



LYSAGHT NEETALOK Fence installation for cyclonic regions

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

Designed to Australian wind loading standards, LYSAGHT NEETALOK® cyclonic fences are available in standard heights of 1500 and 1800 mm. They can be installed on flat and sloping grounds, and are complemented by accessories.

This is a step-by-step guide for the selection and installation for NEETALOK® cyclonic fences.

This publication covers LYSAGHT NEETALOK fences which are designed for installation in the tropical cyclone regions as defined in AS 1170.2—1989 SAA Loading Code, Part 2: Wind loads.

We have a similar publication for installation of non-cyclonic fences used in wind regions A and B (see map on Page 4).

NEETALOK fences are specifically designed not to fly apart during a cyclone. This means they are much safer than standard fences.

However cyclonic wind conditions can be so extreme that NEETALOK fences cannot be *guaranteed* to survive a cyclone.

Gates and their installation must be engineered for each individual application.

NEETALOK is the superior steel fence solution for cyclonic regions.



Fencing Solutions



Roofing & Walling Solutions



Rainwater Solutions



Home Improvements



Structural Solutions



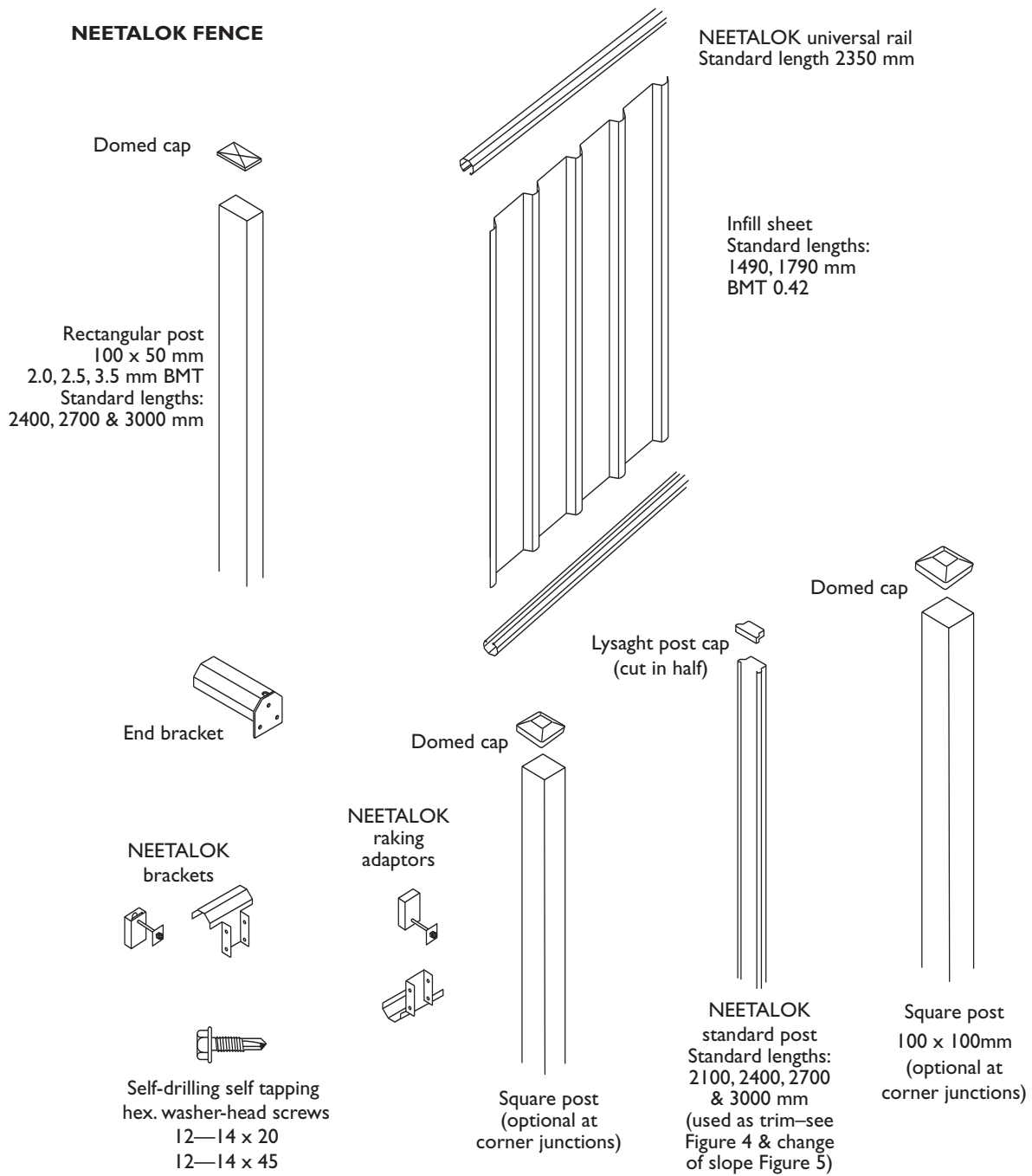
House Framing Solutions



Customer Support

Components

NEETALOK FENCE



At the start

Before you order

- Decide the height of your fence 1500 or 1800 mm high.
- Choose your components as listed in the order guides below.

NEETALOK order guide:

- Number of fence panels (Pages 4 & 5)
- Number and type of posts and their lengths (Pages 5, 6 & 11)
- Number of square posts and their lengths (Pages 5, 6 & 11)
- Number and type of post caps (Page 7)
- Number and lengths of cover strips (Page 10)

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 there are no underground electricity, telephone, gas or water mains.
