Aluminium

Installation Guide

Products: Alpha, Eden, Nova, Belle & Bode

A step-by-step guide to installing your fence

Fentec

Introduction

Thank you for choosing Fentec Aluminium Fencing. This product will provide you with many years of trouble free protection if installed in accordance with the directions outlined in this document.

The recommendations detailed in this guide are formulated along the lines of good building practice. They are not intended to be an exhaustive statement of all the relevant data.

If you have any questions, please contact our Technical Team on 0800 002 725. We are always happy to help in any way we can.

Before you start, read this

This guide does not apply to any fence over 1.8m in height. If your fence is greater than 1.8m, please seek further advice from Fentec.

Describe your site details when ordering materials.

Identify your soil type/ground conditions. Refer to the table in step 2. This will determine the concrete and footing details required.

Make sure you are aware of underground services before you start digging! These could be gas, electricity, or water mains. Contact your local council for more information.

Check your local council regulations on boundary fencing.

Check the delivered material for the correct number of components and general condition before beginning your installation.

Tool List

Make sure you choose the right tools before you start your fence.

Tools

- ☐ Tape measure
- ☐ Spade/shovel
- ☐ Level
- ☐ String line
- ☐ Concrete
- ☐ Drill

Optional

- ☐ Powered Auger - 200mm diameter
- ☐ Hacksaw/powered metal cutting saw
- ☐ Laser-level
- ☐ Rivet gun

Safety Gear (minimum required)

- ☐ Safety boots
- ☐ Gloves
- ☐ Helmet
- ☐ Eye protection
- ☐ Hearing protection
- ☐ Sun protection

It is recommended that the reader pays particular attention to those items identified as Important in this manual to ensure satisfactory long-term performance.

Step 1 > Laying out the fence line

- Accurately establish the property boundary. Determine and mark any legal boundaries and/or underground services. If the boundary pegs can't be found, request a copy of the site plans from the council, or get a surveyor to correctly establish the boundary.
- Lay out a string line to establish the placement of the fence. A string line will ensure the fence line remains straight.
- To determine the measurements for the post positions, see **Table A.**
- Mark the post positions with post markers or spray paint. Measurements should start from the centre of the first post and continue to be measured from each post centre to the next.
- Once all post positions and post centres are determined and marked, use the string line or laser level to make sure all straight lines are aligned.

Table A: Post Centre

Panel Length (mm)	+	**Clearance** (mm)	+	**Post Size** (mm)	=	**Post Centre** (mm)
2430	+	12	+	50	=	2492
2430	+	12	+	65	=	2507

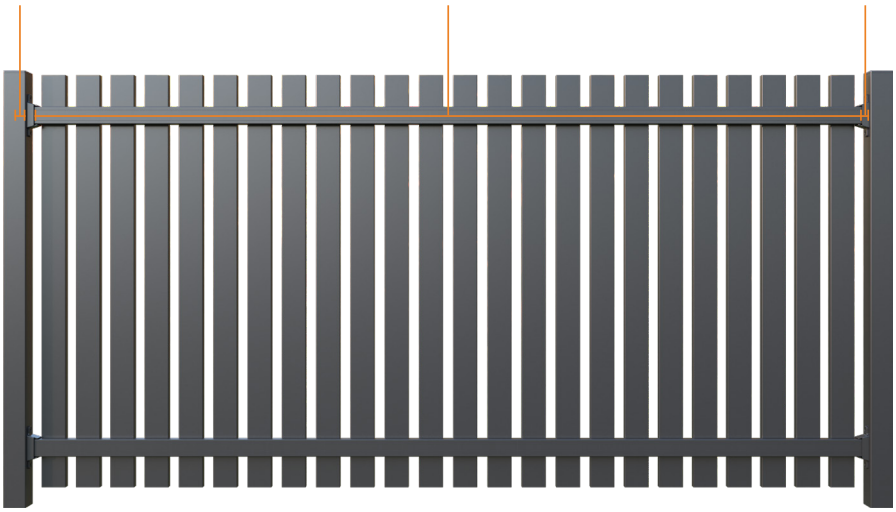
*Clearance between the post and panel allows space for the bracket

