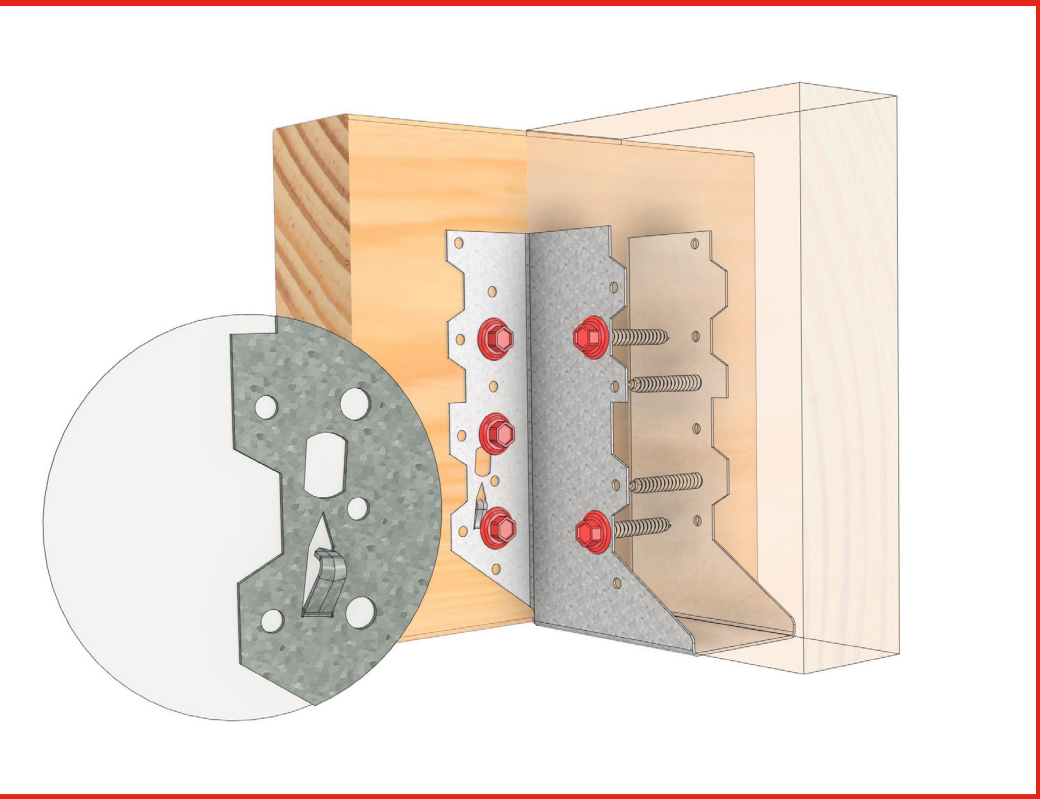
pryda



DESIGN GUIDE

HANGERS & TRUSS BOOTS

2022

HANGERS & TRUSS BOOTS - DESIGN GUIDE

TABLE OF CONTENTS

Product Information Updates

Information contained in this product guide is subject to change.

The latest updates are available from www.pryda.com.au.

ESSENTIAL NOTES

Introduction

The information in this Product Guide is provided for use in Australia by architects, engineers, building designers, builders and others. It is based upon the following criteria:

1. **No Substitution:** The products covered by or recommended in this guide must not be substituted with other products.
2. **Design Capacity Basis:** See Codes & Standards following.
3. **Supporting Constructions:** Constructions using Pryda products must be built in accordance with the NCC (BCA) or an appropriate Australian Standard. *Note: This includes appropriate corrosion protection- See Corrosion Protection following.*
4. **Correct Installation:** Installation of Pryda products must be strictly in accordance with the instructions in this guide.
5. **Current Guide Version Used:** The current version of this guide, including any amendments or additions, must be used. Users are advised to check the Pryda website, www.pryda.com.au, on a regular basis for the most current design guides.

Codes & Standards

Product design capacities in this guide have been derived from:

(a) Results of laboratory tests carried out by or for Pryda Australia

(b) Engineering computations in accordance with the relevant Australian Standards, ie:

- AS1720.1-2010 Timber Structures. Part 1: Design Methods.
- AS/NZS1170 series Structural Design Actions.
- AS4055-2006 Wind Loads for Housing.

Design capacities tabulated in this guide apply directly for **Category 1** joints. For all other joints, reduce design capacities by using the factors as specified in *General Notes (if applicable)*. Design capacities are related to the **Joint Group** of the timber as defined in AS1720 and AS1684. If the Joint Group of timber members joined together varies, the lower group must be assumed for design, for example, JD5 is lower than JD4.

Definitions

Special terms used in this guide are as defined in Australian Standards, including:

Design Capacity: The maximum Limit State Design load (aka "action") which the product can safely support under the specified load condition, eg, 1.2G + 1.5Q (dead+roof live). *See General Notes for details (if applicable).*

Joint Group: Classification of a timber according to its fastener-holding capacity. *See General Notes for details (if applicable).*

Corrosion Protection

Most Pryda products are manufactured using Z275 light-gauge steel, having zinc coating of 275 gsm (total weight). This protection is adequate only for INTERNAL applications in most corrosive environments, except areas that are classified as heavy industrial or those subject to high humidity (eg, enclosed swimming pools). Under these circumstances, seek advice from experts as special protection will be required. *Note: INTERNAL areas are those within the building envelope that are kept permanently dry.*

AS1684.2-2010 and AS1684.3-2010, Australian Standards for Residential Timber Frame Construction stipulate a minimum Z275 steel for all sheet metal products used in an internal environment.

In areas outside the building envelope that are exposed to repeated wetting (EXTERNAL areas), Pryda's stainless steel products or equivalent should be considered. Some alternatives include hot dip galvanised or powder coated steel, which are not supplied by Pryda. For more detailed information, read Pryda's Technical Update on *Corrosion Resistance of Pryda Products* or contact a Pryda office.

Product Certification

Pryda Australia warrants:

- Products in this guide are free from defects in the material and manufacturing
- Design capacities are in accordance with test results or current, relevant Australian Standards and the Building Code of Australia.
- Pryda products are structurally adequate provided they are designed, installed and used completely in accordance with this guide.

This warranty applies only to:

- Products in this guide.
- Products used in the specified applications and not damaged after manufacture and supply.
- Joints free from wood splitting, decay or other timber defects at the joint or within 150 mm of the joint.

Instructions for Installation

These notes are provided to ensure proper installation.

1. All fasteners used must be manufactured by reputable companies and be of structural quality.
2. Connectors must not be installed on timber which is split before or during installation. If the timber is likely to split as fasteners are driven, fastener holes must be pre-drilled.
3. Do not overload the joints during construction or in service.
4. Hole diameter for bolts in seasoned timber must not be more than 1.0 mm larger than the bolt diameter to achieve a snug-tight connection. Specified washers must be installed against the timber face.
5. Use proper safety equipment and due care in installing these connectors.
6. Any gaps in joints between the timber members must not exceed 3 mm.
7. Do not over-tighten screws.

GENERAL NOTES

Timber Joint Groups

Joint groups for some common timber are tabulated below. For further information refer Table H2.3 and H2.4 in Australian Standards AS1720.1:2010 - Timber Structures Part 1.

TIMBERS	STRENGTHGROUP		JOINT GROUP	
	DRY	GREEN	DRY	GREEN
Oregon (Douglas fir) – America	SD5	S5	JD4	J4
Oregon from elsewhere	SD6	S6	JD5	J5
Radiata pine, heart-excluded	SD6	NA	JD4	NA
Radiata pine, heart-in	SD6	NA	JD5	NA
Slash pine	SD5	S5	JD3	J3
Ash type hardwoods from Vic, NSW highlands & Tas	SD4	S4	JD3	J3
Non-Ash type hardwoods from Qld & NSW	SD3	S3	JD2	J2

Note on Engineered Timbers: Most standard LVLs are assigned a JD4 joint group (SD6 strength group), and some JD3. Seek advice from the relevant LVL manufacturer for confirmation.

Material Thickness

All material thicknesses in this guide are the total coated thickness. This includes the zinc coating thickness, which is typically around 0.04mm for Z275 steel.

Design Load Cases

Following is a description of the combined load cases adopted in this design guide. These load cases are in compliance with AS/NZS1170.0:2002 – Structural design actions Part 0:General principles.

LOAD CASE	DESCRIPTION
1.35G	Permanent Action (or Dead Load) only
1.2G+1.5Qr	Permanent and Roof Imposed Actions (or Dead & Roof Live)
1.2G+1.5Qf	Permanent and Floor Imposed Actions (or Dead & Floor Live)
1.2G+Wd	Permanent and Wind Down Actions (or Dead & Wind down)
Wind Uplift (0.9G – Wup)	Permanent and Wind Up Actions (or Dead & Wind up)

Design Loads & Capacities

The tabulated capacities are for Category 1 joints. For all other joints, reduce design capacities by using the following factors:

- Category 2 Joints: **0.94**
- Category 3 Joints: **0.88**

Note: Category 1 joints are defined in Table 2.2 AS1720.1:2010 as structural joints for houses for which failure would be unlikely to affect an area of 25 sqm.

Fastener Usage Summary

Following is a summary of the common nails, screws and bolts used in hangers and truss boot fixing. Read the relevant page in this guide for a detailed specification for the respective hanger or truss boot.

	PRYDA TIMBER CONNECTORNAILS (35 X 3.15 DIA)	PRYDA TIMBER CONNECTORNAILS (40 X 3.75 DIA)	PRYDA TCS12-35 SCREWS (NOTE 2)	M12 BOLTS WITH WASHERS (REFER TO TRUSS BOOT DATASHEET)	M16 BOLTS WITH WASHERS (REFER TO TRUSS BOOT DATASHEET)
I joist Hangers		Y	Y (Note 1)		
Framing Brackets	Y		Y		
HD Joist Hangers	Y		Y		
LVSIA & HSB			Y		
Truss Boots			Y	Y	Y
HD Truss Boots			Y (Note 1)		

Notes:

1. **Permitted for use only in face mounted (LF) i-joist hangers as an alternative to nails. Also used for fixing TBHD75/T or TBHD75 heavy duty truss boots.**
2. **Screws may be either TCS12-35 or TCS12-65.**

Machine Driven Nail Use

For Framing Brackets and HD joist hangers, 50 x 2.87mm Paslode Impulse nails may be used in lieu of hand hammered Pryda Connector nails (35 x 3.15 dia), provided the nails are fixed in to a minimum 50mm timber. No capacity reduction is required.

However, extreme care must be taken when locating these nails, to ensure the hole pattern is followed. Given the prevailing installation practices, machine driven nails must be avoided if the right tool or the right operator skill-set is not available. Refer related pages for more details.

For I-joist hangers, use of machine driven nails would result in a loss of design capacity and therefore best avoided. Contact Pryda office for advice.

Fixing into steel supporting structure

Pryda products can be fixed into steel using Buildex Teks™ screws or similar. Design capacities can be obtained at request from a Pryda Design Office.

PRODUCT DATA SHEET

I-JOIST HANGER

FEATURES AND BENEFITS

VERSATILE: Multiple sizes available to cover all common I-Joist sizes.

EASY: Comes with the fasteners required, including screws to prevent squeaking.

STRONG: 1.2mm thick galvanised steel for the full depth of the I-Joist. Engineered to resist gravity loads and lateral movement of the I-Joist flanges.

