pryda

NZ DESIGN GUIDE

HANGERS & TRUSS BOOTS

2024

PRYDA BUILDING GUIDE OVERVIEW

Pryda has developed this guide to accommodate New Zealand building practices. It is important that designers, engineers, builders, inspectors and building authorities are familiar with the benefits and critical requirements of the system. Pryda timber connectors, trusses and beams comply with the New Zealand Building Code, Section B1 Structure and B2 Durability, having been designed in accordance with sound and widely accepted engineering principles to comply with NZS3604:2011.

The capacities reported in this publication are limit state design capacities and not characteristic strengths thereby allowing direct comparison with design reactions reported in Pryda design software and Pryda design reports. This document supersedes and replaces all the previous publications of Builder's Guide.

For further design advice or engineering support regarding the Pryda products discussed in this publication please phone us at **0800 88 22 44** or visit our website - **www.pryda.co.nz.**

The Pryda Design Guide features a Building Consent Documentation Reference for many connection details. This is aimed to encourage designers to align details in the building consent documentation with useful information for easy reference for builders and building officials at the time of inspection. The process is illustrated on the following page. It should be recognised that this is not a requirement, and fabricators may choose to present information in various formats.

The **Building Consent Documentation Reference** should not be confused with the Pryda product code.

The Company

Pryda New Zealand is an autonomous division of USA-based Illinois Tool Works Inc. a Fortune 200 diversified manufacturing company with almost 100 years of history. Other successful ITW brands include Paslode, ITW Proline, Ramset and Reid Construction Systems. Pryda also gains valuable benefits in product, fabrication machinery and software development from its association with other ITW software and truss connector suppliers from around the world.

Who is Pryda?

Pryda was born in Napier, New Zealand in 1964. Pryda has remained an integral part of the building industry in New Zealand for over 50 years, particularly in timber truss and

frame solutions with the development of a diverse range of timber connectors and structural brackets. Today Pryda remains a trusted New Zealand brand on building sites, in trade stores and in offices of architects, engineers and designers.

Pryda utilises world-class technology to provide a total system package to its licensed truss and frame plants, including fully integrated software and production systems, access to world leading manufacturing equipment and the highest levels of technical support.

Our Philosophy

Pryda develops solutions to common construction challenges on the philosophy, **"safer, faster, smarter, easier"**.

Pryda's philosophy is a unique method of looking at the total business needs of its licensed truss and frame fabricators and providing cost effective solutions that not only meet current requirements but also identify and satisfy long term goals.

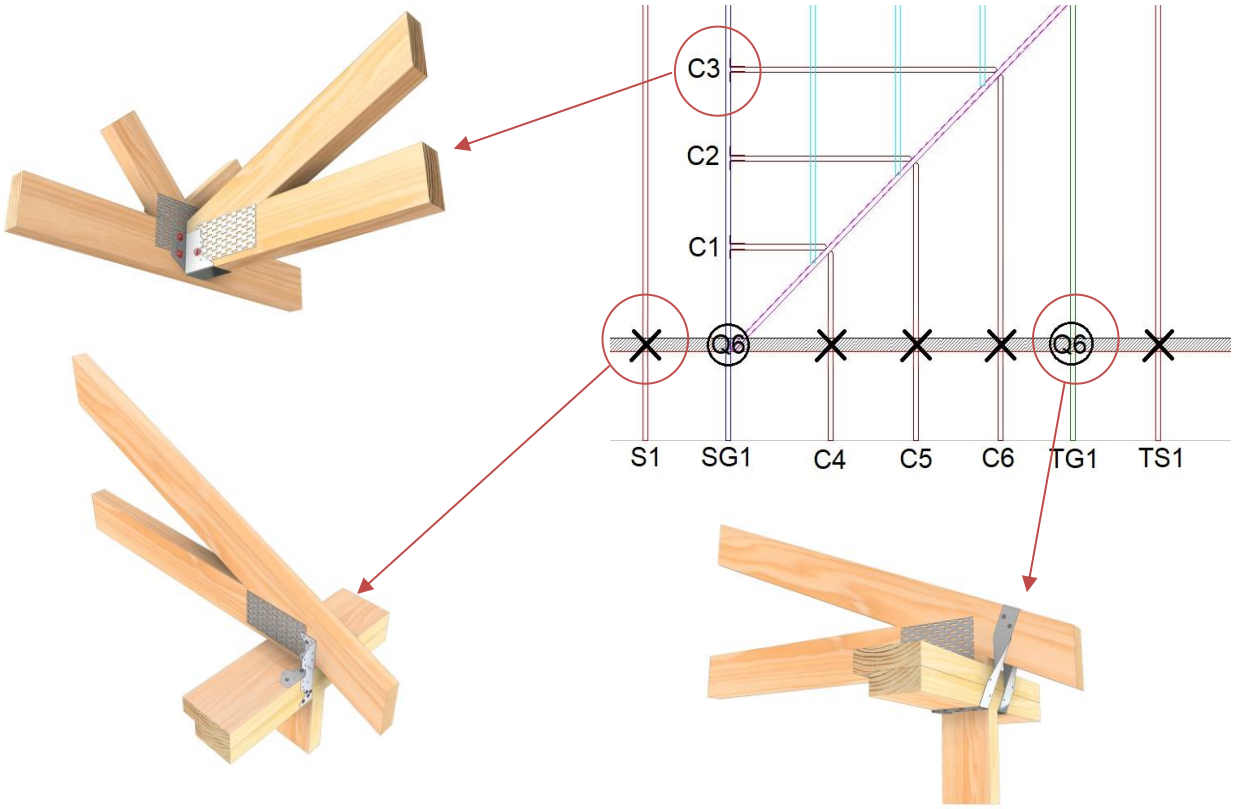
BUILDING CONSENT DOCUMENTATION REFERENCE INDEX

FOUNDATION & SUBFLOOR	Subfloor Fixing	P6	6kN Pile Bearer Kit
		P12	12kN Pile Bearer Kit
	Foundation Strengthening	LB1	10kN Load Foundation slab strengthening
		LB2	20kN Load Foundation slab strengthening
		LB3	30kN Load Foundation slab strengthening
WALL	Bottom Plate Fixing	BP1	Sheet Brace Strap 6kN
		BP2	Sheet Brace Strap 12kN
		BP3	Stud Anchor 6kN
		BP4	Stud Anchor 12kN
		BP6	Bottom Plate Anchor
	Timber Lintel Fixing system	L1	1.4kN lintel fixing
		L2	2.8kN lintel fixing
		L3	8.0kN lintel fixing
		L4	14.0kN lintel fixing
	Top Plate to Stud Connection	TPO	0.7kN Top Plate to Stud
		TP1	1.7kN Top Plate to Stud
		TP2	2.5kN Top Plate to Stud
		TP3	4.7kN Top plate to Stud
	Claw Beam Connection System	L9	Claw Beam Lintel Fixing Various
		L10	Claw Beam Lintel Fixing Various
		L11	Claw Beam Lintel Fixing Various
		L12	Claw Beam Lintel Fixing Various
		L13	Claw Beam Lintel Fixing Various
		L14	Claw Beam Lintel Fixing Various
		L15	Claw Beam Lintel Fixing Various
ROOF FRAMING	Roof Component Tie Down Connection	Z	2 / Z nails ZL or ZR
		U	2 / U nails
		CP9	2 / CPH190 Ceiling Purlin /Hanger
		X	1 / MGL (Multigrip long)
		2X	2 / MGL
		NC4	1 / NPPC4 Concealed Purlin Cleat
		NC6	1 / NPPC6 Concealed Purlin Cleat

ROOF FRAMING	Roof Component Tie Down Connection	NC8	1 / NPPC8 Concealed Purlin Cleat
		Q6	1 / MPQHS6 Cyclone Strap
		Q9	1 / QHS9 Cyclone Strap
		Q6*	1 / MPQHS6 Cyclone Strap, wrap legs under support member
		Q9*	1 / QHS9 Cyclone Strap, wrap legs under support member
	Roof Component to Roof Component Connection	VS	Variable Skew Hanger
		MG	Multigrip
		MGL	Multigrip Long
		A	MPFB4590 Joist Hanger
		B	MPFB45120 Joist Hanger
		C	MPFB45180 Joist Hanger
		D	FB94/152 Joist Hanger
		NC8	2 / NPPC8
		NPA	2 / Nail-on Angle

BUILDING CONSENT DOCUMENTATION REFERENCE

The Pryda Builders Guide features **building consent documentation references** for many connection details. This is aimed to encourage designers to align details in the building consent documentation with useful information in the Pryda Builders Guide for easy reference for builders and building officials at the time of inspection. The process is illustrated below.



FRAME & TRUSS MANUFACTURERS ASSOCIATION CODE OF PRACTICE

1 The Code of Practice

1.1 Purpose

The FTMA Code of Practice is intended to provide a means of assurance to consumers, specifiers, and Building Consent Authorities (BCAs) by way of publishing the standards and procedures that members agree to. In this way there is a basis for comparison with non-members as well as an industry-based benchmark from which expectations can be managed.

1.2 Intention

It is intended that:

- Adherence to the Code of Practice will enable a qualifying fabricator to certify and mark their product as compliant to the Code of Practice.
- After a period of implementation and review adherence to the Code of Practice will be audited by a third-party auditor.
- That adherence to the Code of Practice will be required for membership of FTMA.

1.3 Content

The Code of Practice includes:

- Section 2 - Truss Documentation

2Truss documentation

2.1 Introduction

The intention of this section is to describe the documentation required to be produced by a fabricator of nail-plated timber trusses for use by its customer. The information contained in the document may be used by a Building Consent Authority (BCA) to satisfy the provisions of the Building Act 2004 and reasonable BCA processes in the issuing of a Building Consent or Code Compliance Certificate (CCC).

For practical purposes, the production of the documentation is a two-stage process. The first stage is to provide documentation to support the issuing of a building consent.

This can be achieved by providing:

- a 'Buildable' truss layout.
- Fabricator Design Statement.
- a Producer Statement – Design.

These documents show that trusses have been designed by an accredited fabricator[1], licensed to use specific design software, applying the appropriate loads, and using the appropriate materials to ensure compliance with the NZ Building Code (NZBC) as well as giving notification of any resultant loads that may affect the supporting structure.

This documentation is intended to be provided to the “design lead”[2] to then consider when completing the structural design before providing it to the BCA as part of a building consent application. The BCA may then issue a building consent that is subject to receiving further documentation.

The second stage is to support the issuing of the CCC and is required prior to on-site inspection by the BCA.

This can be achieved by providing:

- an 'As Built' truss layout.
- a Fabricator Design Statement.
- a Producer Statement – Design.
- a Manufacturing Statement.

This is similar documentation to that provided for the first stage but ensures that the final construction details of the manufactured trusses accurately reflect what was built, which can then be recorded by the BCA as part of the project documentation. Such further documentation then satisfies the conditions on which the consent had been issued. The documentation is intended to be provided to the builder on-site and to the customer who should make it available to the BCA prior to on-site inspection.

When producing an 'As Built' truss layout and final truss detailing for supply, it is expected that a fabricator shall give consideration to any 'Buildable' truss layout that has been consented by a BCA. The fabricator shall consider any structural implications that may result from a different layout to that consented and if any changes are to be made then these shall be communicated to the customer to pass on to their design team for consideration and approval before proceeding with supply. It is not expected that fabricators should have to follow exactly a consented layout, particularly when a competitive party may have provided it. However, a fabricator will have to produce an 'As Built' truss layout as per 2.3.1. This two stage process is reflected in section 7.5 of the guidance document "Guide to applying for a building consent" published by the Department of Building and Housing. Acknowledgement and support for the COP Section 2 – Truss Documentation is also outlined in the publication from DBH Codewords issue 044. Both publications are available online at www.dbh.govt.nz.

While it is expected that the documentation is going to be provided to assist a BCA in the consent or CCC process it should be noted that the contractual relationship is between a fabricator and its customer and that the responsibility to provide this information to a BCA rests with the applicant for a building consent.

Notes:

1. An accredited fabricator is a company that has a formal agreement with a nail-plate manufacturer to use their products in the manufacture of trusses. The nail-plate manufacturer in turn licenses the fabricator to use specific design software supplied and underwritten by the nail-plate manufacturer.
2. A design lead refers to the architect or draftsperson responsible for the overall design of the building.

PRODUCER STATEMENT PRYDA TIMBER CONNECTORS

August 2024

This Producer Statement is issued by Pryda NZ to cover the use, installation, and durability of Pryda Timber Connectors for both structural application and durability as required by the New Zealand Building Code clauses B1 & B2, respectively.

Description

The Pryda timber connectors are manufactured from either Z275 or Z600 galvanised coil. Some brackets are also available in hot dipped galvanised or stainless steel for use in certain exposed and covered situations.

Application

Pryda timber connectors are designed for specific connections of timber to timber, primarily, as well as masonry, concrete, and steel. Please contact Pryda should you require assistance relating to these connectors.

Installation

Pryda timber connectors should be installed without damage to the finished surfaces. Storage prior to use to be in dry moisture free conditions that would not affect the future durability of the product.

Design Capacity

As timber grades vary the design capacity is derived using the methods in NZS AS1720.2022 and is mostly dependent on the shear values of the nails, screws, and bolts in timber. Most commonly used Timber Connectors have published limit state design strengths published in our literature.

Durability

The durability of Pryda timber connectors is in accordance with the acceptable solutions contained in Table 4.1 and Table 4.2 of NZS3604:2011 to achieve a 50 year life expectancy for the connectors where applicable. Alternative solutions and direct applications are to be found elsewhere in this publication.

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PRODUCER STATEMENT STRUCTURAL BRACKETS

Pryda Structural Brackets

August 2024

This Producer Statement is issued by Pryda NZ to cover the use, installation, and durability of Pryda Structural Brackets for both structural application and durability as required by the New Zealand Building Code clauses B1 & B2, respectively.

Description

Pryda Structural Brackets are fabricated from flat bar steel. They are mostly available in hot dipped galvanised finish with a selection also available in stainless steel for use as an architectural feature or in certain exposed and covered situations as covered in NZS3604:2011. The zinc coating is applied in accordance with AS/NZS 4680:2006. The remaining Pryda Structural Brackets are finished in electro galvanised.

Application

Pryda Structural Brackets are designed to connect timber to masonry, concrete, and steel. The brackets are designed for specific connections of timber to other materials. Please contact Pryda technical service should you require assistance with your intended application.

Installation

The Pryda Structural Brackets should be installed without damage to the finished surfaces. Storage prior to use to be in dry moisture free conditions that would not affect the durability of the product.

Characteristic Strength

When used with timber, the characteristic strength is derived by the verification method in accordance with the NZBC standard NZS3603:1993. The withdrawal strength of the bracket varies with the type of substrate it is installed in, hence the limit state design capacities shall be determined by the design engineer taking into consideration the above point.

Durability

The durability of the Pryda Structural Brackets is more than the acceptable solutions contained in Table 4.1 of NZS3604:2011 in order to achieve a 50-year life expectancy for the brackets. Pryda Structural Brackets are hot-dipped galvanised to a level equal to or exceeding 500g/m^2. Depending on the environmental conditions and exposure to marine conditions, the surface of the stainless-steel brackets can be affected by tea staining. However, tea staining does not affect the structural integrity of the fitting.

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ENVIRONMENT DEFINITIONS & PRODUCT SELECTION

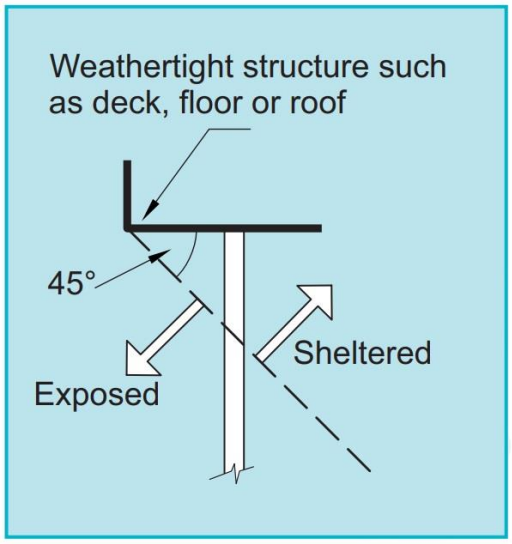
Alternative solution to Table 4.1 NZS3604:2011

Under the building code, Clauses B2 Durability, requirements for steel fasteners are:

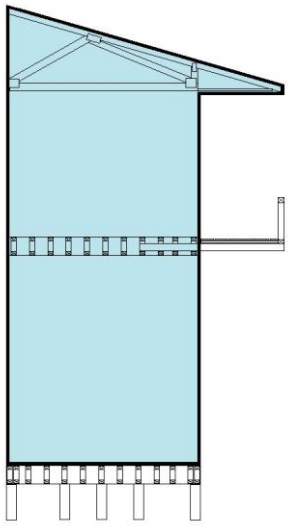
- For structural steel fasteners with difficult access and replacement - 50 years or nominated period
- For structural steel fasteners with moderate ease of access and replacement - 15 years or nominated period