Where to measure the panel and posts

Post Size
50 or 65mm
Measure from post centres on both sides

Panel Length
2430mm
Measure from all ends of rail

Clearance
6mm per side
12mm total. Allow space for brackets



- When installing Alpha, Eden, Nova, Belle or Bode, it is recommended to give consideration to the spacings of the posts, to avoid the need to respace the pickets when installing.
- The panels are 2430mm wide, with the centre of each picket spaced at 100mm apart. If posts require being closer together than the standard panel length, keeping the posts distances in multiples of 100mm, where possible (i.e. 2330mm, 2230mm etc), will result in simply trimming off the excess of the panel and prevent the need for respacing pickets.
- If this is not achievable, a guide to respacing pickets is on page 8.

Step 2 > Mark & dig post hole

If using flanged posts, go to page 5.

If using in-ground posts, dig the holes for the posts using hand tools and/or a powered auger.

The diameter of all post holes are required to be at least 200mm in diameter.

When digging the holes, ensure the post holes don't taper inwards towards the bottom, they need to be either vertically straight and parallel, or be wider at the bottom than the opening.

For post hole dimensions, see **Table B** and **Table C**, which provide guidance depending on post size and soil type.

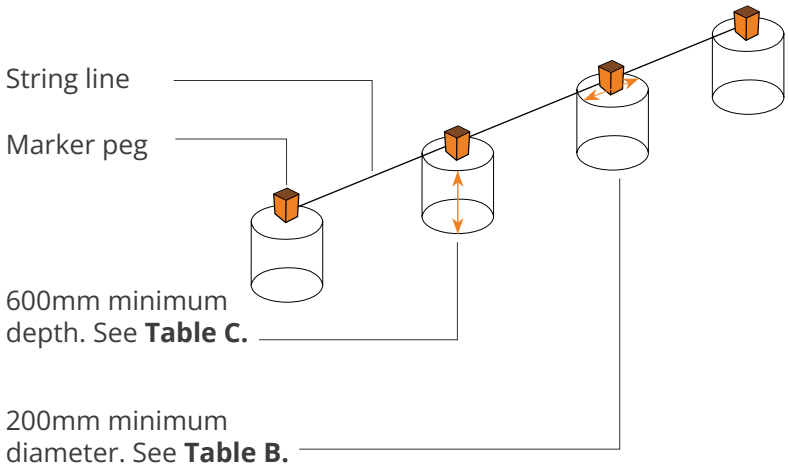


Table B: Required post hole dimensions

Post Size	Suggested Hole Diameter
50x50	200-300mm
65x65	300mm

Table C: Post lengths required will increase accordingly to cater for these ground conditions

Soil Type	Minimum hole depth	Approximate concrete required per post hole
Firm Earth	600mm	2 bags - 20kg bag
Loose Fill	900mm	3 bags - 20kg bag

