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Prolam® PLX Portal

INSTALLATION GUIDE

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Prolam®
Engineered Laminated Timber

PLX Portal contents

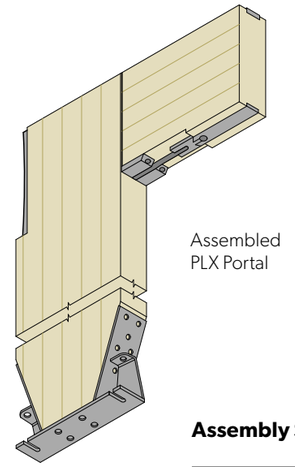
Column (x2)	Lintel (x1)	Foot Plate (x2)	L-Bracket (x2)	Curved End Plate (x2)
Male Dovetail Rod (x4)	HBSP 8x100 (x28 or 34)	VGS 9x160 (x4)	VGZ 7x200 (x4)	M12 Conical Washer (x4)
M12 Zinc Nut (x4)	M12x200 Anchor Screw (x4) *	M12 Angled Washer (x4) *	M12 Galv Nut (x8)	M12x600 Anchor Rod (x4) **
M12 Sq Washer (x8) **	Torx 40 Bit (x1)	Torx 30 Bit (x1)	3x75 Nail (x4)	12x450 Masonry Bit (x1) *

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

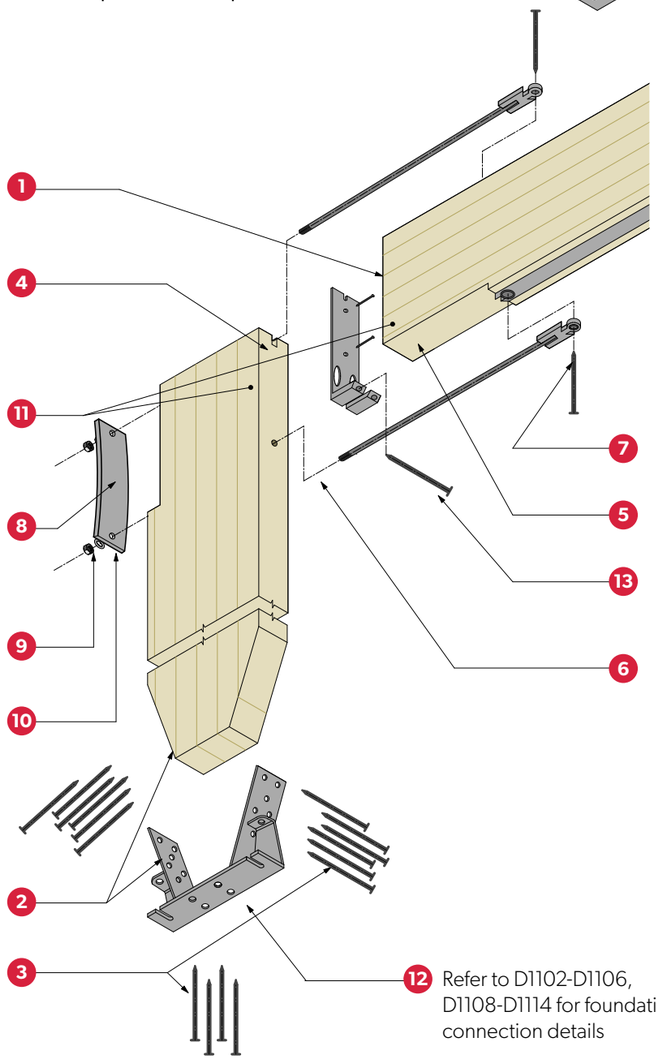
Assembly

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



Assembled PLX Portal



Refer to D1102-D1106, D1108-D1114 for foundation connection details

D1107
11/2024

Assembly Summary

Step 1 Trim lintel to required length (see page 4).

Step 2 Trim columns to the required length (see page 4), then use angled foot plate as a pattern guide to cut angles.

Step 3 Install the bottom 4 HBSP 8x100 screws first then the angled screws.

Step 4 Nail the L-Brackets to top of the flat side of each column.

Step 5 This rebate to be fully seated on to the L-Bracket.

Step 6 Insert lower dovetail rod through column first and connect both arrow dovetail sections together, then add top dovetail rod and connect.

Step 7 Install VGS 9x160 screws into dovetail.

Step 8 Slide curved end plate over threaded rods ensuring that the center of the plate touches column first, not the ends.

Step 9 Add nuts and conical washers with the cone facing out.

