

Prolam[®]
PLX Portal

**The high performance
timber bracing solution for
residential construction**



**Building
better
together**



Prolam[®]
Engineered Laminated Timber

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“The PLX Portal replaces the hassle of steel with a high strength timber portal that has been rigorously tested to New Zealand building standards.”

John Woodman, Managing Director, Prolam





"As a customisable solution for large residential openings, the PLX Portal has real benefits for house builders."

- Andy Van Houtte, Structural Engineer, Potius

Innovative structural
timber solution

The next generation portal bracing solution is here

The innovative Prolam PLX glulam timber portal system revolutionalises building construction. Strong but lightweight, simple to install and sustainably made, the PLX Portal is the smart alternative to steel and other bracing portal options.

Innovative design for unparalleled load bearing and bracing capacity

Proudly designed and manufactured in New Zealand, the PLX Portal is constructed from three glulam timber elements - two Prolam PL12 Portal legs and a Prolam PLX20 Beam precision engineered from quality New Zealand-grown pine reinforced with steel for exceptional load bearing capacity and spanning capability. While the PLX Portal's custom-designed system of brackets and clamping devices provide next level bracing capacity.

Built to perform and to resist wind and earthquake loads

The PLX Portal has been specifically designed and independently tested to provide a structural bracing solution for buildings within the scope of NZS3604. Tested using the BRANZ 21 methodology, the PLX Portal provides bracing units to resist wind and earthquake loads.

Easy assembly and installation

The PLX Portal has been designed to be flexible in both length and height (able to be cut to length on site) and installed using traditional carpentry tools. Trusses and frames can be connected directly to the portal using brackets, nails and screws.

A more sustainable choice

The PLX Portal timber elements are made from timber sourced from renewable and sustainably managed New Zealand plantations using 14 times less energy than their steel equivalents.

The Prolam PLX Portal is ideal for:

- Anywhere you want a low thermal transfer, low carbon option for bracing
- Anywhere you require significant bracing, but only have a narrow wall space
- Anywhere you want to use the most innovative timber bracing system
- Large internal openings
- Garage portals
- Window and door portals

A cut above

- Highest timber bracing system available
- Better insulation values and lower thermal bridging properties than steel bracing options
- High performance and durability
- Increased spanning capability of the lintel
- Up to 40% lighter than steel portals
- Easy on-site assembly using standard tools
- Fast installation – no hiabs or staff
- Cut to length on site
- Can be simply anchored to concrete
- FSC timber options available
- Easy to specify with PS1 certificate
- Made in New Zealand

For detailed specs and information

<https://www.prolamnz.com/products/prolam-plx-bracing-portal/>



Bracing Design

The PLX Portal has been independently tested using the BRANZ P21 test methodology for use for NZS3604 style residential buildings.

The PLX Portal has a ductility of $\mu = 3.0$, making it compatible with NZS3604 bracing systems.

The PLX Portal can be used for both timber and concrete subfloors in accordance with NZS3604 (refer to Detail 2).

Bracing values may be used for lintel spans up to 5.2m.

The walls adjacent to the portal shall be attached at top plate level with a 6kN connection as per NZS3603 cl. 8.7.3.3 (b)

PLPF200 Bracing Capacity						
Nominal Stud Height (m)	Max. Opening Height (m)	Max. Opening Width (m)	Max. Portal Height (m)	Max. Total Portal Width (m)	Wind Bracing (BUs)	Earthquake Bracing (BUs)
2.4	2.26	5.2	2.55	5.92	160	195
2.7	2.46	5.2	2.75	5.92	150	185
3.0	2.76	5.2	3.05	5.92	145	175

Notes: Refer product table for specification codes

1. The Portal height is taken from floor level to top of column. For different columns heights the values above may be interpolated.
2. The same bracing units apply to shorter lintel spans.

