Good energy, together

Indigenous Energy Efficiency Working Group 2026

New Homes Program

EFFICIENCY MANITOBA

Overview

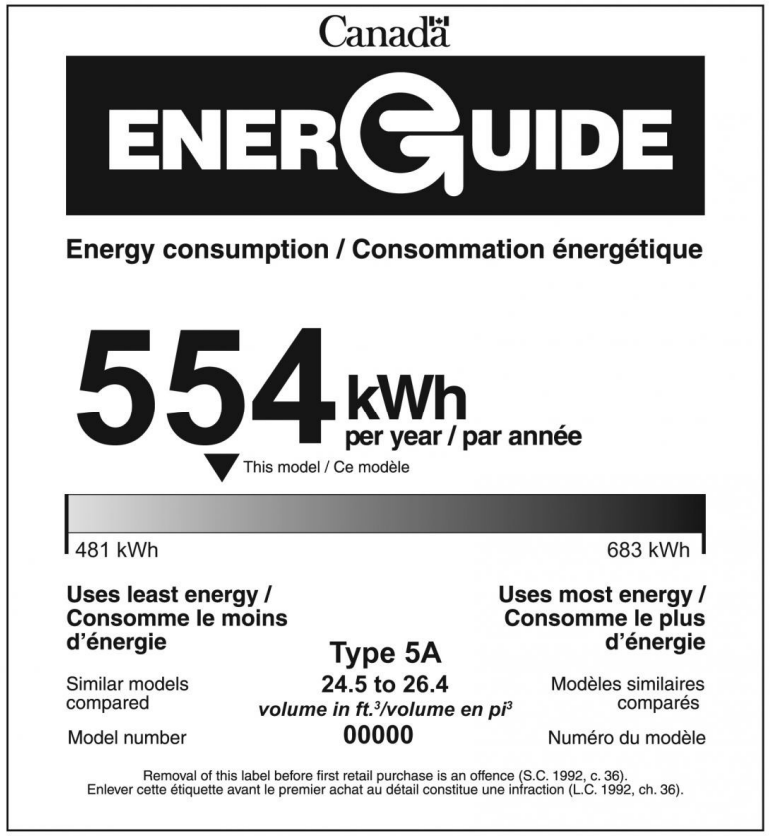
1. EnerGuide Certification

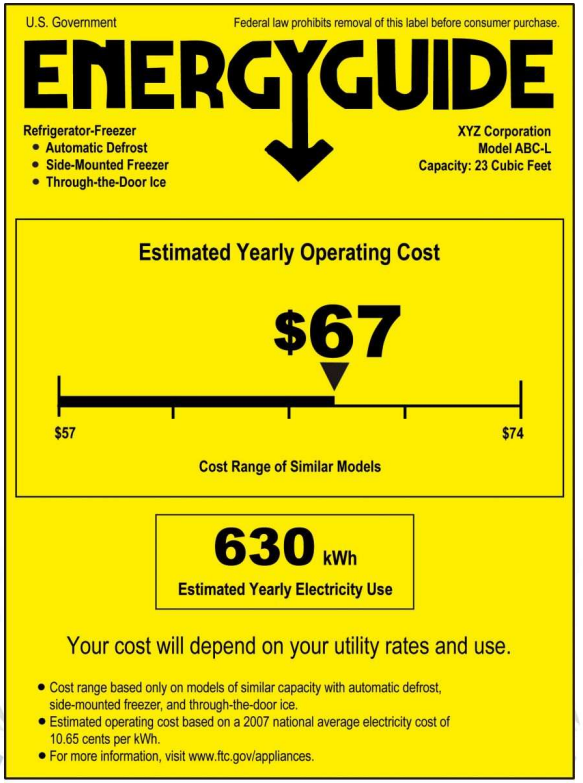
2. Design Heat Loss and F280 Calculation

