

## Warm edge industry awaits controversial new Canadian window regulations

In what can only be good news for warm edge spacer manufacturers, the Canadian government's national energy conservation effort, as run by Natural Resources Canada (NRCan), has finally begun the controversial process of tackling the most difficult to regulate appliances of them all—windows and doors.

For two decades, the fenestration industry made solid progress with improvements in product composition, construction, installation and testing standardization. Despite the progress, however, until the early 1990s, the only measures addressing minimum thermal performance in Canada were to be found in provincial building codes. Using these statutory devices, local authorities restricted their regulatory scope to simply banning the use of single pane glass.

While the Canadian Standards Association created its A440 window standard in 1984, it wasn't until work was completed on a revised thermal performance section in 1990 that actual measurement criteria were settled upon and a set of minimum values declared. Those minimums are an ER value of -38 watts/m<sup>2</sup> for operable windows plus fixed units with a sash, and an ER of -20 watts/m<sup>2</sup> for fixed windows alone. They are an optional part of the standard.

What has come under discussion now, however, in a broad-based industry consultation process, is a new set of performance levels proposed by NRCan's Office of Energy Efficiency. Those levels would see operable window ER ratings rise to -13 watts/m<sup>2</sup>, while fixed window ERs would climb to -3 watts/m<sup>2</sup>.

As minimums, these are a definite improvement over today's regulated levels, but they are by no means the highest on the market. Top-level operating windows have ER ratings that exceed +5 watts/m<sup>2</sup>, while the thermal performance of some high-end fixed windows can even surpass +15.

The main points of contention regarding the proposed new federal window standard and its accompanying EnerGuide labeling program are potential trade-bending conflicts, the fact that it's not very regionally sensitive and the possibility that it will see Canada end the residential use of spectrally-

### Energy Rating (ER)

Much like the EnerGuide program, which compares the energy consumption of home appliances, the Energy Rating (ER) number reflects a window's ability to admit solar heat, prevent heat losses and resist air leakage losses. The ER Value is measured in watts per square metre. It is calculated as the difference between the heat gains and heat losses of the window over the entire heating season (for an average Canadian home and location).

Window ER numbers generally range from -50 to +15. The higher the ER number, the better the window performance.

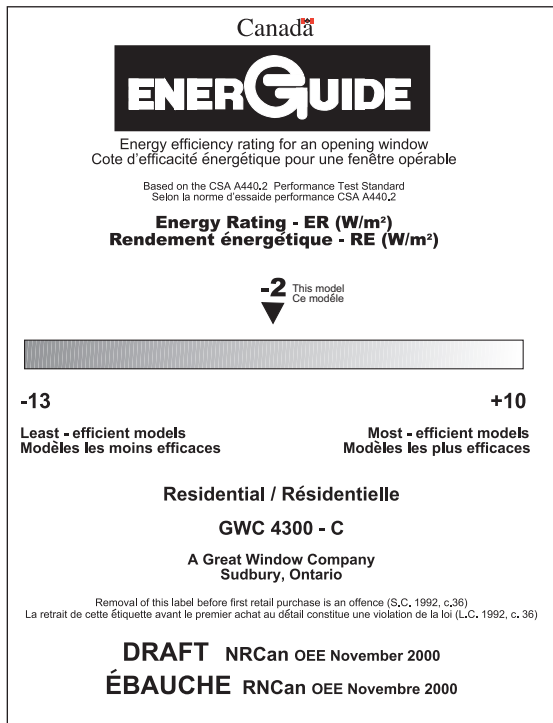
Type of Spacer	Type of Glazing	Fixed Window	Operable Window
Aluminium	Double	-35	-50
Aluminium	Double	-15	-30
Insulated	Double, low E coating, argon	+5	-8
Insulated	Triple, two low E, coatings, argon	+15	+8
Minimum ER Rating for High-performance Window		+2	-11

A standard, double-glazed window with an ER number of about -30 is a substantial energy loser. A window with an ER number of 0 is neutral in energy consumption—it contributes as much solar heat to the house over a heating season as it loses. In contrast, any window with a plus number can actually add more heating energy to a house than it loses.

selective low-e glass and a few other borderline thermally-inefficient technologies.

The jurisdictional quagmire created by a stand-alone federal window regulation, and the trade distorting it creates, were seen as enough of a problem on their own for the Canadian Window and Door Manufacturers Association to formally reject the proposal at its November 17, 2000, board meeting.

The problem is that federal Energy Efficiency Act regulations only apply to inter-provincial trade and imports. This leaves all windows sold in the province in which they are built exempt from the



**Proposed federal Ener-Guide label**

cost and effort of compliance. Without provincial adoption of the federal standards, or similar provincial ones enacted, the new regulations may be open to legal challenge under interprovincial and NAFTA trade law.

Federal project spokesman Steve Hopwood from the Office of Energy Efficiency pointed out that this is still very much a work in progress. Five provinces have energy efficiency acts of their own and they are all listening to what's coming down the pipe.

"There are some parts of the proposal that need to be worked on, and the industry has been giving us feedback on that," Hopwood stated regarding the current comment phase scheduled for completion January 15, 2001. "By early spring, another draft will go out to the industry and the provinces, but it should be stressed that we have a lot of consultation time left."

The impact on industry from even this moderate of an increase in performance is still pretty obvious.

"Aluminum doesn't do very well unless it's really well thermally-broken," Hopwood added, "so there might have to be some tweaking with that."

"We're not asking anyone to be tested," he con-

tinued, "because they're already supposed to be tested to meet the building code. What we're asking is that they take the extra step and have their products rated for thermal efficiency. There's some extra cost involvement, but it's quite small."

Hopwood also remarked on the spectrally selective low-e questions. "This type of low-e glass restricts solar heat gain," he said, "and in a country like Canada with a major heating requirement, it certainly helps to have heat from the sun."

The bottom line in the whole regulatory process is the question of whether enough provinces will sign on, but so far Ottawa is encouraged with the feedback it has been getting. In the discussions with Ontario, Manitoba, New Brunswick and Nova Scotia, no one has yet rejected the proposal out of hand, and everyone seems to understand the pressing need for ultimate approval.

Some have expressed concern that the proposed new window measure is not universal. However, Manitoba, home to several large Canadian window companies and major exporters, questions the use of one standard for all climatic regions, according to Ken Klassen, senior technical officer at the newly amalgamated Manitoba Conservation.

Other provincial spokesmen, such as the Ontario Ministry of Energy's (OME) Ed Grzesik, feel this is not a big concern. In fact, it may be the true beauty of having a comprehensive labeling program.

"That way, consumers know what they're buying and can choose as much energy efficiency as they want to pay for," Grzesik stated.

Part of what the new federal legislation provides, this is one of the reasons Ontario is looking quite favorably at the initiative. It is action they claim to have requested themselves three years ago.

"My recommendation to my political masters," commented Grzesik, "would be that once the federal government comes out with energy efficiency regulations for windows, we should immediately follow suit."

The proposed federal Energuide labeling displays not only the energy efficiency of the unit, but also its relative position on an overall industry scale of window thermal performances. OME window analysts are pleased with the approach.