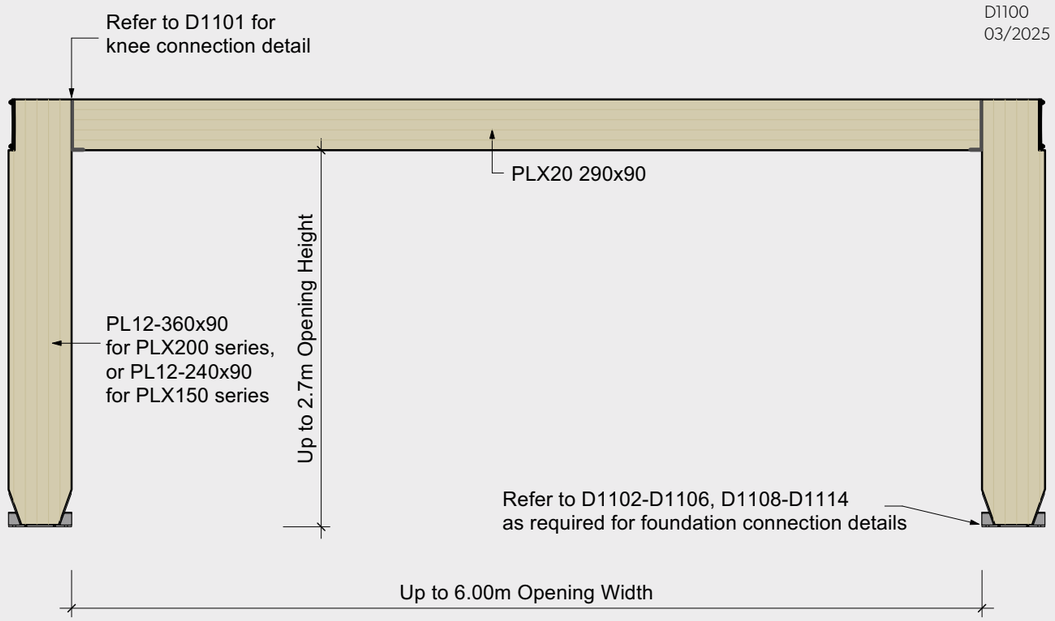
Step 10 Tighten nuts until both conical washers and sprung plate are flattened against the column.

Step 11 Ensure these faces are flush to each other, release nut tention if adjustment is required.

Step 12 Install foundation connection with portal lifted into place on a concrete foundation, for timber foundation install connection first then lift portal into place.

Step 13 Install VGZ7x200 uplift screws.

1. Cut columns and lintel to length and install footplates



Note: Refer to D1107 for assembly overview

Determine the inside dimensions of the portal:

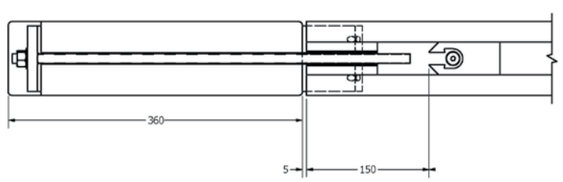
- Opening Width is the inside distance of the opening between the two columns.
- Opening Height is the distance from the floor to the underside of the lintel.

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 outwards away from 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 and Framing Connection Details

Foundation Type	Detail
3604 Concrete	D1102
Insulated Waffle Slab	D1103
Concrete Block	D1106
MAXraft Slab	D1108
Timber Subfloor	D1105, D1109 - D1112
Wall Framing Connections	D1104, D1113, D1114

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.

As per NZS 3604, any builds in Zone D, subfloor fixings will need to be stainless steel or denzo taped.

3. Construct portal on ground

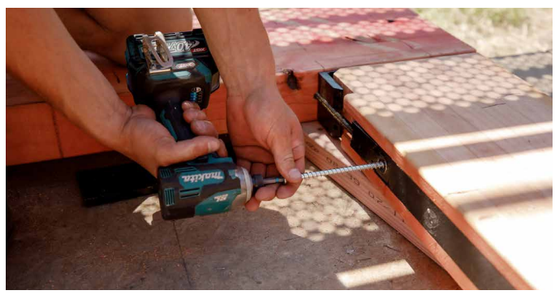
(Refer to Page 3, Detail D1107)

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

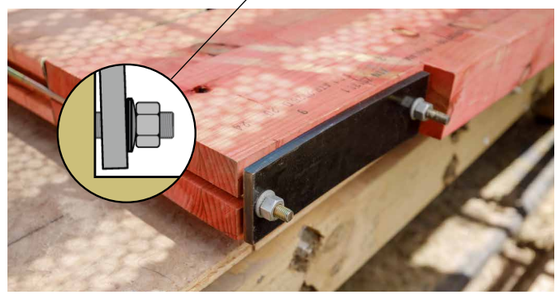
2. Nail the L-Brackets to the unrebated side of each column.

