

Building
better
together

Prolam® PLX Portal

Prolam® PLX Portal

RESIDENTIAL | COMMERCIAL

prolamnz.com



Prolam®
Engineered Laminated Timber

The high performance timber bracing solution for residential construction

The innovative Prolam PLX glulam timber portal system revolutionises 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. The PLX20 is precision engineered from quality New Zealand-grown pine, reinforced with steel for exceptional load bearing capacity and spanning capability. The PLX Portal's custom-designed system of brackets provide next level bracing capacity.

Built to perform and to resist wind and earthquake loads

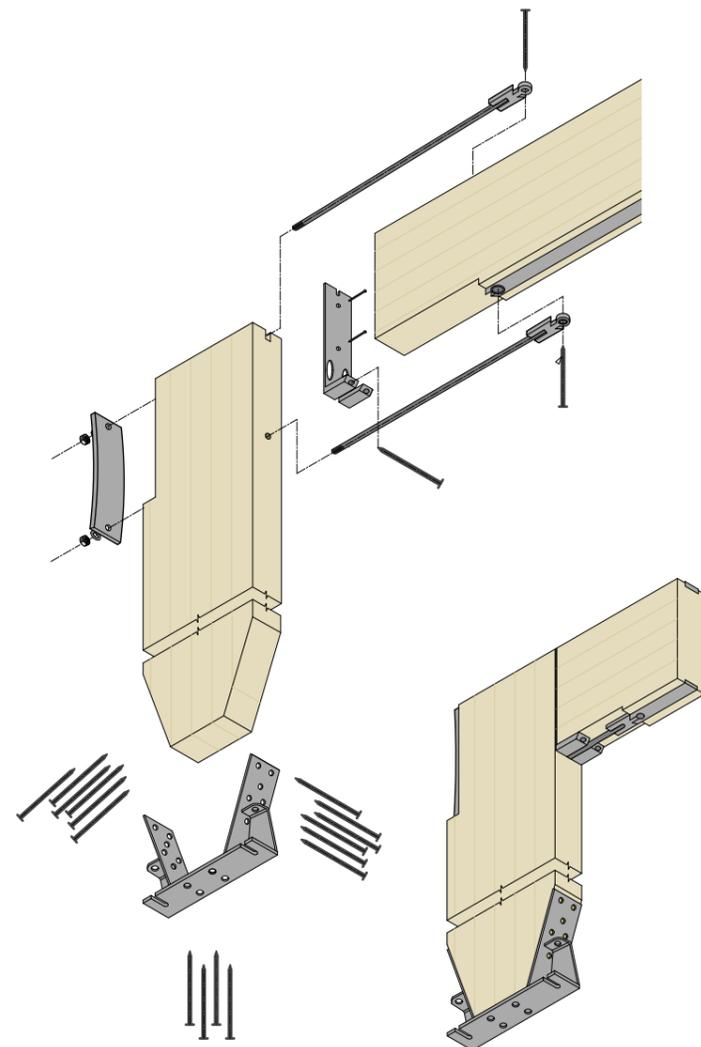
The PLX Portal has been specifically designed and independently tested to provide a structural bracing solution for buildings within the scope of NZS3604. Tested using the BRANZ P21 methodology, the PLX Portal provides bracing units to resist wind and earthquake loads.

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.



