



Effective May 2008

PRESCRIPTIVE CONSTRUCTION REQUIREMENTS

Commentary: *These requirements apply to single family and low-rise (3 storeys or less) multi-residential buildings.*

The intent of these requirements is for the building as a whole to meet the energy performance target equivalent to an EnerGuide 80.

ENERGY REQUIREMENTS:

There are two options for meeting the *GreenHome* Energy requirements:

- 1) Prescriptive energy requirements (see below) to be met

or

- 2) An EnerGuide rating of 80 or higher to be obtained.

Note: For multi unit buildings, an Energy Advisor is required to calculate the energy rating for the building using the Hot2000 analysis tool (general run) to determine the annual energy consumption for the building. The energy target is then calculated using the Energy Target Calculation Procedure for Multi-Unit Buildings from the R2000 Standard for Multi-Unit Buildings (2003 Edition). The EnerGuide rating is then determined from the following formula: $\text{EnerGuide Rating} = 100 - 20 \times (\text{Energy Consumption} / \text{Energy Target})$.

Regardless of which method is used, the prescriptive requirements for ventilation when incorporating combustion heating appliances must be met.

CONSTRUCTION:

Insulation Levels (Installed wall insulation):

Exterior walls above grade: R-28

Exterior walls below grade: R-28

Ceilings: R-60

Footing perimeter: 2 foot width - R-7.5

Bottom floor ground cover insulation – R10

Bottom floor with in-floor heating ground cover insulation – R15

Doors: 2" polyurethane foam core

Large volume single detached dwellings:

Single detached dwellings in excess of 25000 cubic feet of heated space may require additional thermal analysis and higher insulation levels.

Windows:	Triple glazed sealed units, with insulated ½” spacers. Maximum window area is not to exceed 15% of gross wall area.
Air Tightness:	Air Change per Hour (ACH) @ 50 Pascals depressurization = 1.5 ACH applied to entire building, or, NLA @ 10 Pascals of less than or equal to 0.7 sq cm / sq m. of exterior wall surface. Note: Multi Residential - Air tightness testing and air sealing of exterior and shared interior surfaces of individual units at the pre-drywall stage is to be completed to prevent excess leakage between units and through exterior walls.
Combustion Appliances:	Combustion heating appliances shall have a rated AFUE of at least 83%, and a steady state efficiency of at least 85%. A record of burner set-up and combustion analysis is required. Combustion heating appliances and venting systems are to be centralized and protected from depressurization, or kept outside the building envelope. Positively pressurized boilers that are not designed for forced draft venting, are not allowed.
Domestic Hot Water Heaters:	Standby losses for electric water heaters serving individual units not exceeding 65 Watts for a 175 L tank, (40 Imp gal), or 80 watts for 270 L (60 Imp gal tank). Oil fired water heaters shall have an Energy Factor of 0.57 or greater. In any case, R16 insulation and for non-electric heaters a steady state combustion efficiency of at least 68% will meet this requirement.

VENTILATION:

All Heat Recovery Ventilators (HRV) exhaust fans and kitchen range hoods serving individual units, shall be certified by the Home Ventilation Institute (HVI). Ventilation air heat recovery is required. HRV efficiency - Sensible Recovery Efficiency minimum 64% at -25 deg C at design principal ventilation rate.

Ventilation systems serving a single unit will be designed, installed and balanced in accordance with CSA F-326 and designed and tested by a licensed HRAI Residential Mechanical Ventilation design technician (GreenHome Ventilation Advisor), or professional engineer. It shall be tested in accordance with GreenHome ventilation and depressurization test procedures by an approved Ventilation Advisor.

Ventilation systems serving more than one dwelling unit shall be designed and installed in accordance with Part 6 of the 2005 National Building Code of Canada, and approved by a Mechanical Engineer.

Note: For dwellings without combustion appliances within the envelope or ground gas issues, a depressurization test is not required. In any case an envelope air leakage test (blower door) is required.