



**PARKWOOD**  
WELCOME HOME

# SPECIFIERS GUIDE TO ENTRY DOORS [E-BOOK]



# AUTHOR PAGE:

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Carver Broomhall has been with Parkwood since 2010 making him highly experienced in the dos and don'ts of entry doors including the possible pitfalls when doors are placed in the wrong situation for their specification. He has enjoyed working in all areas of Parkwood, from making doors in the factory, through customer service, to salesperson and Key Account Manager.

Carver has completed the NZ Dip in Business, ILM Level 5, UBT's ABM course and the Inbound certification by Hubspot, so the content is sure to inform, entertain and impress!

He now specializes in creating content to help consumers and specifiers to develop clear parameters on their wants and needs to assist them to make the very best decision for them. Contact Carver at [carver@parkwooddoors.com.au](mailto:carver@parkwooddoors.com.au)

# TABLE OF CONTENTS:

The Entrance and the Elements..... 4

Materials Comparison..... 8

Door Construction..... 11

Warranties..... 14

Sizes & Customisation..... 17

Finish – Stain or Paint..... 21

Cost..... 24

Frames..... 25



# CHAPTER 1:

## THE ENTRANCE AND THE ELEMENTS



Entrance doors are often exposed to all four seasons of weather – sometimes in one day!

Constantly changing temperatures (which differ on one side of the door to the other), salt spray and rising and falling humidity demand only the best quality materials and construction that resists warping, remains true and keeps its good looks year after year.

## SPECIFIER'S GUIDE TO ENTRY DOORS

### The Entrance

The entrance to a home creates the first impression and sets the stage for what is to follow.

When choosing an entrance door, your first decision is to consider what design best fits the period or style of home you're building.

Next, consider the weather, exposure to light and whether you need glass to let more light into your home. Then look at the type of material you're using and whether you are going to paint or stain, or if you require a finish that will need less maintenance.

You can choose to brighten the light in both your exterior and interior entrance way by selecting a glazed door and sidelight.



“Choosing the right entry door, especially the right material, for the elements it will endure, is key its success and longevity.”

## The Elements

On the outside, an entry door endures all forms of weather. At the same time, it must resist the pressure created by the atmosphere on the inside. This may include dry air conditioning, or a hot fire. This creates different atmospheric pressures which all influence the performance of a door.

Choosing the right entry door, especially the right material, for the elements it will endure, is key its success and longevity.

## SPECIFIER'S GUIDE TO ENTRY DOORS

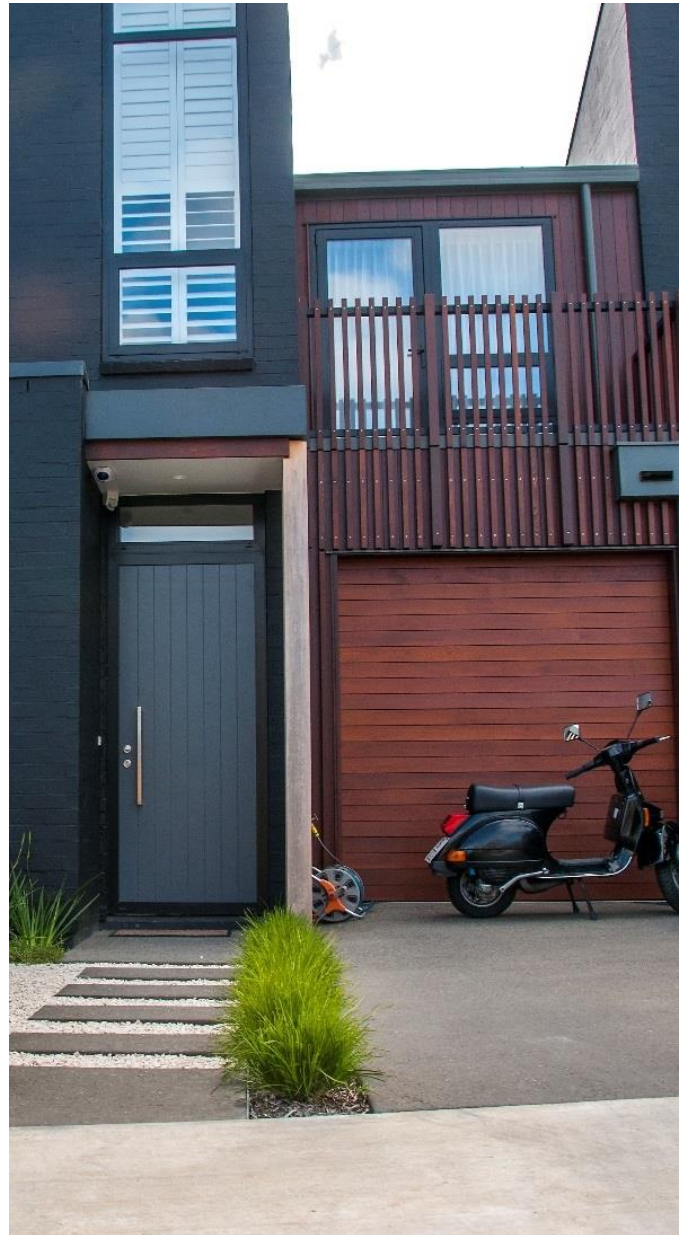
Different exterior elements can affect different materials.