PLX Portal Product Codes

PLX Portal Product Codes				
Nominal Stud Height (m)	2.4	2.7	3.0	
Max. Opening Height (m)	2.26	2.46	2.76	
Max. Portal Height (m)	2.55	2.75	3.05	
Opening Width (m)	2.40 to 2.70	PLXP200H1-2.4H-2.7L	PLXP200H1-2.7H-2.7L	PLXP200H1-3.0H-2.7L
	2.70 to 3.00	PLXP200H1-2.4H-3.0L	PLXP200H1-2.7H-3.0L	PLXP200H1-3.0H-3.0L
	3.00 to 3.30	PLXP200H1-2.4H-3.3L	PLXP200H1-2.7H-3.3L	PLXP200H1-3.0H-3.3L
	3.30 to 3.60	PLXP200H1-2.4H-3.6L	PLXP200H1-2.7H-3.6L	PLXP200H1-3.0H-3.6L
	3.60 to 3.90	PLXP200H1-2.4H-3.9L	PLXP200H1-2.7H-3.9L	PLXP200H1-3.0H-3.9L
	3.90 to 4.20	PLXP200H1-2.4H-4.2L	PLXP200H1-2.7H-4.2L	PLXP200H1-3.0H-4.2L
	4.20 to 4.50	PLXP200H1-2.4H-4.5L	PLXP200H1-2.7H-4.5L	PLXP200H1-3.0H-4.5L
	4.50 to 4.80	PLXP200H1-2.4H-4.8L	PLXP200H1-2.7H-4.8L	PLXP200H1-3.0H-4.8L
	4.80 to 5.10	PLXP200H1-2.4H-5.1L	PLXP200H1-2.7H-5.1L	PLXP200H1-3.0H-5.1L
	5.10 to 5.20	PLXP200H1-2.4H-5.4L	PLXP200H1-2.7H-5.4L	PLXP200H1-3.0H-5.4L

Notes: For PLXP200 allow 360mm each side of opening for portal legs (total portal width = opening width + 0.72m)
Height may be altered (legs shortened) as required to give reduced opening and total portal heights (total portal height = opening height + 0.29m).

Span Tables for Roof Loads

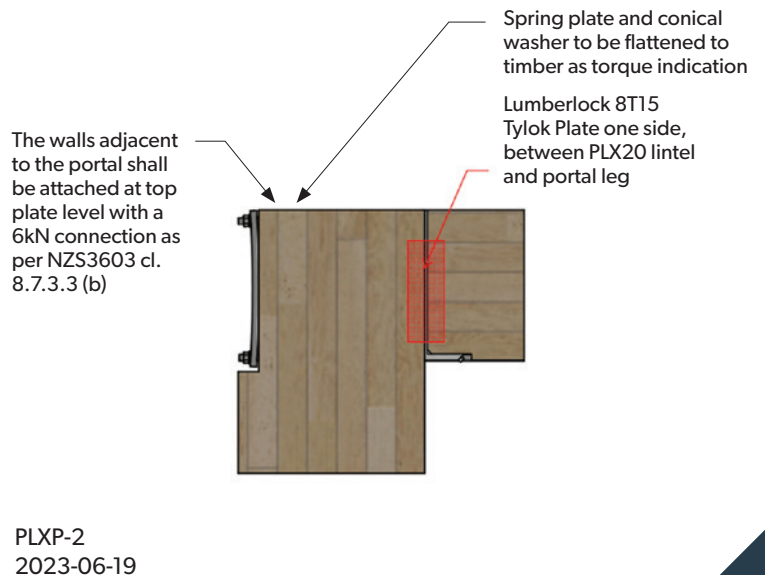
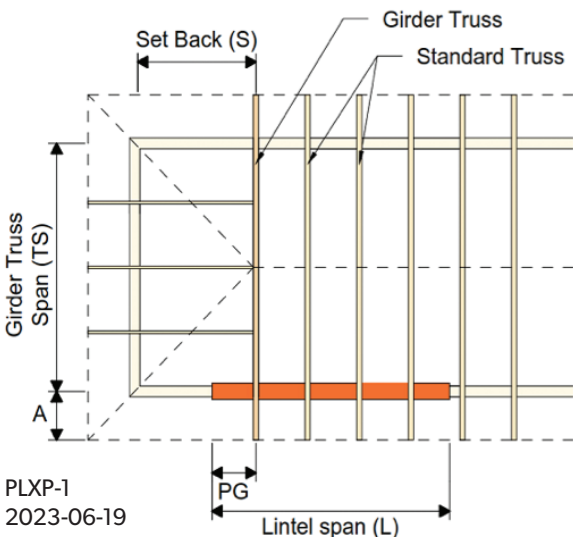
Lintel Supporting Truss Roof and Ceiling - 40kg/m ²							
Truss Span (m)	4	5	6	7	8	9	10
Wind Zone	Opening Width (m)						
Low and Medium	5.2	5.2	5.2	5.2	5.2	5.2	5.2
High and Very High	5.2	5.2	5.1	5.0	4.8	4.7	4.6
Extra-High	5.2	5.1	4.9	4.7	4.6	4.5	4.4

