

The leather making process: step by step

How is leather made?

How do you source the most sustainable leather from a tannery as a brand or designer? How do you know if the leather jacket you are wearing or the leather chair you are sitting on is made with eye for the environment? To find out the answer to these questions, you must first understand the leather manufacturing process.

Users of leather shoes or leather goods should ideally use them for a long time. Longevity and durability while being good in use are key aspects of leather. Leather material is created by tanning animal rawhide and skins. The animal hides are a byproduct from the meat industry, so that is sustainable in itself.

Leather Supply Chain: an overview

The infographic below gives a clear overview of the whole leather supply chain, from live stock to consumer.

The Leather Supply Chain



The five key processes of leather making

There are many different types of leather and therefore many variants on the manufacturing process and also various ways to describe. We break it down in these five steps of the leather production cycle:

1. Preservation

A process that temporarily allows transport and storage of the raw material. This is common but not needed if a tannery is very close to the slaughterhouse. This happens at the end of the slaughterhouse processes where with exception of reptile leather all animal leather is a by-product.

2. Preparatory operations (beamhouse)

Hides are cleaned from dirt, blood, salt and hair, the collagen structure is opened, they are fleshed, processed with base chemicals and split into grains and splits. Splitting in this stage is common for upholstery and automotive leather. Hides are offered to tanning in full substance as well.

3. Tanning

In tanning the collagen of the hides is transformed into leather. Herewith the collagen of the hide is protected to microorganisms.

Drying the leather at this stage would yield hard unhandleable leather. Different tanning agents can be used, e.g. [Zeology](#), chrome, glutardialdehyde (GDA), synthetic products or vegetable extracts.

4. Post-tanning or Wet-end

In wet-end the leather is given its final properties by the application of syntans, fatliquors and dyes. Each leather article requires different wet-end products and mechanical actions.

5. Finishing

The 'finishing' touch of leather making. Via several processes the leather is upgraded. A final film of several layers is used to protect the leather, increase its performance and to create fashionable colours and patterns.



How to source the most sustainable leather?

To procure leather it should come from a tannery that:

- Is [LWG Gold rated](#)
- Can show they use ZDHC certified chemicals

There are very good tanneries who are not yet LWG certified, but without the certification it makes it difficult to verify and also LWG is the most general accepted certification in the fashion world now.

Other guidelines:

1. Use maximum regionally sourced hides. So European leather should be made from European livestock.
When you reduce the distance between raw material, process and manufacture for the final product, you also minimize the environmental impact.
2. Ask tanneries if they use fresh hides as much as possible (and how much percentage) and not salted. Every salt used unnecessarily pollutes.
3. Optional is to ask how much they can trace their hides. Some European tanneries can trace to the actual animal and thus the whole history of the animal.
4. Ask about the way the effluent treatment is done and what they do on water efficiency. There are no easy inputs on this. Beamhouse uses a lot of water and produces a lot of effluent. LWG covers a lot in this. Some tanneries have advanced water re-usage ('zero discharge') and can lower the usage of fresh water or clean it well.
5. Use chrome-free non-glutaraldehyde tanned leather. [Like Zeology.](#)
6. Ask for the level of renewability of the chemicals used in Wet-End. Except for the dyes a lot is possible. 100% bio-based will not yet be possible or provide good performance leather. Tanneries may not have this info readily at hand but they can ask their suppliers such as us.
7. Ask for the use of more natural waxes, oils and protein binders for the finishing.

Source:

- <https://www.neratanning.com/>
- <https://www.neratanning.com/knowledge/the-leather-making-process-step-by-step/>