

Product Guide HempWool®



Contents



Overview	03
Advantages	04
Installation: Interior Walls	06
Installation: Between Truss	07
Installation: Roof	09
Tools	10

Overview



Storage

Store insulation panels in their packaging away from rain & sun. HempWool is best stored inside in a cool dry place. If left outside, store pallets in the original packaging and cover with a waterproof tarp. Please ensure no water or other materials gather on top.



Safety

Wear protective clothing, gloves and eye protection to avoid injury when handling cutting tools during installation. Hempwool is safe to touch & handle. Always follow OSHA guidelines.



Cutting

Hempwool is factory cut to maintain a friction fit between 16" - 24" OC framing dimensions. For off standard dimensions, cut the batts with an added 1/2 - 3/4" width of the studs. This ensures perfect contact & friction fit between the studs.



Installation

Make sure the batts are tightly butt jointed & fill the stud cavity completely. There should be no gaps in the insulation. Never install insulation with direct contact to heat emitting sources, such as appliances, fireplaces, or recessed lighting. Insulation must be kept a minimum of 6" away from heat sources.



Scan for helpful resource

Check out tips & tricks working with HempWool, and install videos.

Advantages

Humidity Control / Moisture Management

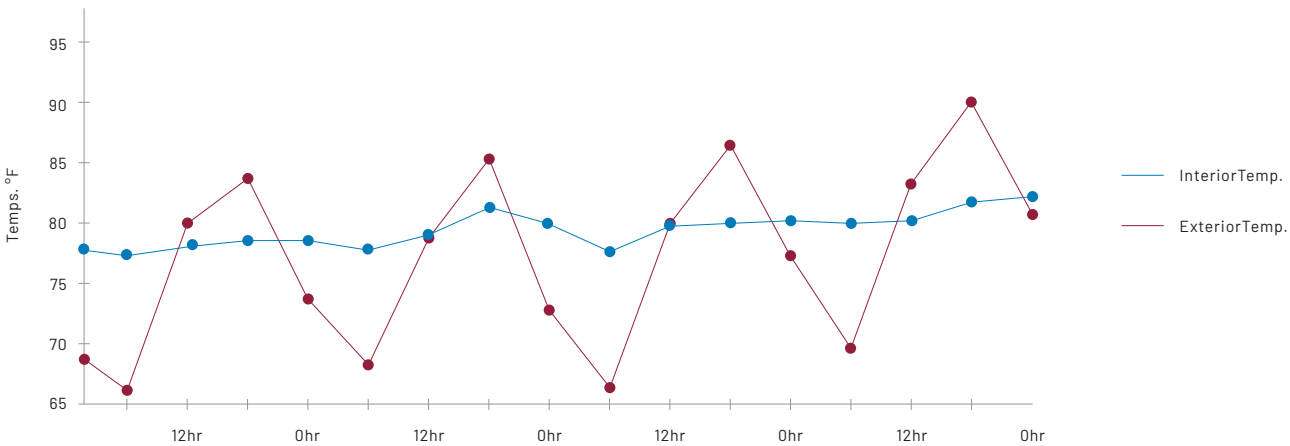
Humidity control of HempWool insulation is one of the most advantageous elements of this material when compared to other insulation products. HempWool is vapor permeable which allows vapor to diffuse through it & increases the drying potential of the building envelope. In addition, HempWool is able to absorb up to 20% of its weight in water before losing its insulating values. This results in better thermal performance in your structures while also minimizing the risk of mold developing from moisture related issues.

Thermal Inertia or Phase Shift

Thermal inertia is the ability of a material to store heat or cold. The more dense a material is (lb / ft³) the higher it's absorption capacity. Hempwool, with an average TI of 2.5 lb / ft³ is considered a dense material & therefore has a higher inertia than conventional fiberglass or any other insulation.

Closely related to thermal inertia, is the phase shift capacity of a material. This determines the temperature fluctuations in a building, from external temperature fluctuations. HempWool has a significant impact on maintaing a stable indoor temperature, despite external temperature fluctuation. This results in a reduction of heating costs in cooler seasons & climates, but also air conditioning, in warmer weather.

Example of phase shift in summer with strong inertia.



Anti-Rodent Materials

Hemp Fiber is naturally resistant to rodents, mites & termites. Fiberglass, which lacks density, is a perfect nest for rodents due to the space it leaves in the cavity. The strong mechanical strength of hemp fiber & the dimensional stability of the insulation batts, prevent & deters rodents,. Moreover, hemp fiber has a high concentration of silica, preventing the development of moths & termites.

In summary, the use of HempWool insulation makes it possible to be better protected against common pests & rodents, preserving the efficiency of the insulation & structural integrity.

Acoustically Insulating

HempWool is naturally sound absorbing. It increases interior acoustic comfort, while also achieving thermal comfort. By achieving both factors of comfort with a single material, the resulting enclosed thermal envelope offers a multitude of benefits.