Lintel Supporting Girder Truss - 40kg/m ²								
Wind Zone	Girder Truss Span (m)	4	5	6	7	8	9	10
	Set Back (m)	Opening Width (m)						
Low and Medium	2	5.2	5.2	5.2	5.2	5.2	5.2	4.9
	3	5.2	5.2	5.2	5.2	5.2	4.7	4.2
	4	5.2	5.2	5.2	5.2	5.2	4.7	3.5
High and Very High	2	5.2	5.2	5.1	4.9	4.7	4.6	4.5
	3	5.2	5.2	5.0	4.9	4.7	4.6	4.2
	4	5.2	5.1	4.9	4.8	4.6	4.0	3.5
Extra-High	2	5.2	5.0	4.8	4.7	4.5	4.4	4.1
	3	5.2	5.0	4.8	4.6	4.5	3.9	3.4
	4	5.1	4.9	4.7	4.5	3.8	3.2	2.7

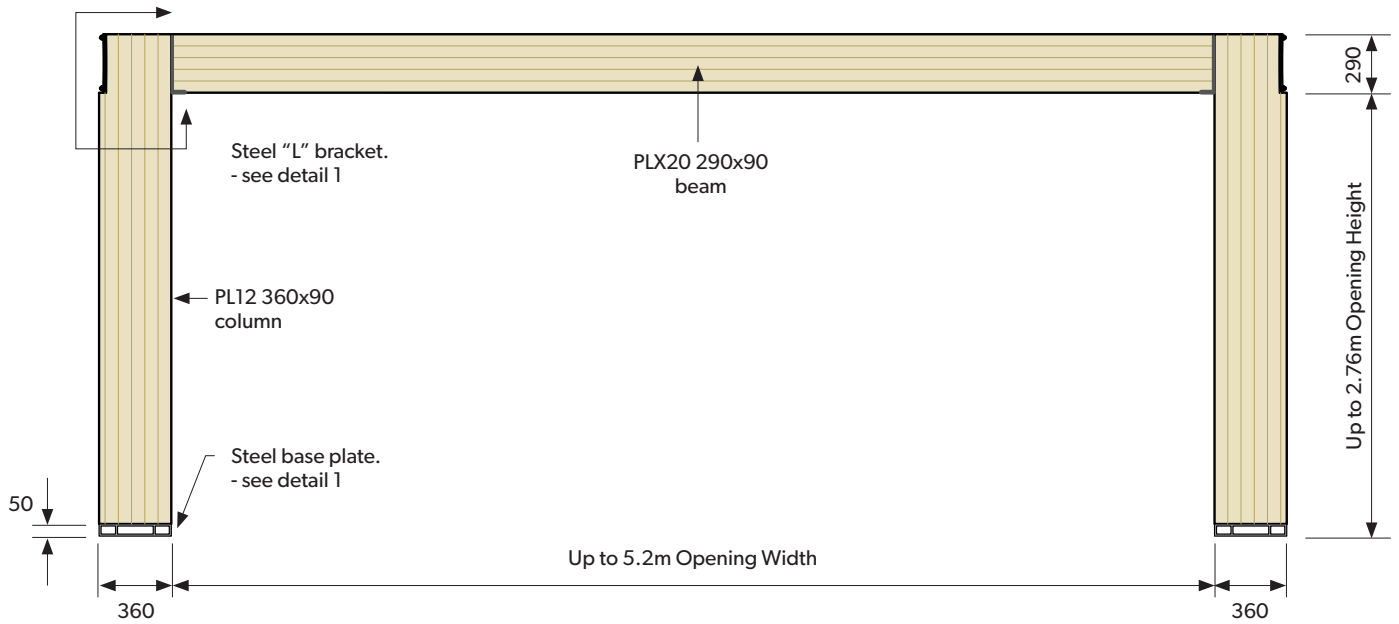
Notes:

1. Ground snow loads up to 0.9kPa.
2. Maximum 750mm eaves width.
3. Up to 25 degrees roof pitch.
4. Girder Truss can be positioned anywhere along the length of the Lintel.
5. Lintel Top edge is assumed to be restrained.
6. Please contact the Prolam Engineer for more information on Span Tables.