Step 3a > Installing the posts **for in-ground posts**

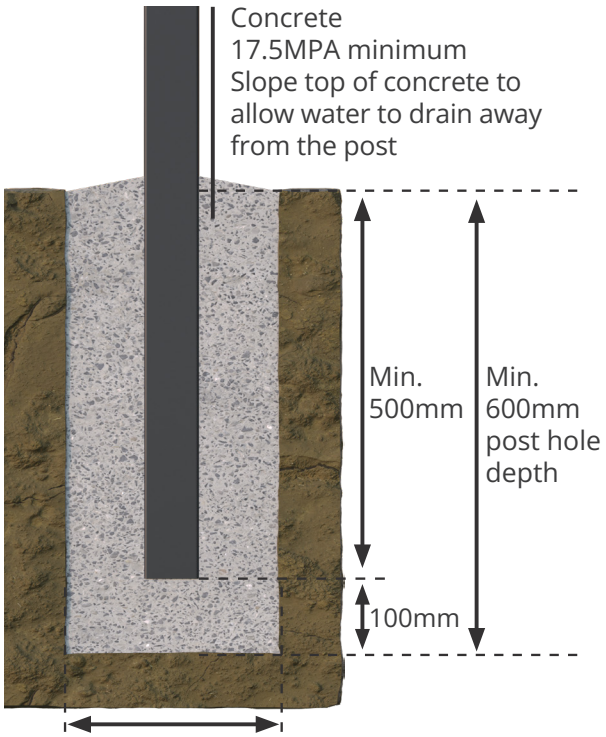
1. Posts should be installed in 'good ground' as defined by NZS3604.
2. Place the post into the hole and ensure the height and position are correct using a tape measure and/or a laser level.
3. Ensure there is sufficient height on the post, from ground level to the top of the post, to allow for the panel height and ground clearance. Ground clearance is measured from the bottom of the pickets. A minimum of 50mm is recommended.
4. Pour the concrete around the post, taking care to keep the post at the right height and position. Regularly check with a spirit level to ensure the post is plumb and ensure the post remains square to the fence line and does not turn as the concrete is laid around it.
5. If the fence line follows any contours in the land or the fence line is curved, regularly check the height of the posts while working down the fence line to ensure a good visual line along the top of the fence.
6. Allow for the concrete to completely set before installing the panels.

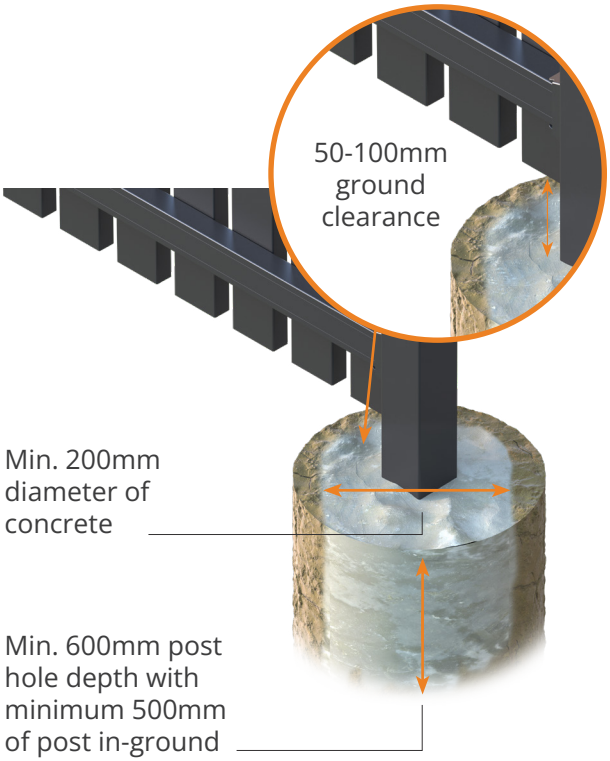
In-ground post options

50x50mm

65x65mm

Post sizes are dependent on the application and design requirements.

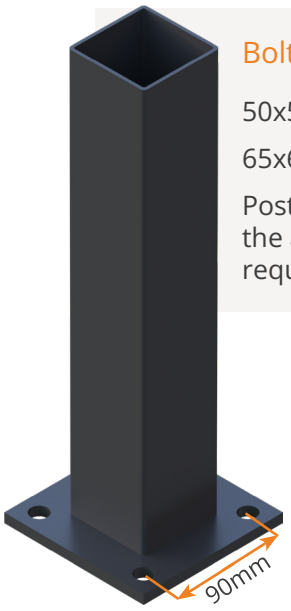




Important: For standard 50x50mm or 65x65mm aluminium posts, a fairly dry concrete mix can be used which will hold the post in place without any bracing while the concrete dries. However, the site must be revisited before the concrete sets firm to recheck post alignment. Any heavier posts, i.e. gate posts, should be concreted in place and braced until the concrete is dry.

