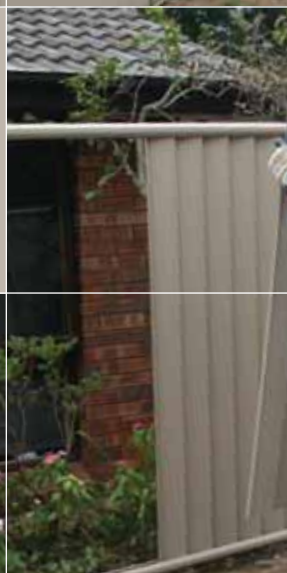
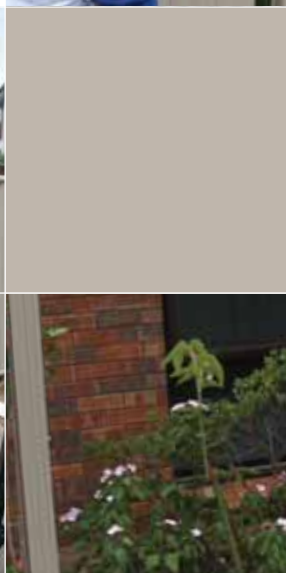


LYSAGHT fence and gate Installation Guide

NEETASCREEN®
SMARTASCREEN®
MINISCREEN®
CUSTOMSCREEN®



- Selection guide for non-cyclonic regions with detailed installation instructions given for assembly of fences, gates and lattices
- Stylish, strong, economical and durable
- All fences and gates come in a selected range of COLORBOND® steel colours
- Available in 3 heights, with or without lattices



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1. Introducing LYSAGHT fencing

Not all fences made from COLORBOND® steel are created equal.

LYSAGHT® fences are stylish, strong, economical and durable. And they're easy to install and maintain.

LYSAGHT fencing is a quality product because we offer a strong, cleverly-designed post. Greater depth of the rail means there is a lot more latitude when raking fences.

Designed to Australian wind loading standards, LYSAGHT fences and gates are available in standard heights of 1500, 1800 & 2100mm and a selected range of pre-painted COLORBOND® steel fence colours.

These fences can be installed on flat and sloping grounds, and are complemented by many accessories, including a range of matching gates. They may be installed all over Australia except for the tropical cyclone regions defined in AS/NZS 1170.2: 2002 Structural Design Loads, Part 2: Wind Loads (See map Figure 4.2). Refer to our cyclonic fencing range for use these areas.

Environment

Our fences have good resistance to accidental spillage of solvents, however they should not be installed within one kilometre of marine, severe industrial or other corrosive environments. Both freshwater and saltwater swimming pools contain corrosive chemicals, and your warranty does not cover fences or gates if they get splashed with the contents of swimming pools.

Fences and gates must be installed clear of the ground.

This is a step-by-step guide for the selection and installation of LYSAGHT NEETASCREEN®, SMARTASCREEN®, CUSTOMSCREEN® and MINISCREEN® steel fences and their matching gates. When these fences are topped with attractive steel lattice or slats and decorative ball caps, they are called NEETASCREEN PLUS®, SMARTASCREEN PLUS®, CUSTOMSCREEN PLUS® and MINISCREEN PLUS®. There are also instructions to convert any standard fence to a 'Plus' fence through retro-fitting a 'Plus' option lattice.

For well over 150 years we have consistently manufactured the highest quality building products – and LYSAGHT NEETASCREEN, SMARTASCREEN, CUSTOMSCREEN and MINISCREEN fences are no exception.

The LYSAGHT Fence Warranty*

When you buy your steel fence from BlueScope Lysaght you can be assured you are getting a 100% Australian made product backed by the strength and reputation of one of Australia's leading manufacturers.

Your purchase of a LYSAGHT® steel fence gives you the protection of two unique warranties for your peace of mind.

1. Your LYSAGHT® 10 Year Fencing Warranty covers the structural integrity of your complete fence system. It's your guarantee that your fence will remain standing for years to come*; and
2. A separate COLORBOND® steel warranty covers the material used to manufacture your LYSAGHT® modular fence system against corrosion to perforation by weathering in the natural elements, and against paint flake and peel.

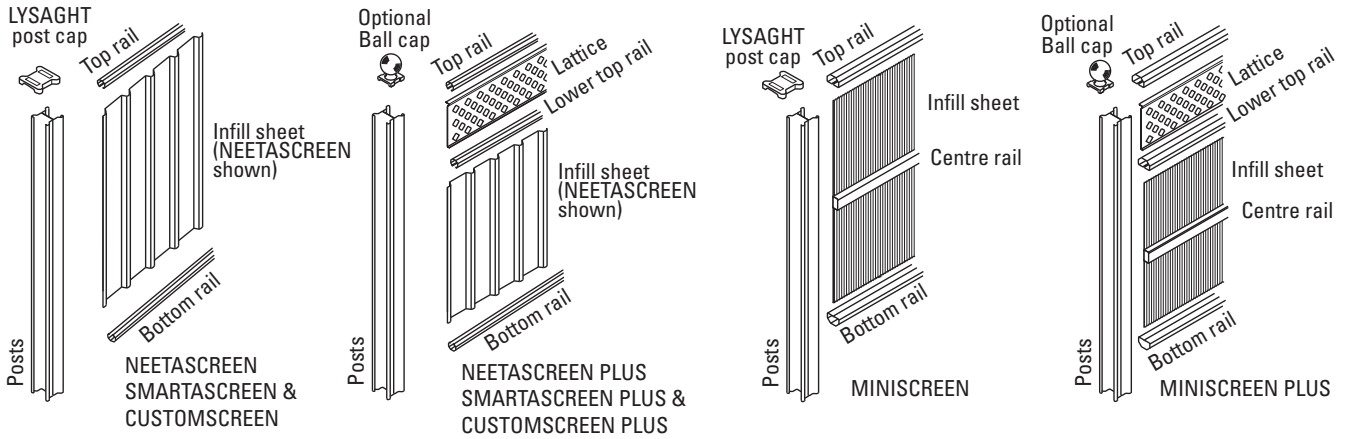
For further information on the warranties available for a LYSAGHT® fence and eligibility, visit www.lysaght.com/warranty.

*This LYSAGHT® 10 Year Fence Warranty replaces the LYSAGHT® 10 Year Complete Fence Warranty from 1 April 2010

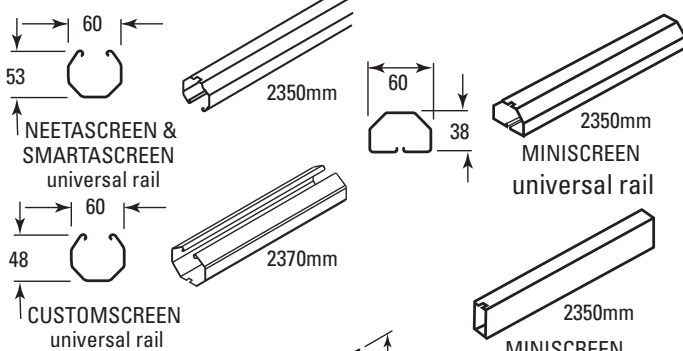


2. Components for fence assembly and installation

Detailed below is the componentry required for assembly and installation of your new fence panels. Ensure you determine the best option and required components from the following pages prior to placing your order. *CUSTOMSCREEN® components are available in SA and Qld only. Find gate components in the Gates section of this manual. Please check with your nearest sales centre for availability of components in your area.*

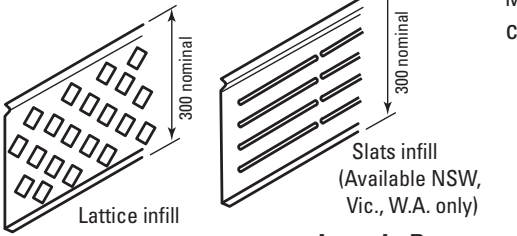
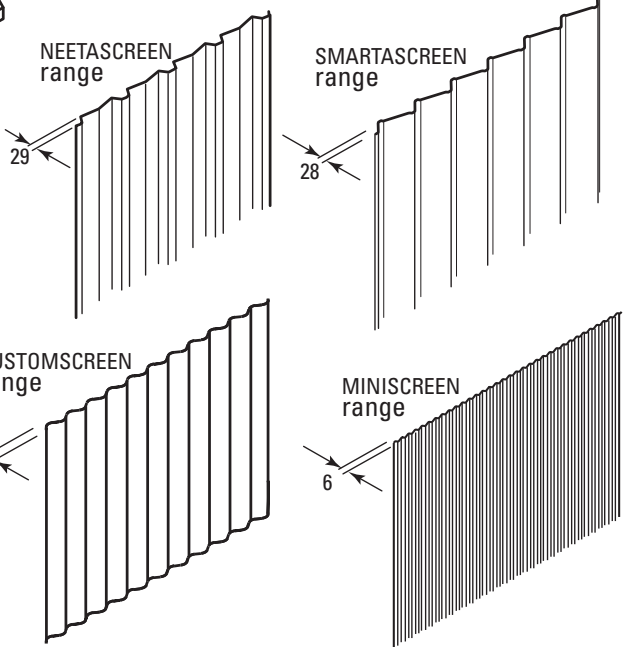


Rails



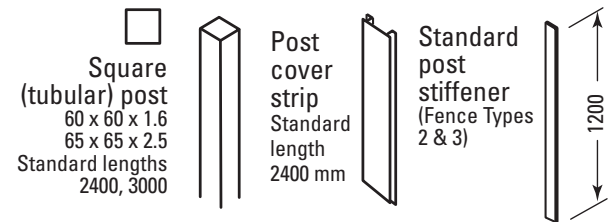
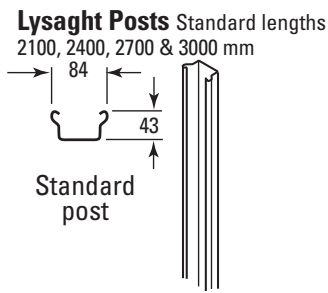
Infill sheets

Standard lengths 1490, 1790 & 2090 mm
Standard lengths for 'Plus' 1190, 1490 & 1790 mm



'Plus' Options

Standard length 2350 mm
NEETASCREEN PLUS
SMARTASCREEN PLUS
MINISCREEN PLUS
Standard length 2370 mm
CUSTOMSCREEN PLUS



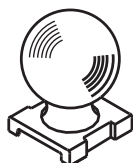
Post caps



LYSAGHT post cap (cut with knife to get single caps)



Square (tubular) post cap (for square post) 60 x 60, 65 x 65

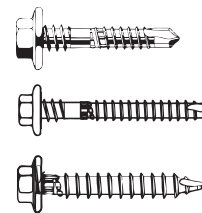


Optional Ball cap

Fasteners

(All fence types)
Self-drilling, self tapping hex. washer-head screws 10—16 x 16

(Fence Types 2 & 3)
Self-drilling, self tapping, long drill bit hex. head screw 12—24 x 32

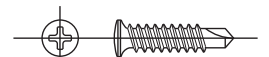


(Fence Type 3 only)
Self-drilling, self tapping, hex. head screw 12—14 x 45 or RoofZips M6-11x50 or AutoTek's M5.5-14x50

Ripple screws (MINISCREEN range only)



RippleZip® screw or M4.8—16 x 25



Ripple Tek® screw 10—16 x 20

3. At the start

Before you order

- The next five pages are about selecting the right components in order to get the fence you want. This includes choosing the right fence type, post lengths and infill profile.
- Decide if you prefer NEETASCREEN, NEETASCREEN PLUS; SMARTASCREEN, SMARTASCREEN PLUS; CUSTOMSCREEN, CUSTOMSCREEN PLUS; MINISCREEN or MINISCREEN PLUS.
- Decide the height of your fence 1500, 1800 or 2100 mm high.
- Choose your components as listed in the order guide below.
- The subsequent pages detail how to install your fence.

Before you start work

- Read this guide before you start.
- Check you have the correct components for the type of fence you are installing.
- Check where you intend to dig that there are no underground electricity, telephone, gas or water mains.
- Check you have the tools that you need.

Tools you need

- Screw gun (or power drill) with torque adjustment
- Marker (Coloured pencils, texter or chalk - not black pencil)
- Tape measure
- Rubber mallet
- Stringline and marker pegs
- Shovel and/or spade
- Spirit level
- Safety gloves and glasses
- Sharp knife (to split LYSAGHT post caps)
- Tin snips (if cutting required)
- Nibbler (optional if cutting required)
- Power saw with metal cutting blade (optional if cutting required)
- Concrete mixer (optional)
- Posthole digger (optional)

Components

The majority of fences built are of Type 1 (Figure 4.1), and the lists in the next column refer only to Type 1 fences.

Posts and post caps

Each standard fence panel is supplied with two standard posts. However, depending on how you configure corners and ends of fence runs, you might need extra standard posts or some square posts (Figure 5.1).

Your selection of these extra posts will affect the number and type of additional post caps.

Standard components

A standard Type 1 fence panel consists of the following components:

NEETASCREEN, SMARTASCREEN and CUSTOMSCREEN components

- 2 Standard posts
- 2 NEETASCREEN, SMARTASCREEN or CUSTOMSCREEN universal rails
- 3 NEETASCREEN, SMARTASCREEN or CUSTOMSCREEN infill sheets
- 1 LYSAGHT post cap*
- 17 self-drilling hex. head screws #10–16 x 16

NEETASCREEN PLUS, SMARTASCREEN PLUS and CUSTOMSCREEN PLUS components

- 2 Standard posts
- 3 NEETASCREEN, SMARTASCREEN or CUSTOMSCREEN universal rails
- 3 NEETASCREEN, SMARTASCREEN or CUSTOMSCREEN infill sheets
- 1 Lattice
- 1 Ball cap*
- 27 self-drilling hex. head screws #10–16 x 16
- 2 Post infill strips (optional)

MINISCREEN components

- 2 Standard posts
- 2 MINISCREEN universal rails
- 1 Centre rail
- 3 MINISCREEN infill sheets
- 1 LYSAGHT post cap*
- 17 self-drilling hex. head screws #10–16 x 16
- 7 Ripple Tek® or RippleZip® screws

MINISCREEN plus components

- 2 Standard posts
- 3 MINISCREEN universal rails
- 1 Centre rail
- 3 MINISCREEN infill sheets
- 1 Lattice
- 1 Ball cap*
- 27 self-drilling hex. head screws #10–16 x 16
- 7 Ripple Tek® or RippleZip® screws
- 2 Post infill strips (optional)

* You may need to order extra caps depending on your post configurations (Page 7).

NOTE: Gates are dealt with separately at the back of this manual.

Type 2 fences contain the addition of a post stiffener. Type 3 fences contain the addition of a post stiffener and are limited to only two infill sheets and have added fasteners to stitch the rails to the infill sheets. Cyclonic fences are detailed in separate manuals: 'NEETASCREEN Type 3 Fencing' in Queensland or 'NEETALOK Fencing' in Western Australia.

