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Size A4	Date issued 2023-03-31	Rev	DO NOT SCALE DRAWING
Sheet 1 of 1		Weight	

Model
Alto Panel 1500mm
FAAFP1522

For use on Swimming Pools, External Balconies or Retaining Walls, please refer to our Producer Statments for further specifications.

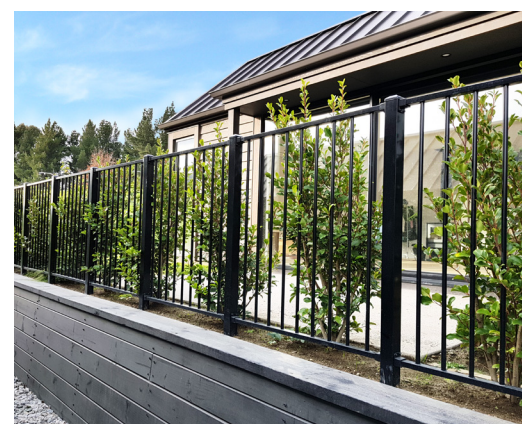
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS

Rail profile	40x40 square aluminium with R3 radius on corners
Picket profile	19x19 aluminium with R3 radius on corners
Panel length	2250x1500mm

Bracket fixing	External aluminium bracket (adjustable brackets available for angled corners)
Post caps	External aluminium caps (standard) or Internal plastic caps (optional)
Flanged post	50x50x1600mm (125mm square flange) M12 fixings
Inground post	50x50x2100mm

ALUMINIUM INSTALLATION GUIDE

A STEP-BY-STEP GUIDE TO INSTALLING YOUR FENCE





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 fences 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. Call 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.

TOOLS LIST

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



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

TOOLS

- Tape Measure
- Spade
- Shovel
- Level
- String Line
- Concrete

OPTIONAL

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

SAFETY GEAR

minimum required

- Safety Boots
- Gloves
- Helmet
- Eye Protection
- Hearing Protection
- Sun Protection

A STEP-BY-STEP GUIDE TO INSTALLATION

STEP 1 - LAYOUT YOUR FENCE-LINE

- ✓ Determine and mark any legal boundaries and/or underground services.
- ✓ Measure out each fence-line and mark the post positions.
- ✓ Determine post centres as follows:
- ✓ If the fenceline 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 and cut panels to fit.
- ✓ Use a string line or laser-level to make sure any straight lines are aligned.

Panel Length	+	Clearance	+	Post Size	=	POST CENTRE
e.g. 2250mm	+	5mm	+	50mm	=	2305mm

STEP 2 - DIG POST HOLES

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

TABLE A - Required Post-hole Dimensions

Post Size	Suggested Hole Diameter
125 x 125	300mm
150 x 100	300mm
150 x 150	300mm
200 x 200	400mm

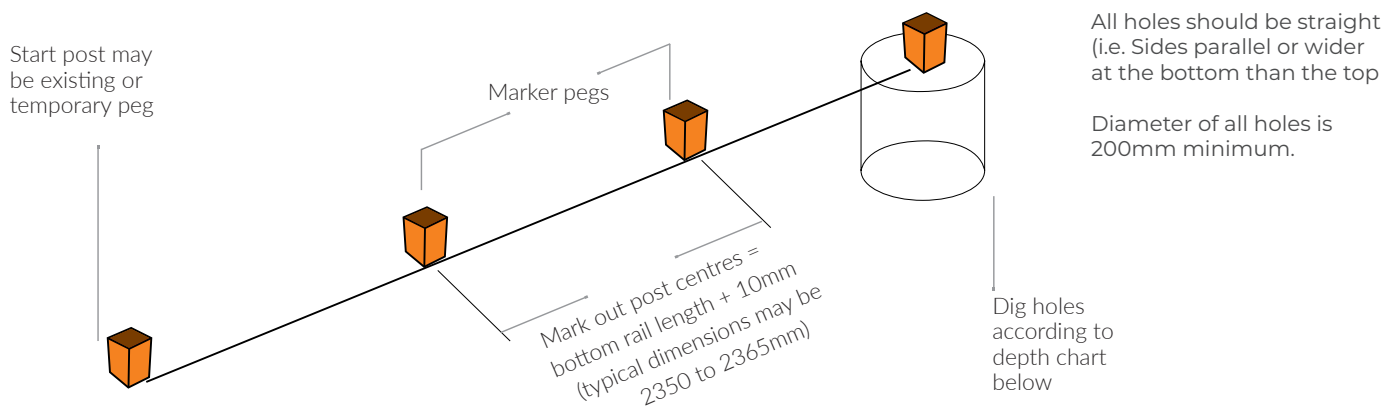
TABLE B - Required Post-hole Depths

	Post Length	Out-of-ground Height	Post-hole Depth
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 / 0.3 deeper in ground

MARKING OUT YOUR POST HOLES

Post centres will be subject to rail length supplied. Eg, 1.8m rail will have approx 1.9m post centre.

