



# THERMAFLEECE™

## Sheep's Wool Thermal Insulation



**Second Nature UK Ltd**

BUILDING ON WHAT COMES NATURALLY

[www.secondnatureuk.com](http://www.secondnatureuk.com)

THERMAFLEECE uses wool from British hill sheep to create an exceptionally efficient insulation material in both new-build and refurbishment projects, which is absolutely safe to use.

*Thermafleece is ideal for use in both new-build and refurbishment projects. It offers the customer an alternative environmental and technical specification and can be used in a wide variety of roof, wall and floor constructions.*

## Healthy to use, healthy to live with

### WHY WOOL INSULATION IS BEST

Wool is a natural fibre from a fully renewable resource, consequently the life cycle of the product has an ideal energy balance.

THERMAFLEECE is manufactured to a density of 25kg/m<sup>3</sup> giving a K-value of 0.039 W/m.K. Because of its ability to rapidly absorb and release water vapour, THERMAFLEECE wool insulation can help to keep buildings cool in summer and warm in winter.



Photograph courtesy of Creekside Education Trust

### COOL IN SUMMER

When the outside temperature increases and begins to heat the wool, it releases moisture; that has a cooling effect on the fibre which reduces the flow of heat to the inside of the building. This can reduce peak temperature by up to 7°C when compared to buildings in which alternative forms of insulation are installed.

### WARM IN WINTER

In the winter the absorption of moisture by wool insulation can increase peak temperature by up to 4°C when compared to buildings in which alternative forms of insulation are installed.

### NATURALLY BREATHABLE

THERMAFLEECE, being hygroscopic, can absorb and desorb water vapour without compromising its thermal efficiency. It is therefore ideal for use in roofs and timber framed walls designed to avoid a damaging build-up of moisture by allowing water vapour to migrate through the structure. In this type of construction, THERMAFLEECE is the perfect partner for a vapour-permeable breather membrane used on the cold side of the thermal insulation to prevent the infiltration of cold air and wind driven rain and dirt. It is necessary to protect the insulation from dirt dust and debris in order to maintain its designed performance levels. Heat loss by convection is also substantially reduced because the insulation is protected by the breather membrane preventing air movement across the surface.

### CONDENSATION CONTROL

Wool generates heat when it absorbs moisture from the air. That energy is known as the heat of sorption and accounts for the warmth felt by wearers of woollen clothes in winter conditions. When the air is saturated with water vapour, wool absorbs some 40% of its dry weight in moisture, producing 960 kilojoules of heat energy for every kilogram of dry wool.

This warmth is not noticeable inside the building but it acts to prevent condensation in construction cavities by maintaining the temperature above the dew-point in damp conditions.

### ENERGY EFFICIENT. TOTALLY SAFE

The cleaning, air-laying and thermal bonding processing during the manufacture of THERMAFLEECE consumes minimal energy.

THERMAFLEECE uses only 14% of the embodied energy that is used to manufacture glass fibre insulation, therefore paying back its manufacturing energy cost seven times faster than glass fibre.

THERMAFLEECE is harmless and can be installed without gloves or protective clothing. It is not irritating to the skin, eyes or respiratory tract and causes no discomfort to site workers during installation. Any fibres which happen to reach the living space will present no hazard to health. The necessary insect proofing and fire resistance rating is achieved by the inclusion of naturally derived additives.

### EXTREMELY DURABLE

The fibre adapts to the shape of rafters, joists and studs to provide a permanently tight fit. Properly installed, THERMAFLEECE will retain its low density and thermal performance - with a life expectancy similar to that of the construction in which it is installed.

### RECYCLABLE

At the end of its useful life, THERMAFLEECE can be recycled for other environmentally friendly applications. THERMAFLEECE contains no permethrin, pyrethroids, pesticides or formaldehydes.





# THERMAFLEECE™

## Application

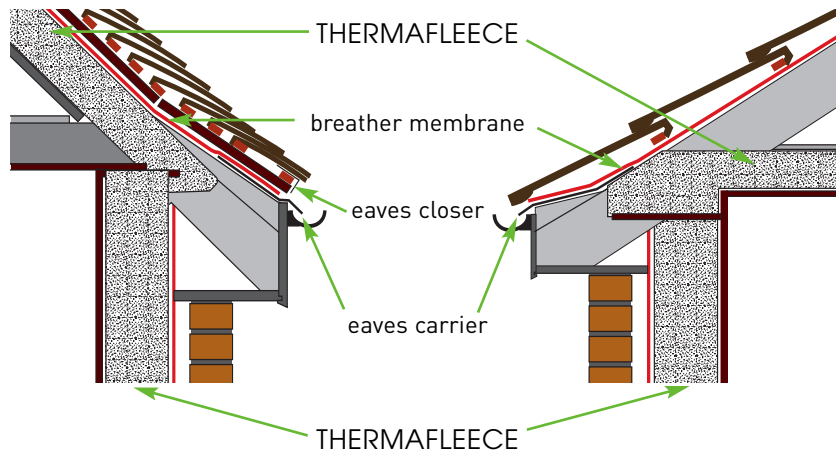
THERMAFLEECE should not be left exposed to sunlight or allowed to remain wet for extended periods; store the insulant under cover and clear of the ground.

THERMAFLEECE is lightweight and easy to handle and install. The material can be easily cut to shape and size with a sharp knife.