Environment Definitions

Exposed/Sheltered



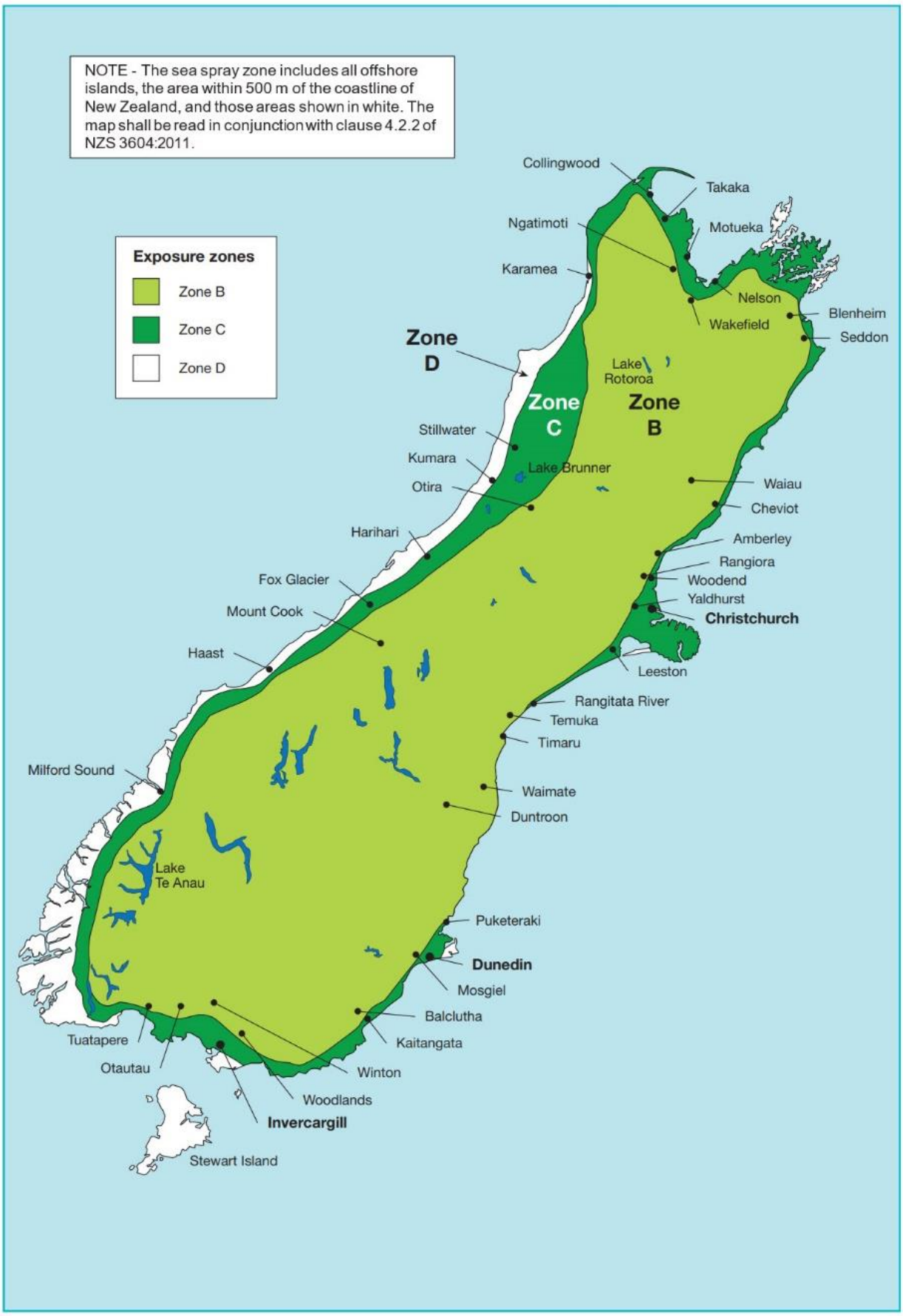
Closed



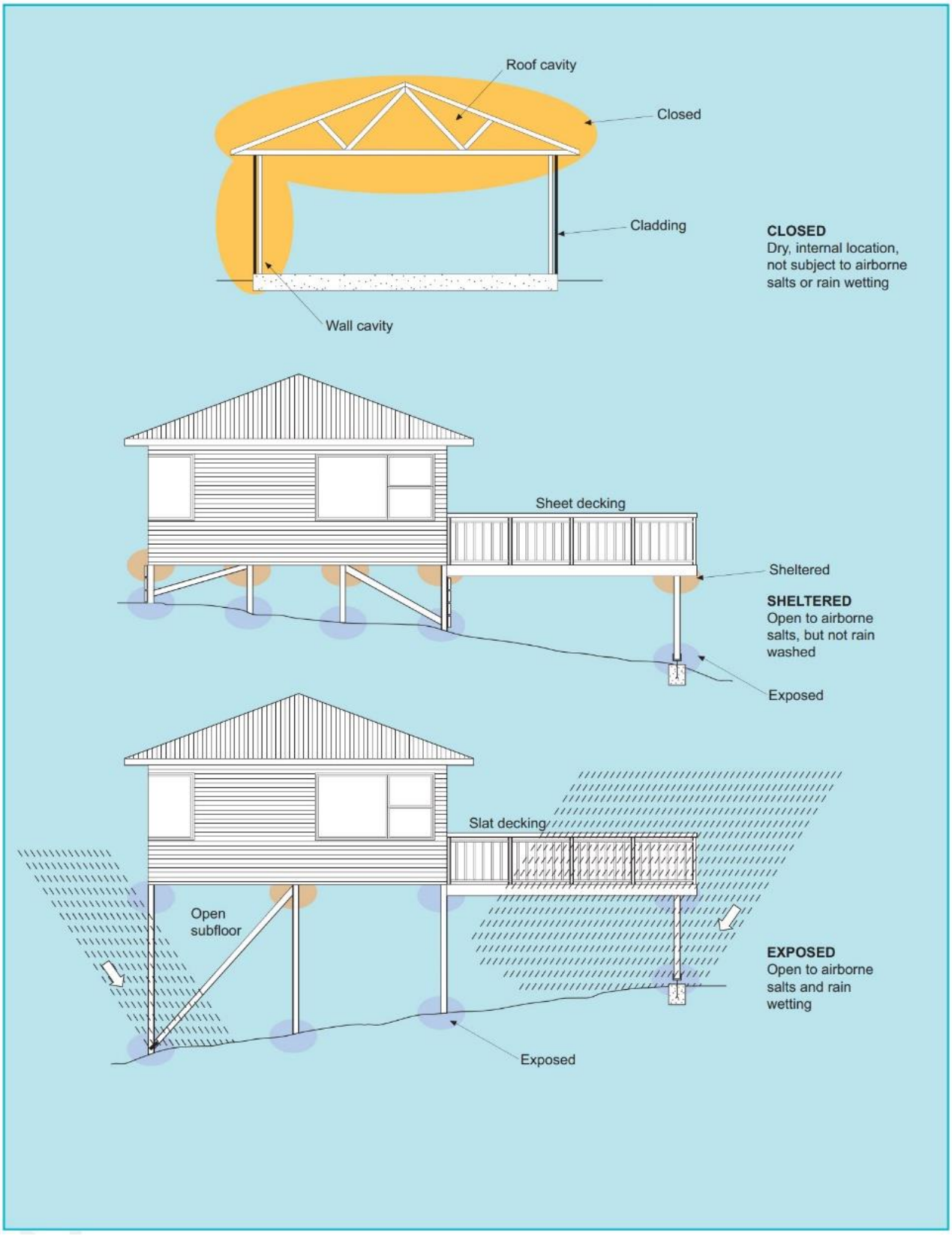
Zone	Location		Environment	Product
All Zones	Fully enclosed walls, floors & roof spaces		Closed	Pryda Zinc Coated Products
Zones B & C	All subfloor fastenings more than 600mm above the ground	Vented 7000mm^2/m^2 or LESS	Sheltered	Pryda Stainless Steel Products
		Vented MORE than 7000mm2/m^2	Exposed	Pryda Stainless Steel Products
	All subfloor fastenings within 600mm of the ground	Sheltered and exposed		Pryda Stainless Steel Products
	All other structural fixings	Sheltered		Pryda Stainless Steel Products
		Exposed		Pryda Stainless Steel Products Pryda SBK HDG Brackets
Zones D	All structural fittings	Sheltered and exposed		Pryda Stainless Steel Products

Notes: All Pryda galvanised products comply with NZS3604:2011 Table 4.2

EXPOSURE ZONES



EXPOSURE DEFINITIONS

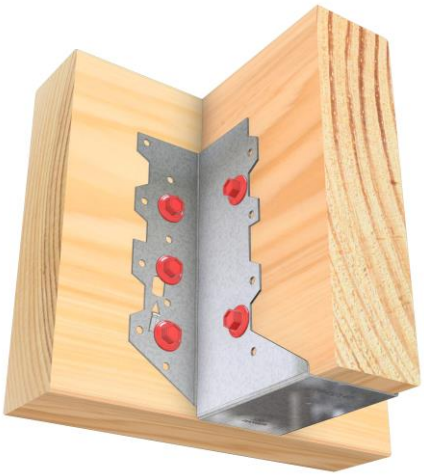


PRODUCT DATA SHEET

NZ PRYDA FRAMING BRACKET

CodeMark CMNZ-10030

Simple means of connecting two members at 90° that provides resistance to gravity and uplift loads.



FEATURES AND BENEFITS

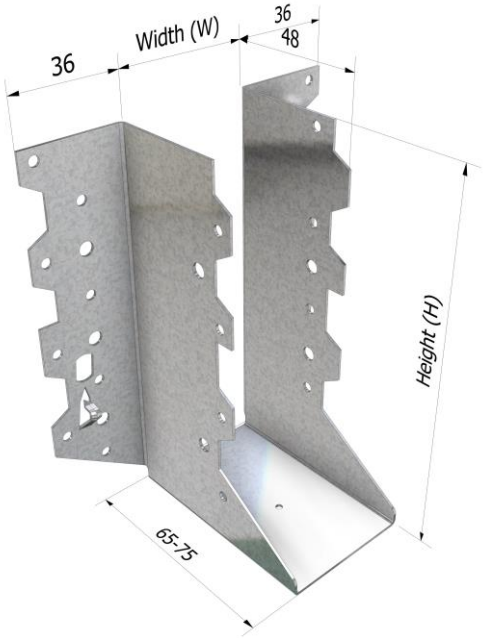
SIMPLE: Can be installed without needing to create special housings or high skill timber joints.

FAST: Can be fastened with Pryda 12G x 35mm Timber Connector screws -painted red head.

DURABLE: 1.0mm thick galvanised steel engineered to resist gravity loads **and** wind uplift loads.

SPECIFICATIONS

PRODUCT CODE	MPFB(W)(D) * (See table for available sizes)
STEEL	G300 or Stainless Steel 304
THICKNESS	1mm
CORROSION RESISTANCE	Z275 or Stainless Steel 304
FASTENERS	Pryda 35 x 3.15mm Timber Connector Nails **OR** Pryda 12G x 35mm Timber Connector Screws – painted red head. Ensure the corrosion resistance of the fastener matches the product i.e., galvanised nails for a galvanised brackets or stainless steel nails for a stainless steel brackets.
HEIGHTS	90-180mm
WIDTHS	45-94mm



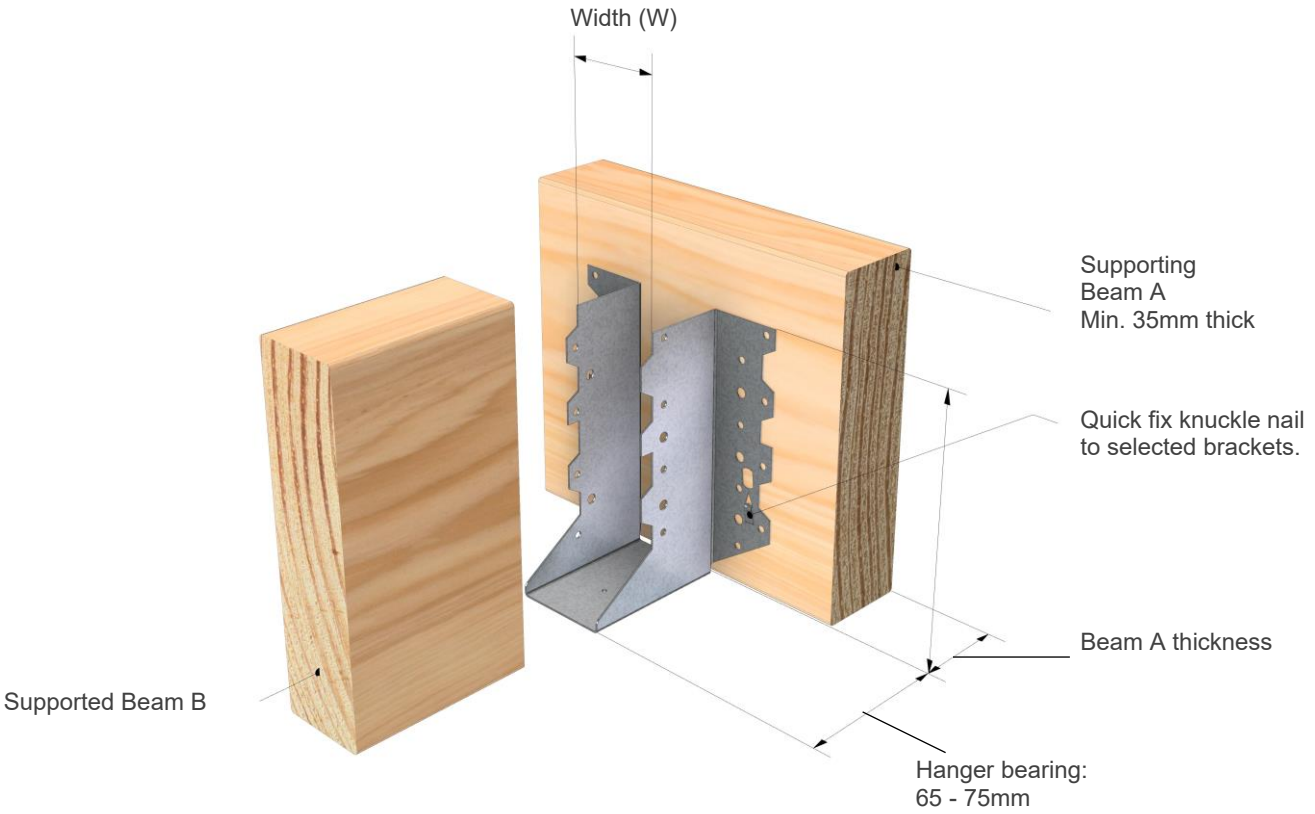
At the time of print, this product is NOT subject to any known warnings and bans found in Building Act 2004.

*All dimensions shown in “mm.”

FRAMING BRACKET

PRODUCT CODE	MATERIAL	WIDTH	HEIGHT	SUITABLE APPLICATION	
MPFBK4590	G300, Z275 Galvanised Steel	46	77	Solid Joist/Beam/Rafter	
MPFBK45120		46	110		
MPFBK45180		46	176		
MPFB5274		52	74		
MPFB52124		52	124		
MPFB52174		52	177		
FB65170		65	167		
FB72163		72	163	Pryda Floor Trusses	
FB94152		94	152		
MPFB4590/S	Stainless Steel 304	45	77	Solid Joist/Beam/Rafter	
MPFB45120/S		45	110		
MPFB45180/S		45	176		
MPFB52124/S		52	124		
FB94152/S		94	152	Pryda Floor Trusses	

CONNECTION DEFINITION



*Only selected Framing Brackets have the Quick fix knuckle nail

DESIGN CAPACITY- LIMIT STATE DESIGN

PRODUCT CODE	Fixing to Supporting Beam (A)	Dead + Floor Live Load (kN) 1.2G+1.5Qf Joint Group JD5	Fixing to Supported Beam (B)	Wind Uplift (kN) k1 = 1.14 Joint Group JD5
MPFB5274	6 nails	2.7	3 nails	2.2
	2 screws	2	2 screws	3.3
MPFBK4590	8 nails	3.6	4 nails	3
MPFB4590/S[9]	4 screws	4	2 screws	3.3
MPFBK45120 MPFB45120/S[9] MPFB52124 MPFB52124/S[9]	12 nails	5.4	6 nails	4.5
	6 screws	6	4 screws	6.6
MPFBK45180	20 nails	9	10 nails	7.4
MPFB45180/S[9]	8 screws	8	6 screws	9.9
MPFB52174 MPFB65170	18 nails	8.1	6 nails	4.5
			11 nails	8.2
	6 screws	6	6 screws	9.9
Floor Truss Framing Brackets				
FB72163	18 nails	8.1	3 nails	2.2
			10 nails	7.4
	6 screws	6	6 screws	9.9
FB94152 FB94152/S(9)	18 nails	8.1	3 nails	2.2
			10 nails	7.4
	6 screws	6	6 screws	9.9

NOTES:

1. The above tabulated capacities are for a minimum supporting beam thickness of 35 mm.
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. For FB65170, FB72163 and FB94152 brackets, wind uplift values have been reduced due to a shorter end distance on the supported beam compared to the other brackets.
4. For FB72163 to FB94152, the wind uplift 3 nails fixing option allows for fixing to the chords only of I-beams or trusses.
5. Unless the top of the supported beam is provided with additional lateral restraints, the bracket must cover at least 60% of the depth of the supported beam.
6. Multiple Laminated Supporting Beams: Fasteners with longer lengths are required when Joist Hangers are fixed into a multiple laminated supporting beam. For double laminates, use 65mm long nails or screws. Alternatively, for double or triple laminated supporting beams, additional fixings may be provided at hanger locations to laminate plies. Seek advice from the Consulting Project Engineer.
7. Gap between Supported and Supporting Beams: A maximum gap of 3mm is permitted without a reduction in design capacity. A larger gap would result in a rotation of the supported beam under downward loads and could compromise on end distance requirements of nails resulting in reduced uplift capacities. Seek advice from a Pryda Engineer regarding treatment of large gaps.
8. The framing bracket shall not hang more than 10mm below the underside of Beam A if the above table values are to be maintained. Seek advice from a Pryda engineer.
9. Stainless Steel Framing Bracket definition ending with:

- "/S" -Stainless Steel 304

Use Stainless Steel fasteners with Stainless Steel Framing brackets.

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^2/m^2 or LESS	Sheltered	Pryda Stainless Steel 304 Products (3)
		Vented MORE than 7000mm^2/m^2	Exposed	Pryda Stainless Steel 304 Products (3)
	All subfloor fastenings within 600mm of the ground	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)
	All other structural fixings	Sheltered		Pryda Stainless Steel 304 Products (3)
		Exposed		Pryda Stainless Steel 304 Products (3)
Zone D	All structural fixings	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)

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.

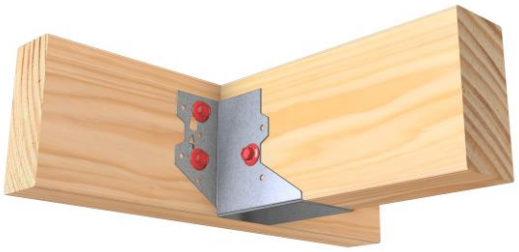
Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1.

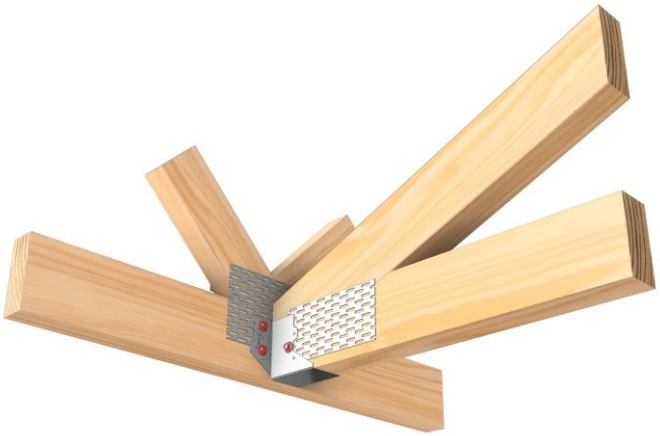
APPLICATION AND SCOPE OF USE

Pryda Framing Brackets 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.

Pryda Framing Brackets are suitable for many joints including:

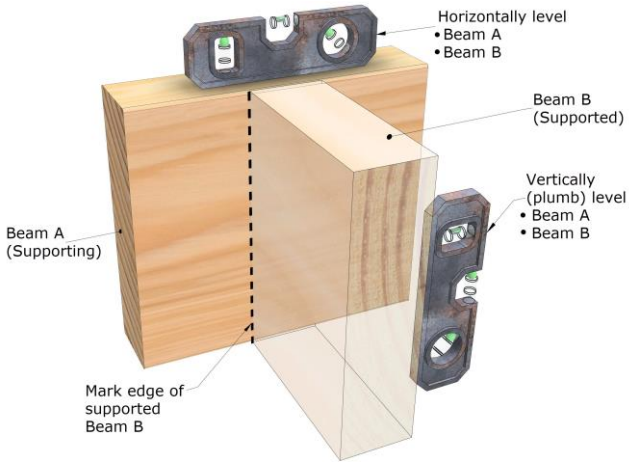
- Joist to beam
- Jack to TG truss
- Ceiling joist to hanger
- Floor truss to beam
- Pergola rafters to fascia
- Beams to masonry





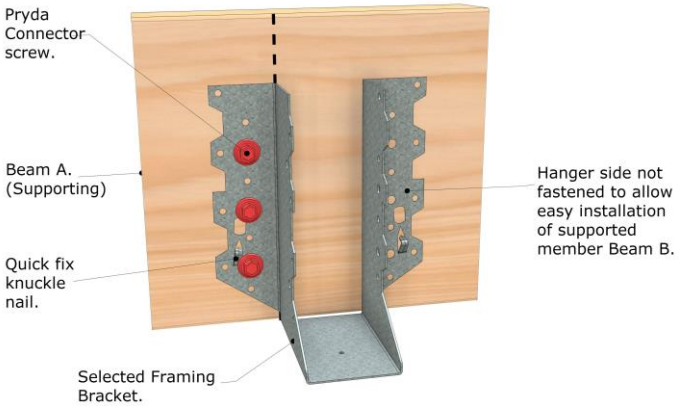
INSTALLATION

STEP 1



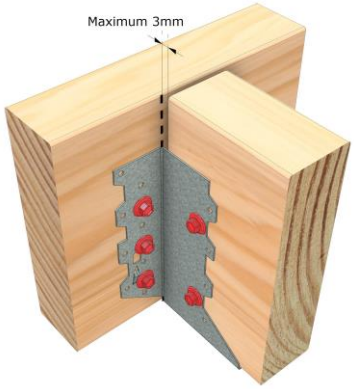
- Ensure both Beam A and B are level and plumb.
- Measure and mark location of connection on supporting beam.