Step 3b > Installing the posts **for bolt down posts**

1. Ensure the surface is firm, level and clean.
2. Concrete surfaces are required to be 20MPa minimum and be at least 120mm thick. The bolts require at least 90mm of embedment into the concrete and must be 40mm away from any edges.
3. Wooden Surfaces* are required to have 120mm embedment into the joist, with extra allowance for the decking timber. Thicker decking timber will require longer screws to maintain the 120mm embedment depth requirement.
4. Check post position, alignments and measurements for the panels are correct before bolting down the posts.
5. Fix the posts in place with four fixings ensuring the correct screws are used for the material surface. Details for timber and concrete options on page 6.

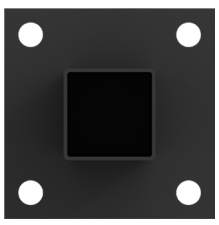


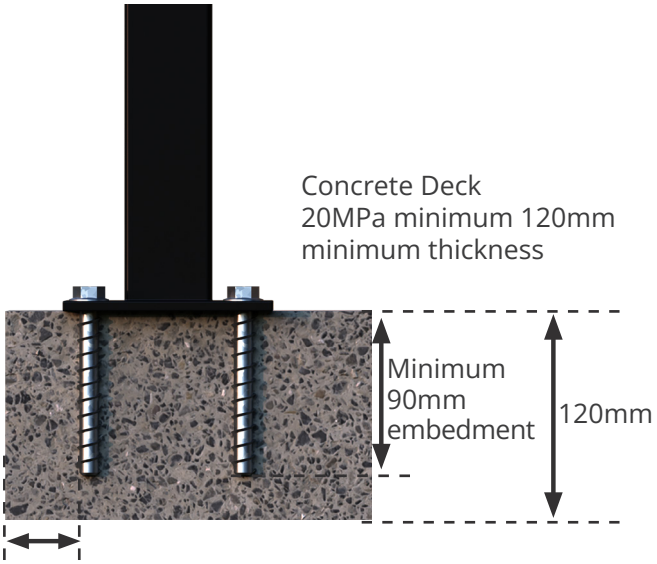
Bolt down flanged post

50x50mm

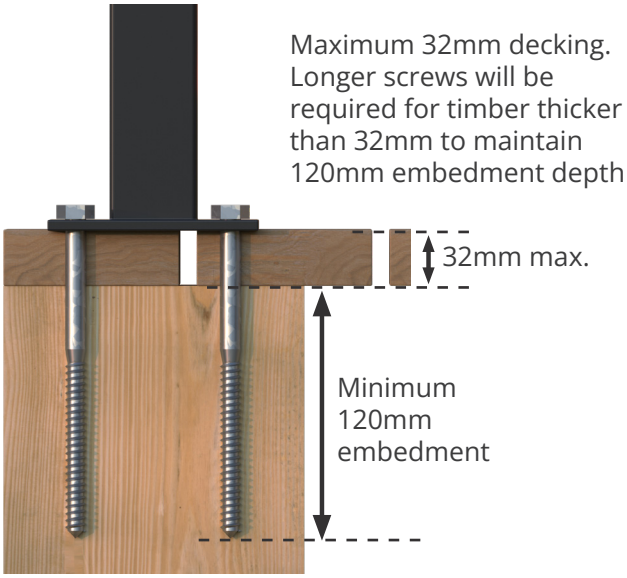
65x65mm

Post sizes are dependent on the application and design requirements.





Fixings - indicative	
	In concrete: 4x M12 Ramset Anka screws or similar with minimum 90mm embedment



Ensure screws are placed in centre of outside joists

Fixings - indicative	
	In timber: 4x 12mm coach screws with minimum 120mm embedment

*When installed on timber surfaces, Alpha, Eden, Nova, Belle or Bode do not comply with F4 (Fall From Height) requirements. For all installations requiring F4 compliance, refer to the Alpha, Eden, Nova, Belle and Bode PS1 for details.

