

# INSTALLING POSTS & RAILS

## BEFORE YOU BEGIN

These instructions will show you how to install fence posts and rails – the first step to building a fence. Once your posts and rails are set, our other “Know How” fencing brochures will help you finish the project:

*Building a Paling Fence*

*Putting up a Picket Fence*

*Installing Trellis Fence Panels*

First up, you will need to work out:

- How far apart the posts need to be.
- How far out of the ground they need to be (post height).
- The number of posts and the sizes that are required.

These dimensions will differ depending on the type and style of fence you are building.

## THE GROUND RULES

Before you start any landscaping or building projects, it's important you make sure the finished job will comply with the building code and council regulations. For full information on the regulations applying to your area, consult with your local council.

## TOOLS

- Hammer
- Handsaw
- Spade / post hole borer
- Stringline
- Carpenters Level
- Carpenters square
- Timber for pegs, braces and packers
- Mallet
- Safety equipment
- Sawhorse
- Wheelbarrow

A post hole borer and a circular saw will make the job much easier, but they're not essential. Make sure all your posts are timber treated to at least H4 standard to resist decay in the ground. If cutting posts down to length, place the post with the fresh cut surface upwards and treat all cut ends with a timber preservative before use to avoid ground damp entering the wood.

## TIMBER SELECTION GUIDE

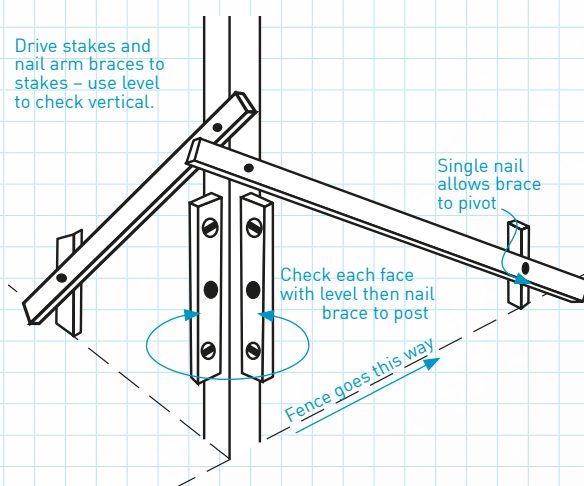
TREATMENT LEVEL	APPLICATION	TYPICAL USES
H3.2	For timber exposed to the weather but not in ground contact	<ul style="list-style-type: none"> <li>• Decking/Joists/Bearers (all deck components except decking posts, piles and veranda posts)</li> <li>• Fence palings, fence rails and trellis</li> <li>• Cladding</li> </ul>
H4	For timber exposed to the weather and in ground contact	<ul style="list-style-type: none"> <li>• Fence posts</li> <li>• Pergola post</li> <li>• Retaining wall TGV and lumber</li> </ul>
H5	For timber exposed to the weather, ground and fresh water contact; and in high risk, load bearing applications	<ul style="list-style-type: none"> <li>• Piles (house foundations, retaining walls, and in decking piles)</li> <li>• Vineyard supports</li> <li>• Veranda posts</li> <li>• Poles</li> </ul>

**NOTE:** Consumer Information and Handling Guide for Pressure Treated Timber is available at your local PlaceMakers store.

