

# The Benefits of Wool

**L**ord Nelson was an admiral bold  
Who beat the storms, the French, the cold  
Because in fleecy wool he clad  
Each jolly pig-tailed sailor lad  
And if one tar so much as coughed  
He had this signal run aloft  
"Remember men, the Navy's rule  
There is no substitute for wool."



'There is no substitute for Wool' This slogan was originated by the Woolmark Company formally the International Wool Secretariat for a London Underground advertising campaign in the early '1950s. The public sent in rhymes which ended in "There is no substitute for Wool", the winner's rhymes were then illustrated by world-famous cartoonists of the day.

A book of this history, rhymes and illustrations written by Past Master Richard Proctor is available for Woolmen to order online at the Woolmen's web site.

*The Woolmen's livery is the Best of the Best  
North, South, East and West  
When Woolmen wear wool, we wear it with pride  
It could be from Yorkshire (mills there still thrive)  
Warming in winter and cooling in sun  
How lucky we are - united as one  
So do raise your glass and let it be full  
"There is no Substitute for Wool."*



Woolmen Rhyme by PM Chris Thierry

## History

Sixty-five million years ago the dinosaur died out, and the mammal evolved, evolution has provided humankind with the world's most versatile fibre. That is a long time for nature to get it right, and it has made for us a luxury fibre that we take too quickly for granted. An abundance of new synthetics over the years make marketing claims on performance and comfort; these cannot come close to matching the versatility of wool.



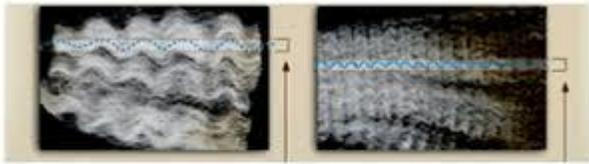
## Wool Facts



**Wool was the first fibre used by the modern human and has protected us, and provided comfort in our clothing, bedding, carpets, rugs, and homes for thousands of years.** Wool felts are still used to form mobile collapsible homes known as Gers in Mongolia, the Russian word you may be more familiar with is Yurts. Keratin which is the basis of wool exists in different forms horn, fingernails, feathers, and hooves. Body hairs of other animals such as goats, camels, rabbits, and llamas are chemically the same as wool.

**Fine wools with high natural 'crimp' mainly come from merino sheep grown in the Southern Hemisphere** and dominated by Australia, which accounts for 80% of the world's supply of superfine wools. Australia is followed by South Africa, New Zealand, Uruguay and Argentina. Merino is the top grade of all wool varieties, with approx. One hundred crimps to the inch. The success of the merino sheep in this hemisphere is due to the abundant sunlight, fertile soil and pollution-free ecological environment in Oceania, this laid the natural conditions for **merino** wool to become the top tier material, with softness to the touch, second only to cashmere.





3 Crimps per inch

This sample shows a higher amplitude or deeper crimp which is also bolder than the sample to the right.

8 Crimps per inch

This sample shows higher frequency (less bold) crimp than the sample to the left.

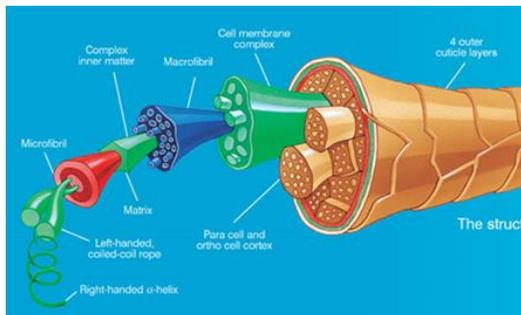
**Straight coarser wool fibres, which are grown around the world in the Northern Hemisphere (including British wools) are generally more suitable for interior furnishings and carpets.** In the Northern Hemisphere where we get a lot of rain, sheep have a straighter coarser wool fleece which enables the rain to run off. In these coarser wools, the crimp can be as low as one or two per inch.

**Merino wool fibre grows at a rate of around 0.2mm/day, and one single wool fleece will contain over 100 million individual fibres.** The modern merino sheep is a 24hr/7 day a week, 365 days a year fibre factory, producing nearly 5,500 miles of fibre/year at a rate 2/3rds of a mile an hour. The fibres from 5 merino sheep joined end to end could tie a bow around the world.



**Wools value is determined by its micron;** a micron is a measurement used to describe the diameter of wool fibre, the lower the micron measurement, the finer and softer the wool. The finest gauge wool comes from the Merino sheep. All Merino wool is considered very fine, meaning the fibres are smaller than 24 microns in diameter. Today 19.5-micron (extra fine) is the most commonly used in clothing for comfort against the skin. You also, have superfine merino wools these are 18.5 microns or lower) and can be as fine as 11.5 microns. To enable you to envisage how fine that is, a human hair is on average around 100 Microns wide.