- Check you have the tools you need.

Tools you need

- Screw gun (or power drill) with torque adjustment
- Marker (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

Posts and post caps

Depending on how you configure corners and ends of fence runs, you might need extra posts. (Figures 4 and 5).

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

Choosing your components

Pages 4 to 7 help you to select your fence type and components.

A standard fence panel consists of the following components.

NEETALOK components

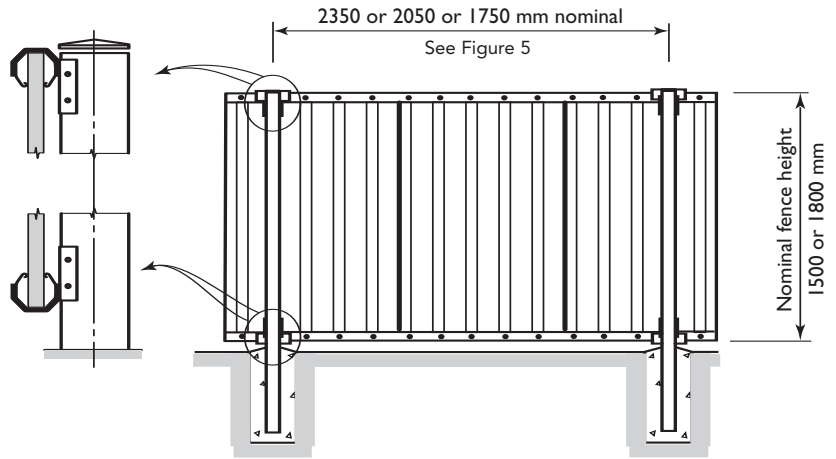
- 2 Rectangular hollow section posts
- 4 NEETALOK brackets
- 4 NEETALOK raking adaptors if fence is to be raked
- 2 NEETALOK universal rails
- 3 Infill sheets (TRIMDEK 0.42 mm BMT)
- 2 Domed caps for rectangular posts
- 16 self-drilling hex. head screws 12-14 x 20
- 24 self-drilling hex. head screws 12-14 x 45
- NEETALOK standard posts for trims (optional)
- LYSAGHT post caps for trims (optional)

Selection of fence type

NEETALOK fences may be used in any terrain category.

Find out your wind region

The fences covered by this guide are designed for use in region C and D of AS 1170.2—1989 SAA Loading Code, Part 2: Wind Loads (Figure 2). Non-cyclonic regions are covered in our non-cyclonic fence guide. If you have any doubt about the region your fence will be in, get advice from your local building consent authority.



NEETALOK fence
(3 infill sheets, rectangular hollow posts, NEETALOK rail support brackets)

Figure 3 Fence features

Fence types

	NEETALOK fence
Wind region	C or D
Principal posts	Rectangular hollow sections
Attachment of rails to post	NEETALOK brackets and, if fence is raked, NEETALOK raking adaptors
Infill sheets	3 sheets per panel of 0.42mm base metal thickness
Lattice	Not available
Installation	Level, stepped or raked
Caps	Domed caps for posts LYSAGHT post caps for trims

