

Shearers travel round the sheep farms in the vast expanses of Australia, shearing the fleeces at a tremendous rate. After shearing, the wool is sorted by quality, baled and labelled before being sold at auction.



There are hundreds of different breeds of sheep throughout the world. Some give naturally good meat, while other breeds are used instead for their wool or skin. For a long time people have reinforced the various breeds' characteristics through breeding. In northern Europe the concentration has been mainly on meat, while the Australian sheep farmers have given priority to wool. In Scotland efforts are being made to recreate the traditional good characteristics of sheep, giving both meat and wool, by crossing good meat sheep with fine fibre merino.

Wool – a unique raw material

Wool exports

The majority of the wool produced by the world's sheep is used locally. Less than half becomes a commodity. There are estimated to be just over 1 billion sheep in the world. Australia, with its 125 million sheep, dominates the world market for fine wool fibre. New Zealand, China and the former Soviet Union are also large producers, mainly of coarser wool. The UK is the largest producer in Europe. Ullfrotté Original obtains its wool mainly from Australia and New Zealand.

Wool was used for clothing as long ago as the Stone Age. During the 20th century large resources have been invested in developing artificial materials with the same good properties as wool, but so far nobody has been able to copy nature's own material.

PROPERTIES OF WOOL FIBRES

Wool fibres consist of proteins, among other things, whose chemical structure gives the wool its resilience, tensile strength and loft. The fibres contain a large amount of air that insulates from heat and cold. In contact with moisture the proteins in the wool fibres also release heat.

The core of the wool fibre is hydrophilic. Heat given off from the body in the form of water vapour is taken up by the core of the fibre. The fibres can carry moisture equivalent to 30% of their dry weight without feeling wet.

A NATURAL RAW MATERIAL FOR CLOTHES

Wool's thermal properties and ability to transport moisture make it an unbeatable material for thermal clothing, etc. Wool is used in mid-layer garments such as sweaters, head-wear, gloves and in garments worn next to the skin. Ullfrotté Original, which is worn next to the skin, uses a fine merino wool produced mainly in Australia.

