

- 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.
- 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 [Illustration 4](#)).

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 [Illustrations 5 & 6](#)).

- 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.

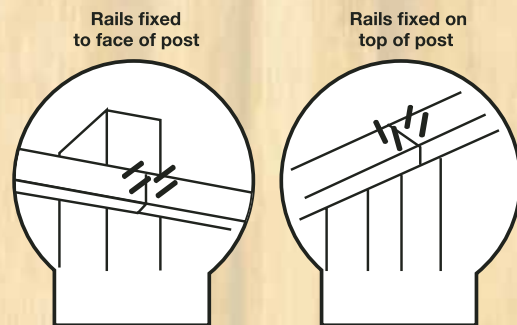


Illustration 5: Rails fixed outside post

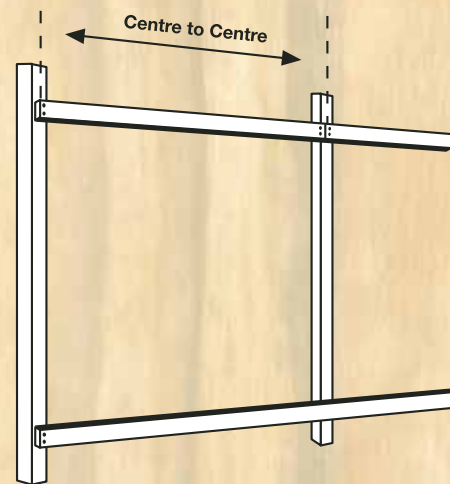


Illustration 6

- Fix or clamp a block to the first post to support the rail at the correct fixing height (see [Illustrations 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.
- Cut the rail to that mark and then nail or bolt fix to the post in the correct position.
- Remove the supporting block from the first post, and repeat the whole process for the rest of the rails.

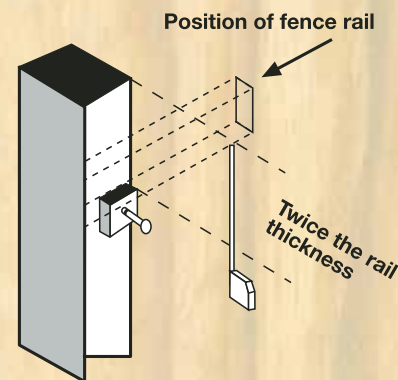


Illustration 7: Packer to support fence rail

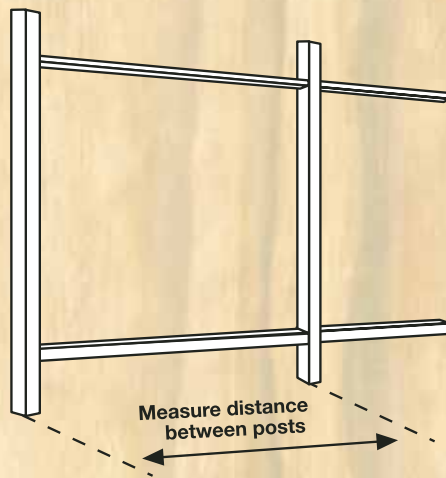


Illustration 8

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 [Illustration 9](#)).

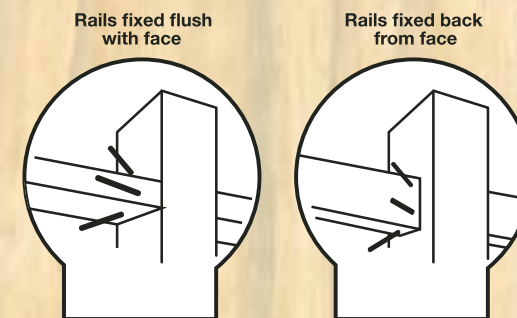


Illustration 9: Rails fixed between post

- 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.
- 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 [Illustration 10](#)).
- Cut the rail to that mark.

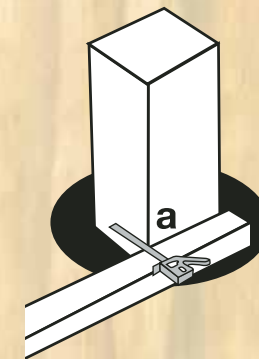


Illustration 10: Marking length of rail between posts

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

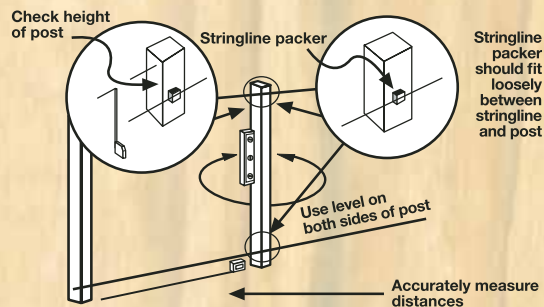


Illustration 4: Making sure the post is in the right place

- 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.
- 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.
 - Leave 7 days for the concrete to harden. If you also intend to pour a mowing strip along the fenceline, do it now.