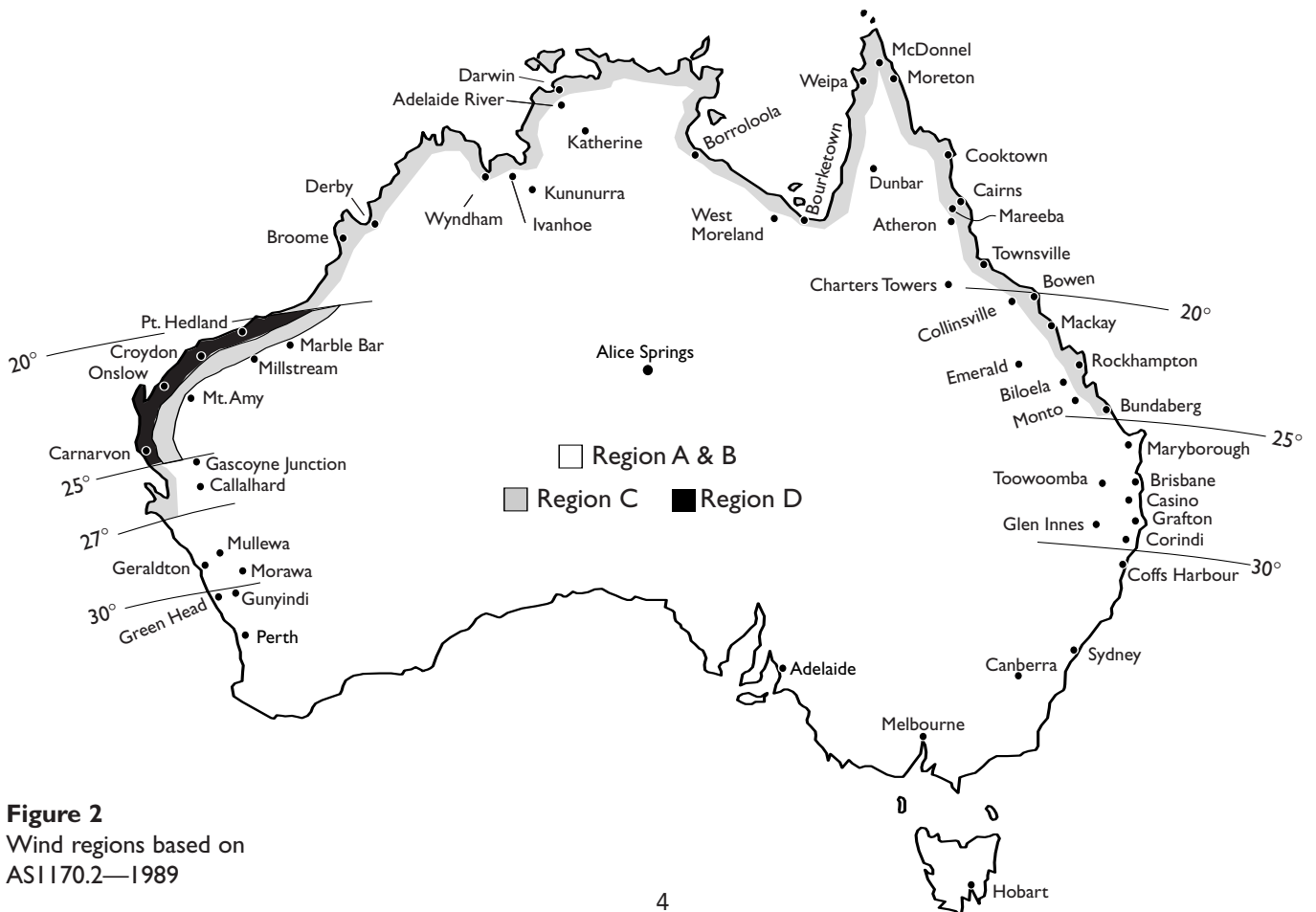


Figure 2
Wind regions based on
AS 1170.2—1989

NEETALOK fences - select posts

Selection of posts for NEETALOK fences

The panels of NEETALOK fences are supported by brackets attached to rectangular hollow section posts.

On sloping ground, NEETALOK fences can be stepped, or sloped parallel to the slope using NEETALOK raking adaptors.

On stepped installations each panel must have two posts. Adjacent panels on a level installation may share a common post (Figures 4 and 5).

At the ends of a fence run and at steps in height, the 'free' end of a panel is trimmed and stiffened by a NEETALOK standard fence post, fixed to the fence rails (Figure 4).

Check the number and type of posts you want. Mark them on a sketch of your fence site (Figure 4). You will need to consider:

- The first post, in a fence run, that doesn't form a corner;
- Intermediate posts;
- The configurations of posts at corners (Figure 4);
- If the fence is to be stepped or sloped;

NEETALOK fence post material sizes

NEETALOK posts are rectangular hollow steel sections.

