buffing properties be achieved? Life is full of choices for the tanner who needs to make the selection while also keeping in mind that the leather will most likely require some form of surface application of finishing materials.

GARMENT LEATHERS

Garment leathers need a high degree of stitch tear resistance, drape, dye fastness, dry clean ability and good soil resistance properties to meet construction and wear longevity constraints.





Both may be predetermined by the choice of the retannage and fatliquor system employed and then enhanced by choice of finishing materials and application techniques used. Again, a sympathetic understanding of the finished leather performance expectations is needed by both finisher and tanner to achieve results consistent with the precise requirements.

FURNITURE LEATHERS

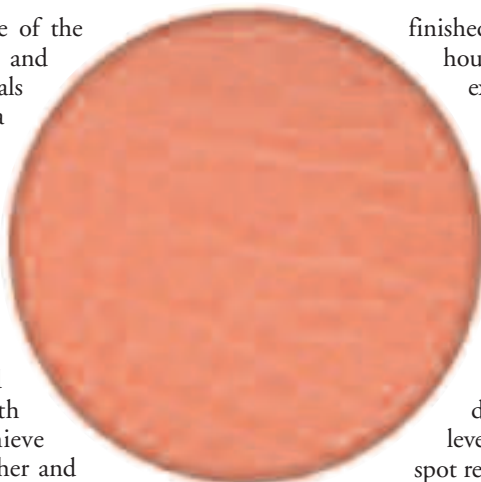
Upholstery leather has traditionally been finished from a basic crust leather prepared in a soft retannage, produced both mechanically and chemically to achieve optimum surface yield of the finished leather and good emboss retention properties. The variety of embossed textures, surface protection, upgrading and colour is mainly influenced by the choice of finish applied. Modern upholstery leathers need improved handle characteristics, improved dye migration resistance, often chrome free tannages, better heat and yellowing resistance and should be free of formaldehyde. More full grain leathers are now produced and even greater care needs to be exercised to ensure that full, rich and uniform dye shades are produced — and with a high degree of consistency between batches. Instead of embossing, many full grain leathers are lightly finished and are simply dry or chemically milled to produce a distinct grain pattern or light pebbling without loss of surface area. Soiling resistance becomes more of an issue on these lighter finished articles.

AUTOMOTIVE LEATHERS

The preparation of automotive leathers is also designed to produce optimal area yield and, again, attention to the selection of dyestuffs that do not migrate especially into water based finishing systems is essential. The increasing demand for chrome-free recyclable leather for use in vehicles stretches the ability of the tanner to maintain its aesthetic aspects in terms of tight grain, shape retention, heat ageing characteristics and fogging resistance. The finisher needs to be aware of the behavioural differences when compared with those prepared using chrome, and to adjust finishing formulations to achieve the very high standards of technical performance required. High levels of abrasion resistance can only be achieved using tough polyurethane topcoats. Matt finishes having a very high resistance to abrasion are usually required and normally utilise matt polymers that do not polish and cause a grey break in the flexed portions of the car seats after prolonged use. Soft touch surfaces are demanded that do not squeak or make noise during normal use. Only finishing can produce these very unique properties that need to be applied to specially prepared crust material when all the required features are to be produced.

LEATHER GOODS

Leather products such as luggage, high quality handbags, purses and many other articles used as fashionable accessories can be made from leathers prepared for other types of end use depending upon the individual design of the



finished article. Nowadays, the famous design houses are using increasing quantities of very expensive leathers and demanding that very strict technical specifications be met. This means that the preparation of the leather is becoming more sophisticated in order that it retains its shape, may be heat moulded to form shapes that would otherwise be impossible to fashion, retains an embossed impression for the life expectancy of the product and ensures that there will be no risk of surface colour being transferred to other materials during use. Finishing should ensure a high level of scuff resistance, colour fastness, water spot resistance and uniformity to enhance and add value to the product. A combined effort by tanner and finisher is needed to ensure total compliance.

OILED LEATHERS

Oiled leathers, and those having high levels of water resistance, have become classic materials and are produced by many tanners for fashionable shoe uppers, certain styles of furniture upholstery, garments and casual leathergoods. Many special pull-up effects may be achieved using drum and surface application of selected oils and waxes. Mixtures of various commercially available products will enable unique characteristics to be produced on the leather surface, the choice of which depends upon customer needs. The handle of the leather can also be influenced depending upon the penetration and nature of those products applied. When the demand is for more specialised leathers the tanner needs to also select special oils, waxes and waterproofing systems to replace more conventional fatliquoring compounds. Heavy substance leathers having a full, round handle and tight grain can be produced. Optional water resistance can be incorporated into the process. Only the tanner can incorporate these features into a product. The fullest benefits may be produced when the leather is tailor made and the surface applications are applied to simply standardise the final desired effect.

Leather finishing starts earlier in the production cycle

So, the answer to the question is clear and simple — leather finishing does not only involve the obvious surface application of surface enhancing products. Finishing does not begin simply when the leather has been tanned, dyed, fatliquored and retanned. There is certainly more thought, effort and attention to detail required at a much earlier stage in product development. The combined knowledge and experience of the tanner and the leather finisher is necessary to develop the right product first time. Today, this is becoming increasingly obvious. But, in order to satisfy customer requirements in terms of product satisfaction delivered speedily, efficiently, consistently and repeatedly, the supplier of leather products of any and every type needs information from a third partner — and that is the customer! It is a three-way split: tanner, finisher and customer. And all three contribute to the success of the finished leather. ●

