



Dear readers!

,Nature doesn't forget anything' - this also applies to a cowhide.

Every leather expert is aware of this fact on the basis of years of experience.

But not all leather experts deal with this knowledge in the same way.

Unfortunately the bigger group of them tries everything to remove the memory off the hide and makes all the remembrances forgotten. They rigorously do this since decades regardless of the consequences. At the same time the consumers were told that this kind of leather is 'normal'. The result of this development is a wide distribution of unified leather surfaces without an own character and a brochure like this needs to explain what pure, natural leather really looks like.

Ecopell has written down the following because from our point of view these little characteristics on each leather hide have too much pride to be covered or make them disappear. These are marks that nature has put onto the hide. Natural features so to speak.

Because of this ecopell manufactures leather that shows its characteristics. It is leather that turns every product made out of it into an odd piece of character.

In addition to this aesthetic view there are also some tangible arguments.

The substances that are used to cover the natural features are plastics that demonstrably pollute the environment, damage the human health and worsen the characteristics of the leather.

Let this brochure take you on a little excurse about the natural features of leather. We are pleased to lead you as crucial consumers to a more astute view when looking at the surface of leather next time.

What are natural features?

What do they look like and where do they come from? What is their impact on the quality of leather? What are the methods natural features are covered on leather and what are the consequences?

With this information you will be well equipped to make a good choice when buying leather next time.

We wish you an insightful lecture.

Your ecopell team

This suits the cow

Need-to-know about natural features on leather





Natural features - Stories of (cattle) life

Cattle are living all over the world. More than 400 breeds are known. Except at the North and South Pole cattle are held as livestock in all regions of the world.

The primary purpose thereby is the extraction of milk and meat. The secondary and waste products – for example hides and dung – are hardly less welcome and are put into use by humans.

The farming methods of cattle are very different.

From huge herds that are all-season out on large grazing areas on a South American farm to a single cow in a pen next to a hut, from a simple shed that provisionally protects from the elements to a high-tech cowshed you can find every variation in the keeping of cattle.

Correspondingly different are the life circumstances and environmental influences that the animals are exposed to. And these often leave their marks on the hides.

If the cattle are mostly outdoors they come into contact with sharp or hard-edged parts of plants, with pasture demarcations like fences or barbed wire. In hierarchy fights the animals can hurt each other with their horns. Piercing and sucking insects annoy the cattle just like us humans. But they can only hit them with their tail to get rid of the nuisances. Nevertheless they have to bear itching and paining bites.

Also in loose housing farming it can come to hierarchy fights in which the horned cattle wound each other. In stanchion barns the tying belts can excoriate the skin. Skin parasites like mites or lice are badgering the animals and their skin if it comes to an infestation.

All these influences caused by posture mark the leather that is tanned from the hide after slaughtering the cattle. In addition there are processes like growth, weight gaining, pregnancy and illnesses that chance the structure of the hide. Not to forget the injuries that is inflicted to them by humans.

Every rawhide shows such natural features. On the leather they become visible after removing the fur which partly is intensified through tanning and coloring of the leather.

Which causes can underlie natural features and what they look like you can read on the following pages.



Tying device





Natural feature or defect in product?

Natural features are often equated with defects in leather or more precise with shortcomings.

Ecopell draws the line at a point where the serviceability of the leather, or of the product employing leather, is objectively affected. This means that if leather goods or furniture show holes or open scratches, it represents a product defect. Natural features do not reduce the functional quality of the product. The integral strength providing long performance is not compromised.

Leather is a natural product. Rawhides naturally display larger or smaller irregularities that are due to the life circumstances of the animals, as well as the caution and skill employed during the first processing steps.

According to the quantity and intensity of the characteristics and defects, the hides are divided into 'assortments' that determine their price.

It's then up to the skills of the leather specialists to remove or mitigate the defective features when cutting and incorporating the leather. How and where the natural features are found in the finished leather products are therefore also due to the competence and aesthetic practice of the manufacturer.

Natural features in detail

Natural features have various causes.

In the literal sense they are natural. They are derived from hereditary and physically defined characteristics of the individual animal. The coloration of the fur and subsequently the skin are visible in naturally maintained leather. The skin structure that varies throughout the different body parts appears in the rustic surface of the leather. Skin diseases also leave visible marks.

