



THERMAFLEECE®

SHEEP'S WOOL THERMAL AND ACOUSTIC INSULATION

MOISTURE CONTROL



The use of Thermafleece insulation in buildings has many benefits. In addition to providing first-class thermal and acoustic performance and absorbing common pollutants, the 'hygroscopic' nature of wool fibres means that the insulation can help to control internal moisture levels.

Moisture in Buildings

Most of the moisture inside buildings comes from the occupants through breathing and their daily activities such as washing, cleaning and drying of clothes. Indeed, the average family produces 10-30 litres of atmospheric moisture per day, equivalent to a full bath of water per week.

Movement of Moisture in Buildings

Air movement carries moisture around buildings. This moisture is capable of penetrating and diffusing through porous surfaces such as walls and floors. Condensation can occur if the moisture comes into contact with cool surfaces or penetrates cool porous materials.

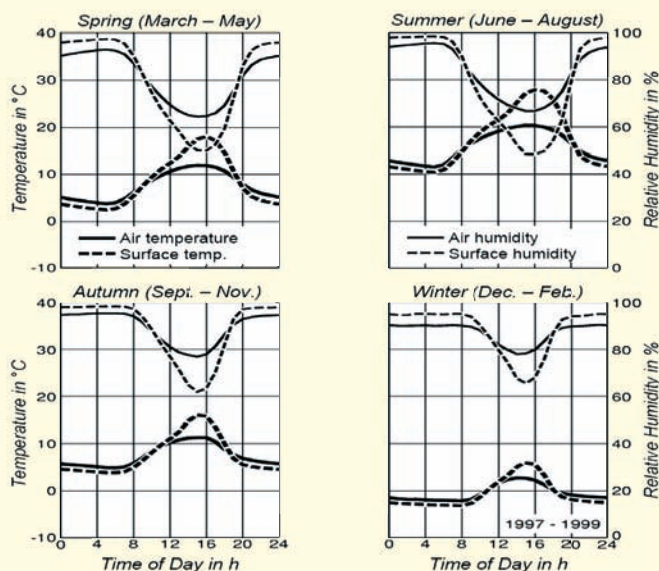
Thermafleece – Controlling Condensation

Wool reacts with water in a complex series of reversible chemical mechanisms that enables water to be absorbed and released. Wool is capable of absorbing and releasing large quantities of water very quickly whilst at the same time having the capacity to absorb and release water slowly over prolonged periods.

The wool in Thermafleece can absorb 38% of its own mass in water and will still feel dry. This is equivalent to more than 70kg or half a bath full of water for an average insulated property.

The use of Thermafleece can contribute to maintaining a more stable level of internal humidity. Atmospheric moisture is capable of diffusing through Thermafleece without affecting thermal performance. If conditions are drier than the wool fibre, Thermafleece will release moisture. Similarly, if the surrounding atmosphere is more humid than the wool insulation, Thermafleece will absorb moisture. The risk of condensation is therefore influenced by the ability of Thermafleece to absorb a significant proportion of moisture.

Seasonal variations in air, surface temperatures & humidity



Condensation and Temperature

Condensation can occur in warm and cold conditions. Warm weather condensation occurs when warm air, which can hold a lot of moisture, enters a building and condenses on cool surfaces. Surfaces such as walls can be cool in summer due to air conditioning or thermal inertia. Cold weather condensation occurs when cold air that doesn't hold much moisture, enters a building and rapidly picks up moisture. When this air comes into contact with cold surfaces it releases water as condensation.

Thermafleece – Controlling Heat

When wool absorbs water, heat is created and when the wool dries heat is absorbed. This is one of the reasons why wool is such a comfortable material to wear. The same process can have a stabilising influence over air temperature in constructions.

If the outside temperature increases and begins to heat the wool insulation, it releases moisture, which has a cooling effect on the fibre. This in turn can reduce the flow of heat to the inside of the building by as much as 7°C when compared to buildings containing conventional insulation. Conversely, in the winter the absorption of moisture by wool insulation can increase peak temperatures by up to 4°C.

In line with good practice, Thermafleece should be considered in conjunction with the range of measures available when managing moisture levels in buildings.

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Healthy to use. Healthy to live with

For further information contact:

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BUILDING ON WHAT COMES NATURALLY

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