## GETTING STARTED

### Setting out the Fenceline

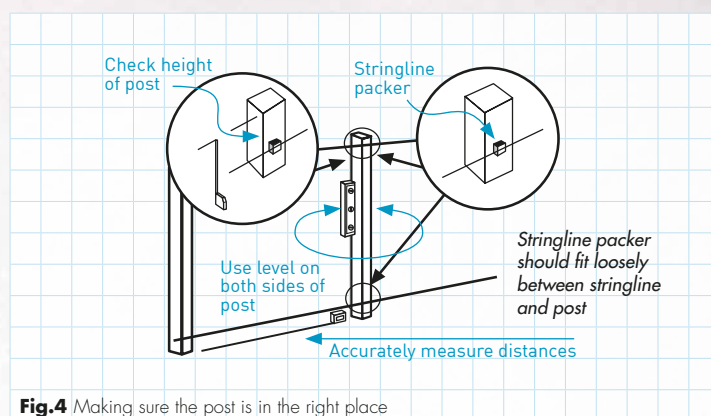
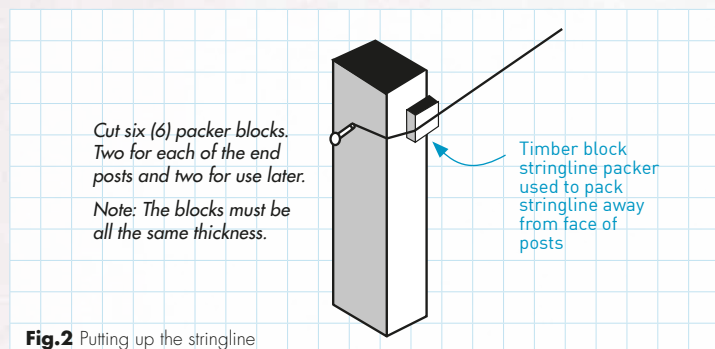
1. Using either a post hole borer and/or a standard garden spade, dig a hole at least 300mm square at both ends of the line to a depth of at least a third of the post length (eg 900mm deep hole for a 2.7M post). It's a good idea to widen the bottom of the post hole to create a “bulb” effect which will provide better anchorage and wind resistance to the post.
2. For each post, drive two pegs into the ground (see **Fig.1**). Nail the end of a brace to each peg with one nail. Start a nail in the other end of the brace. Now place 100mm of concrete in the bottom of the hole and position the post on top of the concrete.



**Fig.1** Bracing the post

3. Check that the top of the post is at least the required height out of the ground. Remove the post and put more concrete into the hole if necessary. Allow some extra height (20mm) so the post can be trimmed later.
4. Using the level on both the front and side faces, check that the post is vertical. Nail the braces to the post.

5. Fill the holes with concrete to within 75mm of ground level, making sure as you pour to tamp concrete with the end of a piece of 100 x 50mm or similar sized timber. Recheck for verticality and adjust braces if necessary. Allow 48 hours for the concrete to set.
6. Drive 2 nails into the edge of both posts, 100mm from the top and 100mm from the bottom. Stretch a stringline between each set of nails and pull taut. Pack the stringline off the face of the post with a piece of scrap timber (see **Fig.2**).

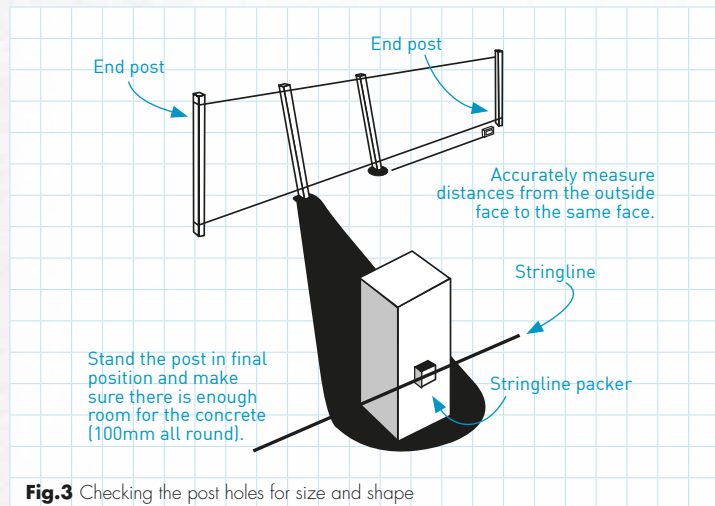


5. With posts braced in position, fill the holes with concrete as with end posts. Recheck as in Step 4 above and if necessary adjust and rebrace.
6. Leave for at least 3 days (depending on the Dricon concrete used) to allow the concrete to gain sufficient strength. If you also intend to pour a mowing strip along the fenceline, do it now.

## The Intermediate Posts

The simplest way to space posts is to measure from the face of one post to the same point of the next post. Don't measure between posts. The outside face of the first post is your reference point.

1. Beneath the stringlines, measure one post spacing from your reference point. Dig a hole there.
2. Drop the post into the hole. Check the measurement from the reference point. Stand the post vertically so the packers will slip easily between the front of the post and the stringlines (see **Fig.3**). Check there is enough space all around the post for concrete. Take the post out.



3. Do the same with all the posts, adding another spacing each time. Always measure from the outside face of the first post to the same face of each subsequent post.
4. When all the holes are dug and you have checked their positions, put 100mm of concrete in the bottom of each. One at a time set the posts in place. Correctly position and brace as with the end posts. Check each post (see **Fig.4**).
  - Is it spaced correctly? Measure from reference point multiplying the spacing by the number of gaps.
  - Does it follow the fenceline? Use packers against both stringlines.
  - Is it high enough? Measure from the stringline to the top of the post.
  - Is it vertical? Check the side of each post with a spirit level.