**Wool is non-allergenic,** the facts. It is a common misconception that wool can cause an allergic reaction. Studies show that all fibres, not only wool, can provoke a prickle sensation on the skin if the fibre end is coarse enough. This prickle can be itchy and cause irritation, but it is not allergy. While fine fibres bend and brush against the skin, coarse fibres tend to be more rigid and can trigger nerve endings in the skin's surface.



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**Wool is one of the most technically and chemically complex of all fibres.** The wool fibre is layered, creating an outer scale structure that is hydrophobic, this repels water molecules; the inner layer hygroscopic and is able to transport moisture vapour from the sheep's skin to the outside keeping it dry.

**Wool provides a natural micro-climate next to the sheep's skin;** stays dry to the touch even when carrying moisture, holding up to a third of its weight in water. Wool keeps that clammy feeling away from the body.



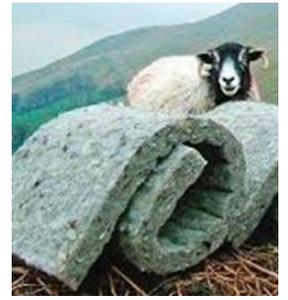
**This ability for wool to keep you both warm and cool is best illustrated through the merino sheep breed;** Merino sheep in Australia thrive in a wide range of conditions, from -15Celsius in winter to +45 Celsius in summer. This is due to wool's unique combination of fibre crimp and its chemical structure. The crimp traps still air which insulates against heat and cold and the and the hygroscopic interior transfers hot moisture vapour from the sheep's skin to the outside to keep it cool and dry. These benefits are transferred to us when we wear wool, keeping us cool when it's hot and warm when it's cold. An example of wools unique properties in **clothing keeping you cool** can be seen in the Sahara Desert,

where the **Bedouins wear thin wool clothing** to keep themselves cool in the blistering heat. In hot temperatures, **wool** absorbs moisture from the skin and helps to dissipate heat more rapidly. This keeps the wearer cool and also reduces odour. **The Worshipful Company of Woolmen's historical connections to Australia and the Australian wool industry goes back to its beginnings some 200 years ago.** It was in the City of London in 1821 that the first bales of Australian merino were sold at Garraway's Coffeeshouse.



**Wool also insulates the sheep and the wearer,** holding in body heat and resisting the penetration of cold air. In snowy climates, you may have seen sheep with a fresh layer of snow on their backs. The reason the snow does not melt right away is that insulation of the wool fleece blocks the loss of heat from the sheep's body

***In the home wool's unique ability acts as a natural dehumidifier;*** this can be achieved through investing in wool carpets, wool roof or wall insulation. At times of high humidity, wool absorbs the moisture and then releases it when the atmosphere is dry, acting as an atmospheric buffer. Wool is an extremely efficient fibre for controlling humidity in a home. An excellent example of this use is the National Trust, who put wool insulation in lofts of some of their period properties, as well as wool carpets, to reduce moisture build-up, which can also save on heating costs.



***Wool is more durable than many of us realise;*** on a like for like basis is as durable as synthetics, it also stretches and recovers and resists bending and crushing. Wool's purpose is to protect the sheep, if the wool was not resilient, it would break down quickly, and the sheep would not survive.

Each wool fibre has a three-dimensional spiralling structure that gives it natural elasticity. This elasticity means a wool fibre can stretch up to 30% more than its original length and bounce back, wool reacts the same way when compressed, The wool fibre is like a spring, which remembers its original form. That's why is best to choose a wool carpet and wool clothing to keep its shape. It is naturally resilient, thereby ensuring long term appearance retention. In socks, it acts as a buffer between the foot and ground like a shock absorber.

***Wool, unlike synthetic fibres, wool is able to absorb contaminants,*** not only does wool keep the air in a room free of many harmful pollutants, it will not re-emit them, even when heated. It has been estimated that a wool carpet combined with wool interiors such as curtains and furniture can help purify the air for 30 years.

***Wool's hydrophobic surface makes soiling wool products hard, however if they do get soiled, they are easy to clean.***

***Wool's chemical and physical structure makes it inherently flame retardant.*** The fibre holds flame retarding moisture and the crimp insulates from heat. It has low flame spread, does not melt, forms an insulating cool char, self-extinguishes; it contributes to smoke reduction and inhibits toxic gas formation.

***Wool's natural crimp traps air;*** this provides optimal sound and thermal insulation. Wool is one of the most effective acoustic building materials possible and dramatically reduces sound transmitted through floors and windows.



