



Energy efficiency

Designing your home for energy performance

All new residential builds are required to achieve a minimum energy performance as part of meeting the New Zealand Building Code. If you make energy-efficient choices at construction stage, your home will be cheaper to run over its lifetime.

Tips for building an energy-efficient home



For aluminium joinery, use thermally broken or insulated window and door frames. These have an insulating barrier to reduce loss of energy via the frame to improve insulation and reduce condensation.



Design roof eaves so that the low angle of the winter sun can enter the building and warm the rooms. Eaves should also be wide enough to provide some shade from the high angle of the summer sun.



Orient the longest elevation of your home towards the sun for winter warmth and free heating.



Take the opportunity to install high levels of ceiling, wall and floor insulation during construction, as adding it later can be difficult.



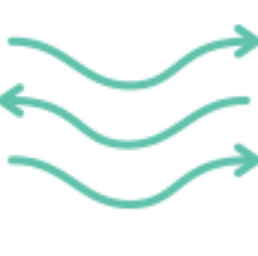
Use your window dollars wisely by installing energy-saving double or triple glazing.



For additional benefits, choose window glass that has Low E coating, and is spectrally selective, tinted.



Use insulation to keep the indoor temperature stable and slow the rate of energy loss or gain. Roof, wall and floor insulation is cheap compared with most other building materials.



Install windows and doors in strategic locations to provide good cross-ventilation for free summer cooling.

Key Facts



By choosing energy-efficient options, such as installing high levels of insulation and using double- or triple-glazed windows, you increase your house's energy performance, meet the standards and reduce the annual energy cost of running your home.



The New Zealand Building Code requires all new residential construction to meet defined standards in energy performance.



To help you achieve an accurate measure of the energy performance for your home, we've developed WEERS (Window Energy Efficiency Rating System), which gives every glazed window or door you purchase an accurate energy efficiency rating.

How energy performance is calculated

Building energy performance is assessed in one of the following three ways:

- By using a ready-made 'schedule' of building elements with known energy performance values.
- By calculating the building performance using a manual 'calculation' method.
- Or by 'modelling' the building using approved computer software.

The details of these methods are described in New Zealand Standard NZS 4218 and you can get assistance from an engineer, architect or designer to make these calculations.

You can also use a mix-and-match approach, which involves both calculating and modelling building performance. This allows you to take the energy performance of different building elements and trade off the cost and benefits of each option to give you an overall BPI (building performance index), which is the measure that matters.



Assessing the energy efficiency of windows

Our Window Energy Efficiency Rating System (WEERS) allows you to accurately assess the energy efficiency of the windows or glazed doors you purchase. It can be given to your architect or energy consultant to use as part of assessing your home's total energy performance calculation or BPI.

WEERS is similar to the energy rating label you find on appliances. It makes it easy to satisfy the requirements of the New Zealand Building Code, and to meet any other energy performance targets that may be required by local authorities.



Benefits of the WEERS rating system

Most other window rating systems are based on standard window sizes and configurations. With WEERS you get an accurate rating specific to each window and door that you purchase. Even if you buy two similar windows, each one will have its own unique and accurate rating.

WEERS ratings are also specific to the New Zealand climate. Ratings from other countries, including Australia, the USA, Canada and Europe are not easily comparable to New Zealand conditions.

WEERS ratings are used in calculating NZ Green Building Council **Homestar** ratings (a comprehensive, independent national rating tool that measures the health, warmth and efficiency of New Zealand houses).



How WEERS works

The windows and doors that you purchase from some members of the Window and Glass Association will be WEERS energy-rated and a certificate will be issued to you describing the windows and their ratings.

The certificate uses a familiar star rating system, with the maximum possible rating of six stars. The certificate also records the thermal efficiency or R-value of each window, and also the R-value for the house lot.