



ENERGY STAR® Qualified Windows, Doors & Skylights

Updated October 2010

When Canadians want to save energy and money and help the environment, they look for the ENERGY STAR symbol to identify energy-efficient products.



Even though windows, doors and skylights do not consume energy, they can be a significant source of heat loss in a home or building. ENERGY STAR qualified products will save money by reducing overall annual energy costs by up to 16 percent. They will also help keep the home or building more comfortable year-round and reduce outside noise, and may have less condensation in cold weather compared with a conventional product.

How Do These Products Qualify for ENERGY STAR?

To be ENERGY STAR qualified, products must meet specific energy efficiency levels that have been set for four climate zones (A, B, C and D) in Canada. In addition, all products must be certified by an accredited agency for their energy efficiency.

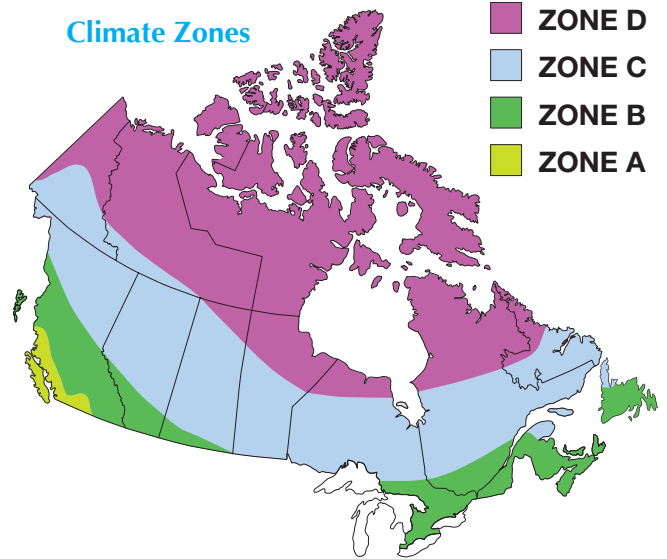
The four climate zones were developed using heating degree-days, a measure of annual average temperature. The efficiency levels measure how well a window, door or skylight insulates against the cold or how well it uses the sun's heat to supplement the home's or building's heating system. Because the climate becomes progressively colder from Zone A to Zone D, the levels are more stringent for each successive zone. This means that models that qualify for Zone B also qualify for Zone A, models that qualify for Zone C also qualify for Zones A and B, and models that qualify for Zone D also qualify for Zones A, B and C.

ENERGY STAR Requirements for Windows and Doors

Products may comply based on either their U-factor or their Energy Rating (ER). The U-factor is a measure of the rate of heat loss. The lower the number, the slower the heat loss. ER is a formula that includes the U-factor, air leakage and the benefit of potential solar gain. The higher the value, the higher the potential annual energy savings. Windows and sliding glass doors must also have an air leakage rate of ≤1.65 cubic metres per hour per metre of product opening or ≤1.5 litres per second per square metre of product area.

Windows and Doors					
Zone	Heating Degree-Day Range	Compliance Paths			
		Energy Rating	or	U-factor	
		Minimum ER (unitless) Maximum U-factor 2.00 W/m ² •K (0.35 Btu/h•ft. ² •°F)		Maximum U-factor W/m ² •K (Btu/h•ft. ² •°F)	Windows only Minimum ER (unitless)
A	≤3500	21	or	1.80 (0.32)	13
B	>3500 to ≤5500	25	or	1.60 (0.28)	17
C	>5500 to ≤8000	29	or	1.40 (0.25)	21
D	>8000	34	or	1.20 (0.21)	25

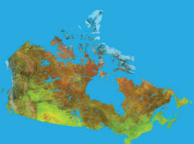
Climate Zones



ENERGY STAR Requirements for Skylights

Skylights*		
Zone	Heating Degree-Day Range	Maximum U-factor W/m ² •K (Btu/h•ft. ² •°F)
A	≤3500	2.80 (0.50)
B	>3500 to ≤5500	2.60 (0.46)
C	>5500 to ≤8000	2.40 (0.42)
D	>8000	2.20 (0.39)

*Includes tubular skylights



U-factor Conversion to R-value

Windows, doors and skylights are not normally assigned an R-value when tested. However, contractors and window salespeople may refer to the R-value as a way to measure performance. To help you better understand the R-value system, sample U-factors in both metric and imperial units have been converted to R-values in the following table. Because ER values are derived from a formula that uses both the U-factor and solar heat gain, there is no method to directly convert the ER value to an R-value.