 Lumberlok 8T15 Tylok Plate Required

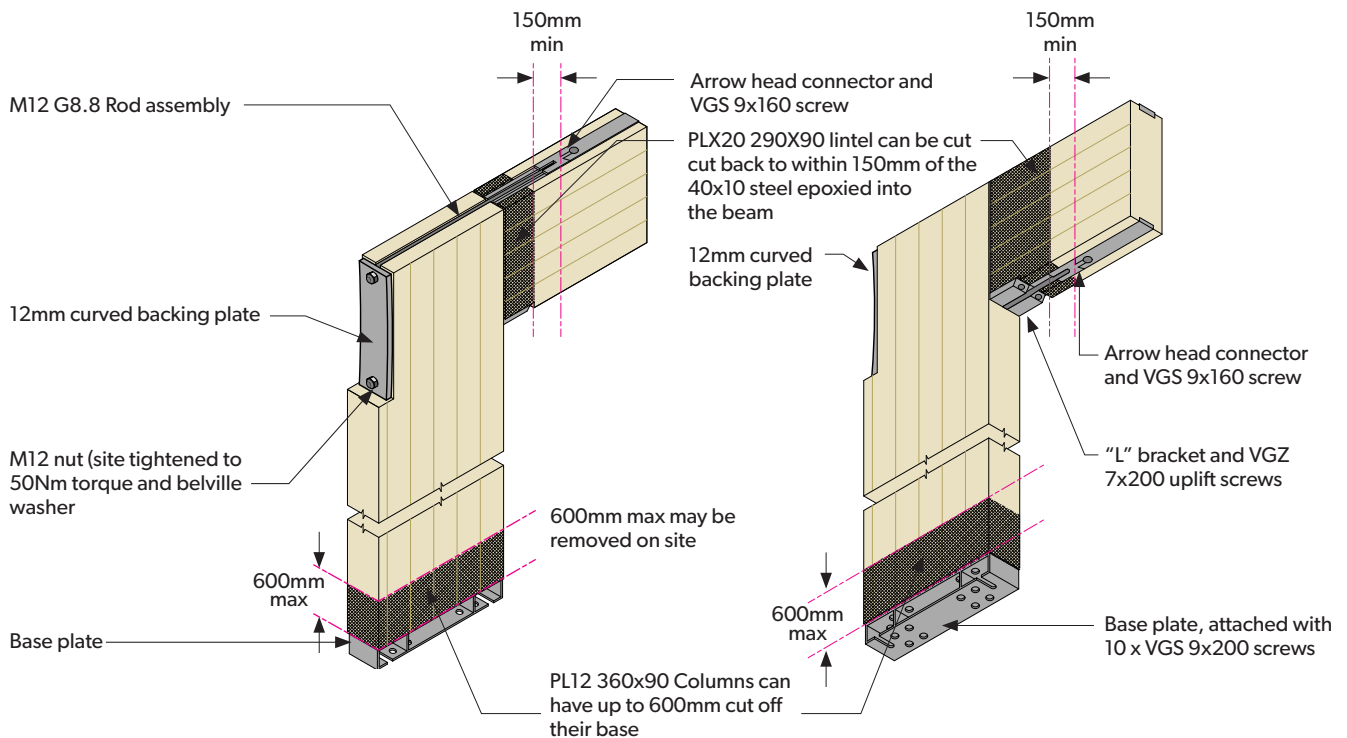


PLX Portal Elevation Drawing



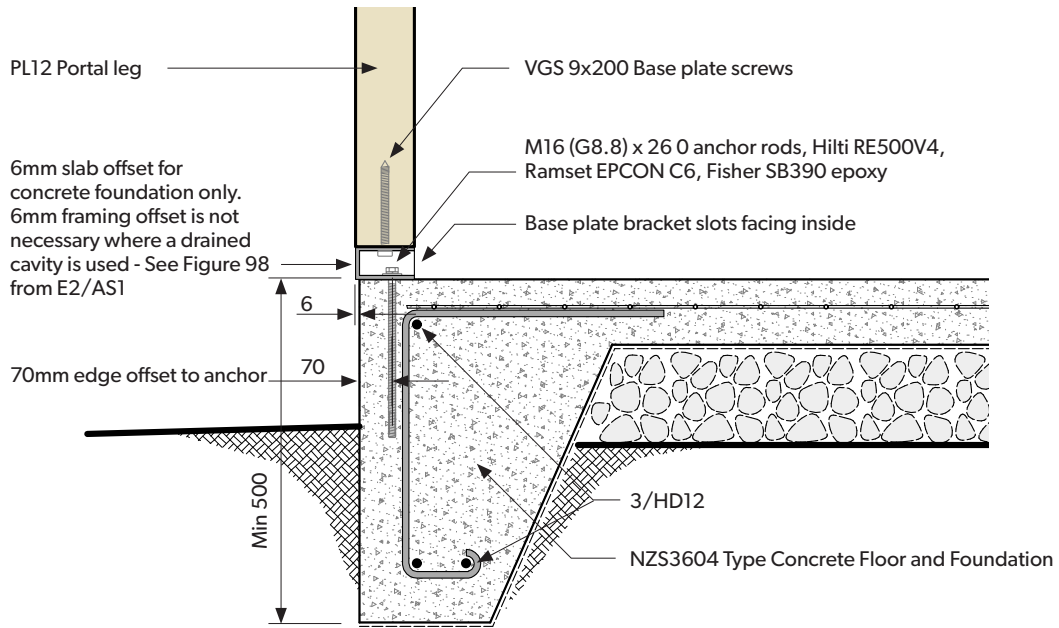
PLXP-3
2023-06-19

Knee and Base Plate Detail



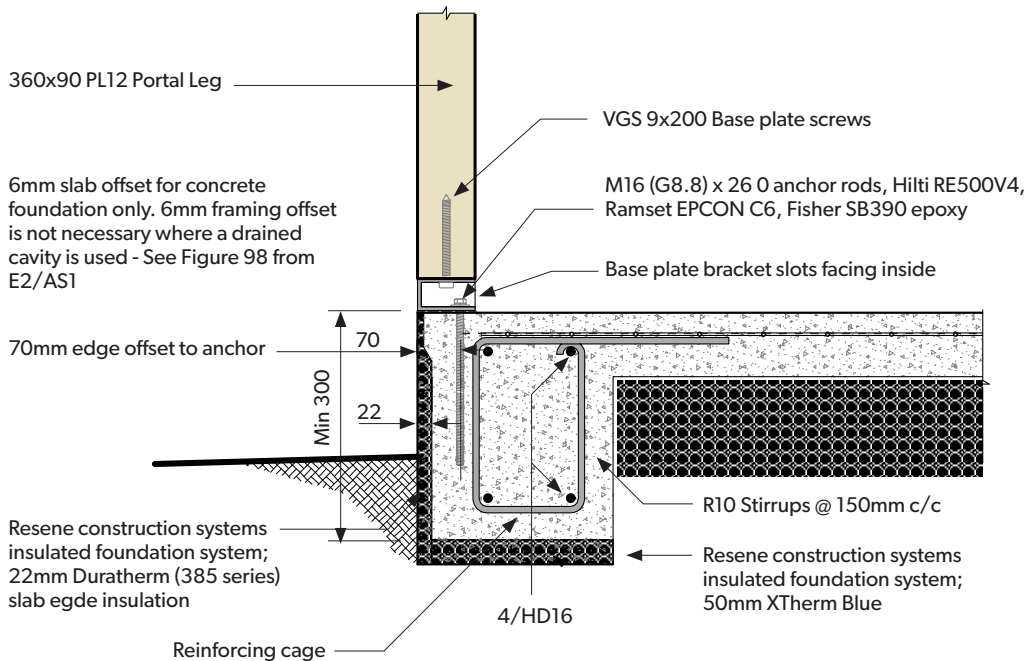
PLXP-4
2023-06-19

Concrete Floor Connections



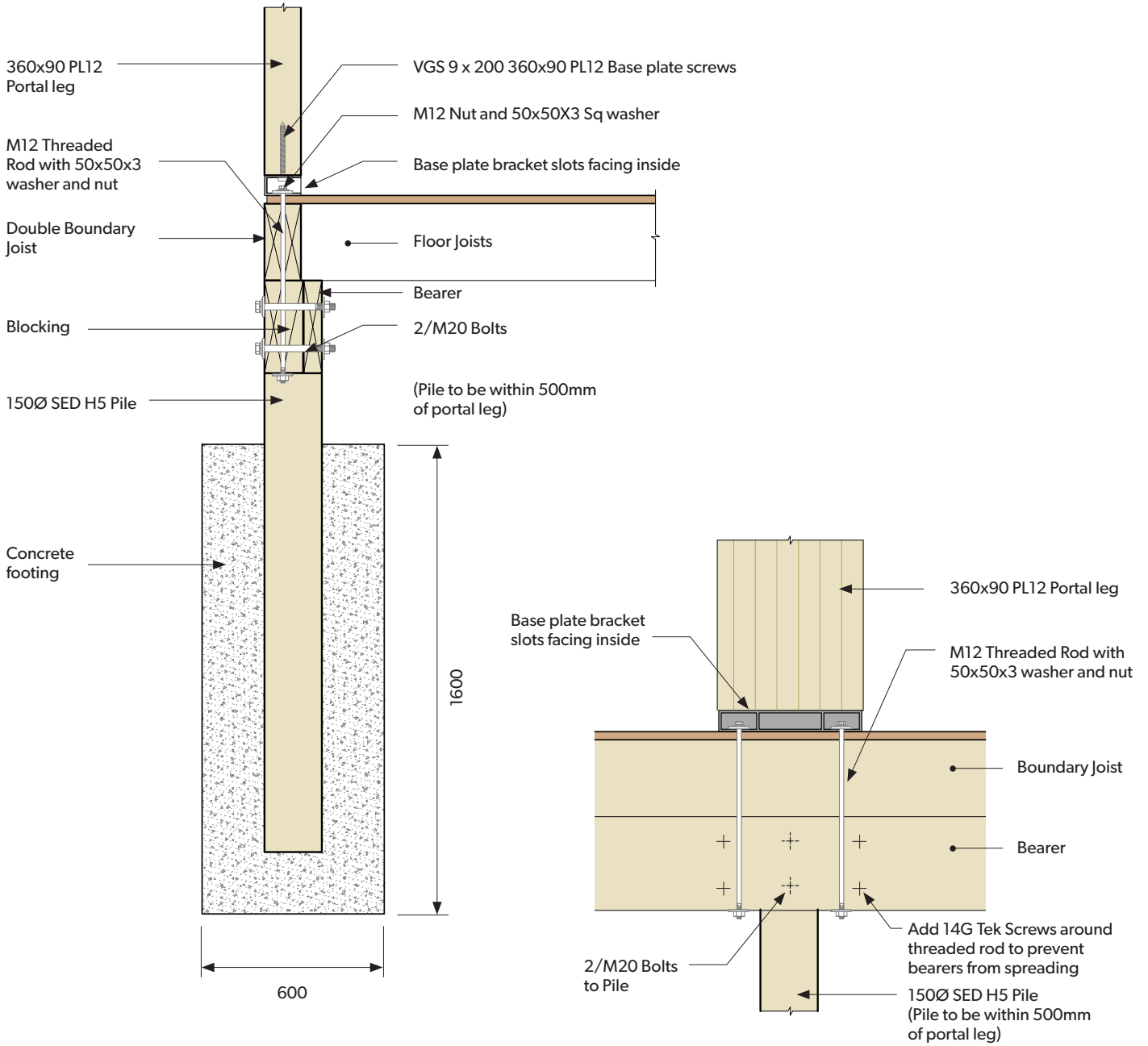
PLXP-5
2023-06-19

Hotedge waffle slab insulated foundation connection



PLXP-6
2023-07-17

Timber Floor Connections



PLXP-7
2023-07-17



Structural Properties

Structural Properties		Characteristic Strength (MPa)		Elastic Moduli (GPa)
		Bending f'_b	Shear in beam f'_s	MoE short duration
Beam	PLX20 290x90	45	3.7	21.0
Column	PL12 360x90	25	3.7	11.5

- Notes:
1. PLX20 is intended for use as a beam and not a tension or compression member.
 2. PLX20 pre camber is $L/800$.
 3. Bending strength and MoE have been determined from testing. Other properties are based on SG6 timber.
 4. PL12 Columns have the same properties as GL12 Glulam as per NZS AS1720.1.
 5. Use ϕ factor of 0.8 for design.
 6. Provisional $K2/J2$ factor of deflection = 1.5
 7. Joint group = JD5.