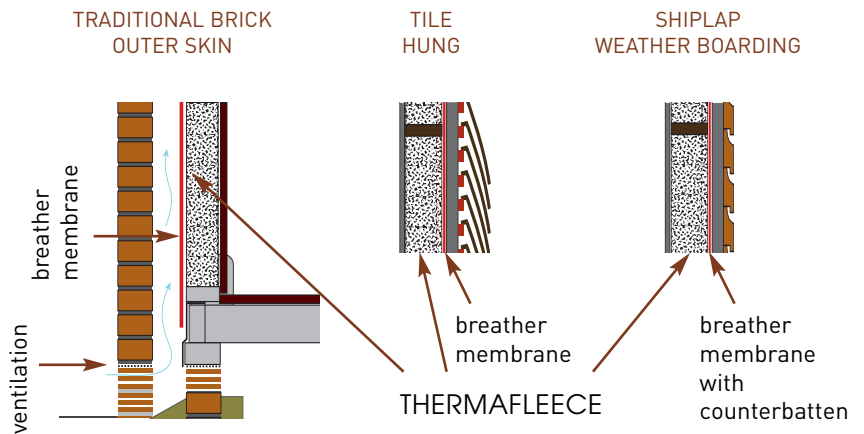
THERMAFLEECE is completely safe to use causing no irritation to the skin, eyes or respiratory tract. When installing the product in confined areas a dust mask is recommended to prevent inhalation of existing dust particles.

To retain the benefits of water vapour absorption and release, THERMAFLEECE should be used in conjunction with a vapour permeable breather membrane.

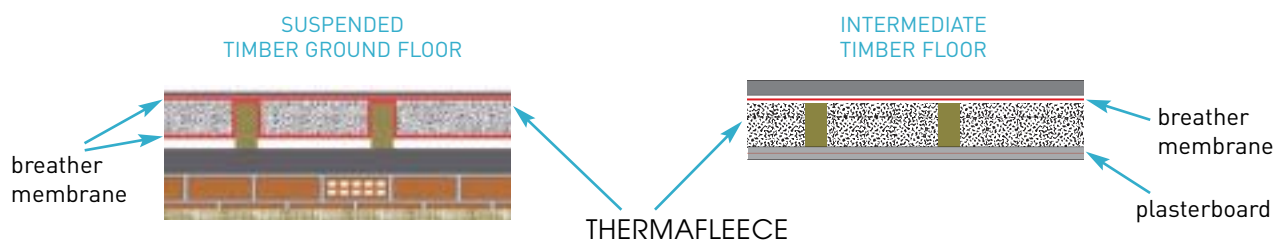
### THERMAFLEECE - ROOFS



### THERMAFLEECE - WALLS



### THERMAFLEECE - FLOORS





# THERMAFLEECE™

## Technical Specification

The low thermal conductivity of THERMAFLEECE (0.039W/m.K) compares favourably with that of other fibrous insulants. The product contains a necessary lofting agent to maintain fibre stability. THERMAFLEECE is manufactured in batts of 1200 mm long and either 400 mm or 600 mm wide. A range of three thicknesses are available - 50 mm, 75 mm and 100 mm enabling any overall insulation depth to be achieved by combining different thicknesses. THERMAFLEECE is sold in packs - 50 mm thick covers 20.16 m<sup>2</sup>, 75 mm thick covers 12.96 m<sup>2</sup> and 100 mm thick covers 10.08 m<sup>2</sup>.

### FIRE RESISTANCE

Wool has a higher fire resistance than cellulose and cellular plastic insulants; it does not burn but rather melts away from an ignition source and extinguishes itself. THERMAFLEECE is treated with a natural fire-proofing agent to improve its intrinsic fire resistance and comply with BS 5803-4 (Spread of Fire) achieving results of zero for ignitability, spread of flame and heat evolved.

### ACOUSTIC

Thermafleece has been tested for its acoustic properties, which means that it can now be specified as part of your noise control scheme. A full acoustic report is available either at [www.secondnatureuk.com](http://www.secondnatureuk.com) or by contacting the Second Nature office.

### TECHNICAL SALES SERVICE AND BACK UP

Second Nature UK Ltd is pleased to provide technical advice on how to incorporate THERMAFLEECE into different forms of constructions, for both refurbishment and new build projects.

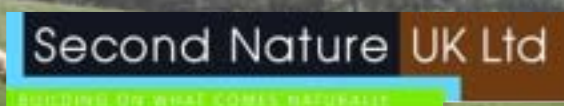
We offer:

- A technical sales office help-line **0870 2406715**
- Computer U-value and condensation risk analysis calculations
- Copies of the relevant reports and samples
- Help and advice on meeting the requirements of Building Regulations

Recommendations as to methods, use of materials and construction details are based on the experience and knowledge of Second Nature UK Limited and are given in good faith as a general guide and a service to designers, contractors and manufacturers.

Thickness (tolerance +/- 5mm) (mm)	Thermal Resistance (m <sup>2</sup> 0K/W)
50	1.29
75	1.94
100	2.58
150 (2 x 75mm) or (1x100mm+1x50mm)	3.87
200 (2 x 100mm)	5.16
250 (2 x 100mm + 1x 50mm)	6.45

Performance/Testing - International Standards	
Energy consumption in manufacture	14.6 MJ/jg or 136MJ/m <sup>3</sup>
Thermal conductivity	0.039W/m.k
Water absorption (@100% RH)	40%
Mould resistance	0NORM B6010
Moth/beetle proofing	Based on ISO 3998
Ignition point	560°C
Spread of fire	BS 5803-4



This leaflet is printed on environmentally friendly paper from sustainable forests.

Thermafleece is supplied on the basis of Second Nature's terms and conditions of business, a copy of which is available on request.

Distributor: