



## NATIONAL FIBER CEL-PAK INSULATION

Professional Cellulose for Cellulose Professionals

# National Fiber's Cel-Pak<sup>®</sup> Cellulose Insulation Specifications

## 1. General

**1.1** This specification provides information regarding the pneumatic application of Cel-Pak cellulose insulation in floors, walls, ceilings and attics. Cel-Pak cellulose insulation provides superior R-Value (resistance to heat flow) for thermal applications, sound control for acoustical treatments, and fire control in floors, walls, ceilings and attics of residential and commercial construction.

## 2. Materials

**2.1 Cellulose Insulation.** Cel-Pak cellulose insulation is manufactured from recycled paper. Each pound of Cel-Pak insulation contains at least 83% paper fiber content. The fibers are treated with boric acid to create permanent flame resistance. The additives are mold-resistant, non-toxic, non-corrosive, will not irritate skin, will not outgas harmful chemicals, will not attract vermin or insects and will not adversely affect other building materials.

**2.1.1 Thermal Performance.** Cel-Pak cellulose insulation resists the flow of heat. Conductive heat transfer is limited as indicated by its R-Value of 3.8 per inch. Air infiltration through the material is limited because of the density of the material and methods used to install it.

**2.1.2 Sound Control.** These same characteristics, particularly the density of the material when installed in walls and floors, also provide significant airborne noise reduction in walls and between floors.

**2.1.3 Fire Resistance.** Cel-Pak cellulose insulation adds fire resistance to building assemblies, is a code approved ignition barrier over spray foam, and a code recognized fire block.

**2.2 Standards.** Cel-Pak conforms to the CPSC standard 16 CFR Parts 1209 and 1404. In addition, Cel-Pak cellulose insulation meets all of the testing requirements of ASTM C-739, E-84 and E-119, and UL-723.

**2.3. Material Characteristics.** The following properties were tested by Underwriters Laboratories (R-8078):

**2.3.1 Settled Density.** The maximum density after long-term settling in a loose filled, dry attic application: 1.6 lbs/cuft.

**2.3.2 Thermal Resistance.** The average thermal resistance per inch: 3.8 (R-Value/in).



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**2.3.3 Flammability Characteristics.** Critical Radiant Flux: greater than or equal to 0.12 watts/cm<sup>2</sup>. Smoldering Combustion: less than or equal to 15%.

**2.3.4 Moisture Vapor Sorption.** This requirement assures that normal variations in relative humidity will not adversely affect thermal resistance. Cel-Pak cellulose insulation meets the requirements of less than 15% for maximum weight gain under the specified test conditions.

**2.3.5 Environmental Characteristics.** When in contact with steel, copper, aluminum, or galvanized materials, Cel-Pak cellulose insulation is non-corrosive. Cel-Pak cellulose insulation passes all required tests demonstrating that it does not support fungal growth.

**2.3.6 Surface Burning Characteristics.** Cel-Pak insulation was tested by Underwriters Laboratories (R-13173) for the following properties:

**2.3.6.1 Flame Spread:** 20

**2.3.6.2 Smoke Developed:** 0

**2.4 Sound Transmission Classification.** Numerous wood and steel stud wall assemblies insulated with Cel-Pak insulation, including firewall assemblies, have been tested according to ASTM E-90 and E-413 by Riverbank Acoustical Laboratories for STC ratings. Results are available upon request.

**2.5 Building Codes.** Properly installed Cel-Pak cellulose insulation meets the requirements for thermal insulating materials set forth in the IBC, CABO, BOCA, ICBO, SBCCI and the Model Energy Code.

### 3. Execution

**3.1 Installation.** Cel-Pak Insulation is pneumatically blown, dry, into attic, wall and floor assemblies after all mechanical, plumbing and electrical and other utility installations have been completed. Coverage charts are available upon request.

**3.1.1** For loose fill cellulose applications, air seal all penetrations through the ceiling including plumbing, wiring, seams between top plate and drywall and all other gaps or holes, with the appropriate air sealing materials. Chimney and flue penetrations shall be air sealed with metal flashing and high temperature silicone sealants and a non-combustible insulation dam installed of sufficient distance and height to meet the code clearance to combustibles requirements. Install loose fill cellulose insulation in accordance with the manufacturer's instructions to settled thickness, or settled R-value, as indicated on the drawings.



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**3.1.2** In open cavity applications that will later be covered with drywall (wall / roof / floor / ceiling), Insulweb is stapled to the face of the interior framing prior to cellulose installation. Install cellulose insulation using the tube insertion or 'dense pack' method in accordance with the manufacturer's instructions to provide a minimum installed density of 3.5 pcf (lbs/cuft). After cellulose injection, the Insulweb is rolled flat to allow for drywall application. For durability, drywall shall be installed as soon as possible over the Insulweb in any inhabited areas or where the possibility for damage exists from poking or tearing. In overhead areas, Insulweb should always be covered with drywall as soon as possible, to prevent the fabric from stretching over time.

**3.2 Certification and Equipment.** Installations will be made only by National Fiber Cel-Pak certified contractors using approved application methods and equipment capable of blower pressures of 3.5 psi or greater at the outlet of the blowing machine, with the agitator running.

If you have any questions, please contact our Technical Manager, Bill Hulstrunk at [technical@nationalfiber.com](mailto:technical@nationalfiber.com).