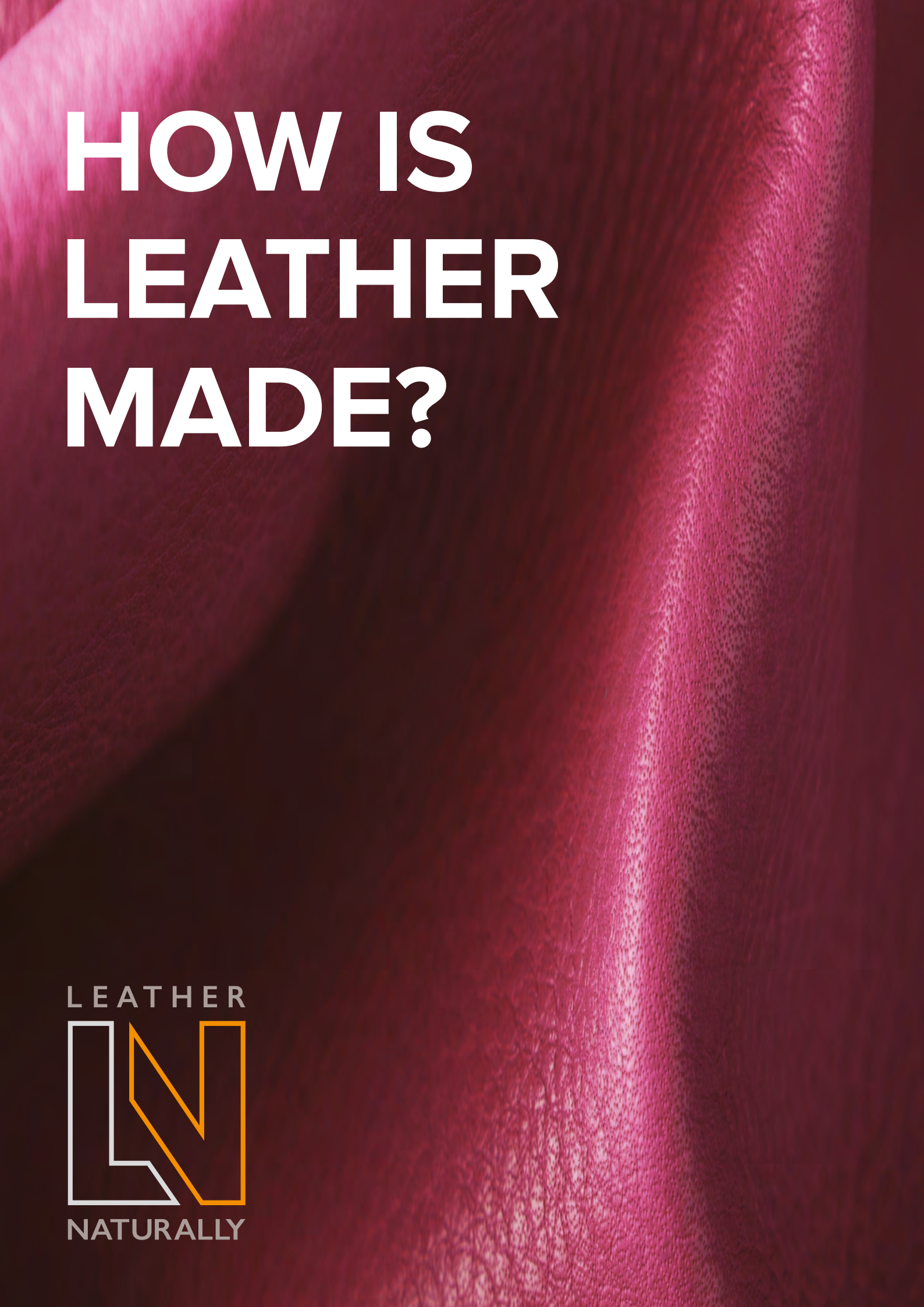

HOW IS LEATHER MADE?

LEATHER
NATURALLY

HOW IS LEATHER MADE?

APPROXIMATELY 99% OF THE HIDES AND SKINS USED FOR LEATHER ARE A BY-PRODUCT FROM THE FOOD INDUSTRY.

Turning this by-product into leather is the **most responsible** thing to do in a circular economy.

THE FIVE KEY PROCESSES OF LEATHER-MAKING:

1. CLEANING
2. TANNING
3. RETANNING
4. MILLING
5. FINISHING

Hides and skins need to be **preserved** during transportation to the tannery. Mostly they are **salted** but can also be shipped fresh in **refrigerated units.**

STAGE 1 - CLEANING (WET PROCESSING)

The process of cleaning the hides & skins is known as the **'beamhouse'.** Any preserving salt, dirt, and flesh are removed together with the wool or hair and the hides degreased. In some case where the final leather will be 'hair-on' the hair or wool will be left intact.

Once the hides are clean they may be split to produce the top, grain layer, used to make **full grain** or **nubuck** leathers and a bottom layer used to make 'split' or suede leather. This allows the thickness to be adjusted for the final product. For example sturdy walking boots will require a thicker, firmer leather.

Skins are not split as they are already very fine and typically less than 1mm thick. At this stage the hides and skins are still called **pelts** and as they have not been **stabilised** by the tanning process, have limited storage time.

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STAGE 2 - TANNING

In the tanning process, the **protein structure** of the hides and skins are stabilised, making them durable, chemical resistant and less susceptible to decomposition, here the pelts are converted to leather. Traditionally, the main tanning methods are based on **chrome, vegetable tannins** and **chrome free** alternatives.

If hides were not split in the **beamhouse operation,** they are usually split after tanning. Once tanning is completed leather tanned with chrome is known as **'wet-blue',** leather tanned using chrome-free tannins is known as **'wet-white'** and leather tanned using vegetable tannins, is called **'vegetable or veg-leather'.**

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STAGE 3 - RETANNING (PREFINISHING)

The retannage operation is what determines the final **character** of the leather and it includes dyeing to give **colour** and **fatliquoring** to add softness, fullness and touch.

It is where the unique characteristics required for the end product will be determined - whether for **automotive** or **aviation** seating, footwear, garments or bags and leathergoods. Once retannage is complete, the leather is known as **'crust'.**

STAGE 4 - MILLING

Leather can be further softened after retannage by placing it in a **dry tumble drum** - this also enhances the natural **grain** structure and leathers softened in this way are often referred to as **'tumbled'** and can be identified by their **soft handle** and **naturally grainy appearance.**

STAGE 5 - FINISHING

Many **surface finishes** can be added - to give **protection,** create distinctive **fashion effects** or to enhance **feel.** These can be in the form of coats, dyes, waxes and oils and/or embossed or printed patterns. Once done, leather becomes **'finished leather'.**

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