4. Fence selection

Whichever LYSAGHT fencing profile you select, you'll be adding a quality product that will enhance the appearance of your home for years to come. That's because a LYSAGHT fencing solution can add style and value while providing privacy and security.

It is important to make your fence selection based on both your aesthetic requirements, but also the suitability to the environment your fence is to be erected. Ensure you get a long lasting, value adding boundary fence by following the guidelines below:

Installation environment

Steel fences should not be installed within 1 km of marine, severe industrial or other corrosive environments. Take extreme care if the fence is near a swimming pool because pool water splashed on the fence will void the warranty.

The fence must be installed clear of the ground to ensure longevity.

These fences are not to be used as a retaining wall.

1. Determine your wind region

The information in this guide is suitable for use only in regions A and B of AS/NZS 1170.2: 2002 Structural Design Loads, Part 2: Wind Loads (Figure 4.2). Cyclonic regions are covered in our cyclonic fence guide. If you have any doubt about the region your fence will be in, get advice from your local building consent authority.

2. Determine your terrain category

Select the terrain category that best describes the area in which your fence will be erected from the categories listed below. Use this information to determine the type of fence required in Table 4.1. If you want to build on the top of a hill, adjacent to an escarpment, on a ridge, or in terrain category 1, you need engineering advice beyond the scope of this publication.

Category 2

Open terrain including sea coast areas, airfields, grassland with a few well-scattered obstructions, such as isolated trees and uncut grass, having heights generally from 1.5 to 10m, and water surfaces. Typically acreage-suburbia with less than 10 houses per hectare.

Category 2.5

Terrain with a few trees, isolated obstructions (for example agricultural land, canefields or long grass to 0.6 m). This category is typical of developing outer urban areas. Less than 10 houses per hectare; or more than 10 houses per hectare, 500 m apart and in two rows.

Category 3

Terrain with numerous closely spaced obstructions the size of domestic houses 3 to 5m high. Typically residential-suburbia with ten or more houses per hectare.

Hill sides and exposed situations

If your fence is situated on the side of a hill or in an exposed location, we recommend you upgrade to the next Fence Type. (Figure 4.1)

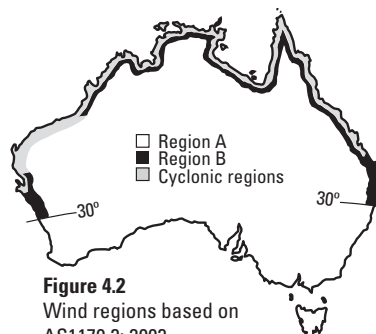


Table 4.1: Fence Types

Fence height (mm)	Terrain category	Fence types*	
		Wind regions A	Wind regions B
2100	2.0	2	-
	2.5	1	3
	3.0	1	2
1800	2.0	1	3
	2.5	1	1
	3.0	1	1
1500	2.0	1	2
	2.5	1	1
	3.0	1	1

*Data is based on level ground

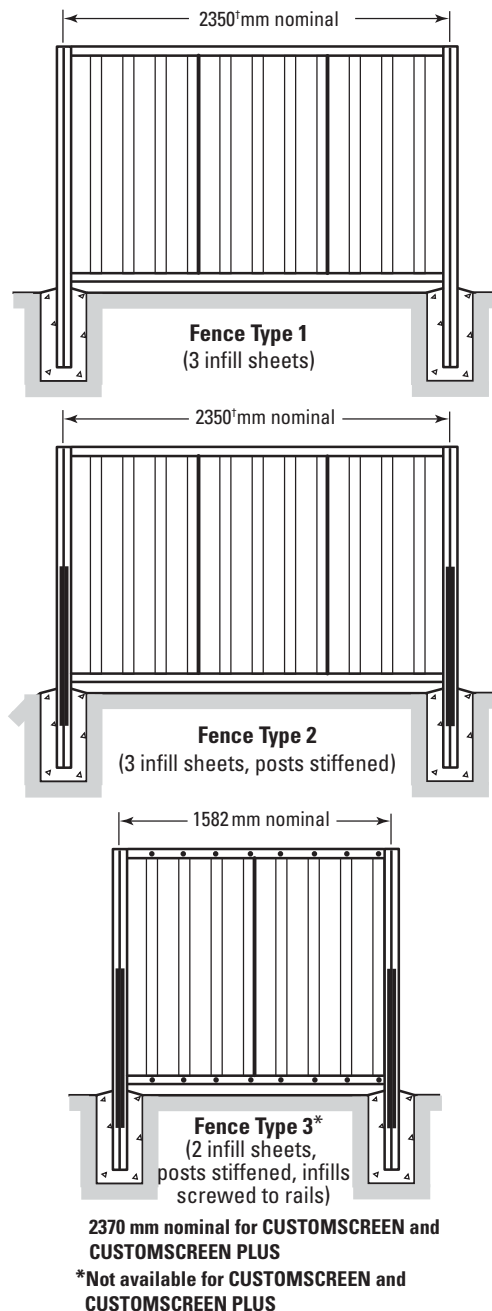


Figure 4.1
Fence Types
(NEETASCREEN fences shown)

5. Select fence posts & caps

Selection of posts

Check the number and type of posts you will need, starting with a sketch of your fence site. Mark on it the type of posts you will need (Figure 5.1).

You will need to consider:

- Posts in a fence run that don't form a corner (typically at the front of a property next to road);
- Intermediate posts (they are always two standard LYSAGHT posts screwed back-to-back);
- The various configurations of posts at corners;
- If the fence is to be stepped;
- If the ends of the fence are to be tapered (Page 15);
- Gate posts;
- That ball post caps are designed to fit on two standard LYSAGHT posts screwed back-to-back, and this may affect the post configurations you choose.

Selection of post caps

Fix post caps on all fenceposts to give the perfect finishing touch and to protect against any sharp edges (see Page 16).

Choose your post caps based on your post configurations and personal preference.

LYSAGHT Post Caps fit two standard LYSAGHT posts screwed back-to-back. For a single standard post, it is easy to cut a cap in half with a sharp knife in the groove moulded into the underside—trim the edges straight.

There is a wide range of decorative spears, available from fence retailers and hardware stores, that you can fit to these caps to customise your fence. There are grooves moulded under the cap to help locate fasteners.

Ball caps are often used for NEETASCREEN PLUS, SMARTASCREEN PLUS, CUSTOMSCREEN PLUS and MINISCREEN PLUS fences, but can be used on any LYSAGHT fence. They are designed to fit two standard LYSAGHT posts screwed back-to-back.

Square post caps suit tubular posts and are usually used at corner junctions and gate openings.

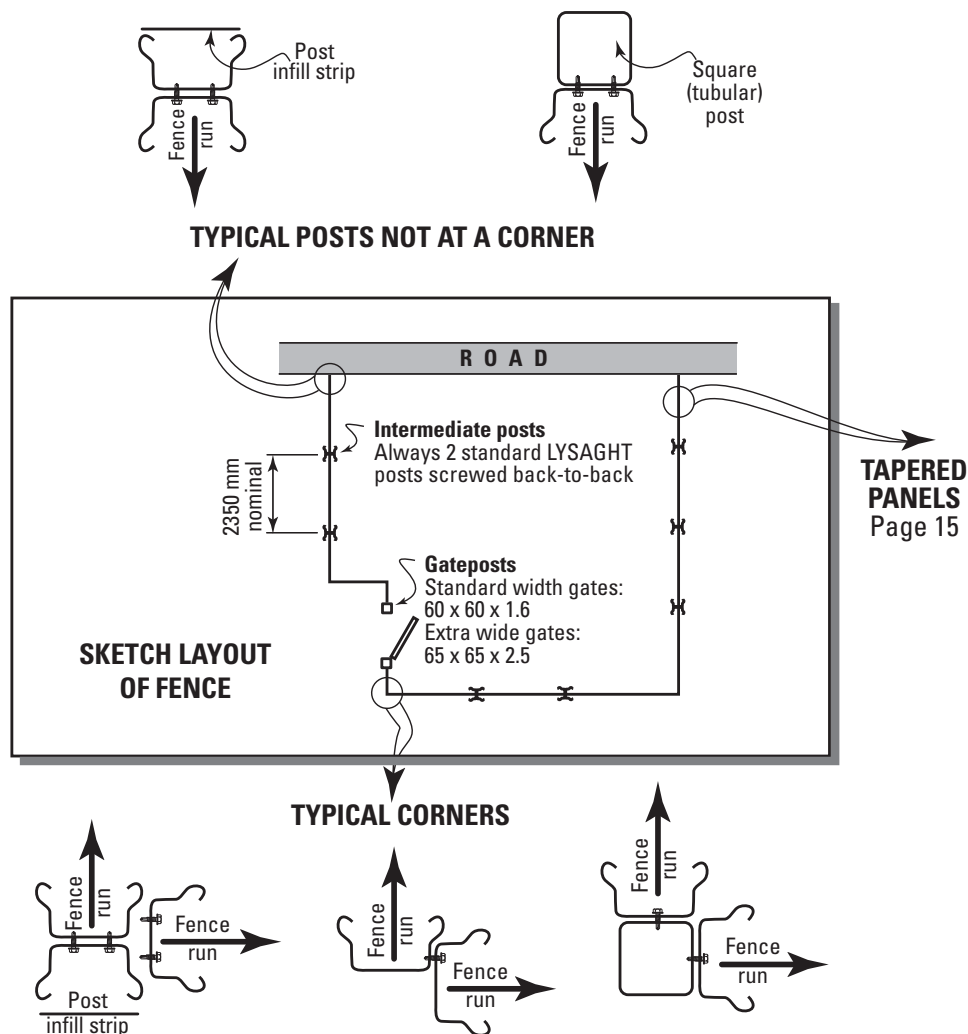


Figure 5.1
Preliminary selection of posts

6. Determine post lengths

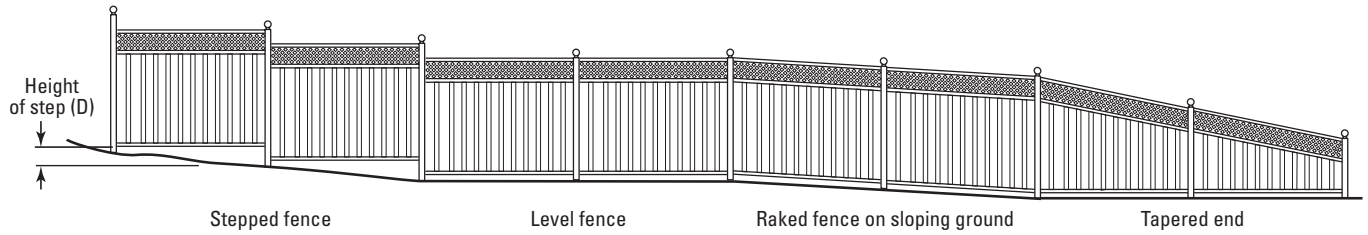


Figure 6.1
Fence installations

If the ground is not all level, consider whether the fence will be stepped or raked (Figure 6.1). For aesthetic reasons, people often choose to step rather than to rake when using a lattice.

Fences may be installed raked on slopes of 1 in 20 (117mm in 2350mm) for NEETASCREEN and SMARTASCREEN, 1 in 25 (95mm in 2370mm) for CUSTOMSCREEN or 1 in 30 (78mm in 2350mm) for MINISCREEN without cutting components to fit.

For steeper slopes you will need to:

- step your fence; or
- cut the infill sheets, lattices and rails (Page 12).

If some of the ground is level and some sloping, or if the slope varies markedly, you might need posts of different lengths.

Determine basic post lengths

(Refer to Figure 6.2. For data on tapered ends, see Page 15).

Basic post length = (Footing depth – 40) + (Height above ground)

Get the footing depth from Page 9, and height above ground from:

$$\text{Height of post above ground} = A + B + C + D$$

Where:

A = Height of infill sheet (Figure 6.2)

B = 50mm ground clearance (Figure 6.2)

C = If using lattice: 300mm (Figure 6.2)

D = If a stepped installation: height of the step (Figure 6.1)

Select standard lengths

Use the table below to select the lengths you need to order. The standard lengths are 2100, 2400, 2700 and 3000mm.

Post lengths

Calculated basic post length		Length of standard post to use (mm)
Minimum (mm)	Maximum (mm)	
2100	2210	2100
2211	2399	2400*
2400	2510	2400
2511	2699	2700*
2700	2810	2700
2811	2999	3000*
3000	3110	3000

* Cut so that dimension E in Figure 6.2 is between 40 and 150 mm.

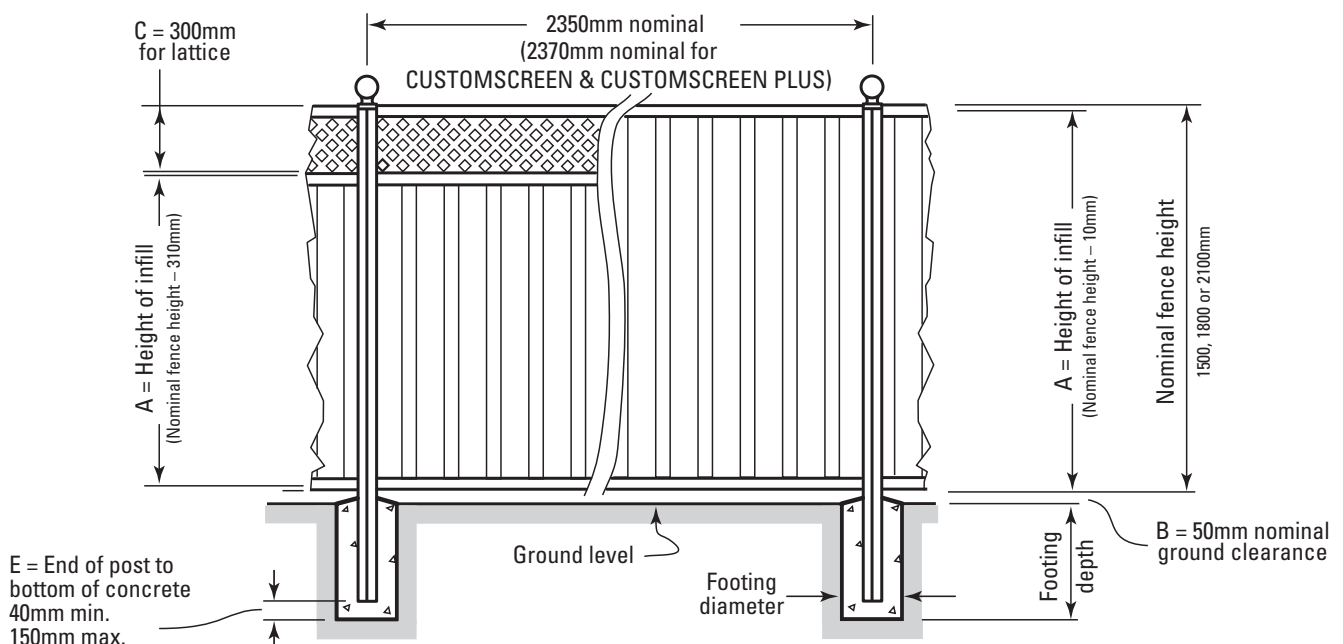


Figure 6.2
Panel arrangement (NEETASCREEN shown)

7. Footings

Select your minimum footing depth

Your fenceposts must be embedded in concrete footings of adequate size. Footings must not be placed in uncompacted fill. All footings in the following table are 200mm diameter.