AS1684 & AS1720 COMPLIANT

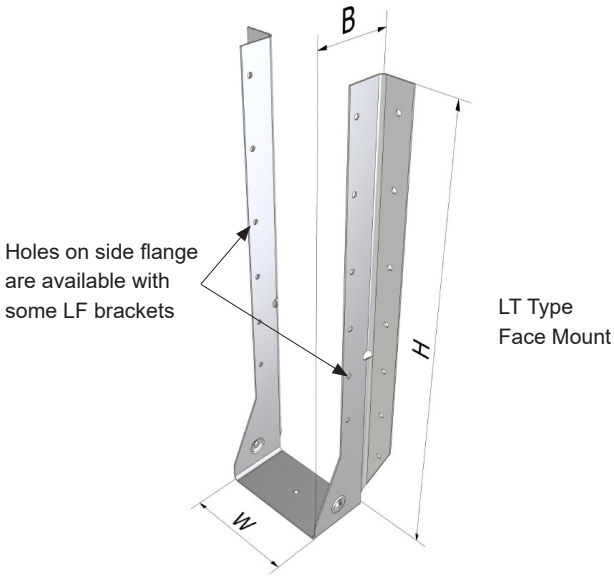
- Minimum Z275 Galvanised Steel
- Design values tested in accordance to the relevant standard

SPECIFICATIONS

STEEL	G300
THICKNESS	1.2mm
CORROSION RESISTANCE	Z275
FASTENERS INCLUDED	Pryda 40x3.75mm Timber Connector Nails (Note this is a different size from the standard 35x3.15mm Pryda nail) No. 6 x 30mm timber screws (1 per hanger in hole on bottom to reduce squeaking)
ALTERNATE FASTENERS	For Face Mounted I-Joists only Pryda TCS12-35. Red Head 12G x 35mm screws may be used
HEIGHTS	235 - 350mm
WIDTHS	45 - 180mm

Simple means of connecting an I-Joist member at 90° to either a timber or metal beam.

FACE MOUNT I-JOIST



FACE MOUNT HANGER RANGE & DIMENSIONS				
PRODUCT CODE	H (MM)	W (MM)	B (MM)	FACE NAIL HOLES
LF300/45	296	46	50	12
LF300/53	296	53	50	12
LF290/65	290	65	50	12
LF290/70	288	70	50	12
LF235/90	235	90	50	10
LF290/90	290	90	50	12
LF350/90	350	90	50	14
LF235/180	235	180	50	10

DESIGN CAPACITIES

Tabulated below are design capacities for Pryda I-joist Hangers based on the specified number of nails shown. “Face nails” are driven into the face of the supporting beam, “Top nails” into the top of the supporting beams and “Joist nails” into the supported member.

PRODUCT CODE	MATERIAL	QTY	HEIGHT	WIDTH	FACE NAILS REQ. (TCS12-35 SCREWS REQ.)	TOP NAILS REQ. (TCS12-35 SCREWS REQ.)	1.2G + 1.5QF (DEAD & FLOOR LIVE) DESIGN CAPACITY, ΦNJ (KN) FOR SUPPORTING BEAM WITH JOINT GROUP		
							JD5	JD4	JD3
LF235/180	G300 Z275 Galvanised Steel	10	235	180	10 (6)	N/A	6.4*	7.8*	10.9*
LF235/90		25	235	90					
LF290/65		25	290	65	12 (8)		7.7*	9.3*	13.1*
LF290/70			288	70					
LF290/90			290	90					
LF300/45			296	46					
LF300/53			296	53					
LF350/90			350	90	14 (8)		8.8*	10.9*	14.2*

* With a minimum of eight face nails, these hangers can carry the design residential floor loads (1.5 kPa live) for joists up to 5.9 m span at 600 mm spacing or 7.9 m span at 450 mm spacing, provided that the timber supporting beams has a joint group of JD4 or better.

NOTES:

1. For joints on primary beams in structures other than houses, see General Notes for information.
2. Use only Pryda 40x3.75mm or 35x3.75 mm galvanised Pryda Timber Connector Nails, for all LF and LT brackets. Pryda TCS12-35 screws (No.12x35 mm Type 17 hex head) may be used as an alternative for LF brackets only.
3. Where these hangers are fixed to a 35 mm thick supporting beam, use 35 x 3.75 mm nails, and multiply design capacities by 0.88.
4. The minimum no. of Pryda TCS12-35 screws required as an alternative fixing is given in brackets. TCS12-35 may be used as ab alternative for LF brackets only.

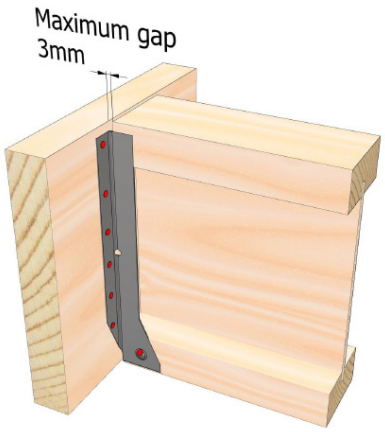
IMPORTANT:

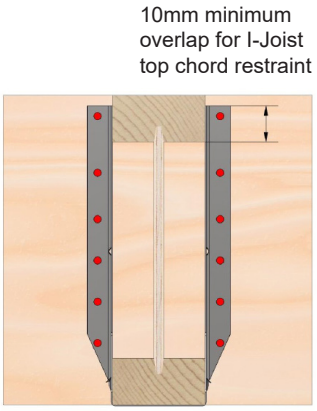
READ THIS DATASHEET IN CONJUNCTION WITH PRYDA HANGERS & TRUSS BOOTS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

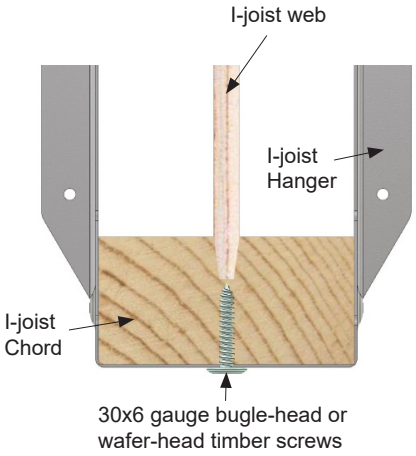
INSTALLATION

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.

INSTALLATION OF FACE MOUNT HANGERS







Note: Use the recommended screw to seat the I-Joist into the hanger properly to help reduce squeaks.

LOOKING FOR MORE DETAILS OR OTHER HANGERS & TRUSS BOOTS IN OUR RANGE?

SEE OUR HANGERS & TRUSS BOOTS DESIGN GUIDE AVAILABLE AT PRYDA.COM.AU

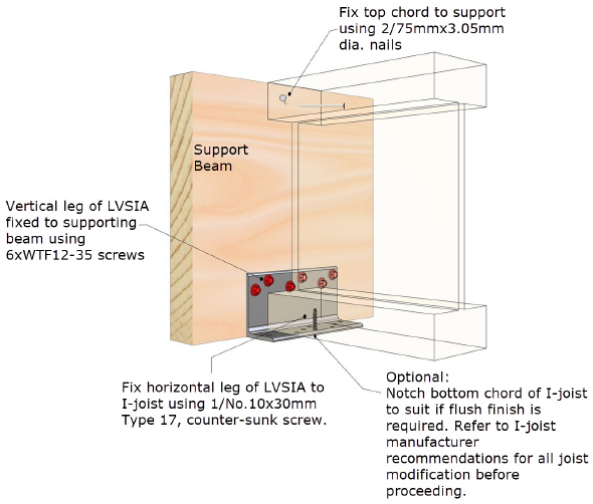
INSTALLATION

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.

INSTALLATION OF VARIABLE SKEW ANGLES

LVSIA variable skew angles are installed as shown in the diagram:

1. Notch the I-joist at ends (if necessary) to achieve flush fitting the LVSIA.
2. Locate the angle with the 75 mm leg vertical and its mid-length at the middle of the required end location of the I-joist. Fix the angle to the supporting beam, waling plate or ledger with 6/ Pryda TCS12-35 screws (No. 12x35 mm Type 17 hex head). Design capacities and other product information are given in page 15.
3. Locate the I-joist on the angle and fix it up through the bottom of angle with 1/ No. 10 x 30 mm countersunk or bugle head Type 17 screw.
4. Nail the I-joist top chord to the support with 2/75x3.05 mm nails



PRYDA I-JOIST NAILS

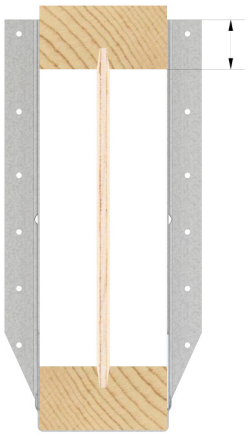
PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
OSNIB/S	Galvanised Steel	Flat head	40 x 3.75mm	10 packs of 500gms	5kg

PRYDA 12-35 SCREWS

PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
TCS12-35/1k	Galvanised Steel	Hex Head & Zip Drilling Tip	12 Gauge x 35mm	1 Carton	1000
TCS12-65/1k		Hex Head & Zip Drilling Tip	12 Gauge x 35mm	1 Carton	1000

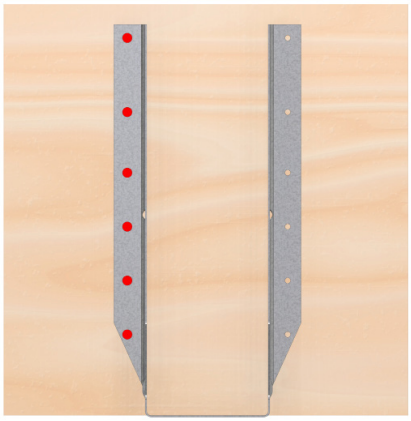
INSTALLATION - FACE MOUNT

STEP 1



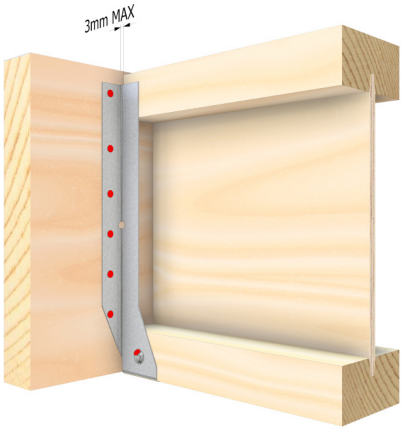
- Before installing, ensure I-Joist hanger is deep enough to cover at least 10mm of the top flange of the I-Jois

STEP 2



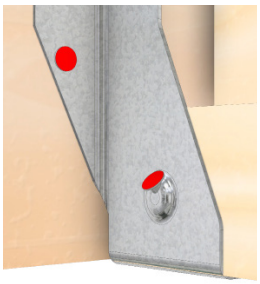
- Line up I-Joist Hanger on the supporting beam and fasten only one side initially using the number of nails or screws specified in the tables above
- If both sides are fastened before the supported beam is slotted in, the final connection could be:
  - Too loose, leading to squeaking and reduced design values
  - Too tight, meaning the beam will not fit.

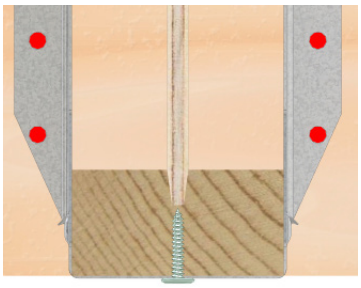
STEP 3



- 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 30mm x 6 Gauge 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 (holes available with some LT brackets), ensure they are adopted to avoid squeaks from nails coming into contact with the hanger's seat. Packers will be required as noted in Step 3 if the hanger is shorter than the supporting beam.