3. Install bottom dovetail rod into each column.

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



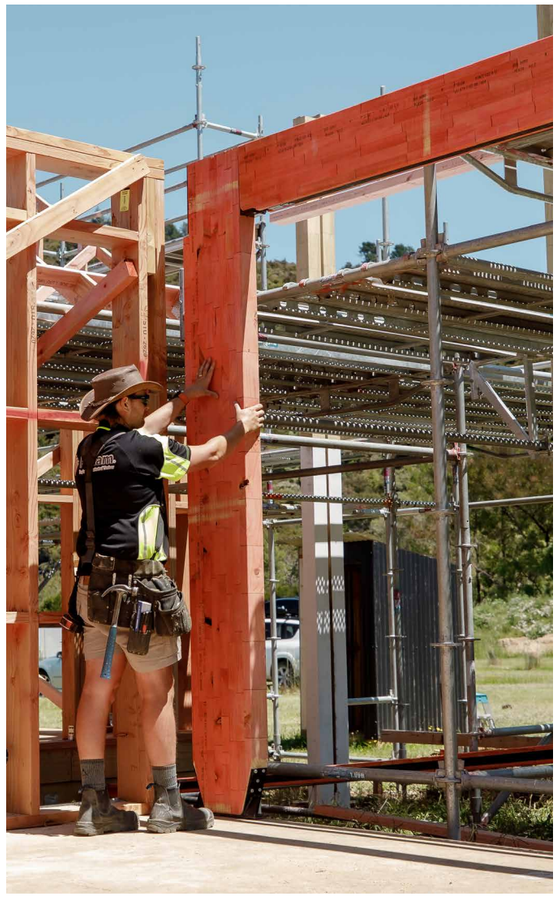
5. Attach dovetail rods with 4x VGS 9x160 screws.



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. Trim rods to fit within portal width.

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.

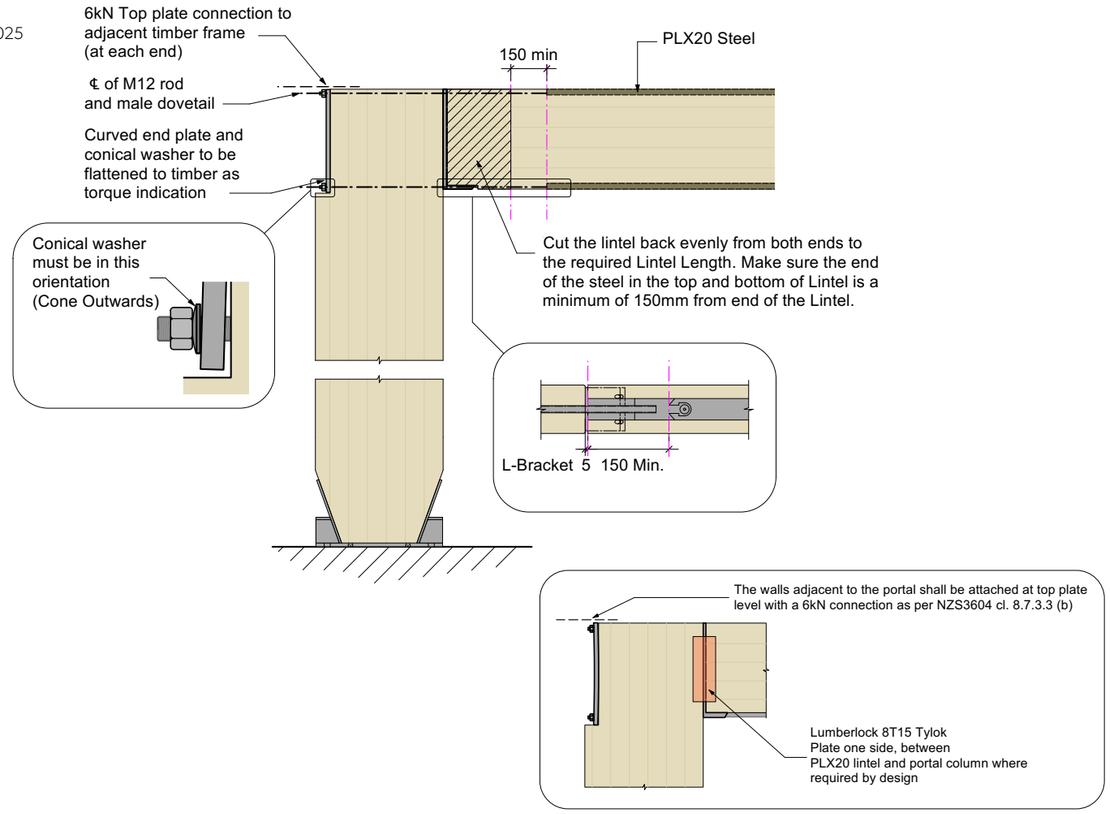
3. Square up the portal then add 4x VGZ 7x200 uplift screws into the L-Brackets at 45 degrees.