3. New Homes Program: Rebates & Energy Modelling

4. New Homes Program: Steps to Participate & Program Challenges

EnerGuide Certification





EnerGuide Certification

Canada

ENERGUIDE

Gasoline Vehicle
Véhicule à essence

1

Fuel Consumption / Consommation de carburant

2

9.0 L/100 km

combined/combinée

10.7 city / ville

7.4 highway / route

3

31 mi/gal

Annual fuel cost

for an annual distance of 20,000 km, and an average fuel price of $1.09 per litre

4

$ 1 962

Coût annuel en carburant

pour une distance annuelle de 20 000 km, et un prix moyen du carburant de 1,09 $ par litre

5

Small SUVs range from / Les petits VUS font entre

7.4 – 14.4 L/100 km

L_e is gasoline litre equivalent
L_e signifie litre équivalent d'essence

Carbon Dioxide Rating / Indice de dioxyde de carbone

6

1 — 6 — 10

207 g CO_2/km

Best/meilleur

Smog Rating / Indice de Smog

6

1 — 6 — 10

Best/meilleur

Tailpipe emissions only / Émissions du tuyau d'échappement seulement

Estimates are based on Government of Canada approved criteria and testing methods. Vehicle's actual fuel consumption will vary.

For more information visit
vehicles.nrcan.gc.ca

Estimations établies selon des méthodes d'essai et des critères approuvés par le gouvernement du Canada. La consommation de carburant réelle du véhicule variera.

Pour plus d'information visitez
vehicules.rncan.gc.ca

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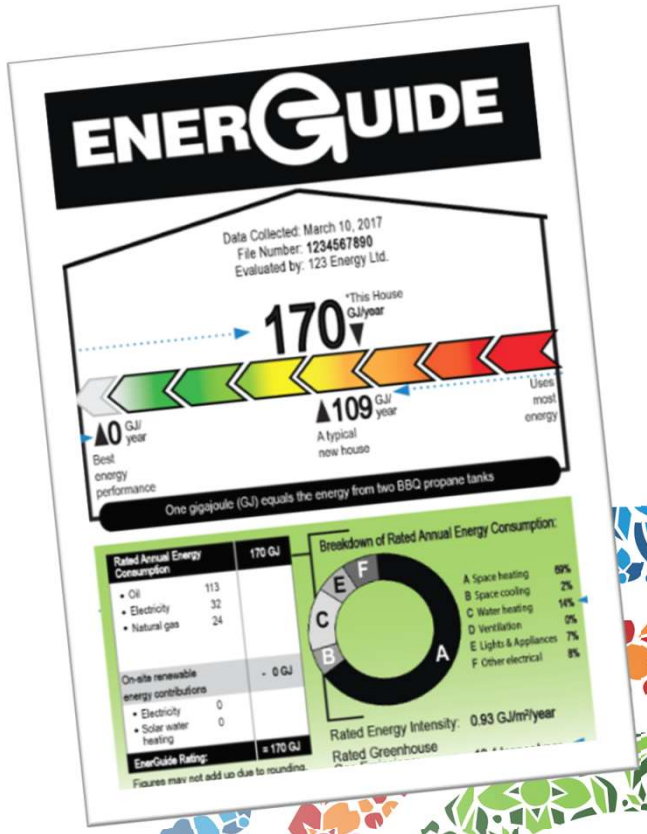
EnerGuide Certification plays a crucial role in promoting energy-efficient building practices by providing a comprehensive assessment of a home's energy performance.

Detailed Evaluation: EnerGuide evaluations measure the energy efficiency of residential buildings through expert assessments, including blower door tests for air leakage detection and energy modeling

Informed Decisions: Provides valuable insights into potential areas for improvement, enabling them to make data-driven decisions about energy efficiency upgrades

Environmental Impact: Reduced energy consumption lowers the carbon footprint, contributing to environmental sustainability



