SOLID PANEL INSTALLATION GUIDE

IMPORTANT

Please read carefully through this installation guide prior to starting the setting out of your new fence. Setting out the wall accurately and correctly will be the difference between a good and a great result.

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DESIGN VERSATILITY | BUILT TO LAST | EASY CONSTRUCTION

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INTRODUCTION

Thank you for choosing one of our quality products. We are the industry leaders in Solid Panel fencing. This product will provide you with years of trouble free protection if installed in accordance with these directions.

The recommendations detailed in this guide produced by BelAire are formulated along the lines of good building practice.
They are not intended to be an exhaustive statement of all the relevant data. Further, as the success of projects depend on factors outside the control of BelAire (e.g. Quality of workmanship, particular design, detail requirements, etc), BelAire accepts no responsibility for, or in connection with, the quality of the projects or their suitability when completed.

If you are in any doubt please seek independent advice or contact BelAire. We are always happy and available to answer questions regarding installation no matter how small or insignificant you think they may be.

Technical and installation advice is available on 0800 235 2473

! IMPORTANT!

Throughout this installation guide you will see information boxes marked as IMPORTANT.

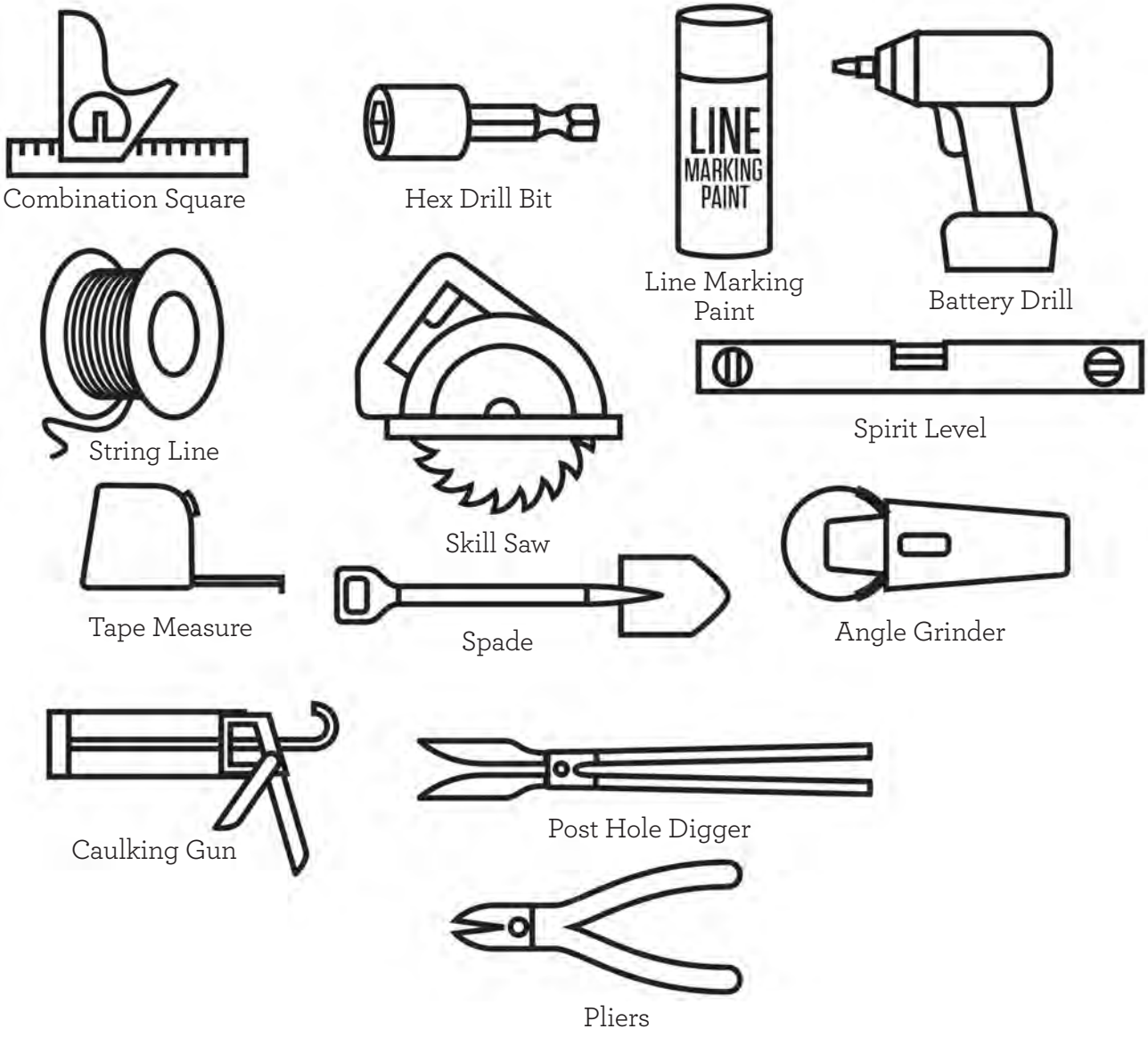
We recommended the reader pays particular attention to them to ensure a satisfactory installation and the long term performance of the products.

BEFORE YOU BEGIN

Consult your local council before installing a solid panel fence to ensure compliance with any local bi-laws. Council regulations vary from region to region and your local council can help with decisions on distances and heights of fences from neighbours and pavements.

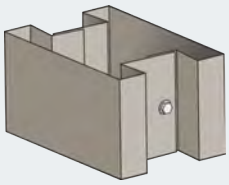
Mandatory safety regulations need to be strictly adhered to.