STEP 2



- Line up Framing Bracket on the supporting beam and fasten only one side initially. Quick fix hanger in to position to supporting Beam A with knuckle nail.
- For Hand nails, fill each small hole.
- For Screws, fill each larger screw hole (shown in diagram above)
- For machine nails use 20% more nails and do not fire through holes, see tips below.

STEP 3



- Place the supported beam into the Framing Bracket ensuring it is right up against supporting beam.
- Any gap greater then 3mm will reduce capacity.

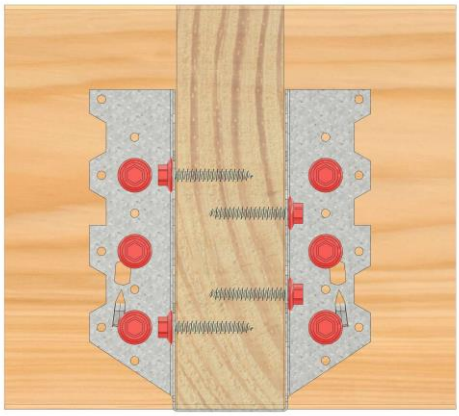
CAUTION

If both sides are fastened before the supported beam is slotted in, the final connection to the supported beam could be:

-Too loose, leading to squeaking and reduced design values

-Too tight, meaning the beam will not fit

STEP 4



- Place the supported beam into the Framing Bracket ensuring it is right up against supporting beam.
- Any gap greater then 3mm will reduce capacity.

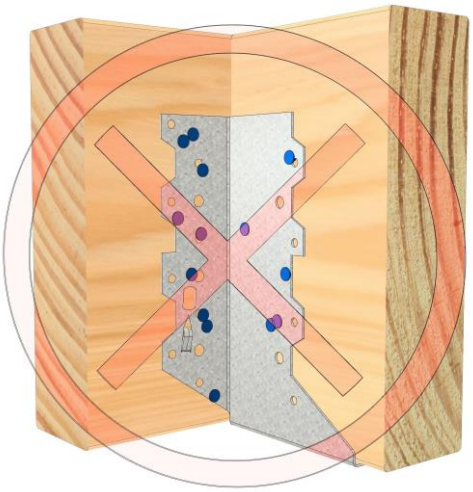
MACHINE NAILING

Where appropriate, Paslode Machine Driven Nails listed below may be used instead of the specified Pryda 35 x 3.15 mm Timber Connector Nails.

PRYDA CODEMARK CERTIFICATE CMNZ10030 CERTIFIES PRYDA FRAMING BRACKETS WITH USE OF NZ PRYDA TIMBER CONNECTOR NAILS AND TIMBER CONNECTOR SCREWS. OTHER FIXING METHODS ARE OUTSIDE THE SCOPE OF THE CODEMARK.

Paslode's PPN-Master positive placement nailer replicates the accuracy of hand nailing by using a probing tip to fire nails through holes in the connector. Pryda supports the use of the PPN-Master for these products. Unlike traditional nailing tools, no design capacity reduction is required when using the PPN-Master.

Acceptable



Not Acceptable

Where appropriate, Paslode Machine Driven Nails listed below may be used instead of the specified Pryda 35 x 3.15mm Timber Connector Nails, provided that:

- 20% More machine nails are used.

Machine driven nails are driven at nail spacings and edge distances similar to the hole pattern, ensuring that these nails are:

- Driven into the blank metal between the pre-punched holes.
- Not located closer than 5mm from the edge of a hole
- Not tightly clustered together
- Not within 15 mm from the edge of the supported beam (B) or 10mm from the edge of the supporting beam (A)
- Nails shall be located vertically aligned with supported beam (B) pre-punched nail holes as shown above.

Screw hardened, electro galvanised Paslode nails that are appropriate include:

- Duo-Fast C SHEG 32 x 2.3 (D40810)
- Paslode 32 x 2.5mm (B25110)
- Duo-Fast 32 x 2.5mm (D41060)
- Pas Coil 32 x 2.5 SHEG 2 Pack (B25250)
- Impulse 32 x 2.5 SHEG (B40020)

Contact details		Contact details	
Manufacture location	Overseas	Manufacture location	New Zealand
Legal and trading name of manufacturer	Pryda Australia -a Division of ITW Australia PTY LTD	Legal and trading name of manufacturer	Fairfit Engineering
Legal and trading name of importer	Pryda New Zealand -a Division of ITW New Zealand	Legal and trading name of supplier	Pryda New Zealand -a Division of ITW New Zealand
Importer address for service	23-29 Poland Road, Wairau Valley, Auckland, 0627, New Zealand	Supplier address for service	23-29 Poland Road, Wairau Valley, Auckland, 0627, New Zealand
Importer website	Pryda.co.nz	Supplier website	Pryda.co.nz
Importer email	info@prydaanz.com	Supplier email	info@prydaanz.com
Importer phone number	0800 88 22 44	Supplier phone number	0800 88 22 44
Importer NZBN	9429039833129	Supplier NZBN	9429039833129
Product Skus	MPFBK4590, MPFBK45120, MPFBK45180	Product Skus	MPFB5274, MPFB52124, MPFB52142/S, MPFB52174, FB65170, FB72163, FB94152, FB94152/S, MPFB4590/S, MPFB45120/S, MPFB45180

PRODUCT DATA SHEET

NZ HEAVY DUTY JOIST HANGERS

CodeMark CMNZ-10030

Heavy duty hanger for higher load applications.

FEATURES AND BENEFITS

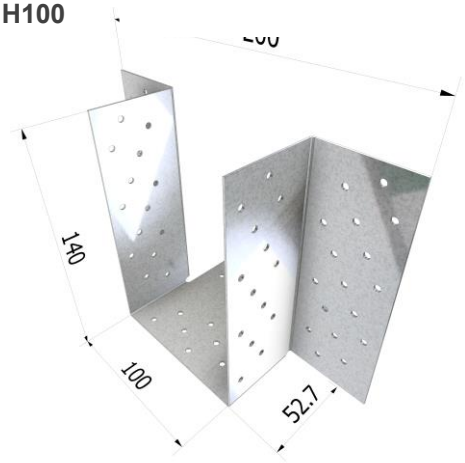
SIMPLE: Preformed to common high-capacity timber sizes including two-ply trusses.

FAST: Can be fastened with Pryda 12G x 35mm Timber Connector Screws or Pryda 35 x 3.15mm Timber Connector Nails.

DURABLE: 1.2mm thick G300 Z275 galvanised steel. Engineered to resist gravity loads **and** wind uplift loads.

*JHH100 – The tongue to the underside of the supporting beam provides added resistance to lateral rotation. JHSS does not have this tongue extension but has greater depth coverage.

JHH100

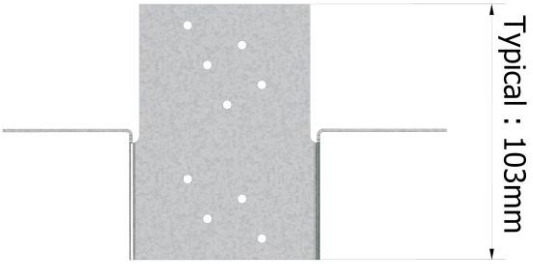


SPECIFICATIONS

PRODUCT CODE	JHH100 – Heavy Duty Hanger JHSS212, JHSS275 – Heavy Duty Split Hanger
STEEL	G300
THICKNESS	1.2mm (JHH100), 1.8mm (JHSS212, JHSS275)
CORROSION RESISTANCE	Z275
FASTENERS	Pryda 35 x 3.15mm Timber Connector Nails **OR** Pryda 12G x 35mm Timber Connector Screws – painted red head.
HEIGHTS	JHH100 =140mm, JHSS212=218mm, JHSS275=281mm
WIDTHS	JHH100=95mm, *JHSS212 , *JHSS275 (*Variable width)

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

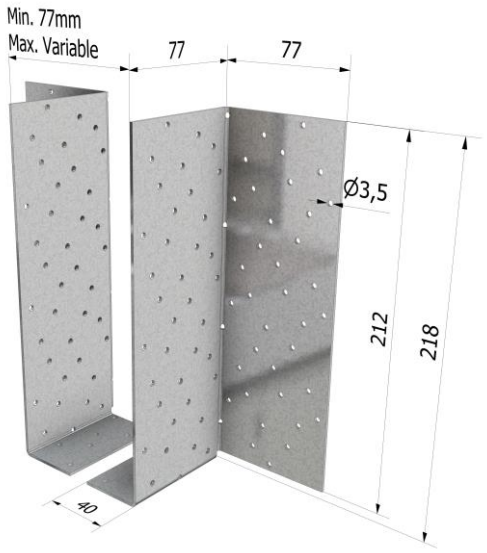
The internal dimension of the JHH100 hanger is only 95mm, specially designed to cater for 2/45 thick beams, joists, trusses or 90mm wide floor trusses or equivalent.



JHH100 : Top View showing bottom tongue extension.

*All dimensions shown in “mm”.

JHSS212



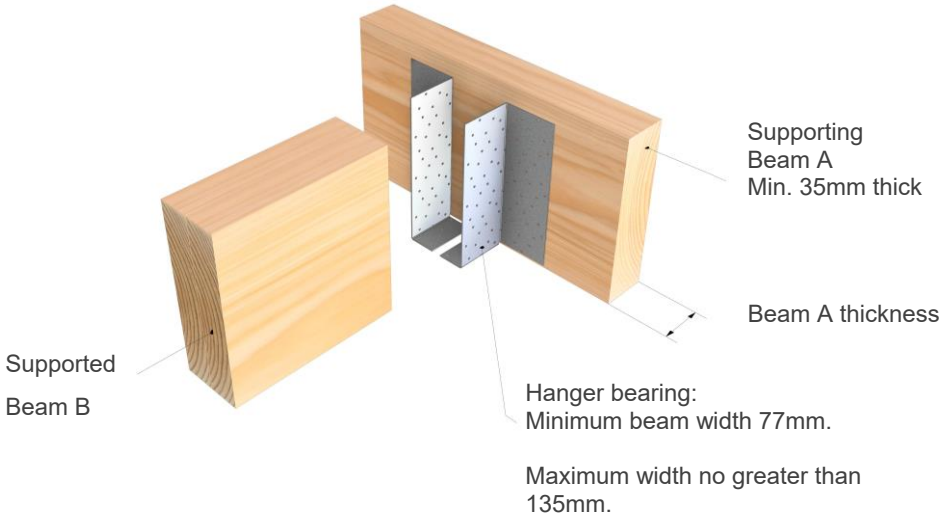
JHSS275

FACE MOUNT HANGER

PRODUCT CODE	MATERIAL	HEIGHT	WIDTH	QTY
JHH100	G300, Z275 Galvanised Steel	140	95	10
JHSS212		218	*Variable	1 (PAIR)
JHSS275		281	*Variable	1 (PAIR)

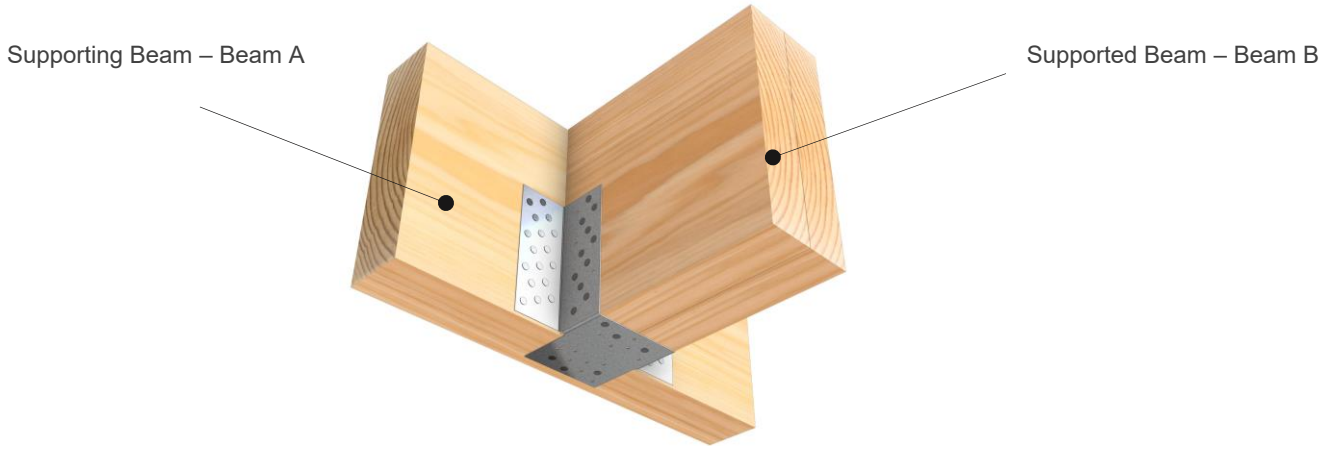
Notes: *Variable having a minimum width of 77mm between left and right halves of JHSS bracket. JHSS brackets must be installed with both halves. Recommended maximum beam width not to exceed 135mm.

CONNECTION DEFINITION



- JHSS supports variable widths. Width should be limited by the designer to prevent eccentric loading on the bracket.
- Multi-laminated timber must be laminated sufficiently by the designer and not rely on the support bracket for this purpose.
- Unless the top of the supported beam is provided with additional lateral restraints, the bracket must cover at least 60% of the depth of the supported beam.

DESIGN CAPACITY- LIMIT STATE DESIGN

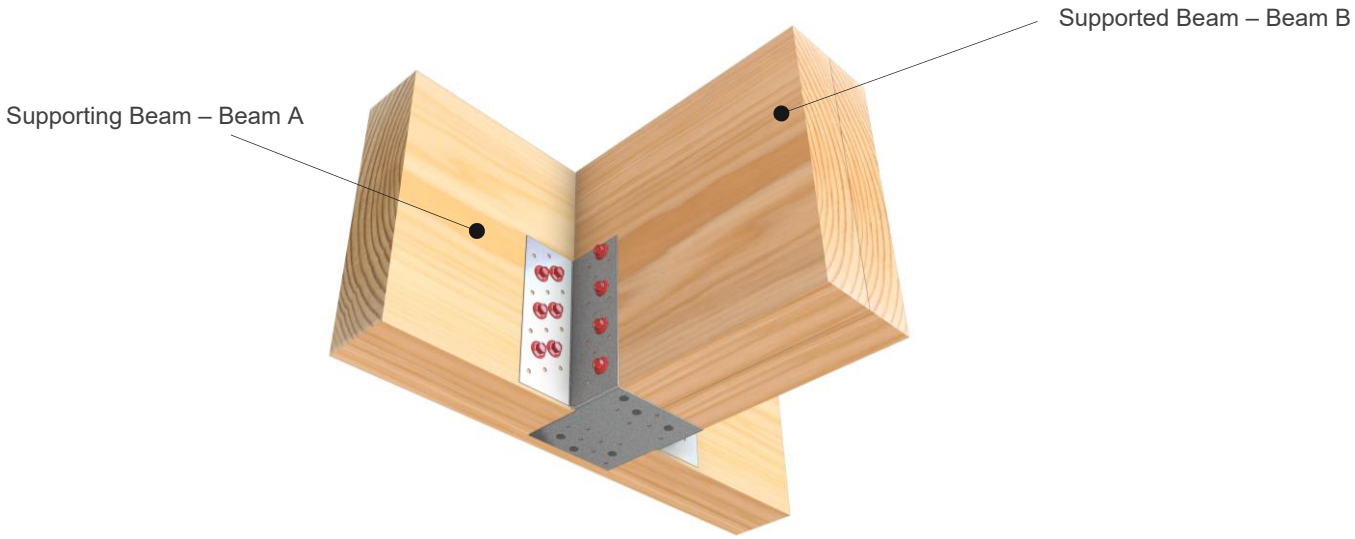


Nail Fixing – Pryda 35 x 3.15mm Timber Connector Nails (OSNGB)

LOAD CASE	DESIGN CAPACITIES (ΦN_J) IN kN	
	OPTION 1	OPTION 2
	30 NAILS TO BEAM A 18 NAILS* TO BEAM B	34 NAILS TO BEAM A 22 NAILS* TO BEAM B
	JD5	JD5
1.35G	6.7	8.2
1.2G + 1.5Qf	8.1	9.9
1.2G + 1.5Qr	9	11.1
1.2G + Wd or Wind Uplift	13.4	16.4

Notes:

1. Beam A = Supporting Beam, Beam B = Supported Beam.
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. **Multiple Laminated Supporting Beams** – Fasteners with longer lengths are required when JHH brackets are fixed into a multiple laminated supporting beam. For double laminates, use 65mm long nails. Alternatively, for double or triple laminated supporting beams, additional fixings may be provided at hanger locations to laminate plies. Seek advice from the beam design Engineer.
4. Pryda CODEMARK certificate CMNZ10030 certifies Pryda Heavy Duty Joist Hanger (JHH100, JHSS212, and JHSS275) with use of NZ Pryda Timber Connector Nails. Other fixing methods are outside the scope of the CODEMARK.
5. **Beams must be at least 140mm deep.** For beams of lesser depths, the tabulated capacities may be adjusted by a factor equal to the ratio of the number of effective fasteners by the number of fasteners tabulated above. Unless the top of the supported beam is provided with additional lateral restraints, the bracket must cover at least 60% of the depth of the supported beam.
6. **Locate bracket away from supporting beam end-cut.** Sufficient end distance shall be kept away from supporting beam end-cut. Seek Engineering approval from beam designer if in doubt or consult your project Engineer for further advice.



Screw Fixing – Pryda 12G x 35mm Timber Connector Screws (TCS12-35)

LOAD CASE	DESIGN CAPACITIES (ΦN_J) IN kN	
	OPTION 1 12 SCREWS TO BEAM A 8 SCREWS TO BEAM B	OPTION 2 20 SCREWS TO BEAM A 16 SCREWS TO BEAM B
	JD5	JD5
1.35G	6.6	13.2
1.2G + 1.5Qf	8	16
1.2G + 1.5Qr	8.9	17.8
1.2G + Wd or Wind Uplift	13.2	26.4

Notes:

1. Beam A = Supporting Beam, Beam B = Supported Beam.
2. **Wind capacities** -Limiting capacity of the hangers = 30.0 kN
3. 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.
4. **Multiple Laminated Supporting Beams** - Fasteners with longer lengths are required when JHH brackets are fixed into a multiple laminated supporting beam. For double laminates, use 65mm long screws. Alternatively, for double or triple laminated supporting beams, additional fixings may be provided at hanger locations to laminate plies. Seek advice from the beam design Engineer.
5. Pryda CODEMARK certificate CMNZ10030 certifies Pryda Heavy Duty Joist Hanger (JHH100, JHSS212, and JHSS275) with use of NZ Pryda Timber Connector Screws. Other fixing methods are outside the scope of the CODEMARK.
6. **Beams must be at least 140mm deep.** For beams of lesser depths, the tabulated capacities may be adjusted by a factor equal to the ratio of the number of effective fasteners by the number of fasteners tabulated above. Unless the top of the supported beam is provided with additional lateral restraints, the bracket must cover at least 60% of the depth of the supported beam.
7. **Locate bracket away from supporting beam end.** Sufficient end distance shall be kept away from supporting beam end-cut. Seek Engineering approval from beam designer if in doubt or consult your project Engineer for further advice.

