

## NZ NAIL-ON PLATES AND ANGLE

A pre-punched plates for joining or connecting timber.

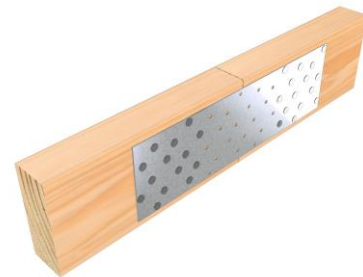
**CodeMark**   
CMNZ-10031

### FEATURES AND BENEFITS

**SIMPLE:** Pre-punch holes ready for onsite application using nail fix or screw fix.

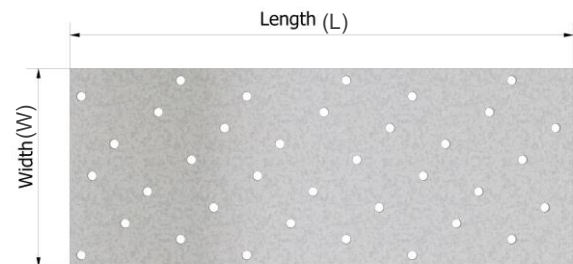
**FAST:** Simply select the correct plate size and type, place into position, and fasten through the pre-punched holes to suit design application.

**DURABLE:** Any heavy-duty timber connection where a **Knuckle nail plate** will not suffice. Joining beams. Repair work over existing fixings.

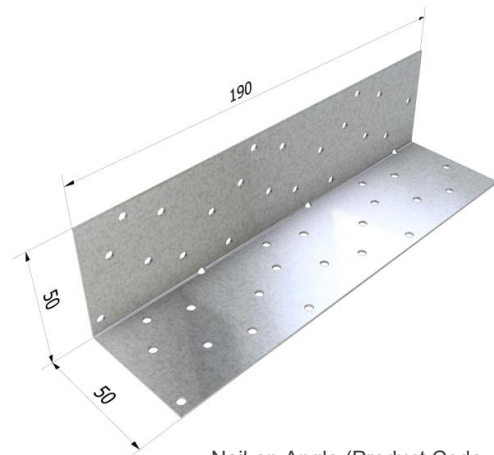


### SPECIFICATIONS

<b>PRODUCT CODE</b>	NPA <sup>(1)</sup> , NPB <sup>(2)</sup>
<b>STEEL</b>	G300 or Stainless Steel 304 <sup>(3)</sup>
<b>THICKNESS</b>	1mm for Z275
	0.9mm for Stainless Steel 304 <sup>(3)</sup>
<b>CORROSION RESISTANCE</b>	Z275 or Stainless Steel 304 <sup>(3)</sup>
<b>PRODUCT DIMENSION</b>	Sizes shown in Design Capacities table



NPA(W)/(L), NPB(W)/(L)



Nail-on Angle (Product Code: NPA)

Notes:

- 1) Refer to table for available sizes and style. Flat plate style or 90 degrees angle style.
- 2) NPB is made from 2mm thick steel. Refer to table for available sizes and style.
- 3) NPA100/190SS is the only Nail-On plate manufactured from stainless steel 316.

At the time of print, this product is NOT subject to any known warnings and bans found in Building Act 2004.

\*All dimensions shown in "mm".

**Pryda Nail-on Plates** are flat, galvanised, or stainless-steel plates which are nail-fixed to timber to form several types of joints. Their medium to high load capacities and wide range of sizes makes them ideally suited for on-site work.

Product codes below are made up from: Width/Length.

