

INSTALLATION GUIDE



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PLX Portal contents



NOTE: * For concrete foundation connection. ** For timber foundation connection.



Assembly

Steps overview

- A. Cut columns and lintel to length and install footplates
- B. Install foundation connection
- C. Construct portal on ground
- D. Lift portal into place







1. Cut columns and lintel to length and install footplates



Determine the inside dimensions of the portal:

- Opening Width is the inside distance of the opening between the two columns.
- Opening Height is the distance from the floor to the underside of the lintel.

Calculate required column length: Opening Height + 280mm = Column Length

Trim the bottom (end without rebate) of each column to length. Then use the foot plate as a pattern guide to cut the angle parts. Shave a little bit off the part where the angle meets the bottom of the column.

Calculate lintel length: Opening Width - 10mm = Lintel Length

Cut the lintel back evenly from both ends to the required Lintel Length. Make sure the end of the steel in the top and bottom of Lintel is a minimum of 150mm from end of the Lintel (refer to diagram).







Install Footplates

For each foot plate: Install the bottom 4 HBSP 8x100 screws first.

Then install the rest of the HBSP 8x100 screws into the angled side plates.

Make sure the slots in the bottom of the footplate will face inwards towards the slab when it is stood up.



2. Install foundation connection

Refer to the table below and Appendix A on pages 8-13 for the Foundation Connection Details

Foundation Type	Detail
3604 Concrete	D1102
Insulated Waffle Slab	D1103
Concrete Block	D1106
Timber Subfloor	D1105, D1109 - D1112



Concrete Foundation (refer to appropriate detail)

(Complete this step after standing the complete portal into place. Go to Step 3)

Ensure the foot plate is correctly facing the slab edge with the tabs allowing the drill bit to be guided in on the correct angle into the slab.

Use the tabs as a guide (see photo) to drill a 12mm x 200mm deep into the concrete foundation. Then install the M12x200 anchor screw bolts according to manufacturers instructions, ensuring the hole is cleaned before installation.

Go to Step 4.2

Timber Foundation

Select the appropriate connection detail from Appendix A. Install the 4x M12x600 Anchor Rods into the subfloor as shown in the detail.



3. Construct portal on ground

(Refer to Page 3, Detail D1107)



1. Lay down columns and lintel (ensure lintel is the correct way up) in place on the ground.



2. Nail the L-Brackets to the unrebated side of each column.



4. Sit lintel into place on L-brackets and add the top dovetail rods.



3. Install bottom dovetail rod into each column.



5. Attach dovetail rods with 4x VGS 9x160 screws.



Belleville washer must be in this orientation (Cone Outwards)



6. Slide curved end plate over ends of the rods (curve facing out) and add the conical washers (cone pointing out) and M12 zinc nuts.



7. Tighten nuts until both curved end plate and conical washers are flattened against the column (to 50Nm Torque).

4. Lift portal into place



1. Stand assembled portal into place.

- 2. For concrete foundations now go to Step 2 to install the foundation connection. For timber sub-floors now add the sq washers and nuts and tighten.



- 3. Square up the portal then add 4x VGZ 7x200 uplift screws into the L-Brackets at 45 degrees.
- 4. Add a 6kN top plate connection to adjacent frame at both ends of the portal.



Appendix A: Connection Details

Knee Connection Detail



3604 Concrete Foundation Connection





Foot plate attached to column

Hotedge Waffle Slab Foundation Connection



Timber Floor Connection





Timber Floor Connection - Parallel to Joists



Timber Floor Connection - Parallel to Joists - Sections



SECTION AT BEARER/ PILE CONNECTION



Timber Floor Connection - Parallel to Bearers



Timber Floor Connection - Parallel to Bearers - Sections



2/190x45 joists

2/ Lumberlok SS CT160 cleats 3 nails into bearer and joist (4 cleats total)

Lumberlok SS CPC 80 bracket one side of bearer to underside of joists

Lumberlok 0.9mm x 110 SS Nailon plate x 200mm long folded both sides of pile. Min $3/12g \times 35mm$ SS screws to bearer and pile

Bowmac BS85 Strap Plate both sides of pile with 2/M12 SS bolts each to pile and bearer. Pick as needed between plate and bearer

SECTION AT BEARER/ PILE CONNECTION





SECTION PORTAL



Innovative structural timber solution

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