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.

Pryda Heavy Duty Joist Hangers are only available in Z275, therefore suitable for “Closed” environment.

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^2/m^2 or LESS	Sheltered	Pryda Stainless Steel 304 Products (3)
		Vented MORE than 7000mm^2/m^2	Exposed	Pryda Stainless Steel 304 Products (3)
	All subfloor fastenings within 600mm of the ground	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)
	All other structural fixings	Sheltered		Pryda Stainless Steel 304 Products (3)
		Exposed		Pryda Stainless Steel 304 Products (3)
Zone D	All structural fixings	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)

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.

APPLICATION AND SCOPE OF USE

Pryda Heavy Duty Joist Hangers (JHH, JHSS) 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).

- Wide joist support
- Truss Support
- Double Joist
- Beam to beam
- I-Joist support

Contact details	
Manufacture location	New Zealand
Legal and trading name of manufacturer	QC Engineering
Legal and trading name of supplier	Pryda New Zealand -a Division of ITW New Zealand
Supplier address for service	23-29 Poland Road, Wairau Valley, Auckland, 0627, New Zealand
Supplier website	Pryda.co.nz
Supplier email	info@prydaanz.com
Supplier phone number	0800 88 22 44
Supplier NZBN	9429039833129
Product Skus	JHH100

Contact details	
Manufacture location	New Zealand
Legal and trading name of manufacturer	Kimberly Tool & Design (NZ) Limited
Legal and trading name of supplier	Pryda New Zealand -a Division of ITW New Zealand
Supplier address for service	23-29 Poland Road, Wairau Valley, Auckland, 0627, New Zealand
Supplier website	Pryda.co.nz
Supplier email	info@prydaanz.com
Supplier phone number	0800 88 22 44
Supplier NZBN	9429039833129
Product Skus	JHSS212, JHSS275

PRODUCT DATA SHEET

NZ PRYDA FACE MOUNT HANGER

CodeMark CMNZ-10030

Simple means of connecting two members at 90°

FEATURES AND BENEFITS

SIMPLE: Can be installed without needing to create special housings or high skill timber joints for I-joist or solid joist.

FAST: Comes with the fasteners (Pryda 40 x 3.75mm Timber Connector Nails) required, including screws to prevent squeaking. Can be fastened with Pryda 12G x 35mm Timber Connector Screws.

DURABLE: 1.2mm thick G300 Z275 steel.

SPECIFICATIONS

PRODUCT CODE	LF235/90
STEEL	G300
THICKNESS	1.2mm
CORROSION RESISTANCE	Z275
FASTENERS	Pryda 40 x 3.75mm Timber Connector Nails. **OR** Pryda 12G x 35mm Timber Connector Screws -painted red head. **AND** 6G x 30mm wafer head screw.
HEIGHTS	235mm
WIDTHS	90mm

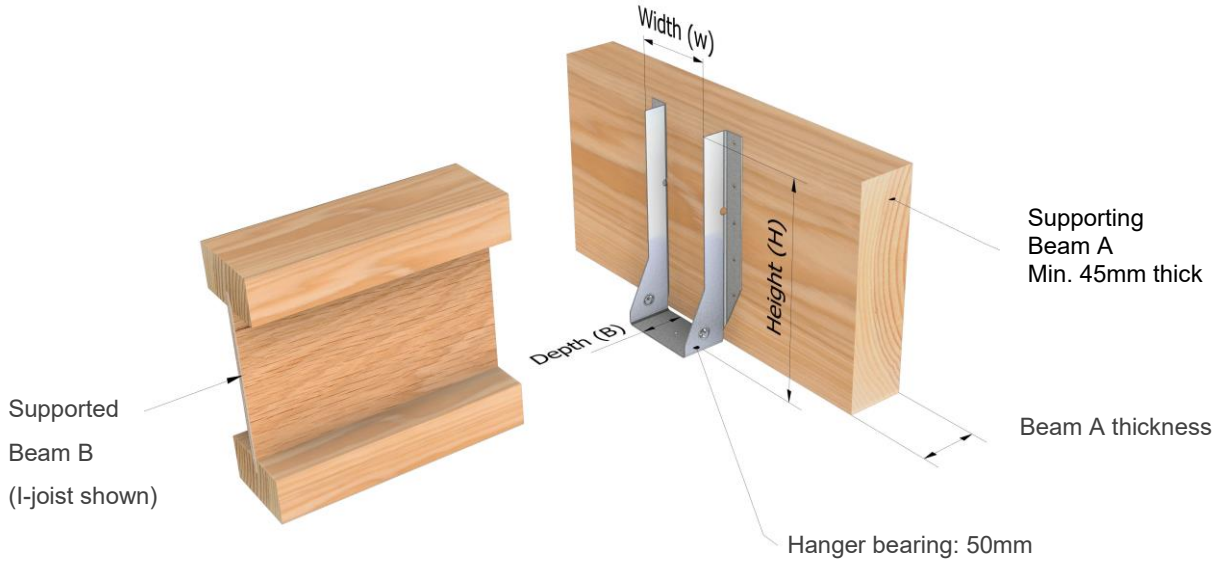
At the time of print, this product is NOT subject to any known warnings and bans found in Building Act 2004.

*All dimensions shown in “mm”.

FACE MOUNT HANGER

PRODUCT CODE	H (mm)	W (mm)	B (mm)	FACE NAIL HOLES
LF235/90	235	90	50	10

CONNECTION DEFINITION



- Face Mount bracket can be used to support solid joists of comparable size.

  Unless the top of the supported beam is provided with additional lateral restraints, the bracket must cover at least 60% of the depth of the supported solid beam.

DESIGN CAPACITY- LIMIT STATE DESIGN

Tabulated below are design capacities for Pryda I-joist Face Mount Hangers based on the specified number of nails or screws shown. “Face nails” are driven into the face of the supporting beam.

PRODUCT CODE	MATERIAL	QTY	HEIGHT	WIDTH	FACE FASTENERS REQUIRED CHOOSE EITHER NAILS OR SCREWS		1.2G + 1.5QF (DEAD & FLOOR LIVE) DESIGN CAPACITY, ΦNJ (KN) FOR SUPPORTING BEAM WITH JOINT GROUP
					NAILS	SCREWS	JD5
LF235/90	G300, Z275 Galvanised Steel	25	235	90	10	10	6.2

NOTES:

1. 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.

2. The above tabulated capacities are for a minimum supporting beam thickness of 45mm.

3. Use only Pryda 40 x 3.75mm Pryda Timber Connector Nails. Pryda Timber Connector Screws (TCS12-35) may be used as an alternative.

4. Gap between Supported and Supporting Beams: A maximum gap of 3mm is permitted without a reduction in design capacity. A larger gap would result in a rotation of the supported beam under downward loads and could compromise on end distance requirements of underside screw, resulting in reduced uplift capacities. Seek advice from a Pryda Engineer regarding treatment of large gaps.

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.

Pryda Face Mount Hanger is only available in Z275, therefore suitable for “Closed” environment.

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^2/m^2 or LESS	Sheltered	Pryda Stainless Steel 304 Products (3)
		Vented MORE than 7000mm^2/m^2	Exposed	Pryda Stainless Steel 304 Products (3)
	All subfloor fastenings within 600mm of the ground	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)
	All other structural fixings	Sheltered		Pryda Stainless Steel 304 Products (3)
		Exposed		Pryda Stainless Steel 304 Products (3)
Zone D	All structural fixings	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)

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.

APPLICATION AND SCOPE OF USE

Pryda I-joist hangers 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).

Pryda I-Joist Face Mount Hanger is suitable for many joints including:

- Joist to beam
- I-joist to beam

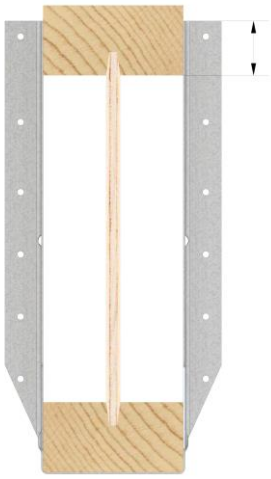
I-joist to beam support using screw fix option.

Double laminated joists to beam support, showing nail fix option. Screws can also be used refer to table for details.

INSTALLATION

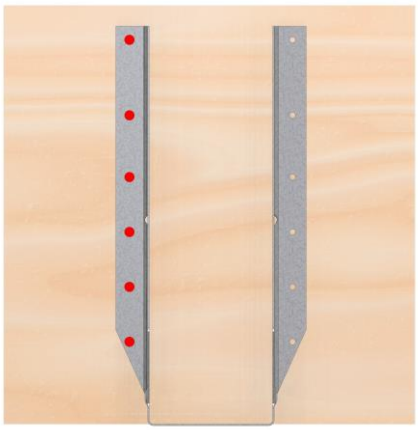
To achieve the specified design loads, Pryda I-Joist Hangers must be correctly installed as specified in the following sections: Refer to I-joist manufacturers' instruction manuals for span table selection and other details for on-site installation of their respective systems.

STEP 1



Before installing, ensure I-Joist hanger is deep enough to cover at least 10mm of the top flange of the I-Joist. This condition only applicable to I-joists only and not solid joists.

STEP 2

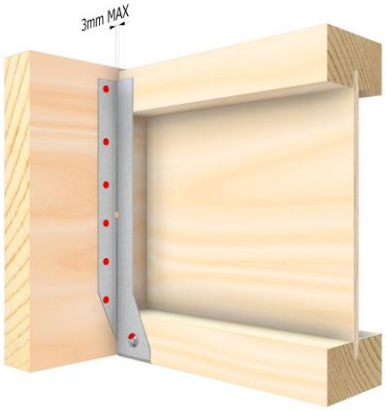


- Line up I-Joist Hanger on the supporting beam and fasten only one side initially using the number of nails or screws specified in the tables above.
- If both sides are fastened before the supported beam is slotted in, the final connection could be:

  - Too loose, leading to squeaking and reduced design values

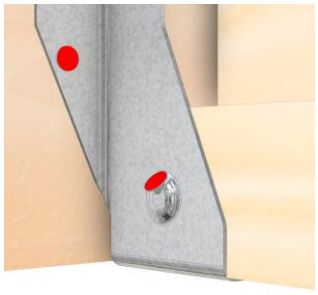
  - Too tight, meaning the beam will not fit.

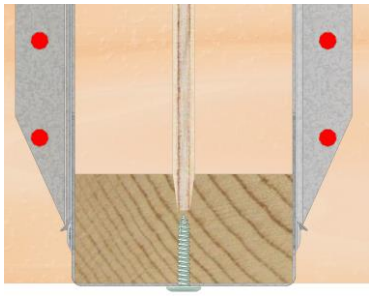
STEP 3



- Place the I-Joist into the bracket ensuring it is right up against supporting beam.
- Any gap greater than 3mm will reduce capacity .
- Fix off the remaining side ensuring the hanger is snug up against the I-Joist

STEP 4





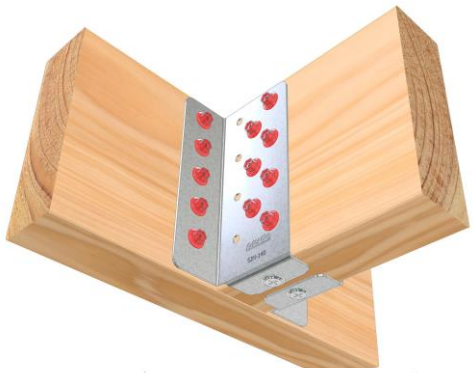
- To prevent the I-Joist squeaking in the hanger: - Skew nail into the dimples of each side near the bottom of the hanger
- Screw the included 6G x 30mm screws into the hole on the bottom as illustrated above.
- Note: Use the recommended screw to seat the I-Joist into the hanger properly to help minimise squeaks. Alternatively, if nails are used from sides, ensure they are adopted to avoid squeaks from nails coming into contact with the hanger's seat.

Contact details	
Manufacture location	Overseas
Legal and trading name of manufacturer	Exim Engineering Pty Ltd
Legal and trading name of importer	Pryda New Zealand -a Division of ITW New Zealand
Importer address for service	23-29 Poland Road, Wairau Valley, Auckland, 0627, New Zealand
Importer website	Pryda.co.nz
Importer email	info@prydaanz.com
Importer phone number	0800 88 22 44
Importer NZBN	9429039833129

PRODUCT DATA SHEET

NZ SPLIT JOIST HANGER

Heavy duty hanger, adjustable to multiple timber sizes, and versatile timber joist or beam connectors



FEATURES AND BENEFITS

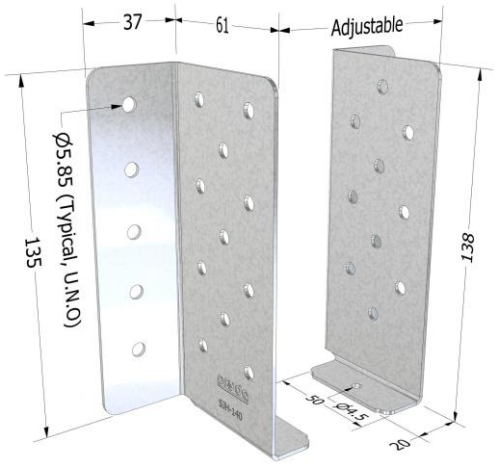
SIMPLE: Can accommodate multiple timber sizes negating the need to carry multiple different joist hangers.

FAST: Can be fastened with Pryda Timber Connector Screws.

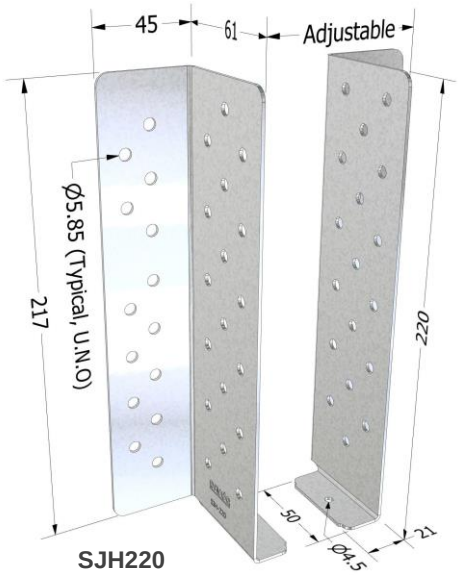
DURABLE: 1.95mm thick galvanised steel. Engineered to resist gravity loads and wind uplift loads.

SPECIFICATIONS

PRODUCT CODE	SJH140, SJH220
STEEL	G300 or Equivalent
THICKNESS	1.95mm
CORROSION RESISTANCE	Z275
FASTENERS REQUIRED	Pryda 12G x 35mm Timber Connector Screws – painted red head. OR Pryda 12G x 65mm Timber Connector Screws – painted black head. *Optional, 6G x 25mm Wafer or Pan head screws.
HEIGHT	SJH140: 138mm, SJH220: 220mm
WIDTH	Bottom tab to each half is 20mm -21mm wide for a minimum 45mm width timber when used in PAIRS. Maximum support timber width not to exceed 200mm with multi-laminate timbers. When using single SJH the minimum width is 35mm and the maximum width is 90mm.
DEPTH	61mm



SJH140



SJH220

*All dimensions shown are in “mm.”

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

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.

Pryda Split Joist Hanger is only available in Z275, therefore suitable for “Internal, fully protected and ventilated” environment.

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^2/m^2 or LESS	Sheltered	Pryda Stainless Steel 304 Products (3)
		Vented MORE than 7000mm^2/m^2	Exposed	Pryda Stainless Steel 304 Products (3)
	All subfloor fastenings within 600mm of the ground	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)
	All other structural fixings	Sheltered		Pryda Stainless Steel 304 Products (3)
		Exposed		Pryda Stainless Steel 304 Products (3)
Zone D	All structural fixings	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)

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.

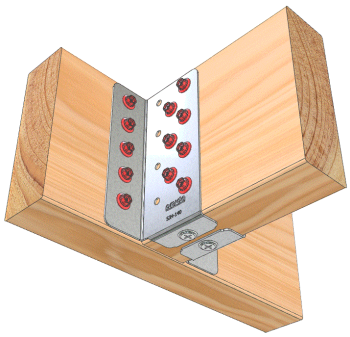
STORAGE AND HANDLING

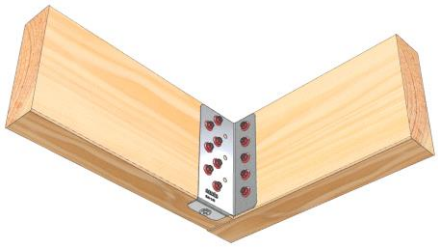
Prior to use, the Pryda products shall be stored in a weatherproof environment and protected from moisture. Care must be taken to avoid any damage to the surface of the products’ protective galvanised coating and profile that may impact performance.

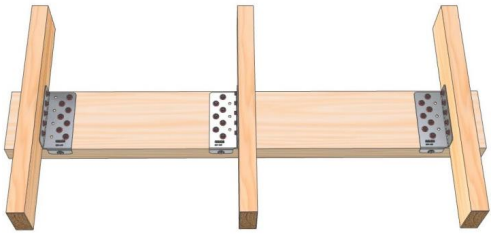
APPLICATION AND SCOPE OF USE

Pryda Split Joist Hangers are certified for use with solid timber when used and installed in accordance with the product datasheet showing 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.

- Common and wide joist support
- Double Joist
- Beam to beam
- Corner beam connection
- Ledger plate to stud support







SINGLE SUPPORTING AND SUPPORTED BEAM CONNECTION

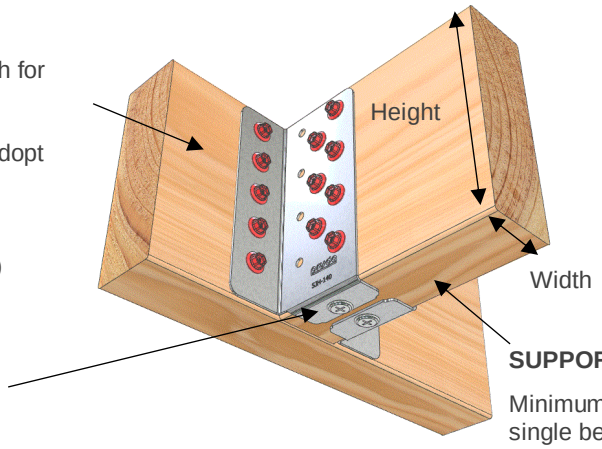
SUPPORTING: BEAM A

Minimum 35mm overall width for single beam.

For multi-laminate beams, adopt 65mm length screws.

Optional (Refer to notes 11)

6G x 25mm Wafer or Pan head hold-down screw

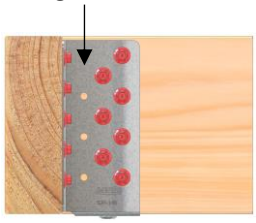


SUPPORTED: BEAM B

Minimum 45mm overall width for single beam.

Typical

Inner column of screw holes to Beam B not in use (both sides). Use fixing holes as shown.



