

NZ DESIGN GUIDE

**BRACING** 

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**

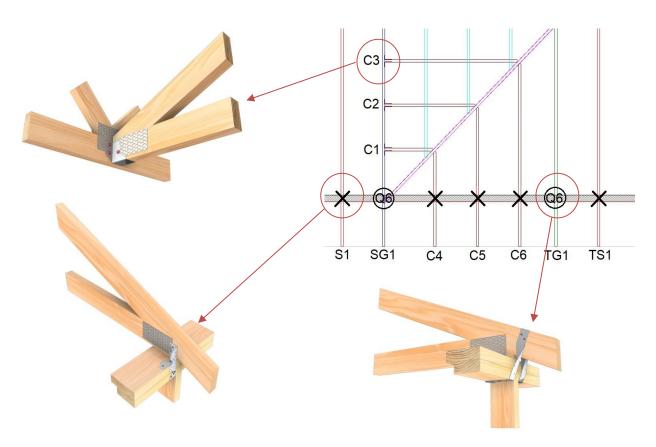
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			NC6	1 / NPPC6 Concealed Purlin Cleat



		NC8	1 / NPPC8 Concealed Purlin Cleat
	Roof	Q6	1 / MPQHS6 Cyclone Strap
	Component	Q9	1 / QHS9 Cyclone Strap
	Tie Down Connection	Q6*	1 / MPQHS6 Cyclone Strap, wrap legs under support member
		Q9*	1 / QHS9 Cyclone Strap, wrap legs under support member
		VS	Variable Skew Hanger
ROOF		MG	Multigrip
FRAMING		MGL	Multigrip Long
	Roof Component to	Α	MPFB4590 Joist Hanger
	Roof	В	MPFB45120 Joist Hanger
	Component Connection	С	MPFB45180 Joist Hanger
	Comicodon	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<sup>1</sup>, 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"<sup>2</sup> 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 <a href="https://www.dbh.govt.nz">www.dbh.govt.nz</a>.

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.

Dr. Kristopher Orlowski

BSc (Eng), MEng, DR-PHILENG, CPEng AUS (4125476), CPEng NZ (2001879)

STRUCUTRAL ENGINEER

Pryda

ITW Construction, Asia Pacific

41 Poland Rd, Glenfield, 0629

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Tel: 0800 88 22 44

Email: info@prydaanz.com



### 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.

Dr. Kristopher Orlowski

BSc (Eng), MEng, DR-PHILENG, CPEng AUS (4125476), CPEng NZ (2001879)

STRUCUTRAL ENGINEER

Pryda

ITW Construction, Asia Pacific

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### **ENVIRONMENT DEFINITIONS & PRODUCT SELECTION**

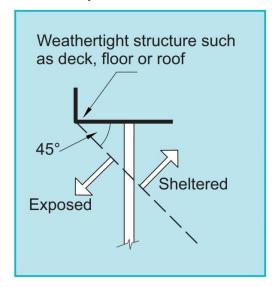
#### Alternative solution to Table 4.1 NZS3604:2011

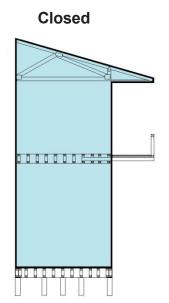
### Under the building code, Clauses B2 Durability, requirements for steel fasteners are:

- 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**





Zone	L	ocation	Environ ment	Product
All Zones	Fully enclosed wa	alls, floors & roof spaces	Closed	Pryda Zinc Coated Products
	All subfloor	Vented 7000mm <sup>2</sup> /m <sup>2</sup> or LESS	Sheltered	Pryda Stainless Steel Products
	fastenings more than 600mm above the ground	Vented MORE than 7000mm2/m <sup>2</sup> Exposed	Pryda Stainless Steel Products	
Zones B & C	All subfloor fastenings within 600mm of the ground	Sheltered and exposed		Pryda Stainless Steel Products
	All other	Sheltered		Pryda Stainless Steel Products
	All other structural fixings 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