## Fixing the Rails

Once the concrete has gained sufficient strength you can start fitting the rails.

1. Check each of the posts and make sure they are firm in the ground. If there is any movement, brace the post with temporary bracing. This will hold it steady until the rails are fixed. The posts can now be trimmed to the correct height.

2. Fix the stringline to both of the end posts at the post height, and mark this height on all posts. On a level site use a square.

On a sloping site the rails won't be at right angles to the posts. In that case follow the stringline. Before taking the stringline down, check the height again.

3. Once you have checked that the heights are marked correctly on all posts trim the posts at height marks.

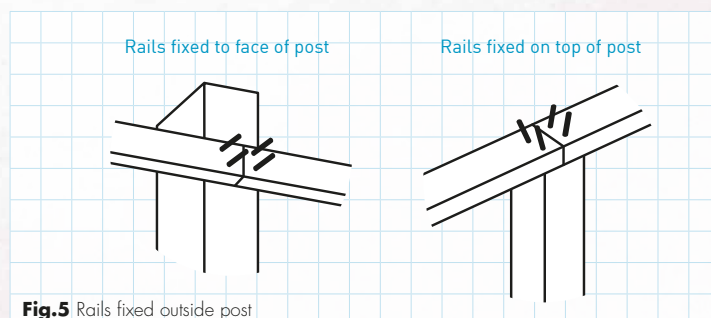
There are different ways of fixing the rails to the fence posts and the method you use will depend on the type of fence you are building. The major difference between rail fixing methods is:

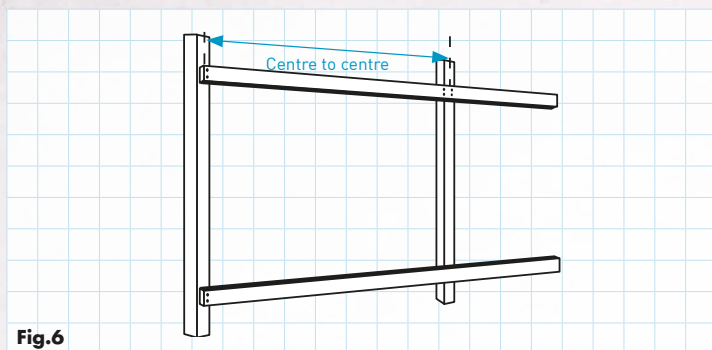
- The rails are fixed to the outside of the posts,
- The rails are fixed between the posts,
- Or, the rails are checked into the posts.

### OUTSIDE POST FIXING & CHECKED IN FIXING

In this method the rails run from the centre of one post to the centre of the next. If the timber you are using is long enough, you can run the rails across two or three posts. In any event it is better to stagger the joints in the rail so that they don't all occur on the same post. The procedure is similar whether you are fixing to the face of the post or the top of the post (see **Fig.5 & 6**).

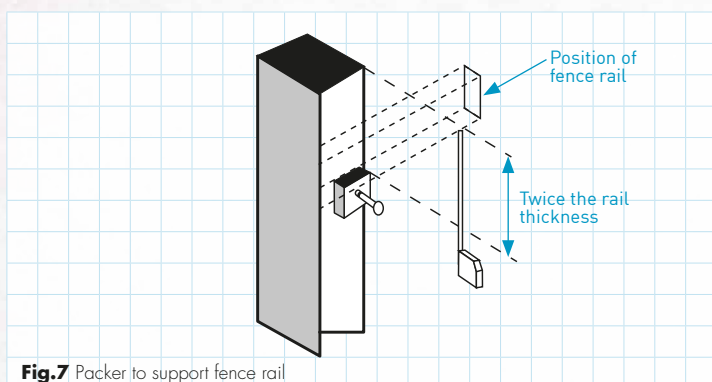
1. On a level site, trim one end of the first rail square. On a sloping site support the rail in the correct position against the posts and mark the cutting angle. Transfer that angle to a piece of scrap timber and use it to ensure all cuts are the same.