U-factor Conversion to R-value		
U-factor (W/m ² ·K)	U-factor (Btu/h·ft. ² ·°F)	R-value (ft. ² ·h·°F/Btu)
3.40	0.60	1.7
3.20	0.56	1.8
3.00	0.53	1.9
2.80	0.50	2.0
2.60	0.46	2.2
2.40	0.42	2.4
2.20	0.39	2.6
2.00	0.35	2.9
1.80	0.32	3.2
1.60	0.28	3.6
1.40	0.25	4.0
1.20	0.21	4.8
1.00	0.18	5.6
0.80	0.14	7.1
0.60	0.11	9.1

How to Identify a Qualified Product

All qualified products must be visibly labelled with the ENERGY STAR symbol and the zone or zones that the product qualifies for. This information may also be in the product literature for each model, along with an explanation of the four climate zones in Canada.

Sample Label Without a Map, Showing Qualification for Zones A and B



© Her Majesty the Queen in Right of Canada, 2010

Cat. No. M144-147/1-1-2010E (Print) ISBN 978-1-100-17119-7

Cat. No. M144-147/1-1-2010E-PDF (On-line) ISBN 978-1-100-17120-3

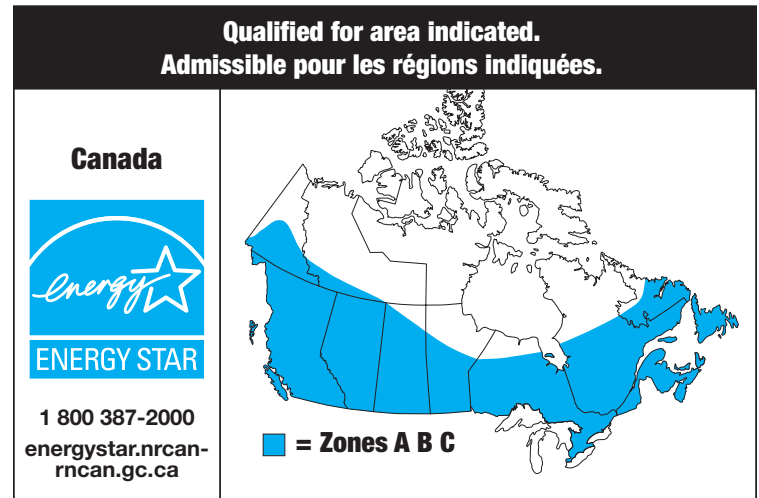
Aussi disponible en français sous le titre : Portes, fenêtres et puits de lumière homologués ENERGY STAR®

For information regarding reproduction rights, contact Public Works and Government Services Canada at 613-996-6886 or at copyright.droitdauteur@pwgsc-tpsgc.gc.ca.



Sample Label With a Map, Showing Qualification for Zones A, B and C

Qualified for area indicated.
Admissible pour les régions indiquées.



Environmental Benefits

If all of the original windows and doors in an average older home were replaced by ENERGY STAR qualified windows and doors, the household energy consumption would be reduced by about 7 percent. If ENERGY STAR qualified windows, doors and skylights were installed in an average new home instead of conventional products, energy consumption would be reduced by about 16 percent.

ENERGY STAR in General

Natural Resources Canada (NRCAN) administers the ENERGY STAR initiative in Canada. Manufacturers who want to label some or all of their models with the ENERGY STAR mark for sale in Canada must sign an administrative arrangement with NRCAN and have these models registered and qualified for ENERGY STAR. By signing the arrangement, the manufacturer verifies that the products to be labelled meet the ENERGY STAR specifications for Canada. Dealers and retailers may also sign an arrangement with NRCAN or receive permission to use the ENERGY STAR name and promotional symbols directly from their manufacturer supplier.

For more information on ENERGY STAR in Canada, visit the Web site at energystar.nrcan.gc.ca, or to order ENERGY STAR publications call the publications line at 1-800-387-2000 (toll-free).

For other free publications write to:

Energy Publications

Office of Energy Efficiency
Natural Resources Canada
c/o St. Joseph Communications
Order Processing Unit
1165 Kenaston Street
PO Box 9809 Station T
Ottawa ON K1G 6S1
Fax: 613-740-3114
TTY: 613-996-4397 (teletype for the hearing-impaired)