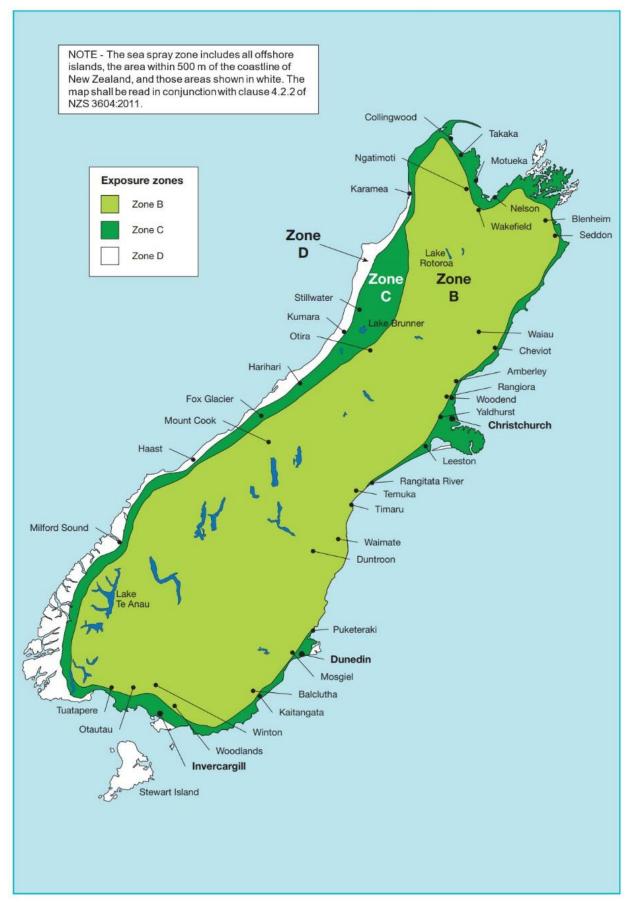


### **EXPOSURE ZONES**



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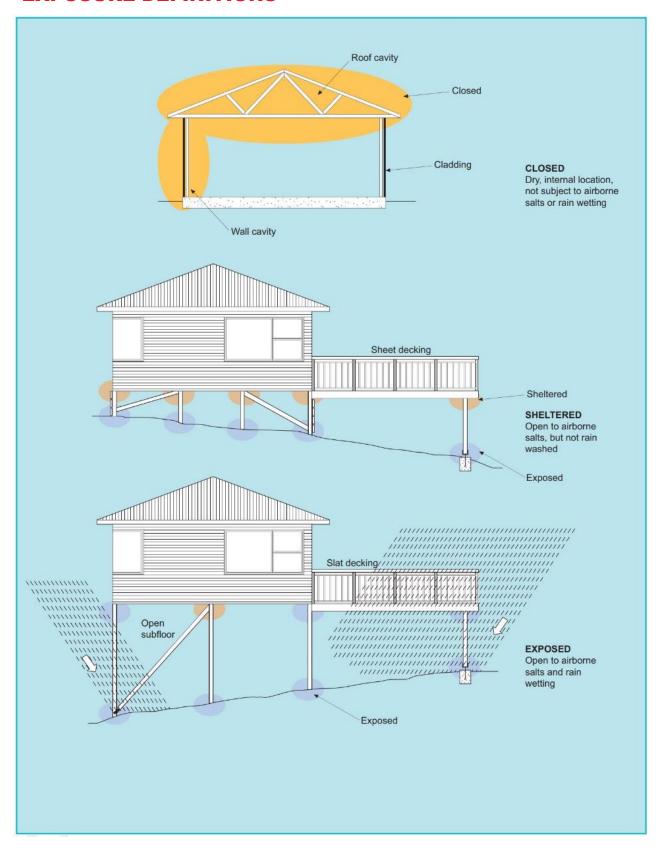




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### **EXPOSURE DEFINITIONS**



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<u>bryda</u>

# NZ PRYDA BRACING ANCHOR (PBA)

Designed to tie timber studs to bottom plates to prevent uplift.

#### **FEATURES AND BENEFITS**

SIMPLE: Ease and speed of installation. Slotted hole on bottom of bracket provides some flexibility in bolt and bracket position installed.

FAST: No checking of timber to ensure flush fitting of board. Can be used for fully closed external and internal walls.

DURABLE: The PBA is a one-piece anchor for either side of stud and manufactured with 5mm thick galvanised steel.

#### **SPECIFICATIONS**

PRODUCT CODE	РВА
STEEL	G250
THICKNESS	5mm
CORROSION RESISTANCE	Electro-Galvanised to Z275
FASTENERS	Pryda 12G x 35mm Timber Connector Screw, M12 anchor bolt.
SIZE	88 x 85 x 50mm

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 Bracing Anchor is only available in electro-galvanised to 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
	All subfloor fastenings more than 600mm above the ground  Vented 7000mm²/m² or LESS  Vented MORE than 7000mm²/m²	Vented 7000mm²/m² or LESS	Sheltered	Pryda Stainless Steel 304 Products (3)
		_	Exposed	Pryda Stainless Steel 304 Products <sup>(3)</sup>
Zones B and C	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 <sup>(3)</sup>
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.

#### 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.

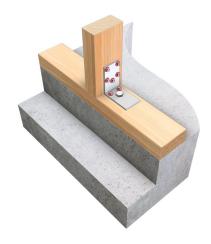


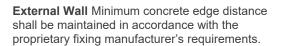
<sup>3.</sup>Routine inspection and cleaning using soap and fresh warm water is an integral part of the ongoing care and maintenance of stainless steel to preserve its appearance.

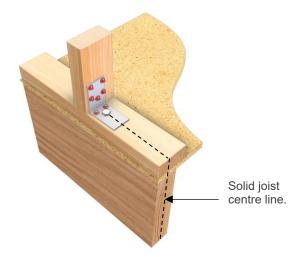
### **APPLICATION AND SCOPE OF USE**

Pryda Bracing Anchor 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).

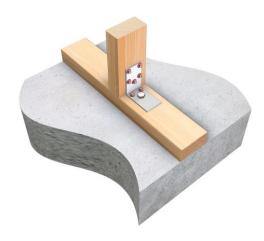
The NZ Bracing Anchor is for fixing timber studs to timber bottom plates to prevent uplift with a capacity of 10.7 kN in accordance with NZS 3604. The NZ Bracing Anchor incorporates a slotted hole for receiving an M12 anchor fixing for the timber bottom plate fixing to a timber or concrete floor in accordance with NZS 3604.