I-JOIST HANGER CROSS REFERENCE GUIDE

The recommended size of Pryda I-Joist Hangers for support of proprietary I-joists in house floors is as follows:

I-JOIST CODE	I-JOIST SIZE (MM)	FACE MOUNT HANGER CODE	TOP MOUNT HANGER CODE	VARIABLE SLOPE & SKEWRAFTER HANGERCODE	VARIABLE SKEW HANGER LEFT CODE	VARIABLE SKEW HANGER RIGHTCODE	DOUBLE I-JOIST HANGERCODE FACE MOUNT	DOUBLE I-JOIST HANGERCODE TOP MOUNT
CARTER HOLT HARVEY HYJOIST								
HJ200-45	200x45	N/A	N/A	N/A	LVSIA	LVSIA	JHH100*	N/A
HJ240-45	240x45	N/A			LVSIA	LVSIA	JHH100*	
HJ300-45	300x45	N/A			LVSIA	LVSIA	N/A	
HJ240-63	240x63	N/A			LVSIA	LVSIA	N/A	
HJ300-63	300x63	LF290/65			LVSIA	LVSIA	N/A	
HJ360-63	360x63	N/A			LVSIA	LVSIA	N/A	
HJ240-90	240x90	LF235/90			N/A	N/A	LF235/180	
HJ300-90	300x90	LF290/90			N/A	N/A	LF235/180*	
HJ360-90	360x90	LF350/90			N/A	N/A	LF235/180*	
HJ400-90	400x90	LF350/90			N/A	N/A	LF235/180*	
TILLINGS SMARTFRAME JOIST								
SJ24040	240x40	N/A	N/A	N/A	LVSIA	LVSIA	N/A	N/A
SJ30040	300x40				LVSIA	LVSIA		
SJ20044	200x44				LVSIA	LVSIA		
SJ24051	240x51				LVSIA	LVSIA		
SJ30051	300x50		LT300/52		LVSIA	LVSIA		
SJ36058	360x58		N/A		N/A	N/A	LF235/120*	
SJ24070	240x70				LVSIA	LVSIA	N/A	
SJ30070	300x70	LF290/70			LVSIA	LVSIA		LT300/140
SJ24090	240x90	LF235/90			N/A	N/A	LF235/180	N/A
SJ30090	300x90	LF290/90					LF235/180*	
SJ36090	360x90	LF350/90					LF235/180*	
SJ40090	400x90	LF350/90*					LF235/180*	
WESBEAM E-JOIST								
EJ20045	200x45	N/A	N/A	N/A	LVSIA	LVSIA	JHH100*	NA
EJ24045	240x45				LVSIA	LVSIA	JHH100*	
EJ24545	245x45				LVSIA	LVSIA	JHH100*	
EJ24051	240x51				LVSIA	LVSIA	N/A	
EJ24090	240x90	LF235/90			N/A	N/A	LF235/180	
EJ30045	300x45	LF300/45			LVSIA	LVSIA	N/A	
EJ30051	300x51	N/A	LT300/52		LVSIA	LVSIA		
EJ30090	300x90	LF290/90	N/A		N/A	N/A		
EJ24563	245x63	N/A			LVSIA	LVSIA		
EJ36063	360x63				LVSIA	LVSIA		
EJ36090	360x90	LF350/90			N/A	N/A	LF235/180*	
EJ40090	400x90	LF350/90 *					LF235/180*	
LP I JOIST								
LPI 302x70	302x70	LF290/70	N/A	N/A	LVSIA	LVSIA	N/A	N/A

NOTES:

1. For hangers marked *, web stiffeners must be installed in accordance with the I-joist manufacturers' specification.
2. JHH100 are Heavy Duty Joist Hangers.

PRODUCT DATA SHEET

VARIABLE SKEW ANGLE BRACKET

FEATURES AND BENEFITS

EASY: Simple design.

FAST: Fixed with Pryda 12 x 35mm screws.

VERSATILE: Can be used in a 'horizontal' orientation as an angle seat to support beams or trusses coming in at any direction, or in a 'vertical' orientation as an angle cleat for beam to beam connections.

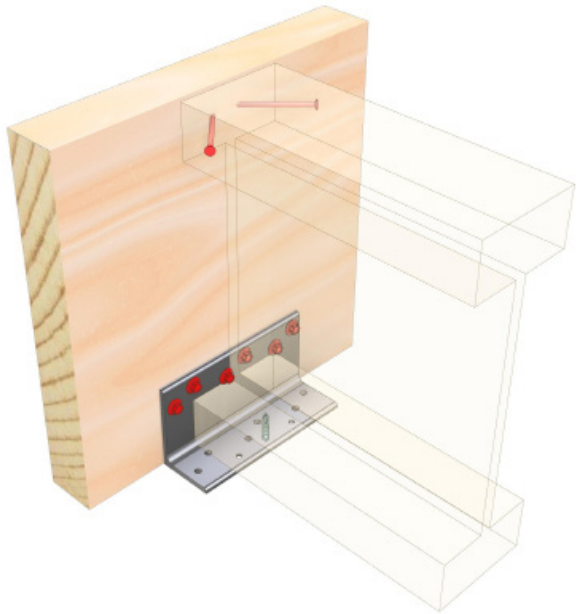
AS1684 & AS1720 COMPLIANT

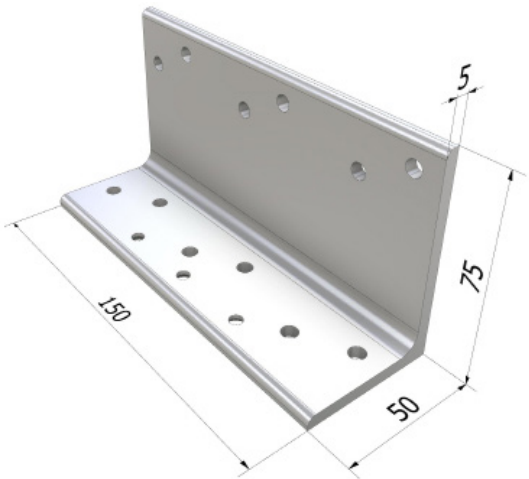
- More than the minimum Z275 galvanised steel
- Design values tested in accordance to the relevant standard

SPECIFICATIONS

PRODUCT CODE	LVSIA
STEEL	G300
THICKNESS	5mm
CORROSION RESISTANCE	Hot Dipped Galvanised Steel
FASTENERS REQUIRED	Pryda 12G x 35mm Screws (TCS12-35) 1 x No.10x30mm Type 17 screw required for uplift capacity if using bracket as a seat
QUANTITY	10

Strong and versatile bracket that can be used as a seat or cleat for beams.



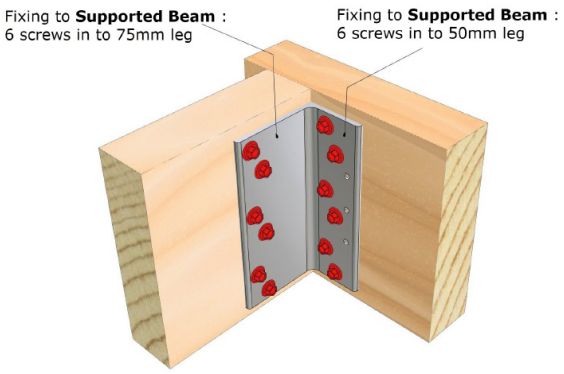


DESIGN CAPACITIES

VERTICAL SINGLE CLEAT

Fixings – 6/Pryda TCS12-35 screws on each leg.

JOINT GROUP	SINGLE LVSIA AS AN ANGLE CLEAT FOR GIVEN LOAD CASES			
	1.35G	1.2G+1.5QF	1.2G+1.5QR	WIND UPLIFT
JD4	4.8	5.8	6.4	8.6
JD3 (1)	6.7	8.0	9.0	13.3



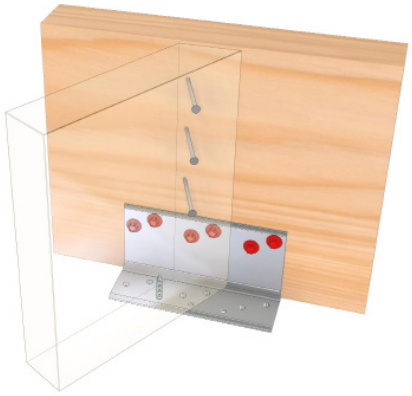
NOTES:

1. Provide 2/No.14 x 90 Type 17 screws from the back of supporting beam in to end-grain of supported beam to resist twisting of supporting beam. Use longer screw lengths if required to ensure a minimum 35mm penetration.
2. When the supported member used is prone to splitting (like hardwoods-JD3), additional precautions should be taken. These can be in the form of prebored holes or provision of anti-split nailplates at ends of the supported beam.
3. Screws with longer lengths are required when LVSIA brackets are fixed into multiple laminated beams. For double laminates, use Pryda 65mm long screws per flange.
4. If the bracket is used as a PAIR, the given capacities shall be increased by a factor of 2.5. Ensure the screws on supporting beam are at least 30mm from end grain.

SEAT HANGER

Fixings – 6/Pryda TCS12-35 screws on vertical leg and
1/No.10x30 Type 17 counter-sunk screw on horizontal leg.

JOINT GROUP	LOAD CAPACITIES(KN) FOR LVSIA AS AN ANGLE SEAT FOR GIVEN LOAD CASES			
	1.35G	1.2G+1.5QF	1.2G+1.5QR	WIND UPLIFT
JD5	4.8	5.8	6.5	1
JD4	6.7	8.2	9.1	1.4
JD3	9.5	11.5	12.9	1.8



NOTES:

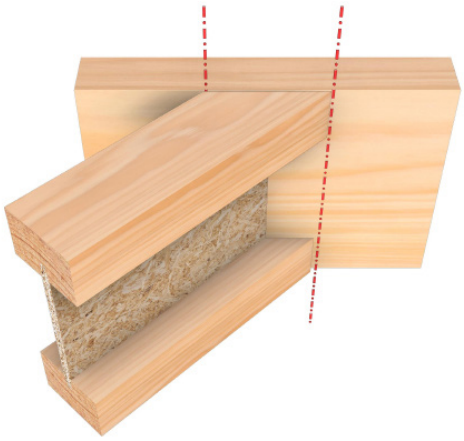
1. The supported beam must be laterally tied to prevent rotation.

IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA HANGERS & TRUSS BOOTS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

INSTALLATION OF LVSIA AS A HANGER SEAT

STEP 1



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

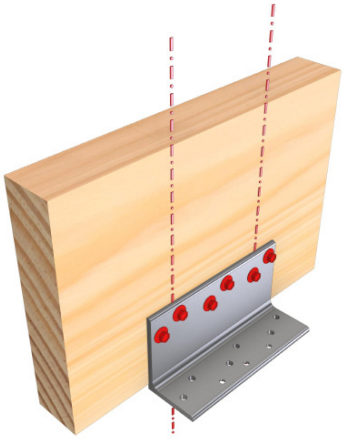
STEP 2

Flush finish for direct fixed ceiling

Set-down 5mm max. for ceiling with battens

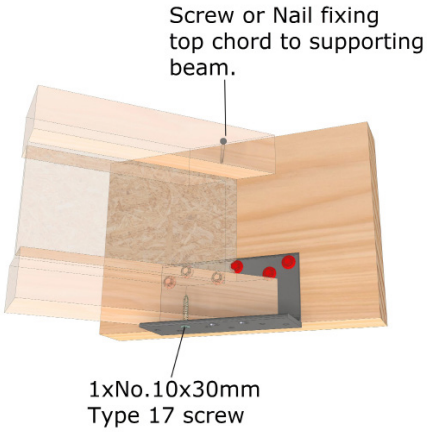
- Line up LVSIA so that the longer leg is on the supporting beam and the shorter leg will be the seat.
- Ensure bottom of bracket is flush with the bottom of the timber if direct fix plasterboard will be installed.
- Alternatively set the LVSIA 5mm maximum below bottom edge of supporting beam for alternate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

STEP 3



- Fix 6 Pryda 12 x 35mm screws into the supporting member.

STEP 4



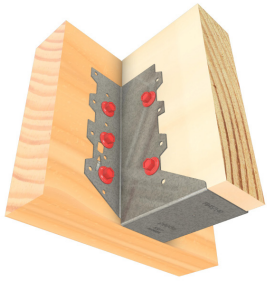
- Sit the supported member centrally in the seat at the desired angle and tight up against the bracket.
- Fix 1xNo. 10 x 30mm type 17 screw into the supported beam from below.
- Screw or nail fix the top of the supported joist to supporting beam.
- Refer to selected proprietary joist for installation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

LOOKING FOR MORE DETAILS OR OTHER HANGERS & TRUSS BOOTS IN OUR RANGE?