4. Add a 6kN top plate connection to adjacent frame at both ends of the portal.

Appendix A: Connection Details

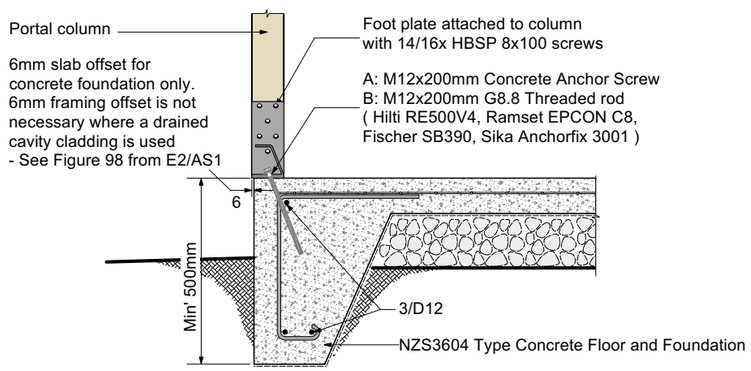
Knee Connection Detail

D1101
03/2025



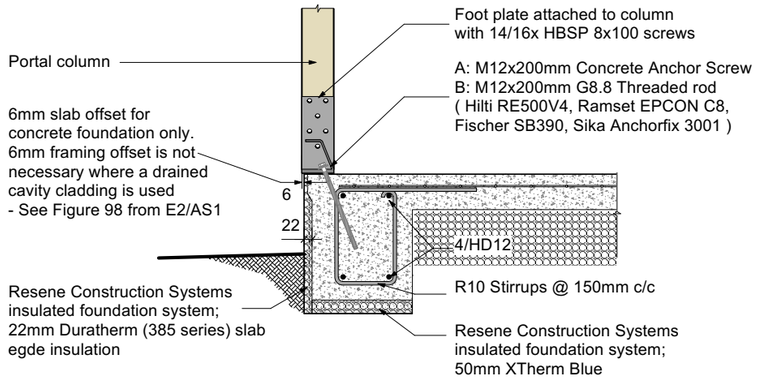
3604 Concrete Foundation Connection

D1102
03/2025



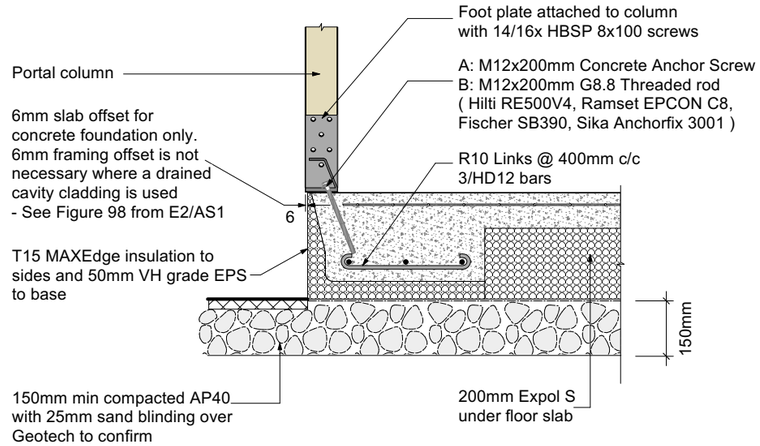
Hotedge Waffle Slab Foundation Connection