Step 4a > Installing the panels

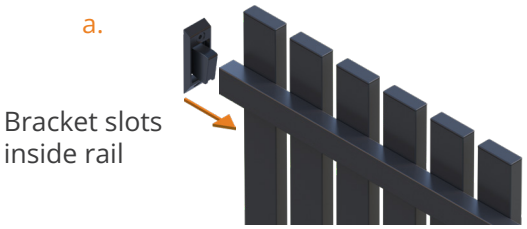
Once the posts are completely set and secured, the panels can be installed.

a. On the posts, measure to confirm the placement of the brackets, allowing for 50-100mm of clearance between the ground and the bottom of the pickets. The panels should sit flush with the top of the posts. For ground clearance, 50mm minimum is recommended.

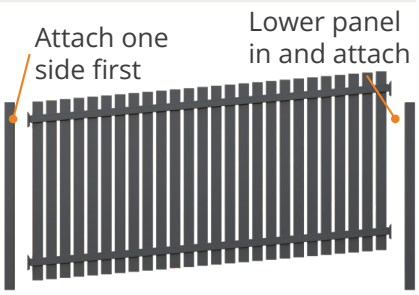
b. Slot the brackets onto the rails, then place the panel between the posts into its correct position and attach the brackets to the post. Since the panel can rake, once one side is attached, the other side can be easily lowered into position.

c. Once the brackets are attached, the rail can be fastened to the bracket to lock the panel into its final position.

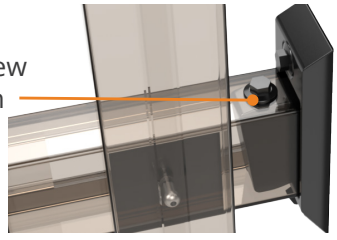
a.



b.



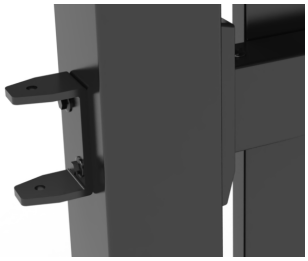
c.



Step 4b > Installing panels in a curved line

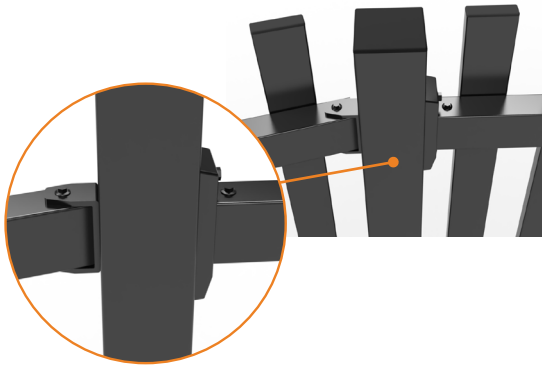
If being installed in a curved line

a. Using a FARB4040 bracket, measure 100mm from the top of the post to the top of the bracket. Secure the brackets onto the post with the provided tek screws.



b. Position the panel at the required angle. If the angle exceeds what the bracket allows, you may need to trim the rail. Refer to Step 4c on Page 7 for instructions on how to trim the rails.

c. Attach the panel to the bracket using tek screws through the top and bottom of the bracket.



Step 4c > Installing panels raking over 15 degrees

If being installed with a raking angle exceeding 15 degrees:

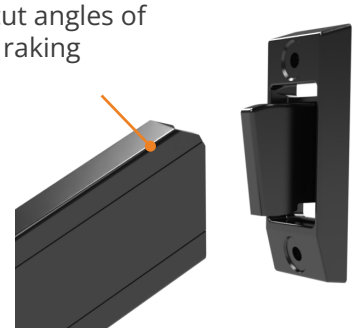
Please note: When raking panels, the spacing between the pickets will decrease. Raking more than 20 degrees may require you to respace the pickets. A guide on respacing pickets is available on page 8.

a. Measure the angle that the panel will rake to and cut that from the rail. The cutouts will be the opposite at either end of the rail. Also measure a 7mm cutout from the long edge of the rail, this will keep the end of the rail from protruding.

