



The Multiple Benefits of Cellulose Insulation

Cellulose insulation is the only green, high performance insulation!

In almost all cases, cellulose is the:

- **most effective and safest,**
- **most cost effective, and**
- **most environmentally positive insulation for an exterior envelope.**

Thermal - with an R-value of 3.8 per inch, cellulose is superior to conventional insulation at 2.2 per inch. Conventional insulation cannot be installed properly around pipes, wires, and other obstructions, leaving voids that reduce the installed performance of a 2 x 6 wall from R-19 down to R-11!

Air - Low moisture sprayed cellulose and dense-packed cellulose are both highly effective air barriers at their installed density of 3.5 lbs/cuft. Conventional insulation is an air filter, not an air barrier, allowing heat or cold air to pass right through the glass fibers. Cellulose insulated buildings are more comfortable and energy efficient.

Moisture - 98% of moisture is transferred by the flow of air. High density cellulose blocks the flow of air and moisture. Vapor barrier requirements exist only because conventional insulation does not impede the flow of warm moist air, so an artificial barrier is needed. A vapor barrier is not recommended with cellulose insulation, except in buildings with unusually high moisture loads (i.e. indoor pool enclosures).

Sound - The key to sound control is high density and no voids. Conventional insulation is light weight and is not an effective sound barrier. Low moisture sprayed or dense-packed cellulose is the best sound barrier insulation that you can use in a wall, achieving STC ratings of 41 in a simple 2 x 4 wall with a single layer ½ inch drywall on each side.

Fire - Cellulose insulation dominates this important attribute. When exposed to a flame, conventional insulation melts, allowing fire to quickly spread. Foam insulation products burn and release large quantities of toxic smoke. Neither conventional insulation nor foam can match the fire ratings achieved with cellulose insulation. As a fire barrier, cellulose insulation is the safest material in a building.

Mold and Vermin - Our NuWool Wallseal is one of the only insulations on the market that contains an EPA-registered fungicide. This inhibits the growth of mold, while discouraging vermin, such as mice, cockroaches, and termites. Most other insulations cannot make this claim.

In summary, cellulose insulation is superior to conventional insulation in every category above. Cellulose costs more to install than conventional insulation, but this extra expense is quickly recovered with the savings from smaller HVAC equipment requirements and an on-going 40% energy savings. Foam is two to three times the cost of cellulose and falls short on sound and more importantly on fire safety. *As a green insulation, cellulose contains over 82% recycled materials, and it has a very low embodied energy (750 Btu/lb), whereas fiberglass and foam contain minimal amounts of recycled materials, and they have embodied energy levels of 16 to 64 times higher than cellulose insulation.*

National Fiber's cellulose is the natural choice for insulation.