



Flay cuts, caused by knife assisted flaying of hides. For fuller substance leathers, these must be avoided.
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Over-complication

In the first in a series of articles that draw on his long, personal experience as a tanner, technical editor, Matthew Abbott, argues that the processes involved in making leather are difficult enough already. To add more complexity is to invite trouble.

Making a piece of leather isn't easy. Tanning is one of very few industries (perhaps the only one) that start with a raw material whose quality is a complete unknown and invisible to the human eye. Hair on one side, fat and flesh on the other, a putrescible material bought by weight that we hope to turn into a product to sell, in most cases, by area. In the past I have made leather to sell by the piece, by weight and even by the pair. So, what would be the most important factors in making the best possible product? Leather has so many different end uses and of course there are many different tannages that have their own areas of speciality, but, fundamentally, all leathers are made in the same way.

Cut to the chase

Getting to know your raw material is absolutely key. Intimately understanding what you are using, how it should perform, even down to what it looks and smells like will be imperative in producing and reproducing a consistent product. Without this understanding and without the ability to convey this to your hide or skin supplier, things will be a little more difficult in the long term. Forging a partnership with your suppliers and securing their buy-in to your success will save you time, money, and effort.

What may not seem to be an issue to your suppliers, based on their understanding, may be disastrous for you. I spent

many hours visiting abattoirs and examining freshly flayed hides looking for flay cuts and damage prior to salting; the cuts would have been critically damaging to the majority of leathers we produced. Over time, through working closely with the abattoirs they dealt with, the suppliers were able to provide hides that were virtually free of flay cuts. This not only led to improvement in leather quality but also allowed for a quicker sorting operation in both the limed and wet blue stages.

Keep it simple

Don't over-complicate things. The leather making process is not easy, so there's little reason to make it any harder than it need be. Over-engineering processes just add more elements that could go wrong and, at some point, probably will go wrong. All leather technologists want to see exciting-looking processes but the 'keep it simple' adage should always be adhered to. Sometimes removing steps from a process will yield better results than continually trying to add to it. That's not to say that advancements in wet processing technology shouldn't be taken advantage of and trialled but adjustments should be made in equal measure.

It will also mean the stockholding of chemicals can be kept at a sensible level. This leads to the idea of product rationalisation. Understanding that there are many different products available to the tanner does not necessarily mean having to use them all.

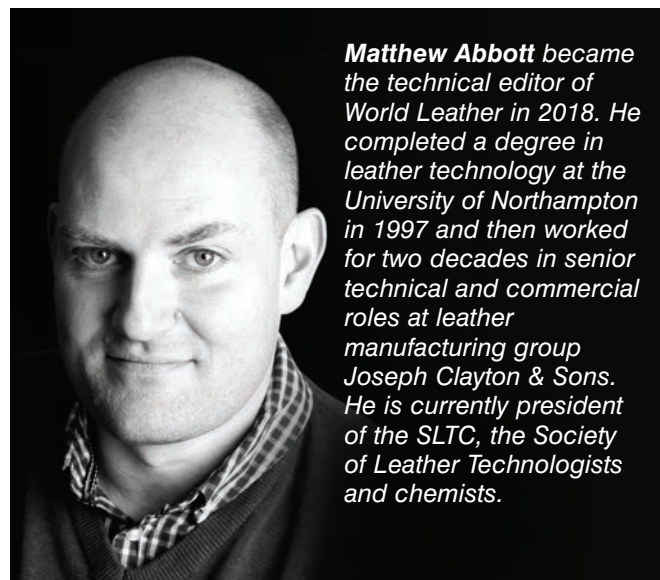


Leather can be forgiving

If something does go wrong, it will certainly have the potential to have a negative impact on the product. The first thing is not to panic; depending on where in the process the wheels fell off, leather can be quite forgiving. If it is deemed that the process is somehow at fault, the first and simplest check should always be the process pack weights. Improper weighing or the input of incorrect weighing figures for process calculations will immediately highlight the issue. Having an understating of what the average pack weights should be at each stage should help. I've seen many situations in which drain valves have been left open or water valves not turned off. In processes such as pickling, a check on float and cross-sectional pH plus specific gravity (Baumé or even Barkometer) will give you some basic understanding. In this situation, acidic swelling could well be the most dangerous outcome and, unlike the controlled swelling undertaken at the liming stage, acidic swelling can be very damaging to the pelt. It's not easy to forget what a "blown" hide looks like and it's not something you would like to encounter regularly.

Early stages of this problem can be counteracted with salt (sodium chloride) additions and slow, intermittent running allowing the swelling to reduce. If caught in time, the damage can be negated but further checks on the pelt and the resultant leather should be meticulous to ensure the physical properties haven't been compromised. In some instances, some controlled acid swell can even be used to advantage,

particularly in vegetable-tanned leather. Lowering the specific gravity of the pickle liquor to around 4° Baumé (28° Barkometer) will allow a controlled amount of acid swelling at around pH 4.5. For a pit-tanning system this can be beneficial for a number of reasons, such as increasing the grain thickness and giving a fuller leather, but also reducing the salt carry-over. ☺



Matthew Abbott became the technical editor of *World Leather* in 2018. He completed a degree in leather technology at the University of Northampton in 1997 and then worked for two decades in senior technical and commercial roles at leather manufacturing group Joseph Clayton & Sons. He is currently president of the SLTC, the Society of Leather Technologists and chemists.

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