

COOL ROOFING IN CANADIAN CLIMATES

It is theorized that dark-coloured roofs can contribute to the urban heat island effect (the temperature in cities is higher than the surrounding unpopulated areas). This theory, based on satellite temperature sensing observations and computer models, suggests that if homeowners replaced their dark shingles or other roof coverings with lighter coloured (more reflective) products, the overall ambient temperature will be reduced, enabling lower cooling costs in the warm summer months. Some reflective roofing products have been listed as "Energy Star qualified", a program that makes it easy for consumers to identify and purchase energy-efficient products.

Natural Resources Canada has issued the following notice regarding the Energy Star program and Roofing Products for Canada:

Roofing Products are NOT Included in Canada's ENERGY STAR® Program.

Roofing products are **NOT included** in Canada's ENERGY STAR program. Natural Resources Canada (NRCan) works closely with the U.S Environmental Protection Agency (EPA) to harmonize product specifications and promote consistency between the ENERGY STAR programs in Canada and the United States. Nevertheless, differences in program approaches do exist, occasionally resulting in differences between the types of products and activities supported by the program in the two countries. There may be limited applications where certain roofing products would provide energy savings in specific locations in Canada. **As Canada is predominantly considered to have a "heating climate", however, the benefits of ENERGY STAR qualified roofing would not be generally applicable throughout the country.**

From NRCan web site <http://oee.nrcan.gc.ca/equipment/manufacturers/15004>

Researchers at NRCan's CanmetENERGY Ottawa lab investigated the benefits of reflective residential roofs. The study found that a reflective roof increased energy consumption in the Ottawa climate due to the need for additional space heating in the winter. Energy costs were decreased by less than \$30/yr. due to the differences between the cost per gigajoule of natural gas and electricity.

Review of the Comprehensive Energy Use Database on the NRCan Canada web site for the Residential Sector shows that over recent years, for all Canadian regions, 66% of household energy use is for space heating and only 1.2% of household energy is used for cooling. For heating dominated climates, such as in Canada, the solar gain is largely trapped by windows.

http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/tablestrends2/res_ca_40_e_4.cfm?attr=0

As well, CASMA concurs with the limitations of cool roofing summarized by the Asphalt Roofing Manufacturers Association (ARMA), in their white papers on the subject which can be viewed via the following link:

<http://www.asphaltroofing.org/coolroofing.html>

Canadian homeowners should be aware that simply using “white” shingles will very likely not reduce their home energy usage costs. The best way for homeowners to reduce air conditioning costs (and heating costs) is to invest in additional attic insulation, and properly ventilate their home’s attic to help control unwanted solar heat gain and reducing the home’s cooling load.

For more information on this subject or other asphalt shingle technical issues, you may contact CASMA by e-mail at casma@casma.ca, or visit our website: www.casma.ca. The information contained in this bulletin is for general education and is not intended to replace advice from a qualified contractor or direction on usage/installation from the manufacturer. Consumers should be aware of the safety hazards associated with work on roofs and, before doing so themselves, should consider following CASMA’s advice of using qualified contractors. This bulletin may be reproduced with permission on condition that it be reproduced in whole, unedited, with attribution of copyright to CASMA.

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