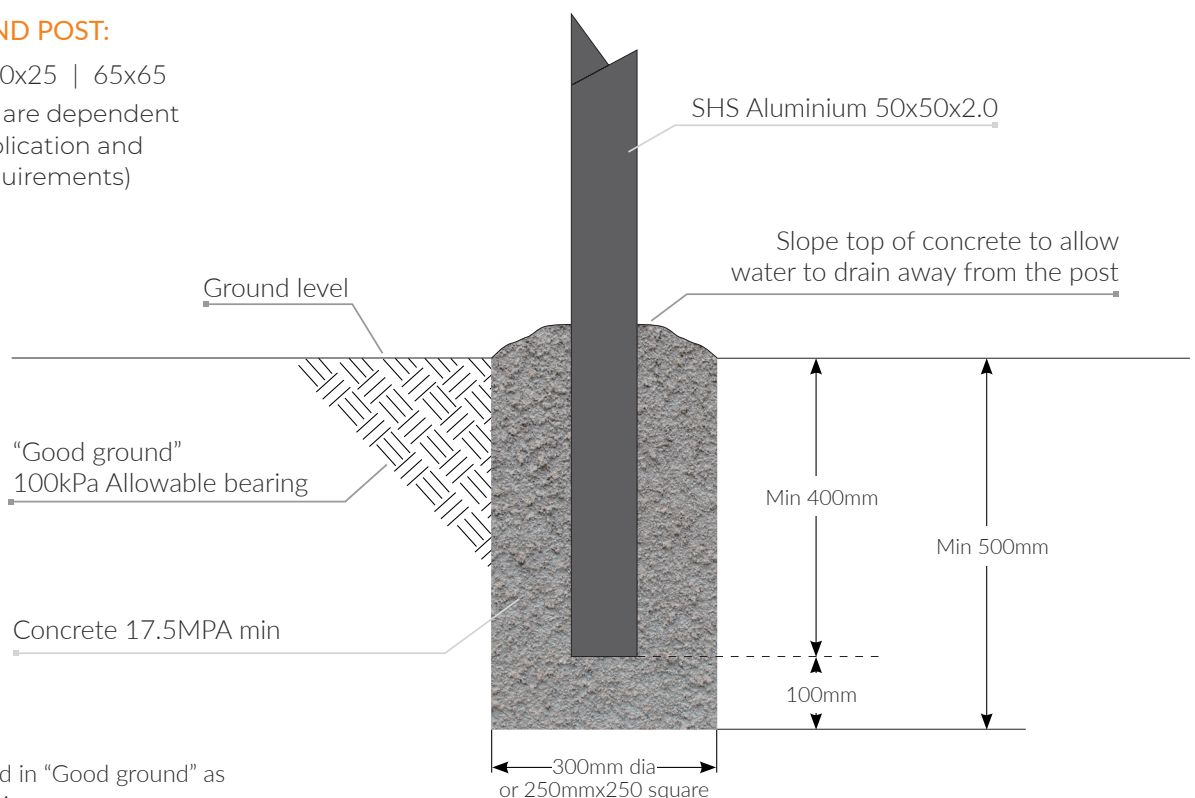


STEP 3 - INSTALLING THE POSTS IN GROUND

- 3.1** 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 and cap clearance.
- 3.2** Fill the hole with concrete around the post taking care to keep the post in the correct position.
- 3.3** Check with a spirit-level regularly to ensure the post is plumb.
- 3.4** Ensure the post remains square to the fenceline and does not turn as you lace concrete around it.
- 3.5** Repeat Steps 3.1 to 3.4 for all posts.
- 3.6** Set the spacing of the posts at the length of the panel, plus approx 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 – so this allows for some adjustment if required (except where a PSI is required).

IN-GROUND POST:

50x50 | 50x25 | 65x65
 (Post sizes are dependent on the application and design requirements)



*Posts to be installed in "Good ground" as defined by NZS3604

NOTES:

- ✓ For standard 50x50 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 re-visited before concrete sets firm to recheck post alignment and correct if required.
- ✓ Any heavier posts (e.g. gate posts) should be concreted in place and braced until the concrete is dry.
- ✓ If the fenceline 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.