Many skin characteristics are developed in the course of an animal's life. They result from the respective life conditions of the animals that are caused by humans, other animals or objectives practiced during the life circumstances of the cattle. The causes range from injuries through tools, stable and pasture demarcations from burns caused by insufficient care and cleanliness (dunghills), and operation scars to insect bites and mite infestation.





tolerable color differences from batch to batch



Genetically / physically caused features

1. Pigmentation marks

Worldwide about 450 cattle breeds are known. Among other things they are characterized by a different coloring (pigmentation) and color distribution of the fur and the skin on the body surface. From white to brown and red-brown to black there are various graduations in the color of the fur. Some breeds show a single-color pigmentation, others are spotted or pinto. Depending on the intensity of the color differences of the skin on one hand and on the used leather color on the other, these various skin pigmentations shine through in dyed, naturally maintained leather. They create interesting color effects that do not make any kind of artificial post-processing necessary.

2. Differences in skin structure, mast pleads

Rawhides consist of a network of three-dimensional connected, finest skin fibers. These fibers are not equally entangled at all parts of the body. In the back section the structure is tight and closely meshed, in the abdomen section more loose and with bigger gaps. Also in the neck the skin structure is loose, in addition skin folders make a maximum of freedom of movement for the head possible.

All of these physically caused differences have an effect in the process of the manufacturing of leather. Because of varying density of fiber the skin absorbs different amounts of dye into the tissue. Like this differences in color occur between leather pieces of parts of the body with tight and loose tissue structure.







Genetically / physically caused features

3. Skin diseases (lichens, warts)

Diseases can be caused or fostered by hereditary tendency and/or the keeping conditions of the animals.

With reference to natural features on leather especially two kinds of diseases are to be named: calf lichens and the occurrence of warts.

Calf lichens infest in particular young animals. It is caused by a fungus and transferred by spores. The infested calf and young cattle mainly show round, hairless areas which are covered with crusty scab on the head and in the neck area. The skin underneath the scab can substantially change its structure even if the infestation is cured.

Warts also change the skin structure. Cattle have also to deal with these little new formations of the skin that are caused by viruses. The point-shaped changes of skin are visible in naturally maintained leather.











Features through keeping conditions

1. Dung areas

From the occurrence of dung areas it is possible to tell how good the state of care of the animals was. Dung areas arise when dung that is inherent in the fur is not removed early enough. The skin in these areas gets burned, so to speak the skin cells inflame and can die off. With this the skin suffers a sustainable change.

2. Abrasion through tying device

In the different farming methods (tying device, loose housing, pasture keeping) it comes to respective specific ways of stress for the skin of the animals. Cattle that are kept in tying device can show typical abrasions through chains or belts in the throat and neck area. The mostly superficial skin damages can be seen on the leather as band-shaped changes.









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3. Scratches from currycombs, hedges and barbed wire

The use of damaged or too sharp currycombs for grooming entails scratches. If deeper parts of the skin are affected it leads to sustainable changes of the skin. If the scratch is cured well a narrow, band-shaped scar is left.

A similar effect on the skin or leather surface have lacerations from hedge thorns or barbed wire whereby hedges normally cause less deep wounds due to the flexibility of their branches.

As cattle for sure try to avoid paining thorn hedges in their daily pastures it can happen that they get into a tangle with the sharp parts of the plants when for example fleeing in panic from a swarm of warble flies.

4. Stab wounds through pitchforks

This is a kind of injury among cattle that is absolutely avoidable but unfortunately still occurs. To propel the cattle – for instance while transporting – pitchforks are being used. If these are used clumsy or ruthless they can leave behind stab wounds. The scars are circle-shaped.









Healing and scraches, skin abrasion and lice grub



Features through keeping conditions

5. Operation scars

Cattle can also sicken from diseases that make an operation necessary. This can for example be the case if an animal has swallowed a foreign body or if a calf has to be born by Caesarean section because of problems at birth.

The scars that the scalpel of the veterinarian leaves behind are to be recognized as band-shaped elevations.

6. Brands

Especially on imported leather the consequences of brands on rawhides are to be found. In Germany brands are hardly used on cattle (and for reasons of animal welfare are very controversial). But in other countries like North and South America they still are rife. The brands lead to burn scars that are permanently recognizable on the skin and on the leather.









Healing (absorb more color, creates contrast)



1. Wounds from horn strokes

Hierarchy fights are the most common cause for physical conflicts in the animal world. Or fighting about females. In modern agricultural cattle farming, herds in which several male animals fight about the female animals, are only very rare. But hierarchy fights also occur between animals in today spread keeping methods.

