

Making Your Home Energy Efficient

Part 1:

- Insulation

- Super Insulation

- What's R-2000?



Insulation has come a long way in the last few decades. Materials are more plentiful, the process for installation is much more refined, and there is a much better understanding of the role that vapor barriers and air barriers play in ensuring an airtight, properly insulated home.

Natural Resources Canada's EnerGuide rating system data suggests that homes built before 1983 have an average EnerGuide rating of 61, whereas homes built after 1995 average 70 (the rating system evaluates the energy efficiency of a home). And nowadays you have more options than ever before!

We often get asked about specific R-values and special energy efficient options for new homes. The tendency is to focus on material R-values however, the absolute R-value will yield little benefit unless the following is respected:

- the use of knowledgeable, certified trades to perform installation
- a detailed inspection process throughout the construction cycle
- proper engineering and selection of heating and ventilation systems
- proper design engineering for windows, doors and openings

Here is a brief primer on basic insulation, super-insulation and the R-2000 initiative.

Basic Insulation

Nowadays, even the most basic insulation package is high-performance, offering an R20 insulating factor in the walls, and an R40 factor in the roof system, a complete air barrier on the exterior of the home, and an acoustically sealed, continuous vapor barrier on the interior.

Super Insulation

Super insulating a wall will yield an insulating factor of R28-R32, and can be accomplished in several ways. One of the most popular methods is to build a conventional R20 (2X6) wall, install a vapor barrier, and then strap the wall horizontally with 2X2 framing and add a semi-rigid insulation yielding R6-R8. The total insulating value of the wall will then be R26-R28. One of the biggest benefits to this approach is that all electrical wiring and boxes can be installed without compromising the vapor barrier.

R-2000

R-2000 is a voluntary standard for energy efficiency developed by Natural Resources Canada in concert with building industry professionals. It is not so much about materials, but about process. Indeed, an R-2000 project must be done by accredited trades and is subject to a vigorous inspection process. In an R-2000 home, all systems and materials are engineered to work together - insulation, heating, ventilation, windows and doors, vapor barriers - all play an important role in the design of an R2000 home.

The end result is that a properly engineered R2000 home is energy efficient, healthy, environmentally responsible and quiet. And you may experience savings of up to 45% on energy bills. To find out more about R2000 visit the Natural Resource Canada Office of Energy Efficiency at www.oee.nrcan.gc.ca/r-2000

Nowadays, energy efficiency is not just about the R-value of a wall. It is about ensuring that all systems are engineered to work together, and that tight processes are used to ensure that all elements are installed to the proper specifications.