

## **Cellulose Insulation Compared to Icynene Foam Insulation**

National Fiber's cellulose insulation is a cost effective alternative to Icynene and other low density foam products, outperforming them in all of the critical aspects below:

### Thermal

National Fiber's cellulose insulation has an R-value of 3.8 per inch; Icynene has an R-value of 3.6 per inch. Cellulose fully fills the building cavities providing an effective barrier to air movement. During the installation of Icynene, large air pockets or voids form reducing its effective R-value. Many Icynene installers also under fill the building cavities further reducing thermal performance of these assemblies. With our NuWool spray applied cellulose, we will guarantee the building's heating and cooling costs and help size the mechanical equipment; Icynene will not.

### Sound

Cellulose insulation is very effective at attenuating sound. Its STC rating in a 2 x 4 wall with half inch sheetrock on each side is 41, compared to only 37 for Icynene, a noticeable difference. There are many cellulose insulated, cost effective sound wall designs to choose from.

### Fire

Of the commonly used insulation materials, cellulose insulation outperforms all others in terms of fire safety. With cellulose, there are over 95 UL fire rated wall and floor/ceiling assemblies to choose from. Our insulation is classified as a Class A material with a flame spread of 15 and a smoke developed of 5. By contrast, Icynene has a flame spread of 25 and a smoke developed of 450. When fire occurs in a foam insulated building, flames spread quickly producing large quantities of smoke and toxic combustion byproducts. Tests by Omega Point Labs have shown that 14.5 inches of cellulose exceeds the performance of conventional two inch wood fire blocking. Icynene will not perform as a fire block and in many instances does not fully fill the building cavity, allowing a pathway for rapid flame spread.

### Mold

National Fiber's NuWool spray applied insulation contains a borate based EPA registered fungicide that resists mold growth, even in high moisture areas. Only materials containing an EPA registered fungicide can legally make this claim; Icynene cannot. Cellulose is also hygroscopic, meaning that in addition to managing moisture throughout the insulation, it also helps dry and protect the materials adjacent to it. Icynene is hydrophobic, allowing water to accumulate and damage the surrounding framing and sheathing materials.

### Environmental

Cellulose contains over 82% recycled material and requires very little embodied energy to manufacture (750 btu/lb). Icynene on the other hand is manufactured from non-renewable petrochemicals, has no recycled content and requires substantial amounts of energy (18,000 btu/lb) to produce. Also, the overspray for spray applied cellulose is recovered and reused while the overspray from Icynene is trimmed off and taken to the landfill.

Cellulose insulation exceeds the performance of Icynene foam in all of these critical areas. Cellulose is clearly a better value than foam and is the only environmentally responsible, high performance insulation choice for your building projects.

If you have any questions or would like to discuss this further, please contact our Technical Manager, Bill Hulstrunk at [technical@nationalfiber.com](mailto:technical@nationalfiber.com).

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

[www.nationalfiber.com](http://www.nationalfiber.com)