



FEATURES

BENEFITS

EnerGuide Rating

The EnerGuide Rating is calculated in software by a third-party EnerGuide Certified Energy Advisor (CEA) by using information collected from:

- an analysis of the building plans and specifications before the home is built;
- results of the blower door test performed after the house is built.

The higher the EnerGuide rating, the less energy the home will consume and therefore reduce energy costs and greenhouse gas production.

Size and Volume

The amount of floor space and the ceiling height of the home will impact how much space needs to be heated/cooled as well as the opportunity for air leakage through the building envelope.

The smaller the home, the less energy it will consume and therefore reduce energy costs and greenhouse gas production.

Air Changes per Hour (ACH)

The ACH rate indicates how many times per hour the home gets fresh air through a combination of the “natural ventilation” (the cracks and holes in your building envelope) and the “mechanical ventilation” (the appliances such as fans and furnace). For example, certification programs such as R-2000 require no more than 1.5 ACH. **Build tight, but ventilate right.** With a home built to a low ACH it is important to incorporate mechanical ventilation.

The lower the ACH, the less your heated/cooled air leaks out of the home. This reduces the cost for you to heat/cool your home and increases the comfort due to reduced air leakage (drafts) through the building envelope. Proper mechanical ventilation will address moisture issues and indoor air quality while bringing adequate amounts of fresh air into the home.

Equivalent Leakage Area (ELA)

If you were to combine all of the holes and cracks in the home, the ELA is the cumulative hole size they would create. For example, a typical home built between 1946 and 1980 might have a cumulative hole 41 cm (16 inches) in diameter whereas a typical home built to EnerGuide 80 at 1.5 ACH might have a cumulative hole 20 cm (8 inches) in diameter.

The smaller the ELA, the less your heated/cooled air leaks out of the home. This reduces the cost for you to heat/cool your home and increases the comfort due to reduced air leakage (drafts) through the building envelope. Since ventilation is still important, proper mechanical ventilation will address moisture issues and indoor air quality.

Exterior Wall, Attic and Basement Insulation

The R value is a measure of resistance to the transfer of heat. To improve the energy efficiency of the home, ask your builder for thermal insulation values above the Alberta Building Code (ABC) minimum requirements.

The bigger the number, the better the building insulation's effectiveness. The home will consume less energy and therefore reduce energy costs and greenhouse gas production.

Location	ABC	Ask for
Exterior walls	R12	R20 or R25
Attic	R34	R40 or R50
Basement walls	R8	R10, R12 or R24 on full height of foundation exterior
Basement floor	NA	R5, R8 or R12 under entire basement slab

“Insulation installed under the basement slab will reduce the downward heat transfer into the ground below the slab. It’s imperative when hydronic in-slab heating is installed. Insulation under the slab can reduce temperature swings in the heated space and respond quicker to new changes in thermostat settings.”

Source: www.BuiltGreenCanada.ca

Windows

Choose ENERGY STAR® labelled windows for the climatic zone of the home. ENERGY STAR qualified windows, doors and skylights are tested and certified by an independent, accredited agency. Products qualify for ENERGY STAR based on either their U-value or their Energy Rating. As well, windows and patio doors must achieve at least an A2 rating for airtightness.

Energy-efficient fenestration products will reduce your home energy costs by 7 to 12 percent, reduce or eliminate cold drafts, collect less condensation and reduce noise from outside.

Source:

<http://oeenrncan.gc.ca/residential/personal/windows-doors/buying.cfm?attr=4>

Space Heating Appliances

Install high efficiency, sealed combustion space heating appliances with a 92%, 94% or 95% AFUE or higher (for natural gas).

High efficiency furnaces or boilers, such as condensing systems, with electronic ignition rather than a pilot light, reduce energy consumption and therefore reduce energy costs and greenhouse gas production. These sealed combustion units also prevent combustion gases from entering the home if the home becomes depressurized, preventing carbon monoxide exposure.

Domestic Hot Water Appliances

Install a power vented domestic hot water tank system, a direct vented sealed combustion two pipe tank system, a condensing domestic hot water tank system, an instantaneous "tankless" domestic hot water heater or a high efficiency (AFUE 90 or better) domestic hot water boiler system.

Both the direct and the power vented systems eliminate the need for conventional chimneys or flue systems, reducing the amount of holes in the building envelope, thereby reducing the potential loss of energy, reducing your costs and GHG production. A tankless system doesn't have a pilot light or a storage tank to keep heated - it burns gas only when you need hot water. This eliminates standby heat loss, saves energy, costs and GHG production.

Mechanical Ventilation / Air Exchange Systems

Install an active Heat Recovery Ventilator (HRV) or an Energy Recovery Ventilator (ERV) and verify balanced installation.

A Heat Recovery Ventilator (HRV) is an air exchanger that exhausts humid, stale, polluted air out of the home and draws in fresh, clean outdoor air into the home. Using an HRV will allow you to efficiently capture the expelled waste heat to preheat the fresh air coming in. An Energy Recovery Ventilator (ERV) recovers heat as well as recuperates the energy trapped in moisture, which greatly improves the overall recovery efficiency.

Solar Ready

Ask your builder to include these features for a solar ready home:

- a roof location of suitable size, pitch and orientation;
- labelled conduits from the mechanical room to the attic;
- extra plumbing valves and fittings on the hot water heater;
- an electrical outlet for the planned solar tank and wall space for PV controls;
- identified locations of future components on construction plans; and
- solar ready labels on the existing water heater and conduits.

Ensuring your home is built solar ready means that it will be less costly to modify or install these requirements after the home is built in order to be able to properly install a solar system. It may also provide you with a more efficient solar system via correct roof pitch/orientation.

Prior to installing a solar system, ensure your home is as energy efficient as possible. This is the most economical approach as it ensures that any energy you generate on-site is less likely to be wasted. (For example, by "leaking" out of your building envelope.)

Location, Orientation & Shading

Efficient design is one of the simplest and most cost effective ways to improve energy efficiency, yet it is also greatly overlooked. Choose a location, orientation and design that optimizes passive solar gains and include appropriate shading to prevent over-heating in the summer months.

Passive solar gains and proper shading will reduce your heating/cooling energy consumption, and therefore reduce energy costs and greenhouse gas production.