PRODUCT CODE	MATERIAL	PLATE STYLE	STEEL THICKNESS	WIDTH (mm)	LENGTH (mm)
NPA75/125	G300, Z275 Galvanised Steel	Flat	1	75	125
NPA75/190		Flat	1	75	190
NPA75/250		Flat	1	75	250
NPA75/315		Flat	1	75	315
NPA75/380		Flat	1	75	380
NPA100/190		Flat	1	100	190
NPA100/315		Flat	1	100	315
NPA150/315		Flat	1	150	315
NPA <sup>(1)</sup>		Angle	1	100	190
NPB75/380		Flat	2	75	380
NPB75 BAR *		Flat	2	75	1260
NPB100 BAR		Flat	2	100	1260
NPB150 BAR*		Flat	2	150	1260
NPA75BAR/S*		Stainless Steel 304	Flat	1	75
NPA100BAR/S	Flat		1	100	1260
NPA150BAR/S*	Flat		1	150	1260
NPA100/190SS	Stainless Steel 316	Flat	1	100	190

**Notes:**

1. NPA Nail-on Angle is NPA100/190 folded 90° along its length.
2. **The product marked with \* is no longer available.**



Narrow timber joining.



Wide timber joining.

## DURABILITY

The following table provides an easy guide when selecting a Pryda product corrosion protection finish that will meet and exceeds NZS 3604:2011 table 4.1.

ZONE	LOCATION		ENVIRONMENT	PRODUCT
All Zones	Fully enclosed walls, floors, and roof spaces		Closed	Pryda Zinc Coated Products Z275
Zones B and C	All subfloor fastenings more than 600mm above the ground	Vented 7000mm <sup>2</sup> /m <sup>2</sup> or LESS	Sheltered	Pryda Stainless Steel 304 Products <sup>(3)</sup>
		Vented MORE than 7000mm <sup>2</sup> /m <sup>2</sup>	Exposed	Pryda Stainless Steel 304 Products <sup>(3)</sup>
	All subfloor fastenings within 600mm of the ground	Sheltered and Exposed		Pryda Stainless Steel 304 Products <sup>(3)</sup>
	All other structural fixings	Sheltered		Pryda Stainless Steel 304 Products <sup>(3)</sup>
Exposed		Pryda Stainless Steel 304 Products <sup>(3)</sup>		
Zone D	All structural fixings	Sheltered and Exposed		Pryda Stainless Steel 304 Products <sup>(3)</sup>

Notes:

1.All Pryda galvanised products comply with NZS3604:2011 Table 4.2.

2.Refer to NZS3604:2011 for all environment definitions.

3.Routine inspection and cleaning using soap and fresh warm water is an integral part of the ongoing care and maintenance of stainless steel to preserve its appearance.

## STORAGE AND HANDLING

Prior to use, the Pryda products shall be stored in a weatherproof environment and protected from moisture. Care must be taken to avoid any damage to the surface of the product protective galvanised coating and profile that may impact the performance.

## COMPLIES WITH THE FOLLOWING PROVISIONS OF THE NEW ZEALAND BUILDING CODE (NZBC)

**Clause B1 STRUCTURE:** Performance B1.3.1, B1.3.2 and B1.3.4. Loads arising from self-weight, imposed gravity loads arising from use, earthquake, snow, and wind. (i.e., B1.3.3 (a), (b), (f), (g), and (h)). Only some may apply for a specific use of the component.

**Clause B2 DURABILITY:** Performance B2.3.1 (a) not less than 50 years and B2.3.2.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1.

## INSTALLATION NAIL-ON PLATE

Use only Pryda 35 x 3.15mm galvanised Timber Connector Nails or equivalent nails with these connectors. Stainless steel nails must be used with stainless steel Nail-on plates.