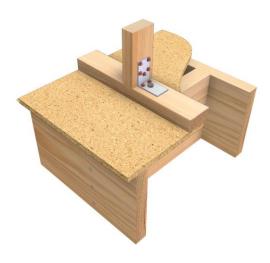




**External Wall** PBA shall be fixed centrally over a solid joist using an M12 x 150mm galvanised coach screw.



**Internal Wall** PBA shall be fixed centrally to the wall frame.



Internal Wall PBA shall be fixed centrally on the bottom plate using an M12 x 150mm galvanised coach screw ensuring that screw is fixed centrally into a solid joist. Extra solid blocking may be required to achieve solid fixing. Solid blocking must be connected to resist tie down requirement.





### **DESIGN CAPACITIES**

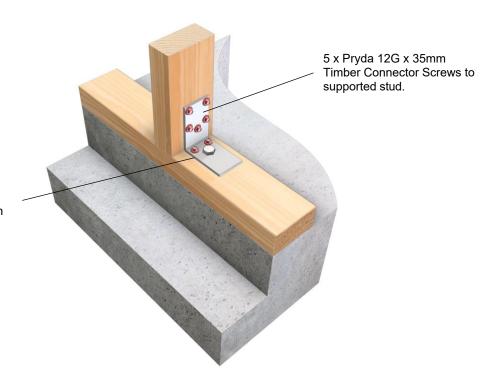
The NZ Bracing Anchor is for fixing timber studs to timber bottom plates to prevent uplift<sup>(2)</sup>.

The PBA can satisfy the hold down requirements and can be a substitute for the pre-fitted Wrap around strap.

JOINT GROUP	LOAD CAPACITIES(KN) FOR SINGLE PBA FOR GIVEN LOAD CASE
	1.2G + Wd or Wind uplift
JD5	10.7

#### Notes:

- 1. Design values are based on SG8 timber and for timber which meets minimum JD5 timber as defined in AS/NZS 1720.
- 2. The above values (for screws) are only applicable:
  - a) if the M12 anchorage into the supporting member has an equivalent or better capacity.
  - b) All screws are set 25mm in from timber edge.



2 x Pryda 12G x 35mm Timber Connector Screws bottom plate combines with M12 anchor.



#### INSTALLATION

- 1. Identify where PBA is to be located from application details. Ensure PBA fits within the wall frame plane.
- 2. Present PBA to junction of bottom plate and stud ensuring a snug fit to both surfaces referring to relevant floor installation detail shown in application details to ensure correct placement across face of bottom plate.
- 3. Mark position of bolt or M12 screw using the PBA as a guide and remove PBA. Ensure the selected anchorage into the supporting member has an equivalent or better capacity to PBA. When connecting to a solid beam, ensure the M12 bolt or screw is central to the beam. For concrete slab connection near edge, minimum concrete edge distance shall be maintained.
- 4. Drill appropriate size hole for bolt or screw with reference to supplier's data sheet for correct hole size and use of the fastening.
- 5. Place the PBA into position and fasten home the screw or bolt to a snug fit, ensuring face of PBA is tight against face of stud.
- 6. Screw 5 x Pryda 12G x 35mm Pryda Timber Connector screws into the stud flange.
- 7. Re-check the tightness of the M12 screw or anchor bolt.
- 8. Finally screw 2 x Pryda 12G x 35mm Timber Connector screws into the bottom plate flange.

#### **IMPORTANT**

Pryda CODEMARK certificate CMNZ10028 certifies Pryda Bracing Anchor with use of NZ Pryda Timber Connector Screws. Other fixing methods are outside the scope of the CODEMARK.

Installing proprietary anchors correctly, refer to the manufacturer's mechanical anchoring information guide for specific installation and performance details to ensure that proprietary anchors are installed correctly.

When installing anchors, ensure the:

- Required slab edge distance is achieved for non-cracked concrete tension—it is possible to blow out the slab edge during installation if the anchor is too close. Anchor capacity may also be reduced due to minimum edge distance.
- Correct depth for required embedment depth to achieve capacity rating.
- Capacity rating of selected anchor to supporting member has an equivalent or better capacity to PBA.
- Hole diameter is suitable for an M12 anchor.
- · Hole is thoroughly cleaned out after drilling.
- Screw is not overtightened refer to recommended torque settings.

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



# NZ STRAP BRACE AND MAXI STRAP

CodeMark CMNZ-10029

Versatile and cost-effective bracing product for roofs and floors.

#### **FEATURES AND BENEFITS**

SIMPLE: Can be cut to match any size or application, meaning you can do more, with less. Slim profile means components do not need to be notched, saving time and cost.

FAST: Tensioner can be used with a drill to speed up tensioning.

DURABLE: Made from G550 Z275 Steel or Stainless Steel 304.

### **SPECIFICATIONS**

STEEL	G550 or Stainless Steel 304
THICKNESS	0.8mm
CORROSION RESISTANCE	Z275 or Stainless Steel 304
FASTENERS	Pryda 35 x 3.15mm Timber Connector Nails
LENGTHS	10m to 30m rolls.

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

For full range details see table on next page. Use Stainless Steel fasteners with Stainless Steel Straps.







WING NUT, WASHER, T-BOLT, AND TENSIONER FOR G550 Z275 STRAP BRACE.



2 X WING NUTS, 2 X WASHERS, 2 X T-BOLTS, AND TENSIONER FOR G550 Z275 MAXI BRACE.

\*STAINLESS STEEL M6 BOLT, WASHER AND HEX NUT WILL BE USED FOR ALL STAINLESS STEEL TENSIONERS.