! TOOLS REQUIRED

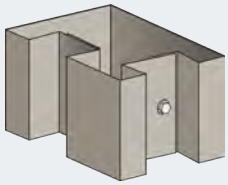


COMPONENTS LIST

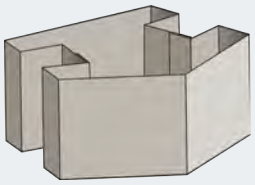
1. Mid Post



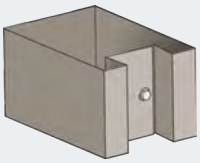
2. 90° Post



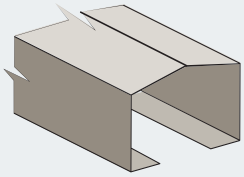
3. 45° Post



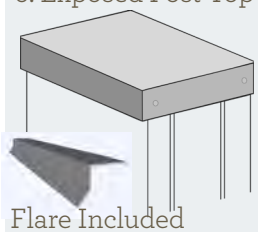
4. End Post



5. External Panel Capping

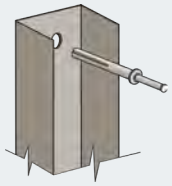


6. Exposed Post Top

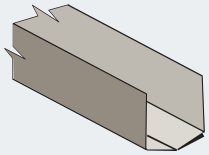


Flare Included

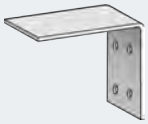
7. Wall Mount Channel & Masonry Anchor



8. Capping Channel

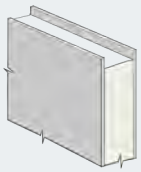


9. Support Bracket

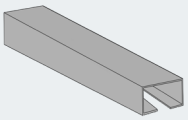


4. Flush Post Top

10. Wall Panel 50mm and 70mm

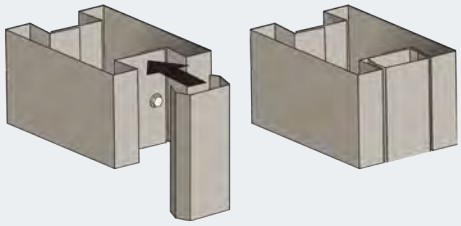


12. Aluminium Joiner

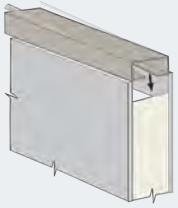


13. End Post Infill

End Post with End Post infill



Wall Panel & Joiner



POST INSTALLATION

STEP 1 – Determine Boundary line, Posthole depths & Centres

Please read the wind region and post hole depth charts carefully prior to starting your installation.

We recommend you plan your wall set out/post position on a piece of paper first to save unnecessary digging.

Accurately determine the boundary line to where the wall will be installed, (in some cases a surveyor may be required) mark this with a string line as per the diagram below.

Note – the diagram on page 5 is for reference purposes only & shows the wall splitting the boundary line, this may not always be the case depending on your individual circumstances.

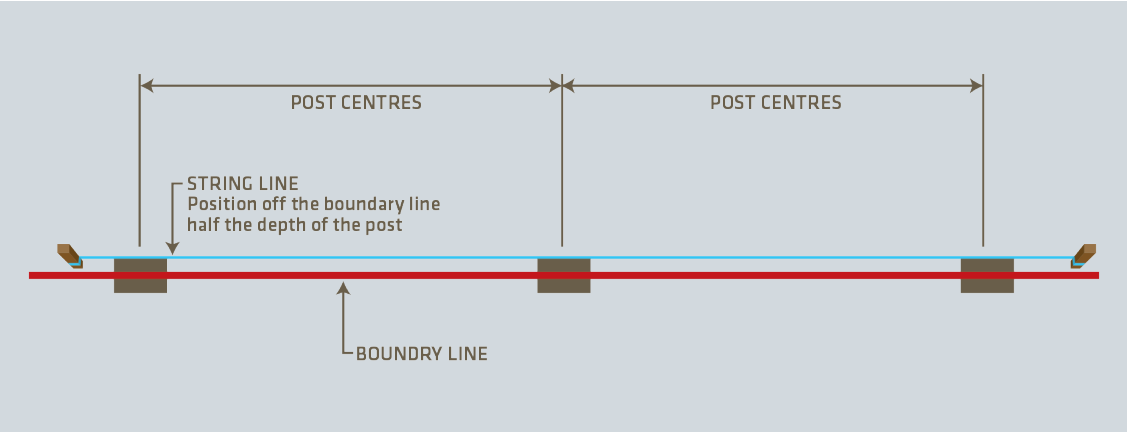
Determine your posthole centres using the table as a guide and mark out your posthole positions on the ground with line marking paint.

Note: Wall panels may be trimmed with a circular saw if necessary to fit in within an exact measurement (panel cutting procedure is detailed on page 19.)

Postholes can be dug by hand or with a mechanical auger. Use the Footing Depth Table on page 5 to determine your posthole depth and diameter.

Recommended footing depths listed here are for wind regions A & B plus terrain categories 2.0, 2.5 & 3. If you are building your wall in a Cyclonic wind area, on the top of a hill, adjacent to an bank/cliff, on a ridge, or in terrain category 1, you will need engineering advice beyond the scope of this publication.

POST INSTALLATION



Standard 'Post Centre to Post Centre' Guide

The table below allows you to work out what your post centres will be. Example - If you have a 2400mm panel and you are using Classic posts then you will have a 2530mm post centre to post centre measurement. If you have a 2400mm panel and you are using Signature posts then you will have a 2630mm post centre to post centre measurement.

Wall Panel Length	Classic (50mm) Post hole Centres	Signature (70mm) Post hole Centres	Estate (70mm) Post hole Centres
2400mm	2530mm	2630mm	2670mm
2700mm	2830mm	2930mm	2970mm
3000mm	3130mm	3230mm	3270mm

Footing Depth Table

Wall Height	Hole depth into firm earth or clay		Hole depth into sand, soft clay or loose earth		Hole diameter
	Wind Region A&B	C	Wind Region A&B	C	For all Wind regions the Post Hole diameter should be your post width plus 100mm
900mm	450mm	STOP IMPORTANT BEFORE YOU CONTINUE You will need engineering advice beyond the scope of this publication. Please contact BelAire directly for this information.	550mm	STOP IMPORTANT BEFORE YOU CONTINUE You will need engineering advice beyond the scope of this publication. Please contact BelAire directly for this information.	Classic = 280mm min Sigature = 380mm min Estate = 420mm min
1200mm	550mm		650mm		
1500mm	600mm		700mm		
1800mm	650mm		800mm		
2100mm	700mm		900mm		
2400mm	800mm		1000mm		
2700mm	900mm		1100mm		
3000mm*	1000mm		1200mm		

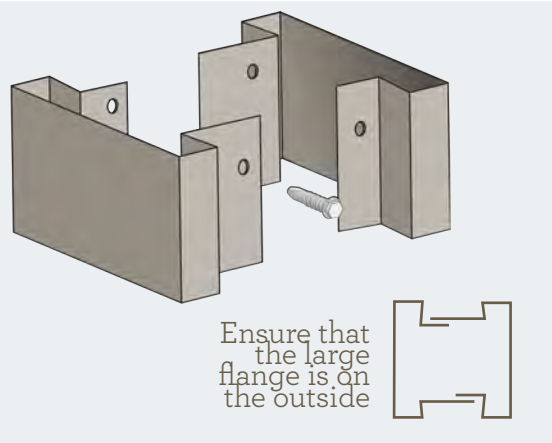
*3000mm high walls may not be suitable for all regions. Please consult BelAire prior to the design stage so we can ascertain if additional materials are required example – shortened free end spacing's, deeper footings and core filling of posts etc.