The sun's UV rays can cause surface timber to become brittle, crack and break down.

Heat on one side of a door and cold on the other results in pressure on the door which can cause it to bow.

Excessive rain can also wear timber out if it has not been protected adequately whilst moisture in dark damp areas can encourage rotting and mold to grow.

However! There are different materials available that are suited to any condition you come across. And that is the purpose of this book, so ready on to learn more.



# CHAPTER 2:

## MATERIALS COMPARISON



An important consideration when selecting the perfect entry door is the main material used in its construction.

Common materials include timber, fiberglass and aluminium, and each have varying benefits and uses.

Formerly, steel was used, but manufacturers have largely moved away from this due to it rusting over a period of time as its protective coating wears away.












































## SPECIFIER'S GUIDE TO ENTRY DOORS

Compare the three door materials with their relative features, and what benefit this is to the consumer.

Material	Feature	Benefit
Composite	<ul style="list-style-type: none"> <li>• Hard-wearing surface</li> <li>• Woodgrain or smooth skin options</li> <li>• Fibreglass skin that won't absorb moisture</li> <li>• Good manufacturers seal all 4 edges with fibreglass</li> <li>• Foam filled core and Fibreglass edges and skin</li> </ul> <p><b>Limitations</b></p> <ul style="list-style-type: none"> <li>• Cassette glazing system</li> </ul>	<ul style="list-style-type: none"> <li>• Resists surface damage and wear and tear</li> <li>• Can be painted or stained depending on the desired affect</li> <li>• Can be exposed to full weather and still warranted</li> <li>• Edges don't need to be painted or sealed on site</li> <li>• The best insulation of the 3 material types - better than timber or aluminium</li> <li>• Although this helps water-proofing, it means the glass vision panels can't be custom-made. Glass sizes are fixed although the combination of panels and number of them can be changed</li> </ul>
Aluminium	<ul style="list-style-type: none"> <li>• Powder coat finish</li> <li>• Woodgrain finish available</li> <li>• Aluminium on all exterior surfaces, and some doors are made of aluminium components only</li> </ul> <p><b>Limitations</b></p> <ul style="list-style-type: none"> <li>• Colour is limited to the powder coat colours available on the market</li> </ul>	<ul style="list-style-type: none"> <li>• Low maintenance (no further painting needed)</li> <li>• An accurate and beautiful timber look can be achieved which has the same durability of powder coating</li> <li>• Won't absorb moisture, won't bow or twist in the heat, can be painted dark colours</li> <li>• An exact special colour can't be matched without a large amount of powder being made</li> </ul>
Timber	<ul style="list-style-type: none"> <li>• A lovely variety of timber options</li> <li>• Solid timber through and through</li> <li>• Timber can be fully customised</li> </ul> <p><b>Limitations</b></p> <ul style="list-style-type: none"> <li>• Solid timber is not suitable for exposure to weather</li> </ul>	<ul style="list-style-type: none"> <li>• Will match any style or spec of home</li> <li>• Good insulation and the best sound-proofing of the 3 common materials</li> <li>• Any design or custom-styled door can be made</li> <li>• This means the door must be sheltered by a porch roof, sealed with the correct product and well-maintained when the seal breaks down</li> </ul>




# MATERIAL COMPARISON

Choose the right door for your home

			
	Composite Doors	Aluminium Doors	Timber Doors
Energy Efficiency 		 Thermtek  Strata	
Weather Resistance 			
Stained or Painted 			
Low Maintenance 			
Hard Wearing Surface 			
Durability 			
Customisable Designs 			
Sound Proofing 		 Thermtek  Strata	
Security 			
Variety of colours 			
Paint Dark Colours 			
Cost 			



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 **GREEN** - Excellent at this feature  
 **BROWN** - Average at this feature  
 **BLUE** - Poor at this feature

# CHAPTER 3:

## DOOR CONSTRUCTION

Each door type is made differently. And they are built to take best advantage of the benefits those materials provide. Understand the construction to ensure you have a door that is fit for purpose.