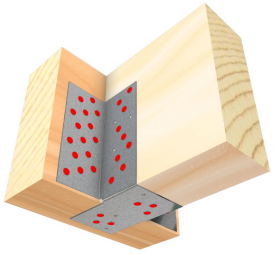
SEE OUR HANGERS & TRUSS BOOTS DESIGN GUIDE AVAILABLE AT PRYDA.COM.AU

FRAMING BRACKETS & HEAVY DUTY JOIST HANGERS

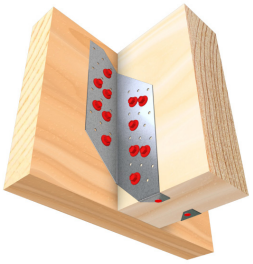
Brackets for Beam to Beam or Beam to Brickwork/Concrete Connections



Framing Bracket for Beam to Beam Connections



Heavy Duty Joist Hanger for Large Sizes, Heavy Loads



Split Joist Hanger for Heavy Loads

General Description

Pryda Framing Brackets, Split Joist Hangers and Heavy Duty Joist Hangers have been preferred and used in Australia and overseas for more than 30 years. They are strong, easy to install, cost effective, well designed connectors for many timber beam to beam and beam to concrete or masonry joints.

The wide range of these brackets provides for all common timber sizes and for glued laminated timber beams. These brackets have been designed to achieve high design loads at low cost through incorporating Pryda's extensive design expertise and taking account of the results of laboratory testing at Monash University in Melbourne.

Advantages

In addition to being well designed and laboratory tested, Pryda Framing Brackets (formerly called Pryda Joist Hangers) are:

- cost effective, eliminating the need for costly on-site skilled labour to make special housing for joints etc.
- easily fixed into position with Pryda Timber Connector Nails, or self-drilling screws. These hangers have wide flanges for ease of nailing and screwing.

Framing Bracket Size Selection

To establish a suitable Framing Bracket size, determine:

1. Joint groups are specified in AS1720.1 SAA Timber Structures Code and in Pryda Timber Data. Groups for some timbers commonly used in Australia are

TIMBERS	JOINT GROUP	
	DRY	GREEN
North American Oregon, western Hemlock	JD4	J4
Heart-excluded Radiata pine and other softwoods	JD4	J4
Pine as above – heart-in	JD5	
Slash pine	JD3	J3
Ash type hardwoods from Victoria, NSW highlands and Tasmania	JD3	J3
Non-Ash type hardwoods from Queensland and NSW	JD2	J2

Note: The moisture content of "dry" timber must not exceed 15%. Where beams of different joint groups are to be joined together, apply the lower group to both. Also read General Notes.

2. Applied loads are to be calculated in accordance with appropriate standards. These loads (reactions) can also be obtained from Pryda Build software.
3. Thickness of beam, truss or joist to be supported and supporting beam thickness. Ensure 1 or 2 mm tolerance is considered when selecting the appropriate Bracket/ Hanger for the given beam or truss thickness. The internal dimensions (thickness) of the bracket or hanger are provided in this guide.
4. Fixing method: nails or screws, but not both combined.
5. Bracket/Hanger size to be selected from the design capacity tables in this guide based on the above data.

PRODUCT DATA SHEET

FRAMING BRACKET

FEATURES AND BENEFITS

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

FAST: Can be fastened with Pryda TCS12-35mm screws.

STRONG: 1.0mm thick galvanised steel engineered to resist gravity loads and wind uplift loads as well as lateral rotation.

SPECIFICATIONS

STEEL	G300
THICKNESS	1.0mm
CORROSION RESISTANCE	Z275 (all)
FASTENERS REQUIRED	Pryda 35x3.15mm Timber Connector Nails OR Pryda Painted hex head 12Gx35mm or 65mm Screws Ensure the corrosion resistance of the fastener matches the product i.e. galvanised nails for a galvanised bracket
HEIGHTS	60 - 220mm
WIDTHS	35 - 94mm

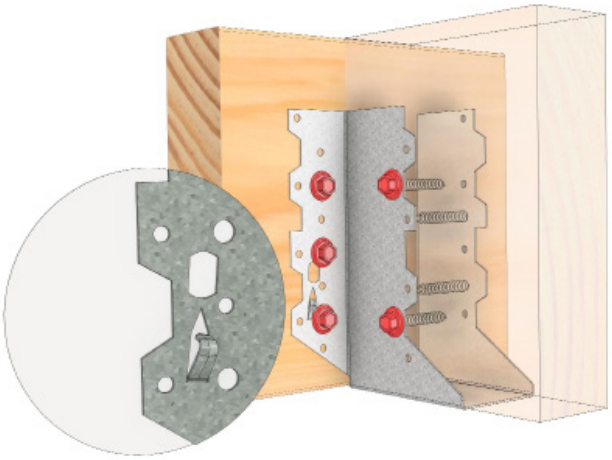
Simple means of connecting two members at 90° that provides resistance to gravity and uplift loads.

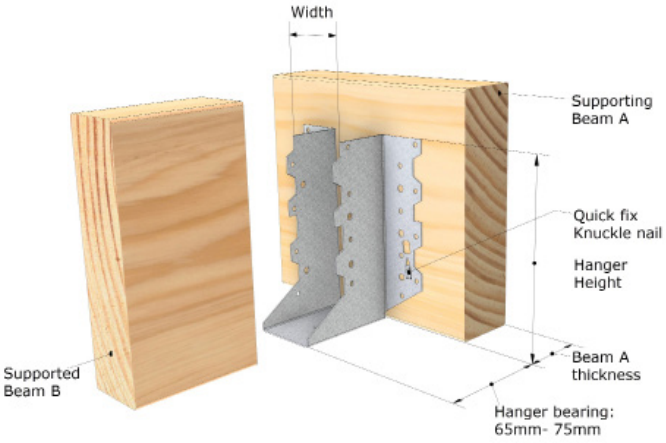
DURABILITY

Z275 to be used in weather protected internal applications.

AS1684 & AS1720 COMPLIANT

- Minimum Z275 galvanised steel
- G300 min. Steel grade
- Design values tested in accordance with the relevant standard





TYPICAL APPLICATIONS

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

FRAMING BRACKETS

PRODUCT CODE	MATERIAL	WIDTH	HEIGHT	SUITABLE APPLICATION	BOX QUANTITY
MPFBK3590	G300 Z275 Galvanised Steel	36	82	Solid Beams	45
MPFBK35120		36	116		45
MPFBK35140		36	140		40
FBK35180		36	182		30
MPFBK3860		39	60		45
MPFBK3890		39	80		45
MPFBK38120		39	115		45
MPFBK38140		39	138		40
MPFBK38180		39	181		30
MPFBK4590		46	77		45
MPFBK45120		46	110		45
MPFBK45140		46	134		40
MPFBK45180		46	176		30
MPFBK45220		46	216		15
MPFBK5060		50	54		45
MPFBK5090		50	75		45
MPFBK50120		50	109		45
MPFBK50140		50	133		40
MPFBK50180		50	175		30
MPFBK50220		50	215		15
FB62120		62	120		25
FB62170		62	170		25
FB62220		62	200		25
FB65170		65	167		25
FB70200		71	194		25
FB84200		85	197		25
FB90200		91	194		25
FB72163		72	163	Floor Trusses	25
FB94152		94	152	Floor Trusses	25

DESIGN CAPACITIES

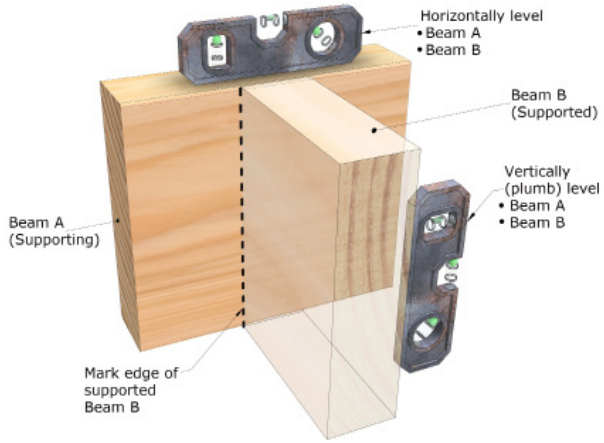
PRODUCT CODE	FIXING TO SUPPORTED BEAM (A)	DEAD + FLOOR LIVE LOAD 1.2G+1.5QF			FIXING TO SUPPORTED BEAM (B)	WIND UPLIFT K1 = 1.14			MAX.
		JOINT GROUP				JOINT GROUP			
		JD5	JD4	JD3		JD5	JD4	JD3	
MPFBK3860 MPFBK5060	6 nails	2.9	3.4	4.8	3 nails	2.4	2.8	3.9	4.5
	2 screws	2.1	3	4.3	2 screws	3.5	5	5	5
MPFBK3590 MPFBK3890 MPFBK4590 MPFBK5090	8 nails	3.8	4.6	6.4	4 nails	3.2	3.7	5.3	6
	4 screws	4.3	6.1	8.5	2 screws	3.5	5	5	5
MPFBK35120 MPFBK38120 MPFBK45120 MPFBK50120 FB62120	12 nails	5.3	6.4	8.9	6 nails	4.7	5.7	7.9	9
	6 screws	6.4	9.1	12.8	4 screws	7.1	10	10	10
MPFBK35140 MPFBK38140 MPFBK45140 MPFBK50140	16 nails	7	8.4	11.7	8 nails	6.1	7.3		
	6 screws	6.4	9.1	12.8	4 screws	7.1	10		
FBK35180 MPFBK38180 MPFBK45180 MPFBK50180	20 nails	8.6	10.3	14.4	10 nails	7.4	8.9	12.4	15
	8 screws	8.6	12.1	15	6 Screws	10.6	15	15	
FB62170 FB65170	18 nails	7.8	9.3	13.1	6 nails	4.7	5.7	7.9	9
	6 screws	6.4	9.1	12.8	11 nails	8.1	9.8	13.6	15
					6 screws	10.6	15	15	
FB62220 FB70200	24 nails	10	11.9		12 nails	8.6	10.7	14.5	
	10 screws	10.1	14.2		7 screws	12.3	15	15	
FB84200	22 nails	9.2	11		12 nails	8.6	10.7	14.5	
	8 screws	8.6	12.1		8 screws	14.2	15		
FB90200	26 nails	10.8	12.9		13 nails	9.6	11.6	15	
	10 screws	10.1	14.2		8 screws	14.2	15		
FLOOR TRUSS FRAMING BRACKETS									
FB72163	18 nails	7.8	9.4	13	3 nails	2.4	2.8	3.9	4.5
	6 screws	6.4	9.1	12.8	10 nails	7.4	8.9	12.4	15
					6 screws	10.6	15	15	
FB94152	18 nails	7.8	9.3	13.1	3 nails	2.4	2.8	3.9	4.5
	6 screws	6.4	9.1	12.8	10 nails	7.4	8.9	12.4	15
					6 screws	10.6	15	15	

NOTES:

1. The above tabulated capacities are for a minimum supporting beam thickness of 35 mm.
2. The values in the table apply directly for Category 1 joints. For Category 2 multiply these values by 0.94 and Category 3 joints multiply by 0.88.
3. For FB65170, FB72163 and 95142 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 65 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 Engineer.
7. Gap between Supported and Supporting Beams: A maximum gap of 3mm is permitted without impeding on the design capacities. A larger gap would result in a rotation of the supported beam under downward loads and also 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.

