

Understanding the Building Codes Requirements and Labeling for Manufactured Fenestrations

Would you purchase a Window, Door or Skylight (Fenestrations) that has the potential to leak air and water into your home, and not be Energy Efficient.? These issues could cause water damage, mould growth, health issues, and possibly overheating of the building, robbing you of your heating or cooling dollars.

Fenestration products must meet the requirements of the National Building Code and its related Standards to achieve minimum Performance levels for air leakage, water penetration, structural integrity, energy efficiency, and their installation to ensure the above issues don't happen.

To confirm that the products comply with the Code requirements, consumers and building officials can use a quote sheet (before the sale) or the product labels (after the sale). Fenestration manufacturers and suppliers work hard and spend millions of dollars to produce products designed and tested to withstand the harsh Atlantic elements.

The quote sheet and the product labels will display the performance information but formatted differently. Each window, door and skylight product must be labeled with their performance data: Energy Performance and Structural-Air-Water Performance. The ratings can be combined onto a single label. The Performance Grade Ratings are Location and Terrain Specific

Performance Grade requirements can vary significantly from one location to the next. This variation is due to the prevailing wind pressure and the driving rain which is dependent on the building's location and terrain.

There are two terrain definitions for locations, rough and open terrain. Open terrain is where the Fenestration is not protected from the elements, and Rough terrain is where they are protected from the harsh Atlantic elements.

Notably, Canada's highest wind and driving rain wind pressure values are found in Atlantic Canada, reinforcing the need for dependable tested products to keep those outside elements from getting into the building.

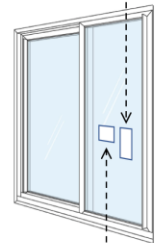
The minimum required Code level of Performance is Class R. The LC, CW, and AW are more demanding classes of performance and are generally specified for larger project types. In some cases, swing door products may show an **LW** water infiltration performance value. This indicates that the unit has a **Limited Water** rating and requires specific protection from the elements, such as an overhang, roof, or canopy.

Fenestration Canada has developed an Easy-to-use performance calculator for consumers to use, and the results can be printed out when shopping or reviewing a quote or label. <https://www.fenestrationcanada.ca/calculator>

When purchasing fenestration products, attention to product performance is key to achieving acceptable management of air, water, and structural performance, as well as energy efficiency. Of particular concern is water leakage, all Fenestrations, including exterior doors must meet a minimum water penetration resistance, and the quote sheet or label would indicate a water penetration resistance rating. This rating must meet or exceed the performance requirement for the location and

| Energy Label |
|---|
| Reports a product's lab-tested or lab-simulated energy performance values: |
| <ul style="list-style-type: none"> • U-factor • Solar Heat Gain Coefficient (SHGC) • Visible Transmission (VT) • Energy Rating (ER) |

| Performance Grade Label |
|---|
| Reports a product's lab-tested resistance to wind pressure, to air leakage, and to rainwater penetration. |
| The following values are reported: |
| <ul style="list-style-type: none"> • Performance Class: R, LC, CW or AW • Performance Grade (PG): PG15 – PG100 • Positive/negative Design Pressure • Water penetration resistance test pressure: • Air infiltration/exfiltration: A2, A3 or Fixed • Size tested |
| The measured width or height of the labeled product must NOT be greater than the size tested reported on the label. |



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exposure condition. Products unable to provide these ratings may be a good indication that the product has not been tested (thus not meeting the Code), potentially putting your project at risk.

The chart below shows the typical ratings for the Atlantic Provinces and how the climatic conditions/location affect the rating, some locations may be higher or lower. The Fenestration Canada Calculator or your window distributor can assist in establishing the required ratings for the geographic area where the Fenestration is being installed. Water penetration resistance values can vary within the same Performance Grade requirements.

| | Performance Class (PG) R | Minimum Design Pressure | Air Infiltration | Water Penetration Resistant (WPRT) |
|----------------------|-----------------------------|-------------------------|------------------|------------------------------------|
| New Brunswick | PG-25 | -1200/+1200 | A3 | 260 |
| Nova Scotia | PG-25 | -1200/+1200 | A3 | 290 |
| Prince Edward Island | PG-25 | -1200/+1200 | A3 | 360 |
| Newfoundland | PG-35 | -1680/+1680 | A3 | 400 |

Label Placement and Number of Labels Applied to Fenestrations

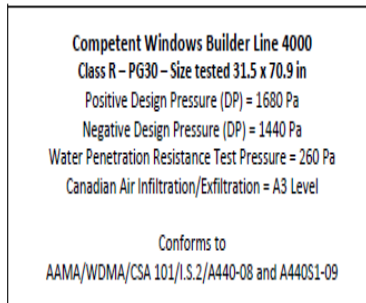
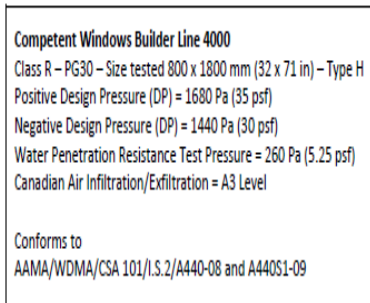
Example Energy Labels

Products that comply with the requirements of the Canadian ENERGY STAR program are permitted to use the ENERGY STAR brand logo.



Energy codes require an Energy Performance label on each product, in some cases on each pane of glass. Required energy efficiency performance can vary based on location as well as Energy Efficiency programs such as the Canada Greener Homes Program. Insure the performance you get meets your requirements.

Example Performance Grade Labels



Performance Grade values require at least one label per product. Composite designs have multiple products within a single perimeter frame. These products may require multiple PG labels unless tested as a complete unit and labeled as such. Combination designs have multiple separate products joined together with couplers or mull strips. These products require a label for each product type as well as the coupler performance results.

.As the Performance/Energy values are only one step to achieving the best product performance, proper Installation, envelope detailing, and appropriate flashings above the Fenestration are critical details in keeping those demanding Atlantic elements from entering your home or costing you Energy dollars.

See your local window distributor or local Building Inspector for clarification of the minimum code requirements.