DESIGN CAPACITIES PER PAIR OF SPLIT JOIST HANGERS PERPENDICULAR JOIST SUPPORT

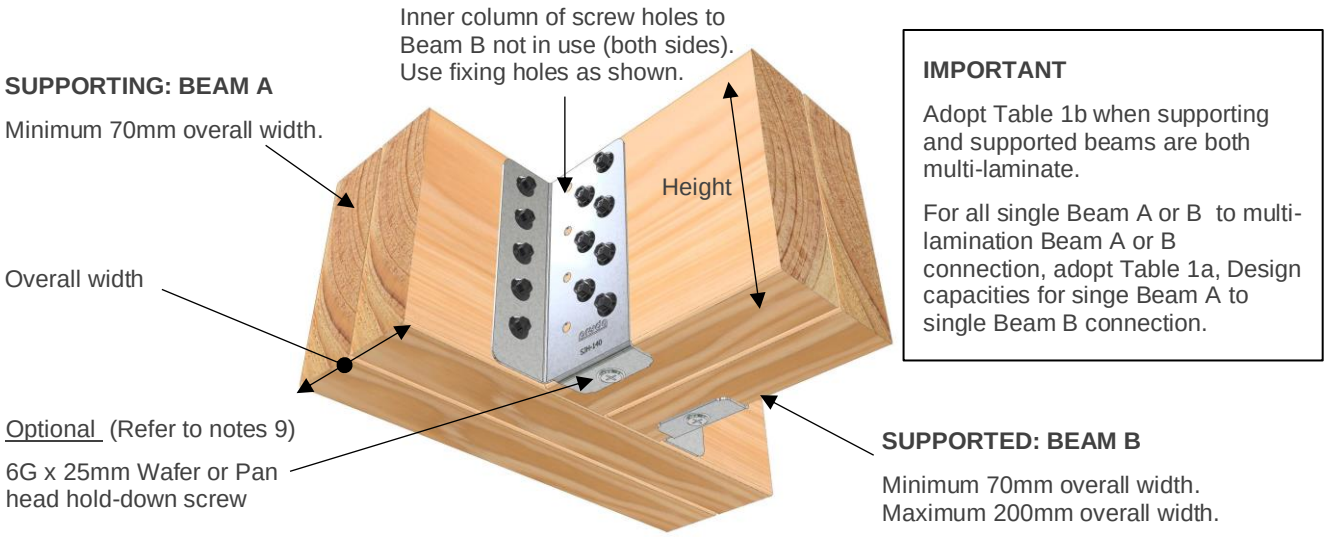
LOAD CASE	DESIGN CAPACITIES (ΦN_J) IN kN PER PAIR OF SJH FOR FASTENERS AND JOINT GROUP					
	SJH140			SJH220		
	PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS			PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS		
	10 screws per pair of hangers to Beam A 14 screws per pair of hangers to Beam B			28 screws per pair of hangers to Beam A 24 screws per pair of hangers to Beam B		
	JD5	JD4	JD3	JD5	JD4	JD3
1.35G	7.7	10.9	15.4	18.6	26.3	37.1
1.2G + 1.5Qr	10.4	14.8	20.9	25.1	35.5	50
1.2G + 1.5Qf	9.3	13.2	18.7	22.5	31.8	44.9
1.2G + Wd or Wind uplift	15.5	21.9	30.9	37.2	50	50

Table 1a, Design capacities for single Beam A to single Beam B connection.

Notes:

1. Beam A (Supporting Beam) and Beam B (Supported Beam) must be a minimum 140mm height when using SJH140 and 240mm when using SJH220 to achieve above screw capacities. Unless the top of the supported beam is provided with additional lateral restraints, the bracket must cover at least 60% of the height of the supported beam.
2. Single beams minimum width is 45mm and maximum width 63mm when using 35mm length screws.
3. SJH140 and SJH220 must be installed in PAIRS.
4. SJH supports variable widths. Refer to next section for multi-laminated beam design considerations and limitations.
5. Design capacities given are for both Beam A and B having the same joint group. Example, Both Beam A and B are JD5, JD4, or JD3. Alternatively, adopt the lesser joint group of the supporting beam A or supported beam B if they do not share the same joint group. Example, if beam A is JD5 and beam B is JD4, adopt the lesser capacity JD5.
6. The values in the table apply directly for Category 1 joints. Refer to 'General Notes' found in the Pryda Hangers and Truss Boots Guide for advice on how the values should be reduced for Category 2 and Category 3 joints.
7. **Supported Beam prone to Splitting** – SJH brackets are not recommended to resist uplift loads for supported members using timbers that are prone to splitting (like hardwoods-JD3 joint group) unless additional precautions are taken. These can be in the form of pre-bored holes or provision of anti-split nailplates at ends of the supported beam.
8. **Multiple Laminated Supporting/ Supported beams:** Fasteners with longer lengths are required when SJH brackets are fixed into a multiple laminated beam. For double laminates use 65mm long screws. Adequate lamination fixing is required for multi-laminated beams. The lamination fixing procedure is the responsibility of the installer. The beam lamination procedure should be completed in accordance with either Engineered Wood suppliers' technical guidelines or a certified Engineering detail.
9. Refer to section "*MULTI-LAMINATE SUPPORTING AND SUPPORTED BEAM CONNECTION*" when both Beam A and Beam B are multi-laminate.
10. **Gap between Supported and Supporting Beams.** A maximum gap of 3mm is permitted without impeding the design capacities. Seek advice from a Pryda engineer for treatment of larger gaps.
11. **Optional**: Recommend installing a 6G x 25mm Wafer head or Pan head hold-down screw to underside of each bracket to reduce likelihood of timber member squeaking in a flooring application.
12. The given capacities are for vertical loads only.

MULTI-LAMINATE SUPPORTING AND SUPPORTED BEAM CONNECTION



IMPORTANT

Adopt Table 1b when supporting and supported beams are both multi-laminate.

For all single Beam A or B to multi-lamination Beam A or B connection, adopt Table 1a, Design capacities for singe Beam A to single Beam B connection.

DESIGN CAPACITIES PER PAIR OF SPLIT JOIST HANGERS PERPENDICULAR JOIST SUPPORT

LOAD CASE	DESIGN CAPACITIES (ΦN_J) IN kN PER PAIR OF SJH FOR FASTENERS AND JOINT GROUP					
	SJH140			SJH220		
	PRYDA 12G X 65MM TIMBER CONNECTOR SCREWS			PRYDA 12G X 65MM TIMBER CONNECTOR SCREWS		
	10 screws per pair of hangers to Beam A 14 screws per pair of hangers to Beam B			28 screws per pair of hangers to Beam A 24 screws per pair of hangers to Beam B		
	JD5	JD4	JD3	JD5	JD4	JD3
1.35G	9.2	13	18.3	22	31.2	44
1.2G + 1.5Qr	12.4	17.5	24.8	29.8	42	50
1.2G + 1.5Qf	11	15.7	22.2	26.7	37.8	50
1.2G + Wd or Wind uplift	18.4	26	36.7	44	50	50

Table 1b, Design capacities for multi-laminate Beam A to multi-laminate Beam B connection.

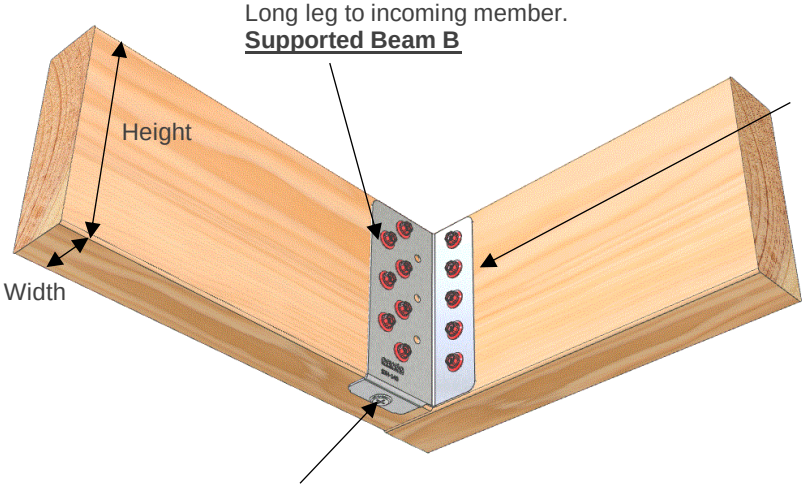
Notes:

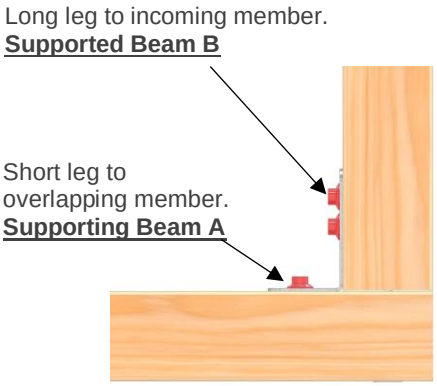
1. Beam A (Supporting Beam) and Beam B (Supported Beam) must be a minimum 140mm height when using SJH140 and 240mm when using SJH220 to achieve above screw capacities. Unless the top of the supported beam is provided with additional lateral restraints, the bracket must cover at least 60% of the height of the supported beam.
2. SJH140 and SJH220 must be installed in PAIRS.
3. SJH supports variable widths. Maximum width 200mm when used with multi- laminate. Multi-lamination can be achieved with :

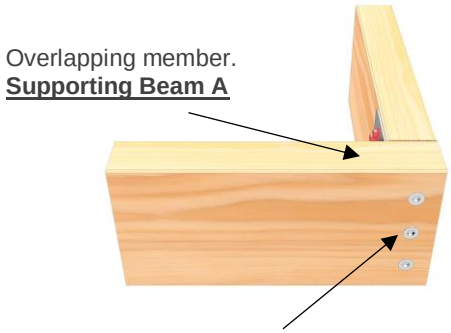
   Double beams using : 35mm or 45mm or 63mm width timbers only.
   Triple beams using : 35mm or 45mm or 63mm with overall width not exceeding 200mm.
4. Design capacities given are for both Beam A and B having the same joint group. Example, Both Beam A and B are JD5, JD4, or JD3. Alternatively, adopt the lesser joint group of the supporting Beam A or supported Beam B if they do not share the same joint group. Example, if beam A is JD5 and beam B is JD4, adopt the lesser capacity JD5.
5. The values in the table apply directly for Category 1 joints. Refer to 'General Notes' found in the Pryda Hangers and Truss Boots Guide for advice on how the values should be reduced for Category 2 and Category 3 joints.
6. **Supported Beam prone to Splitting** – SJH brackets are not recommended to resist uplift loads for supported members using timbers that are prone to splitting (like hardwoods-JD3 joint group) unless additional precautions are taken. These can be in the form of pre-bored holes or provision of anti-split nailplates at ends of the supported beam.
7. **Multiple Laminated Supporting/ Supported beams:** Fasteners with longer lengths are required when SJH brackets are fixed into a multiple laminated beam. For double laminates use 65mm long screws. Adequate lamination fixing is required for multi-laminated beams. The lamination fixing procedure is the responsibility of the installer. The beam lamination procedure should be completed in accordance with either Engineered Wood suppliers' technical guidelines or a certified Engineering detail.
8. **Gap between Supported and Supporting Beams.** A maximum gap of 3mm is permitted without impeding the design capacities. Seek advice from a Pryda engineer for treatment of larger gaps.
9. **Optional**: Recommend installing a 6G x 25mm Wafer head or Pan head hold-down screw to underside of each bracket to reduce likelihood of timber member squeaking in a flooring application.
10. The given capacities are for vertical loads only.

DESIGN CAPACITIES FOR SINGLE SIDE CONNECTION USING SJH140 or SJH220 AS CORNER CLEAT

SJH140 INSTALLATION AS CORNER CLEAT







SJH140

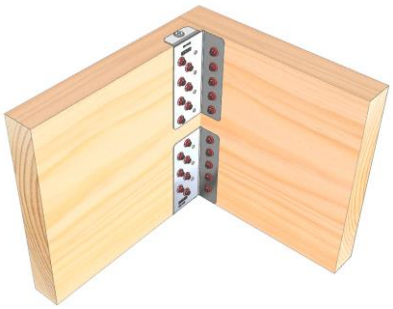
Minimum timber height and width:

- 140mm height, 35mm width.
- 300mm max height for 2 x SJH140 vertically stacked.
- Suitable for single beam width of: 35mm, 45mm or 63mm.
- Double beam width can be achieved with either 35mm or 45mm, not exceeding 90mm.

Fixings for each SJH140 :

- 7 x Pryda TCS12-35 screws on long leg – incoming member.
- 5 x Pryda TCS12-35 screws on short leg – overlapping member.

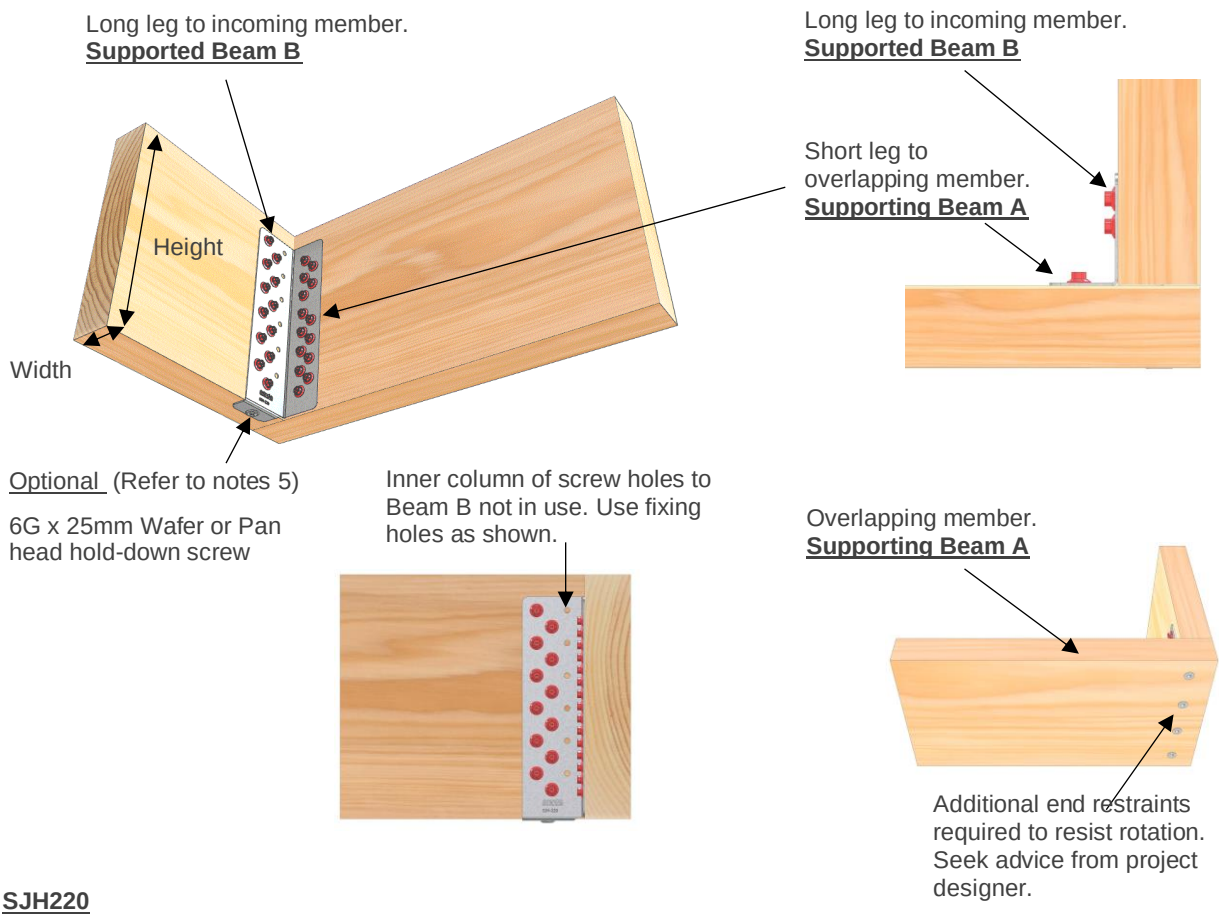
*65mm long screws are required for multi-laminate beams using Pryda TCS12-65.



Using 2 x SJH140, vertically stacked.

SJH220 **NOT recommended to be installed vertically stacked.

SJH220 INSTALLATION AS CORNER CLEAT



SJH220

Minimum timber height and width:

- 240mm height, 35mm width.
- 400mm max. height.
- Suitable for single beam width of: 35mm, 45mm or 63mm.
- Double beam width can be achieved with either 35mm or 45mm, not exceeding 90mm.

Fixings for each SJH220 :

- 12 x Pryda TCS12-35 screws on long leg – incoming member.
- 14 x Pryda TCS12-35 screws on short leg – overlapping member.

*65mm long screws are required for multi-laminate beams using Pryda TCS12-65.

SEE NEXT PAGE FOR DESIGN CAPACITIES

DESIGN CAPACITIES FOR SINGLE SPLIT JOIST HANGER PERPENDICULAR CORNER SUPPORT

LOAD CASE	DESIGN CAPACITIES (ΦN_3) IN kN FOR EACH SINGLE SJH FOR FASTENERS AND JOINT GROUP					
	SJH140			SJH220		
	PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS			PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS		
	5 screws to each single hanger to Beam A 7 screws to each single hanger to Beam B			14 screws to each single hanger to Beam A 12 screws to each single hanger to Beam B		
	JD5	JD4	JD3	JD5	JD4	JD3
1.35G	2.6	3.7	5.2	6.3	8.9	12.6
1.2G + 1.5Qr	3.5	5	7	8.5	12	17
1.2G + 1.5Qf	3	4.5	6.3	7.6	10.8	15.2
1.2G + Wd or Wind uplift	5.2	7.4	10.5	12.6	17	17

Table 2a, Design capacities for single Beam A to single Beam B corner connection.

NOTES:

1. Provide 3 x 14G x 90mm Type 17 screws from the back of overlapping Beam A (Min. height 140mm) in to end-grain of incoming Beam B, to resist twisting of beam. Use longer screw lengths if required to ensure a minimum 35mm penetration. More screws may be required for greater height beams. Pre-drilling is recommended to avoid end splits. Seek advice from fastener supplier for recommended pilot hole. For 14G timber screws, pilot holes typically range between 4.0 - 4.5mm, depending on the type of timber, especially if it is prone to splitting. The timber ends, as well as the area within 300mm of SJH bracket installation, must be free from timber defects. These defects include, but not limited to, knots, splits, wane, checks any other imperfections that could compromise the structural integrity of timber end connection.

2. **Multiple Laminated Supporting/ Supported beams:** Fasteners with longer lengths are required when SJH brackets are fixed into multiple laminated beams. For double laminates use 65mm long screws. Adequate lamination fixing is required for multi-laminated beams. The lamination fixing procedure is the responsibility of the installer. The beam lamination procedure should be completed in accordance with either Engineered Wood suppliers' technical guidelines or a certified Engineering detail.

3. Design capacities given are for both Beam A and B having the same joint group. Example, Both Beam A and B are JD5, JD4, or JD3. Alternatively, adopt the lesser joint group of the supporting Beam A or supported Beam B if they do not share the same joint group. Example, if beam A is JD5 and Beam B is JD4, adopt the lesser capacity JD5.

4. If 2 x SJH140 brackets are used vertically stacked, the given capacities shall be increased by a factor of 2. Minimum height 290mm and minimum width, 35mm. Ensure the screws[(1)] on overlapping beam A are at least 30mm from end and edge of beam. Space screws evenly in between. SJH220 is not recommended to be vertically stacked.