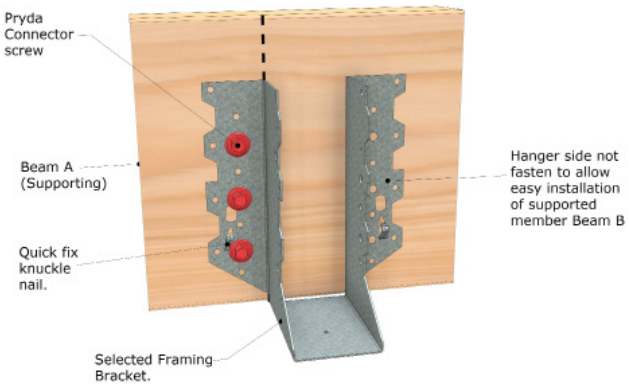
INSTALLATION

STEP 1



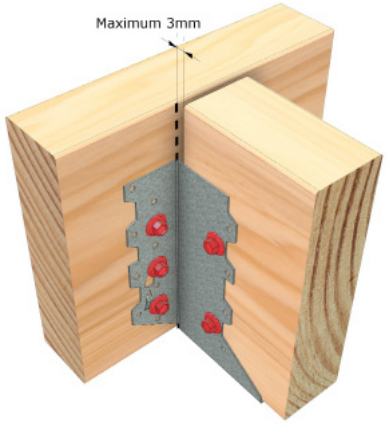
- Ensure both Beam A and B are level and plumb.
- Measure and mark location of connection on supporting beam.

STEP 2



- Line up Framing racket 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

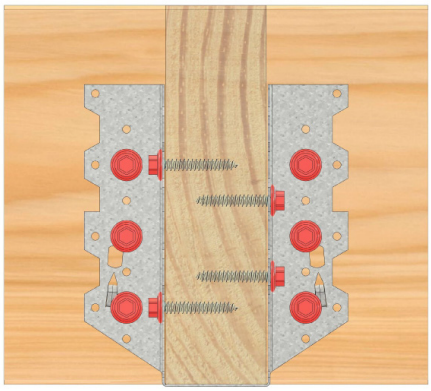


- Place the supported beam into the Framing Bracket ensuring it is right up against supporting beam
- Any gap greater then 3mm will reduce capacity

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

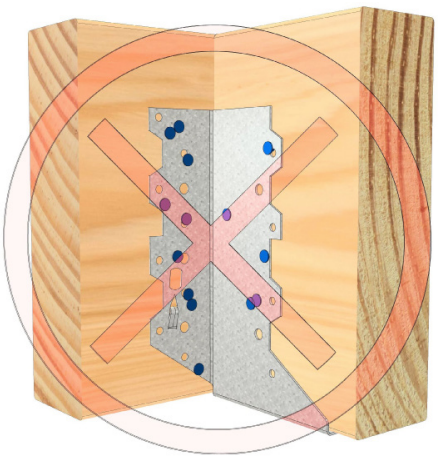
STEP 4



- Cup the Framing Bracket snug with the supported beam and fasten the remaining supporting beam side as well as both sides of the supported beam

MACHINE NAILING

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



Timber Connector Nails to fix Pryda connectors 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 or 10mm from the edge of the supporting beam
- Screw hardened, electro galvanised Paslode nails that are appropriate include:
  - Duo-Fast C SHEG 32 x 2.3 (D40810)
  - Paslode 32 x 2.5 mm (B25110)
  - Duo-Fast 32 x 2.5 mm (D41060)
  - Pas Coil 32 x 2.5 SHEG 2 Pack (B25250)
  - Impulse 32 x 2.5 SHEG (B40020)

LOOKING FOR MORE DETAILS OR OTHER HANGERS & TRUSS BOOTS IN OUR RANGE?

SEE OUR HANGERS & TRUSS BOOTS DESIGN GUIDE AVAILABLE AT PRYDA.COM.AU

PRODUCT DATA SHEET

HEAVY DUTY JOIST HANGER (JHH)

FEATURES AND BENEFITS

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

FAST: Can be fastened with Pryda 12-35mm Screws.

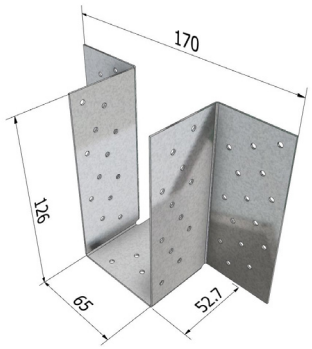
STRONG: 1.2mm thick galvanised steel engineered to resist gravity loads and wind uplift loads as well as lateral rotation.

AS1684 & AS1720 COMPLIANT

- Minimum Z275 galvanised steel
- Design values tested in accordance to the relevant standard

SPECIFICATIONS

STEEL	G300
THICKNESS	1.2mm
CORROSION RESISTANCE	Z275
FASTENERS REQUIRED	Pryda 35 x 3.15mm Timber Connector Nails OR Pryda Red Painted hex head 12G x 35mm Screws

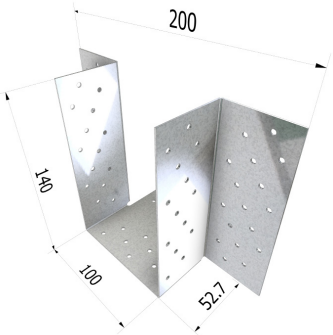


JHH65

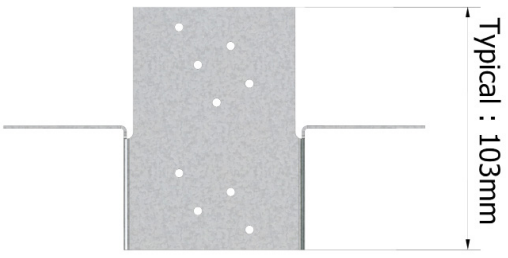
Heavy duty hanger for higher load applications.

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

JHH75 (internal dimension of 75mm) is suitable for 2/35 thick beams or trusses or 70mm thick floor trusses or equivalent.



JHH100



BASE VIEW

HEAVY DUTY HANGERS

PRODUCT CODE	MATERIAL	SUIT TIMBER WIDTH (MM)	HEIGHT (MM)	QUANTITY
JHH65	1.2mm G300 Z275 Galvanised Steel	65	128	10
JHH100		95	142	10

PRYDA 12-35 SCREWS

PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
TCS12-35/1k	Galvanised Steel	Red Hex Head 5/16 or 8mm socket size Zip Drilling Tip	12G x 35mm	1 Carton	1000
TCS12-65/1k		Black Hex Head 5/16 or 8mm socket size Zip Drilling Tip	12G x 65mm	1 Carton	1000

PRYDA TIMBER CONNECTOR NAILS

PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
OSNGB	Galvanised Steel	Flat Head	35 x 3.15mm	500g cardboard packs x 10	5kg
OSNG				1kg cardboard packs x 10	10kg
TPOSNG				5kg Trade pack x 1	5kg
OSNBCI/SS	S316 Stainless Steel			500g clamshell pack x 1	500g

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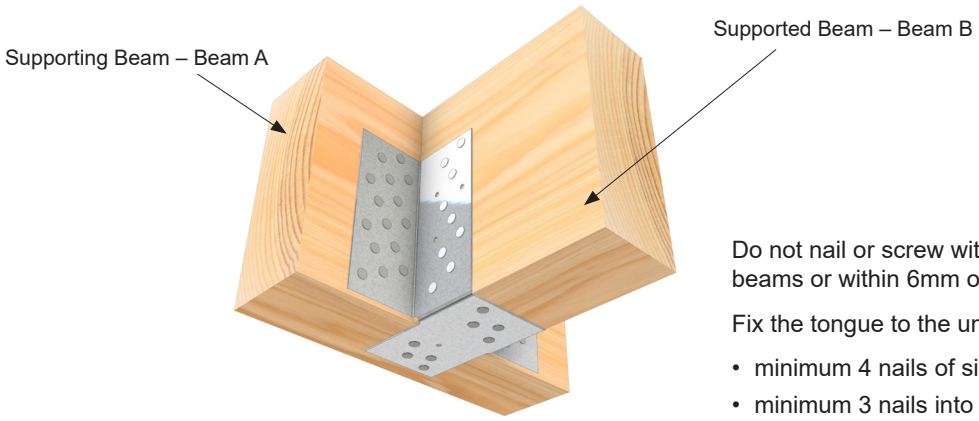
SEE OUR HANGERS & TRUSS BOOTS DESIGN GUIDE AVAILABLE AT PRYDA.COM.AU

DESIGN CAPACITIES



Do not nail or screw within 30mm of the ends of the timber beams or within 6mm of beam edge.

Fix the tongue to the underside of supporting beam A with:

- minimum 4 nails of single laminate Beam A.
- minimum 3 nails into each laminate for multi-laminate Beam A.

NAIL FIXING – 35 X 3.15MM PRYDA TIMBER CONNECTOR NAILS

LOAD CASE	DESIGN CAPACITIES (ΦNJ) IN KN					
	30 NAILS TO BEAM A 18 NAILS* TO BEAM B			34 NAILS TO BEAM A 22 NAILS* TO BEAM B		
	JD5	JD4	JD3	JD5	JD4	JD3
1.35G	10.7	12.7	17.8	12.1	14.4	20.2
1.2G + 1.5Qf	12.9	15.4	21.6	14.6	17.5	24.5
1.2G + 1.5Qr	14.4	17.2	24.1	16.3	19.5	27.3
1.2G + Wd	24.4	29	30	27.6	30	30
Wind Uplift	13	15.4	13.7*	16.1	19.2	17.1*

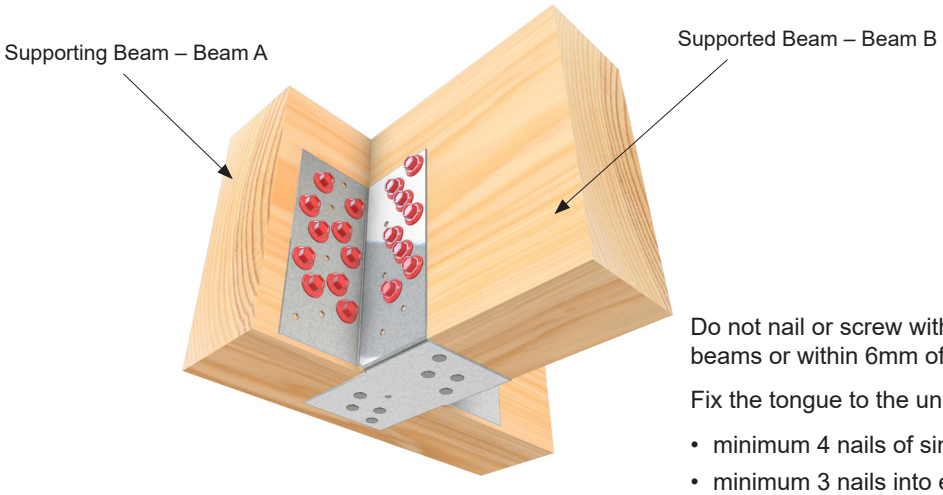
Notes:

1. Beam A = Supporting Beam, Beam B = Supported Beam.
2. **Wind capacities** – The JD3 capacities (marked *) are based on 11 nails for JHH65 and 14 nails for JHH100 to satisfy end distance requirements (also see Note 3). Limiting capacity of the hangers = 30.0 kN
3. **Supported Beam prone to Splitting** - JHH 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.
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 65 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 beam design Engineer.
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. **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.

IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA HANGERS & TRUSS BOOTS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

DESIGN CAPACITIES



Do not nail or screw within 30mm of the ends of the timber beams or within 6mm of beam edge.

Fix the tongue to the underside of supporting beam A with:

- minimum 4 nails of single laminate Beam A.
- minimum 3 nails into each laminate for multi-laminate Beam A.

SCREW FIXING – PRYDA TCS12-35 SCREWS

LOAD CASE	DESIGN CAPACITIES (ΦNJ) 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	JD4	JD3	JD5	JD4	JD3
1.35G	10	14	20	15.9	22.5	30
1.2G + 1.5Qf	12.2	17	24.3	19.3	27.2	30
1.2G + 1.5Qr	13.6	19	27.1	21.5	30	30
1.2G + Wd	20.1	28	30	30	30	30
Wind Uplift	14.4	20	28.7	26	30	30

Notes:

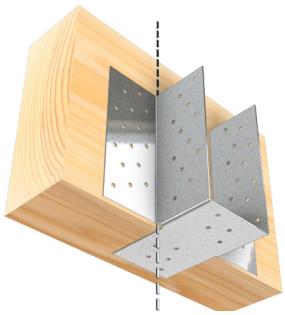
1. Beam A = Supporting Beam, Beam B = Supported Beam.
2. **Wind capacities** – The JD3 capacities (marked *) are based on 11 nails for JHH65 and 14 nails for JHH100 to satisfy end distance requirements (also see Note 3). Limiting capacity of the hangers = 30.0 kN
3. **Supported Beam prone to Splitting** - JHH 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.
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 65 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 beam design Engineer.
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. **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.

IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA HANGERS & TRUSS BOOTS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

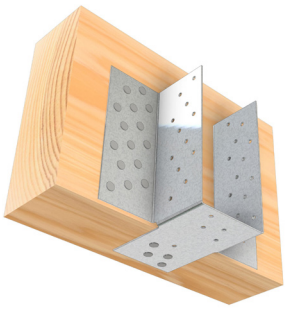
INSTALLATION

STEP 1



- Determine the number of fasteners required using the design values table and your plan. Consult with your project Engineer / Designer. Measure and mark the location on the supporting beam.

STEP 2

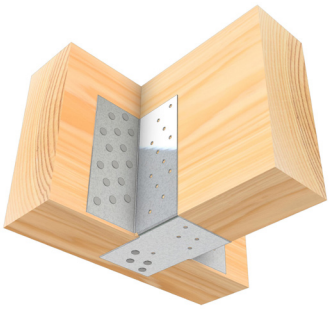


- Line up Heavy Duty Hanger on the supporting beam and fasten only one side initially.

CAUTION

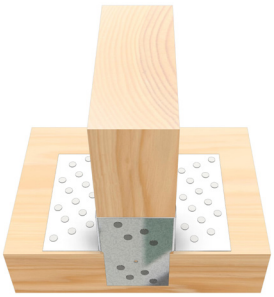
- If both sides are fastened before the supported beam is slotted in, the final connection to the supported beam could be:
  - Too loose, leading to squeaking and reduced design values.
  - Too tight, meaning the beam will not fit.

STEP 3



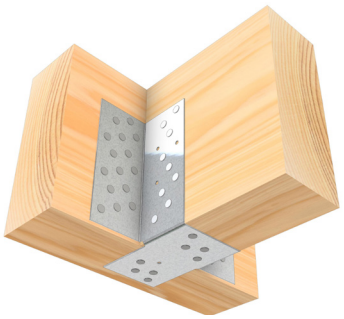
- Place the supported beam into the Heavy Duty Hanger ensuring it is right up against supporting beam.

STEP 4



- Cup the Heavy Duty Hanger tight against the supported beam. Fasten off to the supporting beam.

STEP 5



- Finish by fixing the supported beam on both sides and underside.

FASTENING HEAVY DUTY HANGERS

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 pre-punched 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 to shallow or too deep).

LOOKING FOR MORE DETAILS OR OTHER HANGERS & TRUSS BOOTS IN OUR RANGE?

SEE OUR HANGERS & TRUSS BOOTS DESIGN GUIDE AVAILABLE AT PRYDA.COM.AU

PRODUCT DATA SHEET

SPLIT JOIST HANGER (JHHS)

FEATURES AND BENEFITS

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

FAST: Can be fastened with Pryda 12-35mm Screws.

STRONG: 1.6mm thick galvanised steel engineered to resist gravity loads and wind uplift loads as well as lateral rotation.

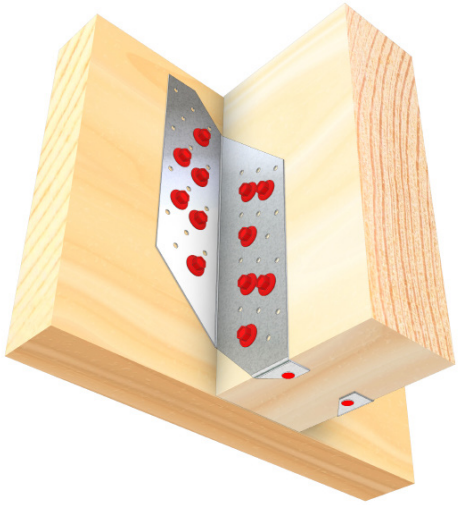
AS1684 & AS1720 COMPLIANT

- Minimum Z275 galvanised steel
- Design values tested in accordance to the relevant standard

SPECIFICATIONS

PRODUCT CODE	JHHS
STEEL	G300
THICKNESS	1.6mm
CORROSION RESISTANCE	Z275
FASTENERS REQUIRED	Pryda 35 x 3.15mm Timber Connector Nails OR Pryda Red Painted hex head 12G x 35mm Screws
DIMENSIONS	233mm High 62mm Deep Each tab 17mm wide for a minimum 35mm Width Timber
QUANTITY	5 pairs (10 pieces total with 5 left hand and 5 right hand)

Heavy duty hanger that is adjustable to multiple timber sizes.



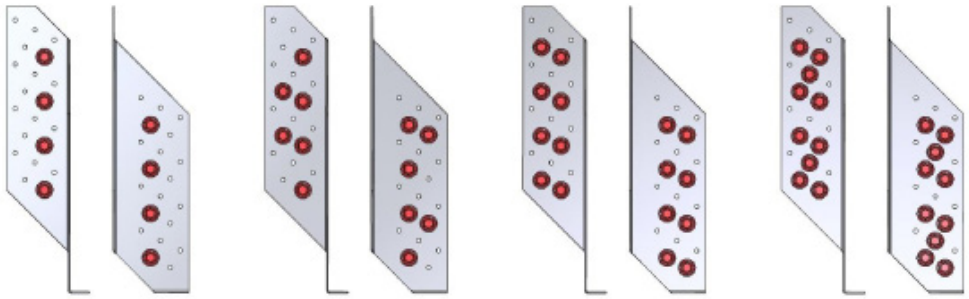
DESIGN CAPACITIES

LOAD CASE	DESIGN CAPACITIES (ΦNJ) IN KN PER PAIR OF JHHS FOR FASTENERS AND JOINT GROUP					
	35X3.15 MM NAILS 16 NAILS PER HANGER PER BEAM			PRYDA TCS12-35 SCREWS 6 SCREWS PER HANGER PER BEAM (SEE NOTE 6 FOR OPTIONS)		
	JD5	JD4	JD3	JD5	JD4	JD3
1.35G	10.4	12.4	13.3	9.9	14	19.8
1.2G + 1.5Qf	12.6	15	16.1	12	17	24
1.2G + 1.5Qr	14.1	16.8	17.9	13.4	19	26.8
1.2G + Wd or Wind uplift	23.8	28.3	29.8	19.9	28.1	39.6

NOTES:

1. Beam A (Supporting Beam) and Beam B (Supported Beam) must be a minimum 240mm deep to achieve above nail capacities or 200mm to achieve screw capacities. See Note 6 for further screw options.
2. Wind capacities: The JD3 capacities are based on a reduced number of fasteners (for nails only) to satisfy end distance requirements (also see Note 3).
3. Supported Beam prone to Splitting: JHHS brackets are not recommended for supported members 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 nail plates at ends of the supported beam.
4. Multiple Laminated Supporting Beams: Fasteners with longer lengths are required when JHHS brackets are fixed into a multiple laminated supporting beam. For double laminates, use 65 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 Engineer.
5. The values in the table apply directly for Category 1 joints. Refer General Notes in page 4 for advice on how the values should be reduced for Category 2 and Category 3 joints.
6. Screw Fixing Options- Further to capacities given above using 6 screws per hanger per beam, different screw configurations may be used as illustrated below. Adjust capacities accordingly, by using a factor (n/6) where n = number of screws used per hanger per beam. Limit maximum capacity to 40.0 kN irrespective of load case.
7. Gap between Supported and Supporting Beams. A maximum gap of 3mm is permitted without impeding on the design capacities. Seek advice from a Pryda engineer for treatment of larger gaps.

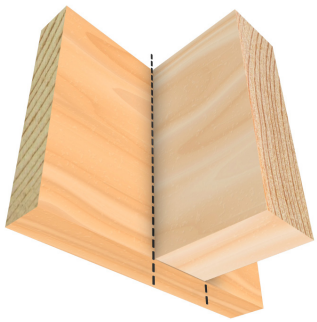
SCREW FIXING OPTIONS



FIXING PER HANGER PER BEAM	4 Screws	6 Screws	8 Screws	10 Screws
MODIFIED CAPACITY	Table Value x 0.67	Use Table Value	Table Value x 1.33	Table Value x 1.67
MIN. BEAM HEIGHT	200mm	200mm	240mm	240mm

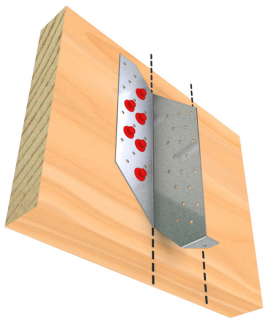
INSTALLATION

STEP 1



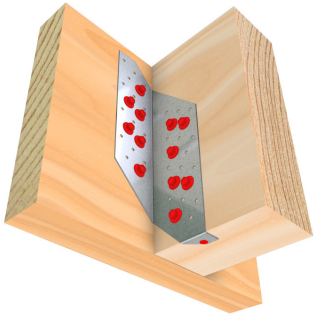
- Determine the number of fasteners required using the design values table and your plan.
- Measure and mark the location of the supported beam, on the supporting beam.
- Ensure both supporting beam and supported member are vertically plumb.

STEP 2



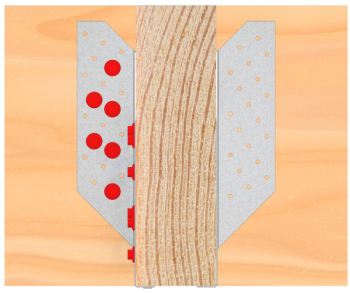
- Position and install one side of the Split Joist Hanger on the supporting beam and fasten in place

STEP 3



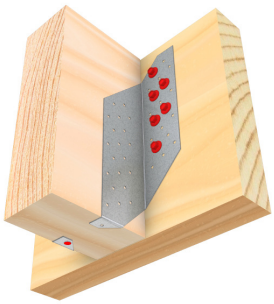
- Position the beam to be supported on the split joist hanger ensuring it is up tight against the supporting beam and hanging bracket.
- Fasten nail to bottom tab and fasten hanger to beam adopting the selected screw option pattern.

STEP 4



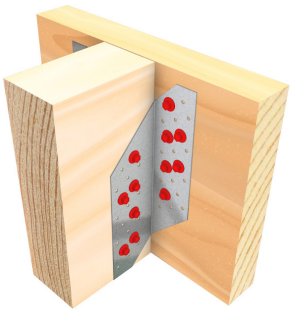
- Position the second Split Joist Hanger ensuring it is up tight against both beams.

STEP 5



- Fix off the second Split Joist Hanger starting at the supporting beam connection

STEP 6



- Finish by fixing the supported beam on both sides.

IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA HANGERS & TRUSS BOOTS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

FASTENING SPLIT JOIST HANGERS

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 pre-punched 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)

USING PASLODE MACHINE DRIVEN NAILS

Extreme care must be taken when locating these nails, to ensure the hole pattern is followed but the nail is not driven into the holes as this can weaken the nail and bracket. Given the prevailing installation practices, machine driven nails must be avoided if the right tool or the right operator skillset is not available. A great alternative is using Pryda WFT12-35 Connector screws.

LOOKING FOR MORE DETAILS OR OTHER HANGERS & TRUSS BOOTS IN OUR RANGE?

SEE OUR HANGERS & TRUSS BOOTS DESIGN GUIDE AVAILABLE AT PRYDA.COM.AU

PRODUCT DATA SHEET

TRUSS BOOTS

FEATURES AND BENEFITS

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

VERSATILE: Multiple types available with different thicknesses and fastening types. TB80V includes a variable angle swing arm to achieve any angle.

STRONG: Provides ample capacity against gravity, uplift and rotational loads.