Depth of footings

Terrain category	Fence height (mm)	Soil type	
		Sand, soft clay, or loose earth (mm)	Firm clay, firm earth or gravel (exclusive of loose topsoil) (mm)
Wind region A			
2, 2.5 & 3	1500	600	600
2, 2.5 & 3	1800	700	600
2, 2.5 & 3	2100	800	700
Wind region B			
2, 2.5 & 3	1500	800	600
2, 2.5 & 3	1800	900	600
2	2100	-	-
2.5 & 3		1000	900

Example

Givens

1. Site in a Sydney built-up suburb.
2. Wind region: Region A
3. Terrain category: Established residential area – Terrain Category 3
4. Soil type: Firm clay
5. Fence height: 1800mm

Solution

Any fence height of Fence Type 1 may be used at this site (see Page 6).
Footing required is:
200mm diameter x 600mm deep).

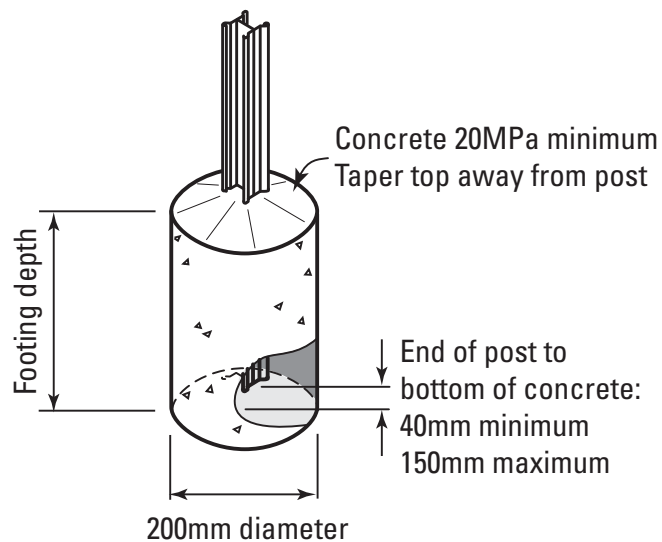


Figure 7.1
Footing dimensions

8. Installing a fence: step by step

So far we have talked about selecting your fence. The following section discusses step by step, how to prepare and install your LYSAGHT fence.

What kind of site do you have?

Work out your levels. Is it one straight run, or are there raked or stepped sections?

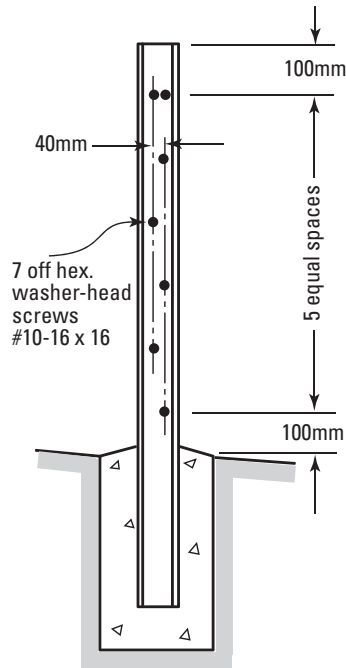
Making up posts

Start by making up posts by screwing them together. Screwing the posts together requires seven staggered screws. (Refer Figure 8.1).

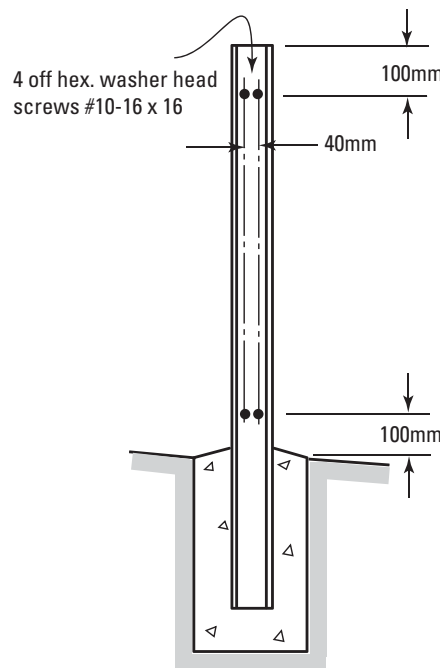
As a tip, bring your top screw down so it sits below your top rail. Otherwise your top rail is going to get stuck on it every time you go to fit it in. (Refer Figure 8.1.)

Use colour coated screws for best visual appeal.

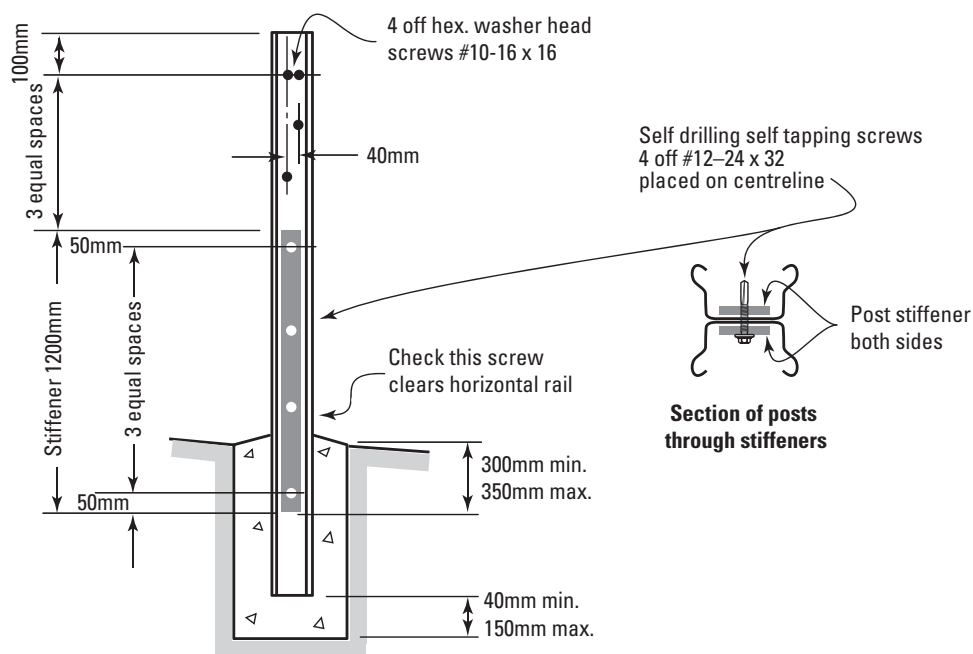
Make up the required number of posts. For Fence Types 2 and 3, post stiffeners must be fitted (Figure 8.1). If using stiffeners, screw into place while making up posts.



Position of screws to fasten together intermediate posts without stiffener (2 standard posts back-to-back)



Position of screws to fasten together corner posts or standard posts to square posts (without stiffener)



Position of screws to fasten together intermediate posts with stiffener

Figure 8.1
Fastening posts together

9. Installing fence posts

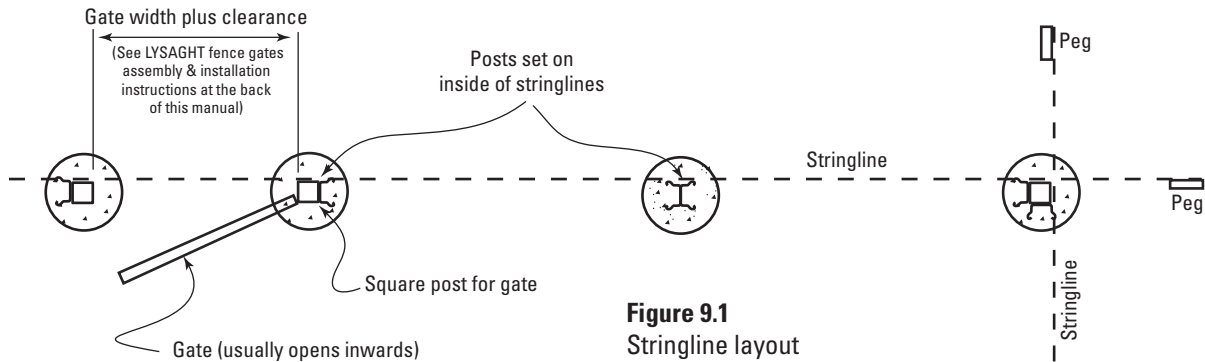


Figure 9.1
Stringline layout

1. Layout stringlines to position your fence

Stringlines mark the outside line of your fenceposts (Figure 9.1), and help to set your fenceposts at a uniform height.

Determine the exact location of your fence and setup a stringline. Keep the stringline taut and set at the top of two end posts. Place the stakes 500mm beyond the corners of the fence, so as not to obstruct the holes.

2. Layout posts and dig holes

Mark the position of fenceposts. Lay the rails on the ground butting end to end between the two end posts so you can see exactly where your posts are going to go. For raked sites, longer rails may need to be used. Refer to the raked section on page 12.

If there is to be a gate, locate the gate posts as detailed in LYSAGHT Fence gates assembly and installation guide at the back of this manual.

A fence panel can be reduced from the nominal width, without cutting infill sheets, by the increments shown in Figure 12.2. Rails and lattices must be cut to suit a narrow fence panel.

Dig the holes using the hole sizes determined from Page 9.

3. Place the first post

If the ground slopes, start at the high end.

Lay a minimum of 40mm concrete under the end of the post and set your post into the hole. This should be done for every post. Fill the hole with concrete and use your spirit level to get the post plumb. Tamp the concrete down. Ensure that the concrete tapers away from the post. (Figure 7.1).

Be careful that concrete doesn't contact the rails above ground.

4. Place remaining posts

Place the second post in its hole and engage a bottom rail with the first and second post. Make sure the bottom rail is 50mm above the ground.

A tip is to give the rails a squeeze when you're putting them into or out of your post. This helps prevent scratching.

Fasten the bottom rail with one hex. head screw (#10–16 x 16) from both sides of each post.

Use the stringline to ensure your posts are all the correct height, plumb and in line, before concreting into position.

Wait at least 24 hours for the concrete to dry before installing infill sheets.

Continue installation of posts and bottom rails for the remainder of the run.

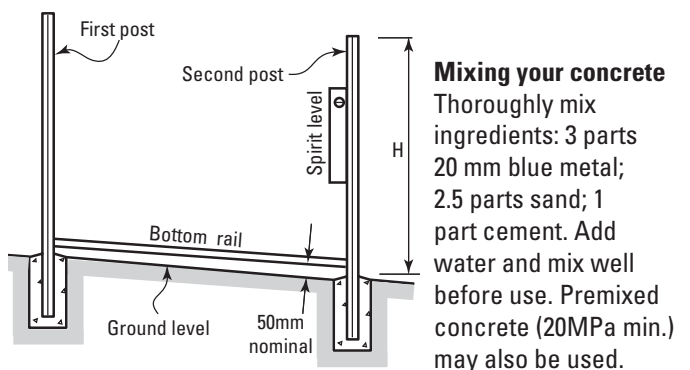


Figure 9.2
Placing remaining posts

Mixing your concrete
Thoroughly mix ingredients: 3 parts 20 mm blue metal; 2.5 parts sand; 1 part cement. Add water and mix well before use. Premixed concrete (20MPa min.) may also be used.



Use stringline to set post heights.



Lay the rails along the string line to determine positions of posts.



Set all the bottom rails into position ensuring a 50mm ground clearance.

10. Preparing raked sections

If your fence requires raked sections, you may need to prepare the rails and infill sheets. If your fence is level or stepped, skip ahead to the infill installation instructions.

Preparing rails

For small rakes, the increase in the length of top and bottom rails can be ignored. An approximate length of angled rail is shown in the adjacent table. A rail of 3100mm (and a lattice of 3122mm) are available for this purpose.

The length to cut these raked sections is detailed in the table at right, once you have determined the height of the cut.

Height of step (D)	Normal rail length	Angled rail length (approx)	Height of panel cut (d)
Fence Types 1 & 2*			
150	2350	2355	50
200	2350	2358	67
250	2350	2363	83
300	2350	2369	100
400	2350	2384	133
Fence Type 3			
150	1582	1589	75
200	1582	1595	100
250	1582	1602	125
300	1582	1610	150
400	1582	1632	200

* For CUSTOMSCREEN, 2370mm is the normal rail length and add 20mm to angled rail length shown.

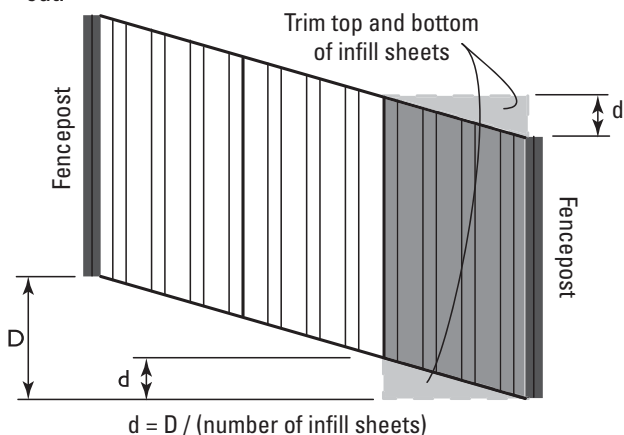


Figure 10.1

Cutting infill sheets for a raked fence (Fence types 1 and 2 shown)

Preparing infill sheets

Work out the measure of the cut by resting your spirit level inside the rail (at least the width of a sheet) at the high end of the rail (Refer photo). Measure the width of a sheet, and measure the distance with your tape between the bottom of the level and the inside of the rail. That will show you the angle of your cut. Wherever possible, make the rake on the bottom rail the same as the top.

Measure the height of your fence up from your cut edge and cut at the same angle at the top of the sheet.

Use a coloured pencil, texter or chalk to mark the cut, as a pencil may cause corrosion.

Fine tune rails before screwing them into position.

Ensuring the rails are aligned, and the sheets are neat vastly improves the appearance of your fence.

Once you have installed all the bays, stand back from the fence and have a look at the fence as a whole.

