



# NATURAL SHEEP'S WOOL INSULATION



## Condensation Control

Condensation is one of the biggest challenges facing the building industry today. Excess moisture can not only have a detrimental effect on the structure of a building but it is also a root cause of mould which can have an adverse affect on the welfare of its inhabitants.

NatuWool is a hygroscopic fibre and is therefore able to absorb, store and release moisture faster than most other materials. NatuWool can absorb over 35% of its own weight in moisture without significant changes to thermal performance, whereas the thermal performance of man-made mineral fibre insulation deteriorates when condensation is present. Sheep's wool insulation is ideally suited to timber frame structures as it has a natural synergy with wood. The sheep's wool fibres draw out the moisture, conditioning the wood and act as a 'buffer' to protect the fabric of the building.

Independent research clearly illustrates that as moisture levels increase, no significant changes to thermal conductivity will occur. This consistency demonstrates the versatility of sheep's wool insulation and an ability to cope in contrasting environments and levels of humidity.

## Historic Properties

Energy prices have risen dramatically in recent years, encouraging traditional property home owners to consider the benefits of insulating their homes. It is sometimes difficult for older properties to maximise energy conservation whilst preserving the fabric of the building.

High ceilings and solid walls are key sources for heat loss and draughts, causing unnecessary energy expense. By allowing the structure to breathe whilst maintaining thermal resistance, natural insulation products help to conserve the building, improve indoor air quality and maximise thermal efficiency.

## Building Towards a Brighter Future

Black Mountain has a factory dedicated to manufacturing natural insulation products. The factory requires minimal energy to operate and is one of the most modern in Europe. Our NatuWool insulation has over 90% wool content, providing high performance and maximum benefit to the end user.

The British sheep's wool industry produces over 2.1 million tons of wool each year. To manufacture Black Mountain sheep's wool insulation, we use 'waste' wools which are rejected by other industries, and would otherwise be rendered useless.

