stahl campus

At the Stahl Campus® people learn how to produce leather and synthetics in a more sustainable way

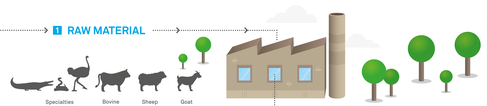
General remarks

Before a new product is released, stringent tests have been done

*Stahl products applicable

How a leather product is made

1 RAW MATERIAL



Facts and figures

Hides are a by-product of slaughtered cattle

If hides were not used for leather, a huge waste disposal would occur

1.

Over 1 billion hides per year are used for leather production

330,000 x

Per year 2,200 km² leather is produced worldwide, the size of 330,000 soccer fields

Curing Preserving of hides by:

- Salting
- Drying
- Cooling

Transport to beamhouse

An increasing number of hides is processed fresh close to the beamhouse to skip curing and transport

2 BEAMHOUSE

Takes 24 to 36 hours

Soaking & liming*
- Cleaning from salt, blood and dirt
- Removing epidermis and hair
- Opening up the collagen structure

Fleshing
- Removing unwanted materials

Splitting
- Into grain skin and split side (splitting at this stage is mostly done for automotive and upholstery)

Grain skin
Skin
Split side

Deliming, baiting & pickling*
- Gentle preparation for tanning

When using Stahl's EasyWhite Tan® no need for pickling

3 TANNING

Tanning*
- Converting the hide's proteins into a stable material
- Tanning chemicals crosslink the collagen structure
- Protection against heat, water and micro-organisms

Sammying
- Reducing water content by approx. 50%

Splitting
- Into grain skin and split side (splitting at this stage is mostly done for shoes and leather goods)

Grain leather
Skin
Split suede

*Grain side is used for leather and nubuck, split side is used for skin suede and split finishes**

Shaving
- Reducing thickness to required substance

Takes 8 to 12 hours

Retanning, dyeing and fatliquoring*
- Removing residual chemicals
- Coloring
- Waterproofing
- Softening
- Adding particular properties

Milling
- Softening by tumbling in the drum

Takes 1 to 36 hours

Staking
- Softening the leather

Drying
- Reducing water content to approx. 10 to 20%
- Toggling, air drying, vacuum drying or hot plate

Setting out
- Stretching out and flattening leather
- Reducing water content to approx. 40%

4 FINISHING

Upgrading*
- Covering grain defects using stucco

Grain leather
Split suede

Basecoat*
- Base for leather design

Embossing
- Bringing patterns on leather surface

The number of possible patterns are vast

Topcoat*
- Final coloring to level the color
- Creating gloss or matt surface
- Meeting up to all physical and visual specifications

Stahl offers multiple variations in finishes

With Stahl products multiple variations in leather coating recipes can be made

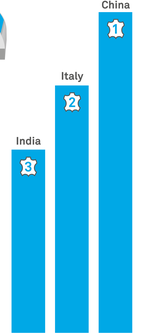
5 TRANSPORT

For example to the shoe factory

Testing & verification
- Quality control of all leather aspects
- Varying from color intensity and uniformity to design effects and feel of the leather
- Lab testing of chemical and physical properties

To test the durability of a shoe coating, it is flexed (for some shoe brands) even up to 500,000 times

Largest leather producers



Shoe production

Transport
- Delivering leather at shoe manufacturer

Cutting
- Leather assessment for the shoes
- Cutting out pieces for the shoe parts

An average pair of shoes requires approx. two square foot leather

Closing
- Sewing upper pieces together
- Inserting eyelets

Packaging
- Boxing of shoes
- Transport to hit the store shelves

Shoe finishing*
- Polishing and waxing
- Attaching laces and tags such as shoe care instructions

WAX

Lasting & stitching
- Moulding uppers into a shape of foot using a last
- Attaching uppers to insole
- Attaching sole and heel and stitching shoe together

Other leather segments

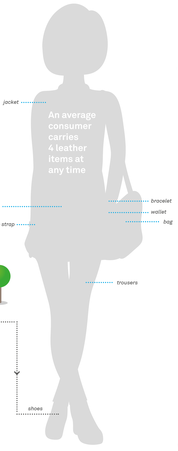
Leather goods
Fashion
Upholstery
Automotive

Most shoes are bought by

1 American people

2 Italian people

3 French people



End of life

- We innovate to minimize the impact of products after a useful life
- We innovate to contribute to biodegradable leather, fabrics and other materials
- We innovate to minimize emissions of harmful ingredients upon disposal

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