Make sure the lines on your sheets run parallel to your posts. Make sure the joint of the overlap looks flush, without a big gap. Adjust where required.

Screw the rails into position.

Remove any swarf from the installation.



Measure the fall on the rail. This will allow you to position the top rail parallel and also to correctly cut the infill sheets.



Measure the amount to be cut and mark the sheet. Ensure you measure edge to edge, not rib to rib.



Cut the infill sheets three at a time. This equals a single bay and ensures uniformity. Measure twice, cut once.

11. Installing infill sheets

Installing the infill sheets is where the art is in fencing. It requires getting a few things to line up all at the same time. It's preferable to treat this as a one person job. Two people get in each other's way.

The following steps assume a standard fence style, however the steps are similarly applied to a 'Plus' fence option. For the installation of the lattice for a 'Plus' Option style, refer to page 15.

Start at the high side. Insert the first sheet flush into the bottom rail, usually about 200mm out from the post. Lift the top rail and slowly slide the sheet into the top rail. Using your knee near the bottom of the sheet and your hand near the top, slowly ease the first sheet along the rails until they contact the post. Remember to move the sheet square or it might kick out of one of the rails.

When the second infill sheet is placed, make sure you place the sheet to allow for the overlap (Figure 12.2). At this stage some minor adjustments may be necessary to get the lap to sit correctly or to fit the sheet into the rail. Gently bump the fence sheet into position as required.

The third sheet is the most difficult, only because there are a few things to get right. Place the bottom of the sheet into the rail, ensuring there is overlap to the second sheet.

It is usually necessary to gently bump, and push this final sheet into position. Roll the top rail away from you and this will assist feeding the top of the sheet into the rail channel. Get the side facing away from you in the bottom rail and then you can push the ridges of the side facing towards you into position with both the rail and the post. Once the sheet is in position, gently tap the top rail down onto the sheets using the heel of your gloved hand.

Do not screw off the top rail until you have 'fine-tuned' the rails by standing back and looking at the whole of the fence. This allows you to make minor adjustments to get the rails aligned.



Lift top rail and place 1st sheet into bottom rail. Slide to end position.



Lifting top rail helps ease 1st sheet into end position.



Place 2nd sheet into bottom rail, ensuring there is sufficient overlap.



Position 3rd sheet. Gentle force can be used.



Lift top rail and rotate until infill sheet slides into rail. Tap top rail down into position.

12. Finishing off the fence installation

Align and fine tune rails before screwing them into position

Do not screw off the rail yet.

Ensuring the rails are aligned, and the sheets are neat vastly improves the appearance of your fence.

Once you have installed all the bays, stand back from the fence and have a look at the fence as a whole.

Make sure the lines on your sheets run parallel to your posts. Make sure the joint of the overlap looks flush, without a big gap. Adjust where required.

Once you have made these adjustments, screw the rails into position.

Remember to wipe off the fence to remove any swarf from the installation.



Screw off top rail and make it as close to parallel with the bottom rail as possible. Stand back and look at your work as you go along.

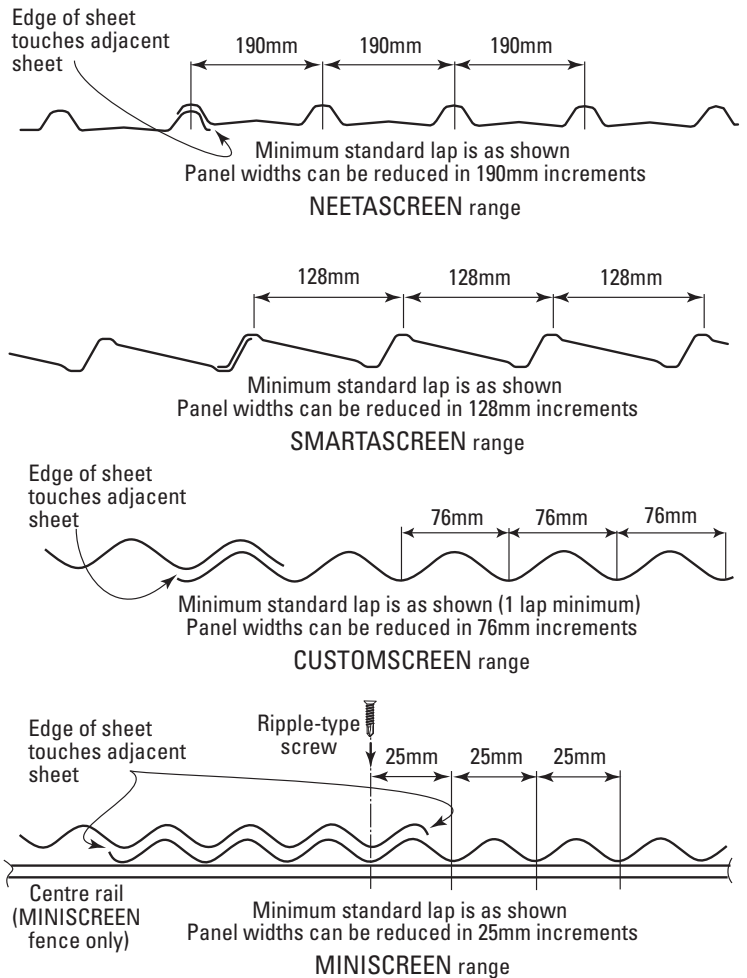


Figure 12.2
Sheet overlaps

Fixing the centre rail for MINISCREEN fences

Only the MINISCREEN fence style requires a centre rail. For MINISCREEN fences, fasten centre rails halfway up the infill sheets. Use at least seven (7) Ripple-type screws through the infill sheets into the centre rail. One screw should pass through the laps (Figure 12.2).

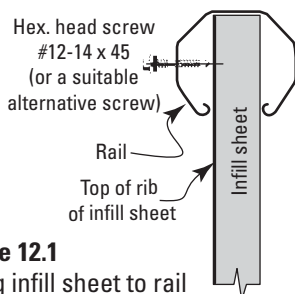


Figure 12.1
Fixing infill sheet to rail on Type 3 fence

Fixing infill sheets to rails for Type 3 fences

From one side, fasten infill sheets to both top and bottom rails with screws—for the NEETASCREEN range at every rib; for the SMARTASCREEN range at every second rib; for MINISCREEN use 6 screws for each infill sheet (Figure 12.1). CUSTOMSCREEN is not recommended for a Type 3 fence.

13. Installing 'Plus' option

Inserting the lattice or slats

Engage a top rail onto the top of a lattice or slats (Figure 13.2 for correct orientation).

Lower the rail and lattice or slats onto the top of a fence panel, engaging the ends of the rail with the posts (Figure 13.1).

Fix with three screws (#10–16 x 16) along the bottom flange of the lattice or slats (Figure 13.2). Protect the paintwork with a piece of cardboard between the drill and the lattice.

Fix the top rail to the lattice or slats with three screws (Figure 13.2).

Fasten the top rail to the posts with one hex. head screw (#10–16 x 16) on both sides of each post.

A component (Edge cover strips used for gates) is available to cover edges of the lattice or slats if it is trimmed in length or use flashing/trim as described in gates.

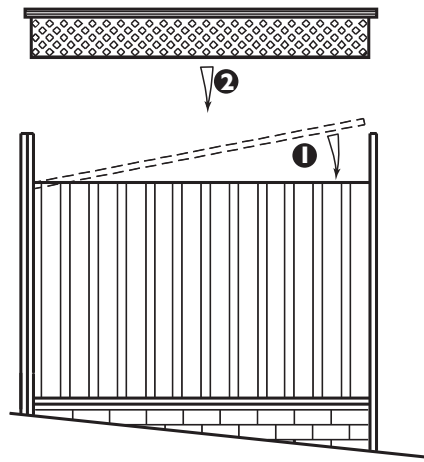


Figure 13.1
1 Rail installation at top of infill panel
2 Installation of lattice

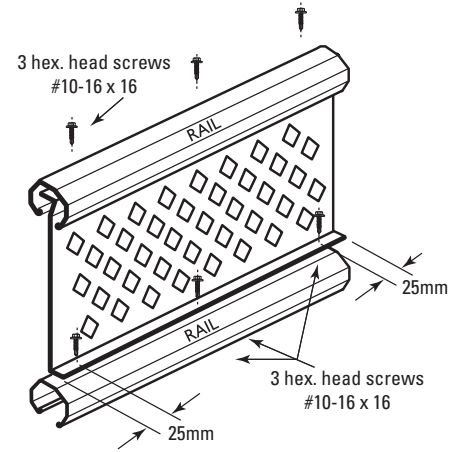


Figure 13.2
Fastening of lattice
(NEETASCREEN rails shown)

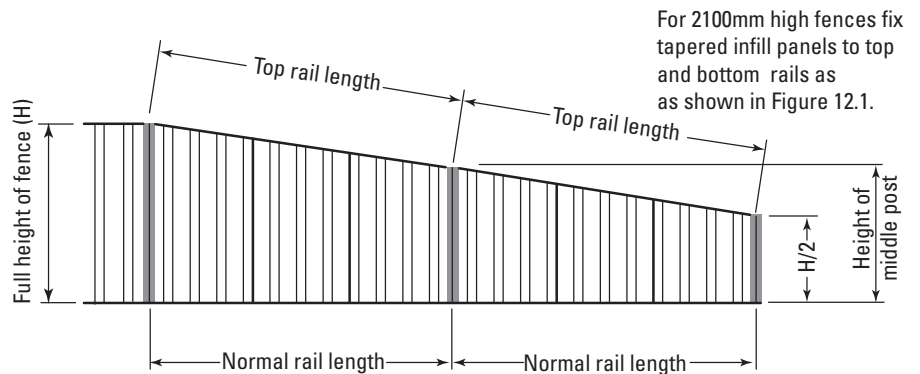
14. Tapering ends of fences

At the end of a fence run, where the fence doesn't form a corner (sometimes called a free end), the panels experience increased wind loadings—particularly where your fence extends beyond the alignment of your house.

Tapering of 1500mm high fences is not mandatory in terrain Category 3 of wind region B and all of wind region A. In all other cases your fence must be tapered in height over the last two panels (Figure 14.1).

Cut the top of the infill sheets in a manner similar to that shown for a raked fence (Figure 14.1).

A rail of 3100mm (and a lattice of 3122mm) are available for this purpose.



For 2100mm high fences fix tapered infill panels to top and bottom rails as shown in Figure 12.1.

Fence height (H)	Half fence height (H/2)	Height of middle post	Normal rail length	Top rail length
Fence types 1 & 2*				
1500	750	1125	2350	2380
1800	900	1350	2350	2393
2100	1050	1575	2350	2408
Fence type 3				
1500	750	1125	1582	1626
1800	900	1350	1582	1645
2100	1050	1575	1582	1667

* 2370 mm normal rail length for CUSTOMSCREEN
Add 20mm to top rail length shown for CUSTOMSCREEN

Figure 14.1
Tapering ends of fences over two panels

15. Installing infill strips & post caps

Post infill strips

Infill strips are used to complete the open side of two standard LYSAGHT posts screwed back-to-back (Figure 15.1).

Cut the strips to an appropriate length and slide in place. Some posts require a strip for the full length of the post. Short pieces are needed on stepped fences (Figure 15.1).

Post caps

All post caps must be positively secured to your fence with either neutral cure silicone sealant or hex. head screws (Figure 15.1).

For a single standard post, it is easy to cut a cap in half with a sharp knife in the groove moulded into the underside — trim the edges straight.

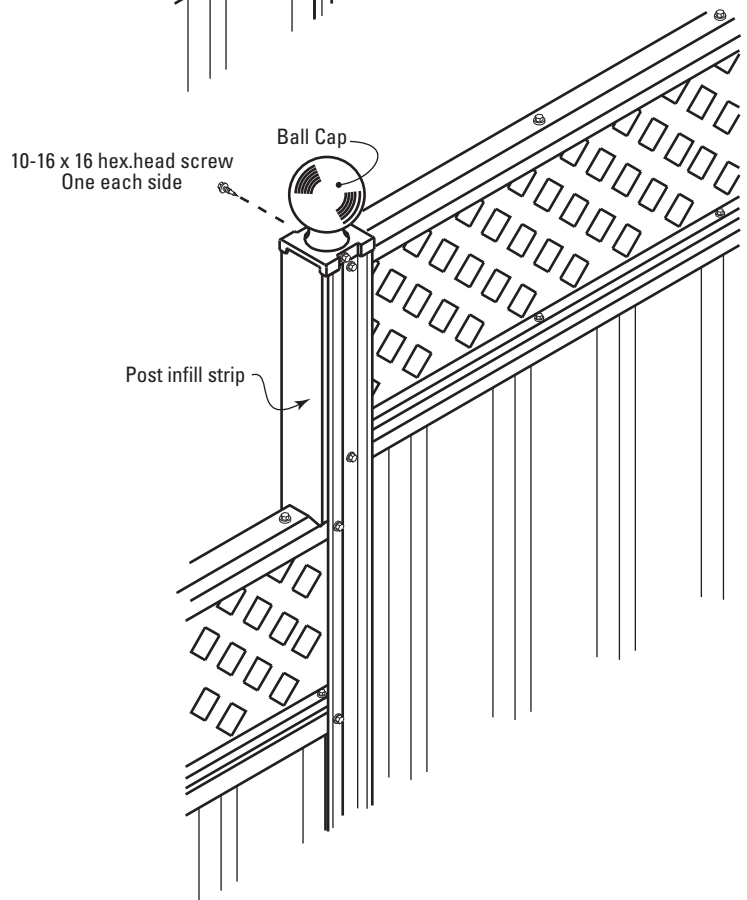
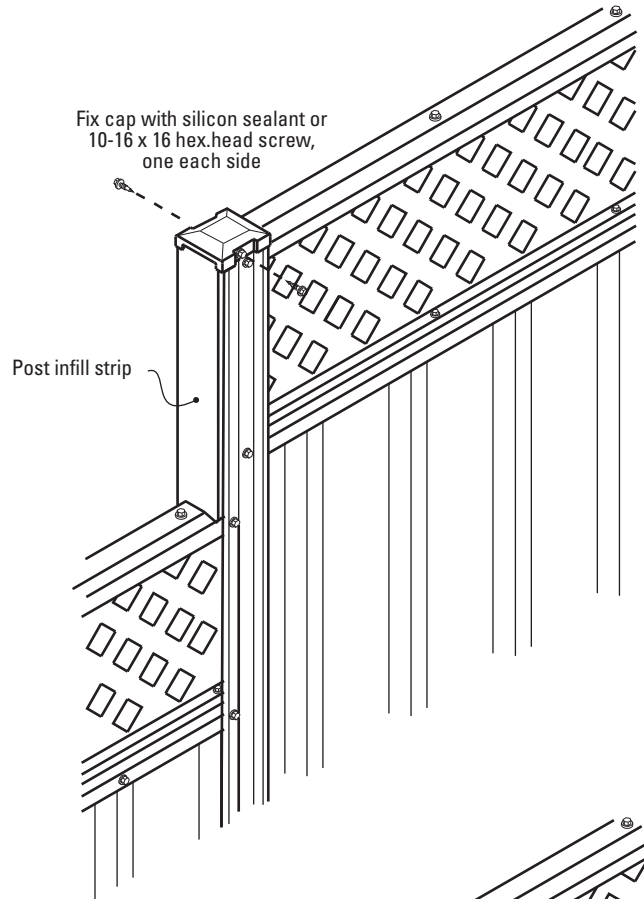


Figure 15.1
Installation of Ball Caps and post infill strips



16. Gate sizes, gate combinations and gate kits

There are a large range of gate sizes, gate combinations and gate accessories available. To simplify the selection of the components to make up the gate system, there are a range of kits available.