Wind regions	Fence height (mm)	Post size (mm)
C	1500	100 x 50 x 2.0
	1800	100 x 50 x 2.5
D	1500	100 x 50 x 2.5
	1800	100 x 50 x 3.5

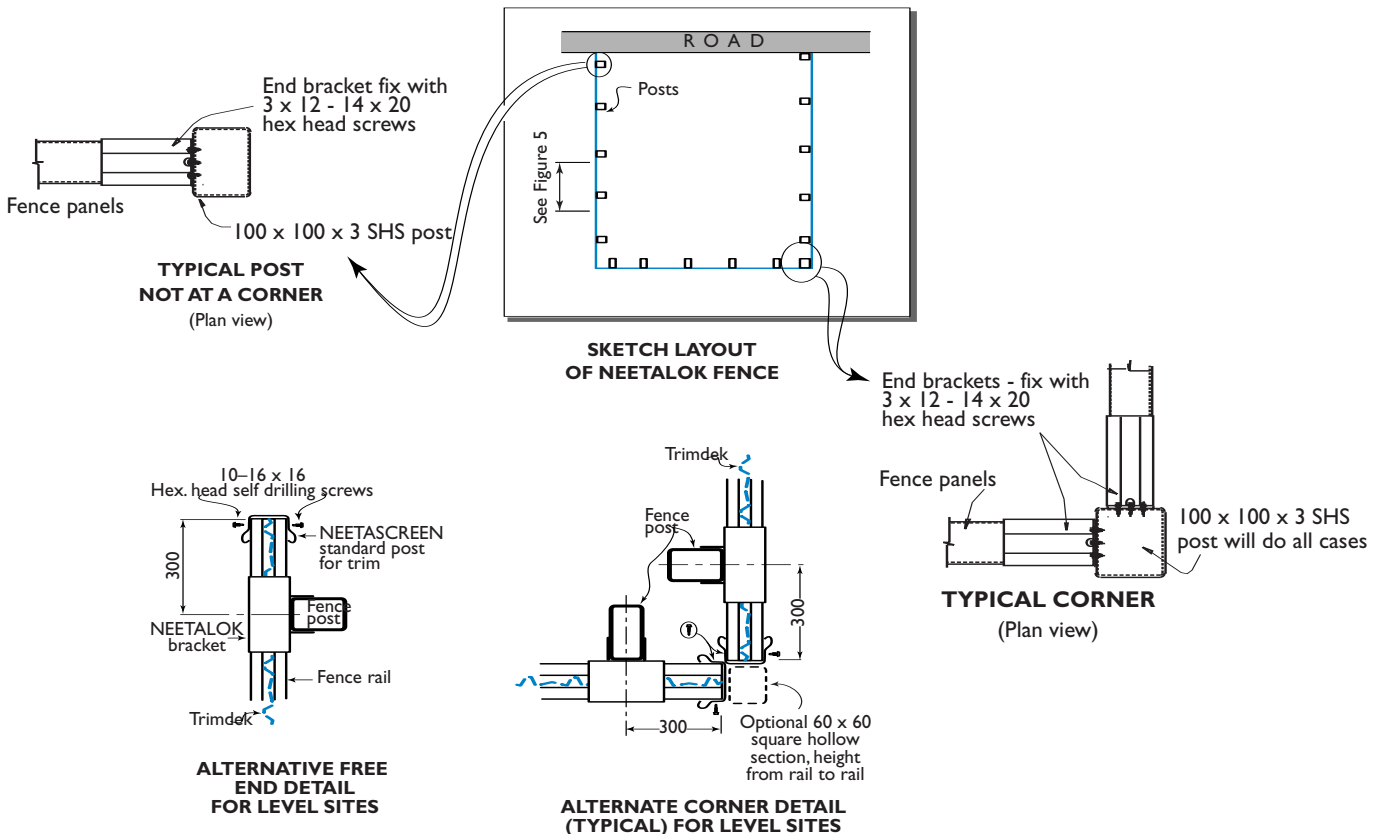


Figure 4
Preliminary selection of posts for NEETALOK fences

NEETALOK fences: determine post lengths

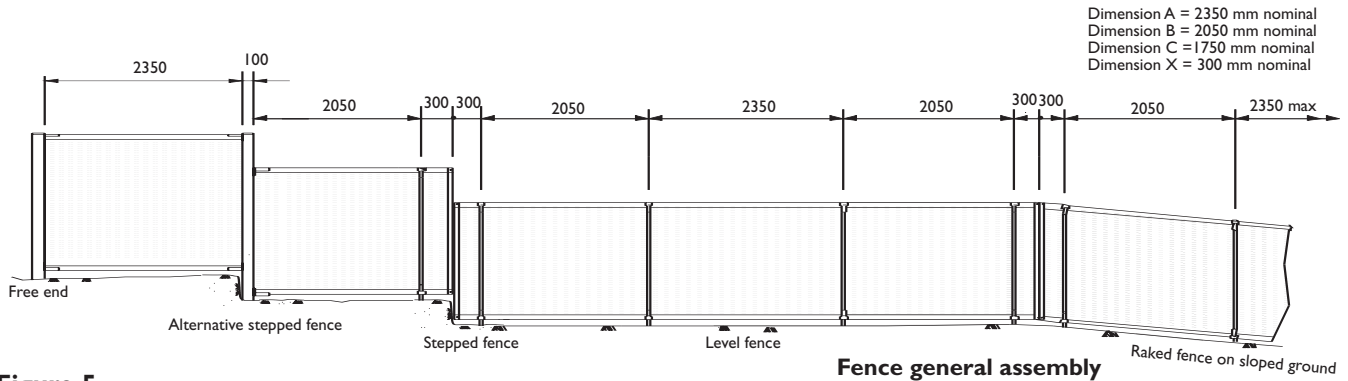


Figure 5
NEETALOK installations

If the ground is not all level, consider where the fence will be stepped or raked (Figure 5).

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

Standard post lengths are 2400, 2700 and 3000 mm.

U Determine basic post lengths

(Refer to Figure 6).

$$\text{Basic post length} = (\text{Footing depth} - 40) + (\text{Height above ground})$$

Get the footing depth from Page 10, and height above ground from:

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

Where:

A = Height of infill sheet (Figure 6)

B = 50 mm ground clearance (Figure 6)

D = If a stepped installation: height of the step (Figure 5)

