



Instead of burning sheep wool, Grade A+ role is essential in solving the farmers' financial problems by upcycling sheep wools into useful products competing the imported ones.

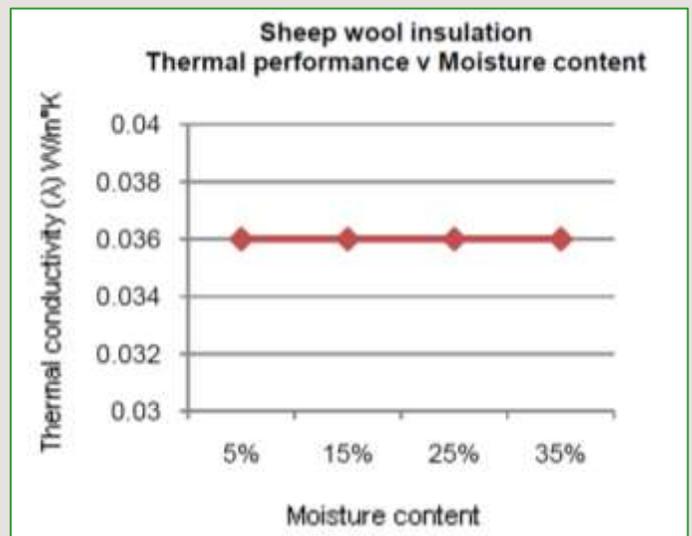
Insulating Material Rolls

Sheep Wool manufactures thermal and acoustic insulation products made 100% of natural sheep wool. In a variety of applications, our products are used to reduce heat loss.

1. Humidity Regulation

Condensation is one of the most pressing issues facing the construction industry today. Excess moisture not only damages a building's structure, but it also serves as a breeding ground for mold, which can be harmful to the health of its occupants.

Sheep wool fibers are hygroscopic by nature, which means that depending on humidity, they can absorb up to 35% of their own weight from the surrounding atmosphere, thereby preserving the nearby timbers. This means that sheep wool insulation can regulate humidity while maintaining thermal performance.



2. Sustainable

In Lebanon, the Awassi is the most numerous and widespread breed of sheep. Every year in spring time, the sheep wool is shorn by the shepherds.

Sheep wool insulation uses less than 15% of the energy required to produce glass fiber insulation because it is made from a naturally occurring fiber. It is a **sustainable and renewable** resource with no ozone depletion potential that can be **remanufactured or biodegraded** at the end of its useful life.



3. Heat Insulation

Our sheep wool insulation is natural and provides a unique combination of product benefits that no other insulation material can match.

Wool absorbs moisture and **releases energy in the form of heat**, raising the temperature of the environment. Wool, by naturally releasing moisture in the warmer seasons, has a **cooling effect** on the same surroundings.

Steady-state heat flux measurements and thermal transmission properties by means of the guarded-hot plate apparatus (ASTM C 177, C1044, C1045, C1058)

<i>Characteristics</i>	<i>Value</i>
Density of specimen, g/cm	0.055
Heat Flow, W	0.430
Sample Thickness, m	0.070
Metered Area, m	0.04
Temperature Difference, K	21.50
Thermal Conductivity, W/(m.K)	0.035
Thermal Resistivity, (m.K)/W	28.57
Thermal Resistance, (m ² .K)/W	2.000

4. Air Purification

Sheep wool has the ability to quickly purify the air in a room and **absorb odor and noxious gases** emitted by some building products such as formaldehyde (carcinogenic gas). Wool permanently traps these gases, protecting residents from a variety of health risks.

Sheep's wool excels in a variety of applications, including fire protection, indoor air quality, acoustics, air quality, recycling, and thermal insulation. Sheep's wool is an excellent choice for indoor climate and air purification. The material can absorb and neutralize common toxins found in household air due to its basic protein component keratin. **Molds also have no chance in this situation.**

A lack of 'breathability' in buildings can lead to a variety of issues, including health issues caused by damp and mold. The ability of a structure to manage internal moisture levels, providing a more comfortable internal environment, is referred to as a **breathable wall**.



5. Sound insulation and fire protection

Crimped wool fibers provide exceptional resilience to sheep wool insulation and outperform cellulose and cellular plastic insulation in terms of fire resistance.

Wool has a very **high inflammation point of 560°C** due to its high Nitrogen content of 16%. Sheep wool insulation is self-extinguishing due to its high Limiting Oxygen Index (LOI=25.2), which means that an oxygen content of 25.2% is required to completely burn wool, whereas air only has 21%. Wool outperforms cellulose and cellular plastic insulation in terms of fire resistance.

Multiple layers of wool fibers effectively reduce airborne sound transfer, making sheep wool a **natural sound insulation material**.

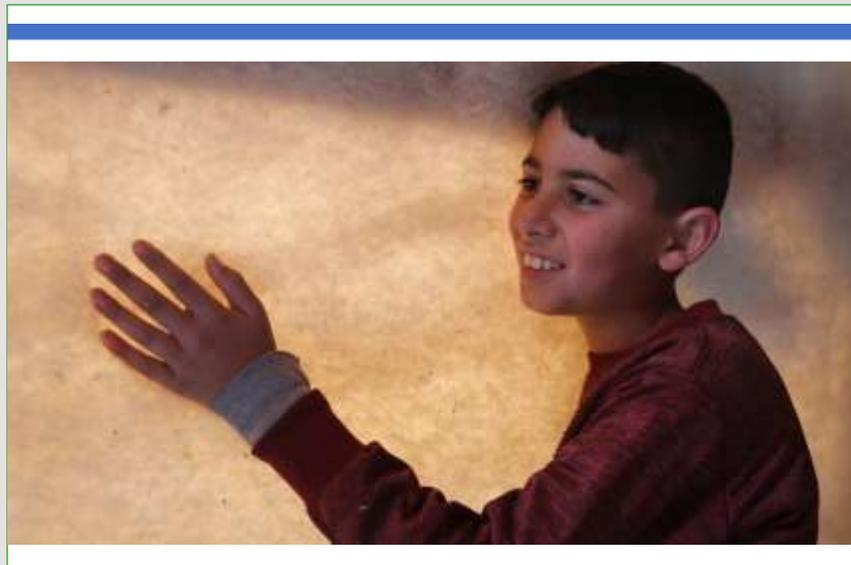
6. Installation & application

Sheep wool insulation is lightweight and adaptable, making it ideal for use in small spaces. Because of this **ease of use**, the installation process is faster and more efficient.

Our sheep wool insulation is ideal for wooden frame structures and can be used to insulate lofts/attics, rafters, walls, and inter-flooring.

Without protective clothing, it is **safe to handle**. Some man-made mineral fiber materials are unpleasant to work with and must be installed or removed with protective clothing, masks, and eyewear.

The product comes in a roll and can be easily cut to fit odd shapes. Rolls are excellent for **reducing installation time**. To avoid disturbing existing fibers, sheep's wool insulation can be applied over existing insulation.



Grade A plus S.A.R.L.



Workshop: Aarsal - Bekaa

M.: 009613017955



gradeAplus.22@gmail.com

www.gradeaplus.net