D1107
03/2025



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

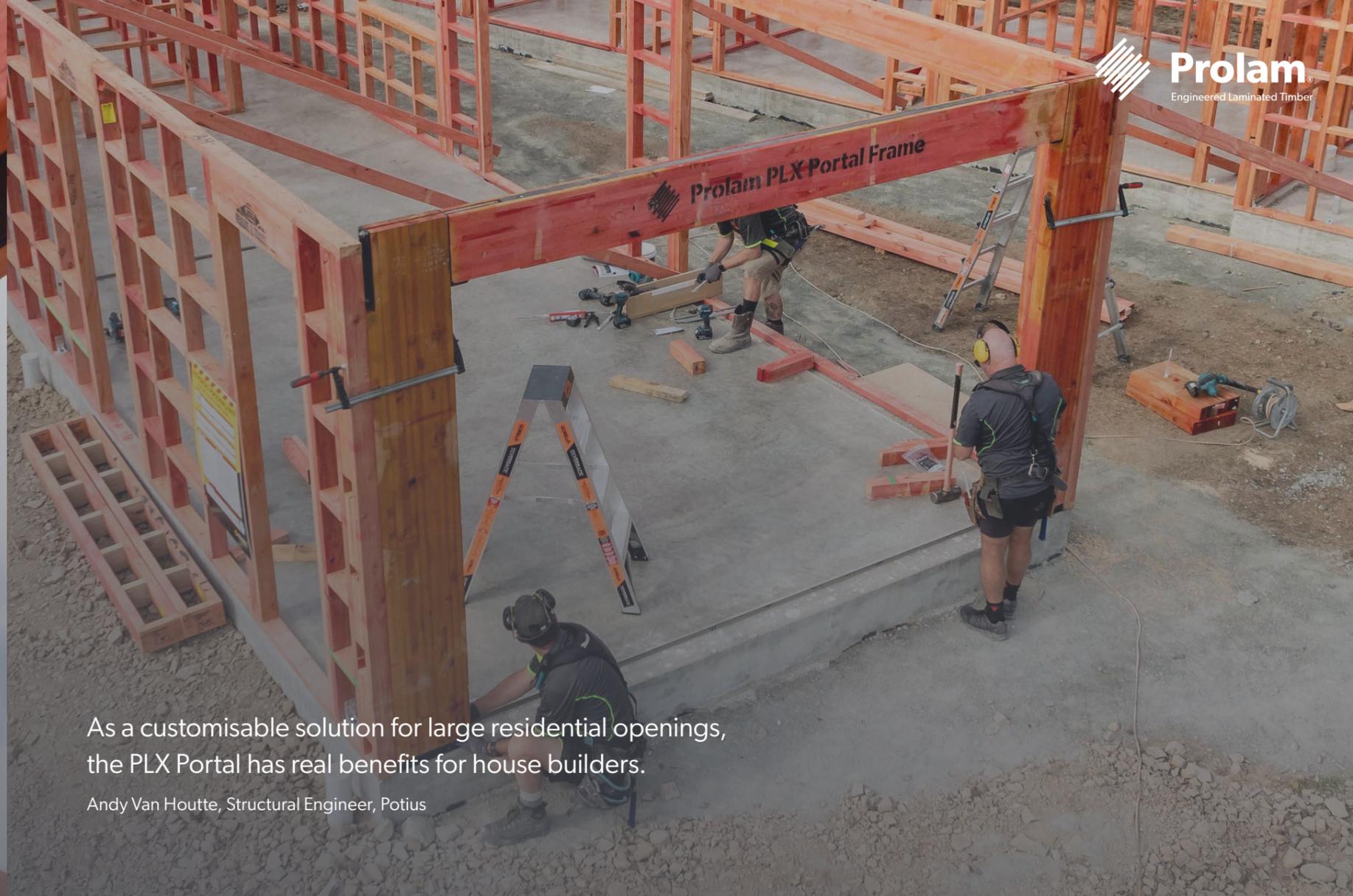
John Woodman, Managing Director, Prolam



SCAN FOR MORE

Detailed specs
and information

Innovative structural timber solution



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

Andy Van Houtte, Structural Engineer, Potius

Prolam[®] PLX Portal

Optimal design freedom & flexibility

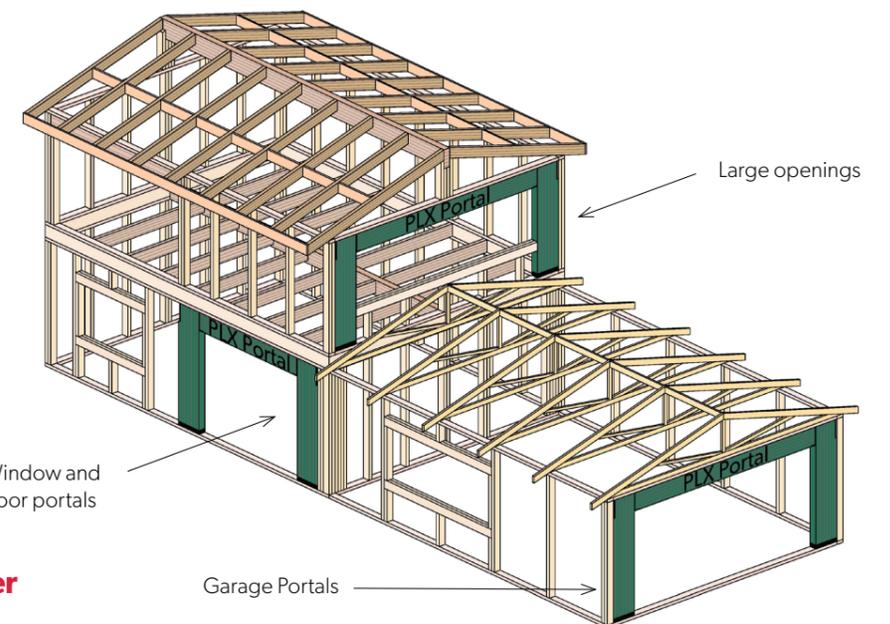
| | |
|--------------|--|
| Columns: | 360mm x 90mm 240mm x 90mm |
| Lintel: | 290mm x 90mm PLX20 |
| Treatment: | H1.2 |
| Grade: | Non-Visual |
| Limitations: | Only for use in interior areas (Service Class 1) Not for exterior use. |

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 additional staff
- ▶ Cut to length on site
- ▶ Simple concrete anchoring
- ▶ FSC timber options available
- ▶ Easy to specify with free PS1 certificate
- ▶ Made in New Zealand

Ideal applications

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



Specify on the Prolam Specifier

Refer to page 19 for a full list of specifications.

PLX200 Portal Series - Column Size 360x90 mm

| PLX200 Portal Series Bracing Capacity | | | | |
|---------------------------------------|-------------------------|------------------------|---------------------|---------------------------|
| Nominal Stud Height (m) | Max. Opening Height (m) | Max. Opening Width (m) | Wind Bracing (BU's) | Earthquake Bracing (BU's) |
| 2.4 | 2.2 | 6.0 | 184 | 202 |
| 2.7 | 2.4 | 6.0 | 180 | 199 |
| 3.0 | 2.7 | 6.0 | 176 | 195 |

| Stud Height (m) | Opening Width (m) | Max Total Portal Width (m) (Max Opening Width + Columns) | Product Code |
|---|-------------------|---|---------------------|
| 2.4 (Opening Height < 2.2) 184 Wind BUs 202 EQ BUs | 2.1 - 2.4 | 3.12 | PLXP200H1-2.4H-2.4L |
| | 2.4 - 2.7 | 3.42 | PLXP200H1-2.4H-2.7L |
| | 2.7 - 3.0 | 3.72 | PLXP200H1-2.4H-3.0L |
| | 3.0 - 3.3 | 4.02 | PLXP200H1-2.4H-3.3L |
| | 3.3 - 3.6 | 4.32 | PLXP200H1-2.4H-3.6L |
| | 3.6 - 3.9 | 4.62 | PLXP200H1-2.4H-3.9L |
| | 3.9 - 4.2 | 4.92 | PLXP200H1-2.4H-4.2L |
| | 4.2 - 4.5 | 5.22 | PLXP200H1-2.4H-4.5L |
| | 4.5 - 4.8 | 5.52 | PLXP200H1-2.4H-4.8L |
| | 4.8 - 5.1 | 5.82 | PLXP200H1-2.4H-5.1L |
| 2.7 (Opening Height < 2.4) 180 Wind BUs 199 EQ BUs | 2.1 - 2.4 | 3.12 | PLXP200H1-2.7H-2.4L |
| | 2.4 - 2.7 | 3.42 | PLXP200H1-2.7H-2.7L |
| | 2.7 - 3.0 | 3.72 | PLXP200H1-2.7H-3.0L |
| | 3.0 - 3.3 | 4.02 | PLXP200H1-2.7H-3.3L |
| | 3.3 - 3.6 | 4.32 | PLXP200H1-2.7H-3.6L |
| | 3.6 - 3.9 | 4.62 | PLXP200H1-2.7H-3.9L |
| | 3.9 - 4.2 | 4.92 | PLXP200H1-2.7H-4.2L |
| | 4.2 - 4.5 | 5.22 | PLXP200H1-2.7H-4.5L |
| | 4.5 - 4.8 | 5.52 | PLXP200H1-2.7H-4.8L |
| | 4.8 - 5.1 | 5.82 | PLXP200H1-2.7H-5.1L |
| 3.0 (Opening Height < 2.7) 176 Wind BUs 195 EQ BUs | 2.1 - 2.4 | 3.12 | PLXP200H1-3.0H-2.4L |
| | 2.4 - 2.7 | 3.42 | PLXP200H1-3.0H-2.7L |
| | 2.7 - 3.0 | 3.72 | PLXP200H1-3.0H-3.0L |
| | 3.0 - 3.3 | 4.02 | PLXP200H1-3.0H-3.3L |
| | 3.3 - 3.6 | 4.32 | PLXP200H1-3.0H-3.6L |
| | 3.6 - 3.9 | 4.62 | PLXP200H1-3.0H-3.9L |
| | 3.9 - 4.2 | 4.92 | PLXP200H1-3.0H-4.2L |
| | 4.2 - 4.5 | 5.22 | PLXP200H1-3.0H-4.5L |
| | 4.5 - 4.8 | 5.52 | PLXP200H1-3.0H-4.8L |
| | 4.8 - 5.1 | 5.82 | PLXP200H1-3.0H-5.1L |

Notes for Tables:

1. The Portal height is taken from floor level to top of column. For different columns heights the bracing values may be interpolated.
2. The same bracing units apply to shorter lintel spans.
3. Allow 360mm or 240mm each side of opening for portal columns (total portal width = opening width + 0.72m or 0.48m).
4. Height may be altered (legs shortened) as required to give reduced opening and total portal heights (total portal height = opening height + 0.29m).
5. Bracing values assume moisture content of timber is ~15% this must be maintained during and after delivery and installation.

