Aluminium

Installation Guide

Products: Lodge, Delta, Alto, Mansion, Axis, Fortress & Balustrade

A step-by-step guide to installing your fence

≡Fentec

Introduction

Thank you for choosing Fentec Aluminium range. 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

Optional

- ☐ Powered auger - 300mm diameter
- ☐ Hacksaw or powered metal cutting saw
- ☐ Laser-level

Safety Gear

- ☐ 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 your fence line

a. Determine & mark any legal boundaries and/or underground services.

b. Measure out each fence line & mark the post positions.
    Determine post centres as follows:

Table A: Post Centre

Panel Length	+	Clearance	+	Post Size	=	Post Centre
E.g. 2250mm	+	5mm	+	50mm	=	2305mm
Axis: 2250	+	10mm	+	25mm	=	2285mm

c. If the fence line length does not work out as multiples of the standard panel length, adjust the length of the last section, or the last few sections, to suit & cut panels to fit.

d. Use a string line or laser level to make sure any straight lines are aligned.

Step 2 > Mark & dig post holes

Dig post holes using hand tools and/or a powered auger. See **Table B** & **Table C** for required post-hole dimensions & depths.

Marking out your post holes

Post centres will be subject to rail length supplied e.g. 2.25m panel will have approx 2.3m post centres.

All holes should be straight i.e. sides parallel or wider at the bottom than the top.

Diameter of all holes is 200mm minimum.
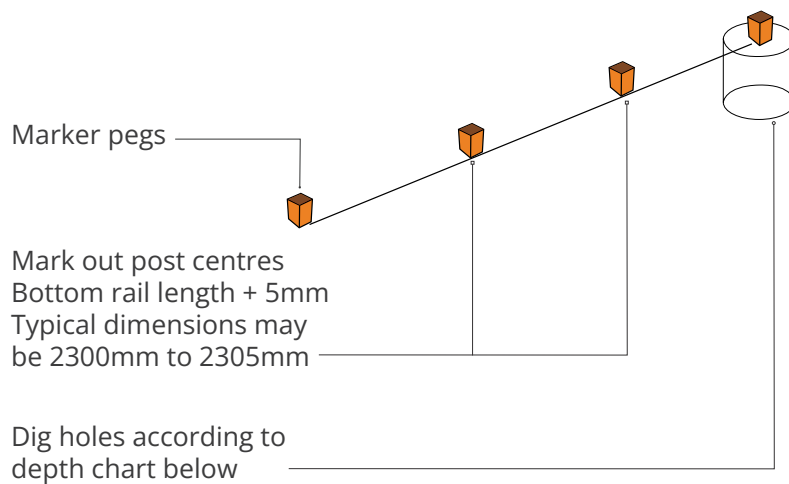
Start post may be existing or temporary peg.

Marker pegs

Mark out post centres
Bottom rail length + 5mm
Typical dimensions may
be 2300mm to 2305mm

Dig holes according to
depth chart below

Table B: Required post-hole dimensions

Post Size (mm)	Suggested Hole Diameter (mm)
125x125	300
150x150	300
150x150	300
200x200	400

Table C: Required post-hole depths

	Post Length (M)	Out-of-ground Height	Post Hole Dept
3 Rail	1.8	1.1-1.2	0.6-0.7
2 Rail	1.5	0.95-1.05	0.45-0.55
2 Rail High	1.8	1.1-1.2	0.6-0.7
1 Rail	1.2	0.65-0.7	0.5-0.55

Gate posts are usually 0.3m longer/0.3m deeper in-ground.

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

a. Place the post into the hole and set the height carefully using a tape measure or, preferably, a laser level.
    Caution: Ensure you allow enough height on the post to allow for panel height & ground clearance (suggest 50-100mm) + additional 25mm for bracket & cap clearance.

b. Fill the hole with concrete around the post, taking care to keep the post in the correct position.

c. Check with a spirit level regularly to ensure the post is plumb.

d. Ensure the post remains square to the fence line & does not turn as you lace concrete around it.

e. Repeat steps **a** to **d** for all posts.

f. Set the spacing of the posts at the length of the panel, plus approximately 5mm clearance (as per Step 1)
    Tip: cut a spacer stick out of timber at the correct length between posts. The panel brackets are 30mm deep
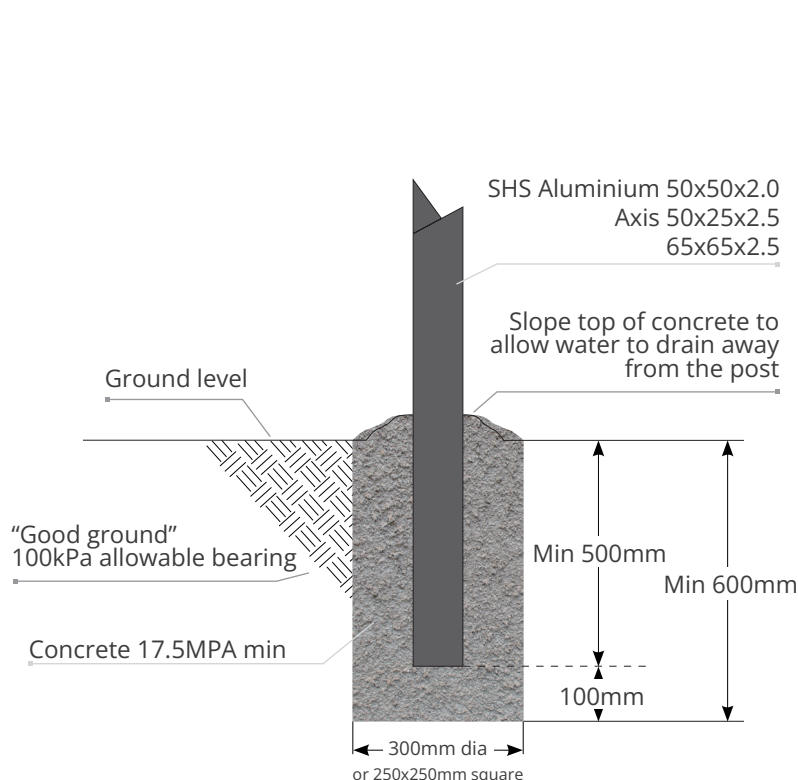
In-ground posts:
50x50mm
65x65mm
50x25mm (Axis only)