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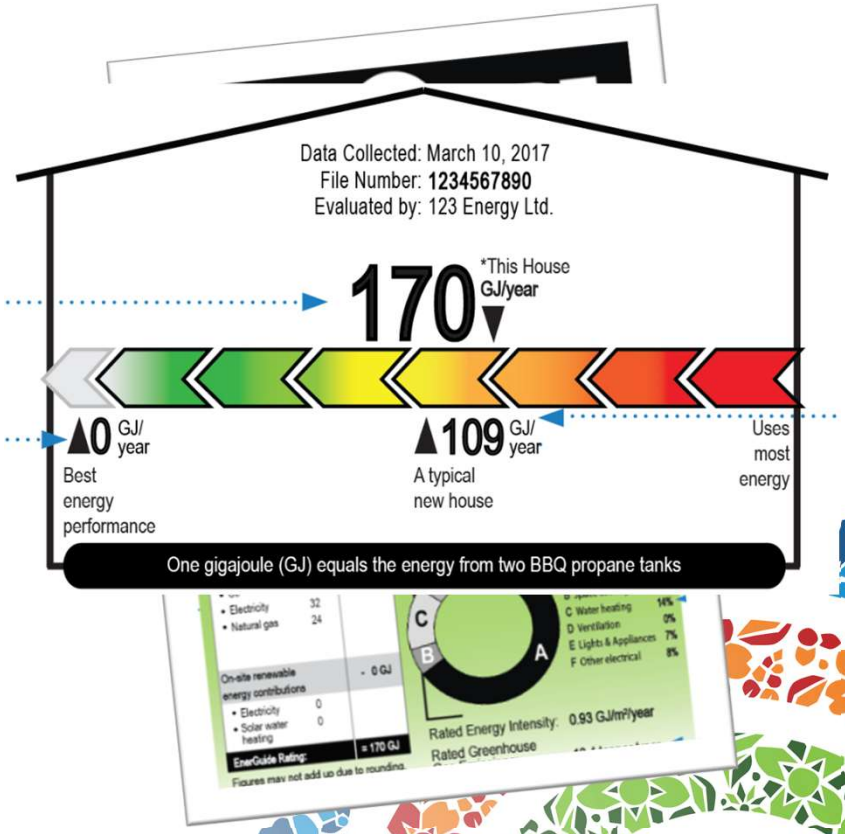
EnerGuide Rating: The rating serves as a benchmark for a home's energy performance. The lower the number, the better energy efficiency

Comparison: The EnerGuide rating allows comparison of the home's energy efficiency to similar homes, providing a better understanding of how their home measures up

Financial Savings: Improved energy efficiency leads to lower utility bills, freeing up more of the homeowner's budget



DESIGN HEAT LOSS: OVERVIEW

WHAT IS HEAT LOSS?

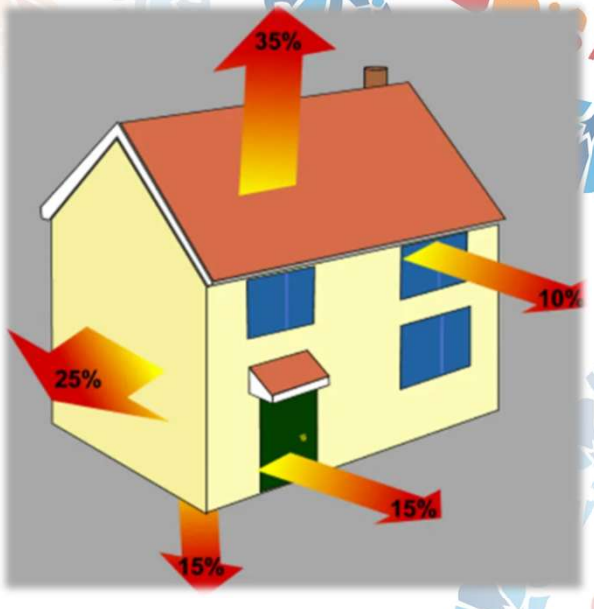
- The amount of heat energy that escapes from a building or a home through windows, doors, floors, and the roof.

WHAT IS A HEAT LOSS CALCULATION?