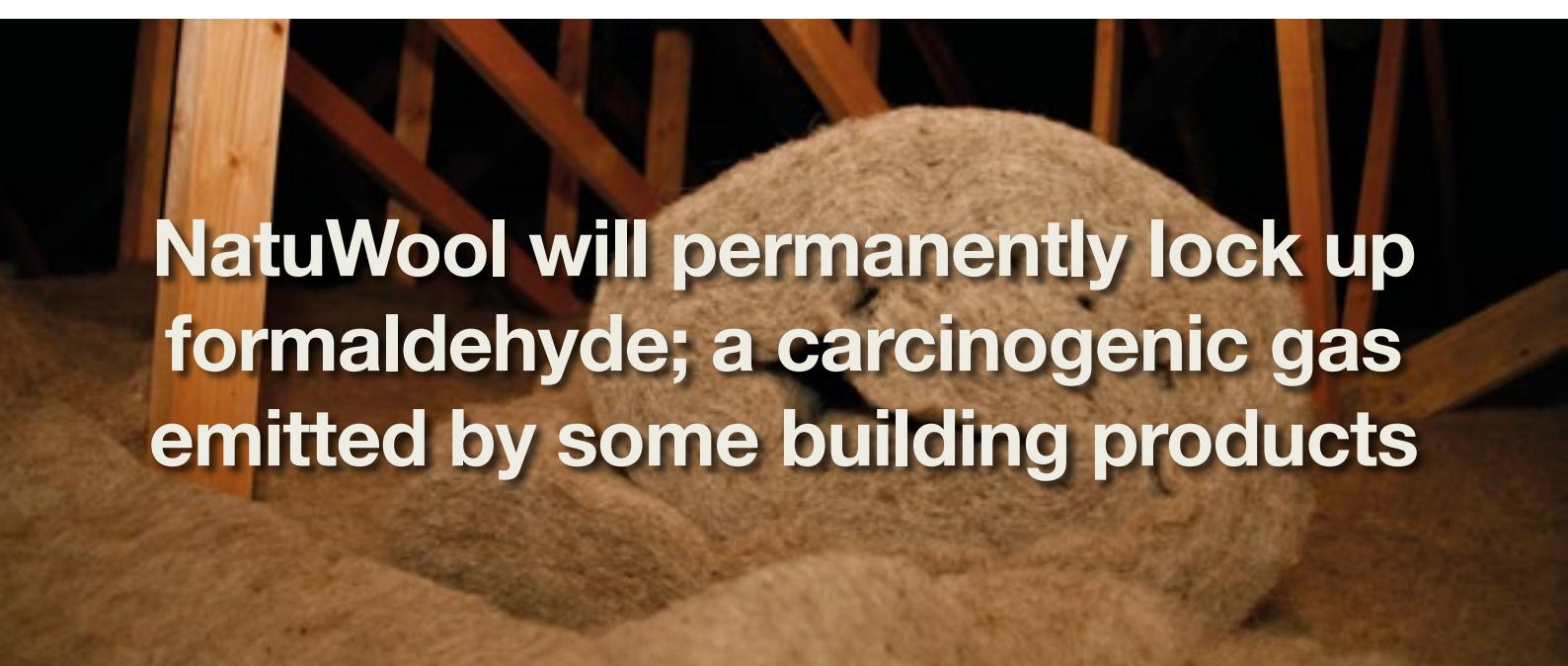
## Ease of Application

Black Mountain sheep's wool insulation is safe to handle without protective clothing. Some man-made mineral fibre materials are unpleasant to handle and require the use of protective garments, masks and eyewear to be safely installed or removed.

The product is available in roll or batt form and can be easily cut to fit unconventional shapes. Rolls are ideal for minimising installation time and batts are effective where limited space is an issue. NatuWool insulation can be applied over existing insulation to avoid disturbing existing fibres, however, it is still advised to wear a mask to prevent the inhalation of dust or any debris already present.

## Landfill is not a Sustainable Option

Sheep's wool is biodegradable and therefore can be composted into the ground to enrich the soil and remain part of the earth's natural cycle. Sheep's wool insulation can be recycled or incinerated to produce additional energy, whereas man-made mineral fibre materials currently have no practical recycling system in place and can only be properly disposed of into landfill sites.



**NatuWool will permanently lock up formaldehyde; a carcinogenic gas emitted by some building products**

## Indoor Air Quality

Black Mountain NatuWool has a unique ability to absorb noxious gases emitted from some building products e.g. formaldehyde; a carcinogenic gas emitted from various man-made building materials. Wool permanently locks up these gases which help to protect residents from a number of health risks.

A lack of 'breathability' in buildings can cause various problems, including health issues as a result of damp and mould. The term 'breathable wall' refers to a structure's ability to manage internal moisture levels, providing a more comfortable internal environment.

## Durability and Longevity

Black Mountain NatuWool insulation contains high levels of sheep's wool fibres which are highly resilient, ensuring that our product will maintain its structure throughout the life of a building.

Compression testing has highlighted that Black Mountain NatuWool insulation has an excellent recovery rate within the first 24 hours of installation, whereas other alternatives may take longer to reach their full thickness. Sheep's wool fibres are naturally very durable; a single wool fibre is stronger than steel of the same diameter. This resilience enables the product to maintain its original structure whilst in transit and is a great solution for pre-fabricated buildings.

Realistically, loft insulation will be disturbed periodically throughout the life time of a building and it is therefore important to ensure that these disturbances do not have a detrimental effect on the thermal performance of the insulation. Sheep's wool insulation is resistant to compaction, unlike some alternatives that will compact over time and compromise thermal performance. This longevity ensures that Black Mountain sheep's wool insulation will continue to perform to a high standard throughout the building's lifespan.