V Select standard lengths

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

Post lengths

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

* Cut so that dimension E in Figure 6 is between 40 and 150 mm.

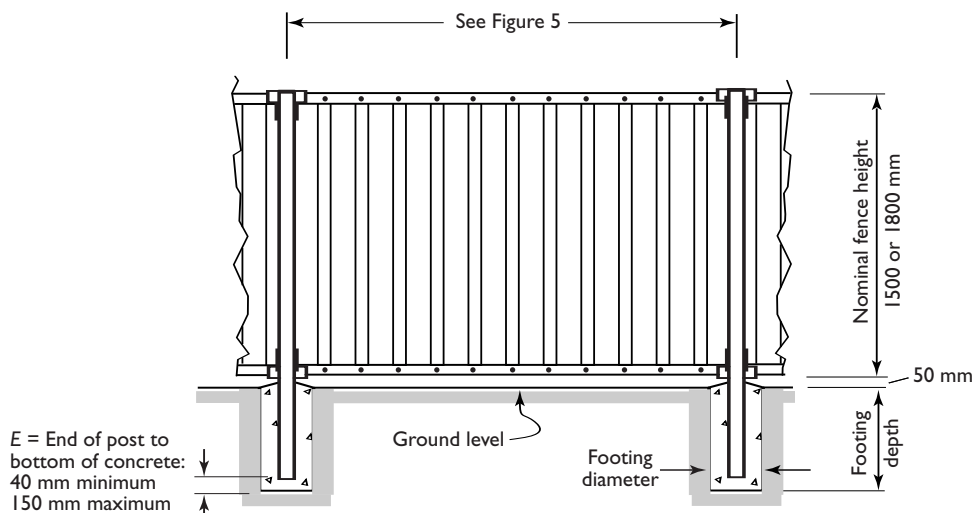


Figure 6
Panel arrangement

Post caps

Install post caps on all fence posts to give the perfect finishing touch and to protect against any sharp edges. Choose your post caps based on your post configurations and personal preference. Post caps must be screw fixed to NEETALOK standard posts.

NEETALOK fences

Rectangular domed caps are used on NEETALOK posts. LYSAGHT post caps are used on trims (NEETALOK standard posts).

Footings

Select your minimum footing depth

Your fence posts must be embedded in concrete footings of adequate size. Footings must not be placed in uncompacted fill. All footings in the following table are 250 mm diameter. The footings are suitable for all terrain categories and both fence heights.

