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# Firedoors 101

If you're new to fire doors, this section will help you get started. It explains the fire resistance rating system, the construction of our main door types and some terms people use when talking about doors. To find out more, feel free to get in touch on (09) 579-8895.

## Fire resistance ratings

The New Zealand system for fire resistance rating (FRR) is based on the British Standard. It is very similar to the Australian Standard, but with some variations. The various elements of a building, such as walls, floors and doors are all rated using this system.

The rating is made up of these four measures. The first three are measured in minutes.

- **Stability:** This rating will always be zero for a door (because they're not load bearing) and is written as a dash. Stability is how long an element can retain its load bearing capacity during a standard fire test that includes some extra load expected in a fire.
- **Integrity:** How long an element will protect people and goods from flames and hot gasses. This is typically determined by the materials' flame erosion resistance, as well as the tightness of joints and their ability to limit smoke and gas penetration.
- **Insulation:** How long it takes for the temperature of the non-fire side of the element to rise by the maximum permitted amount.
- **Smoke rating** - This is not time related. An element is either smoke rated or it is not. The letters Sm show when it is. Through their service life the smoke seals are often overlooked as a maintenance item, yet their smoke control role in a fire is arguably the most significant element of life preservation in a fire.

### Example

A fire resistance rating lists the four measures in the order above. If a door has an FRR of -/60/60 Sm it means the stability is nil, integrity 60 minutes, insulation 60 minutes and it is smoke rated.

## Fire tags

All installed fire rated doorsets must have certified fire tags attached to the doorset to provide evidence of NZS4520 and NZBC compliance. Every fire-rated doorset supplied by NZ Fire Doors comes with an installer declaration that must be completed by the installer and returned promptly to NZ Fire Doors for the issue of fire tags. The declaration needs to detail the approved hardware that has been installed with the doorset. We will provide fire tags when we receive the declaration and it meets our requirements.



## NZ Fire Doors construction

Our doors are made of responsibly sourced materials that provide their tested and proven fire ratings, while ensuring they can provide the desired architectural aesthetics within your construction budget.

### *Anatomy of a fire door*

- **Frame**  
An essential and purpose-built part of a fire door set.
- **Seals**  
Edges of a fire door have fire-rated seals.
- **Self-latching**  
The NZBC requires a fire door set to be self-latching.
- **Self-closing**  
The NZBC requires a fire door set to be self-closing.
- **Specific hardware**  
Compliance with NZS 4520 requires using specific hardware items on fire doors, which is why we have an approved hardware list.
- **Door leaf**  
Either vermiculite mineral (E-CORE), laminated veneer lumber (P-CORE) OR reconstituted wood fibre (S-CORE), depending on fire rating required.

### *E-CORE doors*

Heavy duty fire doors with ratings of more than 60 minutes.

These doors are designed for applications requiring an integrity rating of more than 60 minutes, such as dangerous goods stores or buildings where large numbers of people may take some time to exit. Our E-CORE doors have a core of vermiculite mineral that has been popped like popcorn then compressed with a binding agent. We enclose the core in responsibly-sourced timber or steel exteriors, suitable for a range of aesthetic finishes. Fire-resistant glass panels can also be included in E-CORE doors with 90 to 120 minute ratings.

E-CORE® is a registered trademark of E + Building Products Pty Ltd. In this website E-CORE refers to the doors we manufacture to E+ standards using their E-CORE® core.

### *P-CORE doors*

Exterior doors with fire ratings of up to 60 minutes.

To provide fire resistance in robust doors that will withstand continuous exposure to the elements, we enclose a laminated veneer lumber (LVL) core in marine ply facings. The fire resistant LVL core is constructed from strips of responsibly sourced wood that are glued together in layers with the grains running in different directions to make the core dimensionally stable like plywood.

### *S-CORE doors*

Interior doors with fire ratings of up to 60 minutes.

We manufacture these durable and versatile interior doors using a solid core of reconstituted wood fibre faced with an integral MDF layer. They're a great example of responsibly sourced wood products providing exceptional durability and a wide range of aesthetic finishes.