## Fire Standards

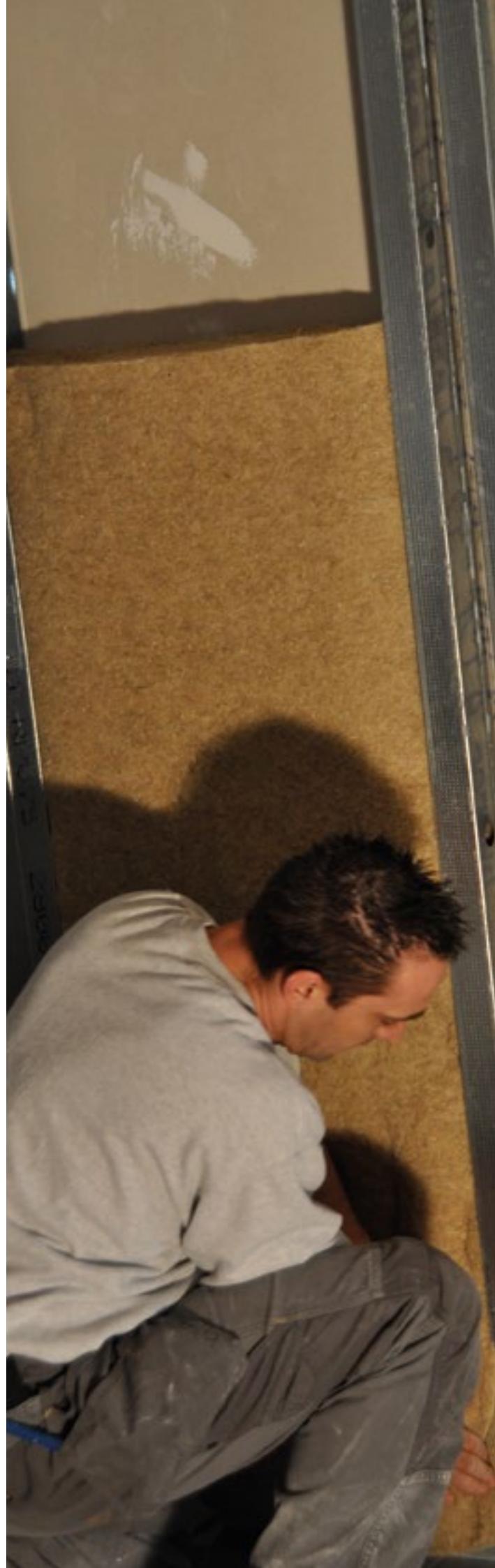
Black Mountain sheep wool insulation achieves a fire performance rating of Euro Class E which ensures that the material is flame retardant.

All our wool is washed and treated to make it fire safe. This means that the product will not cause or exacerbate a fire.

## Installation & Application

NatuWool insulation is flexible and ideal for use in confined spaces. This ease of use makes the installation process faster and more efficient. Black Mountain sheep's wool insulation is ideally suited to timber frame structures and can be applied to:

- Lofts
- Walls
- Rafters
- Floors



## Standards

Sheep wool insulation matches the following standards for loft, rafter and internal wall thermal requirements as follows:

England/Wales	Approved Document L1, L2 - Table 1
Scotland	Technical Standard Table J23
Northern Ireland	Technical Booklet F Table 1.2/1.4

## Sizes Available

STANDARD ROLL SIZES AVAILABLE					
Form		Roll			
Widths		600mm			
Thickness	50mm	75mm	100mm	125mm	
Length	10m	7.5m	5m	4m	
m <sup>2</sup> per pack	6	4.5	3	2.4	

Special sizes and thickness available on request

STANDARD BATT SIZES AVAILABLE					
Form		Batt			
Widths		400mm		600mm	
Thickness (mm)	50	75	100	150	150
Length	1200mm				
m <sup>2</sup> per batt	0.48		0.72		

Special sizes and thickness available on request

## Performance & Technical Standards

Fire	BS 5803-4:1985 Euro Class E
Condensation	BS 5250:1989
Thermal Conductivity	0.039 W/mK
Density	19kg /m <sup>3</sup>
ODP*	Zero
GWP*	Zero

ODP - Ozone depletion potential

GWP - Global warming potential

## Thermal Performance

Thickness	Thermal Resistance (R)	U Value
50mm	1.28 m <sup>2</sup> k/W	0.78 W/m <sup>2</sup> K
75mm	1.92 m <sup>2</sup> k/W	0.52 W/m <sup>2</sup> K
100mm	2.56 m <sup>2</sup> k/W	0.39 W/m <sup>2</sup> K
150mm	3.85 m <sup>2</sup> k/W	0.26 W/m <sup>2</sup> K
200mm	5.13 m <sup>2</sup> k/W	0.20 W/m <sup>2</sup> K
250mm	6.41 m <sup>2</sup> k/W	0.16 W/m <sup>2</sup> K

***NatuWool will absorb over 35% of its weight in moisture without affecting thermal performance***

**NATUWOOL  
SHEEP WOOL  
INSULATION**

For more information on NatuWool, please contact our sales team

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