D1103
03/2025



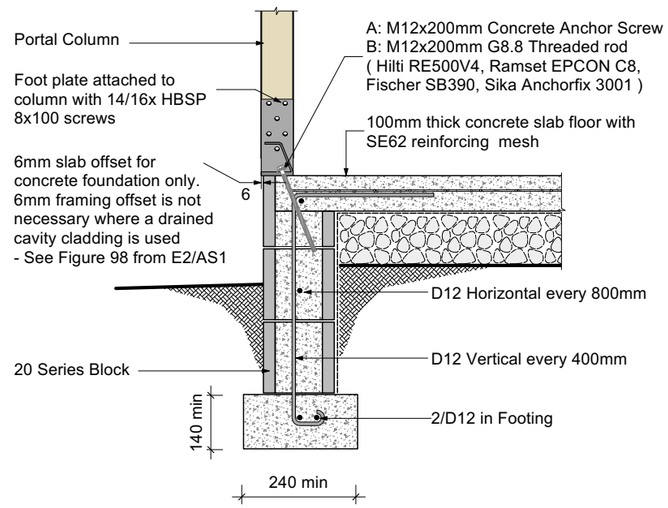
MAXraft Slab Foundation Connection

D1108
03/2025



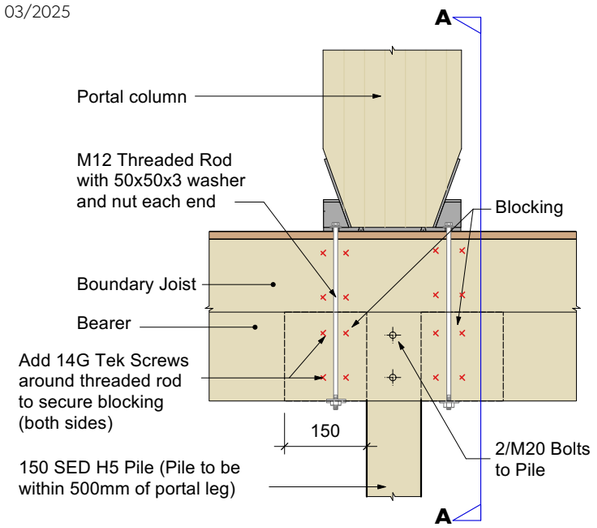
Block Concrete Edge Connection

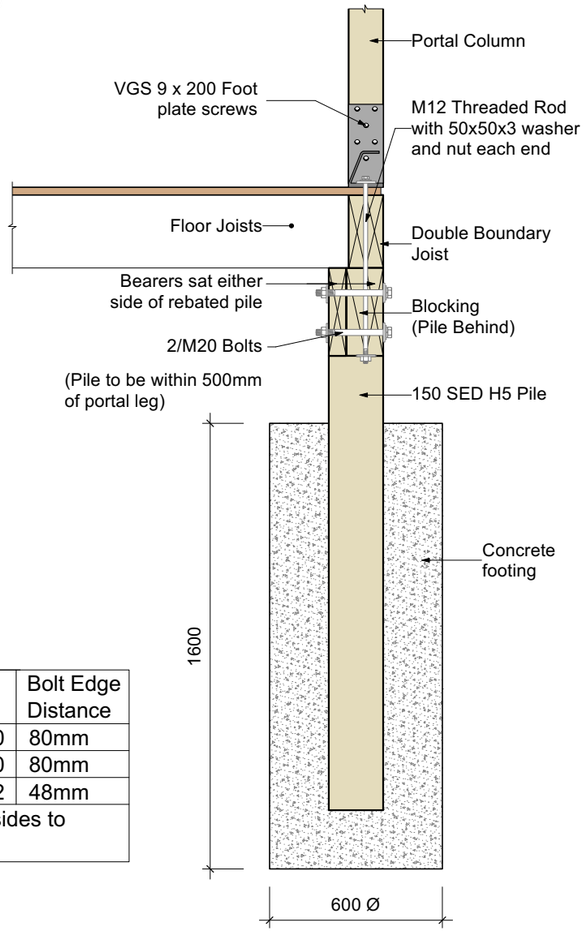
D1106
03/2025



Timber Floor Connection

D1105
03/2025

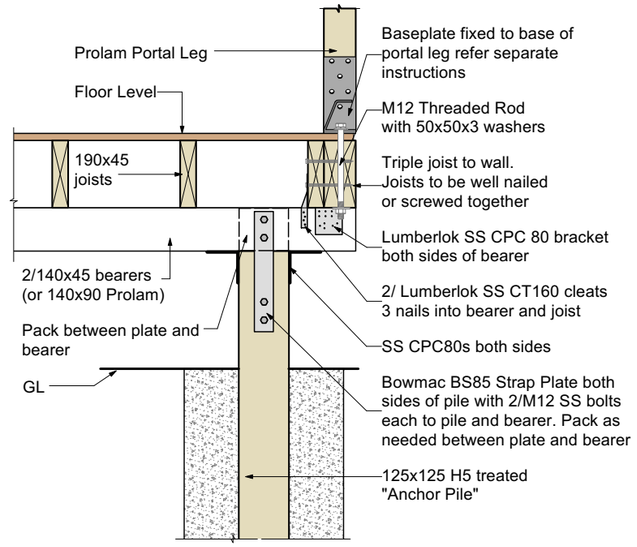




Required Bearers	Bolts	Bolt Edge Distance
2/290x45 SG8	2/M20	80mm
2/240x45 SG8	2/M20	80mm
