

“Significant energy and comfort benefits can be achieved by using more energy efficient windows.”

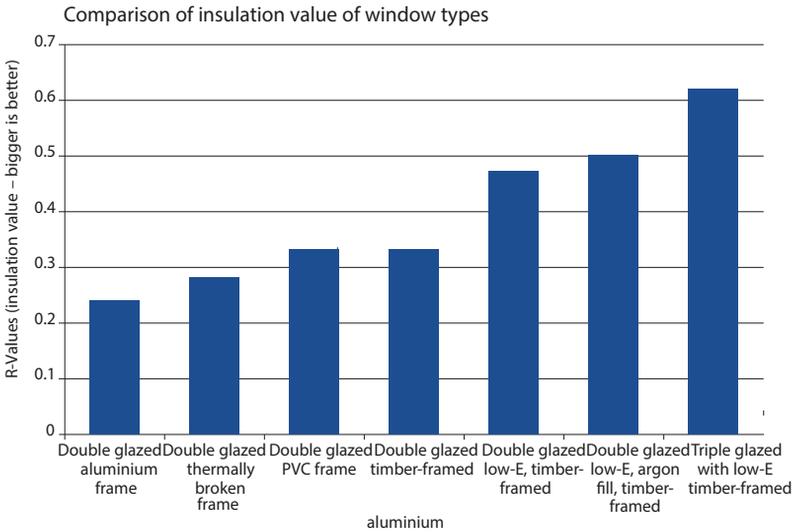


Heat loss from glass

Significant energy and comfort benefits can be achieved by using more energy efficient windows.

Double glazing is now widely used throughout New Zealand. In addition to improved energy performance, double glazing also minimises window condensation and reduces noise transmission. The higher the performance specification of double glazing, the higher the inside surface temperature of a double glazed window, and therefore the warmer people will feel when close to this glass. The best performing windows allow less than half the heat loss of standard double glazing, and less than a quarter the heat loss of standard single glazing.

Thermally broken metal frames perform 20% better than standard metal frames. Wooden and other low heat conduction frames such as PVC units can perform 40% better than standard metal frames, 'low-E' coating on the inner pane of double glazing can provide up to a 30% benefit and argon gas between the double glazing provides an additional benefit. The following graph demonstrates that simple double glazing is only half as effective as the best double glazing option.



For the medium glazed house used in the calculations for this book, the heat losses through the the standard double glazed windows alone amount to 25-30% of the total heat losses. This glass represents only 10% of the total external surface area of the building. The roof accounts for only 10% of the heat losses but is 30% of the total external surface area. The benefit from doubling the insulation value of windows will therefore be far greater than doubling the insulation value of the roof.

To help in the selection of windows and glass doors that best meet your needs, the Window Association has developed a simple five-star rating system known as WERS (window efficiency rating system). WERS uses an accredited computer program to test specific glass and frame combinations. A table of WERS ratings is available at www.wanz.org.nz