

how to recognize

good value

in windows and doors

What to look for in window and door products

This article can be found at [CSA International's website at www.csa-international.org/consumers/consumer_tips/default.asp?load=window_doors](http://www.csa-international.org/consumers/consumer_tips/default.asp?load=window_doors).



Choosing a window or door is not exactly an open-and-shut case. With thousands of products to choose from, how do you recognize good value?

Look for products that have been tested and certified to relevant performance standards. Products certified under CSA International's Windows and Doors Certification Program will carry the CSA mark. To ensure that you are buying CSA certified products, request a written contract from the supplier.

The operational performance ratings for certified products are based on CSA International's CSA A440-00 Window Standard, the Canadian General Standards Board CGSB 82.1 Sliding Glass Door Standard, the CGSB 82.5 Insulated Steel Door Standard, CSA A440.2-04 Energy Performance of Windows and Other Fenestration Systems, and CSA A453-95 Energy Performance Evaluation of Swinging Doors.

Performance Ratings

The standards allow for several levels of performance for:

- air tightness (A)
- water tightness (B)
- wind load resistance (C)
- forced entry resistance (F)
- screen strength/ease of operation (S/E)
- condensation resistance (I) (optional)
- energy rating (ER) (optional)

Air Tightness (A)

Performance is indicated by a number rating from A1 to A3.

The higher the number, the more airtight the product.

Windows	Sliding Doors
A1	A1
A2	A2
A3	A3

Insulated steel doors are tested on a pass/fail basis and do not receive a graduated rating.

Water Tightness (B)

Performance is indicated by a number ranging from B1 to B7 for windows, and from B1 to B4 for sliding doors.

The higher the number, the more watertight the product.

Windows	Sliding Doors
B1	B1
B2	B2
B3	B3
B4	B4
B5	
B6	
B7	

Insulated steel doors are tested on a pass/fail basis and do not receive a graduated rating.

Wind Load Resistance (C)

There are up to five levels of wind resistance for windows (C1 to C5) and three levels (C1 to C3) for sliding doors.

The higher the number, the better the performance.

Windows	Sliding Doors
C1	C1
C2	C2
C3	C3
C4	
C5	

Insulated steel doors are not tested for wind load resistance.

Forced Entry Resistance (F)

For windows, an F10 rating means that the window meets the standard level of resistance to forced entry. An F20 rating indicates that the window has achieved a higher level of resistance to forced entry.

All sliding doors must have a lock or latching device. An F10 or F20 rating indicates that the product has passed forced-entry resistance testing.

For both windows and sliding doors, an F20 rating indicates better performance than F10 rating.

Screen Strength/ Ease of Operation (S/E)

For windows, a number rating ranging from S1 to S2 indicates screen strength.

They are tested for tear, damage or retention when subjected to loads. Please note that insect screens are

not intended for any purpose other than to keep insects out.

For sliding doors, a number rating from E1 to E3 indicates ease of operation. They are tested based on the force required to open and close the moveable section of the door.

S2 is stronger than S1. E3 requires the least amount of effort.

Windows	Sliding Doors
S1	E1
S2	E2
	E3

These tests do not apply to insulated steel doors.

Condensation Resistance (I)

Condensation resistance for windows and sliding doors is determined by a thermal characteristic called Temperature Index (I), which ranges from 40 to 80. The higher the number, the more likely the product will resist condensation.

Insulated steel doors are tested on a pass/fail basis and do not receive a graduated rating.

Energy Rating (ER)

The performance rating for energy efficiency in windows, sliding doors, and insulated steel doors is represented by the letters 'ER'.

An ER rating for windows and sliding doors is derived from:

- Solar heat gain
- Heat loss through frames, centre and edge of glass

- Air leakage heat loss
- The addition of a constant +40 ER number

ER numbers range widely depending on the type of window and design options. For example, fixed windows score better ER ratings than operating windows.

ER ratings for operating windows and sliding doors typically range from 5 (indicating weaker energy performance) to 40 (higher energy performance). Fixed windows can be designed to have positive ER numbers ranging from 15 to 45.

A typical ER rating for insulated steel doors with wood frames is -13.

Who is CSA International?

CSA International tests products for compliance to national and international standards, and issues certification marks for qualified products. The CSA mark assures consumers that a product has been evaluated by a formal process that involves examination, testing and follow-up inspection, and that it complies with applicable standards for safety and performance.

All Weather Windows products are all CSA certified.