4/190x45 SG8	4/M12	48mm
Double up bearers both sides to adjacent piles		

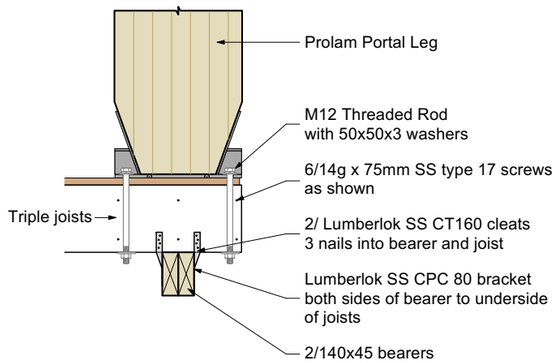
Timber Floor Connection - Parallel to Joists

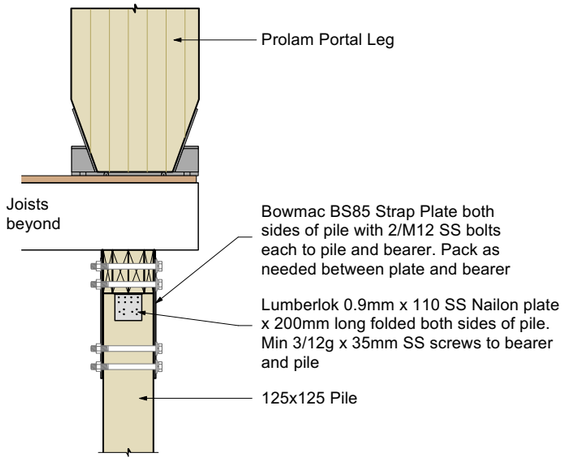
D1109
03/2025



Timber Floor Connection - Parallel to Joists - Sections

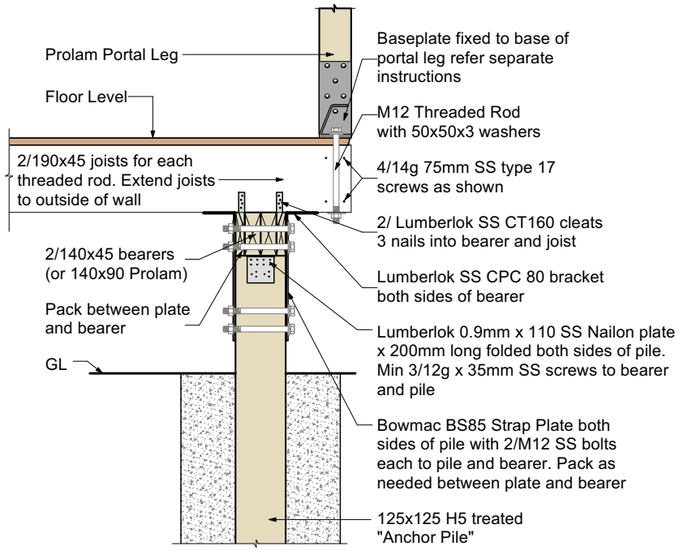
D1110
03/2025





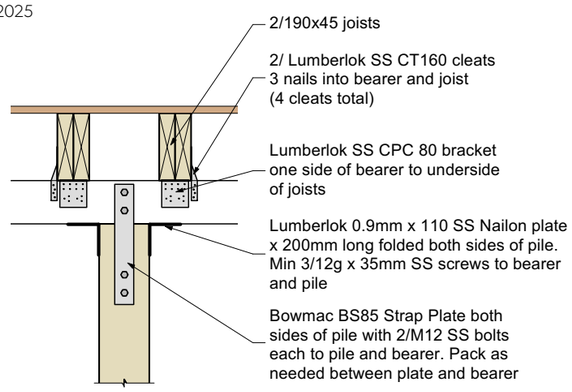
Timber Floor Connection - Parallel to Bearers

