



**NATIONAL FIBER**  
CEL-PAK INSULATION

Professional Cellulose for Cellulose Professionals

## Cellulose Insulation Compared to Icynene® Foam Insulation

National Fiber's cellulose insulation is a cost-effective alternative to Icynene and other low-density sprayed 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 building cavities, providing an effective barrier to air movement. During the installation of Icynene, large air pockets or voids may form, reducing its effective R-value. Many Icynene installers also under fill building cavities, further reducing thermal performance of these assemblies. With National Fiber's 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 2x4 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 foam insulated buildings, 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 is manufactured from non-renewable petrochemicals, has no recycled content and requires substantial amounts of energy (18,000 btu/lb) to produce. In addition, the overspray from 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 most environmentally responsible, high performance insulation choice for your building projects.

For further information, please contact our Technical Manager, Bill Hulstrunk at [technical@nationalfiber.com](mailto:technical@nationalfiber.com)