\*All dimensions shown are in "mm."



### **STRAP BRACE**

PRODUCT CODE	MATERIAL	TYPE	LENGTH	SIZE	
SB10		Ctron Broom	10m		
SB30		Strap Brace	30m		
SB10T SB30T	G550 Z275	Strap Brace + 5 x Tensioner	10m 30m	25 X 0.8mm	
		Maxi Strap			
SBI/15			Mayi Stran	15m	50 X 0.8mm
SBI			30m	30 X 0.011111	
SB15/S	Stainless Steel 304	Strap Brace	15m	25 X 0.8mm	
SBI/S	Stairliess Steel 304	Maxi Strap	30m	50 X 0.8mm	

#### Note:

- 1. Use same material type for Strap and Tensioner. Example, use stainless steel tensioners with stainless steel straps only.
- 2. T-bolts and Wing nuts are only available for non stainless steel tensioners. Stainless steel tensioner will be supplied with equivalent stainless steel M6 hex head bolt, washer, and nut.

### **TENSIONERS**

PRODUCT CODE	MATERIAL	FASTENING STYLE	TO SUIT BRACE WIDTH	QUANTITY
SBT	OFFO 707F	G550 Z275 Wing Nut	25mm	1 ctn
SBI	G550 Z275		25111111	(8 bags of 5)
SBI/T	G300 HDG Galvanised Steel		50mm	1 each
SBI/TS	Stainless Steel 304	Hex Nut	50mm	1
SBT/SS	Stainless Steel 316	Hex Nut	25mm	1

### **DESIGN CAPACITY (WIND LOADS ONLY**

PRODUCT CODE	MATERIAL	SIZE	Limit State Design Tension Capacity (kN) for Wind load case	
SB10				
SB30		25 X 0.8mm	7.6 <sup>(1)</sup>	
SB30T	G550 Z275			
SBI/15		50 X 0.8mm	12.1(1)	
SBI		50 A U.omin	12.10	
SB15/S	Stainless Steel 304	25 X 0.8mm	6.9 <sup>(1)</sup>	
SBI/S	Stairliess Steel 304	50 X 0.8mm	18.9 <sup>(1)</sup>	

#### Note:

- 1) Tension capacity shown are with tensioners installed with the fastening style:
  - G550 Z275 strap: T-bolt, washer, and Wing nut.
  - Stainless steel strap: Stainless steel M6 bolt, washer, and hex nut.



### **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
	All subfloor fastenings more than 600mm above the ground	Vented 7000mm²/m² or LESS	Sheltered	Pryda Stainless Steel 304 Products <sup>(3)</sup>
		Vented MORE than 7000mm²/m²	Exposed	Pryda Stainless Steel 304 Products <sup>(3)</sup>
Zones B and C	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 <sup>(3)</sup>
		Exposed		Pryda Stainless Steel 304 Products <sup>(3)</sup>
Zone D	All structural fixings	Sheltered and Exposed		Pryda Stainless Steel 304 Products <sup>(3)</sup>

#### Notes

- 1.All Pryda galvanised products comply with NZS3604:2011 Table 4.2.
- 2.Refer to NZS3604:2011 for all environment definitions.
- 3. Routine inspection and cleaning using soap and fresh warm water is an integral part of the ongoing care and maintenance of stainless steel to preserve its appearance.

#### STORAGE AND HANDLING

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

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

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. Loads arising from self-weight, imposed gravity loads arising from use, snow, and wind. (i.e., B1.3.3 (a), (b), (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

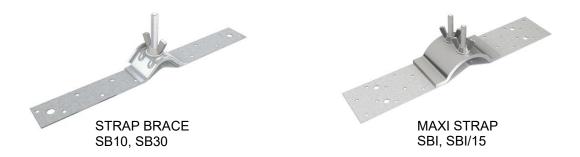
Pryda Strap brace is suitable for bracing walls and truss/rafter roof construction (spans up to 12m) in residential buildings. Use Pryda Maxi Strap for larger spans and commercial and industrial buildings. Pryda Tensioners provide a fast, dependable, and simple method of tensioning long lengths of bracing strap.

Pryda Strap brace complies with NZS3604:2011 Light Timber Frame Buildings, clause 10.4.2.2 (b) requirements for diagonally opposing pair of continuous metal bracing strips each having a tension capacity of 4kN **but is not suitable for use as holding down straps on braced wall panels**. Use Pryda Sheet Brace Straps for this application.

Pryda Strap brace and Maxi Strap act in tension only. Braces must be **applied in pairs** as illustrated. Holes are pre-punched for Pryda 35x 3.15mm Timber Connector Nails and 6mm tensioner bolts.

Pryda Strap Brace and Maxi strap 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.



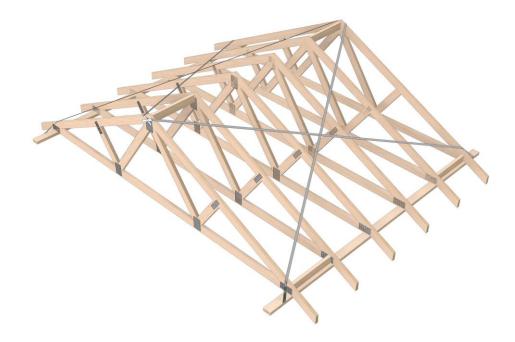


#### **ROOF AND CEILING BRACING**

Use in crossed pairs as for wall braces. For residential construction in accordance with NZS3604:2011, secure braces with 6 x Pryda 35 X 3.15mm Timber Connector Nails (12 nails for Maxi Strap) at each end, and 2 nails (after tensioning braces) at truss/ rafter or Purlin crossing.

