



The Importance of Kiln-Drying



Kiln-drying, is it important?
If it is important, how important
is it really?

Without a doubt, kiln-drying is the most important step in the manufacturing of a log home. This critical process of reducing a log's moisture content ensures a quality product that will last over time. When administered properly, kiln-drying will not only remove excess moisture from the wood, it eliminates mold and fungi, insect infestation and provides a better base for stains and finishes.

At Strongwood, we understand the importance of kiln-drying and take great care to ensure the process is properly managed. With three kilns in operation, Strongwood dries its logs for a minimum of 30 days at temperatures that rise to 180 degrees, uniformly shrinking, sanitizing and stabilizing the logs. This period of time ensures that each log's moisture content has been reduced to 19% or less. This results in the removal of as much as 10,000 lbs. of water from a typical log home.

Strongwood is committed to manufacturing only quality homes, and it is our goal to provide customers with the very best home available. Based on our knowledge and over 30 years of experience in the log home industry, we feel that we cannot provide the very best product without kiln-drying.



Kiln-Drying Facts

- Kiln-drying stabilizes the wood.
- Kiln-drying, before the milling of the logs, maintains the quality of the logs.
- Most checks occur during drying.
- Logs can be turned during the milling, placing checks in such a way as to maximize the best possible finish.
- Kiln-drying kills wood boring insects (beetles) and decay fungi (dead-standing pre-seasonal logs harbor both of these).
- Kiln-drying sets the pitch and prevents pitch bleed.
- Kiln-dried logs are lighter, thereby saving in the cost of transportation.

Does the Competition Stack-Up on Kiln-Drying?

- Minimum of 30 days in the kiln is required.
- Temperatures that reach 180 degrees.
- Logs are monitored throughout the drying process according to our kiln-drying schedule.
- When criteria has been met several samples of the logs are cut and weighed.
- A moisture meter (probe) is used to check moisture content of these samples.
- With the correct moisture level achieved, the logs are placed in dry storage until milling.
- Moisture levels are checked once again during the milling process.
- Any log not meeting the correct moisture level is dropped out.
- To assure quality, logs are checked a final time before being shipped.

To insure the logs for a home were properly kiln-dried, ask a log home manufacturer these questions:

- How long is the material kept in the kiln?
- Could I see the kiln-drying schedule?
- Could I see the kiln?
- What is the starting temperature in the kiln?
(Strongwood starts at a temperature of 120 degrees).
- What is the ending temperature?
(Strongwood finishes at a temperature of 180 degrees).
- What are the criteria for determining when the logs come out of the kiln?
- How are kiln-dried logs stored?

Advantages of using Strongwood Logs

- True kiln-dried product.
- Timber Products, Inc. graded and stamped, plus our own rigid grading standards.
- Facilities for storing dried logs.



Energy Efficiency

Technical data from both instrumented field studies and computer modeling supports the efficiency of properly constructed log homes. The following is a real-world example of the performance potential of log homes, according to studies conducted over more than 20 years.

A log home constructed of 7-inch solid wood walls might have an indicated steady-state R-value of R-9, but in most U.S. climates - especially those where log homes are most popular - a stick-framed home would have to be insulated to about R-13 (or even R-15 in some areas) to perform as well for heating and air-conditioning energy use on an annual basis. This comparison assumes similar attic insulation, window performance, foundation design and the use of identically efficient mechanical systems for heating and cooling. In practical terms, log homes may be expected to perform from 2.5% to over 15% more energy efficiently compared to an identical wood-frame home, considering annual purchased heating and cooling energy needs.

In real terms, this means an owner of a log home might expend \$150 to \$400 less per year on their heating and cooling-related utility bills, while maintaining equal or superior comfort under real-world weather conditions. Over the long term, these savings add up - for example an owner could have over \$12,000 in today's dollars in the bank due to energy efficiency. Since inflation eats into the value of money over time, such savings could be worth on the order of \$30,000 in future dollars, according to example calculations from the EPA/DOE *Energy Star* Homes program.

The summary above is based on information from a variety of US Department of Energy sponsored studies concerning thermal mass as it relates to energy efficiency in buildings, conducted during 1978 through the late 1980's.