Conventional Verandah

• Suitable for wind classifications up to and including N3 (W41N)
• Add thousands of dollars value to your home
• Typically can be erected in a single day
• LYSAGHT FIRMLOK™ structural beams provide the framework
• COLORBOND® steel and unpainted ZINCALUME® steel delivers a structure requiring minimal maintenance
1. This system has been engineered to comply with the relevant Australian Standards, providing the spanning capacities and connection details are as outlined in this document.

2. Firmlok beams, FLATDEK roof sheeting, receiver channel and suspension bracket are G550 A500 0.50 (minimum yield stress, 0.50 minimum coating mass) and comply with AS1397—2001.


4. The connection and beam capacities are based on limit state design and testing at BlueScope lysaght laboratories and they conform with AS/NZS4600—1996.


6. Recommended roof pitch for this system is 2 degrees.

7. Footings and slabs as detailed in this document shall be into a firm natural soil base, with a minimum skin friction of 15MPa and a class A or S site. Minimum concrete strength 20MPa, 50mm minimum cover for post, 40mm clear cover required for mesh in slab. Damp proof membrane to be used with slab. Control joints required for slab lengths greater than 5,500mm — minimum 300mm from post.

8. The structure to which the verandah is attached must be capable of withstanding the additional loads being imposed.

9. Verandah being attached to a brick wall must have solid bricks, not extruded bricks.

10. Roof sheeting is to have no foot traffic. Signs showing “no foot traffic” to be visible.

11. Gutter capacity assumption is one 65mm diameter downpipe for every 20m² of roof area for rainfall intensity of 150mm/hour.

12. All screw fasteners to be 10—16 x 16 self-drilling hex head screws with Hitek® drill points. Otherwise use 12—14 x 30 self-drilling hex head screws with Hitek® drill points.

13. All concrete workmanship and materials shall be in accordance with AS3600 Concrete Structures.

14. For Firmlok connection to fascia, the beam must be positively fixed back to the main structure.

15. This System has been designed as a complete system, and only genuine parts from BlueScope Lysaght may be used.
Construction instructions

BlueScope Lysaght’s new structural beam, FIRMLOK®, provides the framework to design a range of stunning verandahs and patios. The beam is lightweight, uniform, does not warp or split, and does not require painting.

Formed of two interlocking C-sections, FIRMLOK beams are easily fixed with standard self-drilling screws. The structural superiority of FIRMLOK is illustrated by its maximum spanning capabilities, which under some conditions, is over 8.5m.

FIRMLOK beams and components are available in ZINCALUME® coated steel and finished in six popular high-gloss COLORBOND® prepainted steel colours.

The beams are supplied in five stock lengths: 4000, 5000, 6100, 7500 and 9000mm.

**STEP 1: GETTING STARTED**

Determine the width of your verandah from the Span Table on page 2 and choose the FIRMLOK beam to suit your preferred post and rafter spacing.

**STEP 2: POUR A SLAB**

Pour an appropriate concrete slab floor. Allow a minimum of 1:100 fall away from the house and ensure the finished floor level is at least one brick course below the weepholes.

**STEP 3: ATTACHMENT TO DWELLING**

Choose how you wish to attach the verandah to the house. There are two options:

- Attached to fascia (Fig 1)
- Attached to brickwork (Fig 2)

### Tools for the Job

- Screw gun and Tek bits
- Masonry drill and 12mm masonry bit
- Concreting tools
- String line
- Tin snips
- Fine-toothed, metal-cutting power saw or hacksaw,
- Spirit & water or dumpy level
- Straight edge
The required headroom should determine your choice of attachment. The Span Table on page 2 gives minimum recommended falls for the various verandah widths.

**STEP 4: CHOOSE YOUR REINFORCING**

Choose an appropriate reinforcing method for the attachment point:

Fascia-to-rafter Connection (Fig 1): this is the best option on most slab-on-ground homes. Lift back the first row of roof tiles to gain access to the eave space and screw fix a 140 Universal Bracket to each truss rafter. Keep the front section of the bracket hard against the inside of the fascia. 

Brickwork Connection (Fig 2): a minimum of five brick courses are required above the connection to provide adequate structural integrity. This connection may be suitable if you have a raised floor house or 2700mm high ceilings with no eaves.

