Hemp Insulation

Homeowners and builders are always looking for better insulation products. Hemp insulation is gaining popularity because it is ecologically friendly and a renewable resource. It is long-lasting and degrades naturally when its usefulness ends. Hemp batts can even be dried out and reused after floods or plumbing leaks.

Courtesy: Pinterest - Insulating a vaulted ceiling with 8” thick hemp batts.

What is Hemp Insulation

Ninety-two percent of hemp insulation is manufactured from the hemp plant. The raw wood fiber is turned into hemp wool and mixed with polyester fibers. Non-toxic bonding agents help hold the batts together, and fire retardant is added for safety.

The batts are 3 ½", 5 ½", or 8" thick. They fit standard 2 x 4 and 2 x 6 framing. One company manufactures 92 ½" long batts to fit a full 8' stud cavity. Hemp batts are not available in rolls or with paper backing. (Some local building codes require a vapor barrier on the warm side of the wall.) Hemp is also not available as a loose-fill product for blowing into walls or attics.

Hemp and Marijuana

The industrial hemp plant is often confused with marijuana. Most of the confusion was created in 1937 when the US government banned the use of the drug and the growing of hemp throughout the country. Hemp does not contain psychotropic substances like THC.

The industry is still struggling to differentiate between the two products. Some states changed laws to allow hemp cultivation, but there are only about 25,000 acres seeded each year. The US Congress is considering a bill to rescind the 1937 law. If passed, the new law will provide clear guidance and increase supply.

Hemp Insulation Uses

Use hemp insulation batts in the same locations that **fiberglass batts** or **mineral wool batts** are used.

- Exterior wall stud cavities for R-value.
- Interior walls for soundproofing.
- Attic floors.
- Between vaulted roof rafters.
- Between floor joists in the basement or between floors.
- Around windows and doors. Because it can be packed tightly without losing R-value.

Hemp Insulation R-value

The **R-value** of hemp batt insulation is about R-3.5 per inch–a little more than **fiberglass batts** and a little less than **cellulose insulation**. Hemp batts can be compressed without losing any R-value. For instance, 5 ½" hemp batts can be compressed into a 3 ½" stud cavity and still

retain their R-19.25 value. Fiberglass loses R-value when compressed because the air is squeezed out of it.

U-value measures heat transfer. Hemp has a U-value of 0.039–the equivalent of 8” of fiberglass insulation.

Benefits of Hemp Insulation

Hemp insulation provides many benefits. It also has some advantages compared to other types of insulation.

- **R-value**. R-3.5 per inch. Better than fiberglass batts.
- **Compressible**. Can be compressed without losing R-value.
- **Renewable**. Fast growing–approximately 70 days from seeding to harvest. Requires few pesticides or fertilizers.
- **Breathable**. Allows moisture to travel through the material and dissipate it.
- **Hygroscopic.** Can absorb condensation from the house. Helping to control home humidity.
- **Dense**. About 2.2 lbs. per square foot. Provides enhanced soundproofing.
- **Biodegradable**. Can be ground into compost when no longer needed. Or recycled as insulation.
- **Pest Resistant**. Natural repellent to rodents and insects.
- **No VOCs**. No Volatile Organic Compounds to off-gas.
- **Installation**. Easy to install. Can be cut with scissors or a utility knife. Not itchy. No special safety clothing or equipment is required.

Disadvantages of Hemp Insulation

Hemp insulation does have one major problem. It is very difficult to get. As of this writing, there are two manufacturers of hemp insulation in Canada and one in the US. The US plants only 25,000 acres of hemp per year. By contrast, 90 million acres of corn are planted. If Congress changes the regulations, more hemp will be grown. Manufacturing facilities will follow.

Hemp insulation manufacturers also compete with makers of hemp-based food and clothing for raw materials. Further restricting supply.

Cost of Hemp Insulation

Hemp insulation costs at least twice as much as fiberglass insulation. Three-and-a-half-inch batts cost around $1.80 per square foot. Five-and-a-half-inch batts cost about $2.40 per square

foot. Add freight costs to that price. None of the big building supply outlets carry it, and big insulation manufacturers do not make it.