Fixing the Rails

Once the concrete has set hard you can start fitting the rails.

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.

- 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.
- 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.

INSTALLING POSTS & RAILS

YOUR COMPLETE HOW TO GUIDE



GETTING STARTED

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.

Ideas & Inspiration



Tools

✓	Hammer	✓	Carpenters Level
✓	Handsaw	✓	Carpenters Square
✓	Spade / Post Hole Borer	✓	Scrap timber for pegs, braces and packers
✓	Stringline	✓	Mallet

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"> • Decking/Joists/Bearers (all deck components except decking posts, piles and veranda posts) • Fence paling, fence rails and trellis • Cladding
H4	For timber exposed to the weather and in ground contact	<ul style="list-style-type: none"> • Fence posts • Pergola post • Retaining wall TGV and lumber
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"> • Piles (house foundations, retaining walls, and in decking piles) • Vineyard supports • Veranda posts • Poles
H6	For timber in marine use, for permanent salt water immersion	<ul style="list-style-type: none"> • Marine piles • Slipways

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

Instructions

Setting out the Fenceline

1. Using either a post hole borer and/or a standard garden spade, dig a 300 x 300mm square hole 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 Illustration 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.

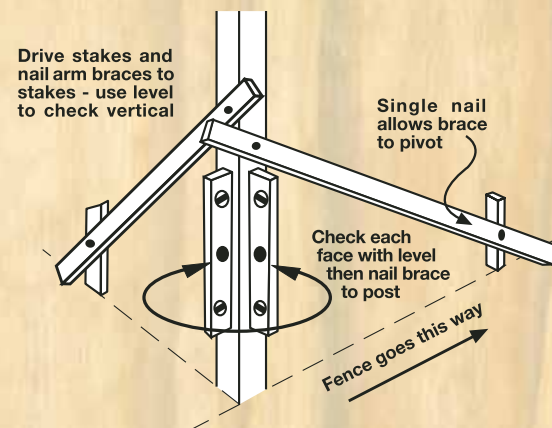
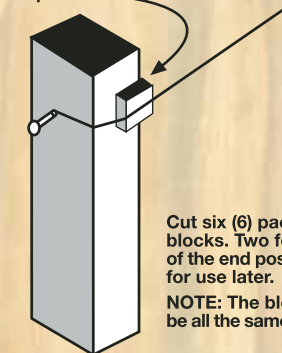


Illustration 1: Bracing the post

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 Illustration 2).

Scrap timber block (stringline packer) used to pack stringline away from the face of posts



Cut six (6) packer blocks. Two for each of the end posts and two for use later.

NOTE: The blocks must be all the same thickness.

Illustration 2: Putting up the stringline

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 Illustration 3). Check there is enough space all around the post for concrete. Take the post out.

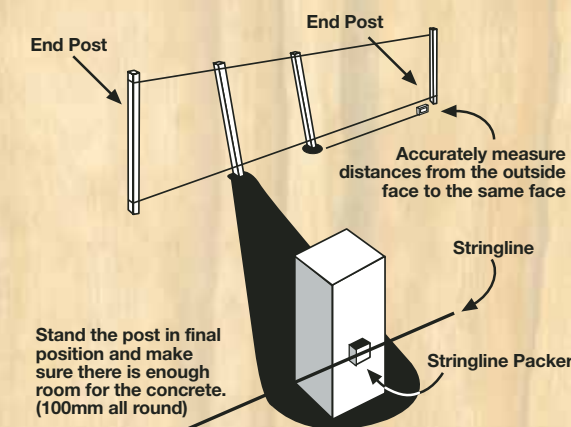


Illustration 3: Checking the post holes for size and shape



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The Building Research Association of New Zealand

Please Note:

While the advice and recommendations contained in this brochure have been produced with proper care, they are offered only with the objective of assisting those interested in home improvement projects. PlaceMakers does not accept responsibility for the advice, recommendations, etc. contained herein.

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