- Determines the maximum amount of heat (Btu/h or KW) that is required to condition a building based on the outdoor winter design temperature.

WHAT DOES HEAT LOSS CONSIDER?

- thermal heat transfer
- mechanical ventilation
- air leakage

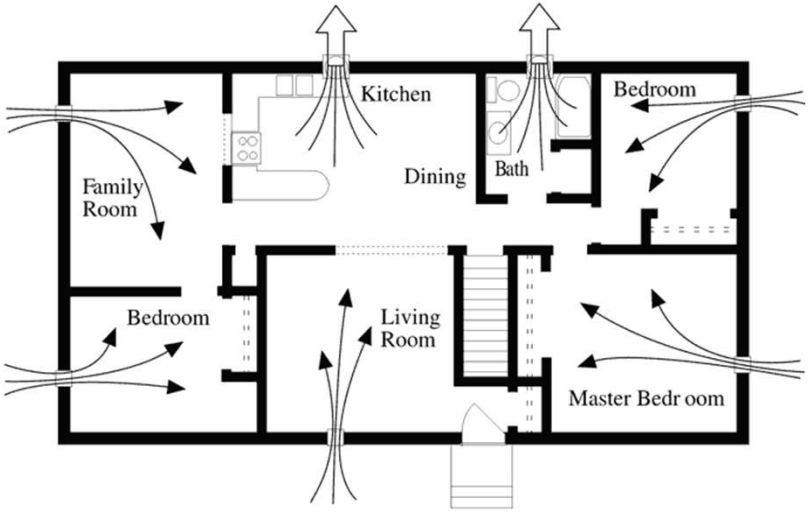


https://www.greenbuildingadvisor.com/

DESIGN HEAT LOSS CALCULATIONS

WHY HEAT LOSS CALCULATIONS ARE VITAL

- Helps design and size a heating system accurately.
- Helps identify problem areas in your home where improvements can be made.
- Allows for more efficient energy use, reducing costs and environmental impact.



CALCULATING HEAT LOSS

To calculate heat loss involves understanding two key types:

- loss of transmission (walls, windows, roofs)
- loss of ventilation (air changes per hour)

HVAC Protocols

F280 (Manual J) – RESIDENTIAL LOAD CALCULATION – For determining how much heat the house loses in winter and gains in summer. Allows you to determine how much conditioned air each room needs for both heating and cooling.

Manual S – RESIDENTIAL EQUIPMENT SELECTION – Once the amount of conditioned air (cfm) necessary for each room is known, the designer reviews and selects a right-sized piece of equipment.

Manual T – AIR DISTRIBUTION BASICS – Determines how to distribute the air in the room to deliver enough to meet the needs (the higher of the heating and cooling cfm requirements from Manual J).

Manual D – RESIDENTIAL DUCT SYSTEMS – With all the data, the cfm needed for each room, the selected equipment, and how the air is distributed in the room, you can design the duct system.

New Homes Program: Energy Performance and Rebates

% IMPROVEMENT*			PERFORMANCE REBATE	ENERGY MODELLING REBATE**
Energy Performance Tier	>300 m³ conditioned space	≤300 m³ conditioned space		
Tier 3	25%	15%	$2,000	Up to $350
	30%	20%	$2,500	
Tier 4	35%	25%	$3,000	Up to $500
	40%	30%	$4,000	
	50%	40%	$5,000	
	60%	50%	$6,000	
Tier 5	70%	60%	$8,000	Up to $750
	80%	70%	$10,000	
	90%	80%	$12,000	
Net Zero Energy	**100%**	**90%**	**$15,000**	

Geometry, orientation, air tightness

+ Envelope upgrades
+ ASHP

+ Solar array

New Homes Program:
Energy Modelling Preliminary Results

	PERFORMANCE	ACH	VOLUME (M3)	R60 Attic	3" Exterior Rigid	1 ACH	ASHP	All Upgrades
NORTH	20.0%	1.5	354	20.9%	36.0%	22.2%	35.7%	51.2%
EAST	19.1%			20.0%	35.1%	21.3%	34.8%	47.3%
SOUTH	23.2%			24.1%	39.0%	25.4%	37.9%	52.3%
WEST	21.4%			22.3%	37.2%	23.6%	29.5%	48.1%