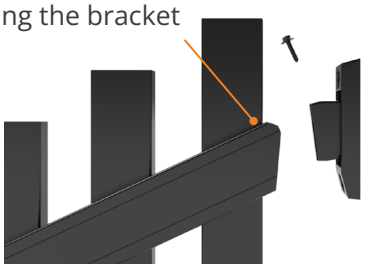
b. Slot the brackets onto the rails, then place the panel between the posts into its correct position, ensuring the bracket on the lower end is inverted to accommodate the rake. Attach the brackets to the posts using the provided tek screws.

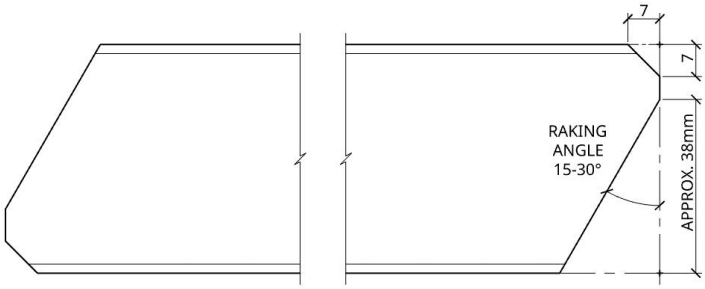
c. Fasten the rail to the bracket to fix the panel in its final position.

Example of cut angles of rail for extra raking

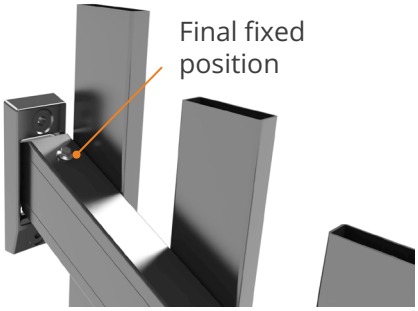


Tek screw is driven through the top of the rail after attaching the bracket to the post





Final fixed position



Extra > Respacing pickets

Tools required

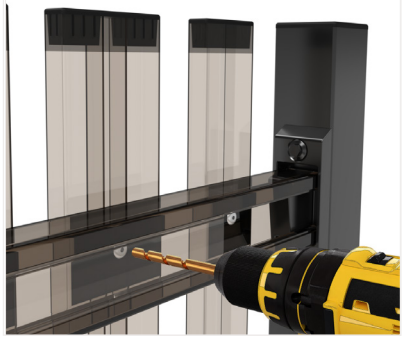
- ☐ Drill with 5mm drill bit
- ☐ Rivets (4.8mm aluminium with grip range of 3.2 to 4.8mm)
- ☐ Rivet gun or hand riveter
- ☐ Tape measure

Figure 1

Step 1:

Remove the slip cover from the back of the rails on the panel.
The cover is designed to slide out of the channel Figure 1.

Figure 2



Step 2:

Drill out the rivets with a 5mm drill bit Figure 2. Be careful not to allow the chuck of battery drill to rub on the rail, this can damage the powdercoated finish.

Step 3:

Space out pickets evenly.
Small 5-10mm differences are typically not noticeable.

Tip: Use a spacer to keep the picket gap widths consistent.

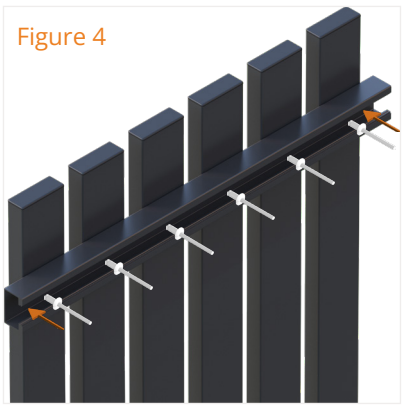
Figure 3

Step 4:

Drill a new hole through both the rail and the back side of the picket, be sure to avoid drilling right through to the front side of the pickets Figure 3.

Tip: Mark the drill bit with a piece of tape at 5mm of depth to make sure you don't over drill.

Figure 4



Step 5:

Rivet the new pickets on using a hand riveting tool or a rivet gun Figure 4.

Step 6:

Replace the slip cover.
The previous rivet hole should be covered over with the refixed pickets.

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