#### **ROOF BRACE DEFINITION**

A "roof brace" comprises a diagonal pair of Pryda Strap Braces intersecting at 45°, connecting the ridge of the roof to the top plate of the wall with both ends fixed as shown in the diagrams below. A "roof brace" can also be a valley or hip connected continuously.



#### **Light Weight Roofs**

Require ONE "roof brace" in each plane of the roof area per 50m² of plan roof area which also includes any overhangs.

### **Heavy Weight Roofs**

Require ONE "roof brace" in each plane of the roof area per 25m² of plan roof area which also includes the overhangs. Note: Porches, dormers, and small roof planes of less than 6m² do not require bracing.

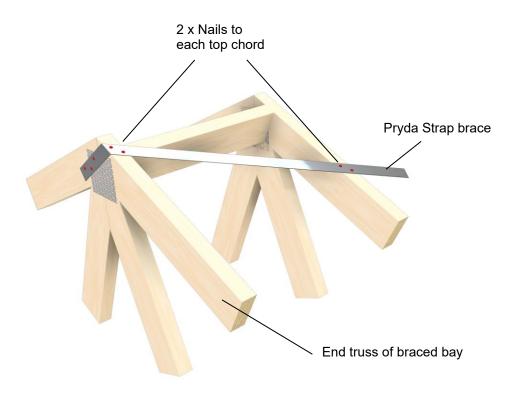


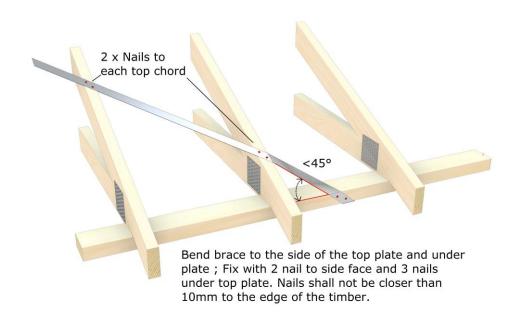
#### **INSTALLATION NOTES**

- 1. The distribution of roof braces should be performed in an even and balanced fashion.
- 2. For purlins / battens 50mm or deeper, the roof brace shall occupy the plane directly on top of the top chords or rafters.
- 3. Pryda Strap Brace shall be used for spans up to 12m. For spans over 12m Pryda Maxi brace shall be used.
- 4. Nail off Pryda Strap Brace at apex end with 5 nails. Layout Pryda Strap Brace at 45° and nail off at heel end with 5 nails.
- 5. Tension Pryda Strap Brace using Pryda Tensioner before final nailing of one nail per top chord crossing.

#### **Anchorage Point:**

Bend strap brace over side of top chord and fix Pryda Strap brace end with 5 Pryda Timber Connector nails. Three nails to face and 2 nails to top. Nails shall be no closer than 10mm to the edge of the timber. Solid block between trusses/rafter behind each anchorage point.







### **BUILD WITH CONFIDENCE**

#### Where possible, hand nailing with Pryda Timber Connector nails is always preferred, why?

- Pryda Timber Connector Nails are forged in one piece, unlike clouts that are two pieces soldered together, meaning the head can pop off
- Pryda Nails are the correct diameter, ensuring a tight fit in prepunched holes = a stronger connection
- Design values and testing have all been conducted using Pryda Timber Connector Nails
- Hand hammered nails ensure correct nail positioning and drive depth (not driven too shallow or too deep)

PRYDA CODEMARK CERTIFICATE CMNZ10029 CERTIFIES PRYDA STRAP BRACE WITH USE OF NZ PRYDA TIMBER CONNECTOR NAILS. OTHER FIXING METHODS ARE OUTSIDE THE SCOPE OF THE CODEMARK.

#### **USING PASLODE MACHINE DRIVEN NAILS**

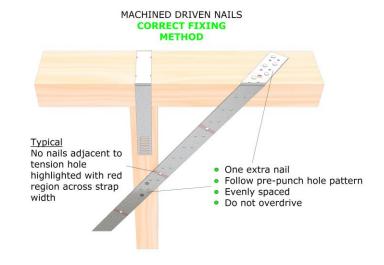
Where appropriate, Paslode Machine Driven Nails listed below may be used instead of the specified 35 x 3.15mm Pryda Timber Connector Nails to fix Pryda connectors provided that:

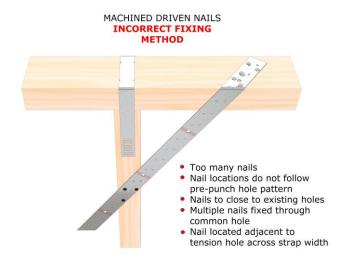
- There is one additional nail per connection than specified in the bracing details (e.g., 2 instead of 1, 3 instead of 2, 5instead of 4 etc.)
- Machine driven nails are driven at nail spacings and edge distances similar to the hole pattern, ensuring that these nails are not:
  - Driven into the holes
  - Located not closer than 5mm from the edge of a hole
  - Grouped together
  - Within 10mm from the edge

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

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

Extreme care must be taken when using machine driven nails as the prevailing installation practices tend to inhibit compliance with the above requirements.