PLX150 Portal Series - Column Size 240x90mm

| PLX150 Portal Series Bracing Capacity | | | | |
|---------------------------------------|-------------------------|------------------------|---------------------|---------------------------|
| Nominal Stud Height (m) | Max. Opening Height (m) | Max. Opening Width (m) | Wind Bracing (BU's) | Earthquake Bracing (BU's) |
| 2.4 | 2.2 | 6.0 | 108 | 135 |
| 2.7 | 2.4 | 6.0 | 96 | 120 |
| 3.0 | 2.7 | 6.0 | 87 | 108 |

| Stud Height (m) | Opening Width (m) | Max Total Portal Width (m) (Max Opening Width + Columns) | Product Code |
|---|-------------------|---|---------------------|
| 2.4 (Opening Height < 2.2) 108 Wind BUs 135 EQ BUs | 2.1 - 2.4 | 2.88 | PLXP150H1-2.4H-2.4L |
| | 2.4 - 2.7 | 3.18 | PLXP150H1-2.4H-2.7L |
| | 2.7 - 3.0 | 3.48 | PLXP150H1-2.4H-3.0L |
| | 3.0 - 3.3 | 3.78 | PLXP150H1-2.4H-3.3L |
| | 3.3 - 3.6 | 4.08 | PLXP150H1-2.4H-3.6L |
| | 3.6 - 3.9 | 4.38 | PLXP150H1-2.4H-3.9L |
| | 3.9 - 4.2 | 4.68 | PLXP150H1-2.4H-4.2L |
| | 4.2 - 4.5 | 4.98 | PLXP150H1-2.4H-4.5L |
| | 4.5 - 4.8 | 5.28 | PLXP150H1-2.4H-4.8L |
| | 4.8 - 5.1 | 5.58 | PLXP150H1-2.4H-5.1L |
| 2.7 (Opening Height < 2.4) 96 Wind BUs 120 EQ BUs | 2.1 - 2.4 | 2.88 | PLXP150H1-2.7H-2.4L |
| | 2.4 - 2.7 | 3.18 | PLXP150H1-2.7H-2.7L |
| | 2.7 - 3.0 | 3.48 | PLXP150H1-2.7H-3.0L |
| | 3.0 - 3.3 | 3.78 | PLXP150H1-2.7H-3.3L |
| | 3.3 - 3.6 | 4.08 | PLXP150H1-2.7H-3.6L |
| | 3.6 - 3.9 | 4.38 | PLXP150H1-2.7H-3.9L |
| | 3.9 - 4.2 | 4.68 | PLXP150H1-2.7H-4.2L |
| | 4.2 - 4.5 | 4.98 | PLXP150H1-2.7H-4.5L |
| | 4.5 - 4.8 | 5.28 | PLXP150H1-2.7H-4.8L |
| | 4.8 - 5.1 | 5.58 | PLXP150H1-2.7H-5.1L |
| 3.0 (Opening Height < 2.7) 87 Wind BUs 108 EQ BUs | 2.1 - 2.4 | 2.88 | PLXP150H1-3.0H-2.4L |
| | 2.4 - 2.7 | 3.18 | PLXP150H1-3.0H-2.7L |
| | 2.7 - 3.0 | 3.48 | PLXP150H1-3.0H-3.0L |
| | 3.0 - 3.3 | 3.78 | PLXP150H1-3.0H-3.3L |
| | 3.3 - 3.6 | 4.08 | PLXP150H1-3.0H-3.6L |
| | 3.6 - 3.9 | 4.38 | PLXP150H1-3.0H-3.9L |
| | 3.9 - 4.2 | 4.68 | PLXP150H1-3.0H-4.2L |
| | 4.2 - 4.5 | 4.98 | PLXP150H1-3.0H-4.5L |
| | 4.5 - 4.8 | 5.28 | PLXP150H1-3.0H-4.8L |
| | 4.8 - 5.1 | 5.58 | PLXP150H1-3.0H-5.1L |

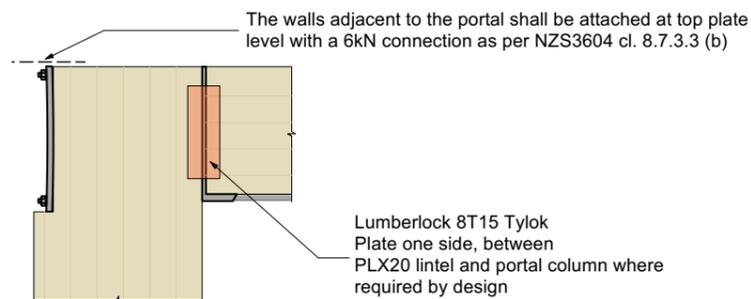
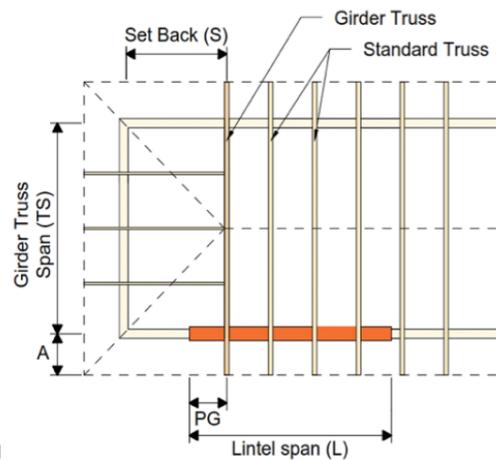
Span Tables for Roof Loads

| 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 | 6.0 | 6.0 | 6.0 | 5.8 | 5.6 | 5.5 | 5.3 |
| High and Very High | 5.5 | 5.3 | 5.1 | 5.0 | 4.8 | 4.7 | 4.6 |
| Extra High | 5.3 | 5.1 | 4.9 | 4.7 | 4.6 | 4.5 | 4.4 |

| Lintel Supporting Girder Truss - 40kg/m ² | | | | | | | | |
|--|----------------|-------------------|-----|-----|-----|-----|-----|-----|
| Wind Zone | Roof Width (m) | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | Set Back (m) | Opening Width (m) | | | | | | |
| Low and Medium | 2 | 6.0 | 6.0 | 5.9 | 5.7 | 5.6 | 5.4 | 4.9 |
| | 3 | 6.0 | 6.0 | 5.9 | 5.7 | 5.4 | 4.7 | 4.2 |
| | 4 | 6.0 | 6.0 | 5.8 | 5.6 | 4.7 | 4.0 | 3.5 |
| High and Very High | 2 | 5.5 | 5.2 | 5.1 | 4.9 | 4.7 | 4.6 | 4.5 |
| | 3 | 5.5 | 5.2 | 5.0 | 4.9 | 4.7 | 4.6 | 4.2 |
| | 4 | 5.4 | 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 us at info@prolamnz.com for more information on Span Tables.

Lumberlok 8T15 Tylok Plate Required. Refer to detail D1101.