### Composite Fibreglass

Composite Fibreglass doors are made with a fiberglass skin, resin/fiberglass edge and foam-filled core. LVL stiles and rails inside the resin provide more stability against warping/twisting and provide blocking for hardware fixing points such as locks, hinges and handles.

Glass is beaded in using a cassette bead system that seals from any water entering inside. Different line detailing is created on the door surface by etching a 'U' shaped groove into the skin.



Cassette bead detail



### Aluminium

Aluminium doors are made from hollow extrusion that is clipped and screwed together. The recessed panels are made using a 'sandwich panel' where aluminium sheet is glued to polystyrene sheets.

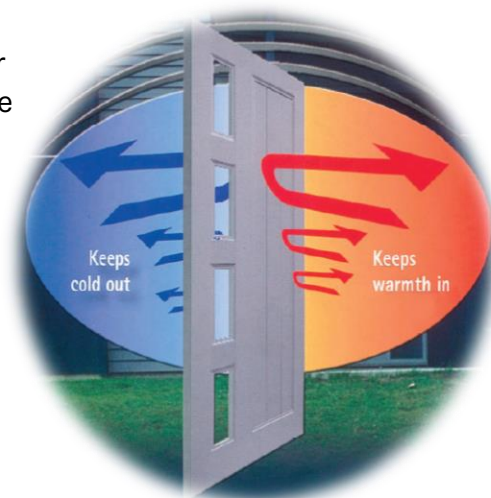


### Thermally Broken Aluminium

Aluminium is a high conductor of energy. Thermally broken aluminium means the outside faces of the door are separated by a plastic or rubber clip from the inside faces of the door. This stops the transfer of excessive heat or cold energy through the door.

Other benefits of thermally broken aluminium include decreased condensation on the inside of the door, reduced sound travel and overall, a nicer, more solid quality feel to the door.

The best thermally broken doors are separated by a rubber clip system, as opposed to plastic. Plastic has been known to bow when it heats up (dark-coloured doors get very hot in direct summer sun) and this can cause the whole door to bow. Parkwood recommend doors with a rubber thermal break.



### Timber

Solid timber doors are constructed from solid planks that are machined and square-dressed. They are then mortised to take a mortise and tenon join or drilled with round holes to be fitted together with strong timber dowels. They are glued in a press, put through a door sander, to ensure even finish, and then groomed by hand so they're ready for immediate staining or painting.

Mortice and tenon joint



Single glaze profile



Double glaze profile



Raised panel profile



# CHAPTER 4:

## DOOR WARRANTIES

Given the right conditions, premium doors are expected to last for a long time. Each entry door range will have a different warranty, as they're all designed for different situations.



Correct care of your door will ensure it will last for years to come.

### Composite / Fibreglass Door Warranties

High quality composite doors are warranted for 10 years in fully exposed conditions. When the door has fibreglass/resin on all edges, it doesn't have to be painted to be warranted.

Some points to remember when painting or staining your composite door:

- Both sides of the door must be coated in the same products and colour
- Parkwood don't recommend dark gloss colours as they can show a slight 'wave' in the door

[For full instructions on painting or staining your Duramax Composite door, click here.](#)

### Aluminium Door Warranty

Aluminium doors are covered by a 10-year warranty. Some powder coats have a 10 or even 15-year warranty. Powder coat finishes require a certain level of care and maintenance to meet the long warranty periods. [Click here for a guide](#) and [see an example warranty here](#).

Good powder coat suppliers supply free colour swatches to help client's select the right colour. We recommend you check the actual samples before confirming your choice of colour.



### Solid Timber Door Warranty

Timber doors are designed for use in weather protect situations. Timber is a beautiful natural product, and creates a solid, attractive entry door. However, it will not last if it is exposed to the elements without adequate protection. In basic terms, this means the door must:

- Have a minimum porch roof or protection of 1200mm
- Not be exposed to driving rain or direct sunlight for more than 4 hours per day
- Be pre-finished (coated) in a form-filling product, on ALL 6 faces
- Have a well-maintained coating

Form filling products exclude oils but include other products in many desirable colours.