### Number of Nail Holes per Plate

PLATE WIDTH	PLATE LENGTH				
	125	190	250	315	380
75	23	36	47	59	71
100	31	48	63	79	95
150	47	71	94	118	143

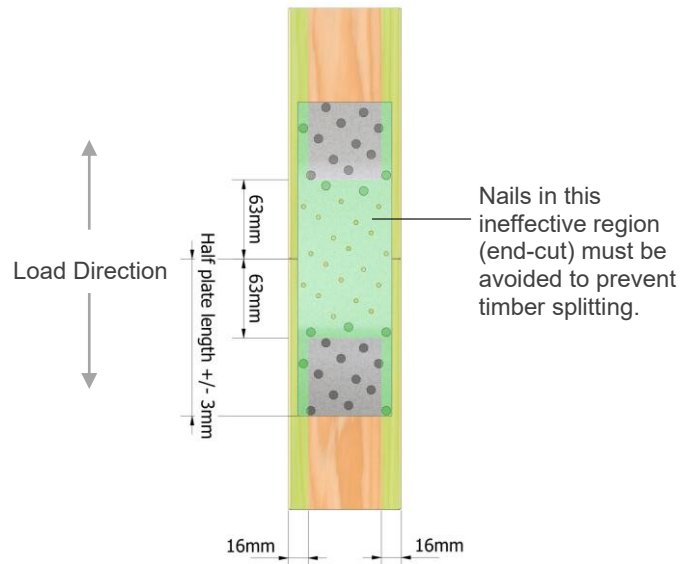
Note:

1. Nail density is **approx.** one nail per 400 mm<sup>2</sup>
2. Nails must be driven into all holes (i.e., all holes filled), except for holes within 63 mm of timber ends and 16 mm of timber edges, to achieve the full Design Capacities.

### Design Capacities for a Tension Joint

Limit State Design capacities for **Pryda Nail-on Plates** per pair of plates are as tabulated below with conditions:

- All nail holes filled except within 63mm of timber ends.
- Minimum edge distance to nail center = 5D = 16mm.
- Minimum edge distance plate to timber edge = 5mm.
- Loading case = 1.2G+1.5Qr (Dead Load+ Roof Live).
- Nails within 63mm of butt joint are neglected.
- Positioning tolerance along plate length = 3 mm.



**TABLE 1: TENSION LOAD PARALLEL TO GRAIN**

PRODUCT CODE	TIMBER WIDTH (mm)	STEEL THICKNESS (mm)	WIDTH (mm)	LENGTH (mm)	DESIGN CAPACITIES (ΦNJ) IN kN FOR PAIR OF NPA PLATES (TENSION LOAD PARALLEL TO GRAIN ONLY)			
					1.35G	1.2G + 1.5Qf	1.2G + 1.5Qr	1.2G + Wd or Wind uplift
NPA75/125	90	1	75	125	N/S	N/S	N/S	N/S
NPA75/190	90	1	75	190	3.5	5	4.5	7
NPA75/250	90	1	75	250	5.5	8	7	11.5
NPA75/315	90	1	75	315	10	14	12.5	20.5
NPA75/380	90	1	75	380	14.5	20	18	29.5
NPA100/190	120	1	100	190	5	7	6	10
NPA100/315	120	1	100	315	19	23	26	38
NPA150/315	170	1	150	315	23.5	32	28.5	47.5
NPB75/380	90	2	75	380	14.5	20	18	29.5