Unmatched Ease of Installation

Our insulating HempWool batts are easy & safe to install. Because HempWool is non abrasive, it can be held without gloves & without risk of irritation. Generally, HempWool installs like mineral wool batts, but without the itch. HempWool is easily cut with both power tools & manual tools, such as wave form blade insulation knives, or handheld grinder with a metal cutting blade.

Sustainable Buildings - Zero Carbon

Industrial hemp contributes to soil regeneration & requires little water, fertilizer or pesticides. During it's growth, industrial hemp absorbs approximately 9.8 tons of co2 per acre, thus reducing the carbon footprint of HempWool & the structures that use it.

Our Idaho production facility is powered by 100% renewable energy, lowering the carbon footprint of our manufacturing, and products.

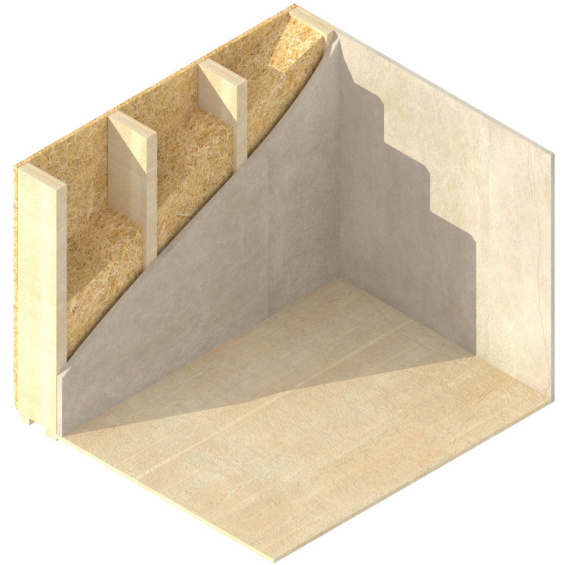
Beneficial for Health

Made primarily of natural plant based fibers, HempWool is USDA Biobased certified, contains no VOC's (Volatile Organic Compounds) and is red-list ingredient free.

Installation

Interior Walls

HempWool Insulation is friction-fit between standard framing materials, such as wood studs. For high performance walls that minimize thermal bridges, 2 layers of HempWool can be used. In this case, wooden battens run perpendicular to the vertical studs, creating an additional cavity to friction fit HempWool. Alternatively, the additional battens can be run vertically; however, this mitigates thermal bridging less so than battens run horizontally.



Insulation Cutting

Cut the insulation with an excess of .5" from the actual distance between the two joists. You can cut with an electric saw, manual saw or cutting disc.

The thickness of the chosen insulation is determined by the desired thermal performance as well as the depth of the joists.

HempWool will perform best with the use of an interior membrane such as Intello. Install membrane in accordance with local codes or project specifications.



Installing Between Studs

Place the insulation between the studs & slightly compress both sides & let it take advantage of the "spring effect". The insulation will regain its initial shape & friction fit in the stud cavity.

Adjust the insulation panels to make them perfectly joined.

Ensure continuity of insulation at junctions between wall, floor, ceiling & crawling space. If necessary, complete with "cut-offs" of insulation produced on the site.



Possible Second Layer (Cross-Jointed)

Attach horizontal battens with a matching depth equal to the added layer of insulation, with either 16" or 24" on center spacing.

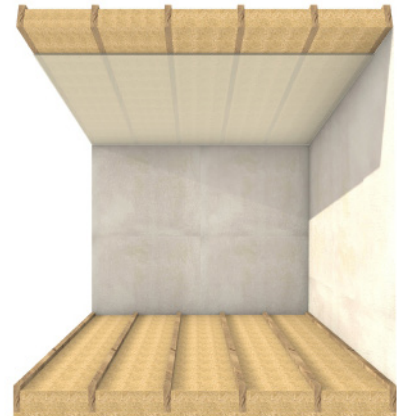
Insert HempWool between the battens by compressing it into place with a friction fit.

Adjust the insulation panels to make them perfectly joined & ensure continuity of insulation at junctions between wall, floor, ceiling & crawling space.

Installation

Conditioned Attics

Attics often consist of wooden rafters. Installing HempWool in rafters is similar to installing it between vertical stud walls. To begin, simply place a layer between the rafters using the friction fit technique. The dimensional stability of HempWool will hold it in place. Based on roof R-Value requirements, you may opt to complete the installation with a second layer of HempWool that is installed perpendicularly to the existing insulation.



Prior to Installation



Between Rafters



Possible Second Layer (Cross-Jointed)

Follow all architectural design details & specifications that are specific to your climate zone & local codes. The installation of a water resistive barrier (WRB) membrane on the exterior side is required. A vapor control barrier such as an Intello Membrane on the inside is recommended.

Ensure that the surface to be insulated is clean, in good condition, is dry & does not show any leaks.

Place the insulation between the rafters & slightly compress both sides to take advantage of the "spring effect". Due to HempWool's dimensional stability & material memory, the insulation will regain its initial shape & stay suspended through friction.

Adjust the insulation panel ends to butt them together & fill the cavity completely with no gaps.