Download ['Care Of Your Door Instructions'](#) here, and the [full Parkwood warranty here](#).

Most timber door guarantees are VOID if:

- An oil or penetrating stain is used as the finish – even if recommended by a manufacturer of such products
- It has insufficient cover (min 1.2m)
- It is exposed to driving rain or long periods of sunlight (more than 4 hours per day)
- It is finished in a dark colour, as this attracts the heat

NOTE:

- Due to seasonal and geographical variations in atmosphere, moisture can cause a certain amount of shrinkage or expansion in a product – this is not a defect
- Natural variations in colour of timber will not be considered a defect
- Doors need to be stored in a clean, dry area away from direct sunlight





# CHAPTER 5:

## SIZES AND CUSTOMISATION

Each door type has some size and customization restrictions. Read on to see what you can and can't do when creating your customized design.



### Composite

#### Sizes

Composite doors can be custom made to any size up to 2400mm high and 1060mm wide. A lot of door re-sellers and even door manufacturers will import their doors from specialist overseas factories, so they can only supply standard sizes. However, those that manufacture their own doors can custom-build them. They are almost always 41mm thick.

The exception to these sizes is the pressed panel doors. This means the doors with recessed panels representing the solid timber raised and fielded timber panel. This style of composite door is only available in standard sizes as they are made in a mold. Molds can't be customized to the shape and size of the door due to the huge investment required to make the mold.

It is not recommended that Composite doors are made smaller than 1940mm high and/or 760mm wide. This is because normally their internal structure is based on the final door being this size or greater, so if a door is cut down to smaller than this, it will start to take the internal structure away and could cause the door to bow or delaminate.

## SPECIFIER'S GUIDE TO ENTRY DOORS

Due to the cassette style of beading around the glass, the vision panels cannot be customized in size or shape. This means the size of the door can sometimes be restricted by the vision panel. For example, if a vision panel cassette is 600mm wide, a 760mm wide door would only have 80mm wide stiles, which may not be suitable to take some locks.

Depending on the manufacturer, the groove design and vision panel layout is normally customized to suit the size of the door. Composite doors are always double glazed. Any type of glass can be used, but Etchlite or clear glass are standard. Other glass types will be extra cost.

Component dimensions of individual doors can be found on most manufacturer's websites.

### Design Customisation

Generally Composite doors are restricted to what designs you can create with the array of vision panels that the manufacturer offers. These can be altered in number or placement on the door, but their shape and size cannot be changed. The U-groove designs can also be customized to suit any design the client chooses.



### Aluminium Doors

#### Sizes

Most aluminium doors can be made any size up to 2400mm high by 1200mm wide. Some manufacturers only offer up to 1000mm wide. They are normally 41mm thick, but some manufacturers are offering 50mm options to suit thermally broken window suites and frames.

All aluminium doors on the market today are made to order, so a special size is considered the norm. The only exception to special sizes is the tongue and groove door. Some manufacturers can only make this in standard widths - e.g. 760, 810, 860 or 910mm wide. Parkwood has both options, and the only difference is that the standard width option is simply more economical.

#### Design Customisation

Aluminium doors are made using extrusion which is cut to the required size and fitted together. This means that although the designs are partly customizable and almost any size is possible, the width and shape of the extrusion can't be changed. So a door will always have the same stile and rail sizes, but the panels can be adjusted to change the size of the door.



### Timber Doors

#### Sizes

Timber doors can be made any size up to 2400mm high by 1200mm wide. Larger sizes can be made, but most manufacturers will not warrant over this size. Steel can be added to certain designs to allow them to be made larger. Standard thickness for exterior doors is 41mm.

Most solid timber doors are considered a premium product now, so they are generally made to order, to the exact sizes that are required.

#### Design Customisation

Solid timber can be cut and machined into almost any shape. This means timber doors are the most customizable option of all door types. Rails and stiles can be made to any shape or thickness, and the same goes with the raised inner panels.

Of course, you will need to weigh up the costs associated with intricate customization. Curved rails or diagonal slats can take a long time to get right and will require the hands of a skilled timber joiner.



# CHAPTER 6:

## FINISH – STAIN OR PAINT

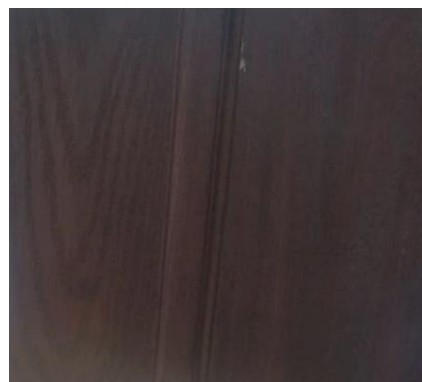
The finish of an entry door can really make or break the entranceway, whether it be a bright paint colour, or a stain. The quality and character of the finish will change the whole look and feel of your finished product.