Shearing

Grading

Baling

Cleaning

Washing

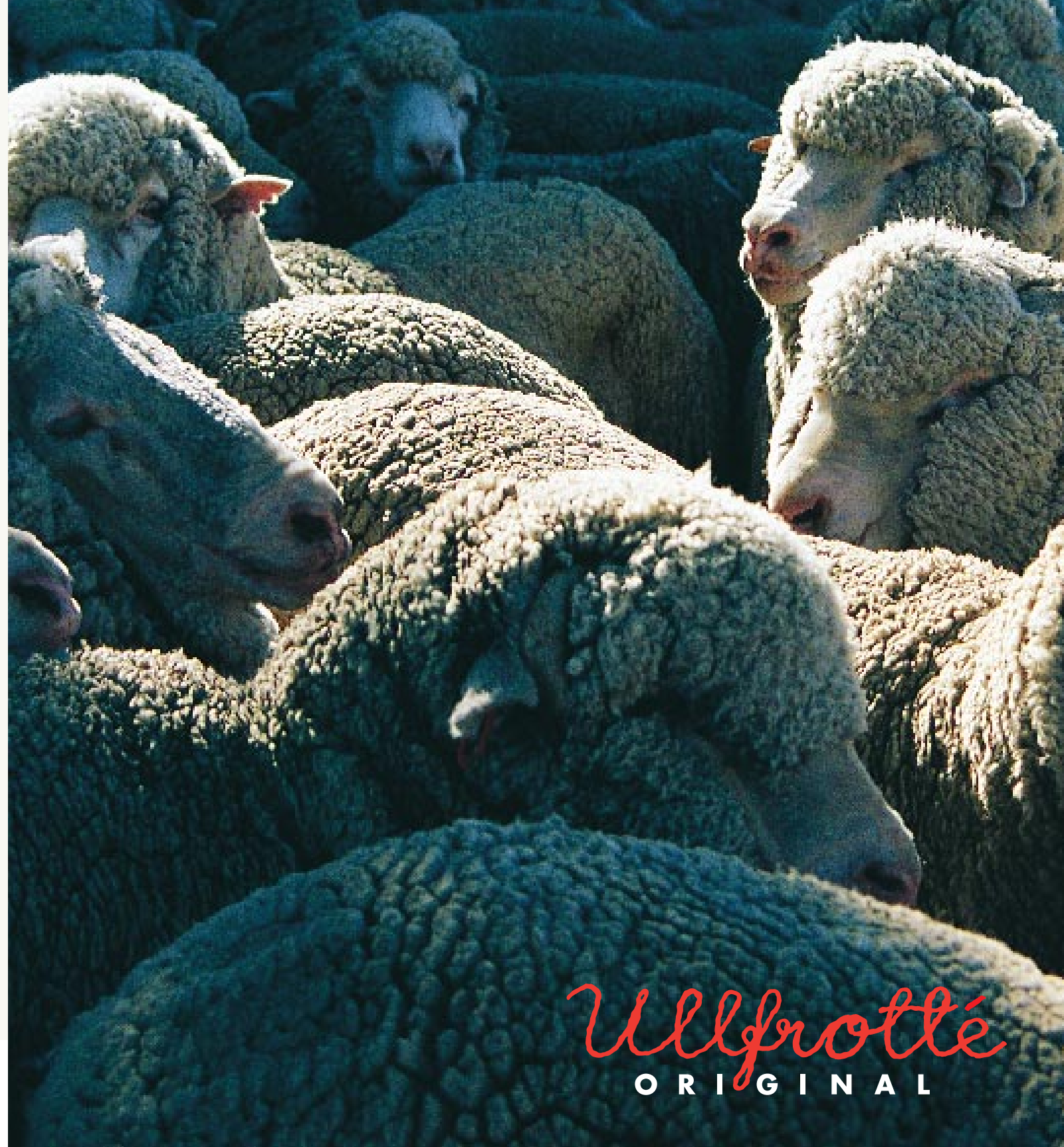
Carding

Combing

Spinning

Washing, carding, combing, spinning

Washing the wool is the first step in the factory on the way to a woollen garment. Only about 2/3 of the wool's original weight remains after washing and cleaning. In Australia it is called the "yield". The wool must then be carded, combed and finally dyed before being spun into yarn. It can then be knitted or woven to make a finished garment.

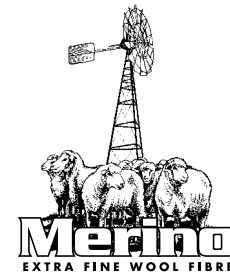


WOOL

Ullfrotté
ORIGINAL

Merino

Two hundred years ago the first merino sheep was shipped to Australia. The merino comes originally from Spain and has the finest and thinnest fibres of all breeds. In the days of the old sailing ships, meat exports were out of the question for the Australian settlers. They invested instead in wool production on a large scale. Over generations of breeding work the amount of wool has increased while the fibres have become ever finer. Today Australia leads the world in fine wool fibre.



Fine wool fibres for softness

Comfort is taken seriously in Australia. The CSIRO research institute tests wool fibres of various thicknesses. The unit used to describe the thickness of the fibres is the micron (one-thousandth of a millimetre). The comfort limit for garments worn next to the skin is 28 microns. Finer fibres give greater comfort.

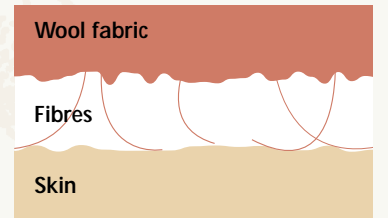
Merino fibres have a diameter of 15-25 microns and are ideal for garments worn next to the skin. The type of wool in greatest demand in the market today is merino. Merino wool is uniform and matt and has fine fibres. These properties make it easy to spin and give superior softness.

FIBRE DIAMETER DETERMINES QUALITY AND PRICE

In much of the industry a low micron value has become virtually synonymous with quality. The market demands ever-lighter garments with the highest possible comfort, and pays up to 20 times more for fine wool fibre than for coarser wool fibre.

ULLFROTTÉ ORIGINAL

Ullfrotté Original uses only fine merino wool with a fibre diameter of 22 microns. Ullfrotté Original carries the Merino – Extra-fine wool fibre label, which guarantees the raw material's quality. All packs are also labelled with a micron indicator that shows the raw wool's average fibre diameter.



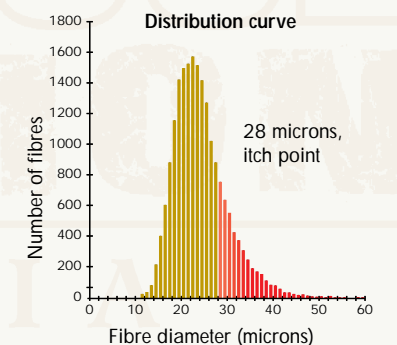
If the wool fibres are sufficiently fine, the fibres bend when in contact with the body and do not irritate the skin's nerve endings. Ullfrotté Original therefore uses fine merino wool with a wool fibre diameter of 22 microns for high comfort.

Furthermore, Ullfrotté fabric has the advantage that the wool fibres spring back into the material, which gives a further increase in comfort.



The fibre diameter can vary

Wool fibres are of varying thickness, even if they come from the same sheep. Many people experience discomfort if more than 3-4 per cent of the fibres are over 28 microns thick. This is not an exact limit, but even so it is known popularly as the "itch point" or comfort limit. The fibre diameter gives an average value for all fibres. A coarser wool yarn of poorer quality, with an average diameter of 25 microns, can vary between 15 and 45 microns (see Distribution curve). So not only should the micron value be as low as possible, but the distribution should also be as narrow as possible.