Compliance Statement

The PLX Portal has been specifically designed and independently tested in New Zealand to provide a structural bracing solution for residential buildings within the scope of NZS3604. The PLX Portal has been tested in accordance with the BRANZ P21 (2010) bracing test and evaluation procedure, which is cited by NZS3604, paragraph 8.3.1.2.

When the PLX Portal is installed as per these installation details it will meet the requirements of the New Zealand Building Code with respect to:

- Clause B1 Structure: Performance B1.3.1, B1.3.2 and B1.3.3 and B1.3.4
- Clause B2 Durability: Performance B2.3.1 of not less than 50 years, internal use only.

Once the PLX Portal has been installed and prior to lining, the Building Consent Authority should inspect the portal during pre lining inspections.

For use other than with NZS3604 type structures, Specific Engineering design will be required.

Inspection Schedule

1. Foundation connection. Ensure the hold down bolts are tight and the anchor bolts are well secured into the timber or concrete.
2. Knee Connection. Ensure the M12 G8.8 nuts on the outside of the portal knee are tightened to 50Nm or both the 12mm washer plate and M12 Bellevue washers are squished flat.
3. Uplift screws. Ensure the two 45 degree uplift VGZ screws are installed at each end of the lintel.
4. Tylok uplift plate. If a Tylok uplift plate is required (refer to Span Table) check this is installed at each end of the lintel.
5. 6kN top plate connection. Ensure the adjacent walls are connected to the portal with a 6kN top plate connection.

Producer Statement

Potius Building Systems Ltd have been engaged by Prowood to develop and prepare the PLX Portal.

P21 testing has been performed at the Scion test facilities and engineering design has been carried out in accordance with widely accepted engineering principals of AS/NZS1170, NZS3604 & NZS/AS1720 using the structural properties shown below.

On behalf of Potius Building Systems Ltd (Producer statement to be reviewed by June 2028)

