



Choosing windows and door materials

External glazed windows and doors need a frame that is durable, strong and weather-tight. In New Zealand, all windows must be tested and certified to ensure they are acceptable for our conditions, which can include exposure to strong winds and high levels of UV light.

Key Facts



New Zealand window and door frames need to be strong and durable to withstand our climate and conditions.



Aluminium, timber and uPVC are among our most commonly used framing materials.



Aluminium is popular because it is light, durable and low-maintenance. It is also reusable and recyclable.



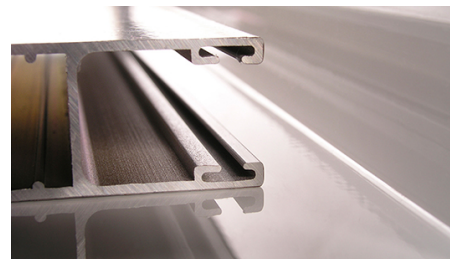
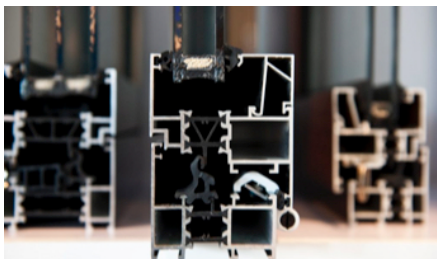
Timber is more energy efficient than aluminium but requires regular painting or staining to stay in good condition.



uPVC is a form of plastic that is durable, low-maintenance, and is a good insulating material, making it a good option for window frames.

Aluminium joinery

Aluminium is one of the most popular and versatile materials for framing windows and glazed doors in New Zealand. Light but strong and durable, it doesn't require regular repainting and needs less cleaning and maintenance than timber frames, which helps reduce its overall cost over a lifetime. Aluminium is also a high-value recyclable that can be melted down and used again indefinitely.



High Performance

Bare or mill-finish aluminium can be either anodised or powdercoated. Both processes produce a surface finish and colour that is rot- and weather-resistant. This makes aluminium window and door framing ideal for coastal areas, or locations that are exposed to a lot of light. Regular washing every three months is recommended to keep your aluminium frames in good condition.

Thermal breaks improve energy efficiency

Aluminium is a great conductor of energy and therefore has a low energy efficiency (Internal link to Energy Efficiency section) rating. This means aluminium allows heat to travel from a hot environment (interior) to a cold environment (exterior) very quickly, making a traditional aluminium frame a poor choice in cold areas. However, many frames now have a 'thermal break' – a section of nylon or resin that interrupts the transfer of heat or cold and improves energy efficiency. When used in combination with double or triple glazing, an aluminium frame with a thermal break becomes a very energy-efficient unit.

Reusing and recycling

Because aluminium is so durable it is one of the longest-lasting window framing materials available. As long as a used aluminium window still meets the requirements of the New Zealand Building Code, it can be reused and should provide a long life of service. Aluminium windows and doors sold by our members can also be returned to them for recycling. Anecdotal evidence suggests that as much as 100% of all disused aluminium windows are recycled or reused – we aim to keep it that way.

Timber joinery

Wooden window and door frames are also a popular choice. Timber joinery is energy efficient and looks great, but it is less durable than other materials and requires regular painting or staining to protect and maintain its surface. It is also more expensive than other types of joinery primarily due to a higher labour content and level of craftsmanship required to manufacture. Internal reveals – the parts of the frame on the interior of the window or door – are also typically made of wood in New Zealand, even on window frames of other materials.

Variety of styles and colour

Wood-framed windows come in a wide variety of styles, including double-hung, sliding, casement, and tilt-and-turn. Unlike some other window materials, they can be stained or painted in any colour. However, this does require regular reapplication and maintenance to ensure the wood stays in good, weather-tight condition.



Insulation and energy efficiency

Wood offers better insulation than aluminium and doesn't attract as much condensation directly to its surface. However, condensation on the glass pane itself can lead to water pooling on the frame edge, which can damage or even rot the timber frame. It's a good idea to take steps to reduce condensation on your windows as much as possible.

Use durable wood

Because timber is susceptible to moisture and decay, the New Zealand Building Code requires a minimum 15 years' durability for any timber used in timber reveals (the parts of the frame that secure the window to the building). The Building Code provides a list of timbers suitable for joinery, which includes commonly available options such as treated Pinus radiata.

uPVC joinery

uPVC (unplasticised polyvinyl chloride) is a naturally warm, easily cleaned, material commonly used throughout Europe and North America for window frames in residential housing. To withstand the wind loads imposed on a building it is often strengthened with steel profiles inserted during the manufacturing process. uPVC windows and doors are available with a variety of operational options and some manufacturers are able to provide a range of colours and/or external finishes that better resist exposure in harsher UV climates.

Considerations

One of the most common reasons for choosing uPVC, over another material, is that it's a good insulating material and because of its low conductivity and therefore higher thermal efficiency it reduces the risk of condensation forming on your window frames. uPVC is easily recycled or downcycled into other products.

At this time, uPVC window sections are primarily imported and bring their European and North American design influences, including functions and features not usually available with traditional New Zealand product. Some of these influences must be considered when integrating into local building design and construction methodologies. Whilst some manufacturers can provide a range of colours and/or external finishes, uPVC windows and doors are most commonly white in colour.

Selection

All windows and doors, regardless of material, must comply with the New Zealand Building Code, for structural integrity, durability, weathertightness, energy, and safety. Often imported, windows, systems, and/or raw materials are labelled as compliant with Standards from their country of origin.

Before making a purchase, discuss with your intended supplier how their offering compares and complies with the provisions of the NZ Building Code. More information can be found here: <https://www.wganz.org.nz/upvc-windows>