POST INSTALLATION

STEP 2 – Screw Posts Together

Place the two halves of the post on a FLAT surface. Align the pre-punched holes in the post exactly (large flange on top) and clamp both ends together (see picture).

IMPORTANT: Screw both ends together first then fasten one screw in the middle (with supplied Hex head screws). The remaining screws can be fixed in any order.



Coastal Areas

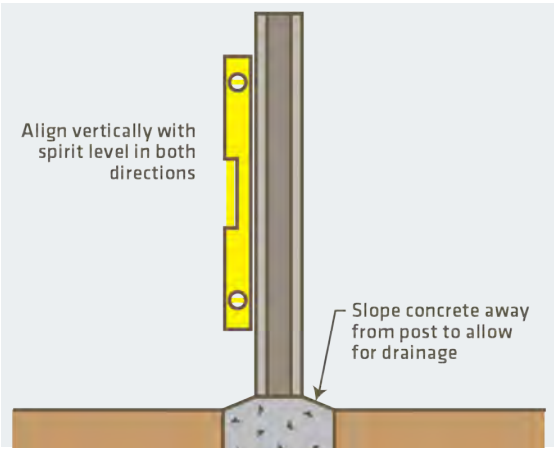
If you are installing a **Belaire solid** wall within 1.5 kilometres from the seaside, we recommend applying a bitumen sealer to the post.

The area to apply the bitumen coating will be 500mm above the concrete line and 150mm below where the concrete will finish on the post.

Most hardware stores will stock a bitumen coating.

This will then cover the 10 yr warranty, otherwise BelAire accepts no responsibility for any corrosion.

No posts should be set in actual salt water.



POST INSTALLATION

STEP 3 – Fixing the Base Brackets to the Post

Attach the panel support bracket into the post with the hex head screws supplied.

The measurement from the top of the post will vary depending if you have Flush or External .

External Post Tops

Depending on which join you have, whether its a closed join or a exposed join your bracket height will be different in height.

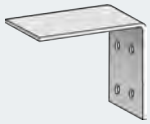
Example: for an 1800mm high closed join wall the bracket should be fixed at 1830mm from the top of the post. This allows for the post top to sleeve over the post after the panels have been installed. Please Note: if you choose to have the exposed join you will have to add 13mm to get the required bracket height. (See table below)

Flush Post Tops

The support bracket should be fixed at 5mm more than the finished wall height.

Example: For an 1800mm high closed join wall, the bracket should be fixed at 1805mm from the top of the post, if it is an exposed join wall, the bracket should be fixed at 1819mm. This 5mm is to allow for the thickness of the top wall capping and base channel on top of the panel measurements.

Support Bracket



Tek Screw

Note: If your wall is stepped please see instructions for How to Step Your Wall on page 17 before fixing your brackets.

*We recommend to go for the exposed join look as it gives a far superior finish to the complete wall

Wall Support Bracket Fixing Heights heights					
Finished Wall Heights (mm)	900	1200	1500	1800	2100
Closed Join	928	1228	1528	1828	2128
Exposed Join*	N/A	N/A	1540*	1840*	2140*
Flush Capping*	If you have a wall with Flush Capping, Take 25mm off the above Heights				
Suggested Cleat Height for your new wall				mm	

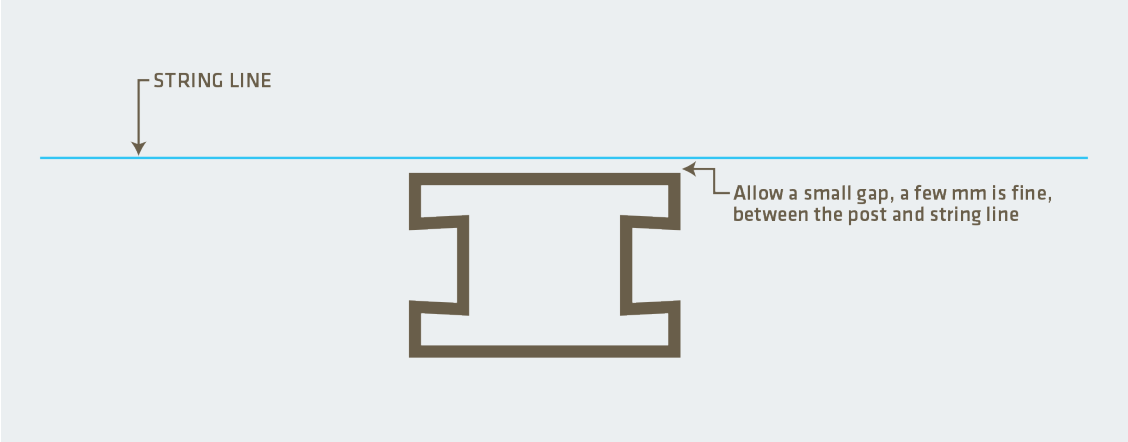
POST INSTALLATION

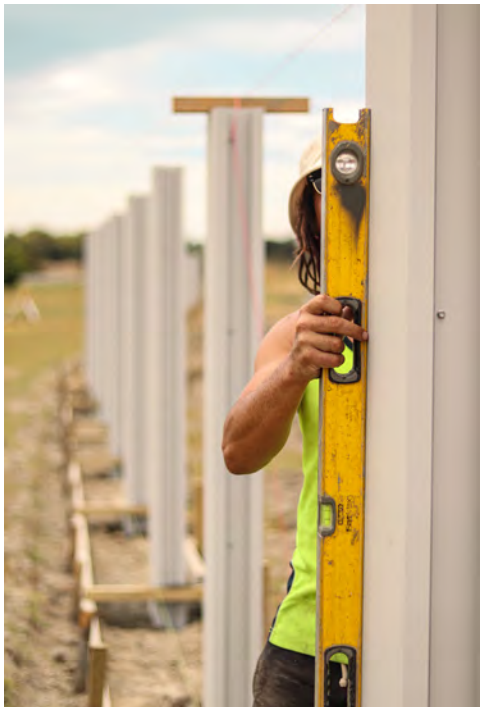
STEP 4 – Post Fitment and Alignment

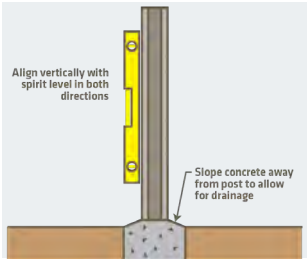
Working to a string line on the face of the post, insert the first post into the hole and gradually pour in the concrete. Continually check the post alignment with a spirit level as the concrete is being poured.