D1101
03/2025

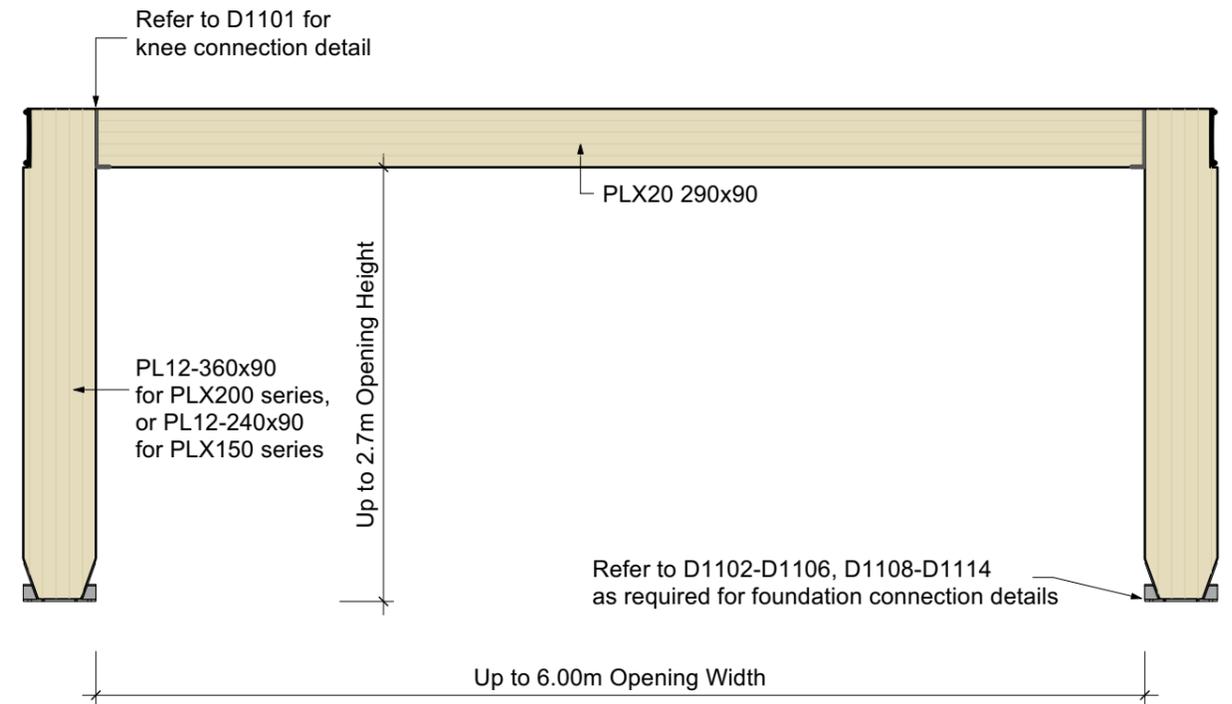
PLXP-1
2023-06-19

Specify on the Prolam Specifier

Refer to page 19 for a full list of specifications.