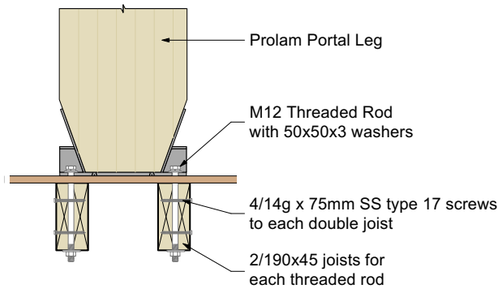
D1111
03/2025



Timber Floor Connection - Parallel to Bearers - Sections

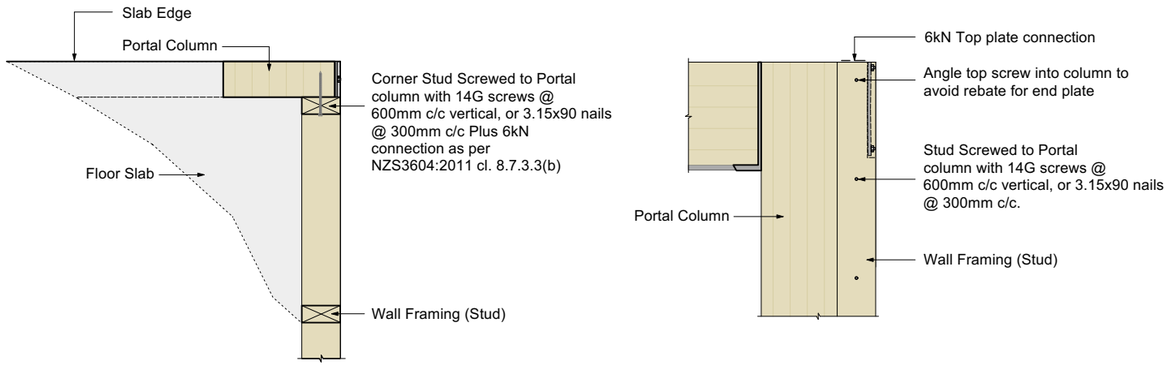
D1112
03/2025





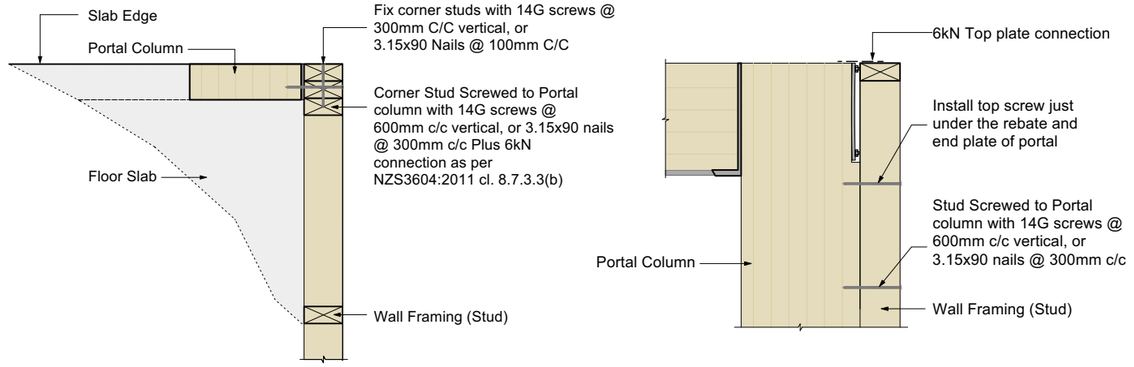
Connection to Wall Framing: Perpendicular Wall

D1104
03/2025



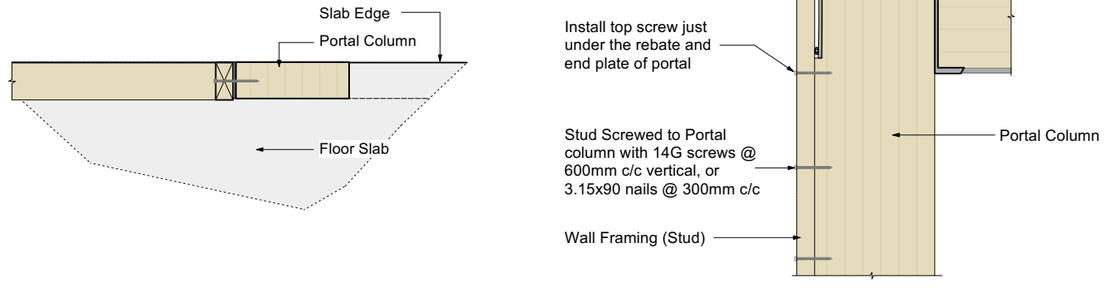
Connection to Wall Framing: Perpendicular Wall 2