### STRAP BRACE TIPS

- 1 Larger holes are only for tensioners, do not use them for nails
- 2 Do not over tension Strap Bracing as this can both reduce the capacity of the unit and bring walls out of plumb
- 3 Ensure nails are at least 10mm away from timber end or edges to prevent splitting
- 4 Ensure Strap Brace is tensioned prior to nailing to studs/trusses
- **(5)** Keep wall bracing angles within 30° to 60° and roof angles between 30° to 45° or the brace will not be compliant
- 6 Fix Strap Brace to the Bottom Plate before standing wall
  - Avoid having the center of the opposing brace located over a stud or a nog as this can cause a bump in the plasterboard

Contact details	
Manufacture location	New Zealand
Legal and trading name of manufacturer	Fairfit 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



# NZ PRYDA SHEET BRACE STRAPS (SBS)

CodeMark CMNZ-10028

Tie-down fixing for wall panels.

#### **FEATURES AND BENEFITS**

SIMPLE: Multiple lengths to suit different applications.

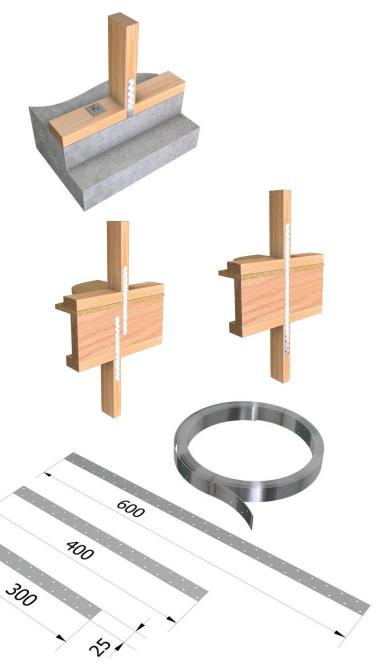
FAST: Simply select the pre-cut lengths to best suit the application and hammer fix nails to the selected pre-punched holes.

DURABLE: Made from 1mm thick G300 Z275 galvanised steel or Stainless Steel 304.

#### **SPECIFICATIONS**

PRODUCT CODE	SBS* (See table for available lengths)
STEEL	G300 or Stainless Steel 304
THICKNESS	1mm
CORROSION RESISTANCE	Z275 or Stainless Steel 304
FASTENERS	Pryda 35 x 3.15mm Timber Connector Nails
SIZE	25 x 1mm (See table for available lengths)

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."



### SHEET BRACE STRAP

PRODUCT CODE	MATERIAL	SIZE (mm)	LENGTH (mm)
SBS300			300
SBS400	G300, Z275		400
SBS600		25 x 1mm	600
SBS300/S		25 X 1111111	300
SBS400/S	Stainless Steel 304		400
SBS600/S			600
COIL			LENGTH (m)
SBS10M	C200 7275	25 x 1mm	10
SBS30M	G300, Z275	25 X IMM	30

#### Note:

Use stainless steel nails with all stainless steel sheet brace straps. Pryda galvanised Connector nails are suitable for G300, Z275 Sheet Brace Straps only.

### **DESIGN CAPACITY TO AS3604:2011 TO PREVENT UPLIFT**

NAILS PER LEG (EACH END)	DESIGN CAPACITY (φN <sub>J</sub> ) (kN) FOR TIMBER JOINT GROUP (TENSION)	
(2.1011 2.112)	JD5	
6	7.5	

### Notes:

- 1. Capacity is based on 6 x 35 x 3.15mm nails to each end of strap, per strap and fixed as shown in NZS3604:2011 Figure 8.12 and clause 8.6.1.8.
- 2. Design values are based on SG8 timber and for timber which meets minimum JD5 timber as defined in AS/NZS 1720.
- 3. Limit State Design capacities are shown in table to resist Wind Uplift.



#### **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
	All subfloor fastenings	Vented 7000mm²/m² or LESS	Sheltered	Pryda Stainless Steel 304 Products <sup>(3)</sup>
	more than 600mm above the ground	Vented MORE than 7000mm²/m²	Exposed	Pryda Stainless Steel 304 Products (3)
Zones B and C	All subfloor fastenings within 600mm of the ground	Sheltered and Exposed		Pryda Stainless Steel 304 Products (3)
	All all an almost wall for its	Shelter	red	Pryda Stainless Steel 304 Products (3)
	All other structural fixings	Expos	ed	Pryda Stainless Steel 304 Products <sup>(3)</sup>
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.

#### 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.

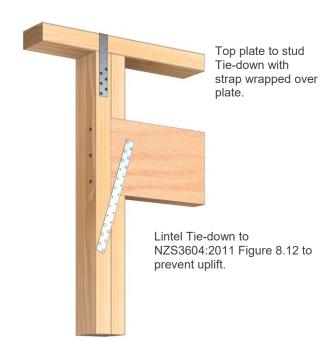
### APPLICATION AND SCOPE OF USE

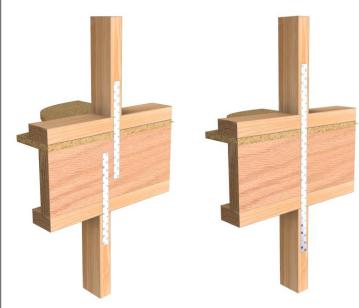
Pryda Sheet Brace Straps (SBS) are certified when used and installed in accordance with the product datasheet shown connection details. Pryda fasteners approved for the installation form an integral part of the connection and therefore should be used with all Pryda products installation unless otherwise 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.