Your string line should have a small amount of clearance between the line and your post. If you have your string line always touching the post you can risk pushing it slightly every time and the result will be an 'arc' in the line of the wall.

We recommend pre-mixed concrete as it is a lot easier to work with and gives you more time.







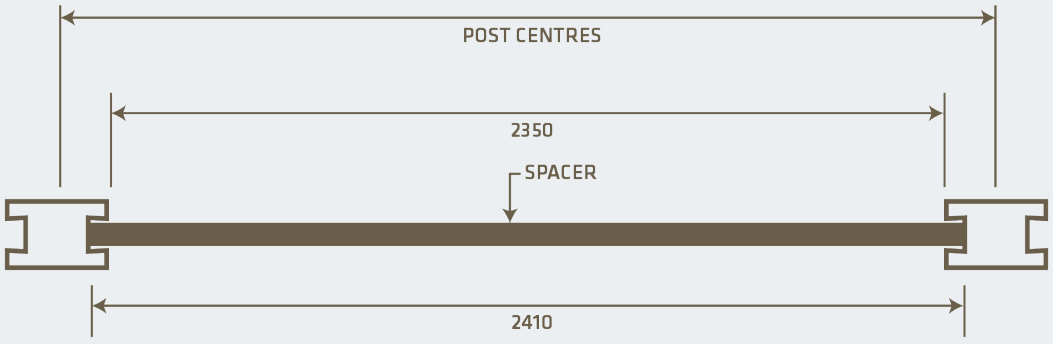
POST INSTALLATION

STEP 5 – Spacing your Posts Correctly

We recommend you cut a suitable spacer (timber or steel) to press against the back of the post rebate. This distance should be the panel length you are installing + 10mm.

Example: If the wall panel being inserted is 2400mm in length then the distance between the two rebates should be 2410mm. This will then accurately give you the correct spacing plus a surface to get a level from (providing the spacer you are using is straight & true.)

Alternatively you can use a tape measure between the face of the posts and use something rigid to sit across the top of the posts to sit the spirit level on.



This example is based on a 2400mm panel being installed

PANEL INSTALLATION

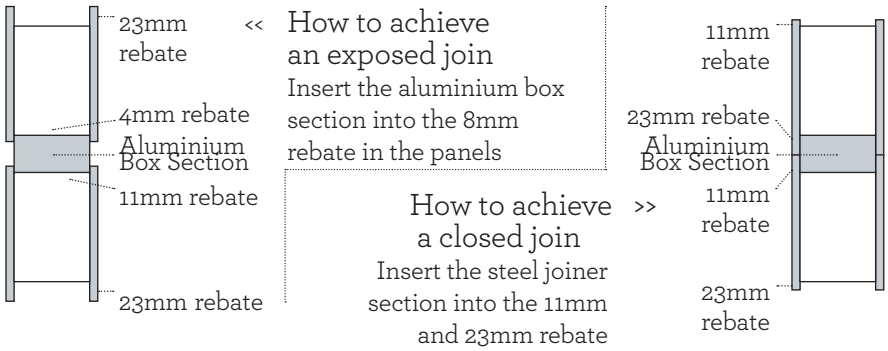
Allow concrete to cure completely before further assembly

Closed Join or Exposed Join ?

The idea of an exposed join is for a shadow line, when the sun is directly above the wall the shadow will be cast into the exposed join but with the closed join the shadow line will be seen in different sunlight.

We recommend having a exposed join for better appearance!

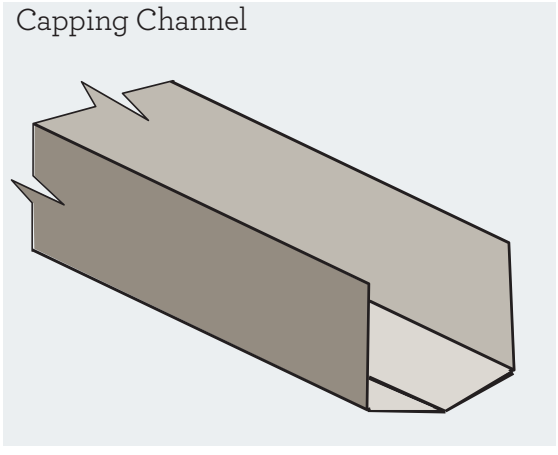
*We recommend to go for the exposed join look as it gives a far superior finish to the complete wall.



STEP 6 – Fitting the Capping Channel to the Panel

The capping channel will be slightly shorter than the panel to allow it to be guided down the post easily so it does not collide with the heads of the tek screws. The base channel also has holes in the bottom to allow for breathing.

Start at one end of the panel, approx 7mm in and carefully ease the capping channel over the panel. Once fitted, tap the capping channel to make sure it is seated correctly.



PANEL INSTALLATION

STEP 7 – Inserting Wall Panels

Make sure the base bracket is free of debris. Then with one person at either end, lift the panel vertically and insert into the top rebates of the post.

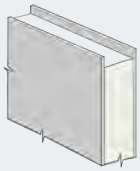
The first panel will have the capping channel installed so the initial 25mm will be tight to insert as the post is trying to 'stretch' to accommodate the panel plus the capping channel, this is normal.

If you feel it is too tight to insert you can remove the top tek screw which will allow the post to expand more readily. Be sure to re-install the tek screw prior to inserting the top panel.

Note: The panel must be guided down at an even & level rate or it will jam.

IMPORTANT: Always take special care if working from heights or lifting objects above your head.