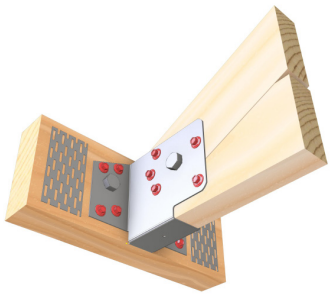
AS1684 & AS1720 COMPLIANT

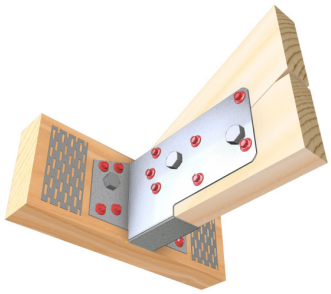
- Minimum Z275 Galvanised Steel
- Design values tested in accordance to the relevant standard

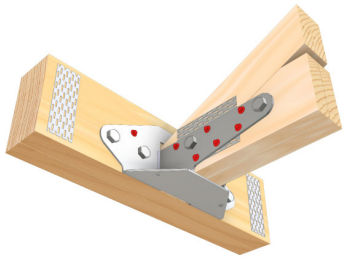
SPECIFICATIONS

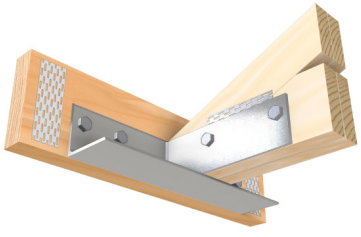
	MULTI-FIX TRUSS BOOT	HEAVY DUTY
STEEL	G300	Mild Steel
THICKNESS	1.6mm	4mm to 5mm
CORROSION RESISTANCE	Z275	Hot Dipped Galvanised
FASTENERS REQUIRED	M12 bolts or M12 and M16 bolts Pryda painted hex head 12G 35mm or 65mm screws	M16 Bolts with 63x54mm square washers For TBHD75 the above and; Pryda painted hex head 12G 35mm or 65mm screws
HEIGHTS	105-110mm	100-150mm
WIDTHS	38-73mm	365-450mm

Strong means of forming a truss to truss connection.









APPLICATION & FEATURES

Pryda Multi-Fix Truss Boots are used to connect roof trusses or other roof members to supporting “girder” trusses and they comprise:

- Joist Boots used for:
  - *End support of joists and beams
  - *Support of lightly loaded trusses from girder trusses
- Truss Boots – used for support of standard trusses.

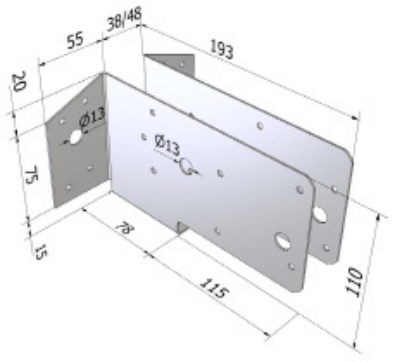
See also Pryda Heavy Duty Truss Boots.

“Multi-fix” means that these connectors can be fixed with bolts or screws, or bolts and screws together.

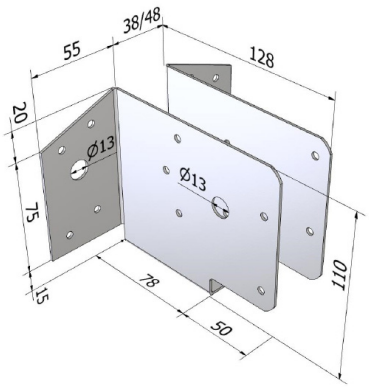
TYPE	PRODUCT CODE	TIMBER THICK.	BOLT DIAM.	APPLICATIONSUPPORTOF:
Truss Boot	TBJ35	35	12	eg: at hip ends Lightly loaded trusses
	TBJ35/T	35	12	
	TBJ45	45	12	
	TBJ70	70	12	
	TB35/12	35	12	Standard trusses
	TB35/16	35	16/12	
	TB45/16	45	16/12	
Steel	TBJ & TB – 1.6 mm G300 –Z275 Galvanized			
Packing	10 per carton			
Size	See dimensions following			

DIMENSIONS

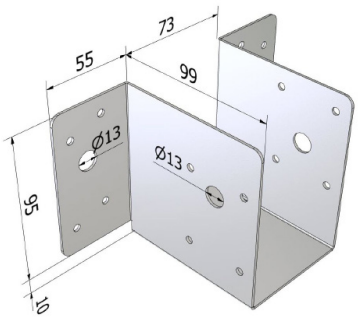
Dimensions of Pryda Joist Boots and Truss Boots are:



TB35, TB45



TBJ35, TBJ35/T, TBJ45



TBJ70

TRUSS BOOTS

PRODUCT CODE	MATERIAL	DIMENSIONS			QTY	FIXING TO SUPPORTING TRUSS		FIXING TO SUPPORTED TRUSS		BOLT KIT PRODUCT CODE
		W	D	H		FASTENER	WASHER	FASTENER	WASHER	
JOIST BOOTS – MULTI-FIX										
TBJ35	1.6mm G300 Z275 Galvanised Steel	38	128	110	10	2 M12 Bolts &/or 8 12x35mm Screws	55x55 x3mm	1 M12 Bolt &/or 8 12x35mm Screws	55x55 x3mm	OBK312
TBJ35/T										
TBJ45		45	128	110						
TBJ70		73	99	105						
TRUSS BOOTS – MULTI-FIX										
TB35/12	1.6mm G300 Z275 Galvanised Steel	38	193	110	10	2 M12 Bolts &/or 8 12x35mm Screws	55x55 x3mm square	2 M12 Bolts &/or 12 12x35mm Screws	55x55 x3mm	OBK312
TB35/16						2 M16 Bolts &/or 8 12x35mm Screws	55x55 x3mm			N/A
TB45/16		48	193	110						
TRUSS BOOTS – HEAVY DUTY										
TB80C	5.0mm Hot Dipped Galvanised Mild Steel	450	280	100	1	4 M16 Bolts & Pryda Timber Connector Nails	63x63 x5mm	2 M16 Bolts	63x63 x5mm	OBK816
TB80V (Variable angle)								2 M16 Bolts		
TBHD75	4.0mm Hot Dipped Galvanised Mild Steel	379	278	150				2 M16 Bolts & 6 12x35mm Screws		
TBHD75/T								2 M16 Bolts & 6 12x35mm Screws	57x57 x4mm	

NOTES:

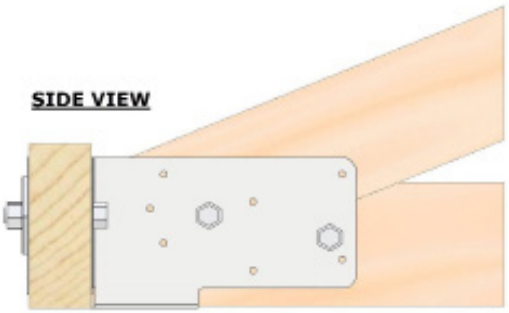
1. *M12 or ½ inch diameter must be fitted with nuts and 55 mm diameter or 50x50 mm square by 3 mm thick washers. M16 or 5/8 inch diameter bolts must be fitted with nuts and 65 mm diameter or 57x57 mm square by 4mm thick washers. See Pryda Bolt Kits in below table.
2. Pryda Heavy Duty Truss Boots are installed with 6/ M16 bolts and with 63x4 mm square washers on all surfaces where the bolt head or nut bears directly on the timber.
3. Screws are Pryda TCS12-35/1K (No. 12x35 mm red hex head screws).
4. The TBJ35/T has a tongue to tie the supported truss to the girder.

IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA HANGERS & TRUSS BOOTS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

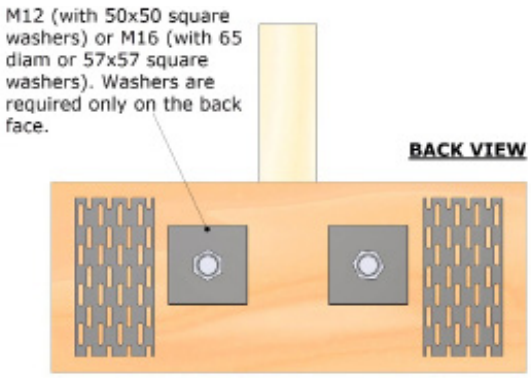
BOLTS ONLY INSTALLATION

STEP 1



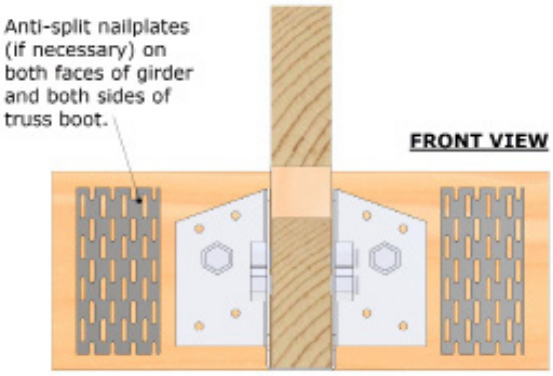
- Fit the Boot flush with the bottom of the girder bottom chord and tack fix with two nails or screws.
- Drill the bolt hole and fit the bolt with the nut and washer on the face opposite to the boot.
- Ensure correct bolt length and specification is used.

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 5 mm, preferably tight fitting.
- Drill the bolt hole (TBJ and TB types only) and fit the bolt(s) and nut(s).

STEP 3

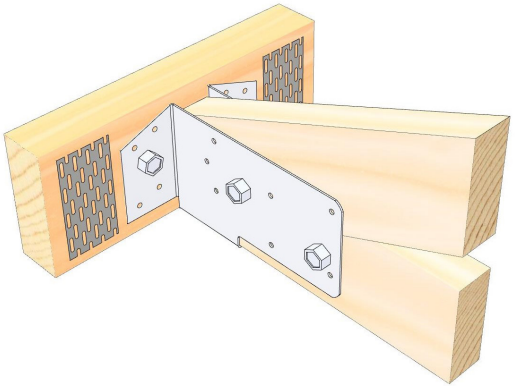


- Hammer apply anti-split Claw nailplates on the girder truss chord on both faces and both sides of the Boot, ie: 4 nailplates of:

CHORD WIDTH (MM)	90	120,140	170,190
ANTI-SPLITPLATESIZE	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



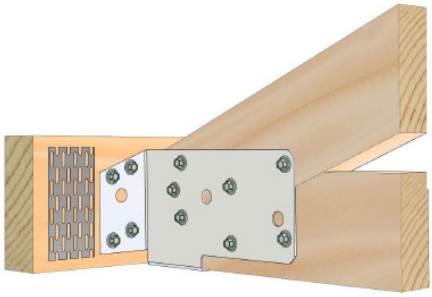
- Important: The roof cladding (tiles, sheet steel etc) must be installed only after the truss boots are fully fixed into both the girder and supported truss, with all bolts and washers in place.

LOOKING FOR MORE DETAILS OR OTHER HANGERS & TRUSS BOOTS IN OUR RANGE?

SEE OUR HANGERS & TRUSS BOOTS DESIGN GUIDE AVAILABLE AT PRYDA.COM.AU

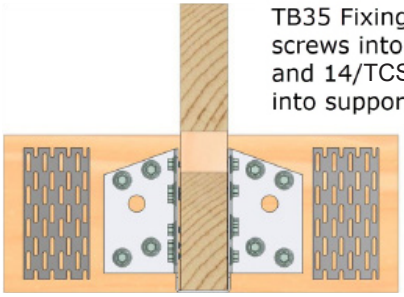
SCREWS ONLY INSTALLATION

STEP 1



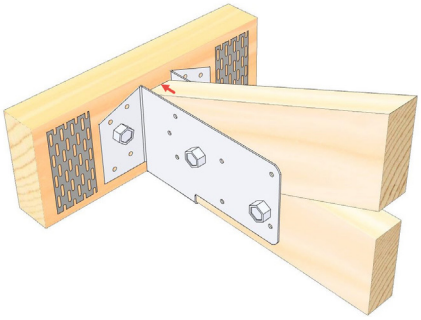
- If the girder truss is comprised of two or more laminates (ie: a “double” or “triple” girder), the laminates must be fixed together using one of the details specified in Fixing Details For Double or Triple Girders opposite.