### *EVERGREEN doors*

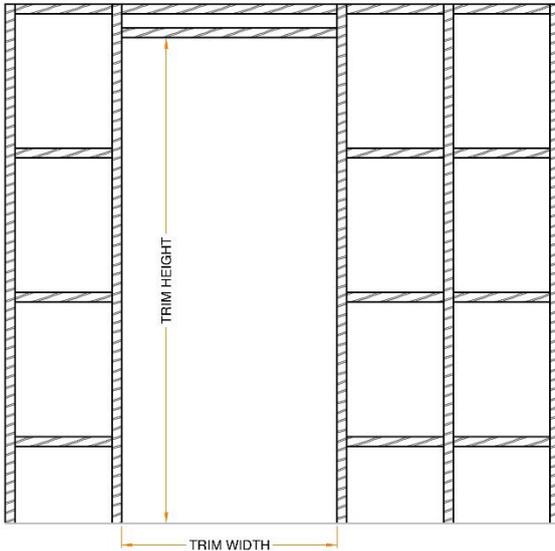
Exterior doors with cost effective durability and insulation.

Our EVERGREEN doors are manufactured using timber frames and a medium density expanded polyurethane foam core. Strong, durable and attractive, they provide an economical alternative to solid timber or steel doors for residential and industrial applications. They also have an excellent insulation value when compared with solid timber.

## Door talk

Here's a brief explanation of some terms people use when talking about doors. If there's anything else you don't understand, please get in touch. We'd be happy to explain.

**Trim size:** Also known as the 'hole in the wall' this refers to the dimensions of the prepared opening for a door. Our leaf/trim calculator will help you match the leaf and trim sizes for a door.



**Installation tolerances:** Allowed gaps, see [installation details](#)

**Door leaf:** The part of a door that swings open and shut.

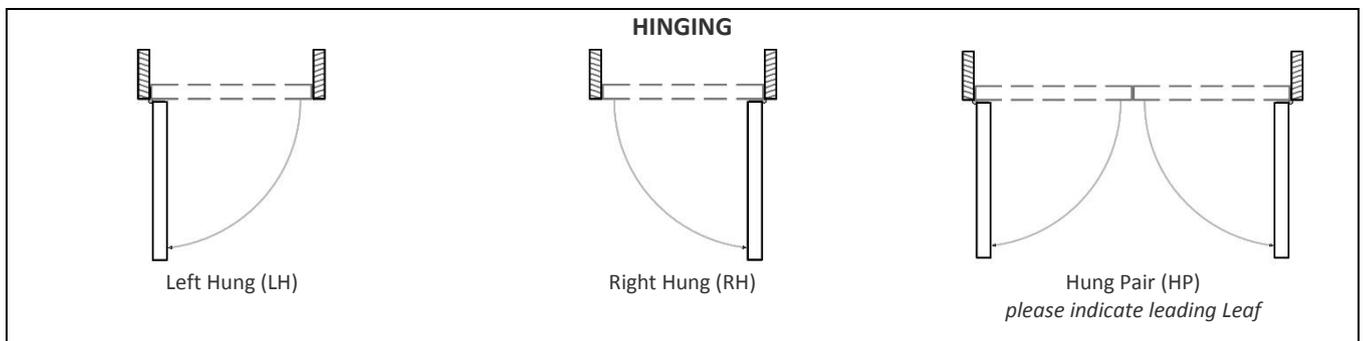
**Door frame:** The leaf's hinges are attached to the door frame, which includes two vertical jambs and a top horizontal lintel.

**Hung door:** The assembled leaf, hinges and frame.

**Fire door:** A complete unit made up of the leaf, frame, seals and hardware that are all appropriate to the door's fire rating.

**Door handing:** This term relates to how the door swings open. There are many confusing ways that this can be explained, but we like to make it easy.

1. With the door CLOSED, stand (or imagine you are standing) on the side where you will have to PULL THE DOOR TOWARD YOU to open it
2. Observe (or imagine) which the side the of the door is (or will be) hinged
  1. If the hinges are on the left, the door is left hung
  2. If the hinges are on the right, the door is right hung
3. You can mark this on our detail sheet where we use the same logic. <ADD LINK to DETAIL SHEET>



The only time you have to take 'open in' or 'open out' into consideration is if you want us to supply your prehung door with a fitted sill. Call us on (09) 579-8895 and we'll help you with that.

**Passive vs active leaf:** In a double-leaf door the active leaf is the one to which the latching or locking mechanism is attached. The latching mechanism engages with the passive leaf when the pair of leaves is closed. When In service the active leaf is the first of the pair to open and the last to close.