Wall Panel



If your wall is 1200mm high or lower go straight to Step 10

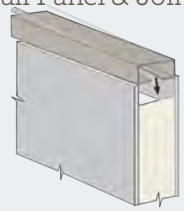
You won't have to 'double stack' panels

PANEL INSTALLATION

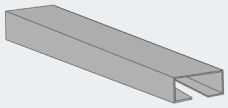
STEP 8 – Insert The Joiner

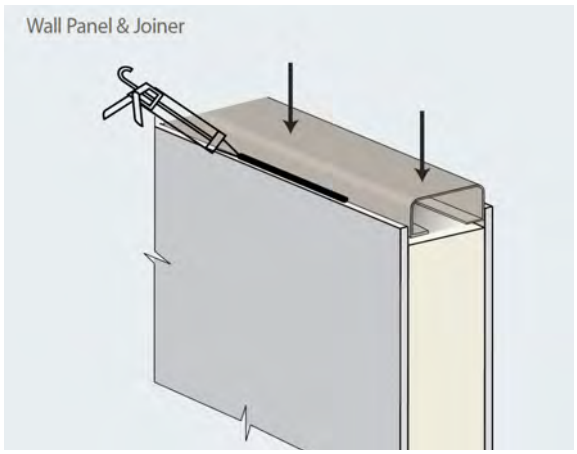
Insert the aluminium joiner into the bottom panel making sure it is seated all the way down and silicone is applied as below.

Wall Panel & Joiner



12. Steel Joiner





Please use MS Silicone to seal the joiner along the bottom panel.

PLEASE NOTE - IF THIS PROCESS IS NOT COMPLETED CORRECTLY THIS WILL VOID WARRANTY

STEP 9 – Inserting Consecutive Panels

Guide the second panel down on top of the base panel.

Note: If it does not align correctly with light downward pressure, it may be necessary to 'tap' the top panel down using a heavy block of wood in a 'pivoted slapping action' to bring it together completely, (see picture below.)

CAPPING INSTALLATION

STEP 10 – Fitting the Top Wall Capping

There are two types of panel capping options - You will have either have Exposed Panel Capping or a Capping Channel to give a flush finish look.

Both procedures are outlined below.

Exposed Panel Capping

Firstly determine the correct length for your cap and then cut to suit gap.

Apply 'liquid nails fast grab' or similar every 250mm.

Note: The adhesive must be polystyrene safe or it will melt into the polystyrene.

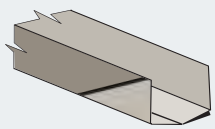
Ease the wall capping over the panel starting at one end and press down (see picture below). Once set, the liquid nails will stop any unwanted movement.

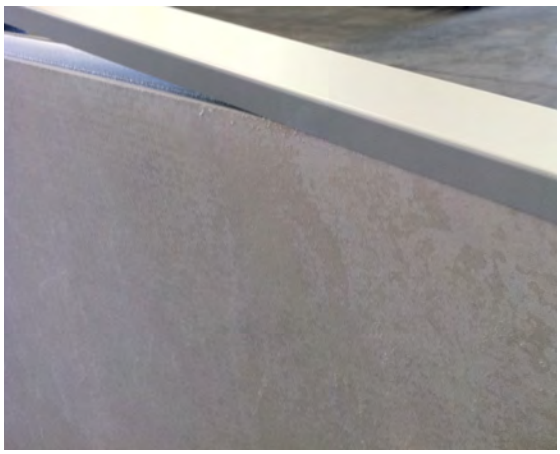
Capping Channel

Apply 'liquid nails fast grab' or similar every 250 mm along both internal radiuses. This adhesive will contact with the fibre cement sheets once the channel is installed.

Start at one end approx 5mm in and carefully guide the capping channel over the panel. Once fitted, tap the capping channel to make sure it is seated correctly.

Capping Channel





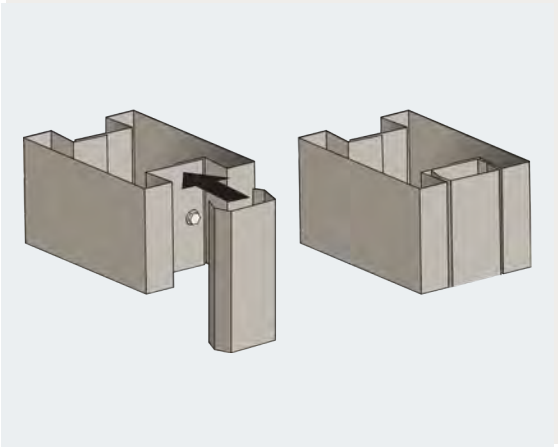
CAPPING INSTALLATION

STEP 11 – End Post Infills

To fill the recess in a post where you are not inserting a panel, snap in an end post infill.

Note: These are designed to be inserted with a small amount of force.

Where your wall is stepped, this insert can be cut to size to suit the step and inserted in the exposed recess.



CAPPING INSTALLATION

STEP 12 – Fitting the Post Tops

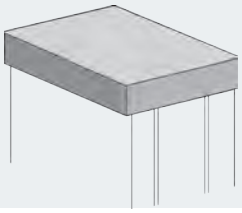
There are two types of Post Top options – You will have either have Exposed Post Top or, to give a flush finish look you will use a Flush Post Top.

Both procedures are outlined below.

Exposed Post Top

As below, take the 2 small angles and fix them on flush to the top of the post as shown below in Fig. 1 and 2, Once fixed onto the post then the post cap will simply push and clip over the tabs and fix onto the post, Fig.3. We would also recommend applying glue along the flat top of the angles especially in a high wind environment.