**NOTES:**

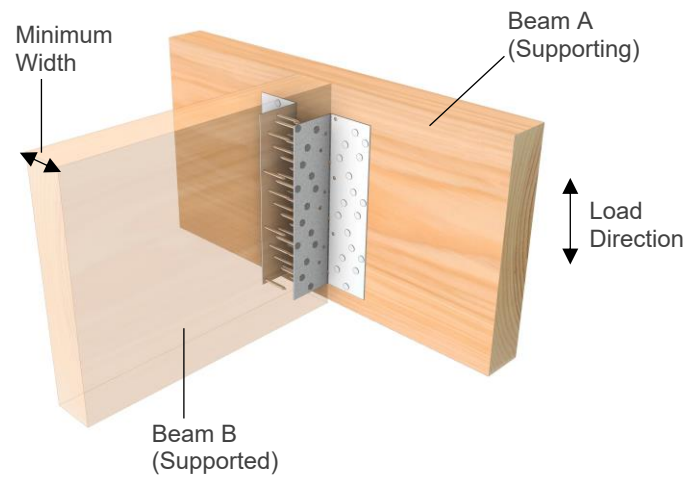
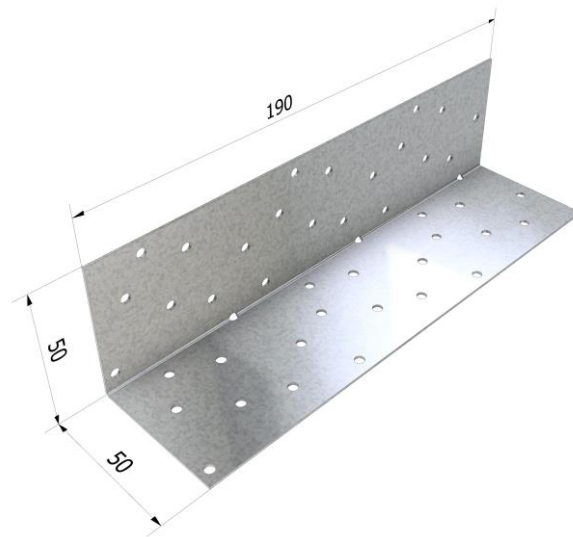
- Design capacities applies for dry (maximum moisture content of 18%) Radiata Pine and Douglas Fir timber grade SG8 and for timber which meets JD5 timber as defined in AS/NZS 1720.
- The nail capacities (ΦNj) given in the table above can resist a resultant design force arising from an axial tension load.
- The design capacities tabulated above apply directly to joints on JD5 (SG8) timber using  $k_1 = 0.8$ . The resultant capacity must not exceed the maximum Tension load given.
- Pryda TCS12-35 screws may be substituted for Pryda Timber Connector nails. To achieve equivalent capacity, use 2 screws for every 4 nails (in JD5). The end/edge distance and spacing requirements for screws are different to nails and therefore should be specified by the designer.
- All NPA and NPB Bar shall be trimmed to the set size found in Table 1 and adopt the same capacities and conditions of use.
- Use galvanised nails with galvanised plates and stainless steel nails with stainless steel plates.
- 'N/S' in the above table signifies that the plate is not suitable for a butt-joint connection, due to ineffectiveness of nails resulting from end-distance violations.

## NAIL-ON ANGLE

Ideal for beam to bearer situations to give a strong, economic alternative to framing brackets where the width of the beam is non-standard.

## INSTALLATION NAIL-ON ANGLE

- Always used in PAIRS on opposing faces.
- Use Pryda 35 x 3.15mm Timber Connector Nails or equivalent.
- Use 75 x 3.15 diameter Flat Head nails when nailing into poles.
- Use Pryda Timber Connector Screw TCS12-35 with single laminate, 35mm minimum width timber.



Variable width connection utilising nails. Suitable for a high truss uplift and gravity loads. All nail holes to be filled.

**Nail Fixing – Pryda 35 x 3.15mm Timber Connector nails**

LOAD CASE	DESIGN CAPACITIES (ΦN <sub>J</sub> ) IN kN
	OPTION 1
	ALL NAIL HOLES TO BE FILLED TO BEAM A AND BEAM B EACH FLANGE
	JD5
1.2G + 1.5Qr	31.1
Wind Uplift	46

Notes:

1. Beam A = Supporting member, Beam B = Supported member.
2. Design capacities applies for dry (maximum moisture content of 18%) Radiata Pine and Douglas Fir timber grade SG8 and for timber which meets JD5 timber as defined in AS/NZS 1720.
3. The down capacities provided above are for 1.2G+1.5Qr (Dead+Roof Live Load). All capacities are limit state design values and not characteristic strength therefore these may be compared directly to Pryda design software output.

## APPLICATION AND SCOPE OF USE

Pryda Nail-On Plate and Nail-on Angle are certified when used and installed in accordance with the product datasheet shown connection details. Pryda fasteners approved for the installation form an integral part of the connection and therefore should be used with all Pryda products installation unless otherwise approved by a certified structural Engineer. Only use the product for its intended applications and the selected product material type within the specified environmental condition as outlined in NZS 3604:2011 Table 4.1. (Refer to Durability section for more details). Fastener material type shall match the selected Pryda product. i.e., Galvanised fasteners with galvanised products. Stainless Steel fasteners with stainless steel products.

- Joining timber under tension loads ( Flat Plate only)
- Truss Support (NPA – Angle)
- Rectification work
- Tie-down anchor

Contact details	
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