



NATURAL HEMP INSULATION

 **NatuHemp**

 **Black
Mountain**
NATURAL INSULATION

Historic Value

Hemp fibre has been used throughout history for durable applications such as ropes, sails and clothing. Even today, ships still use hemp in sails and rigging around the world due to its strength and natural resistance to mildew and weathering.

The hemp fibre used at Black Mountain NatuHemp is incredibly resilient with an ability to buffer moisture, regulate thermal performance and retain its structural rigidity; this makes hemp ideal natural insulator.

Carbon Footprint

During its growth stage, hemp will lock away up to two tonnes of CO₂ per tonne of fibre harvested, combating the effects of global warming. The CO₂ will remain stored in the hemp fibre throughout the life of the product. Black Mountain use up to 90% less manufacturing energy compared to alternative insulation products. At the end of a building's life, the hemp fibre is biodegradable or it can be incinerated to provide further energy.

Overall, the product will lock up more CO₂ than was emitted during production which has a significant positive impact on the environment.

Durability

The greater strength of hemp fibres together with the high natural fibre content of Black Mountain insulation, means that our product maintains a semi-rigid structure and is more resistant to slumping. These characteristics make Black Mountain hemp insulation an ideal solution for warm lofts and timber frame walls. Some insulation products are known to compact over time resulting in a significant loss of performance. Hemp fibres have a natural resilience which enables them to maintain their structure.

The ability of Black Mountain hemp insulation to resist compaction from human disturbance ensures the energy efficiency of the building is retained throughout its life.

True Sustainability

Hemp fibre is a biodegradable, non-toxic fibre. The organic hemp fibres used at Black Mountain are derived from waste straw left at the end of the hemp seed harvest. Annually, the growth rate and versatility of this agricultural crop means that hemp insulation is truly sustainable and will flourish in diverse conditions.

Hemp needs little water to grow and thus does not require artificial irrigation; an important factor for many areas where water shortages regularly occur.

Hemp is also a natural weed suppressor due to the speed at which the plant grows. It can be grown without the use of herbicides and other chemical pesticides; a condition rare in agriculture today. Hemp is also used as a 'break' crop between other crop rotations thus allowing the soil to regain the nutrients necessary to produce healthy cereal crops. Black Mountain hemp insulation has a 95% natural fibre content; one of the highest available on the market today. This high natural content enables the product to achieve the maximum natural performance and provide the utmost benefit to the end user.

Greener Alternative

Black Mountain has a dedicated natural insulation factory in the UK, which is one of the most modern in Europe achieving one of the lowest energy consumption rates. Many companies claim their products save the energy consumed in their manufacture, however, this is true for all insulation products.

NatuHemp insulation uses very little energy in its manufacture; it is a carbon negative product. During its growth stage, it will lock up significantly more carbon than is produced in the manufacturing process. Truly sustainable products require minimal energy to manufacture.

Black Mountain NatuHemp insulation is one of the most innovative, technically superior and environmentally sensitive natural insulation products available on the market today.



NatuHemp locks up to two tonnes of CO₂ per tonne of fibre

Thermal Performance

The thermal conductivity of hemp insulation is 0.039 W/mK. Low conductivity levels make hemp an excellent insulator. Natural insulation materials also have a higher thermal mass which enables them to not only retain heat but also regulate thermal performance for an optimum indoor environment. This allows buildings to stay warmer in winter and offers some protection against overheating in the summer; a unique attribute particularly relevant to buildings with warm lofts.

Moisture Permeability

Condensation is a fundamental problem facing many architects today. A lack of 'breathability' in building materials can lead to structural damage, e.g. wood rot and potential health issues as a result of damp and mould.

Hemp can absorb up to 20% of its weight in moisture without any deterioration in its thermal performance, whilst some man-made insulations will deteriorate significantly. NatuHemp also acts as a 'moisture buffer' by absorbing sudden influxes of condensation and allowing it to evaporate at a more gradual rate. This ability to regulate moisture makes hemp insulation an ideal product for use in timber frame structures as it is able to draw out moisture and keep the frame conditioned. Black Mountain NatuHemp's superior moisture performance is achieved through its high natural fibre content.

Fire Standards

NatuHemp insulation achieves a fire performance rating of Euro Class E which ensures that the material is flame retardant. All our hemp is treated with a non-toxic chemical compound to make it fire safe. This means that the product will not cause or exacerbate a fire.

Installation & Application

All our insulation products are safe to install without protective clothing and are easy to cut to fit any size or shape. Hemp insulation is resilient yet flexible and ideal for use in confined spaces. This ease of use makes the installation process faster and more efficient. Black Mountain hemp insulation is ideally suited to timber frame structures and can be used in / installed in lofts, rafters, walls and floors.

Widths & Dimensions

Older properties generally fail to meet current new-build dimensions, therefore the resizing required for an exact fit is usually time consuming and produces a substantial amount of waste material.

Black Mountain provides a bespoke sizing service for larger projects, minimising installation time, eliminating waste material and reducing overall cost.



NatuHemp insulation matches the following standards for loft, rafter, external 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

Performance & Technical Standards

Fire	Euro Class E EN 13501-1:2002
Condensation	BS 5250:1989
Thermal Conductivity	0.039 W/mK
Density	30kg /m ³
ODP*	Zero
GWP*	Zero

ODP - Ozone depletion potential
GWP - Global warming potential

Sizes Available

For the latest pack and pallet quantities, please contact Black Mountain sales@blackmountaininsulation.com.

Thermal Performance

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

NatuHemp insulation will absorb 20% of its weight in moisture without affecting thermal performance

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For more information on NatuHemp, please contact our sales team

Phone	01745 361911	Fax	08082 800395	Black Mountain Insulation Limited
Email	sales@blackmountaininsulation.com			Bradwell Hall, Bradwell on Sea
Website	www.blackmountaininsulation.com			Essex, CM0 7HX