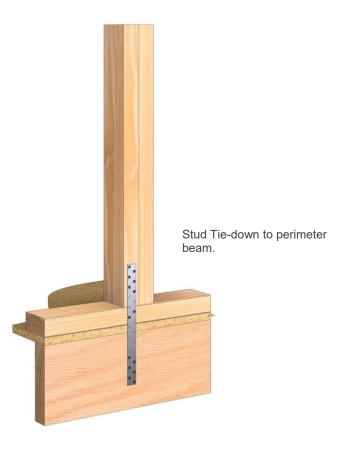
<sup>3.</sup>Routine inspection and cleaning using soap and fresh warm water is an integral part of the ongoing care and maintenance of stainless steel to preserve its appearance.

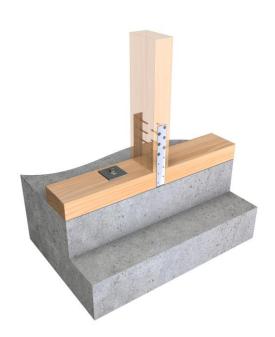
Pryda Sheet Brace Straps are mild steel straps providing the required 7.5 kN tension capacity fixing for various components in wall panels. They comply with the requirements of section 8 NZS3604:2011 and are also popular as a method of lintel tie down. Where straps longer than 600m are required 30m coils are available. The coils can easily be cut to the required length.





Offset or in-line continuity Tie-down.



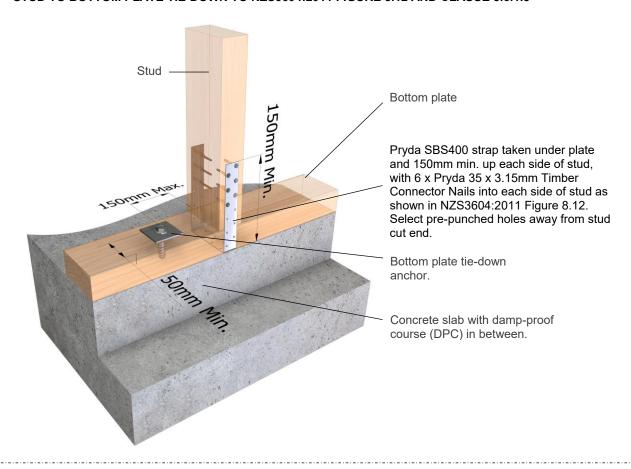


Stud to bottom plate Tie-down to NZS3604:2011 Figure 8.12 to prevent uplift.

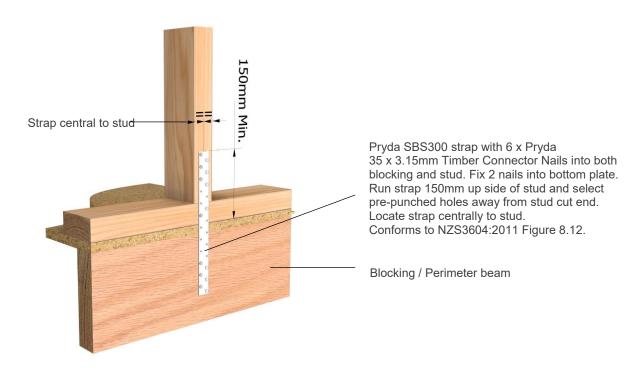


### **INSTALLATION**

#### STUD TO BOTTOM PLATE TIE-DOWN TO NZS3604:2011 FIGURE 8.12 AND CLAUSE 8.6.1.8



#### STUD TO BLOCKING/PERIMETER BEAM TIE-DOWN TO NZS3604:2011 FIGURE 8.12 AND CLAUSE 8.6.1.8





Contact details	
Manufacture location	New Zealand
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## NZ PRYDA STUD ANCHOR

CodeMark CMNZ-10028

6kn or 12kn capacity fixing stud tie-down

#### **FEATURES AND BENEFITS**

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

FAST: Able to be retrofitted if external wall lining / cladding already installed.

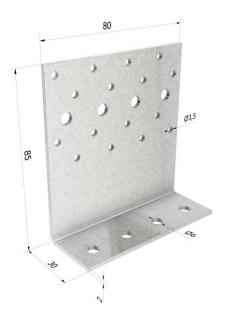
**DURABLE**: Made from 2mm thick G300 Steel galvanised to Z275.

#### **SPECIFICATIONS**

PRODUCT CODE	SBA
STEEL	G300
THICKNESS	2mm
CORROSION RESISTANCE	Z275
FASTENERS	Pryda 30 x 3.15mm Timber Connector Nails and Pryda 12G x 35mm Timber Connector Screws.
SIZE	85 x 30 x 80mm

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





\*All dimensions shown in "mm".