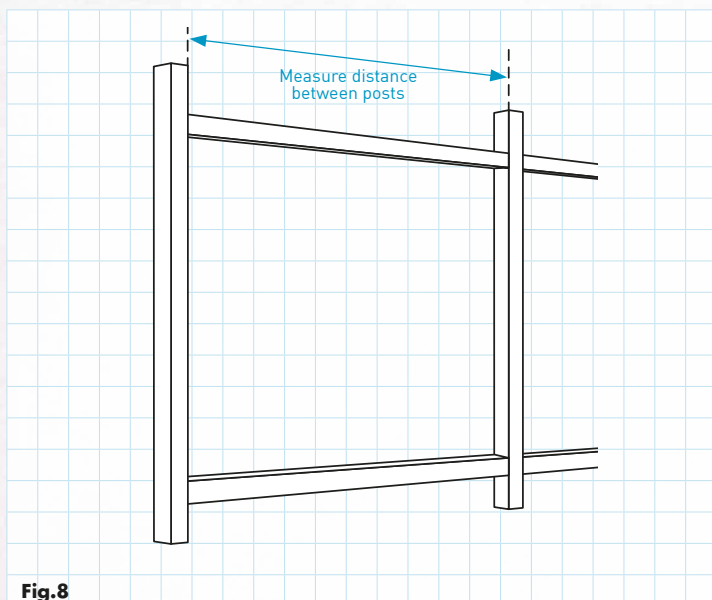


**Fig.6**

2. Fix or cramp a block to the first post to support the rail at the correct fixing height (see **Fig.7 & 8**). The rail should be held flush with the leading edge of the first post and the rail then marked at the centre of the joining post.
3. Cut the rail to that mark and then nail or bolt fix to the post in the correct position.
4. Remove the supporting block from the first post, and repeat the whole process for the rest of the rails.



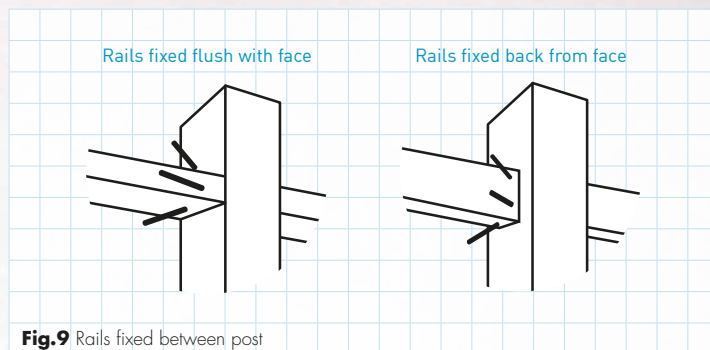
**Fig.7** Packer to support fence rail



**Fig.8**

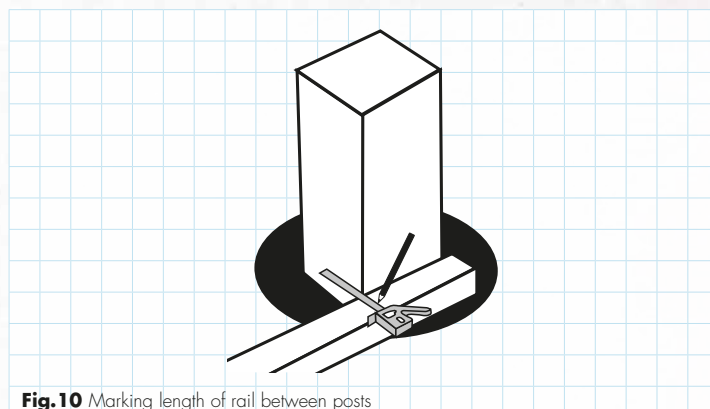
## BETWEEN POST FIXING

In this method the rails run between the posts. The procedure is similar whether you are fixing the rails to be flush with the face, or set back from the face (see **Fig.9**).



**Fig.9** Rails fixed between post

1. On a level site, trim one end of the first rail square. On a sloping site support the rail in the correct position against the posts and mark the cutting angle. Transfer that angle to a piece of scrap timber and use it to ensure all cuts are the same.
2. Lay the rail on the ground against the base of the first post and mark it against the edge of the next post in the line (see **Fig.10**).
3. Cut the rail to that mark.



**Fig.10** Marking length of rail between posts

4. Nail or cramp a supporting block to each post and place the rail in its correct position.
5. Skew nail the rail to the post using at least four 75 x 3.15mm hot dipped galvanised flathead nails.
6. Remove the supporting block from the first post and repeat the process for the rest of the rails.

## LIMITATIONS OF LIABILITY

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