MICRON

Ullfrotté
ORIGINAL



For wear-resistance, elasticity and flame resistance

Ullfrotté Original consists today of 2/3 wool and 1/3 man-made fibre. The composition is different in different garment parts to give optimal function and comfort.

POLYAMIDE

Wool is blended with polyamide to increase wear resistance. By combining the best characteristics of the wool and the man-made material, we have achieved virtually the optimal combination. The polyamide also contributes elasticity to improve the finished garment's pliability.

ELASTANE

Ribbing and cuffs in Ullfrotté Original contain the rubber-like man-made fibre elastane. This fibre gives resilience and ensures that the shape conforms to the body while being pliable. The amount of elastane used today is less than 3%. One brand of elastane used in Ullfrotté Original is Lycra™.

ARAMIDE




To satisfy demands and regulations for personal protective equipment in the European working environment co-operation, Ullfrotté Original is now available in a complete special collection, reinforced with an aramide fibre that further improves the material's flame-resistant properties. The aramide fibre is also a form of polyamide fibre. Garments included in the flame-resistant range are identified in the product programme by their own insewn label.

EN 531 A B2 C1

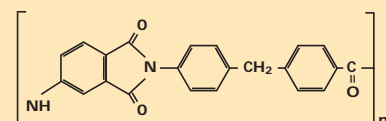
The Ullfrotté Original flame-resistant range has been developed to meet the requirements of the European working environment co-operation concerning protective clothing for industrial workers. Garments that meet the demands of EN 531 protect the user against brief contact with fire and one or more heat hazards. Code A denotes the garment's resistance to flame and the spread of fire. B denotes the garment's protection against convective heat and C denotes the garment's protection against radiated heat.

Ullfrotté Original meets the EN 531 A B2 C1 standard.

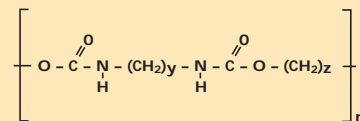
Ullfrotté Original with aramide fibre is available today in socks, pants, sweaters, jackets, overalls, hoods and gloves.

 ENV 343 thermal lining	2 1	 EN 531 A B2 C1 D0 E0
 CE 0336	400 g/m ² 70% WOOL 18% POLYAMIDE 12% ARAMIDE	
Ullfrotté Original FR		

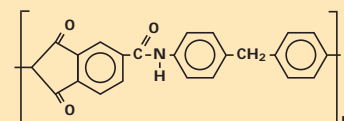
POLYAMIDE



ELASTANE



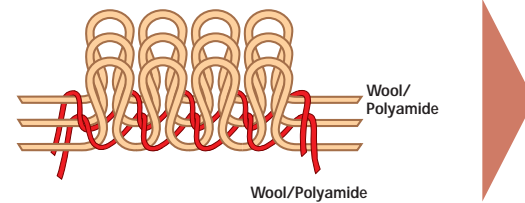
ARAMIDE



MAN-MADE FIBRE



Ullfrotté Original fabric consists of a number of loops of specific size and density. The terry fabric's ability to trap air and the wool's porous fibres give a material with high permeability to vapour and good insulating ability.



Unique manufacturing method

Ullfrotté Original is manufactured with high-technology circular knitting machines, developed by ourselves, that knit sleeves, legs and body parts in tubular form without seams. Even the ends of the garments are knitted in tubular form. For the best possible shape and fit, each garment part and size is knitted on individual knitting machines of different diameters. The yarn is knitted in a loop system that gives a soft terry with good loft. The technique produces very comfortable, strong garments with minimal seams.



Each size and garment part is knitted to shape on various knitting machines with needle beds of different diameters. This gives the garment a good shape and fit and exceptional comfort.

PREPARATION/SHAPING

The fabric is washed in water to stabilise the material. The finished garment must not shrink more than 5%. The material is then formed and set on metal frames and tenters with the aid of high temperature and steam.

DIE-CUTTING/CUTTING OUT

Each size and model has a specific length and breadth. Each garment part is stacked and die-cut with metal knives. The tube-knitted pants legs are split at the crotch using a cutting machine.

SEWING WITH FLAT SEAMS

After die-cutting and cutting out, the various garment parts are sewn together using flat seams. This technique produces seams without edges that chafe.

QUALITY ASSURANCE

Manufacturing is continually sampled at random for checking at every stage – raw materials, semi-finished and finished products – to maintain consistently high quality. Change in appearance, wear resistance, absorption ability, insulation and shrinking are checked continuously in the laboratory. The company complies with the ISO 9000 regulations for quality assurance.



Fabric knitted on circular knitting machines

Washing/shrinking

Shaping/setting

Die-cutting/Cutting out

Sewing

Top: Sewing garment parts. **Bottom, from left:** 1. Ullfrotté Original fabric is knitted on unique circular knitting machines. 2. The fabric is stabilised by washing in water. 3. The garments are shaped and set on tenters and metal frames with the aid of high temperature and steam. 4. Each garment part is die-cut with metal blades.

MANUFACTURING