Ensure continuity of insulation at junctions between wall, floor, ceiling & crawl space. If necessary, complete with "cut-offs" of insulation produced on the site.

If necessary, attach horizontal battens with a matching depth equal to the added layer of insulation, with either 16" or 24" on center spacing. Alternatively, HempWool can be placed directly on top of the existing layer.

Friction fit the insulation horizontally between the battens.

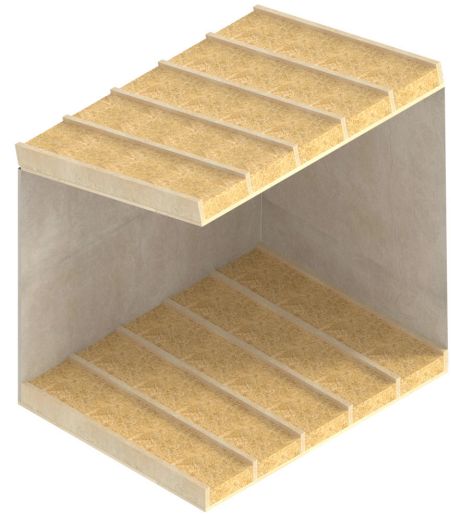
Adjust the insulation panels to make them perfectly joined & ensure continuity of insulation at junctions between wall, floor, ceiling, etc.

Installation

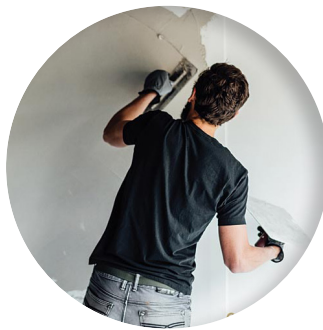
Conditioned Attics (cont.)

Cathedral Ceiling (between rafter insulation)

- Insulation
- Vapor Barrier
- Wood Fiber
- Interior Finish



Vapor Barrier



Interior Finish

Mechanically fasten the vapor control membrane to the interior side of the structural elements in accordance with manufacturer's recommendations & guidelines.

HempWool will perform its best with the use of an interior membrane. It is the responsibility of the purchaser to specify & install a vapor control membrane.

Most conventional materials, such as drywall, are compatible with HempWool insulation.

For a healthy, biobased finish approach that compliments the healthy characteristics of HempWool, we suggest Earthaus Mineral Finishes.

Installation

Unconditioned Attics

In ventilated, unconditioned attics, Hempwool can be installed between the attic floor joists. For higher R-values & to minimize thermal bridges, add a second layer on top of & perpendicular to the insulation between the framing members. Add additional layers as necessary to achieve desired R - value.



Prior to Installation



Cutting the Insulation



Insulation Installation

HempWool will perform its best with the use of an interior membrane. It is the responsibility of the purchaser to specify & install a vapor membrane, as conditions are subject to climate zones, local codes, & architectural design.

"Open Roof" attic spaces must be correctly ventilated to avoid moisture condensation.

The thickness of the insulation depends on the desired thermal performance.

In the case of an in-between truss web installation, for spacing different than 24" OC or 16" OC, cut the insulation 1/2" to 3/4" wider, to ensure friction fit.

Insert HempWool panels in the cavity, taking care not to leave any empty space at the junctions.

Adjust the insulation batts to make them perfectly contiguous to each other to form a monolithic layer.

If necessary place a second layer of insulation, parallel to the cross joints above the first layer, to achieve higher R Value.

Insulation must not obstruct the vents or be in direct contact with heat sources (chimney, spot lighting, etc). Depending on the case, you may use protective covers or create a spacing of at least 6" around heat sources using non-combustible material.

Tools

Suggested for Installation

HempWool is a biobased insulation made primarily of coarse, strong natural fibers. Due to the unique composition of HempWool, it cuts differently than other insulating materials like fiberglass insulation.

The best tool for cutting HempWool quickly & efficiently is a grinder with a metal cutting wheel. Depending on the depth of insulation you are cutting, you can use a variety of cutting disc dimensions. For thicker insulation, we suggest using a 7" cutting disc. If you do not want to use a mechanical grinder, serrated insulation knives (like those used for mineral wool) will also work.

A table saw with either a metal cutting blade or a Hardie Board blade is recommended for making precise cuts of insulation for widths that are different than standard framing dimensions. To mark HempWool, use a Sharpie or simply imprint the insulation with your finger to leave a reference mark.

A utility knife is suggested for opening the HempWool pallets & bundles. A tape measure is suggested for accurately measuring & cutting hemp insulation.



Grinder with metal cutting disc



Bahco Profcut insulation saw
or similar mineral wool saw



Utility Knife (1" Blade)



Measuring Tape



Table Saw



Cutting Blade (Hardie Board/ Metal Blade)



hempitecture®

Hempitecture Inc. 421 E 500 S. #100
Jerome, ID 83338

hempitecture.com
208.218.8698
sales@hempitecture.com

TRULY
SUSTAINABLE
BUILDING
MATERIALS
FOR
PEOPLE
& PLANET