### **PRYDA STUD ANCHOR**

PRODUCT CODE	MATERIAL	SIZE	QUANTITY
SBA	G300, Z275	85 x 30 x 80mm	1

### **DESIGN CAPACITY 6kN or 12 kN - Resist Wind load**

JOINT	LOAD CAPACITIES(KN) FOR SINGLE SBA FOR GIVEN LOAD CASE
GROUP	1.2G + Wd or Wind uplift
JD5	7.6

- Loads can be doubled when used in PAIRS to same stud. Bottom plate anchor required to resist uplift load.
- Capacity can be achieved by fixing 8 x 30 x 3.15mm Pryda Connector Nails to stud and 4 x 12G x 35mm Pryda Timber Connector screws to wall plate for each Bracket.
- Alternatively, 3 x 12G x 35mm Pryda Timber Connector screws to stud and 4 x 12G x 35mm Pryda Timber Connector screws to wall plate for each bracket.
- Design values are based on SG8 timber and for timber which meets minimum JD5 timber as defined in AS/NZS 1720.
- Limit State Design capacities are shown in table to resist Wind Uplift.

### **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 Stud Anchor 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
All subfloor fastenings more than 600mm above the ground	Vented 7000mm²/m² or LESS	Sheltered	Pryda Stainless Steel 304 Products (3)	
		Vented MORE than 7000mm <sup>2</sup> /m <sup>2</sup>	Exposed	Pryda Stainless Steel 304 Products <sup>(3)</sup>
Zones B and C	All subfloor fastenings within 600mm of the ground	Sheltered and	Exposed	Pryda Stainless Steel 304 Products (3)
	All other structural	Shelter	red	Pryda Stainless Steel 304 Products (3)
fixings	Exposed		Pryda Stainless Steel 304 Products <sup>(3)</sup>	
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 Stud Anchor 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).

The Pryda Stud Anchor is an easy-to-use 6kN or 12kN capacity wall stud-to-bottom plate or Top plate-to-stud tie-down anchor. Due to the slim profile and side fixing method, it can be easily retrofitted after external cladding have been installed from internal wall face access.



Stud-to-bottom plate tie-down with single SBA.



Top plate-to-stud tie-down with single SBA.

**6kN**: One connector provides 6kN capacity fixing of wall stud to bottom plate.



Stud-to-bottom plate tie-down with a PAIR of SBAs.



Top plate-to-stud tie-down with a PAIR of SBAs.

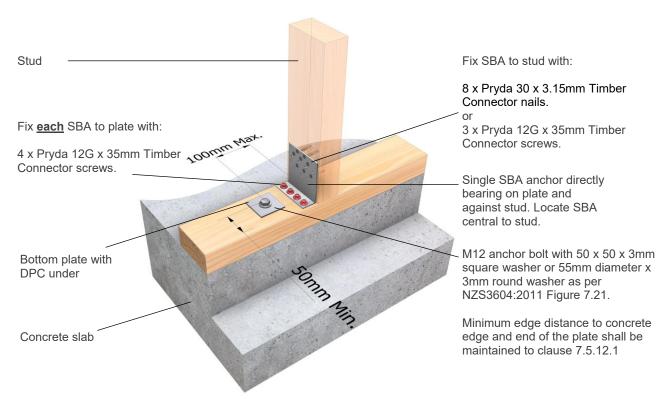
**12kN**: Use 2 connectors, one each face of stud (e.g., Boundary fire wall – single storey garage).



### **INSTALLATION**

#### **WALL STUD TO BOTTOM PLATE ANCHOR**

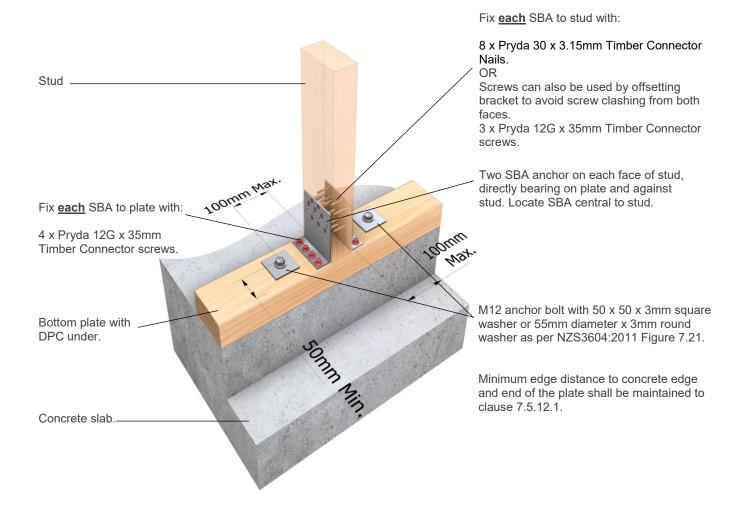
#### **Detail A**



**6kN Installation Detail A**: One connector provides 6kN capacity fixing of wall stud to bottom plate. The same fixings can be adopted for top plate-to-stud tie-down using SBA anchor only. Top plate and stud assumed to be fixed in accordance to framing design to NZS3604:2011



#### **Detail B**



**12kN Installation Detail B**: Use 2 connectors, one each face of stud (e.g., Boundary fire wall – single storey garage). The same fixings can be adopted for top plate-to-stud tie-down using a pair of SBA anchors only. Top plate and stud assumed to be fixed in accordance to framing design to NZS3604:2011

Contact details	
Manufacture location	New Zealand
Legal and trading name of manufacturer	Fairfit 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
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