### Composite

Composite doors have either a woodgrain or smooth skin. The woodgrain skin has a slightly textured surface that is shaped like real timber grain. This can either be painted or stained. The painted obviously looks like painted timber. When the woodgrain skin is stained, the stain soaks into the texture and brings out the grain, very similarly to solid timber.

Composite doors are normally supplied ready for painting or staining. Some manufacturers offer to pre-finish the doors themselves, but if this is not part of the actual manufacturing process, it may be more costly for them to supply it this way. Often the painter on site will simply paint the door for a continuation of their square metre rate.

[For instructions and further information on painting or staining your composite door, click here.](#)



Composite Fibreglass with a stain finish

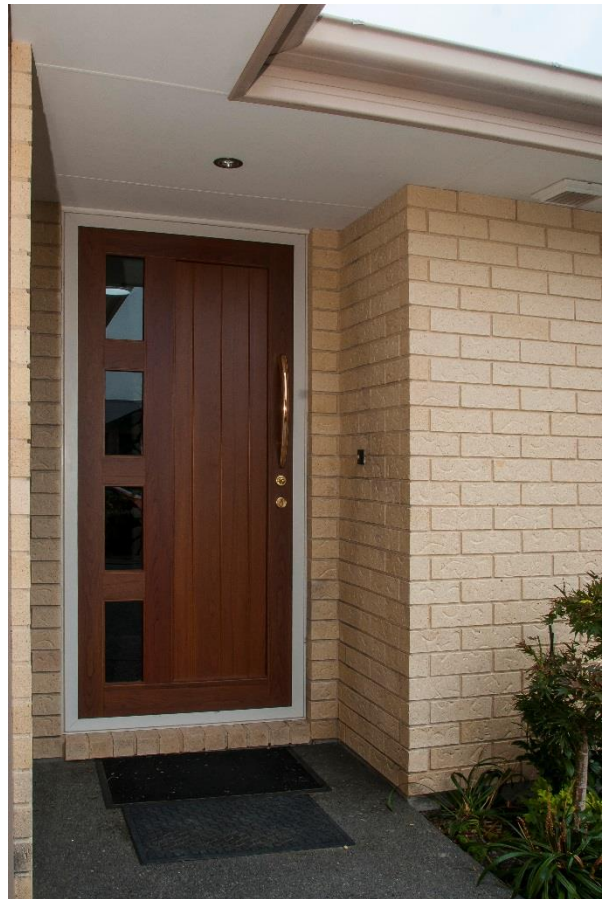
### Aluminium Doors

Aluminium doors are finished with a powder coat colour. To do this, the aluminium is often sanded down to remove scratches or imperfections, it is then put through pre-treatment tanks which give it an acid wash.

The powder is then applied in a colour of the client's choice. [Click here to see a range of standard powder coat colours from Dulux - a good powder coat supplier.](#)

Woodgrain finishes can be applied to aluminium doors to make them like real life timber doors. This incredible finish carries the same warranties as a standard powder coat finish.

With both the powder coat and the woodgrain finishes, these are always supplied by the manufacturer as they are part of its manufacturing process.



### Timber Doors

It is critical that timber doors are pre-finished with the correct products to ensure they are completely sealed to prevent moisture absorption.

Timber is made up of tiny pores that can absorb moisture in the air. When they do this, they can expand. As the humidity drops or temperatures increase, these pores dry out again causing the timber to shrink. In doing so it will often twist, crack and change shape.

## SPECIFIER'S GUIDE TO ENTRY DOORS

To prevent this, a film forming product must be used. A film forming product will line the pores of the timber and seal it completely from the outside elements. This is opposed to a stain or oil that simply sits on the outside of the pores. Film forming products will last longer and require less maintenance.

[To see a full analysis of pre-finishing timber doors, see our blog post - Finishing Solid Timber Entry Doors](#)

Good suppliers of such products include Cabots, Intergrain or Sikkens. These companies all offer the finish in a variety of colours.

With Sikkens it is recommended that the coating should be maintained every -7 years.

Some timber door manufacturers offer to pre-finish the doors in their factory, but normally this is left up to the painter or homeowner on site. Ensure it is finished as soon as it arrives, or at least has a base coat which will give it temporary protection for 5 days.