External Post Top



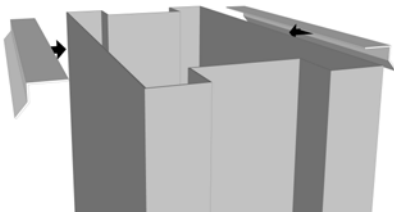


Fig.1

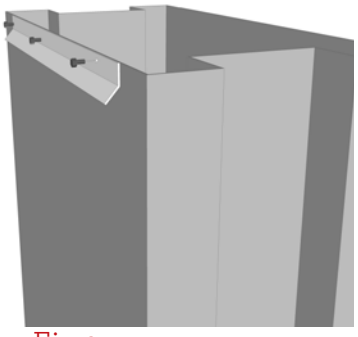


Fig.2

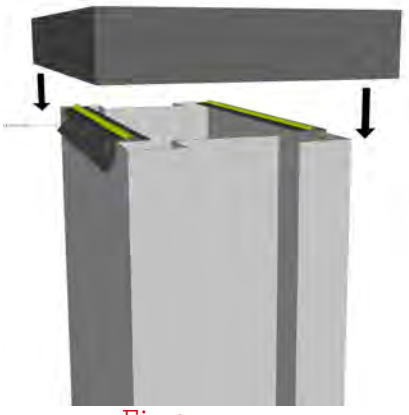


Fig.3

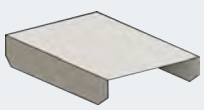
Flush Post Top

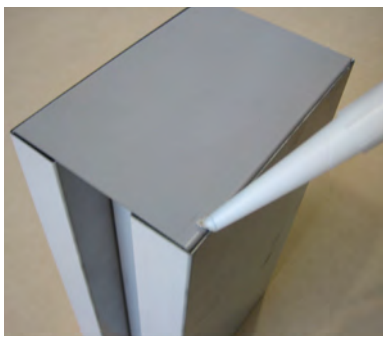
Apply a small amount of MS Silicone to the sides of the flush post top before pushing it into place, wipe away any excess. Push the flush post top into the post and tap it down lightly to seat it.

Note: You may have to squeeze the sides of the flush post top to start it into the post

Seal around the post top with an exterior (paintable) polyurethane sealant prior to painting (Sika flex pro is recommended). This will provide a water tight seal and prevent the top from lifting with expansion and contraction.

Flush Post Top





ADDITIONAL INFORMATION

Stepping or Raking your Wall

This will generally be the most complex part of any installation. Please take the time to draw it out on a piece of paper before setting any posts in the ground. Having to remove posts that are concreted in can be very disheartening! And remember we are always here to help you get it right, so if you are unsure please ask.

There are three methods for dealing with sloping ground. The examples below are based around an 1800mm high wall.

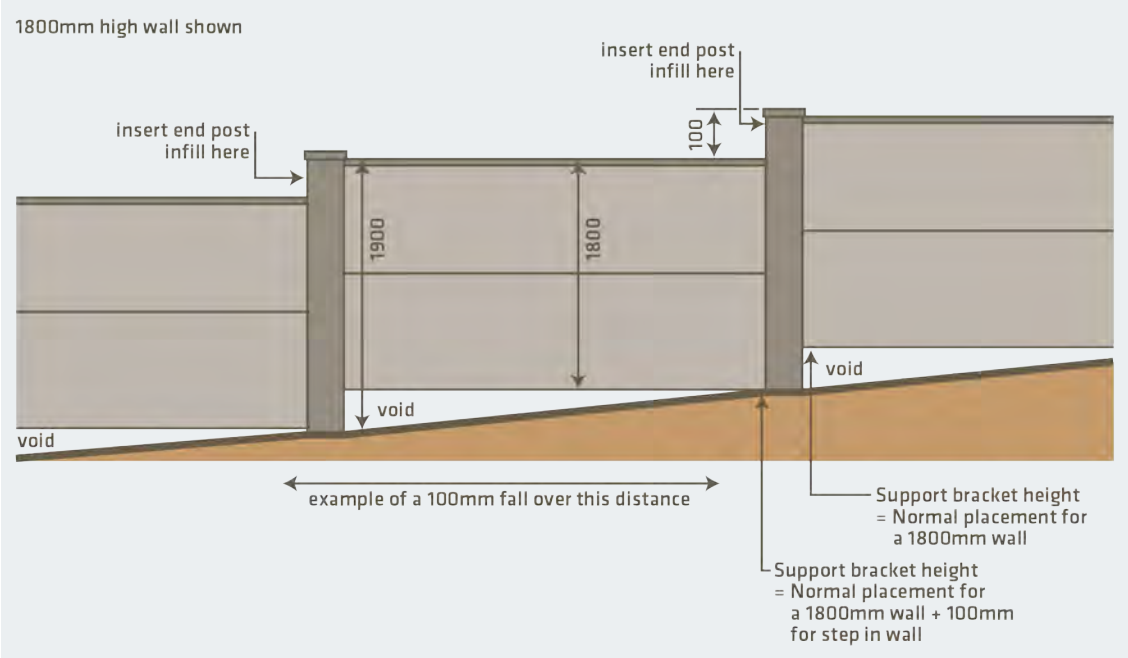
Method 1 – Stepping the bottom of your panels & maintaining a minimum 1800mm wall height.
Note - This will leave a void/gap under one end of your wall panels.

Method 2 – Raking/cutting the base panel & maintaining a maximum 1800mm wall height.
Note - This will leave no void/gap under your wall panels but will reduce your wall height at one end.

Method 3 – Raking/cutting the base & maintaining a minimum 1800mm wall height at one end and a taller wall height at the low end of the slope.
Note - This will leave no void/gap under your wall panels but will increase your wall height at the lower end of the slope above 1800mm. A wider base panel is required for this method and as such should be a consideration at the time of ordering.

Stepping Method 1 – Maintaining a Minimum 1800mm Wall Height

As pictured below it should be noted that you will be left with a void at the low end of the slope but you will maintain a minimum 1800mm wall height. In most cases on gradual slopes this void won't be large and can either be left as is or planted in front of.