STEP 4 - INSTALLING POSTS, BOLT-DOWN OPTION

- 4.1** Ensure the surface you are bolting the post to is firm, level, and clean. (See Figure below)

BOLT-DOWN POST:

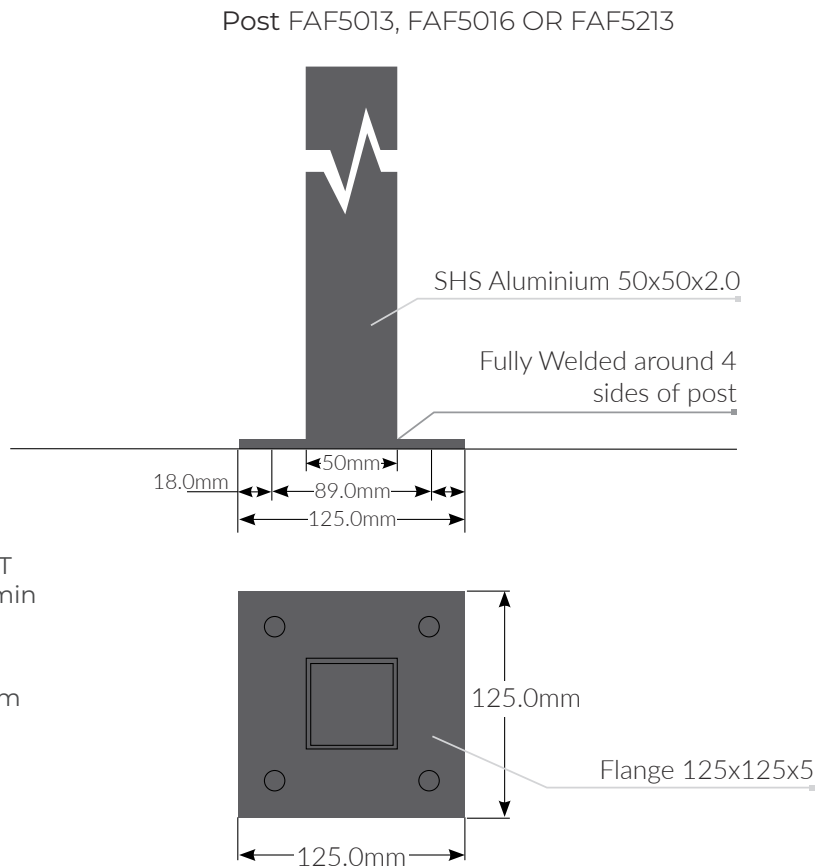
50x50 | 65x65

(Post sizes are dependent on the application and design requirements)

Fixings: (indicative)

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

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



- 4.2** Fix the posts in place with four fixings of the correct type for the situation.

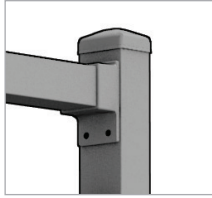
STEP 5 - INSTALLING THE PANELS

- 5.1** For straight and level fence lines, all the posts can be installed and carefully lined up, and then the panels can be installed once the concrete has set. This is the quickest and easiest method.
- 5.2** For undulating or curved fence lines – panels may need to be installed along with each post and braced until the concrete has set.
- 5.3** The panels are held in place with the brackets:
1. Slide a 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 and check for level
 4. Screw the brackets into the posts with the tek-screws supplied.

PANEL TO POST

Fixing with external
bracket

FAPB4040
FARB4040
FAPB2525
FAPB5025
FARB5025

**NOTES:**

- ✓ 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 powder-coated 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 powder-coated finish.
- ✓ Take care when handling all components to avoid damage to the powder-coated finish.

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

STEP 6 - HANGING THE GATES

- 6.1** Gate hinges and latches vary depending on the gate size and/or security requirements. Refer to the instructions with the gate/hinges for the correct clearances.
- 6.2** Ensure the gate-posts are set in the correct position allowing clearance for the hinges and latches and clearance between double gates.



Post lengths required will increase accordingly to cater for these ground conditions.

Soil Type	Minimum Hole Depth	Approximate Concrete Required
Rock	300mm	1 bag per hole (20Kg bag)
Clay/Firm Earth	600mm	2 bag per hole (20Kg bags)
Sand/Loose Fill	900mm	3 bag per hole (20Kg bags)

**CONTACT FENTEC**

FENTEC'S TECHNICAL SUPPORT: 0800 002 725

TO LEARN MORE VISIT: WWW.FENTEC.CO.NZ

This document is only intended to be a general guide, as every property and situation is different. Any installation work, including the use of power equipment is completely the responsibility of the person(s) installing. All persons using power equipment must be trained and certified to use the equipment and must wear all applicable personal protection gear. Fentec cannot accept any responsibility for any faulty installation or damage or injury arising from installation work.



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