Fixings for a 2 x SJH140 vertically stacked:

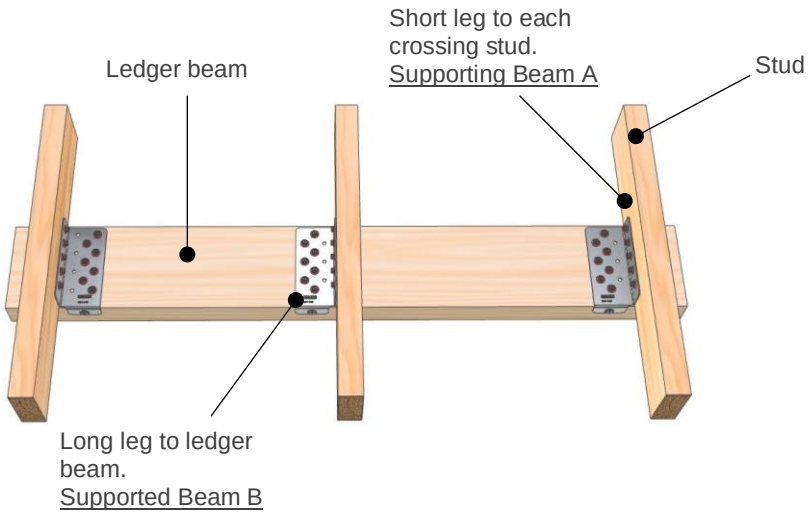
- 14 x Pryda TCS12-35 screws on long leg – incoming member, supported Beam B.
- 10 x Pryda TCS12-35 screws on short leg – overlapping member, supporting Beam A.

*Adopt longer screws for double laminate beams using min. 65mm long screws. The given capacities are given for vertical load only and not intended for resisting lateral load.

5. Optional: Recommend installing a 6G x 25mm Wafer head or Pan head hold-down screw to underside of each bracket to reduce likelihood of timber member squeaking in a flooring application.

6. The given capacities are for vertical loads only and not intended for resisting lateral loads.

LEDGER PLATE / WALING PLATE SUPPORT AND DESIGN CAPACITIES



DESIGN CAPACITIES FOR SINGLE SPLIT JOIST HANGER LEDGER BEAM SUPPORT

LOAD CASE	DESIGN CAPACITIES (ΦN_J) IN kN FOR EACH SINGLE SJH FOR FASTENERS AND JOINT GROUP					
	SJH140			SJH220		
	PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS			PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS		
	5 screws to each single hanger to Beam A 7 screws to each single hanger to Beam B			14 screws to each single hanger to Beam A 12 screws to each single hanger to Beam B		
	JD5	JD4	JD3	JD5	JD4	JD3
1.35G	2.6	3.7	5.2	6.3	8.9	12.6
1.2G + 1.5Qr	3.5	5	7	8.5	12	17
1.2G + 1.5Qf	3	4.5	6.3	7.6	10.8	15.2
1.2G + Wd or Wind uplift	5.2	7.4	10.5	12.6	17	17

Table 3a, Design capacities for single Beam A to single Beam B corner connection.

NOTES:

1. For SJH140 installation with 140 x 45mm or 35mm ledger, fix ledger to each crossing stud with 3 x 90 x 3.15mm framing nails having a minimum edge distance no less than 30mm from beam edge and spaced evenly across beam. Minimum nail to beam end distance 60mm. Install a single SJH140 connecting back face of ledger to each crossing stud as to Table 3a. SJH minimum clearance away from stud end 60mm.

For SJH220 installation with 240 x 45mm or 35mm ledger, fix ledger to each crossing stud with 5 x 90 x 3.15mm framing nails having a minimum edge distance no less than 30mm from beam edge and spaced evenly across beam. Minimum nail to beam end 60mm. Install a single SJH220 connecting back face of ledger to each crossing stud as to Table 3a. SJH minimum clearance away from stud end 60mm.

2. Capacities given are for single 35mm or 45mm beam to stud connection only. Use only 140 x 45mm or 35mm ledger with SJH140. Use only 240 x 45mm or 35mm with SJH220.

3. Design capacities given are for both supporting stud A and supported ledger, Beam B, having the same joint group. Example, both stud A and Beam B are JD5, JD4, or JD3. Alternatively, adopt the lesser joint group of the supporting stud or supported Beam B if they do not share the same joint group. Example, if supporting stud, A is JD5 and Beam B is JD4, adopt the lesser capacity JD5.

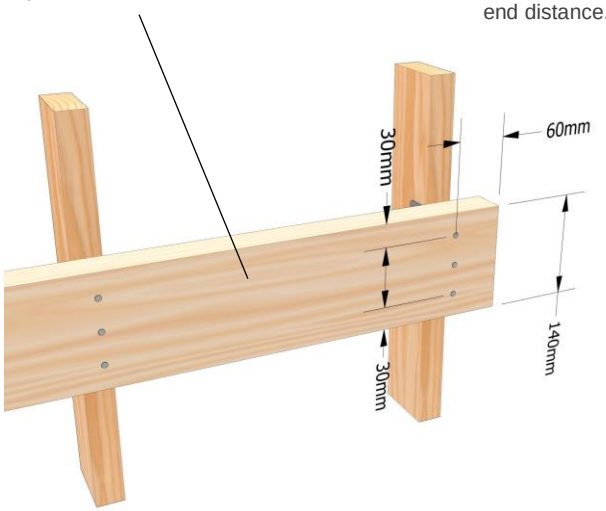
4. The given capacities are for vertical loads only and not intended for resisting lateral load.

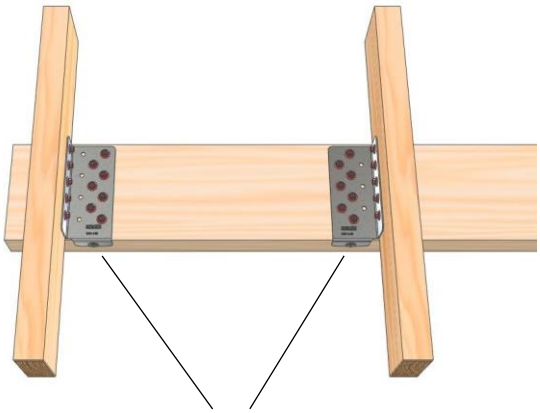
5. Optional: Recommend installing a 6G x 25mm Wafer head or Pan head hold-down screw to underside of each bracket to reduce likelihood of timber member squeaking in a flooring application.

LEDGER PLATE / WALING PLATE INSTALLATION

Ledger : 140mm or 240mm

Nail minimum edge and end distance.





Fix SJH to each crossing stud as per Table 3a.

For 140mm ledger :

3 x 90 x 3.15mm framing nails to each crossing stud.

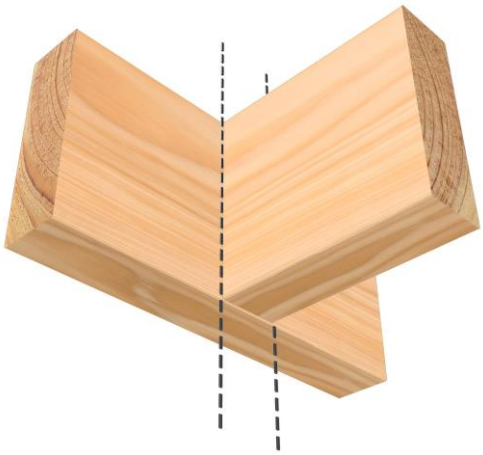
For 240mm ledger:

5 x 90 x 3.15mm framing nails to each crossing stud.

INSTALLATION OF SPLIT JOIST HANGER
PERPENDICULAR JOIST SUPPORT

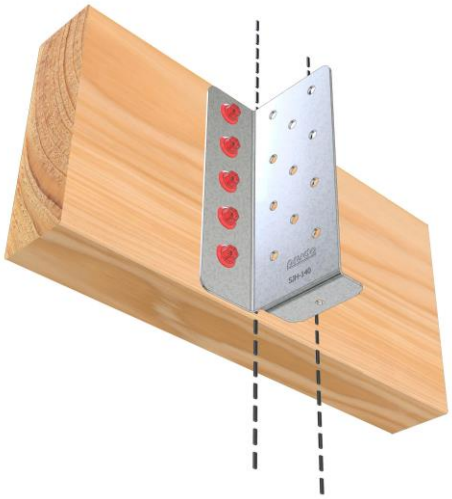
STEP 1

Measure and mark the location of the supported joist, on the supporting beam. Ensure both supporting beam and supported member are vertically plumb.



STEP 2

Position and install one side of the Split Joist Hanger on the supporting beam and fasten in place.

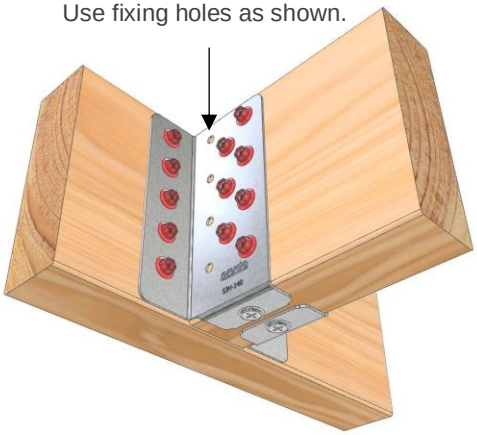


STEP 3

Position the joist to be supported on the split joist hanger ensuring it is up tight against the supporting beam and sitting on hanging bracket bottom tab. Fasten hanger to beam, filling indicated holes using number of fasteners required as defined in capacity table. Only use 12G Pryda Connector Screws for beam connections and screw fix to underside of bottom tab with 6G x 25mm screw to reduce likelihood of squeak.

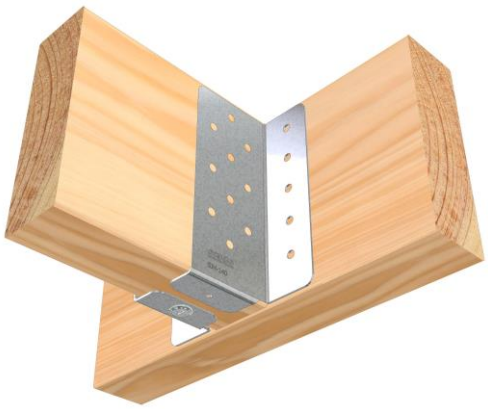
Refer to Table 1a notes for beam size constraints.

Inner column of screw holes to Beam B not in use (both sides). Use fixing holes as shown.



STEP 4

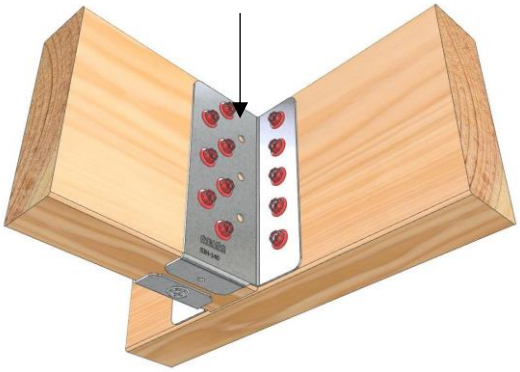
Position the second Split Joist Hanger ensuring it is up tight against supporting beam and supported joist.

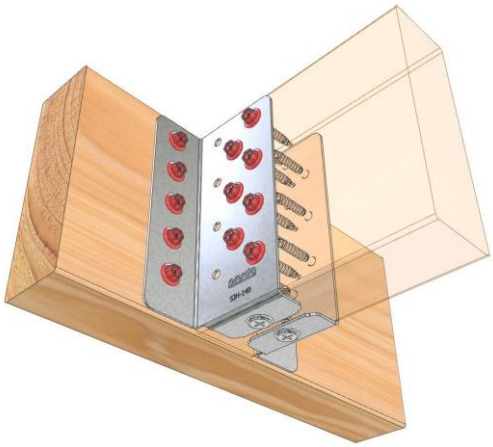


STEP 5

Fix off the second Split Joist Hanger starting at the supporting beam connection and then the bottom tab like Step 2.

Inner column of screw holes to Beam B not in use (both sides). Use fixing holes as shown.





BEAM COMBINATION TYPES, SCREW FIXING PATTERN AND TABLE SELECTION GUIDE

Multi-laminate Supporting Beam A , single Supported Beam B.

Adopt Table 1a.

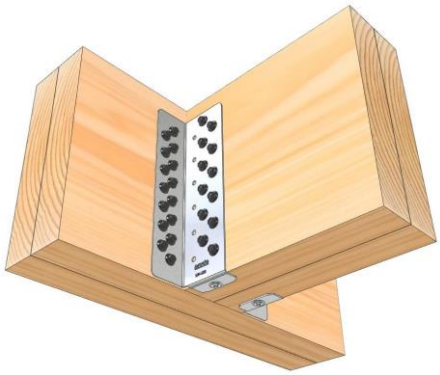
Single Supporting Beam A , single Supported Beam B.

Adopt Table 1a.

All screws shown are Pryda Timber Connector Screws.
Black Head = 65mm length.
Red head = 35mm length.

Single Supporting Beam A , multi-laminate Supported Beam B.

Adopt Table 1a.



Multi-laminate Supporting Beam A , multi-laminate Supported Beam B.

Adopt Table 1b.

Contact details	
Manufacture location	Overseas
Legal and trading name of manufacturer	Shanghai Zenith International Trading Company Co LTD
Legal and trading name of supplier	Pryda New Zealand -a Division of ITW New Zealand
Importer address for service	23-29 Poland Road, Wairau Valley, Auckland, 0627, New Zealand
Importer website	Pryda.co.nz
Importer email	info@prydaanz.com
Importer phone number	0800 88 22 44
Importer NZBN	9429039833129

PRODUCT DATA SHEET

NZ TIM-CON BRACKET

CodeMark CMNZ-10030

Ideal fixing for concrete to timber beam connection

FEATURES AND BENEFITS

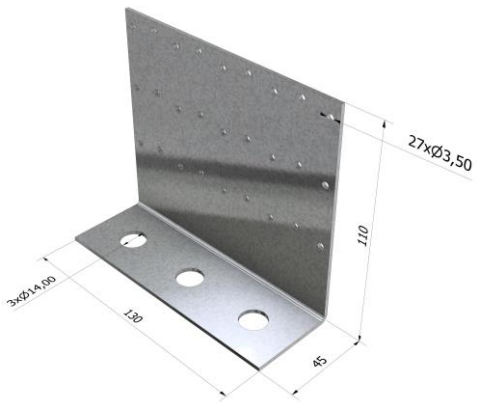
SIMPLE: A bracket that can be fixed with nails using common on-site tools.

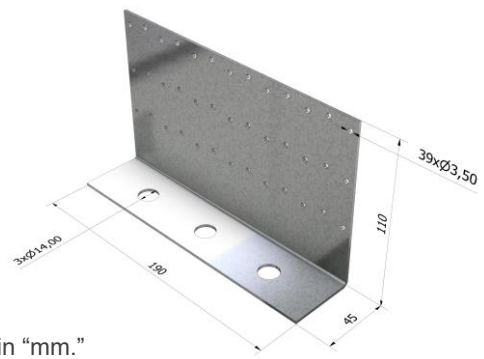
FAST: Fixed with Pryda 35 x 3.15mmTimber Connector Nails.

DURABLE: 2mm thick galvanised steel. Used in a 'vertical' orientation as an angle cleat for Wall-to-beam , Beam-to-beam connections.

SPECIFICATIONS

PRODUCT CODE	TCF130, TCF190
STEEL	G300
THICKNESS	2mm
CORROSION RESISTANCE	Z275
FASTENERS REQUIRED	Pryda 35 x 3.15mm Timber Connector Nails M12 Anchor
HEIGHT	110mm
WIDTH	130mm,190mm
DEPTH	45mm
QUANTITY	TCF130 20 pieces TCF190 10 pieces





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

*All dimensions shown are in "mm."

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.

Pryda Tim-Con Bracket is only available in Z275, therefore suitable for “Closed” environment.

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^2/m^2 or LESS	Sheltered	Pryda Stainless Steel 304 Products (3)
		Vented MORE than 7000mm^2/m^2	Exposed	Pryda Stainless Steel 304 Products (3)
	All subfloor fastenings within 600mm of the ground	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)
	All other structural fixings	Sheltered		Pryda Stainless Steel 304 Products (3)
		Exposed		Pryda Stainless Steel 304 Products (3)
Zone D	All structural fixings	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)

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.

DESIGN CAPACITIES AND SUPPORT ORIENTATION

VERTICAL CLEAT

Supported beam fixings:

Capacities are based on 27 Nails per TCF130 and 39 nails per TCF190.

LOADS (Limit State Design)	DESIGN CAPACITIES (ΦN_J) IN kN FOR SINGLE BRACKET USING PRYDA 35 X 3.15MM TIMBER CONNECTOR NAILS AND JOINT GROUP	
	TCF130	TCF190
	JD5	JD5
1.35G	17.6	16.1
1.2G + 1.5Qf	21.3	19.5
1.2G + 1.5Qr	23.7	21.7
1.2G + Wd or Wind uplift	35.1	32.2

Fixing to Supporting Concrete wall, each bracket :
Use 37 x 37 x 3mm washers with each M12 Bolt.

Connection shown using 2 x M12 bolts are only indicative only, refer to notes.

Fixing to Supported Beam each bracket:
TCF130 : 27 Nails
TCF190 : 39 Nails

IMPORTANT
Supported member must be supported at each end. No cantilever members.

NOTES:

1. The supported beam must be laterally tied to prevent rotation. Consult with the project Engineer for further details.
2. Specified capacities are for vertical load transfer only.
3. Minimum timber width 45mm. Install bracket to each face for double 45mm.
4. TCF brackets should NOT be assumed to contribute and must not be used towards stabilising concrete wall panels.
5. Connection point to supported member must be free from any defects such a knot, splits, shakes or any natural/seasoning defects that may impact the structural integrity of the connection.
6. Bracket, supporting and supported member must be installed vertically plumb.
7. Bracket and supported member must be perpendicular to supporting wall.
8. TCF brackets shall not be used to support cantilever members.
9. Bolt connection to concrete wall or beam shall exceed load capacities of selected TCF bracket and connection designed and approved by consulting project Engineer.
10. Minimum 2 bolts per each TCF bracket, adopting the very top hole and bottom hole to each bracket when using 2 bolted connections.

APPLICATION AND SCOPE OF USE

Pryda Tim-Con Brackets 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).

- Beam to Concrete wall.
- Beam to beam.

INSTALLATION OF TIM-CON BRACKET

NAILS: Pryda 35 x 3.15mm Timber Connector Nails. The brackets have 27 nail holes in the TCF130, and 39 nail holes in the TCF190.

BOLTS: Use 12mm diameter anchor bolts such as Reid SA12-75 Sleeve Anchor (in concrete) or HSB12/100 Reid Hexagon Screw Bolt (in filled blockwork) applied strictly in accordance with manufacturer's instructions and confirm capacities before using. Always use a 37 x 37 x 3mm washer with each bolt connection.

Alternatively, 12mm cast-in bolts or chemical anchors may be used – seek further advice from your consulting project Engineer. Because the bolt load is critical (rather than the nails or bracket), and bolt strength varies with different concrete grades, bolt spacing, embedment length and edge distance, IT IS THE RESPONSIBILITY OF THE SPECIFIER to check the adequacy of the bolts in each application.

STEP 1

- Measure and mark location of the supported member on to supporting wall.
- Ensure wall and bracket are vertically plumb.
- Ensure bracket is perpendicular to supporting wall.
- Use the selected TCF bracket as template to mark bolt holes.
- Ensure bolt holes locations conforms to bolt's manufacture literature and Engineering design for edge distance, embedment depth and pre-drilled hole size.
- Minimum of 2 bolts per bracket.