**STEP 5: REINFORCE THE ATTACHMENT POINT**

If rafters are required, fix the suspension brackets at rafter positions and fix receiver channel. Position the receiver channel as high as the gutter will allow (note the receiver channel should sit into the open notched top of each suspension bracket). Plumb up from your slab edge taking into account the 27mm additional width of the post foot as shown in Fig 3. Fix the suspension brackets with six 10-16 x 16 screws into a steel fascia, or three M10 Dynabolts into brickwork.

For steel fascias, place a bead of silicone sealant behind the receiver channel to enhance the waterproofing capabilities of your structure.

**STEP 6: INSTALL POST FEET**

Measure the verandah width out from the house and mark. Once again remember to add 27mm from the outside edge of the slab for the post foot. Using a straight edge or chalk line, extend the outside line of the post foot the full length of the slab parallel to the house. Recheck the squareness of your slab and mark the corner position for your first post foot. Mark and drill holes for two M10 Dynabolts® (Fig 4). Repeat the process for the opposite end.

Measure the centreline dimension between the two end posts and divide by the number of post spacings. This will give you the centreline position of each post. Mark the centreline positions along your line and then bolt the post feet.
STEP 7: FINISH POSTS

From a corner of the verandah, measure from the bottom of the receiver channel to the slab, and mark this point on the slab. Using a level, determine the level height difference between the marked point on the slab and the shoulder of the post foot (see Fig 4).

Do this for each post foot and note the measurement. The height of the post can then be determined using the following calculation:

$$\text{HEIGHT OF POST TO UNDERSIDE OF BEAM} = \text{Height from receiver channel to slab} - \text{Post foot difference} - \text{Beam Height} - \frac{\text{Roof fall and curve}}{2}$$

There are two options for finishing the post-to-beam connection (see Fig 5).

For Option 1, add the beam height to the post length. If your verandah requires rafters and purlins, Option 2 is recommended.

Cut the posts with a hacksaw or fine-toothed metal cutting power saw. Fit the post over the post foot and screw off.

STEP 8: FIX BEAMS

Mark and cut the fascia beam length to equal the overall dimension of the posts.

Mark the centreline position of each post on the top and bottom of the fascia beam and drill a 12mm hole top and bottom at your marks. Using an M8 cuphead bolt connect the top post inserts. Then fit beam end caps.

If necessary, mark the centreline rafter positions on the inside face of the beam and fix the appropriate FIRMLOK Universal Bracket at these positions.

Ensure the intersecting beams will be on the top side of the fascia beam.

Fix the FIRMLOK Universal Brackets to the corresponding positions on the fascia reinforcing plate as per Fig 6.

Lift the beam onto the posts and fix the post inserts with screws.

STEP 9: FIX RAFTERS (if required)

After plumbing up posts, measure between the FIRMLOK Universal Bracket on the fascia reinforcing plate and the FIRMLOK Universal Bracket on the new fascia beam at each end of the verandah.

Cut the two rafters to this measurement.

Fit a FIRMLOK Universal Bracket to the inside face of each rafter at its mid point.

Lift the rafters into position and screw fix.

Use a string line to straighten the fascia beam.

Temporarily brace your verandah for lateral movement.

Measure and cut the remaining rafters. Install two FIRMLOK Universal Brackets to each side of the rafter at its mid point. Install and screw off rafters.
STEP 10: FIX PURLINS (if required)
If purlins are required, cut and install as per rafters (Fig 7).

STEP 11: FIT GUTTERS
Screw fix your chosen gutter brackets to the face of the fascia beam at not less than 1200mm centres. Be sure to allow a minimum 1:500 fall for your gutter. Position downpipes at posts.

STEP 12: INSTALL ROOF SHEETS
Insert a closed-cell foam strip into the receiver channel.
Using pliers or the like carefully turn up the ends of each valley on the sheet being inserted into the receiver channel (Fig 8).
Starting from the direction of the prevailing wind, install and fix the roof sheets. CUSTOM ORB® should be screw fixed at every second ridge at the gutter end and riveted, using 5.2mm Aluminium Bulb-tite® blind rivets with EPDM seal, at every second valley at the receiver channel end. Middle purlin should be fixed on every third ridge.

STEP 13: INSTALL BARGES
Using either rolltop barges or receiver channel, install barges as shown in the General Arrangement and fix with pop rivets at 600mm centres.

STEP 14: FINISH THE JOB
Remove temporary bracing and clean any swarf from roof. Invite some friends around, fire up the BBQ, and toast to your new outdoor space.

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