Our gate systems are designed to perfectly complement our fence styles. Detailed instructions for the assembly of the gate system with line drawings are given, together with a set of pictorial instructions. Please refer to both to help you visualise the process.

Because MINISCREEN gates are assembled slightly differently, they are dealt with in a separate section to the NEETASCREEN, SMARTASCREEN and CUSTOMSCREEN gates. All gates are all fast and easy to install.

Tools required

Refer to Section 3 for the range of tools required for the fence assembly and installation. With particular application to the gate assembly and installation the tools required are; screw gun, tin snips, safety gloves and glasses, marker and tape measure, fine toothed metal file and square.

Gate widths, gate post spacing and footings

For gate widths and post clearances see Table 16.2 below. For single gates, posts clearance must be the width of the gate, plus 20mm (i.e. 10mm post/gate clearance on either side). For double gates, posts clearance must be the width of the double gates plus 30mm (i.e. 10mm post/gate clearance on either side and 10mm gate/gate clearance).

Gate kits

Gate kits are available for a single gate of Standard Width Gates and Extra Wide Gates. These kits are available for the full range of LYSAGHT fences systems (NEETASCREEN, SMARTASCREEN, CUSTOMSCREEN, MINISCREEN); both standard and PLUS versions). Combinations of these gates can then be made to make up various combinations of double gate systems. The contents of all gate kits generally consist of the following (Table 16.1):

Gate accessory kits

Gate accessory kits are available that include hinges, latch/lock set, handle, drop bolt, stile caps and appropriate fasteners. The kits are for standard gate and extra wide gate combinations.

Gate accessories kits are available in an economy, standard and premium packages.

Contact your BlueScope Lysaght office for details.

Table 16.1








Contents of a Gate Kit	Quantity
Stiles	2
Bottom Rail *	1
Top Rail *	1
Lower Top Rail * #	1
Lower Top Rail Clip (Lattice Gate Clip) #	2
Lattice #	1
Centre Rail ^	1
Centre Rail Clip ^	2

Notes * rails are identical # PLUS version only ^ MINISCREEN only Fasteners (#10-16x16 Ripple type) included in kit.

Components that must be ordered separately include: Infill sheets, gate posts, gate accessories, all other fasteners, edge cover strips for infills (if required), trims for lattice (if required).

Table 16.2

Gate configuration options

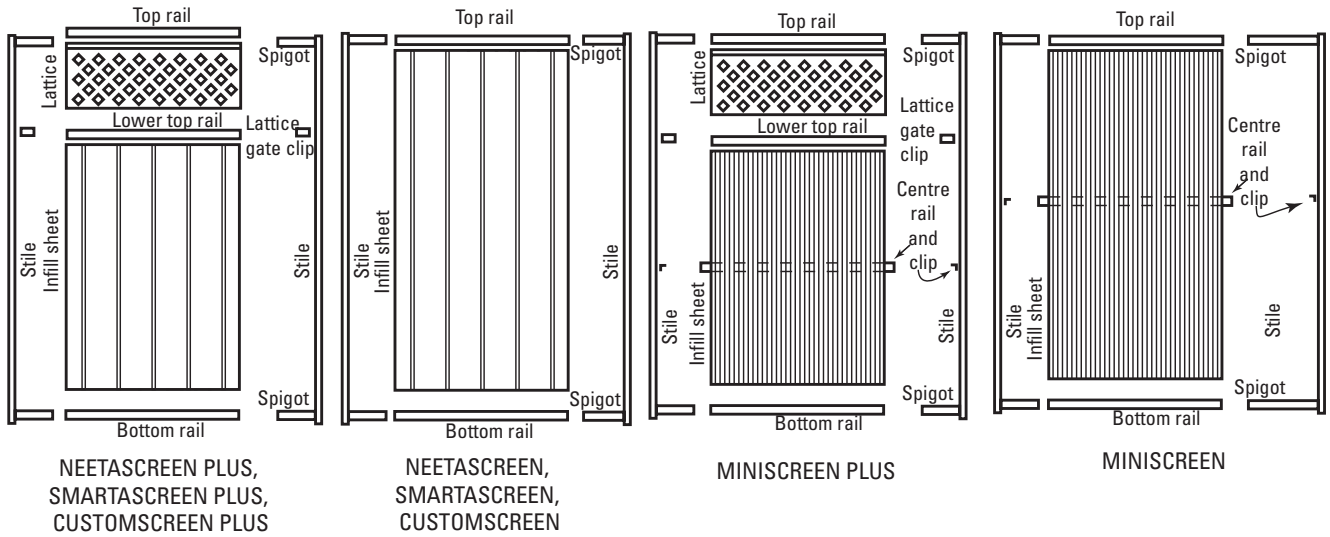
		Fence System				
		NEETASCREEN	SMARTASCREEN	MINISCREEN	CUSTOMSCREEN	
Gate Dimensions (mm)						
Standard Width Gate (Note 2)		Gate width (Note 3)	885	885	910	910
		Lattice length	815	815	815	815
		Rail length	815	815	840	840
Extra Wide Gate (Note 2)		Gate width (Note 3)	1645	1645	1655	1675
		Lattice length	1575	1575	1575	1575
		Rail length	1575	1575	1585	1605
			Note 6	Note 5	Note 5	
Distance between Posts (mm) (Note 4)						
Single Gate:						
Standard Width Gate		905	905	930	930	
Extra Wide Gate		1665	1665	1675	1695	
Double Gate combinations:						
2xStandard Width Gate		1800	1800	1850	1850	
2xExtra Wide Gate		3320	3320	3340	3380	
1xStandard Width Gate 1xExtra Wide Gate		2560	2560	2595	2615	

Notes: 1) The above dimensions are for the standard fence system and the PLUS fence system
2) Standard Width gate = 1 infill sheet; Extra Wide Gate = 2 infill sheets
3) Overall width of gate

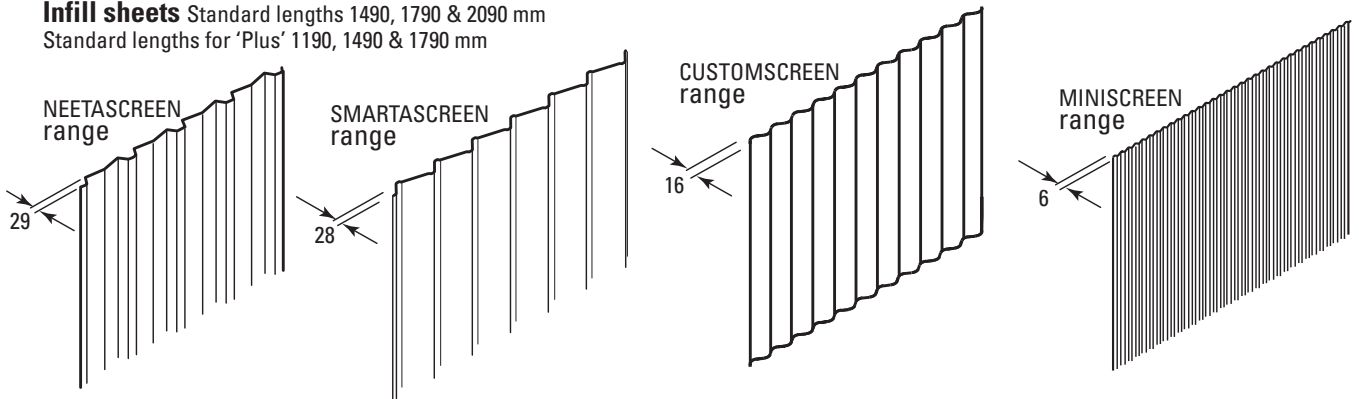
4) Face-to-face dimension between posts
5) Lattice may require a trim
6) Edge Cover Strip for infill may be required

17. Components for gate assembly and installation

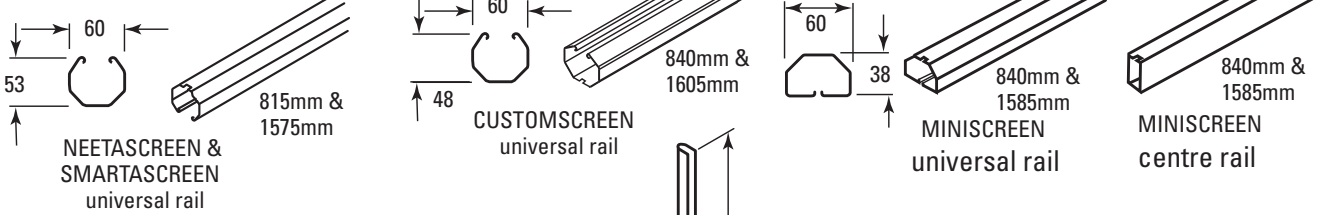
Detailed below is the componentry required for assembly and installation of your new fence gate. Ensure you determine the best option and required components from the following pages prior to placing your order. NOTE: *CUSTOMSCREEN® components are available in SA and Qld only. Please check with your nearest sales centre for availability in your area.*



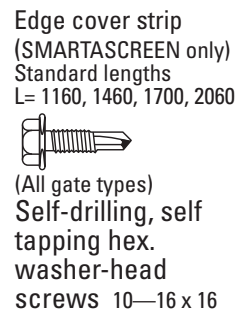
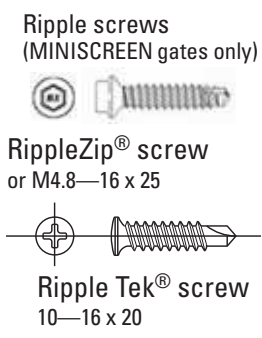
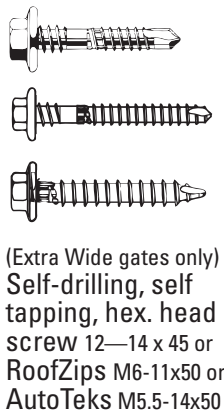
Infill sheets Standard lengths 1490, 1790 & 2090 mm
Standard lengths for 'Plus' 1190, 1490 & 1790 mm



Rails



Fasteners



'Plus' Options

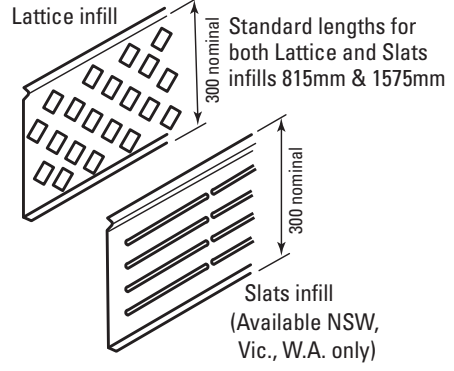


Figure 17.1 Gate components

18. Installation of gate posts and gate

For gate assembly, see following Sections 19-22

1) Select post size - 60x60mm for Standard Width Gate, 65x65mm for Extra Width Gate. Footings for gate posts must be prepared and constructed in accordance with the fence installation guidelines (page 9).



2) Measure the gap where you are going to position the gate to know where to set the posts. Measurements should allow room for the gate to swing, and for space between stiles & posts. (Recommended allowances are given on p17 of this brochure.)



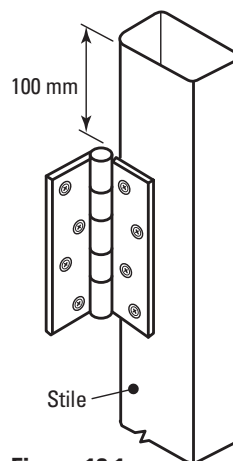
3) Set the level at the height required to swing clear of the ground. Use a measuring tape or the level to show where gate aligns with the post and mark this position (using a compatible marker or texter, not a lead pencil.)



4) Set the second post so the post tops align and check it is plumb. Measure the position of gate height and mark on post.



5) Use the level to double check plumb and gate positioning. Remember that a level gate swings free and easy.



6) Fit the hinges to the selected stile of the gate, using 4 screws per hinge.

Install the hinges on the wide face of the stile (not on the narrow face) (Figure 18.1).

To avoid rust stains, it is important to brush and shake out drill swarf from the gate and rails.

Figure 18.1
Fixing of hinges



7) Hang the gate. Attach the latch, handle and drop bolt as required.

8) Clean off any marks, hose down the completed gate, and fit the post caps to the stiles.

19. Gate assembly - preparation steps (NEETASCREEN, SMARTASCREEN & CUSTOMSCREEN gates)

Infill sheet

- 1) Lay sheet(s) on a horizontal surface. Use some soft material to protect the COLORBOND® steel finish.
- 2) For extra-wide gates: overlap sheets to the desired width (Figure 19.1). Join the two sheets with hex. head screws (#10-16 x 16), through the overlaps, at both top and bottom edges (Figure 19.2).
- 3) Using tin snips, notch the four corners. The top and bottom notches are different. (Figure 19.3).
- 4) If required, fit edge cover strip to one side of the infill sheet for SMARTASCREEN gate only. (Figure 19.4)

Gate Lattice or Slats

- 5) If required, trim the lattice to fit the width of your gate. Equally trim both ends to retain a balanced effect. (Figure 19.6)
- 6) Notch the top leg of the lattice/slats on both ends. (Figure 19.5)

General

- 7) Carefully file all cut edges to remove burrs.

