

Your how-to guide #5

# WINDOW AND DOOR MATERIALS

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When choosing windows and doors for your home there are a few materials that you can choose from. This guide will give you information on the most commonly used materials so that you can choose the right option for you.

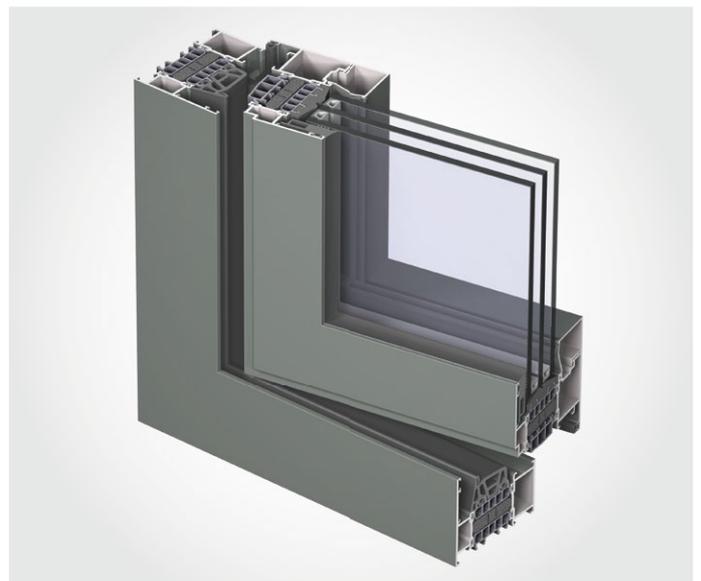
## Aluminium

Aluminium is a strong and lightweight material that is 100% recyclable with no loss of quality. The window or door usually comprises aluminium profiles sandwiched around what is known as a polyamide thermal break - an often complex strip of rigid insulation material.

The aluminium is usually covered in a tough powder coat finish that can be matt or gloss and can be specified in almost any colour. Metallic and textured finishes are also available and it is possible to specify a different colour inside and out. An anodised finish is usually available as an alternative, though this is more prone to scratching than powder coating.

Aluminium is a low maintenance alternative to uPVC, and as aluminium expands just 1mm per metre, it is especially suitable for larger windows and doors.

The inherent strength of aluminium is such that the frames can be relatively narrow. This maximises the glass area, and can also be used to mimic the appearance of traditional steel windows.



## Composite

There are a growing number of windows and doors that are made using two or more different materials. The most common combination is to have a timber window that is clad with aluminium on the outside to protect it from the weather. Other composites may comprise timber and aluminium sandwiched around a layer of insulating foam.

These composites can achieve some good thermal results. Aesthetically they are not to everyone's taste and they tend to be amongst the more expensive types of window.

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## uPVC

uPVC (Unplasticised Polyvinylchloride) is the same as PVC-U (Polyvinylchloride - unplasticised) and is widely used in the replacement windows market in the UK. Its popularity is due to its low cost and low maintenance qualities. Traditionally these windows and doors have been white, though more recently a variety of coloured and wood-grain finishes have been available - the colour either being painted on or applied using a thin film called a foil.

uPVC windows and doors are usually put together by welding the mitred corners and trimming off the excess plastic, this does leave a groove at each corner that some people find unsightly. There are a few uPVC windows that are made with joints that mimic more traditional timber windows and are screwed together instead.

uPVC expands and contracts by as much as 3mm per metre with changes in the ambient temperature. This means that whilst uPVC is a good low cost material for smaller windows and doors, it is less suitable for larger openings.

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# Timber

Timber windows and doors can be made from a softwood or hardwood. The softwood (usually a redwood) will often come with a chain of custody certifying that it is from carefully managed sustainable forests. There are a number of species of hardwood that may be used. As hardwood is slower growing and often comes from developing countries where the certification and chain of custody processes are more prone to corruption, hardwood can be more difficult to justify environmentally.

Whether hardwood or softwood, timber windows and doors often have a more traditional appearance, and for the homeowner may give a softer, more cosy feel to the property. As the frames are usually given a painted or stained finish, the colour options are almost infinite, although generally you have to have the same colour inside and out. Of course, these windows and doors will require regular maintenance to keep them looking good and to make them last as long as they should.

It is increasingly popular to use engineered timber where the knots have been cut out and three or four layers of timber are laminated together. This has the advantage of being much less likely to twist and warp with changes in the weather, but can mean that zigzag joints in the wood called finger joints are visible. In time they may even be apparent through a paint finish.



# GRP

Glass reinforced polymer, or more commonly - fibreglass, is a stronger and more thermally efficient alternative to uPVC. It is most established as a window frame material in Canada and Scandinavia, but seldom seen in the UK. Its complex manufacturing process makes it an expensive option, and it is difficult to achieve a smooth surface finish.



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