Depth of footings

	Soil type	
	Sand, soft clay, or loose earth (mm)	Firm clay, firm earth or gravel (exclusive of loose topsoil) (mm)
Wind region C	1000	800
Wind region D	1200	1000

Example

Givens

- 1 Site at Karratha, Western Australia
- 2 Wind region: Region D
- 3 Soil type: Firm earth
- 4 Fence height: 1800 mm

Solution

Footing required is: 250 mm diameter x 1000 mm deep (Figure 9).

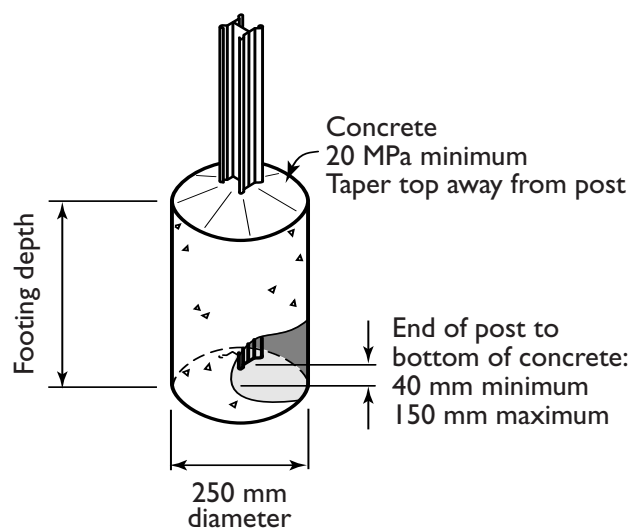


Figure 9
Footing dimensions

Making up fence posts

Level or stepped NEETALOK fences

Fix the bottom bracket to the posts, located as shown in Figure 10.

Raked NEETALOK fences

- Drill posts for the top and bottom raking adaptors (Figure 10).
- Lightly bolt the adaptors to the posts.
- Fix the bottom bracket to the bottom adaptor.