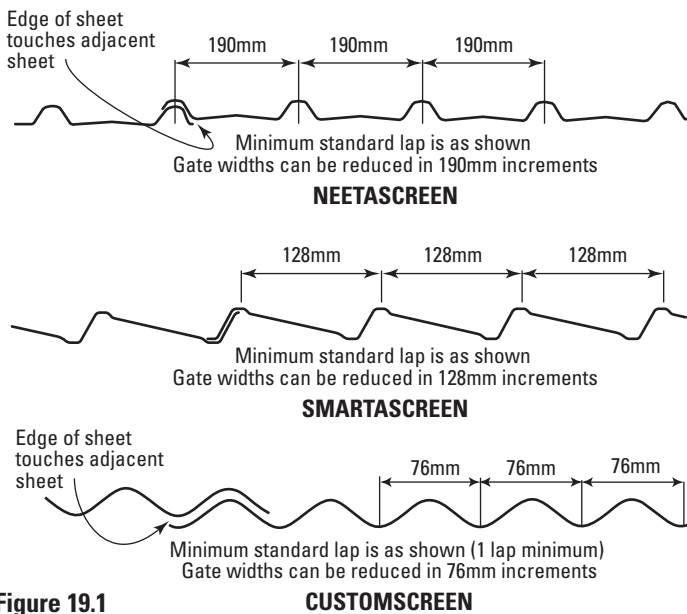


Figure 19.1
Sheet overlaps for extra wide gates

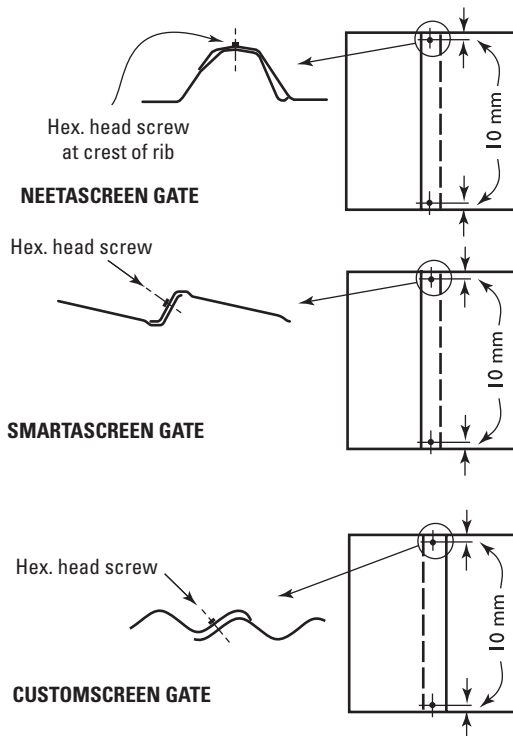


Figure 19.2
Joining of sheets for extra wide gates

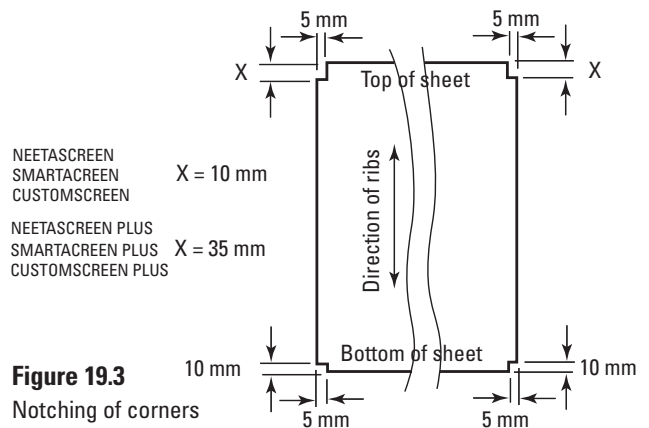


Figure 19.3
Notching of corners

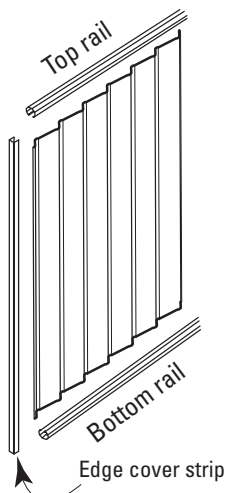


Figure 19.4
Fit Edge Cover Strip (SMARTASCREEN only)

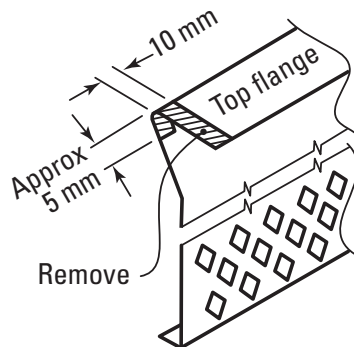


Figure 19.5
Notch at top of lattice

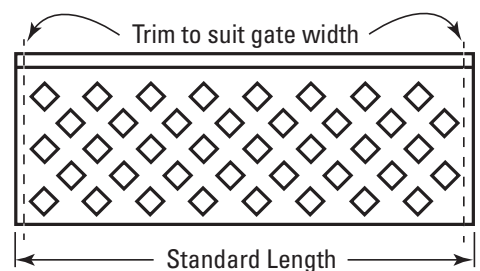


Figure 19.6
Length of lattice

20. Gate assembly

(NEETASCREEN, SMARTASCREEN & CUSTOMSCREEN gates)

1. Complete the preparation steps if they are not already done.
2. Lay out all the components (Figure 20.1) on some soft material to protect the COLORBOND® steel finish.
3. For gates with no lattice, go to step 5.
4. For 'PLUS OPTION' (with lattice/slats) gate:

Mark the position of the two lattice gate clips. Fasten the clips to the stiles using two hex. head screws (#10-16 x 16) for each (Figure 20.2).

5. Lay the infill sheet(s) on a horizontal surface. Slide the top rail (lower top rail if lattice is used) onto the top of a sheet(s). A rubber mallet or piece of timber can help.
6. Fit the bottom rail similarly.
7. Insert the spigots of the stiles into the top and bottom rails.

If a lattice is used, ensure that the lower top rail fits neatly onto the lattice gate clips. (Figure 20.3)

Even up the sheets by bumping the ribs with the palm of your hand.

8. Hold both stiles firmly in place and drive one hex. head screw (#10-16x16) in each of the four corners, 20mm from the inside edge of the stile (Figure 20.3).

9. Check squareness by measuring the gate's diagonals. Drive a second hex. head screw (see below) in each of the four corners, at first inner rib (non side-lap rib) of infill sheet from the stile for NEETASCREEN and SMARTASCREEN and second inner rib for CUSTOMSCREEN (Figure 20.3).

- For standard width gate (with or without 'Plus' option) use #10-16x16 screws.
- For extra wide gate (without 'Plus' option) use #12-14x45* screws.
- For extra wide gate (with 'Plus' option) at top rail use #10-16x16 screws and at bottom rail use #12-14x45* screws.

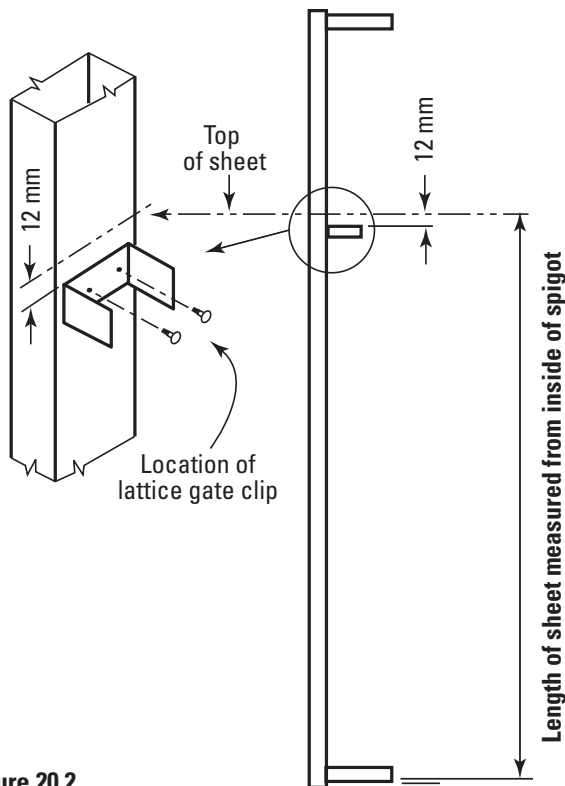


Figure 20.2
Positioning of lattice clips for gates with lattice or slats.

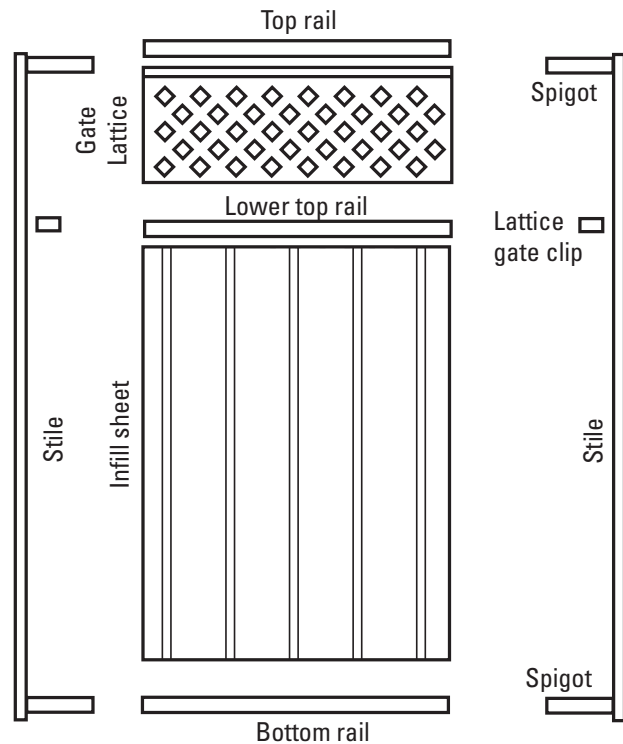


Figure 20.1
Initial layout of parts

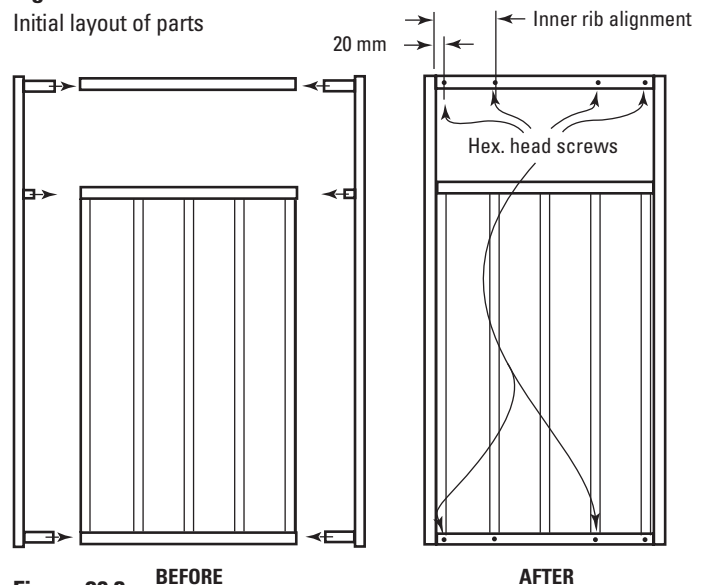


Figure 20.3
Assembly of stiles (NEETASCREEN PLUS shown)



10. For extra wide gate with 'Plus' option additional screws are required (Figure 20.4):

- Lower top rail at corners passing through the lattice clip at Position A #10-16x16.
- Lower top rail at corners passing through the inner rib alignment at Position C #12-14x45*.
- Lower top rail & bottom rail passing through the lapped rib at Position B #12-14x45*. Take care to miss the screw earlier positioned to stitch the in-fill sheets together.

11. Turn the gate over and drive two #10-16x16 hex. head screws in each corner, placed in alignment to those in steps 8 and 9.

For gate (standard width and extra wide) with 'Plus' option, drive an additional #10-16x16 screw into the two corners of the lower top rail passing through the lattice or slats clip in alignment with Position A (Figure 20.4).

12. If your gate includes a 'Plus' option (lattice or slats), insert it into the top rail. Swing the bottom of the lattice/slats in and secure it to the lower top rail using 3 hex. head screws #10-16x16 for standard width gates, or 3 for extra wide gates. Secure it also to the top rail: 2 screws for standard width gates, and 3 screws for extra wide gates. (Figure 20.5)

13. For CUSTOMSCREEN, ensure the lattice is centred. If desirable, the gaps on either side of the 'Plus' option can be filled with a suitably sized flashing/trim and fix with rivets top and bottom to lattice/slats and stile (Figure 20.6)

If the lattice/slats has been trimmed to suit the width of the gate, then a similar flashing/trim may be appropriate.

* Or a suitable alternative.

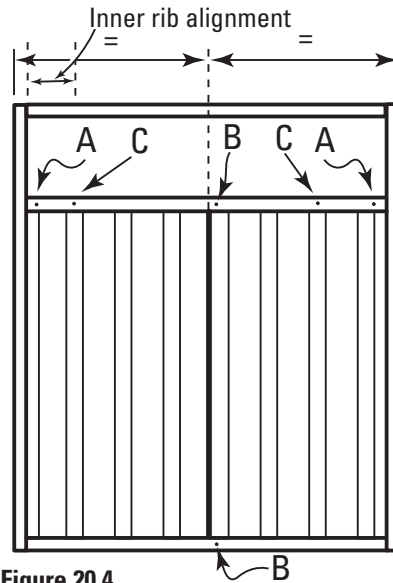


Figure 20.4
Location of added fasteners for extra wide 'Plus' gates

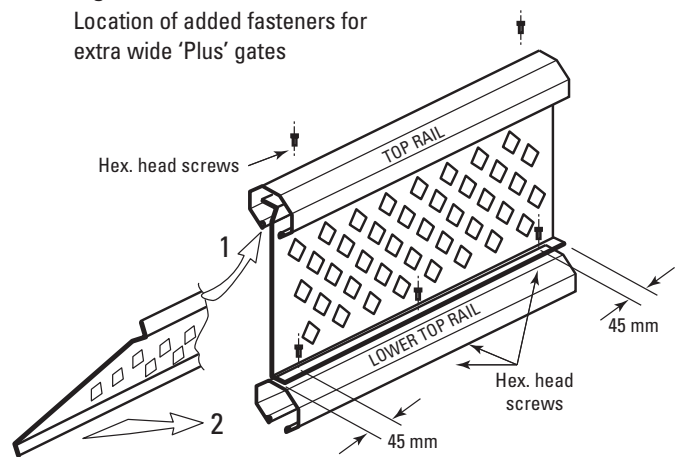
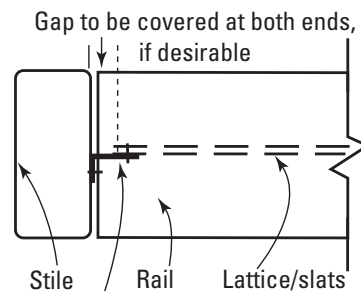


Figure 20.5
Fixing of 'Plus' option (standard width gate, lattice shown)



Trim/flashing to match the colour of the lattice/slats. Fix with rivets top and bottom to lattice/slats and stile.

