

Wall Density, R-Value, and Settling

National Fiber's cellulose insulation has been tested by our third party testing lab, R&D Services, to ensure that our product performs to the stated R-value, above certain densities in the wall cavity. This claim is valid only when the cellulose insulation has been installed in accordance with current professional application standards.

This wall performance was determined through laboratory testing. Individual wall cavities (measuring 96"H x 16"W x 3.5"D) were dense-packed with cellulose insulation (in the case of dry blown) and sprayed with cellulose insulation (in the case of low moisture spray). These filled cavities (2 dense-packed, 2 damp-sprayed) were shipped by truck from National Fiber in Massachusetts to R&D Services Lab in Tennessee.

When the wall cavities arrived at R&D Services Lab, they were opened and inspected. No settling had occurred. They were then sealed again and placed on a vibration machine. This machine shook each cavity 0.1 inch, 15 times per second, for 24 hours. The machine was stopped every 6 hours, the cavities were opened, inspected for settling, and re-closed. After 24 hours on the vibration machine, there was no settling in any of the 4 cavities. The R-value was also determined through testing to be 3.8 R per inch.

Each cavity was then emptied completely, and the cellulose insulation was weighed. To determine the density of the cavity, the weight of the insulation in each cavity was divided by the known volume of the cavity. The density for the 2 dense-packed cavities was calculated to be 2.7 lb/cu ft. The density for the 2 damp-sprayed cavities was calculated to be 2.2 lb/cu ft.

For dense-packed wall cavities, NF warrants that our cellulose insulation, properly installed at any density of 2.7 lb/cu ft or higher, will not settle and will deliver the stated R-value of 3.8 per inch.

For low moisture sprayed wall cavities, NF warrants that our cellulose insulation, properly installed at any density of 2.2 lb/cu ft or higher, will not settle and will deliver the stated R-value of 3.8 per inch.