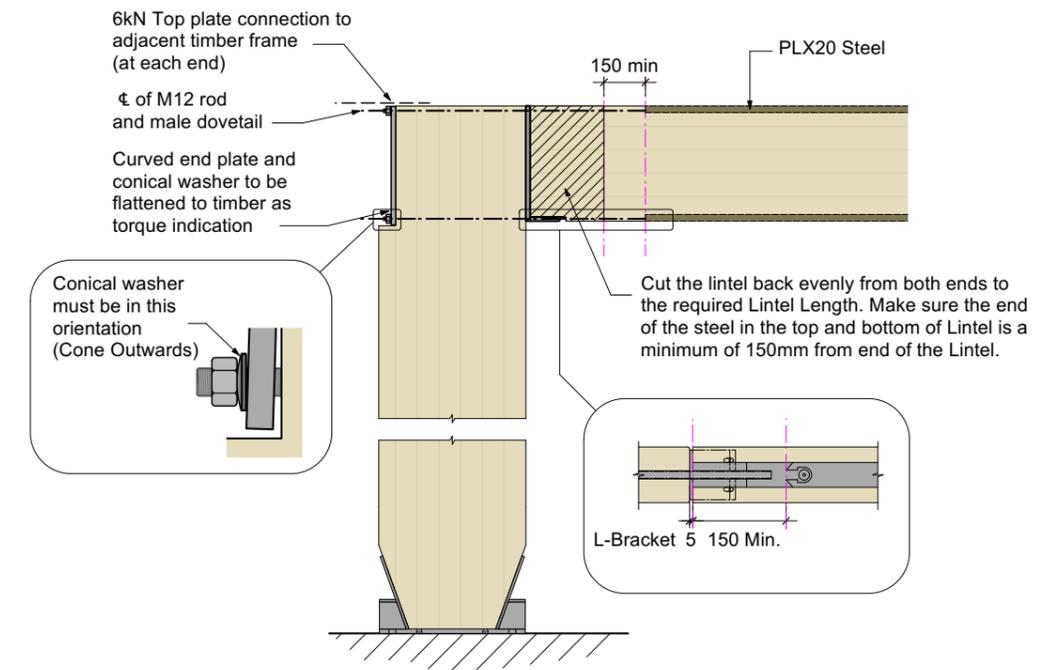
Side View Elevation

D1100
03/2025



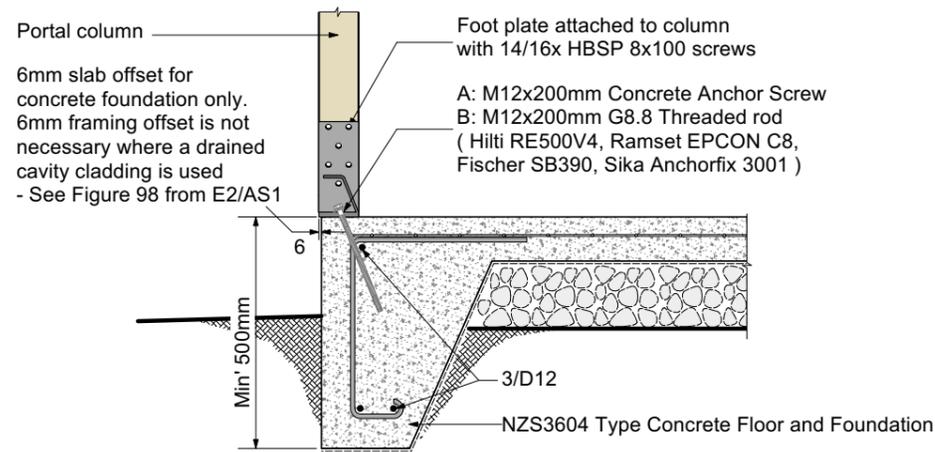
Knee Connection Detail

D1101
03/2025



3604 Concrete Foundation Connection

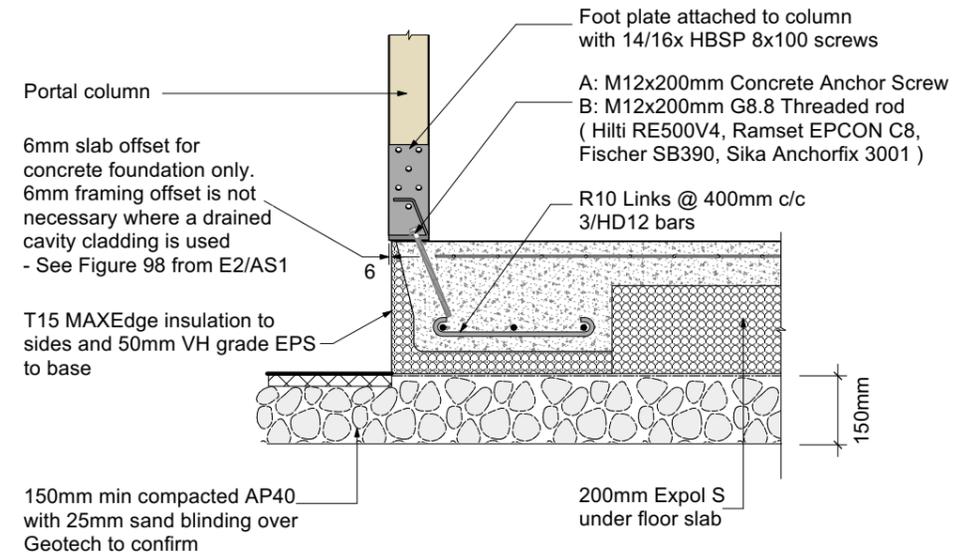
D1102
03/2025



Note: Refer to D1104, D1113, D1114 for slab edge installations

MAXraft Slab Foundation Connection

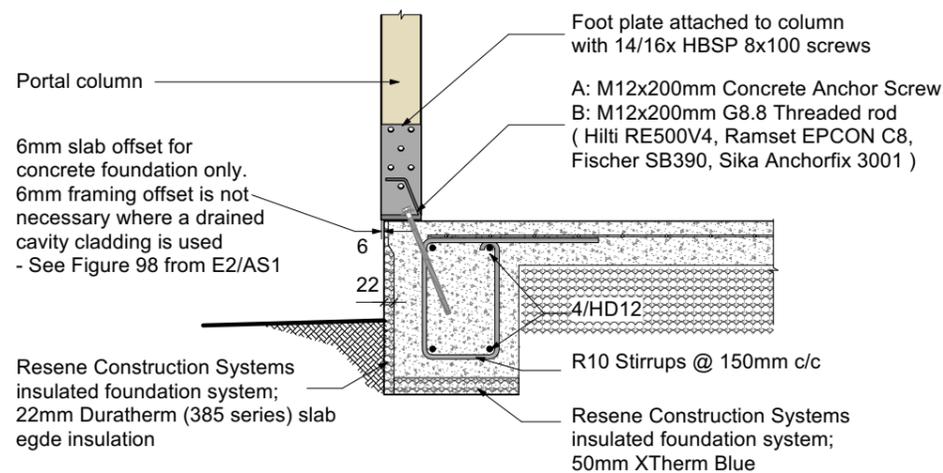
D1108
03/2025



Note: Refer to D1104, D1113, D1114 for slab edge installations

Hotedge Waffle Slab Foundation Connection

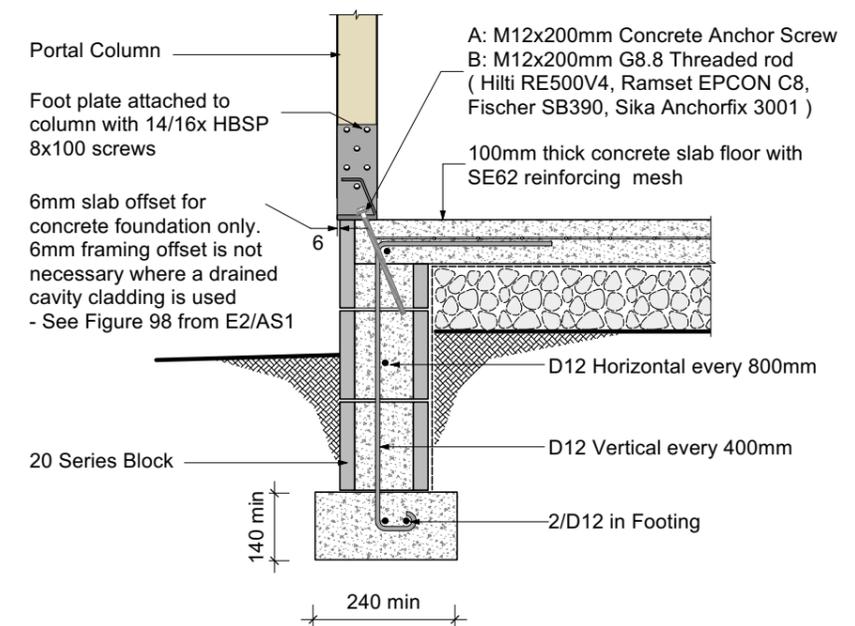
D1103
03/2025