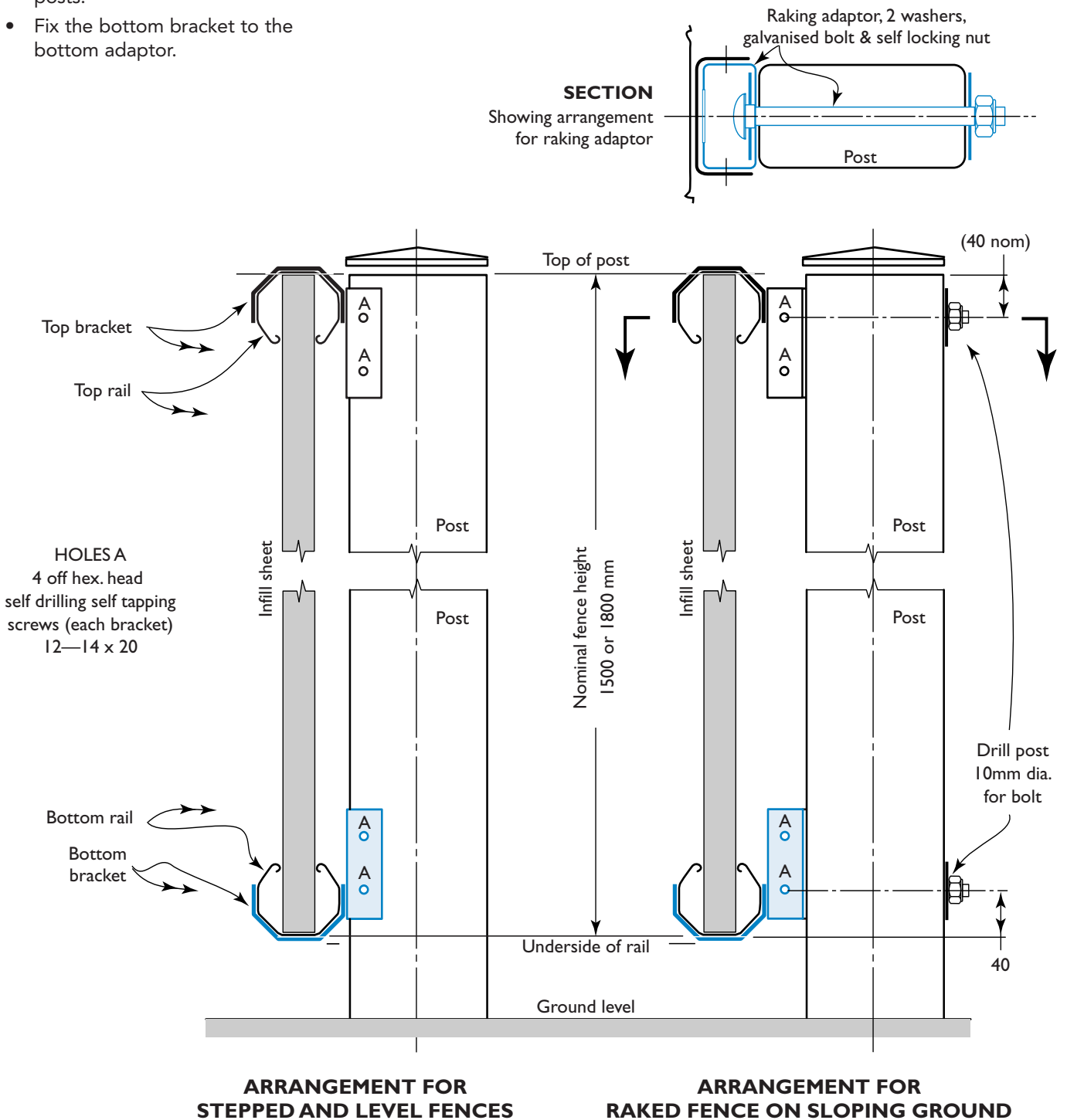


Figure 10
Section assembly of
NEETALOK fence

Installing fence posts

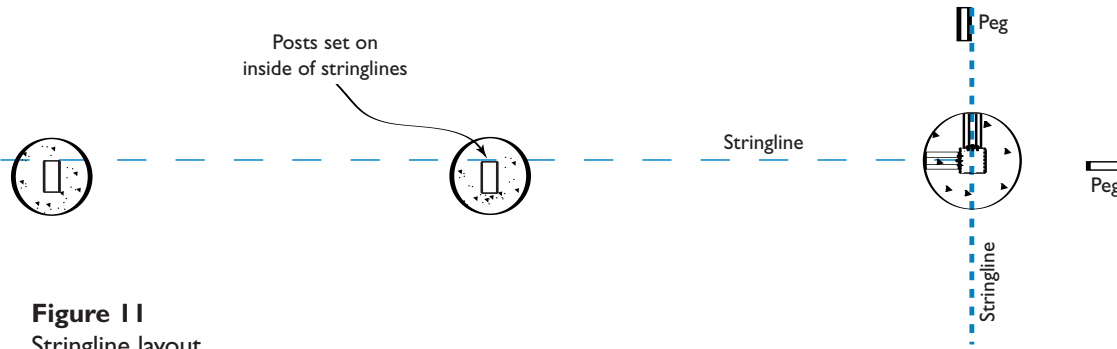


Figure 11
Stringline layout

U Layout stringlines to position your fence

Stringlines mark the outside line of your fence posts (Figure 11), and help to set your fence posts at a uniform height.

Determine the exact location of your fence and setup a stringline supported by pegs. Keep the stringline taut and set at 50 mm above the ground. Place the pegs 500 mm beyond the corners of the fence, so as not to obstruct the holes.

V Layout posts and dig holes

Mark the position of fence posts along your stringline at centres that suit your fence type and lay the posts beside the stringline.

A fence panel can be reduced from the nominal width, without cutting infill sheets, by the increments shown in Figure 10. Rails and lattices must be cut to suit a narrow fence panel.

Dig the holes using the hole sizes determined from Page 12. The depth of holes shown excludes the top soil. Check that the top of each post will be at the correct height.

W Place the first post

If the ground slopes, start at the high end.

Place the first post in its hole, fill the hole with wet concrete and firm in place. Use a spirit level to ensure the top of the post is vertical. Check that the top of the post is at the calculated height.

Contour the top of the concrete so that water flows away from the post.

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

X Place remaining posts

Place the second post in its hole and engage a bottom universal rail with the first and second post.

Chock the bracket at each end to align it with the stringline.

For raked NEETALOK fences, tighten the rake adaptor nut.

Concrete the post as described above.

Check that the post is vertical and at the correct height (Figure 12).

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

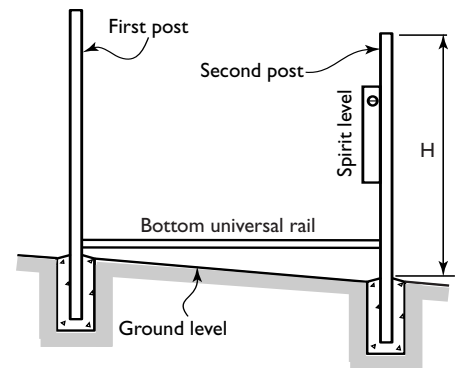


Figure 12
Placing remaining posts

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 (20 MPa min.) may also be used.