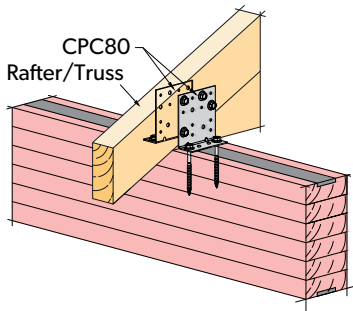


Andy Van Houtte
CMEngNZ, CPeng 250791

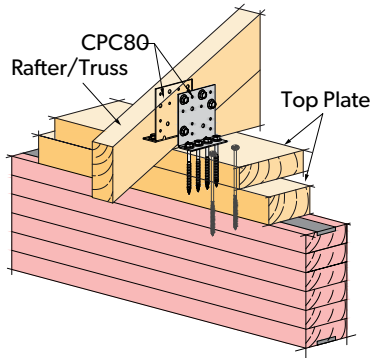


PLX Uplift Fixings

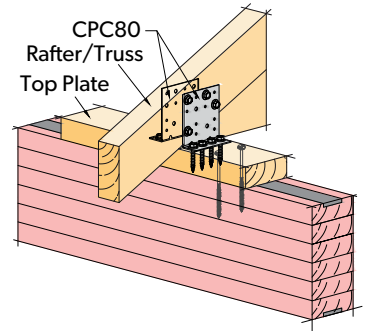
A1



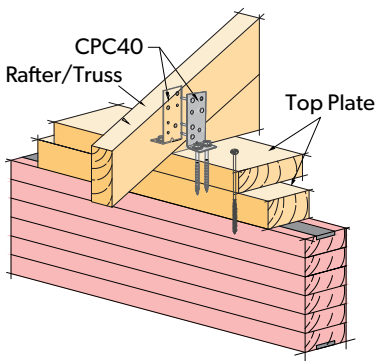
B1



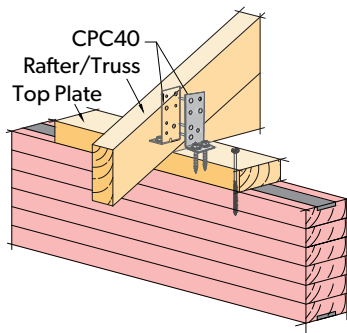
B2



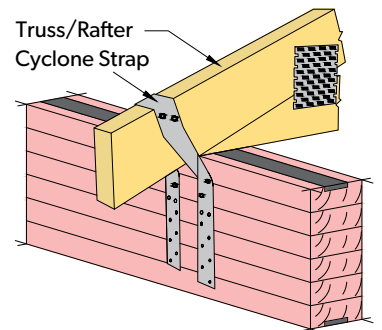
C1



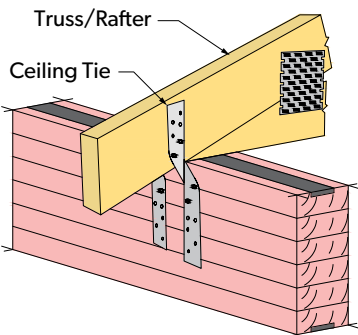
C2



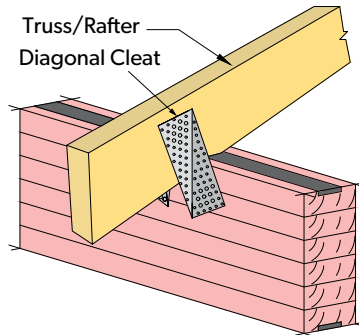
G1



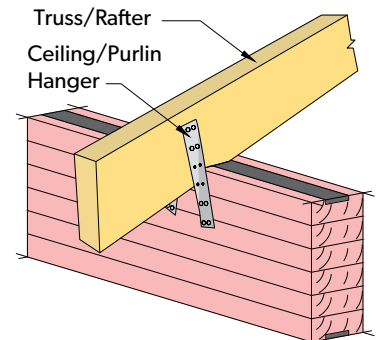
H1



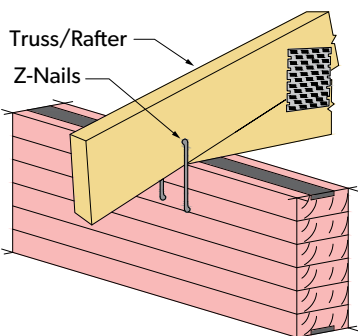
I1



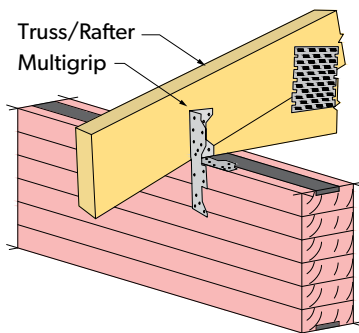
J1



K1



L1



	Characteristic Strength	ULS Capacity
A1	16 kN/Pair	11.2 kN/Pair
B1 & B2	16 kN/Pair	11.2 kN/Pair
C1 & C2	8 kN/Pair	5.6 kN/Pair
G1	12 kN	9.6 kN
H1	10.5 kN/Pair	8.4 kN/Pair
I1	20 kN/Pair	16 kN/Pair
J1	-	5 kN/Pair
K1	3.2 kN/Pair	2.5 kN/Pair
L1	4 kN/Pair	3.2 kN/Pair

Building Better Together

At Prolam, we support engineers, architects and building professionals to design and build with strength, confidence and ease using premium engineered timber solutions.



NZ made quality

Innovative timber solutions designed and made in New Zealand using high quality, locally sourced materials – creating local employment and training opportunities



Fast and efficient

Industry-best lead times via a secure supply chain, proactive management of stock holdings and next level production efficiencies



Solid eco-credentials

Made from New Zealand plantation timber, with research-backed resistance to harsh environmental conditions



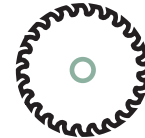
Strong and safe

Precision engineered for a superior fit, optimal structural integrity, dimensional stability, and easy and safe installation



Confident compliance

Prolam sets the benchmark in building code compliance and certification for glulam timber products – for smooth engineering and building consent approvals



Cutting edge technology

Advanced manufacturing processes and smart tools that streamline product specification, supply, installation and certification



Built-in ease

Control at every step, with expert technical advice on tap – from knowledge of local industry codes, precise product specification to installation and after sales support



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