***This inherent wool fibre structure in carpets will reduce injury should you fall.*** In the study, published in an issue of *Age and Ageing*, researchers looked at the number of falls and flooring type involved over a two-year period in 34 residential nursing homes in the U.K. A total of 6,641 falls and 222 fractures occurred during the study. Researchers found carpeted wooden floors were associated with the lowest number of hip fractures. The risk of a hip fracture from a fall on a carpeted wood floor was 78% lower than all other floor types.

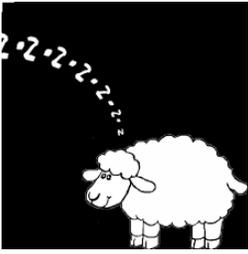
Wool carpeting increases thermal comfort by reducing heat loss through the feet on carpets or furniture. In tropical climates, walking barefoot on a wool carpet or sitting on wool, feels more refreshing, less sticky and more comfortable than a synthetic one.

***Wool is a natural, renewable fibre when the carpet needs to be replaced, the old carpet will biodegrade.*** The same for apparel products, an example to try yourself.

***Wool's natural properties help minimise the effect of dust mites;*** this is very important for allergy sufferers who react to dust mites. Wool does this by controlling the humidity in the carpet as dust mites like a humid atmosphere. A wool carpet also has a natural ability to reduce static build-up and the movement of dust and noise on laminates is overcome.

In the garden wool's attributes as a mulch, to prevent the soil drying out and also as slug pellets. In both cases as they biodegrade they release valuable nutrients into the soil. As an experiment to test this - in the Autumn lift some turf from the lawn, place an old sweater on the soil, replace the turf on top of the sweater, wait until next spring. As the wool biodegrades, the grass will grow greener, and taller, taking on the shape of the sweater.

**Sleep well with wool.** The human body consists of up to 75% water, and 500ml of water is lost each day through the respiratory system and perspiration, a considerable amount of this moisture is lost during sleep.



Sleep is dynamic and changing – it is very structured and controlled by the central nervous system

- Stage 1 – A transition stage from waking to sleep
- Stage 2 – A person is sound asleep but can easily be awakened by noises
- Stage 3 – almost totally relaxed
- Stage 4 – this is the deepest level of sleep with muscles completely relaxed REM Sleep

Sleeping materials are essential as wool helps control body temperature, the heart rate slows, less limb exposure, calmer rest, REM sleep can increase by 25%

Within the room, the microclimate created by the human body and its interaction with individual bedding items has a strong relationship with, temperature and humidity conditions. An ideal room comfort range seems to be between 18°C – 20°C (64°F – 68°F) Lower than 16°C (60°F) people attempt to sleep more, above 21°C (70°F) people may not sleep long enough to be rested.

**Wool is used in hospitals to control the body temperature of premature babies, and for patients with long periods in bed.** Fleece disperses pressure spots exceptionally well and eliminates moisture build-up and reduces the chance of bedsores and helps babies gain weight more rapidly.



**Wool, a naturally environment friendly fibre;** live with wool and reduce your carbon footprint, as wool is an ideal fibre to help reduce global warming. According to international research, a household can significantly reduce its carbon emissions by living with wool: insulating with wool, wearing wool, walking, sleeping and sitting on wool. The European Commission reports that a household can cut its CO2 emissions by up to 300kg a year and energy bill by 5-10 per cent simply by reducing its heating by a mere 1°C. Extract from a media release by AWI in 2009.

Wool is not anti-bacterial, however it appears to be so, because it does not smell when worn next to skin. This is because it is absorbing the mal-odours rather than killing the bacteria responsible for the mal-odours and therefore requires less regular cleaning than for example, cotton. **A further opportunity of carbon footprint reduction.**



**Wool is a planet-friendly fibre made from the simple combination of sunlight, water, and grass.** It is made of up to 50 per cent carbon, stored in a stable form. It is renewable, has the ability to biodegrade without harm to the environment and can be recycled. Providing both advanced and developing countries alike the opportunity to reduce their reliance on fossil fuels.



**A note on guilds and livery companies engaged with wool;** many of the 12<sup>th</sup> Century City Livery Companies were involved with **wool**. Some specialised in particular wool manufacturing processes such as Weaving, Dyeing or Clothworking. These are recognised as 'Craft' Livery Companies. Some Company roots such as the Drapers' and the Woolmen were more involved in the setting of standards, the buying, collection and selling of wool products. These are described as 'Merchant' Companies. The Woolmen's varied history defines it as predominantly a 'Merchant' rather than a 'Craft' Company. The Woolmen is unique in being the only Textile related Livery Company whose title is defined as a single fibre - Wool. Many early Woolmen lived outside London.