STEP 2

- Line up TCF to bolts holes and install 37 x 37 x 3mm washer to each bolted connection.
- Install selected M12 bolts and tighten to bolt's manufacturer recommendation.

STEP 3

- Install supported timber member firmly against TCF bracket and butting into wall with no more than 3mm gap.
- TCF shall be located centrally to timber depth.

STEP 4

- Install recommended number of nails using Pryda 35 x 3.15mm Timber Connector Nails.

Contact details	
Manufacture location	New Zealand
Legal and trading name of manufacturer	QC Engineering
Legal and trading name of supplier	Pryda New Zealand -a Division of ITW New Zealand
Supplier address for service	23-29 Poland Road, Wairau Valley, Auckland, 0627, New Zealand
Supplier website	Pryda.co.nz
Supplier email	info@prydaanz.com
Supplier phone number	0800 88 22 44
Supplier NZBN	9429039833129

PRODUCT DATA SHEET

NZ VARIABLE SKEW ANGLE BRACKET

CodeMark CMNZ-10030

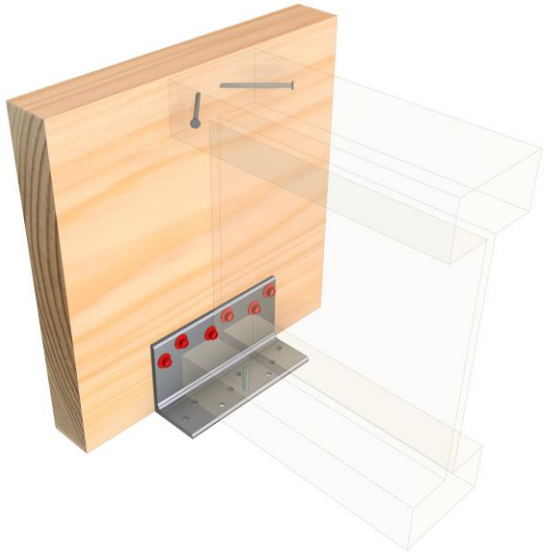
Strong and versatile bracket that can be used as a seat support.

FEATURES AND BENEFITS

SIMPLE: Simple design.

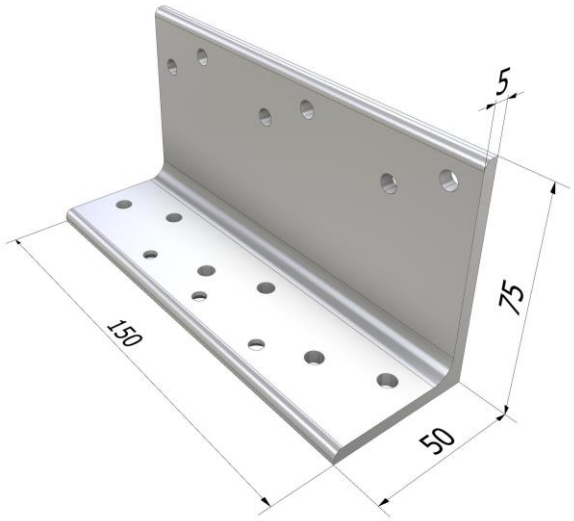
FAST: Fixed with Pryda 12G x 35mm Timber Connector Screws – painted read head.

DURABLE: 5mm thick, HDG galvanised steel. Used in a 'horizontal' orientation as an angle seat to support beams or trusses coming in at any direction.



SPECIFICATIONS

PRODUCT CODE	LVSIA
STEEL	G300
THICKNESS	5mm
CORROSION RESISTANCE	Hot Dipped Galvanised
FASTENERS REQUIRED	Pryda 12G x 35mm Timber Connector Screws - painted red head
HEIGHT	75mm
WIDTH	150mm
DEPTH	50mm
QUANTITY	10 pieces



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

*All dimensions shown are in "mm."

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.

Pryda Variable Skew Angle Bracket is only available in HDG, therefore suitable for “Closed” environment.

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^2/m^2 or LESS	Sheltered	Pryda Stainless Steel 304 Products (3)
		Vented MORE than 7000mm^2/m^2	Exposed	Pryda Stainless Steel 304 Products (3)
	All subfloor fastenings within 600mm of the ground	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)
	All other structural fixings	Sheltered		Pryda Stainless Steel 304 Products (3)
		Exposed		Pryda Stainless Steel 304 Products (3)
Zone D	All structural fixings	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)

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.

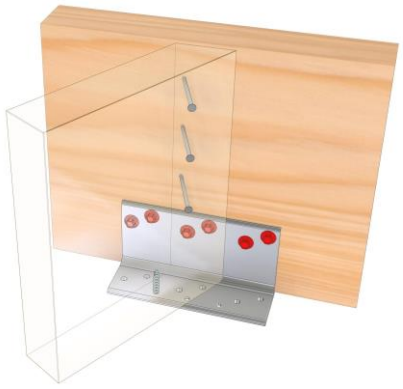
Clause B2 DURABILITY: Performance B2.3.1 (a) not less than 50 years and B2.3.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1.

DESIGN CAPACITIES

SEAT HANGER

Fixings – 6 x Pryda TCS12-35 screws on vertical leg and
1/10G x 30mm Type 17 counter-sunk screw on horizontal leg.



JOINT GROUP	LOAD CAPACITIES(KN) FOR LVSIA AS AN ANGLE SEAT FOR GIVEN LOAD CASE			
	1.35G	1.2G+1.5QF	1.2G+1.5QR	WIND UPLIFT
JD5	6.6	8.0	8.9	1.2

NOTES:

1. The supported beam must be laterally tied to prevent rotation by fixing the upper section of the supported beam with skew nails into supporting beam or through the supporting beam into the end grain of supported beam with long screws. Consult project Engineer for approved details.

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. Longer lengths screws are required when LVSIA brackets are fixed into multiple laminated beams. For double 35mm laminates, use 6 x 12G x 65mm Type 17 Hex head screws. Multiple laminated beams fixings to be designed and approved by consulting project Engineer.

Pryda CoreMark certificate CMNZ10030 certifies Pryda LVSIA with use of NZ Pryda Timber Connector screws. Other fixing methods are outside the scope of the CoreMark.

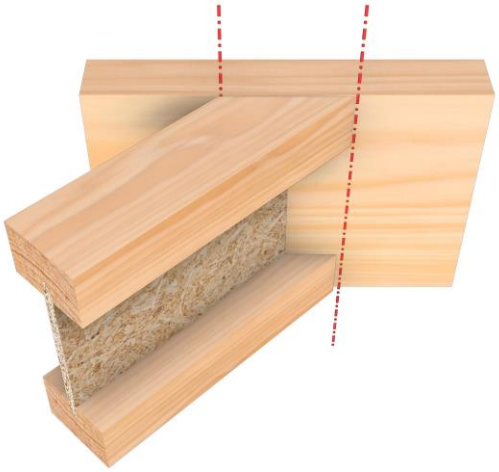
APPLICATION AND SCOPE OF USE

Pryda Variable Skew Angle bracket is 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).

- Joist support
- Truss Support
- Double Joist support

INSTALLATION OF LVSIA AS A HANGER SEAT

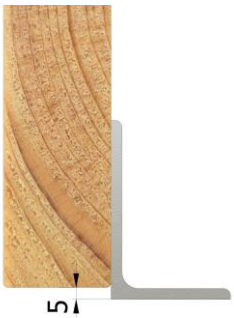
STEP 1



- Measure and mark location of the supported member on to supporting beam.

STEP 2

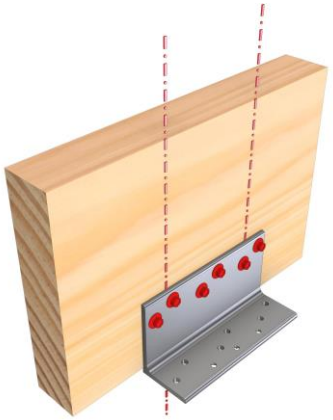
Flush finish for direct fixed ceiling



Set-down 5mm max. for ceiling with battens

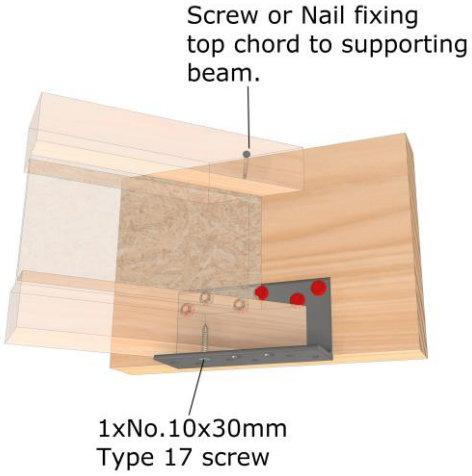
- Line up LVSIA so that the longer leg is on the supporting beam and the shorter leg will be the seat.
- Ensure bottom of bracket is flush with the bottom of the timber if direct fix plasterboard will be installed.
- Alternatively set the LVSIA 5mm maximum below bottom edge of supporting beam for alternate ceiling fixing style. i.e., on battens

STEP 3



- Fix 6 x Pryda 12G x 35mm Timber Connector Screws – painted red head, into the supporting member.

STEP 4



- Sit the supported member centrally in the seat at the desired angle and tight up against the bracket.
- Fix 1 x 10G x 30mm Type 17 counter-sunk screw into the supported beam from below.
- Screw or nail fix the top of the supported joist to supporting beam.
- Refer to selected proprietary joist for installation guidelines or approved connection by your consulting project Engineer.

Contact details	
Manufacture location	Overseas
Legal and trading name of manufacturer	Shanghai Zenith International Trading Company Co LTD
Legal and trading name of importer	Pryda New Zealand -a Division of ITW New Zealand
Importer address for service	23-29 Poland Road, Wairau Valley, Auckland, 0627, New Zealand
Importer website	Pryda.co.nz
Importer email	info@prydaanz.com
Importer phone number	0800 88 22 44
Importer NZBN	9429039833129

PRODUCT DATA SHEET

NZ PYRDA HEAVY DUTY AND MULTI-FIX TRUSS BOOTS

Strong means of forming a truss-to-truss connection. Specifically designed to support Girder trusses and large span trusses.

FEATURES AND BENEFITS

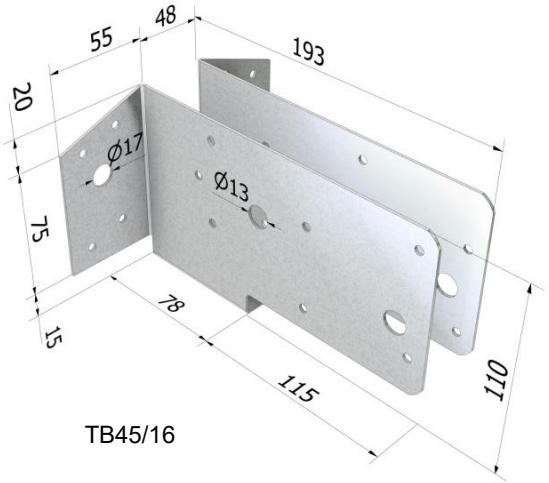
SIMPLE: Simple to install with bolt kits available to make. installation a breeze.

FAST: Multiple types available with different thicknesses and fastening types. Provides ample capacity against gravity, uplift, and rotational loads.

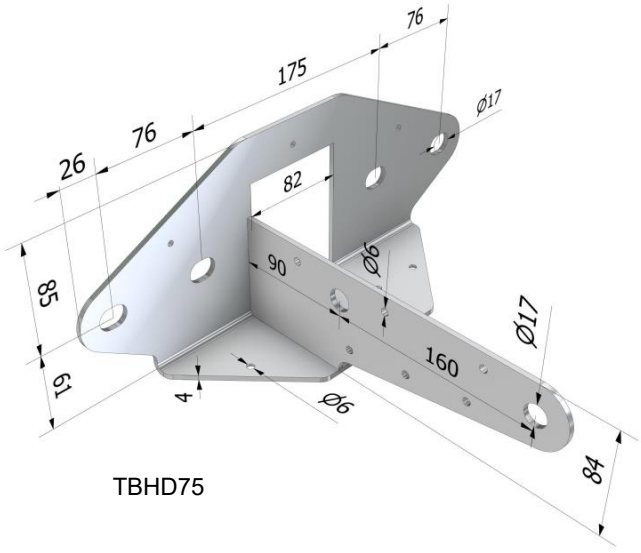
DURABLE: Made from reliable 1.6mm G300 Z275 Steel to 4mm HDG steel.

SPECIFICATIONS

	MULTI-FIX TRUSS BOOT	HEAVY DUTY
PRODUCT CODE	TB45/16	TBHD75
STEEL	G300	MILD STEEL
THICKNESS	1.6mm	4mm
CORROSION RESISTANCE	Z275	Hot Dipped Galvanised
FASTENERS REQUIRED	M12 bolts and M16 Bolts + *washers Pryda Timber Connector Screws. 12G x 35mm or 65mm screws	M16 Bolts +*washer Pryda Timber Connector Screws. 12G x 35mm or 65mm
HEIGHTS	110mm	150mm
WIDTHS	48mm	35mm - 70mm



TB45/16



TBHD75

Note:
*Refer to “installation” for washer size to suit M12 and M16 bolts.

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

APPLICATION AND SCOPE OF USE

Pryda Truss Boots TB45/16 and TBHD75 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).

TB45/16: This Pryda Multi-Fix Truss Boot is used to connect roof trusses or other roof members to supporting girder truss. 'Multifix' means that these connectors can be fixed with bolts or screws or bolts and screws together.

TBHD75: The long anti-rotation leg and heavy-duty steel of Pryda Heavy Duty Truss Boots, combined with the inherent high stiffness of the carried truss, prevents twisting of the bottom chord of the girder.

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.

Pryda Heavy Duty and Multi-fix Truss Boots are only available in HDG and Z275, therefore suitable for "Closed" environment.

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^2/m^2 or LESS	Sheltered	Pryda Stainless Steel 304 Products (3)
		Vented MORE than 7000mm^2/m^2	Exposed	Pryda Stainless Steel 304 Products (3)
	All subfloor fastenings within 600mm of the ground	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)
	All other structural fixings	Sheltered		Pryda Stainless Steel 304 Products (3)
		Exposed		Pryda Stainless Steel 304 Products (3)
Zone D	All structural fixings	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)

Notes:
1.All Pryda galvanised products comply with NZS3604:2011 Table 4.2.
2.Refer to NZS3604:2011 for all environment definitions and Table 4.3 for nails or screw galvanizing.
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.

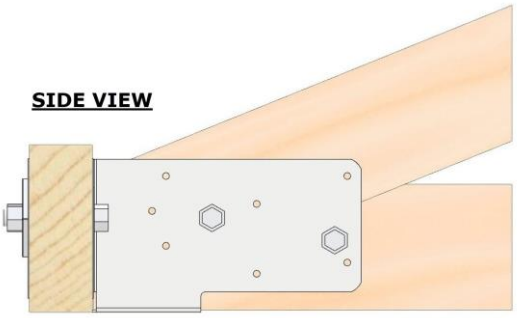
INSTALLATION

- M12 or ½ inch diameter bolts must be fitted with nuts and 55mm diameter or 56 x 56mm square by 3mm or 40 x 40mm square by 5mm thick washers to timber interface.
- M16 or 5/8-inch diameter bolts must be fitted with nuts and 63 x 63mm square by 5mm thick washers to timber interface.

BOLTS ONLY INSTALLATION

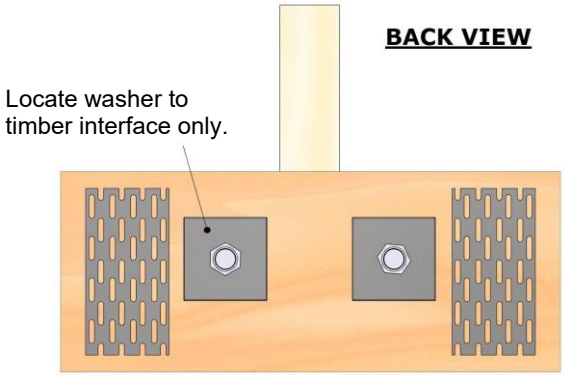
The roof cladding (tiles, sheet steel etc.) must be installed only after the truss boots are fully fixed into both the girder and supported truss, with all fasteners fully installed. i.e., Screws, Bolt assemblies etc.

STEP 1



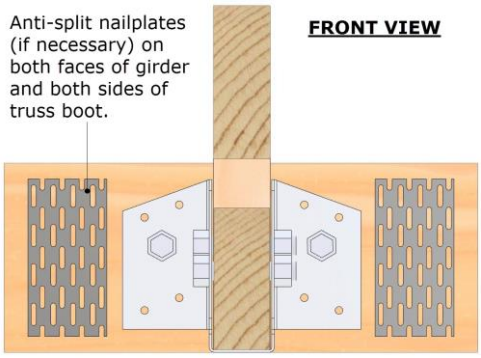
- Fit the Boot flush with the bottom of the girder bottom chord and tack fix with two nails or screws.
- Drill the bolt hole and fit the bolt with the nut and washer on the face opposite to the boot.
- Ensure correct bolt length and specification are used.

STEP 2



- Sit the incoming member into the boot and fix it in place.
- The clearance between the end of the incoming member and the face of the girder truss chord should not exceed 5mm, preferably tight fitting.
- Drill the bolt hole and fit the bolts, washers, and nuts.

STEP 3

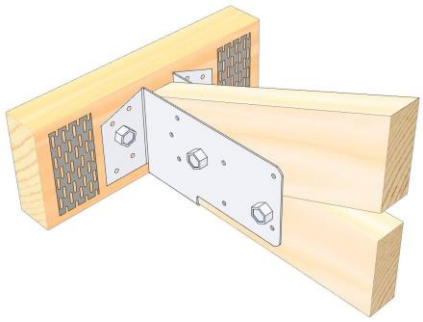


- Hammer apply anti-split Claw nailplates on the girder truss chord on both faces and both sides of the Boot, i.e.: 4 nailplates of:

CHORD WIDTH (mm)	90	120	140	170	190
ANTI-SPLIT PLATE SIZE	3C2	4C2		6C2	

- Note: Anti-split Claw nailplates are NOT required for boots fixed with M12 bolts into timbers that are not prone to splitting.

STEP 4

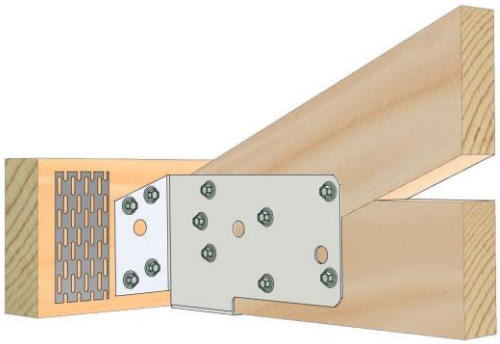


- Important: The roof cladding (tiles, sheet steel etc.) must be installed only after the truss boots are fully fixed into both the girder and supported truss, with all bolts and washers in place.

SCREWS ONLY INSTALLATION

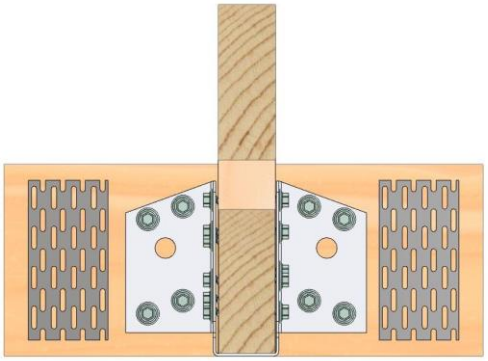
The roof cladding (tiles, sheet steel etc.) must be installed only after the truss boots are fully fixed into both the girder and supported truss, with all fasteners fully installed. i.e., Screws, Bolt assemblies etc.