Note: Refer to D1104, D1113, D1114 for slab edge installations

Block Concrete Edge Connection

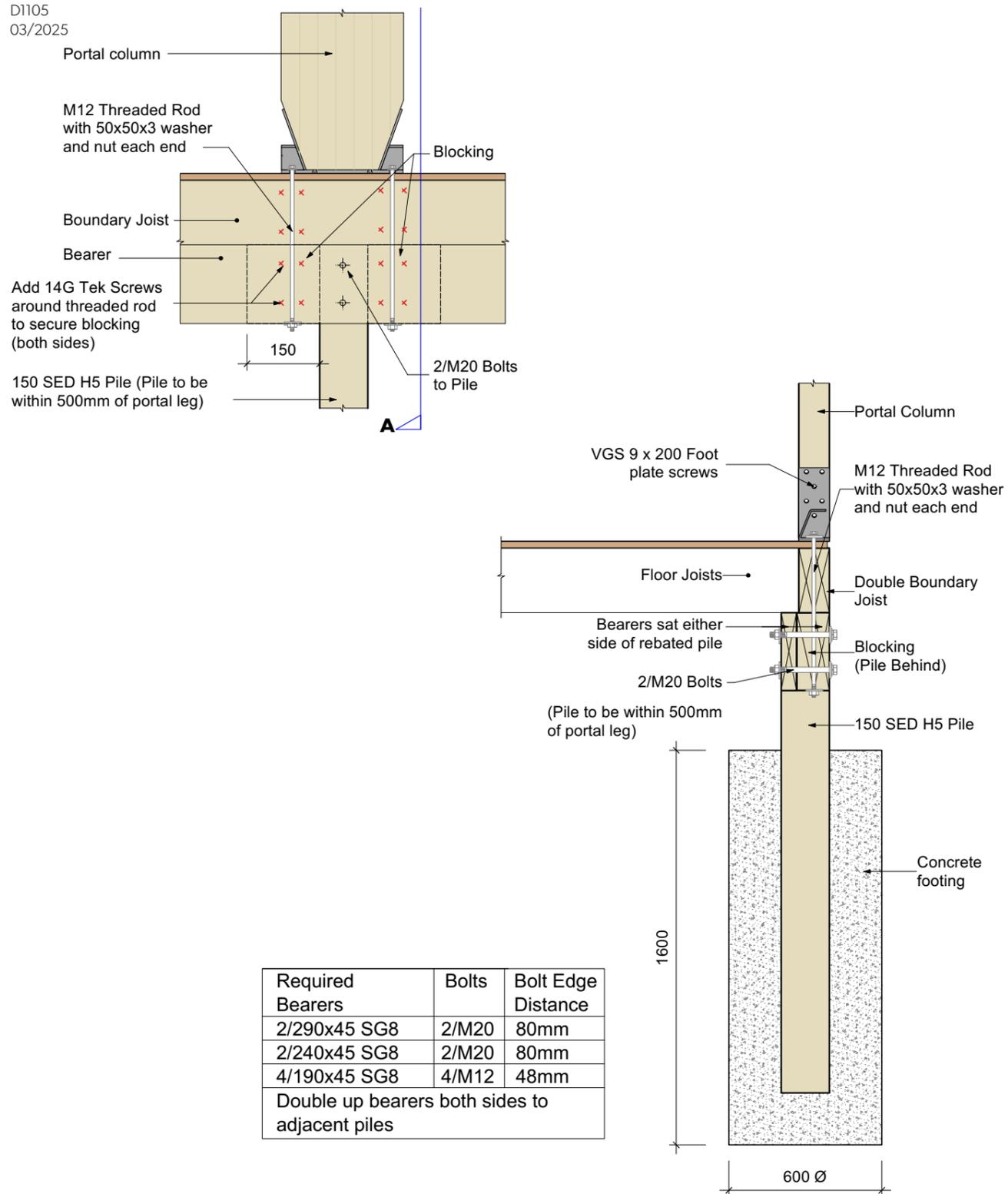
D1106
03/2025



Note: Refer to D1104, D1113, D1114 for slab edge installations

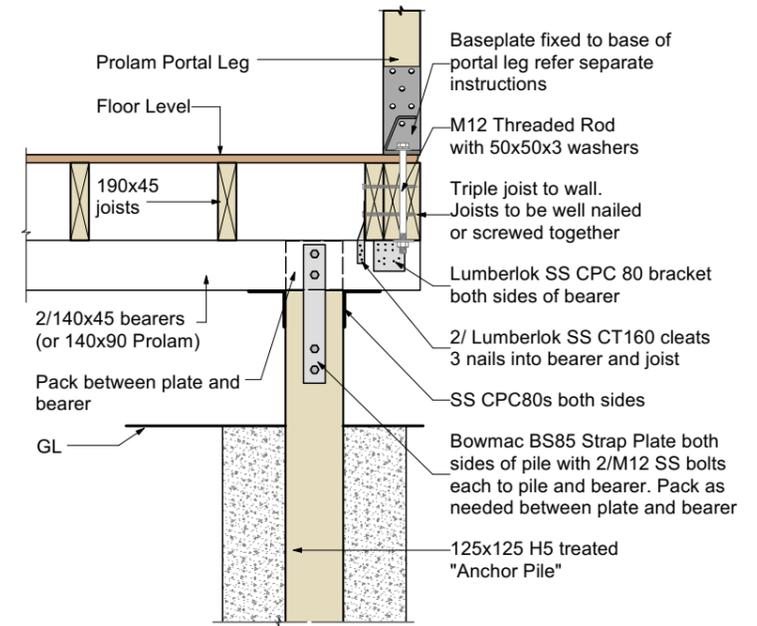
Timber Floor Connection

D1105
03/2025



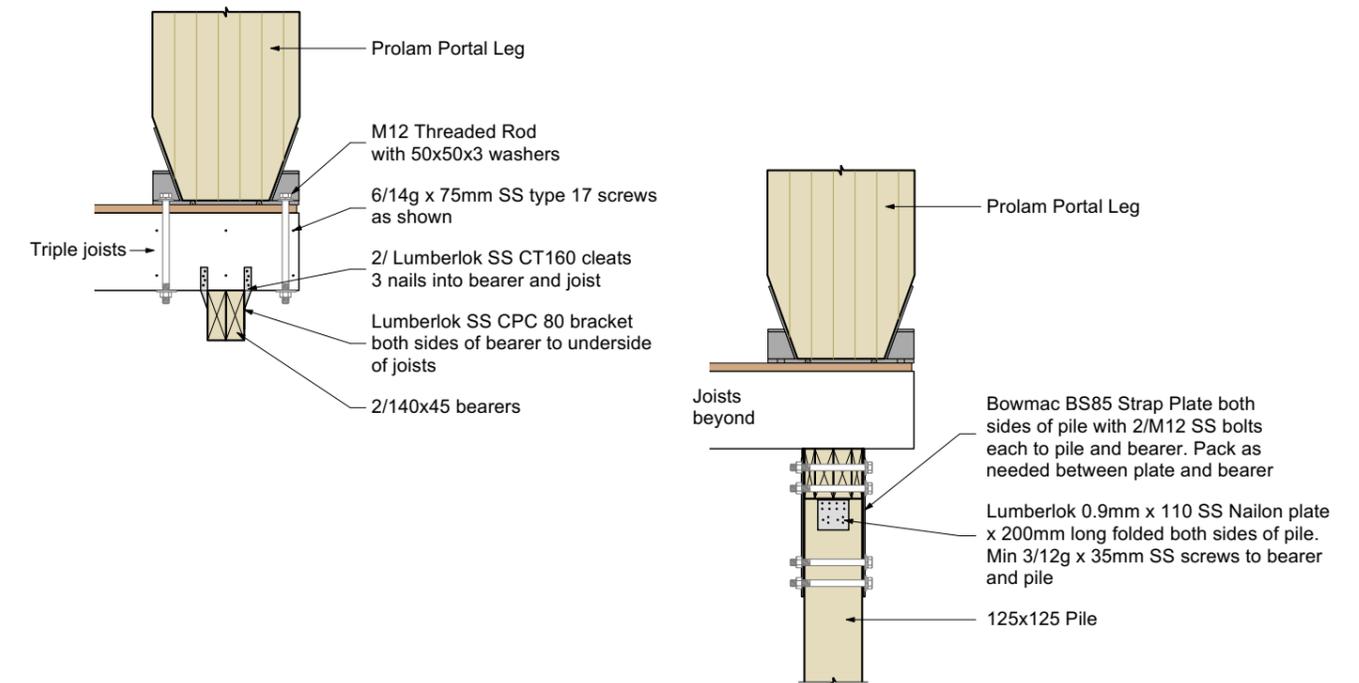
Timber Floor Connection - Parallel to Joists

D1109
03/2025



Timber Floor Connection - Parallel to Joists - Sections

D1110
03/2025

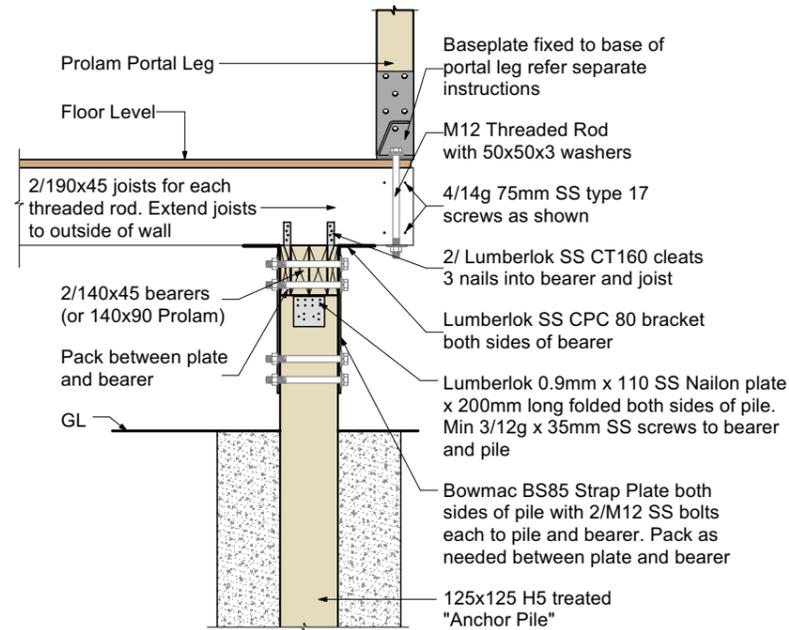


Note:
As per NZS:3604 for any builds in Zone D, subfloor fixings will need to be stainless steel or denzo taped.