Installing infill sheets

U Allow concrete to dry

Wait for the concrete to dry before installing infill sheets. A minimum of 24 hours is recommended

W Fixing infill sheets to rails

For all NEETALOK fences, fasten infill sheets, from one side, to both rails with screws at every rib (Figure 14).

V Insert the infill sheets

Insert infill sheets into a bottom universal rail. Ensure that all sheets overlap correctly (Figure 13).

Insert a top universal rail between two posts and over the top edge of the infill sheets (Figure 10).

Place a rail support bracket to clamp the rail and fix it with four hex head screws (Figure 10). If using raking adaptors, tighten the nuts (Figure 10).

Continue installation of infill sheets and universal rails for the remainder of the run.

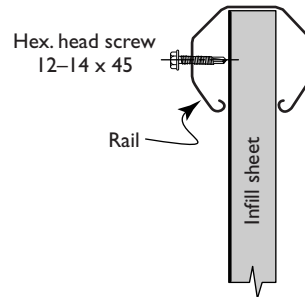


Figure 14
Fixing infill sheet to rail

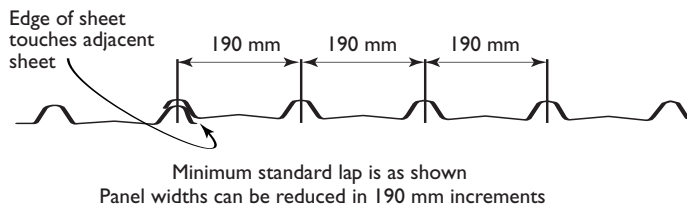


Figure 13
Sheet overlaps

Maintenance

Maintenance of your fence

Make sure that the posts and bottom rail of the fence are not in contact with the ground and are kept free of dirt and debris.

A regular hose down of your fence, at least at six-monthly intervals, will keep the fence in good condition and looking its best.

Storage and handling

Keep the product dry and clear of the ground. If stacked or bundled product becomes wet, separate it, wipe it with a clean cloth and stack it to dry thoroughly.

Handle materials carefully to avoid damage: don't drag materials over rough surfaces or each other; carry tools, don't drag them; protect from swarf.

Care of paint

Do not touch up minor damage, such as scratches, with paint. Minor scratches will not affect the performance of your fence, because the coatings effectively protect any cut edges or scratches from corrosion.

Cutting

For cutting thin metal on site, we recommend a nibbler or power saw with a metal-cutting blade because they produce fewer damaging hot metal particles and leaves less resultant burr than does a carborundum disc.

Cut materials over the ground and not over other materials.

Metal, timber & chemical compatibility

Lead, copper, bare steel and green or chemically-treated timber are not compatible with this product; thus don't allow any contact of the product with those materials, nor discharge of rainwater from them onto the product.

Take care to avoid harmful chemicals coming into contact with the fence—they include swimming pool or bore water, garden sprays, poisons, fertilisers and solvents. If there is an accident, wash the fence immediately with fresh water.

If there are doubts about the compatibility of products being used, get advice from our information service.

Fasteners

All screws must conform to AS 3566—1988, Class 3 or better.

Cleaning up

It is most important to sweep all metallic swarf and other debris from fence components at the end of each day and at the completion of the installation. Failure to do this can lead to surface staining when the metal particles rust.

Be sure that the drainage slots in the bottom rails are clear.

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 COLORBOND® pre-painted steel is not recommended for use in these environments.

Fences must be installed clear of the ground.

Post caps

Post caps must be installed onto fence posts to prevent water building up inside the post. LYSAGHT post caps are 'press to fit' into the post.



**Information, brochures and
your local distributor**

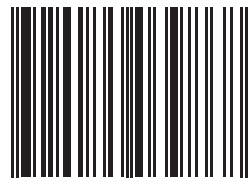
1800 641 417

Please check the latest information
which is always available at
www.lysaght.com

© Copyright BlueScope Steel Limited 13 July 2004

LYSAGHT®, NEETALOK®, NEETALOK® PLUS, COLORBOND® and
ZINCALUME® are trademarks of BlueScope Steel Limited
A.B.N. 16 000 011 058

The LYSAGHT® range of products is exclusively made by
BlueScope Steel Limited trading as BlueScope Lysaght.



9 320075 039868