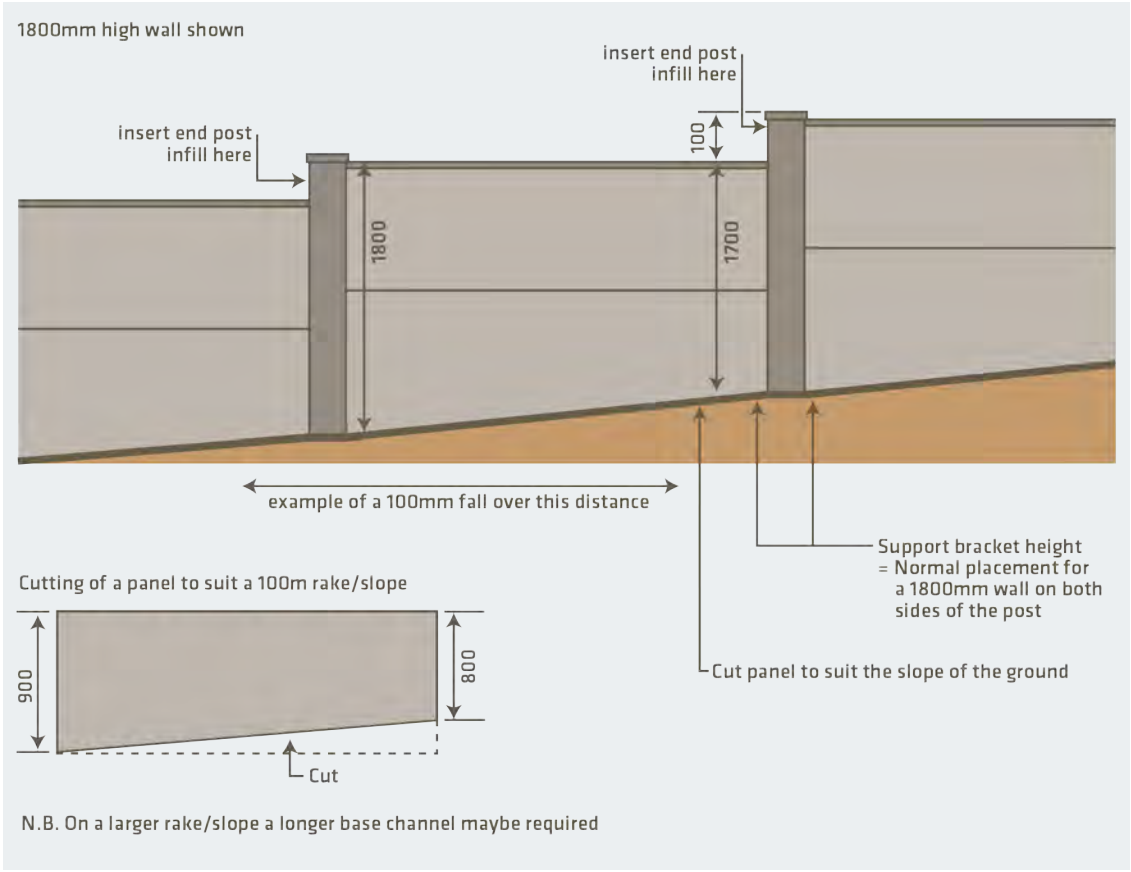


ADDITIONAL INFORMATION

Stepping Method 2 – Rake/Cut your Bottom Panel to the Slope Using 1800mm Worth of Wall Panels

You will maintain a maximum height of 1800mm wall height – as pictured below it should be noted that your wall height at the high side of the slope will be reduced by the amount of the rake – in this situation 100mm.

Depending on the additional height gained by doing this you may require deeper footings and longer posts. Please contact us for specific advice before installation.

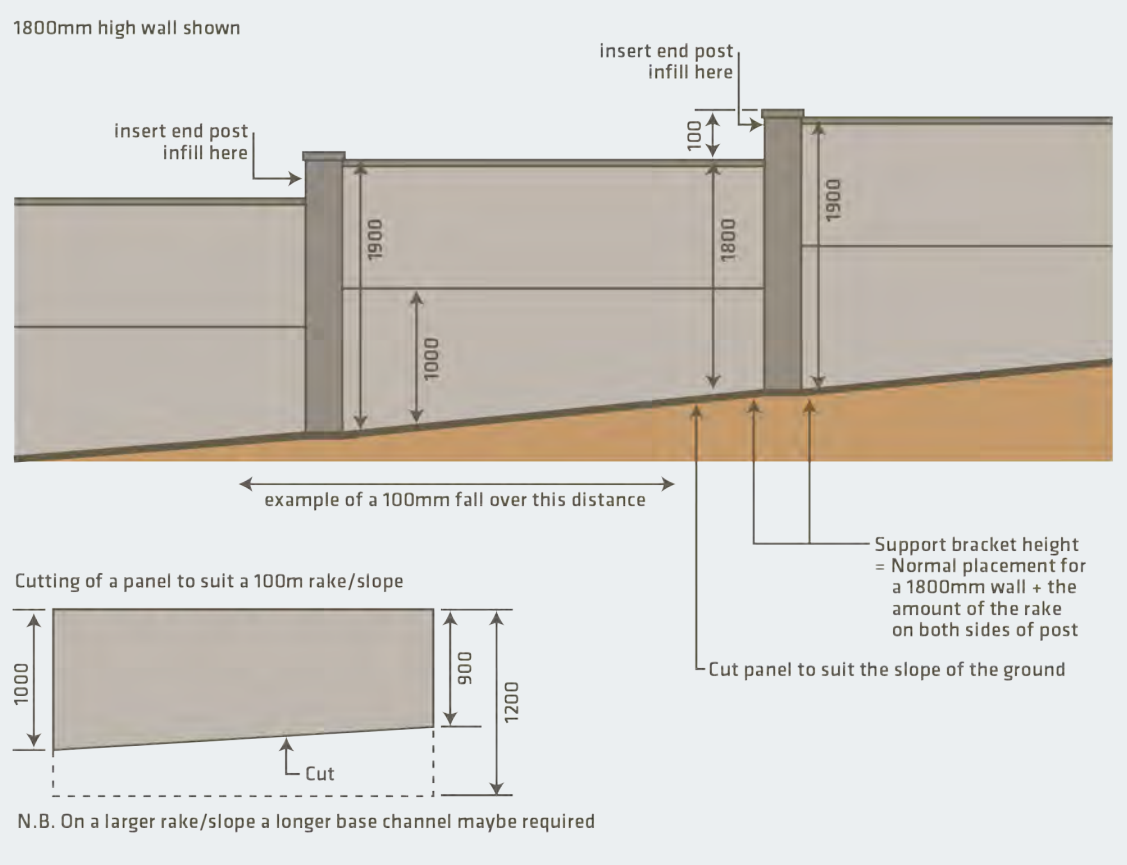


ADDITIONAL INFORMATION

Stepping Method 3 – Rake/Cut your Bottom Panel to the Slope Using 2100mm Worth of Wall Panels to Maintain a Minimum 1800mm Wall Height

You will maintain a maximum height of 1800mm wall height – as pictured below it should be noted that your wall height at the high side of the slope will be increased by the amount of the rake – in this situation 100mm.