Are the cattle horned these fights can lead to injuries that are hurting for the animals and that leave wounds in the skin and later scars.

2. Insect bites (horseflies, lice)

Also cattle are bothered by insects. Just like for us humans especially the bloodsucking kinds are very annoying. Because their bites are as disturbing for them as they are for us. New insect bites are visible as circle-shaped areas on the skin or on the leather surface.





Features caused by other animals

3. Mite infestation

With dogs and cats it is commonly known - the mange. But cattle can also be infested with mange.

It is caused by mites that gouge their way into the skin and carry on digging courses in there. In the courses they lay their eggs and torture the infested animals with intense itching. With hard infestation the well-being of the cattle can be so much impaired that the milk yield of the cows is reduced and the beef cattle show less weight gains than usual. The skin is sustainable damaged through mange mites and also other kinds of mites. Lacerations can be the consequence of the mite infestation.

On the leather the flat mined courses are visible as differences in color to the surrounding parts of skin.











Natural features grouped by form

Flat natural features:

- dung areas
- pigmentation marks
- mast pleads
- fatty spew
- abrasions by tying device
- mite infestation

Band-shaped natural features:

- scars
- scratches from currycombs
- scratches by hedges
- operation scars

Circle-shaped and round natural features:

- insect bites
- stab wounds through pitchforks wounds from horn strokes
- warts
- lichens infestation







Natural features and color

On tanned, natural maintained leather natural features partly come forward even stronger than on an uncolored leather surface.

Through changes in the skin structure that come along with injuries and healing also the absorbing capacity for dye of the skin changes.

Scar tissue absorbs less color and accumulates it to the skin fibers.

Scar tissue therefore often has less color intensity than healthy parts of the skin.

The absorption and accumulation of dye is also influenced through the natural differences of the fiber density of the parts of the skin and different color shades within the skin. In uncolored leather or with light shades the natural pigmentation of the skin can shine through and lead to different color shades within a skin.

Likewise unevenness of the skin surface like for example skin folds, lead to color differences within a skin. At the bottom of the folds more dye accumulates than on the protuberant parts.

These color differences understandably also occur from skin to skin even if the leather skins were dyed together in the same dip. Like every animal itself also the animal skins are unique. This also concerns their dyeing behavior.

The visual effects that come along with the natural features however don't tell anything about the other characteristics of the leather.





Dying of natural maintained leather





Negative side of unblemished surface

Natural maintained leather without natural features virtually is nonexistent. Even with excellent keeping conditions the cattle carry away little injuries during their lifetime that can be seen on the leather surface.

If you prefer a totally uniform rustic surface with leather without any natural features you have to choose coated or covered leather.

Coating or finishing of leather levels the leather surface. In the process plastics are being used that create an even and uniform surface after application. The process is supported by color pigments that cover the differences in color. The finishing sometimes is combined with a prior grinding of the leather to get rid of unevenness. Subsequently to the coating mostly an embossing of the leather follows. Like this the surface gets back a leather-like structure that however seems artificial when closely looking at it because the natural features and unevenness are missing.

What looks unblemished also contains a lot of chemistry.

Plastics are for example, polyurethane, acrylic paint, halogenated hydrocarbons, vinyl compound, organic hydrocarbons like butadiene, carry Health risks. The warnings on health damages for the used substances range from allergic effects to the suspicion of triggering cancer.

In addition the finishing of the leather changes its functional quality.

On one hand the leather becomes insensitive against soiling and water-repellent because the skin pores get sealed through the coating. On the other hand also the air exchange between the leather tissue and the environment gets cut off. Like this, leather came to the reputation of being a cold material. However this only applies to coated leather. Naturally maintained leather is in exchange with the air it is surrounded by and therefore is always well-tempered.

Our recommendation

If you choose a natural material like leather, indulge yourself with leather in all its diversity. There is no other material that offers so many individual ways of expressing and showing itself like leather. Every product becomes an individual piece if you allow nature to show its various ways of beauty.

The best way to reach this effect is with naturally maintained leather that has undergone a vegetable tanning. The liveliness of real leather is also expressed by the fact that it changes over the years through the contact with light and additionally develops a unique character.

natural maintained leather

There is no plastic that could ever offer you this.

mechanically embossed leather with sealed surface through polyurethane

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Nothing leads to good, that isn't naturally