# CHAPTER 7:

## COST

The cost between different material types vary. Other factors include the details involved in the design such as the glass, number or components, type of finish and, of course, the size.

Overall, the cost of each range is similar. Composite are general the most economical, but they aren't supplied with a paint finish so this will have to be considered.

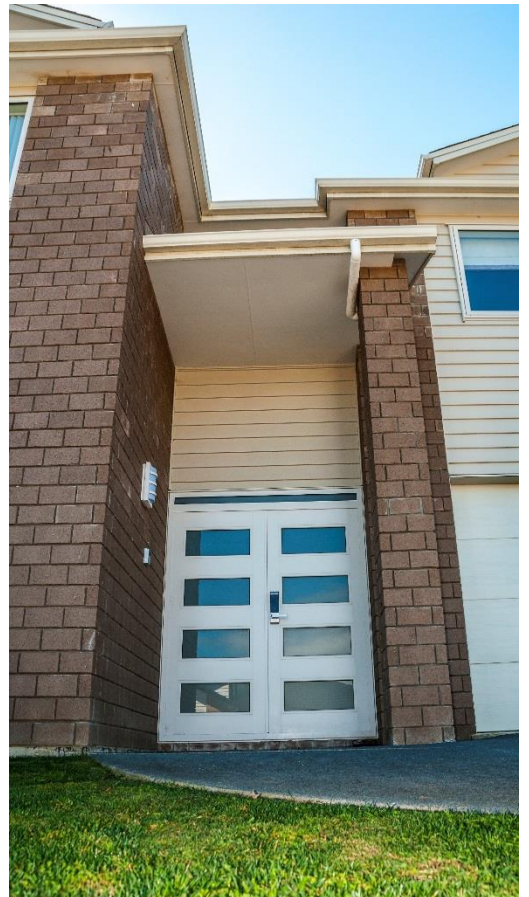
Within the Duramax range of doors, the flush or vertical tongue and groove cost the least. Special v-groove designs cost a little more, and then the doors with glass are almost double the cost.

Aluminium is normally the next most economical, and these are always supplied with a full colour finish. Woodgrain is an additional extra here.

Similarly, tongue and groove door cost the least and those with glass cost more.

A thermally broken door normally costs around 25% more for the same style of door.

Solid timber doors are considered a prestige option at the top of market. Glazed doors are generally more, especially when double glazed. There are veneer timber doors with composite cores that are mass-produced in standard sizes that are available for the cheapest prices of all door types, but quality and longevity is a trade-off for this.





# CHAPTER 8:

## FRAMES

A frame around the entry door can often be the icing on the cake, completing the wow factor. How the door is hung in the frame affects its movement and hence the feeling you get as it swings open for you to enter the home.

Entrance doors can be hung in timber or aluminium frames, and then can be hinged or pivoting.

Solid timber frames give the entrance a solid, secure and warm feel. Their sill and jambs can be fully customized to suit the walls and floor of the home. The timber can either be stained or painted to match the entry door.

Often your timber manufacturer will pre-hang the timber door, otherwise the door can be delivered to a timber joiner or door pre-hanger who will complete the unit.

Aluminium frames, like aluminium doors, are supplied powder coated and are considered no maintenance. Whilst their powder coat colour gives them a durable and decisive finish, the aesthetics in shape and customization are very limited. The main jam and sill is a narrow piece of aluminium connected to a paint quality liner - not exactly a feature. These can be supplied along with the windows, and the fabricator will often pre-hang the door in the frame and deliver it as one packaged to site.



## SPECIFIER'S GUIDE TO ENTRY DOORS

Doors can either be hinged or pivot hung. Both timber frames and aluminium frames can take pivot hung doors.

Hinging a door is considered the standard method and is easier and more economical. All doors can be hinged, but not all doors can be pivot hung. To be pivot hung, the door must have a solid structure in the top and bottom rail of the door. Most fiberglass doors and a lot of aluminium doors don't have this structure, and there is no way to add blocking, so they can only be hinge hung.

One common issue to watch out for with pivot hung doors is how they are going to be sealed in their frame. As the actual door leaf will have sides that will be both opening in and opening out, a standard jamb on the outside that seals the gap cannot be used. A system of brush strips on all edges of the door is the only real option. Sometimes this is not adequate for the frame's location and exposure to the weather, and draughts can be felt on the inside. Check with your expert before choosing a pivot door.



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