

The efficiency and comfort of a home is only as strong as its weakest link and windows are typically the biggest heat sinks a house has. The thermal performance of window frames available in the market varies considerably. The window and door frames you choose will make a significant difference to your comfort, health, energy bills and the value of your home.

Modern uPVC

NK Windows partner with German-based Aluplast GmbH for uPVC profile systems. They are world-leaders in the field and focus solely on uPVC for window and door systems. Their products are used around the globe. We only use uPVC profile that has been formulated for parts of the world with high levels of UV light. We design and manufacture windows and doors to your exact specifications in Christchurch using German, Austrian and New Zealand components.

Thermal Performance

Aluplast's Ideal 4000 Series profile is an extruded 5-chamber profile, with a combined material width of 70mm. It is ideally suited to South Island conditions and outperforms any standard or thermally broken aluminium joinery on the market. A thermal transmittance R_f Value of $0.77 \text{ m}^2 \text{ deg C/W}$ enables compliance with low-energy house standards. Our systems provide glazing thickness from 24mm to 36mm, comfortably exceeding standard aluminium offerings resulting in reduced heat loss and condensation within your home. We are very proud to be the window and door partner of choice for New Zealand's first 10 Homestar Built rated house and for a customer at Scott Base in Antarctica.

R-value is a measure of thermal resistance used in the building and construction industry. U-value measures are

also widely used to explain thermal performance. U-values and R-values are quite simply the inverse of one another. The higher R-value, the greater the thermal resistance.

See the table below showing the thermal performance of common window frame and glass options in NZ.

Most existing NZ homes current situation			
Frame	Glass	R-value	U-value
Aluminium	Single	0.15	6.66
Wooden	Single	0.19	5.26
Aluminium	Double	0.26	3.85
Common renovation and new build options			
Frame	Glass	R-value	U-value
Aluminium	Double	0.26	3.85
Thermally broken aluminium	Double	0.31	3.22
	Double plus Low-E	0.40	2.51
	Double plus Low-E and argon	0.43	2.33
PVC frames from NK Windows	Double plus warm edge spacer	0.40	2.51
	Double Planitherm XN (Low E) and warm edge spacer	0.73	1.37
	Double Planitherm XN (Low E) +Argon and warm edge spacer	0.84	1.19
	Triple plus 2x Low-E, argon and warm edge spacers	1.20	0.83

Benefits of a Warmer Home

Needless to say, a warmer home is a healthier and more comfortable home. Warm frames mean no condensation and no condensation means no opportunity for harmful and unsightly mould to grow. Warm and tightly sealed frames mean no cool drafts or needless waste of energy and money!