Figure 20.6
Plan detail - Stile to lattice trim

21. Gate assembly - preparation steps

(MINISCREEN gates)

Infill sheet

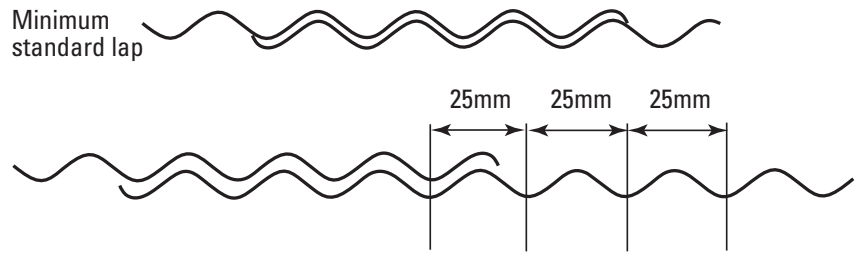
- 1) Lay sheet(s) on a horizontal surface.
Use some soft material to protect the COLORBOND® steel painted finish.
- 2) For extra-wide gates: overlap sheets to the desired width (Figure 21.1). Join the two sheets with hex. head screws #10–16x16 through the overlaps, at both top and bottom edges (Figure 21.2).
- 3) Using tin snips, notch the four corners. The top and bottom notches are different. (Figure 21.3).

Lower top rail and gate lattice

- 4) If required, trim the lattice to fit the width of your gate. Equally trim both ends to retain a balanced effect. (Figure 21.5)
- 5) Notch the top leg of the lattice on both ends. (Figure 21.4)
- 6) Remove the internal lips of the lower top rail for 5 mm at both ends. (Fig. 21.6)

General

- 7) File all cut edges to remove burrs.



Gate widths can be reduced in 25mm increments

Figure 21.1: Sheet overlaps for extra wide gates

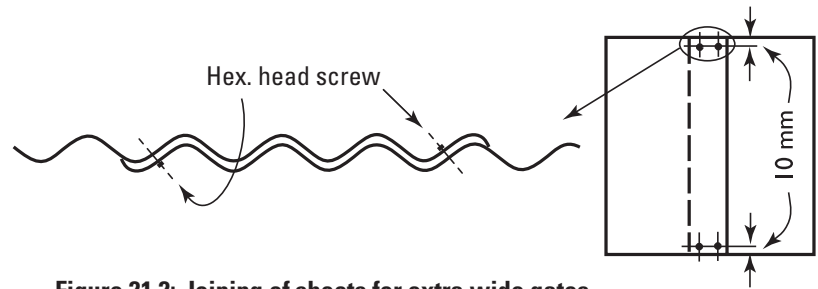
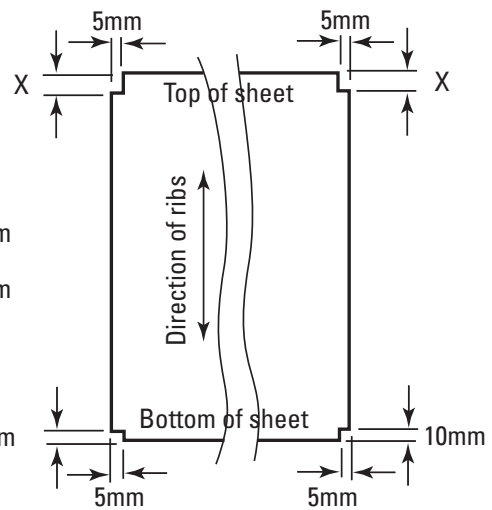


Figure 21.2: Joining of sheets for extra wide gates



MINISCREEN: X = 10mm
MINISCREEN PLUS: X = 35mm

Figure 21.3: Notching of corners

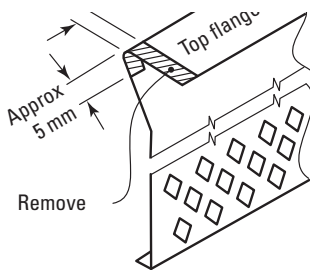


Figure 21.4
Notch at top of lattice

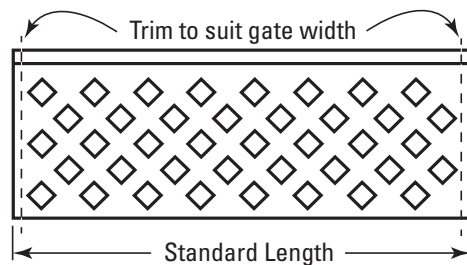


Figure 21.5:
Length of lattice

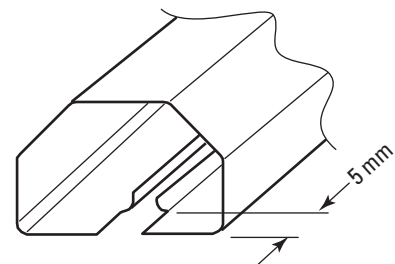


Figure 21.6:
Notching of lower top rail

22. Gate Assembly (MINISCREEN gates)

1. Complete the preparation steps if they are not already done.
2. Lay out all the components (Figure 22.1) on some soft material to protect the COLORBOND® steel finish.
3. If your gate includes a 'Plus Option' (lattice or slats), mark the position of the two lattice gate clips. Fasten the clips to the stiles using two hex. head screws #10–16x16 for each (Figure 22.3).
4. Mark the position of the two centre rail clips, with the inner edge of the clip 2mm from the centreline of the stile, and fasten them to the stiles using a hex. head screw #10–16 x 16 for each (Figure 22.3).
5. Lay the infill sheet(s) on a horizontal surface. Slide the top rail (lower top rail if 'Plus' option is used) onto the top of a sheet(s). A rubber mallet or piece of timber can help.
6. Fit the bottom rail similarly.
7. Insert the spigots of both stiles into the top and bottom rails and locate the centre rail on its clips. If a lattice is used, ensure that the lower top rail fits neatly onto the lattice gate clips (Figure 22.2). Even up the sheets by bumping the ribs with the palm of your hand.
8. Hold both stiles firmly in place and drive one hex. head screw #10–16 x 16 in each of the four corners, 20mm from the inside edge of the stile (Figure 22.2).
9. Check squareness by measuring the gate's diagonals. Drive a second hex. head screw (#10–16x16) in each of the four corners, 170mm from the stile (Figure 22.2).

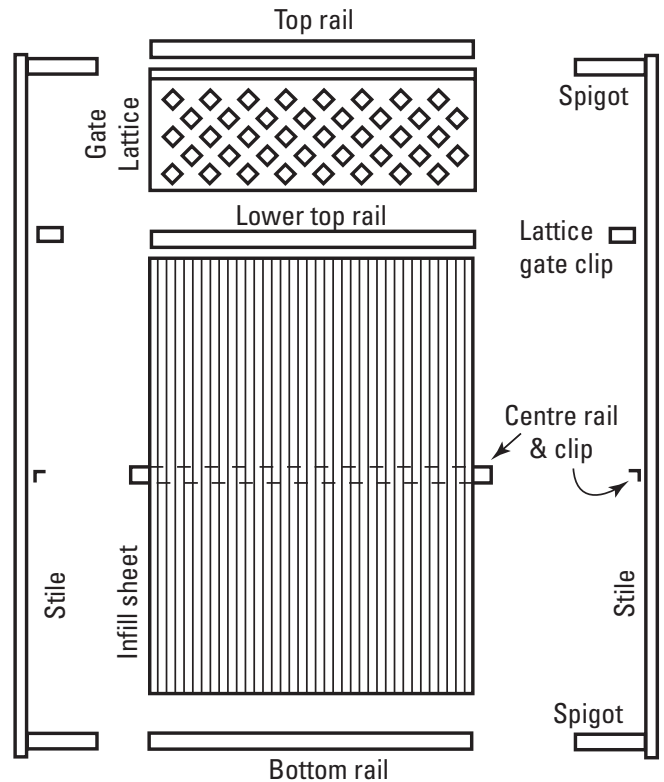


Figure 22.1
Initial layout of parts (showing 'Plus' option)

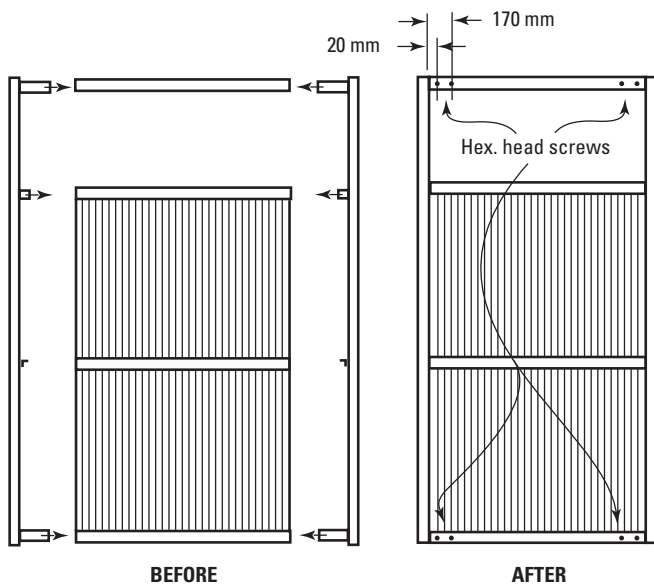


Figure 22.2
Assembly of stiles (MINISCREEN PLUS shown)

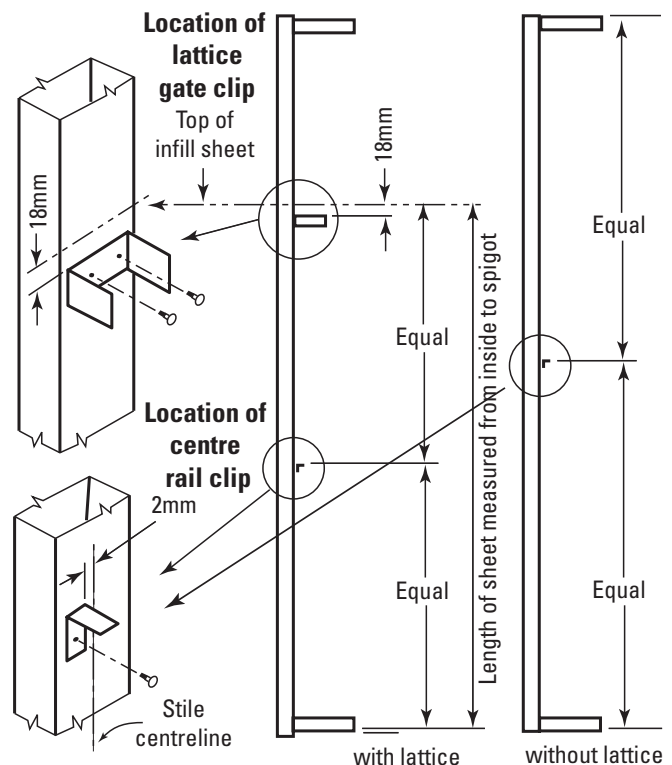


Figure 22.3
Positioning of clips for gates

10. For gate with 'Plus' option, drive an additional #10-16x16 screw into the two corners of the lower top rail passing through the lattice clip in alignment with Position A (Figure 22.4)

11. Turn the gate over and drive a hex. head screw in each corner, placed similarly to those in Step 8.

12. Drive a second hex. head screw (see below) in each corner, placed similarly to those in Step 9.

- For standard width gate (with or without lattice) use #10-16x16 screws.

- For extra wide gate (without lattice) use #12-14x45* screws.

- For extra wide gate (with lattice) at top rail use #10-16x16 screws and at bottom rail use #12-14x45* screws.

13. For extra wide gate with lattice additional screws are required (Figure 22.4)

- Lower top rail at corners passing through the lattice clip at Position A - #10-16x16

- Lower top rail at corners passing through the inner rib alignment at Position C - #12-14x45*

- Lower top rail & bottom rail passing through the lapped in-fill sheets at Position B - #12-14x45*.

14. Fix the in-fill sheet(s) to the central rail with a minimum of 3 Ripple screws for standard width gate and 5 Ripple screws for extra wide gate. For the extra wide gate one screw must pass through the lap of the in-fill sheets.

15. If your gate includes a lattice, insert it into the top rail. Swing the bottom of the lattice in, and secure it to the lower top rail using 3 hex. head screws for standard width gates, or 3 for extra wide gates. Secure it also to the top rail: 2 screws for standard width gates, and 3 screws for extra width gates. (Figure 22.5)

16. Ensure the lattice is centred. If desirable, the gaps on either side of the 'Plus' option can be filled with a suitably sized flashing (trim and fix with rivets top and bottom to lattice/slats and stile - Figure 22.6)

If the lattice/slats has been trimmed to suit the width of the gate, then a similar flashing/trim may be appropriate.

* Or a suitable alternative.

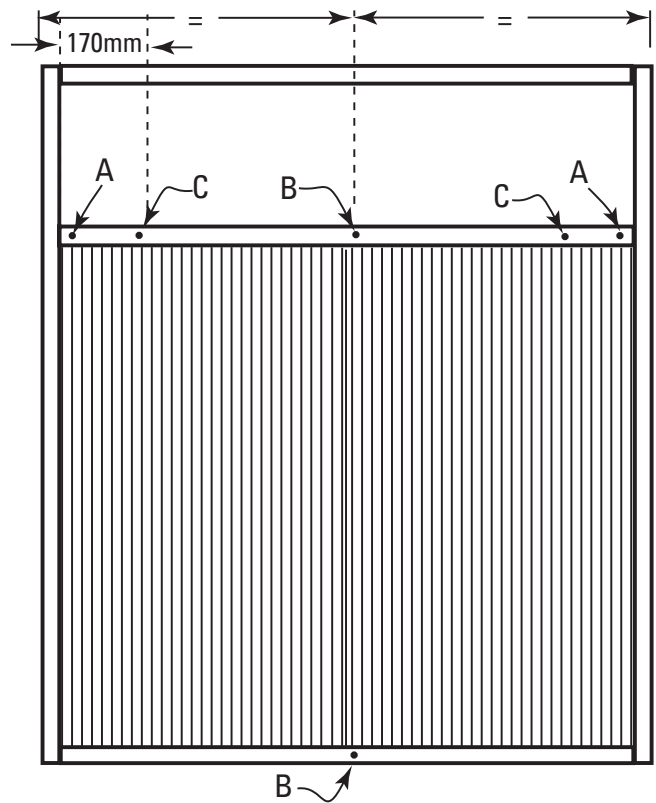


Figure 22.4

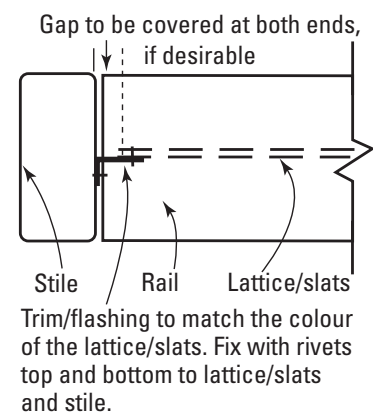


Figure 22.6

Plan detail - Stile to lattice angle trim

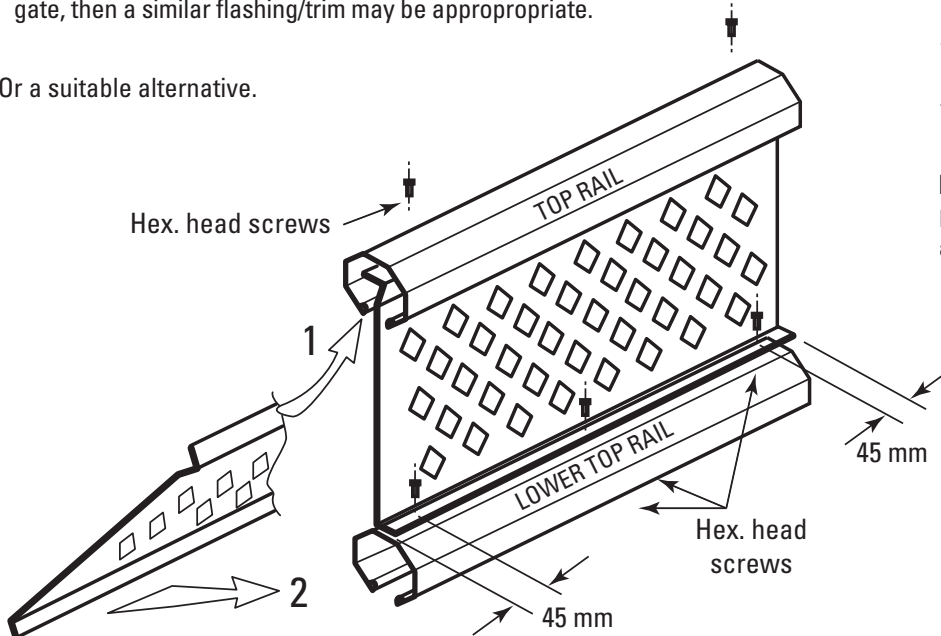


Figure 22.5
Fixing of lattice
(Standard width gate shown)