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

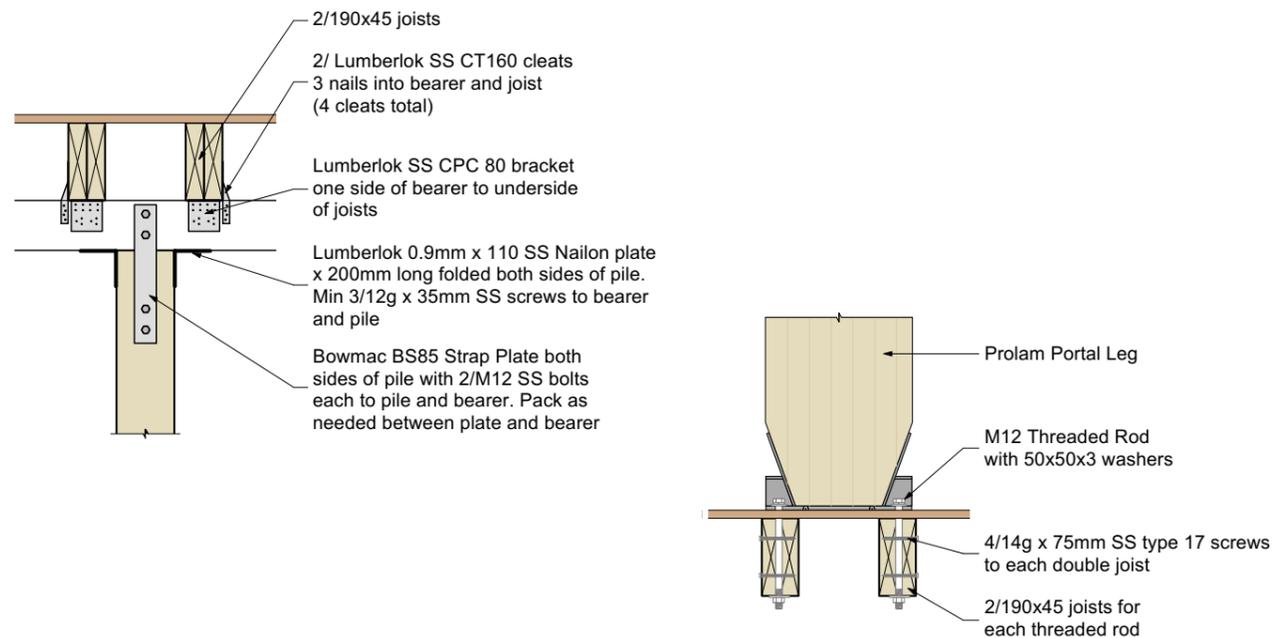
Timber Floor Connection - Parallel to Bearers

D1111
03/2025



Timber Floor Connection - Parallel to Bearers - Sections

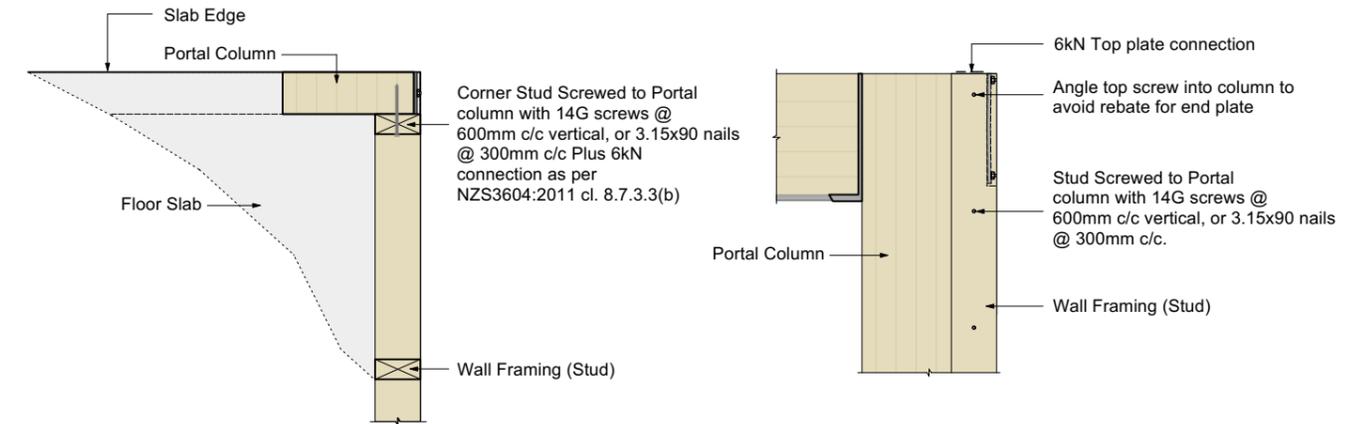
D1112
03/2025



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

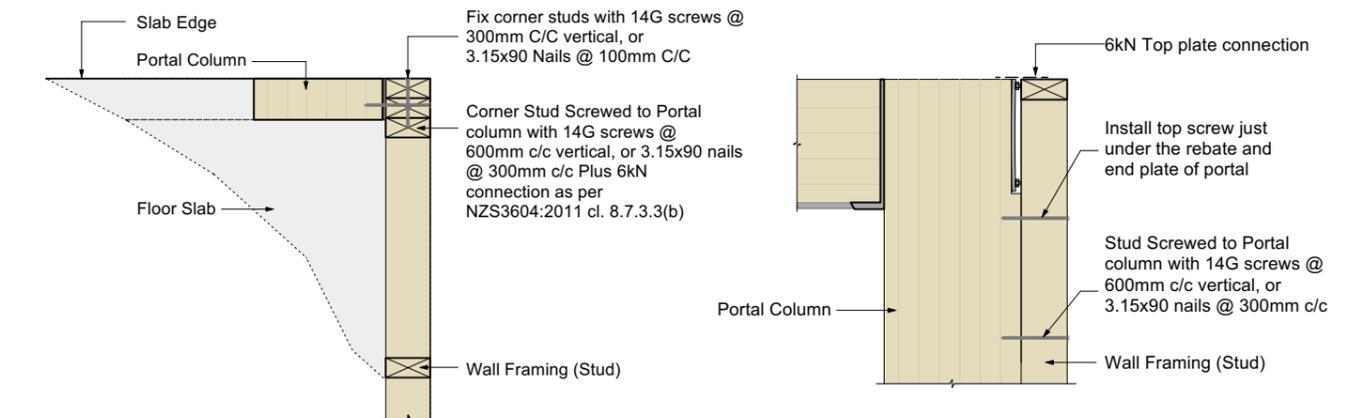
Connection to Wall Framing: Perpendicular Wall

D1104
03/2025



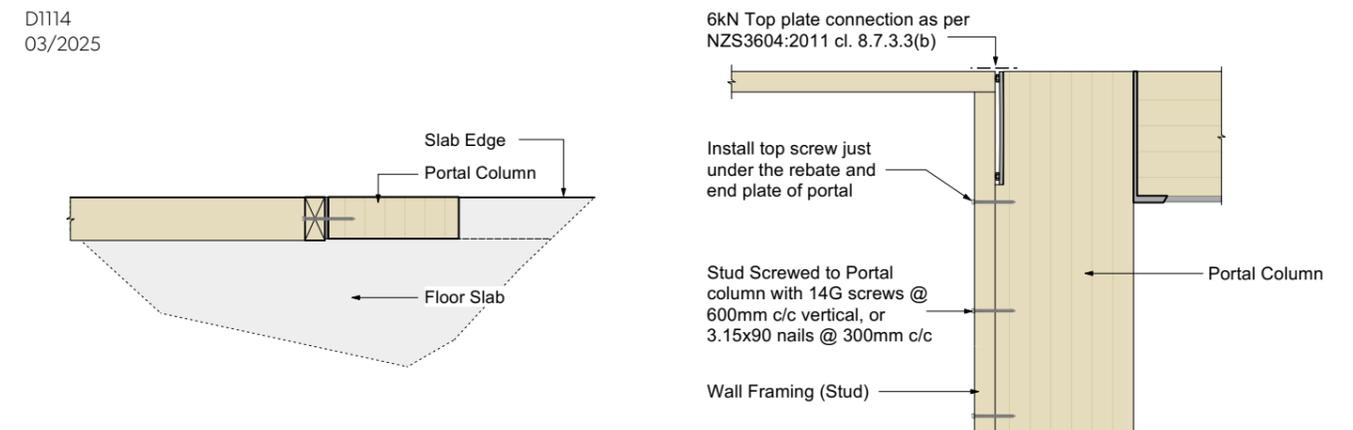
Connection to Wall Framing: Perpendicular Wall 2