D1113
03/2025



Connection to Wall Framing: Along Edge With Adjacent Wall

D1114
03/2025



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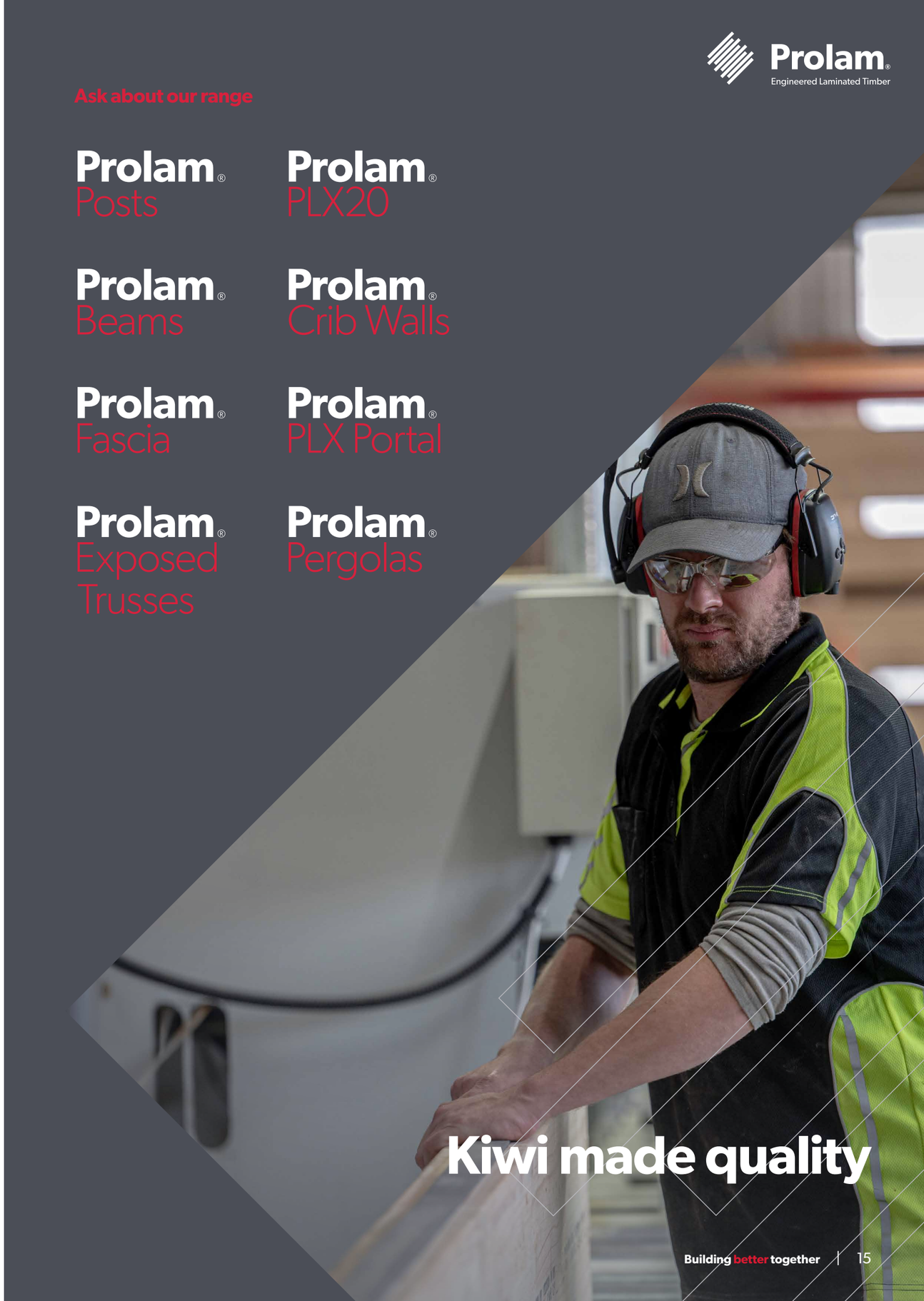

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