STEP 1



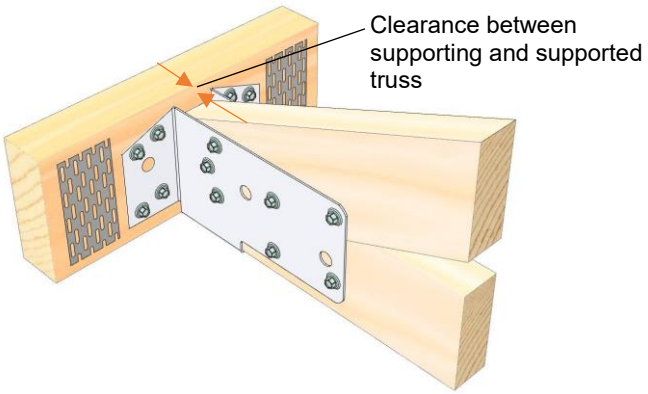
- If the girder truss is comprised of two or more laminates (i.e.: a “double” or “triple” girder), the laminates must be fixed together using one of the details specified in “Fixing Details For Double or Triple Girders”.

STEP 2



- Fit the Boot flush with the bottom of the girder bottom chord and tack fix with two screws.
- Fully install the remaining screws by filling all screw holes.

STEP 3

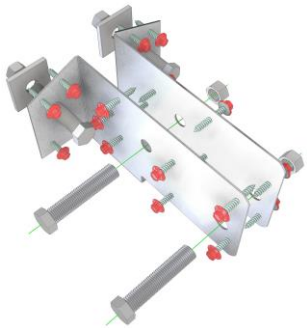


- Sit the incoming member into the boot and fix it in place.
- The clearance between the end of the incoming member and the face of the girder truss chord should not exceed 5mm.
- Drive screws into all holes.
- Note: that anti-split nailplates are not required for Screws Only fixing.

BOLTS AND SCREWS INSTALLATION

The roof cladding (tiles, sheet steel etc.) must be installed only after the truss boots are fully fixed into both the girder and supported truss, with all fasteners fully installed. i.e., Screws, Bolt assemblies etc.

STEP 1

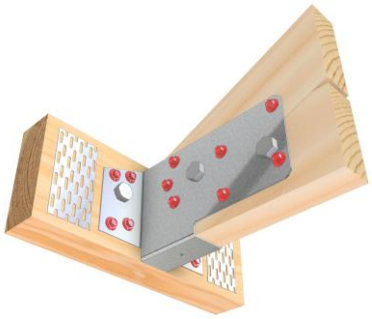


- Refer to the specification table on page 2 to gather the correct fasteners for the Truss Boot including the correct washer size when using bolts.

STEP 2

- Always fix to the supporting truss first, if the supporting girder truss is double or triple laminated, ensure the lamination connection method is adequate.
- Refer to our Hangers and Truss Boots design guide for details on appropriate girder lamination fixings.

STEP 3



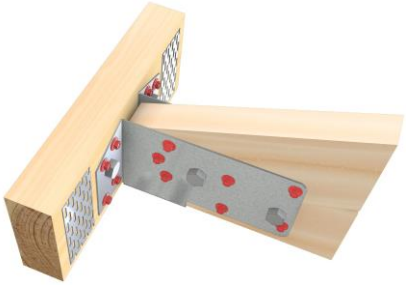
- Position the truss boot so the bottom sits flush with the bottom of the supporting truss.
- Fix Truss Boot using the fasteners required to achieve the desired capacity.

STEP 4

- If fixing with bolts and the timber is prone to splitting, fix anti split claw plates on either side of the truss boot and both face of the supporting truss for a total of 4 plates as illustrated above and in step 3.

CHORD WIDTH (mm)	90	120	140	170	190
ANTI-SPLIT PLATE SIZE	3C2	4C2		6C2	

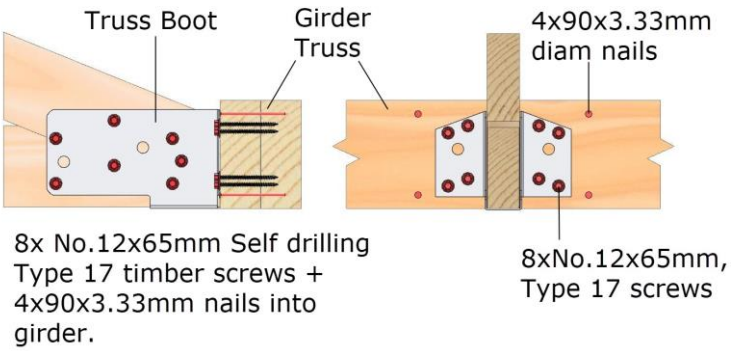
STEP 5



- Fit the incoming member ensuring it is tight up against supporting truss.
- The gap between the end of the supported truss and the supporting truss should be no more than 5mm.

FIXING DETAILS FOR DOUBLE 45MM GIRDER TRUSSES

DOUBLE GIRDERS – 2 x 45mm

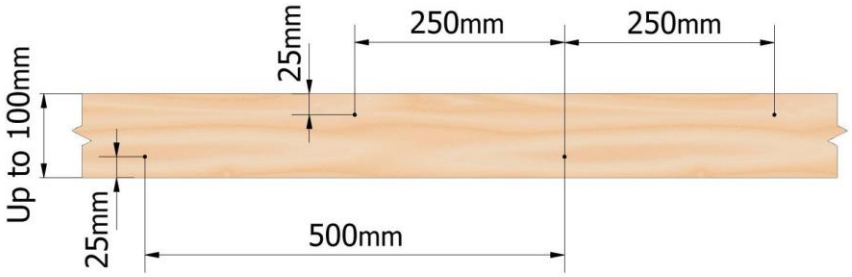


Notes:

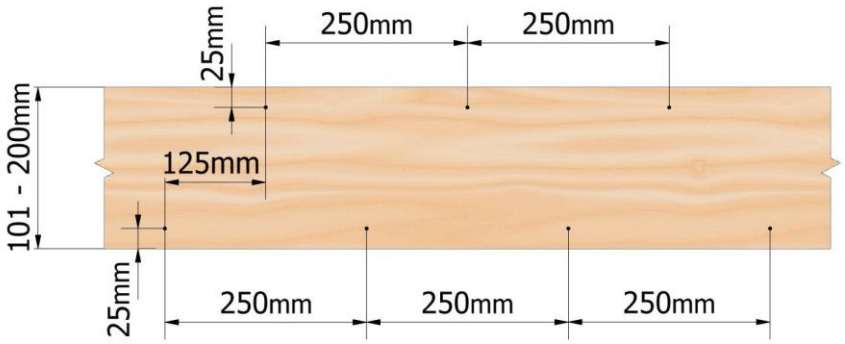
1. Nails at the Truss Boot are to be spaced 70mm (min) apart along the grain and 40 mm (min) apart across the grain. They should be as close to the Truss Boot as practical, but not further away than the depth of the member.
2. All screws are to be Pryda Timber Connector Screws TCS12-35 (12G x 35mm) or TCS12-65 (12G x 65mm)
3. For all double, the chords (top and bottom) and webs are to be nailed in accordance with truss lamination table.

TRUSS LAMINATION TABLE

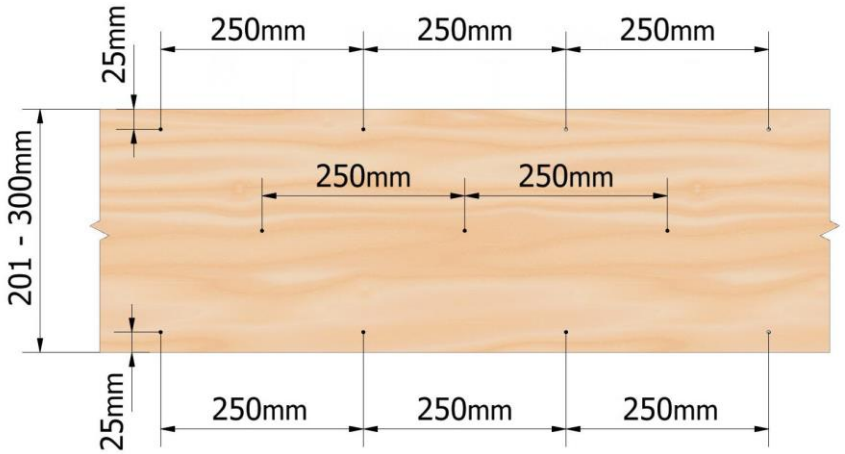
TIMBER WIDTH	NAIL ROWS & MAXIMUM SPACING
Up to 100mm	2 Rows (staggered) at 500mm cts
101 - 200mm	2 Rows (staggered) at 250mm cts
201-300mm	3 Rows (staggered) at 250mm cts



Up to 100mm Chords or Webs

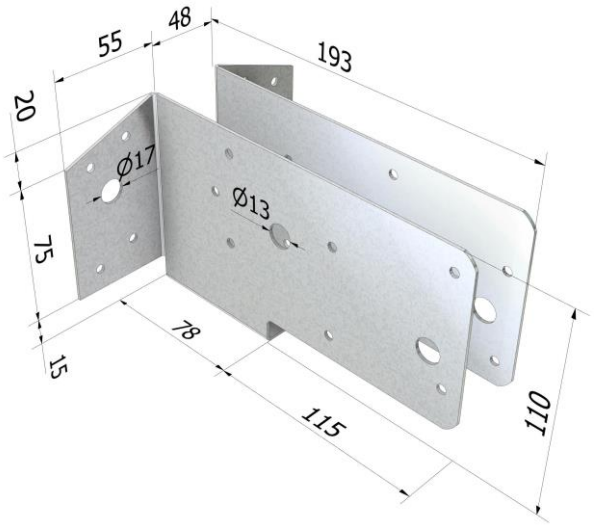


101mm - 200mm Chords or Webs



201mm - 300mm Chords or Webs

DESIGN CAPACITIES FOR MULTI-FIX TRUSS BOOTS



Determine Truss Boot capacities in the following manner:

FOR DOWNWARD LOADS

Design capacity is the lesser of the values in Table TB1 (at Girder truss) and Table TB2 (at supported truss) for the corresponding load case.

FOR WIND UPLIFT

Design capacity is the lesser of the G-Wu values in Table TB1 (at Girder truss) and Table TB3 (at supported truss).

TABLE TB1: GIRDER TRUSS CAPACITY (DOWNWARD AND UPLIFT – DUE TO FASTENERS)

BOOT CODE	LOAD CASE	DESIGN CAPACITY ΦNj (kN) - JOINT GROUP:
		J5
		MINIMUM THICKNESS (mm)
		45
TB45/16	BOLTS ONLY	
	G	8.9
	G + Qr	11.8
	G + Wd	14.8
	G - Wu	14.8
	SCREWS ONLY	
	G	8.7
	G + Qr	11.6
	G + Wd	14.6
	G - Wu	14.6
	BOLTS & SCREWS	
	G	17.6
	G + Qr	23.4
	G + Wd	25.0*
	G - Wu	20.0

Refer to notes under TABLE TB2 for conditions of use with the above table.

TABLE TB2: SUPPORTED TRUSS CAPACITY (DOWNWARD – DUE TO BEARING + FASTENERS)

PRODUCT CODE	LOAD CASE	DESIGN CAPACITY ΦNJ (KN) - JOINT GROUP		
		J5		
		FIXING OPTIONS		
		BOLTS ONLY (M12)	SCREWS ONLY	BOLTS + SCREWS
TB45/16	G	14.3	18.2	25.0*
	G + Qr	21.6	25.0*	25.0*
	G + Wd	24.7	25.0*	25.0*

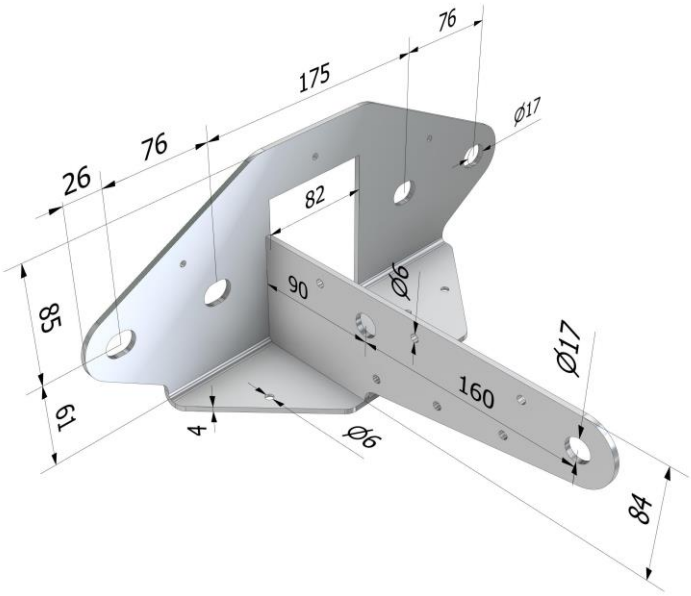
NOTES:
1. Load case symbols are: (refer Hangers and Truss Boots design guide for descriptions)
   - G = 1.35G
   - G + Qr = 1.2G + 1.5Qr
   - G + Wd = 1.2G + Wd
   - G - Wu = Wind uplift
2. Girder timber thicknesses are minimum. Supported truss thicknesses are minimums for bolt capacity and maximums (3 mm tolerance for two nail plates) for fitting the timber into the boot.
3. Bearing + fasteners capacities above apply to standard heel joints with a 10 mm minimum square cut or non-heel ends of cut-off and mono trusses.
4. Design capacities applies for dry (maximum moisture content of 18%) Radiata Pine and Douglas Fir timber grade SG8 and for timber which meets J5 timber in accordance with NZS3604.
5. For other design conditions, contact a Pryda design office.
6. The capacities with an asterisk (*) are governed by steel strength of the truss boot.
7. Use appropriate bolt lengths:
   - Min. 120mm bolts for up to 2/45 trusses.

TABLE TB3: SUPPORTED TRUSS CAPACITY (UPLIFT– DUE TO FASTENERS)

PRODUCT CODE	THICKNESS (mm)	FIXING METHOD	DESIGN CAPACITY ΦNj (kN) WIND UPLIFT (G-Wu)
			$k_1 = 1$
			J5
TB45/16	45	12 screws	17.5
		2/M12 bolts	11.1
		Bolts + screws	20.0

Notes:
1. For wind uplift, take the lower of the capacities for the supported truss and girder, i.e.: look up both tables.
2. Design capacities applies for dry (maximum moisture content of 18%) Radiata Pine and Douglas Fir timber grade SG8 and for timber which meets J5 timber in accordance with NZS3604.
3. The capacities with '*' are governed by steel strength of the truss boot.
4. Limit State Design capacities are shown in the table.

TRUSS BOOTS HEAVY DUTY



Features the long anti-rotation fin and heavy-duty steel of Pryda Heavy Duty Truss Boot, combined with the inherent high stiffness of the carried truss, prevents twisting of the bottom chord of the girder.

The TBHD75 Truss Boots have further benefits which include:

- Special shape to reduce weight, and rounded edges for easier handling.
- Improved bearing capacity for supported truss.
- A unique slot in the back of the boot to eliminate the need to cut 6-10mm from the heel of the supported truss.
- Additional screw fixings into supported trusses to improve uplift capacity, if required.
- Nail holes in the back flange to allow the boot to be easily located on the girder truss prior to drilling for bolts.
- Holes in the base to allow screw to hold any incoming angled member at ceiling level (such as a hip truss) in position. These holes are countersunk to allow flush finish if required.

INSTALLATION

Pryda Heavy Duty Truss Boots are installed with 6/ M16 bolts and with 63 x 5mm square washers on all surfaces where the bolt head or nut bears directly on the timber. Anti-split Claw nailplates are to be installed central to the bolt line on both faces of the girder and on both sides of the truss boot at approx. 80mm away from the centre of the outside bolts. Screws used on the TBHD75 Truss Boot are to be Pryda TCS12-35 or TCS12-65 for multi-laminate trusses.

DESIGN CAPACITIES FOR HEAVY DUTY TRUSS BOOT

Girder Truss bottom Chord MUST have the same Joint Group with a minimum 130mm depth to adopt the following table. Otherwise adopt the lesser of the Girder and supported truss joint group capacities.
Examples:

1) Girder Truss joint group J4 and supported truss J5, adopt the supported truss J5 capacities.
2) Girder Truss joint group J5 and supported truss J4, adopt the supported truss J5 capacities.
3) Girder Truss joint group J4 and supported truss J4, adopt the supported truss J4 capacities.
4) Girder Truss joint group J5 and supported truss J5, adopt the supported truss J5 capacities.

GIRDER TRUSS THICKNESS (mm)	SUPPORTED TRUSS THICKNESS (mm)	DESIGN CAPACITIES (kN) FOR VARYING LOAD CASES AND SUPPORTED TRUSS JOINT GROUPS							
		SUPPORTED TRUSS = J5				SUPPORTED TRUSS = J4			
		1.35G (Dead Only)	1.2G+1.5Q (Dead+ Live)	Wind Uplift		1.35G (Dead Only)	1.2G+1.5Q (Dead+ Live)	Wind Uplift	
				Bolts Only	Bolts+ Screws			Bolts Only	Bolts+ Screws
45	45	17.6	23.7	14.8	22.7	17.6	25.1	15.7	23.6
	2/45	17.8	23.7	19.6	27.5	18.8	25.1	24.6	30(1)
2/45	45	17.6	29.1	14.8	22.7	17.6	29.1	15.7	23.6
	2/45	23.6	31.4	19.6	27.5	29.5	39.4	24.6	30(1)

Notes:

1. The values (30 kN) with a superscript (2) refers to the capacities that are limited by steel strength of TBHD75 in uplift. The limiting steel value for downward loading is 40 kN.
2. 2/45 refers to 45mm thick double laminated truss.
3. Design capacities applies for dry (maximum moisture content of 18%) Radiata Pine and Douglas Fir timber grade SG8 and for timber which meets J5 timber in accordance with NZS3604.
4. The values related to 1.35G (Dead only) load case should be checked against reactions arising from 1.35G load case. Similarly 1.2G + 1.5Q (Dead + Roof Live) capacities should be checked against factored reactions from 1.2G + 1.5Q load case.
5. A 120mm deep bottom chord for girder trusses may be used when supporting concrete tile roofs in low wind areas (up to N2 wind class) where wind uplift is not critical or when the truss boot is located at a panel point.
6. It is important to use the specified washer (63 x 5mm square) against the timber face to achieve the full capacity of M16 bolts.
7. Limit State Design capacities are shown in table.

Contact details		Contact details	
Manufacture location	Overseas	Manufacture location	Overseas
Legal and trading name of manufacturer	Shanghai Zenith International Trading Company Co LTD	Legal and trading name of manufacturer	Exim Engineering Pty Ltd
Legal and trading name of importer	Pryda New Zealand -a Division of ITW New Zealand	Legal and trading name of importer	Pryda New Zealand -a Division of ITW New Zealand
Importer address for service	23-29 Poland Road, Wairau Valley, Auckland, 0627, New Zealand	Importer address for service	23-29 Poland Road, Wairau Valley, Auckland, 0627, New Zealand
Importer website	Pryda.co.nz	Importer website	Pryda.co.nz
Importer email	info@prydaanz.com	Importer email	info@prydaanz.com
Importer phone number	0800 88 22 44	Importer phone number	0800 88 22 44
Importer NZBN	9429039833129	Importer NZBN	9429039833129
Product Sku	TBHD75	Product Sku	TB45/16

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