23. Adding a 'Plus Option' to an existing LYSAGHT fence

Conversion kit components*

Component	Quantity
Extension posts	2
Ball cap	1
Top rail	1
Lattice (or Slats)	1
Fasteners	16

* (per panel)

Step 1

Remove existing screws from post and top rail junction of existing fence, as shown in Figure 23.1.

Step 2

Slide post extension down over top of existing post till cut out meets existing top rail. Fasten with 2 screws, as shown in Figure 23.2.

Step 3

Engage a top rail onto the top of a lattice or slats (Figure 23.4 for correct orientation).

Lower the rail and lattice onto the top of a fence panel, engaging the ends of the rail with the posts (Figure 23.3).

Fix with three hex. head screws along the bottom flange of the lattice or slats (Fig. 23.4). Protect the paintwork with a piece of cardboard between the drill and the lattice.

Fix the top rail to the lattice or slats with three hex. head screws (Figure 23.4).

Fasten the top rail to the posts with one hex. head screw on both sides of each post.

Step 4

Place the ball cap over top of post extension and top rail.

They can be secured with one screw on either side of the post (Figure 23.5).

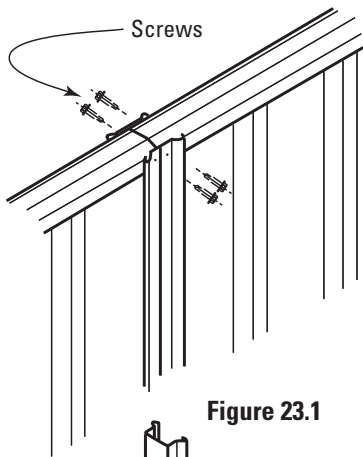


Figure 23.1

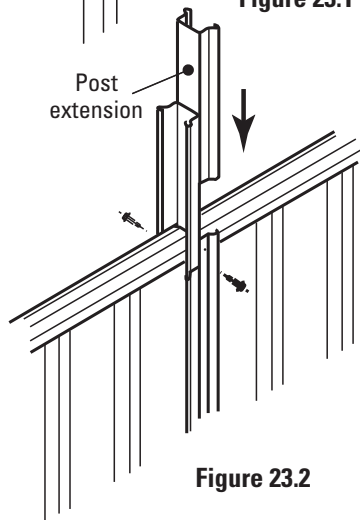


Figure 23.2

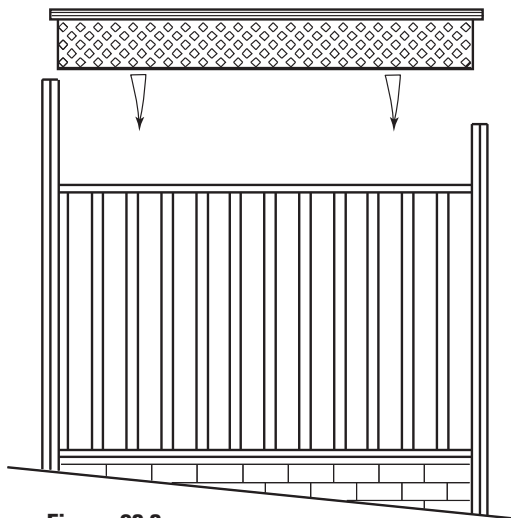


Figure 23.3

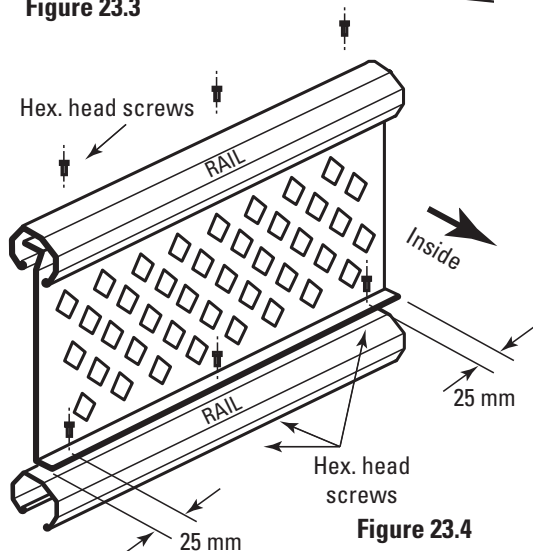


Figure 23.4

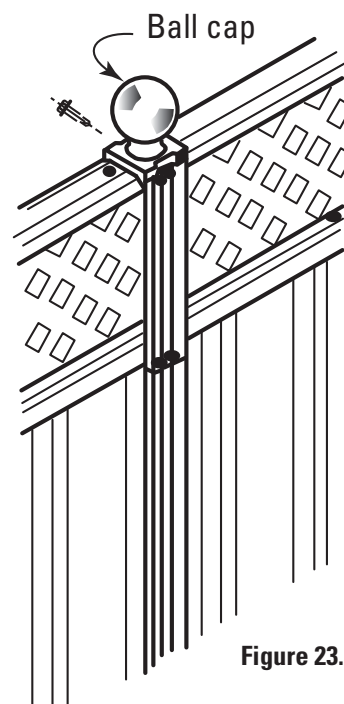


Figure 23.5

24. Post caps installation

The range of plastic post caps provides a safety barrier by covering sharp edges on posts of all heights. They improve the look of your fence and in turn add value to your home. They are very easy to use and install. They push on easily over the outside of the top of the post and may be fitted during or after construction. To prevent accidental or intentional removal we recommend that they be screwed into position.

The benefits of using the plastic Post Cap include:

- Provides safety from cut or exposed edges.
- Colour matched to the COLORBOND® steel fencing colours.
- Inexpensive when compared to metal powder-coated caps.
- While sturdy and strong and flexible allowing for an easy fit

There are 2 different types of post caps: the LYSAGHT Post Cap and the Ball Cap.

LYSAGHT Post Cap

The LYSAGHT Post Cap is suitable for the LYSAGHT posts (C-Post) when using universal rails for all LYSAGHT fences. It comes as a double cap suitable for back-to-back posts.

It has a cutting guide for easy on-site cutting for single post applications, such as a stepped fence or at the end of a run. Just nick either side of the post cap, bend back and slice along the fold. Place over the outside of the post for a firm and perfect fit.

These post caps can be screwed in on the side or through the top.

Ball Cap

This cap is used where a point of difference is desired and is particularly recommended for use in our "Plus Option" fence styles. The Ball Cap gives a sense of style to your fence, setting it apart from other fences by adding that special touch. This is a double cap so it only fits on back-to-back LYSAGHT posts. At the end of a run, another post plus an infill strip can be purchased to continue the look.

Other post caps

There are other plastic caps (black) in the LYSAGHT range:

- For the tubular square posts, 60 x 60 and 65 x 65 black plastic caps.
- The gate accessory kits also come with stile caps (plugs) in the size 57 x 35mm.

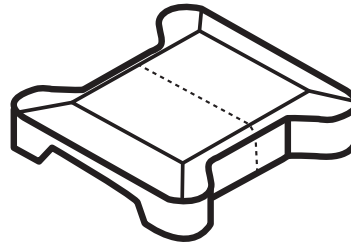


Figure 24.1
LYSAGHT Post Cap

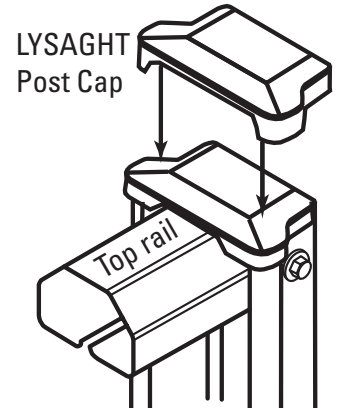


Figure 24.2
MINISCREEN
(and Plus Option)

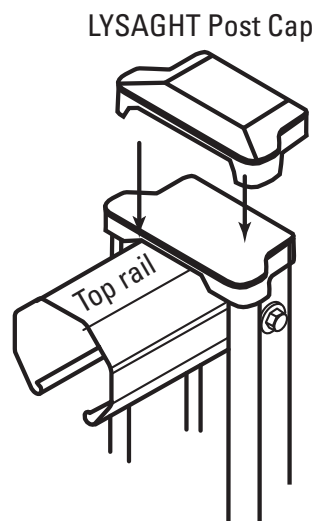


Figure 24.3
NEETASCREEN (& PLUS),
CUSTOMSCREEN (& PLUS)
SMARTASCREEN (& PLUS)
using universal rail

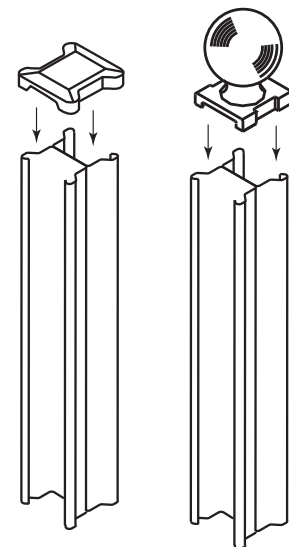
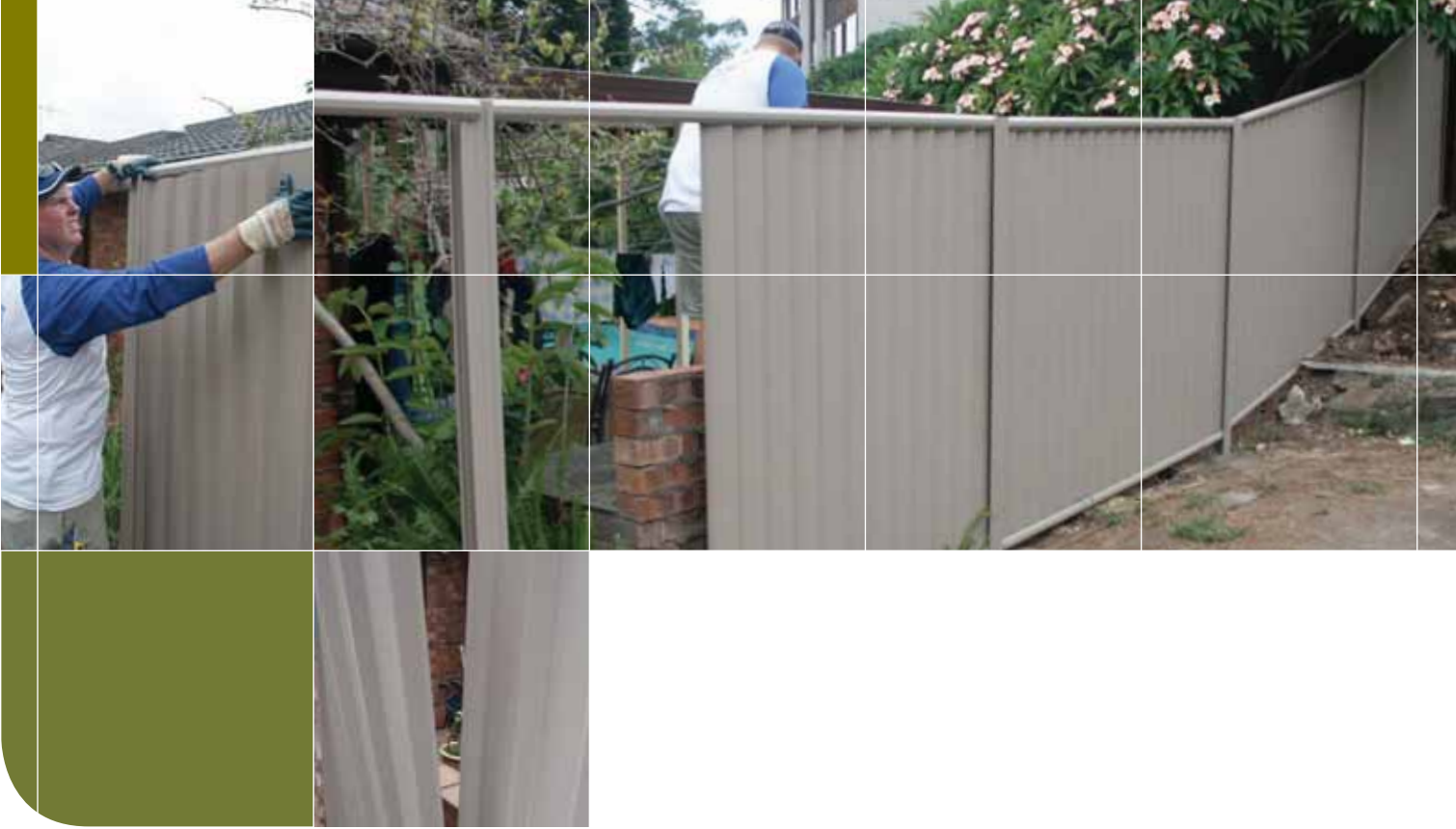


Figure 24.4
LYSAGHT Post Cap and Ball Cap



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