Notes

- Walls and foundation are close to code minimum and upgrades will make the biggest efficiency, durability and comfort improvements

- Recommend 3-4" Rockwool or GPS insulation on exterior of above and below grade walls. Skirting recommended (already on plans)

- DO NOT use sand on poly floor of crawlspace, recommend Stega Crawl or CleanSpace Poly w/ concrete block pavers spaced out as ballast and path to mechanicals

CSA F280	Watts	BTU/HR
Heat Loss	5.69	19,393
Heat Gain	2.87	9,773

- Focus on air barrier to improve durability and performance of the build.

- Modest air source heat pump modelled as an example. Recommend looking at an Air Source or Ground Source heat pump for cooling and dehumidification.

New Homes Program:
Energy Modelling Performance Summary

Estimated Performance Improvement % (no baseloads, NBC Tiers and New Homes Program)		**39.5%**
Efficiency Manitoba New Homes Program eligibility (minimum 25% required)		**YES**
Potential NHP Rebates	**Per Unit**	**All Units (if >1)**
ENERGY MODELLING REBATE:	**$350**	
PERFORMANCE REBATE:	**$3,000**	

ERS Rating (GJ/ year)	**69**
Estimated Performance Improvement % (including baseloads)	**29.1%**
Greenhouse Gases (t/a, used for some mortgage insurance rebate programs)	**0.5**
Eligible for CMHC mortgage insurance premium rebates based on GHG emissions?	**YES**
CSA F280 Design heat loss (kw)	**8.37**
CSA F280 Design heat loss (BTU/Hr)	**28552**
CSA F280 Design heat gain (kw)	**4.22**
CSA F280 Design heat gain (BTU/Hr)	**14382**

Note: this calculation does not replace the F280.
1 kW = 3412.142 BTU/hr

New Homes Program: Recap

Design a Certified Energy Efficient Home

- **EnerGuide Label:** Official certification from Natural Resources Canada
- **Energy Modelling:** Detailed assistance and recommendations
- **Rebates:** $2,000 to $15,000 based on energy performance

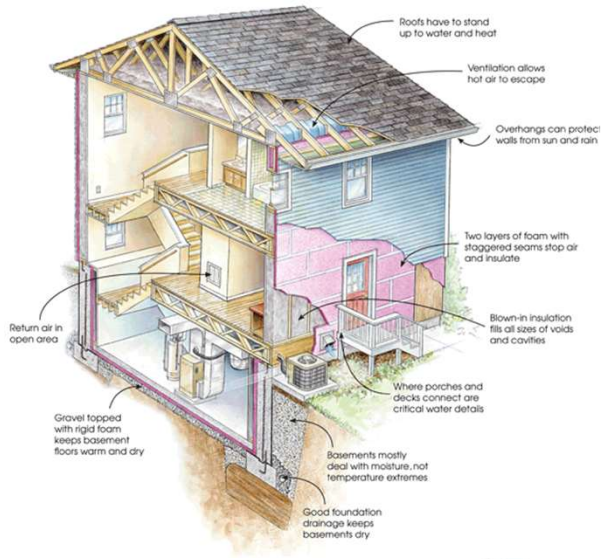
Steps to Participate:
We can work with you to keep it simple!

- Your full set of building plans (floor plans, elevations, cross sections, assembly descriptions)

- Proposed window and doors, manufacturer name (copy of invoice with sizes and specs)

- Type of HVAC system specified
  - heating/cooling system
  - HRV unit, HRV controls, drain water heat recovery system, hood fan, hot water tank

- Geographical orientation of each house
  - site plan is best



Program Challenges

1. Assembly of technical documents.

2. In-community blower door testing.