Depending on the additional height gained, by doing this you may require deeper footings and longer posts. Please contact us for specific advice before installation.



ADDITIONAL INFORMATION

Cutting the Panels:

STOP – Wear the appropriate safety equipment for performing the task. Eye wear, hearing protection and a dust mask.

The panels can be cut using a circular saw with a timber blade. Remember to always support or catch the piece you're cutting off as it may break towards the end of your cut if you don't.
Note - If your circular saw doesn't have a deep enough blade to cut through the panel in one sweep, then you must cut through one face and carefully turn the panel over and cut through the other.

The panel should go 25mm into the rebate of each post.

Example: If the distance between the internal face of posts is 2000mm then the panel should be cut at 2050mm.

Cutting the Posts:

STOP – Wear the appropriate safety equipment for performing the task such as, eye wear, hearing protection & a dust mask.

Mark the post and use a 5 inch/125mm angle grinder with a 1mm cutting blade to cut through the post. A smaller grinder (4 inch/100mm) can be used but you will find it difficult to get the blade depth required when cutting through the rebate in the post that accepts the panel.

Note: All cut edges that will remain exposed to the elements will require treating with a zinc rich paint such as 'cold gal' or similar.

ADDITIONAL INFORMATION

Post Extensions: For All Walls Where Extra Post Length is Required

Examples: Unstable ground, gate support posts or wind region C, etc.

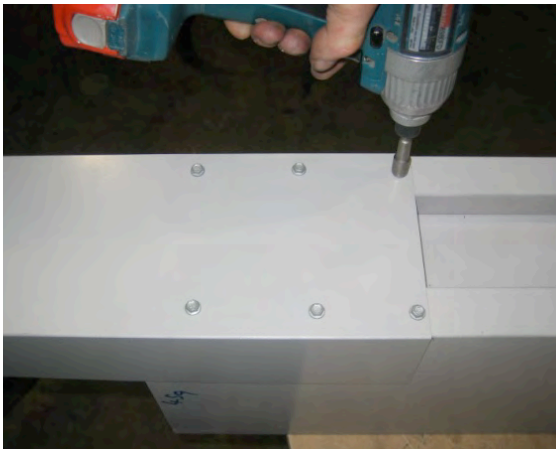
Where a post extension is required. the 2 halves must be flexed open and sleeved over the exterior of the post base by 200mm minimum, then fastened with the supplied tek screws at a minimum 100mm spacings along the flange edges (see picture below).

We recommend digging your hole first, then measuring the depth of the hole and sleeving the post extension onto the base of the post to suit the hole depth.

Before panel insertion the post must be core filled with concrete to cover the post extension internally.

Note: The pictures below are only showing one half of the post extension being fitted, the post should be turned over and the other half fitted also.

The 2 halves of the post extension will not quite meet in the middle of the post, this is to allow a small amount of concrete to enter the centre of the post before actual core filling.



EXTERIOR PAINT APPLICATION

IMPORTANT: Please make sure you do not carry out any painting on your new wall until wall is completely dry!! If the wall is not completely dry you will have a risk of mould growth, you should wait a minimum of 36 hours for the wall to completely dry from any rain.

Please make sure all joins or potential moisture traps are sealed with a good quality MS Silicone Sealant. The centre join is the main join that needs to be completely sealed from any moisture.

We recommend you paint your wall within 90 days of installation.

We recommend that you use Dulux Weather Shield x10, Dulux Timbercryll or a similar self priming premium brand of exterior grade paint. A base primer is not required, as long as the paint being applied is self priming and suitable for untreated fibre cement/masonry substrates.

Dulux product spec pages:

http://www.duspec.co.nz/duspec/file/NZDD1268.pdf

Or

http://www.duspec.co.nz/duspec/file/NZDD0789.pdf

Surface Preparation – Posts, Trims & Post Tops

The metal surfaces to be painted must be clean, dry and free of contaminants.

Lightly scuff/rub down all Metal and Primed components with a 3M Scotch Bright pad prior to the application of paint. Scotch Bright pads are available from most paint stores.

NOTE: The light key this gives won't be visible but it is effective!

Surface Preparation – Panels

Prepare the surface by ensuring that the Fibre Cement Panels are clean, dry and free of contaminants. This can be achieved by means of a brush down with a stiff brush or rubbing lightly with a 'Scotch Bright' pad.

Application Procedure:

Two coats of paint are required.

We recommend applying the first coat with a roller. Cut in the sections that the roller missed with a brush prior to applying the second coat. Let the first 'cutting in' dry and apply a second 'cutting in' coat prior to the second and final roller coat.

On a large job a spray application may be justified. Please see the paint manufacturer for advice on spray application.

SAND PAINT APPLICATION

How to Achieve a Cost Effective Tuscan Style Rendered Look:

As this is generally the first time most people have applied this type of finish, it is highly recommended that you follow the procedure below exactly on a small test panel first before applying to your finished wall.

Never apply in direct sun light.

Products

Base Coat – We use and recommend Dulux Acra Sand texture paint. Acra Sand is available from Dulux trade stores only. Only a single base coat of this is required, if over coated with Dulux Weather shield (see top coat step below).

If a different brand of sand based finish is selected, (than specified above) please ensure that it is self-priming onto fibre cement/masonry surfaces.
If it isn't then a base primer such as Dulux Acraprime will also be required.

NOTE: This base Acra Sand coat can (in most cases) be tinted to the colour of your final topcoat at the time of purchase.

NOTE: This product should not be used as a top coat as it is not 'UV' stabilized.

Dulux product spec: http://www.duspec.co.nz/duspec/file/NZDA0990.pdf

Application Method 

Top Coat – We use and recommend Dulux Weather Shield or a similar premium brand of exterior grade paint.

Surface Preparation – Posts, Trims & Post Tops

The metal surfaces to be painted must be clean, dry and free of contaminants. Lightly scuff/rub down all Metal and Primed components with a Scotch Bright pad prior to the application of paint. Scotch Bright pads are available from most paint stores.

Surface Preparation – Panels

Prepare the surface by ensuring that the Fibre Cement Panels are clean, dry and free of contaminants. This can be achieved by means of a brush down with a stiff brush or rubbing very lightly with a 'Scotch Brite' pad.

For more information, call us to speak to one of our friendly team:

0800 235 2473

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