D1113
03/2025



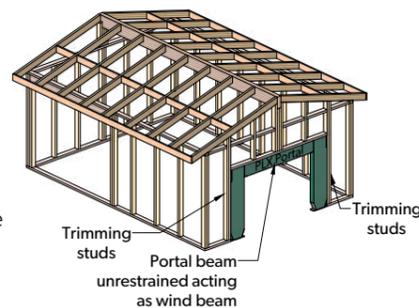
Connection to Wall Framing: Along Edge With Adjacent Wall

D1114
03/2025

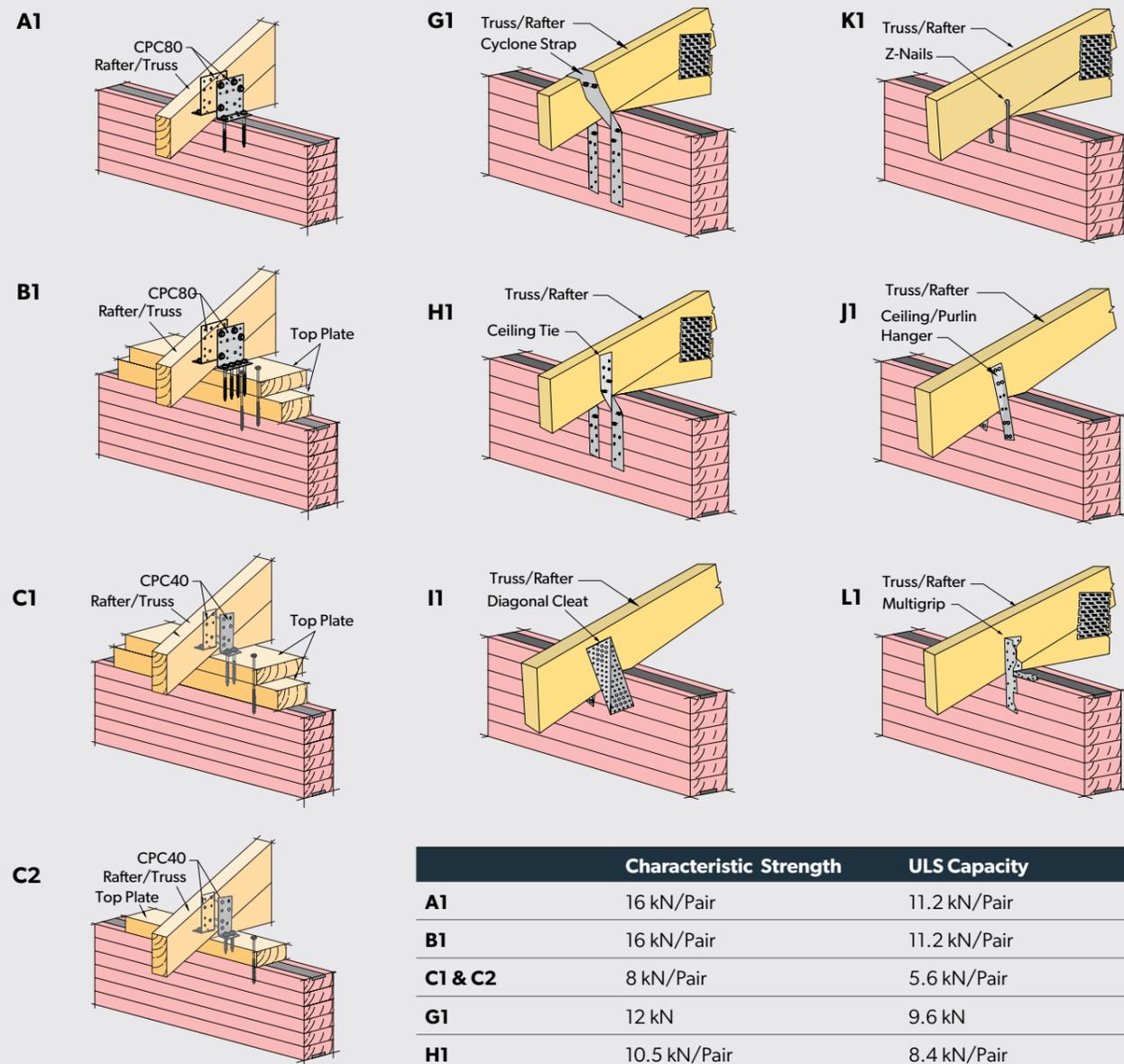


Lateral restraint

Beams in PLX portals, designed using the Prolam specifier or the span tables in this guide, are assumed to have adequate lateral restraint provided by the roof framing, floor framing or ceiling system. If the beams lack sufficient lateral restraint, the performance of the beams for wind loads on the face of the wall should be evaluated using PLX20 design properties about the minor (Y-Y) axis. PLX portal should be able to transfer the wind loads on the face of the wall to the roof or floor framing. If the portal is not directly connected to the roof or floor framing, full-height trimming studs next to the portal column will be necessary.



Uplift fixings



| | Characteristic Strength | ULS Capacity |
|--------------------|-------------------------|--------------|
| A1 | 16 kN/Pair | 11.2 kN/Pair |
| B1 | 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 |

Avoid drilling through or damaging the steel bar for fixings and take care to prevent the steel plate from damaging the screw threads.

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

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

Structural Properties

| | Structural Properties | Characteristic Strength (MPa) | | | Elastic Moduli (GPa) short duration | |
|---------------|-----------------------|-------------------------------|----------------------|---------------------|-------------------------------------|--------------|
| | | Bending $f' b_{x-x}$ | Bending $f' b_{y-y}$ | Shear in beam $f's$ | MoE $_{x-x}$ | MoE $_{y-y}$ |
| Beam | PLX20 290x90 | 45 | 13 | 3.7 | 21.0 | 6 |
| Column | PL12 360x90 | 25 | 25 | 4.2 | 11.5 | 11.5 |
| Column | PL12 240x90 | 25 | 25 | 4.2 | 11.5 | 11.5 |

Notes:

1. PLX20 is intended for use as a beam and not a tension or compression member.
2. PLX20 precamber has a 600m radius.
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.

The PLX Portal can be used for both timber and concrete subfloors in accordance with NZS3604 (refer to pages 10 - 15).

Bracing values may be used for lintel spans up to 6.0m.

The walls adjacent to the portal shall be attached at top plate level with a 6kN connection as per NZS3604 cl. 8.7.3.3 (b)

Inspection Schedule

1. Foundation connection. Ensure the hold down nuts are tight and the anchor bolts/screws are well secured into the timber or concrete subfloor according to the appropriate foundation connection.
2. Knee Connection. Ensure the M12 G8.8 nuts on the outside of the portal knee are tightened to 50Nm or both the curved end plate and conical washers are flattened against the columns.
3. Uplift screws. Ensure the two 45 degree uplift VGZ screws are installed into the L Brackets at each end of the lintel.
4. Tylok uplift plate. If a Tylok uplift plate is required (refer to Span Table on page 7) 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. See detail D1101.

Note: Inspection must be carried out by the Building Consent Authority or a certified third party.

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 above.

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

Andy Van Houtte
CMEngNZ, CPeng 250791

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.



Solid eco-credentials

Made from New Zealand plantation timber, with research-backed resistance to harsh environmental conditions, FSC certified timber options available.



Confident compliance

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



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.



Fast and efficient

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



Strong and safe

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



Cutting edge technology

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

Specify with certainty

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