Post sizes are dependent on the application & design requirements.

Posts to be installed in 'good ground' as defined by NZS3604.

• For standard 50x50mm (and smaller) 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 if required.
• Any heavier posts, i.e. gate posts, should be concreted in place & braced until the concrete is dry.
• If the fence line follows any contours in the land or the fence line is curved, regularly check the height of the posts as you work down the line to ensure a good visual line along the top of the fence.

SHS Aluminium 50x50x2.0
Axis 50x25x2.5
65x65x2.5

Slope top of concrete to allow water to drain away from the post

Ground level

"Good ground" 100kPa allowable bearing

Concrete 17.5MPA min

Min 500mm
Min 600mm
100mm

300mm dia
or 250x250mm square

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

a. Ensure the surface you are bolting the post to is firm, level & clean.

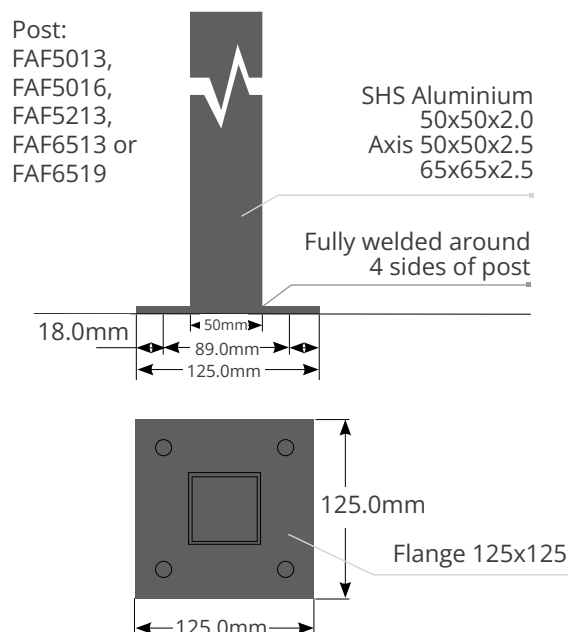b. Fix the posts in place with four fixings of the correct type for the situation.

Bolt down post
50x25mm
50x50mm
65x65mm
Post sizes & fixings are dependent on the application & design requirements.

Fixings - indicative

In concrete: 4x M12 HILTI HST stud anchors or similar with minimum 70mm embedment.

In timber: 4x 12mm coachscrews with minimum 120mm embedment.

Post:
FAF5013,
FAF5016,
FAF5213,
FAF6513 or
FAF6519

SHS Aluminium
50x50x2.0
Axis 50x50x2.5
65x65x2.5

Fully welded around 4 sides of post

18.0mm
50mm
89.0mm
125.0mm

125.0mm
Flange 125x125

125.0mm

Step 4 > Installing the panels

a. For the straight & level fence lines, all the posts can be installed & carefully lined up and then the panels can be installed once the concrete has set. This is the quickest & easiest method.

b. For undulating or curved fence lines, panels may need to be installed along with each post and braced until the concrete has set.

c. The panels are held in place with brackets:

    1. Slide the bracket onto each rail.

    2. Ensure the tab of the bracket is positioned under the top rail, can be either way up on the bottom rail.

    3. Fit the panel in place & check for level.

    4. Screw the brackets into the posts with the tek screws supplied.

Panel to post

Fixing with external bracket
FAPB3825 (Lodge)
FAPB4040 (Delta, Alto, Mansion & Fortress)
FARB4040 (Delta Raking)
FAPB2525 (Axis)
FAPB5025 (Barrier)
FARB5025 (Barrier Raking)

FAPB4040

Axis & Raking Bracket

Important:

• When cutting panels or posts to length, use a hacksaw or a power saw with a sharp diamond tip blade, or tungsten tip on aluminium. Do not use a grinder or abrasive cut off wheel as this will burn the powdercoated finish. Do not leave swarf on the fence as it can rust.

• Be careful not to allow the chuck of battery drill to rub on the bracket, this can damage the powdercoated finish.

• Take care when handling all components to avoid damage to the powdercoated finish.

• When cutting steel posts or panels to length, the cut ends must be painted with zinc rich paint to prevent corrosion.

Step 5 > Hanging the gates

a. Gate hinges & latches vary depending on the gate size and/or safety requirements. Refer to the instructions with the gate/hinges for the correct clearances.

b. Ensure the gate posts are set in the correct position allowing clearance for the hinges & latches & clearance between double gates.