STEP 2



- Fit the Boot flush with the bottom of the girder bottom chord and tack fix with two screws.
- Drive the remaining screws.

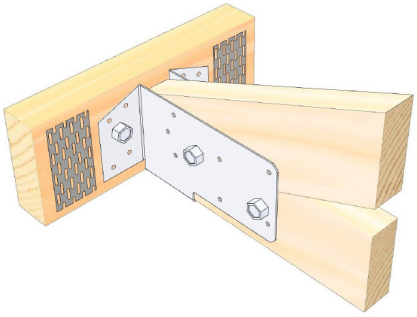
STEP 3



- 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 5 mm, preferably 0 mm.
- Drive screws into all holes.
- Note: that anti-split nailplates are not required for Screws Only fixing.

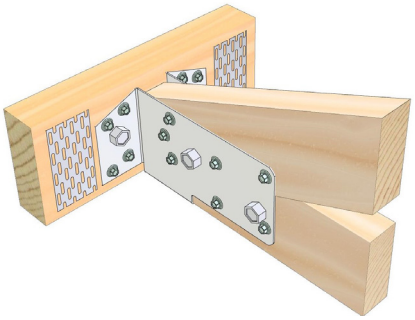
BOLTS & SCREWS INSTALLATION

STEP 1



- Install the Truss Boot and supported truss as per the Bolts Only method.

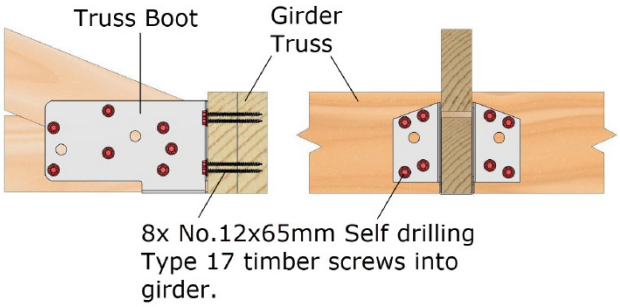
STEP 2



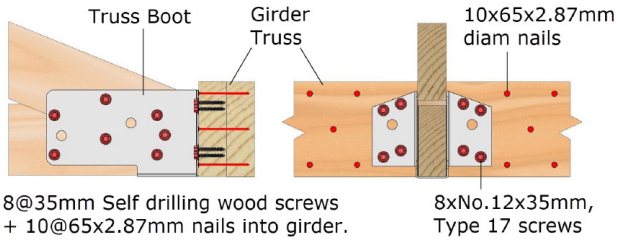
- Drive the screws into all screw holes.
- Important: The roof cladding (tiles, sheet steel etc) must be installed only after the truss boots are fully fixed into both the girder and supported truss.

FIXING DETAILS FOR DOUBLE & TRIPLE GIRDERS SCREWS ONLY

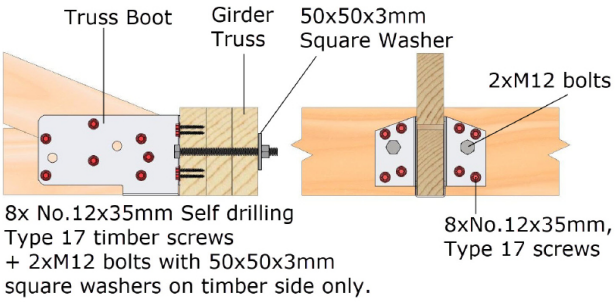
DOUBLE GIRDERS



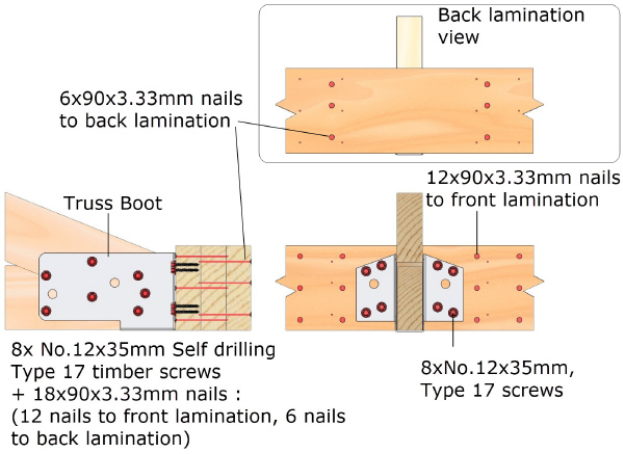
ALTERNATIVE FIXING DETAIL



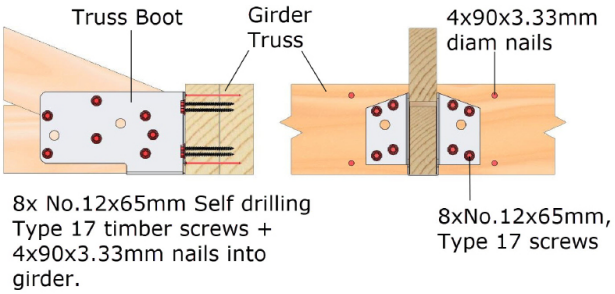
TRIPLE GIRDERS



ALTERNATIVE FIXING DETAIL



2@ 45 GIRDER LAMINATIONS – PREFERRED



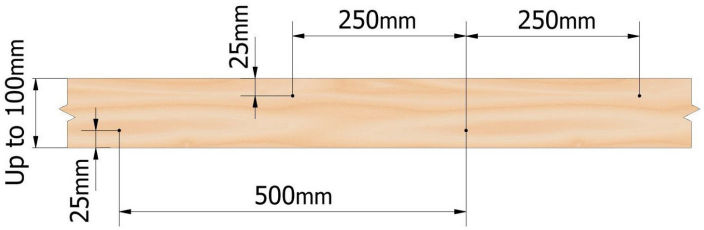
ALTERNATIVE FIXING DETAIL

NOTES:

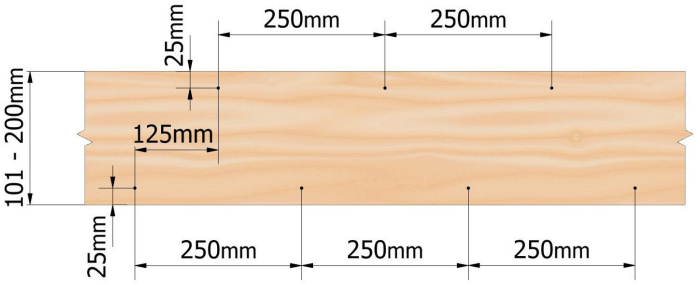
1. Nails at the Truss Boot are to be spaced 70mm (min) apart along the grain and 40 mm (min) apart across the grain. They should be as close to the Truss Boot as practical, but not further away than the depth of the member.
2. Use the details for 35 mm laminates for timber thickness between 35 and 40 mm, and the 45 mm details for timber thickness between 41 and 50 mm.
3. All screws are to be Pryda TCS12-35 (No. 12x35 mm Type 17 hex head screws) or Pryda TCS12-65.
4. For all double and triple girder trusses, the chords (top and bottom) and webs are to be nailed at:

TRUSS LAMINATION

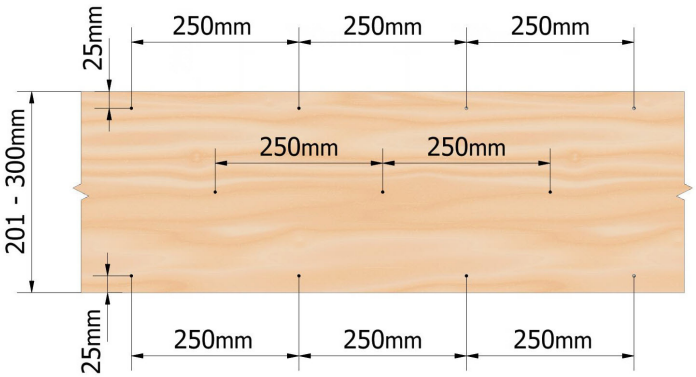
TIMBER WIDTH	NAIL ROWS & MAXIMUM SPACING
Up to 100 mm	2 rows (staggered) at 500 mm
101 - 200 mm	2 rows (staggered) at 250 mm
201 - 300 mm	3 rows (staggered) at 250 mm



Up to 100mm Chords or Webs



101mm - 200mm Chords or Webs



201mm - 300mm Chords or Webs

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PRYDA 12-35 SCREWS

PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
TCS12-35/1k	Galvanised Steel	Red Hex Head 5/16 or 8mm socket size Zip Drilling Tip	12G x 35mm	1 Carton	1000
TCS12-65/1k		Black Hex Head 5/16 or 8mm socket size Zip Drilling Tip	12G x 65mm	1 Carton	1000

PRYDA WASHERS & BOLT KITS

PRODUCT CODE	MATERIAL	TYPE	PACK CONFIGURATION	SUITS PRODUCT CODES
OBK312	Hot Dipped Galvanised Steel	Bolt Kit	2 M12x65mm bolts for supported Truss 2 M12x100 bolts for supporting Truss (up to 75mm thick) 4 55x55x3mm square washers	TBJ35 TBJ35T TBJ/45 TBJ/70 TB35/12
OBK816			2/M16x110 into supported truss 4/M16x110 into supporting truss (up to 75mm thick) 6 63x5mm square washers	TB80C TB80V TBHD75 TBHD75/T

PRYDA WASHERS & BOLTS

PRODUCT CODE	MATERIAL	TYPE	DESCRIPTION	QUANTITY
OBS16/110	Hot Dipped Galvanised Steel	Bolt and nut	M16x110mm bolt and nut	75
OW12/56S		Washer	56x3mm square washers – suit M12 bolts	100
OW16/63S		Washer	63x5mm square washer – suit M16 bolts	40

IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA HANGERS & TRUSS BOOTS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

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)

PRODUCT CODE	LOAD CASE	DESIGN CAPACITY ΦNJ (KN) - JOINT GROUP					
		JD3			JD4		
		MINIMUM GIRDER THICKNESS (MM)					
		35	45	70	35	45	70
BOLTS ONLY							
TBJ35 TBJ35/T TBJ45 TB35/12 TBJ70	G	6.9	8.9	10.3	5.1	6.5	8.6
	G + Qr	9.4	12	13.9	6.9	8.8	11.6
	G + Wd G-Wu	13.8	17.6+	17.6+	10.2	13.1	17.1
TB35/16 TB45/16	G	9.2	11.9	14	6.8	8.7	12.2
	G + Qr	12.5	16	21.1	9.2	11.8	16.5
	G + Wd	18.5	23.4+	23.4+	13.6	17.4	23.4+
	G-Wu	18.5	20.0*	20.0*	13.6	17.4	20.0*
SCREWS ONLY							
All other truss Boots	G	14.1	14.1	14.1	10	10	10
	G + Qr	19.1	19.1	19.1	13.5	13.5	13.5
	G + Wd	24.0+	24.0+	24.0+	20.1	20.1	20.1
	G-Wu	20.0*	20.0*	20.0*	20.0*	20.0*	20.0*
BOLTS & SCREWS							
TBJ35 TBJ35/T TBJ45 TB35/12 TBJ70	G	20.2	22	25.0*	15.5	17	19
	G + Qr	25.0*	25.0*	25.0*	21	22.5	25.0*
	G + Wd	25.0*	25.0*	25.0*	25.0*	25.0*	25.0*
	G-Wu	20.0*	20.0*	20.0*	20.0*	20.0*	20.0*
TB35/16 TB45/16	G	22.2	25.0*	25.0*	15.5	17	19
	G + Qr	25.0*	25.0*	25.0*	21	22.5	25.0*
	G + Wd	25.0*	25.0*	25.0*	25.0*	25.0*	25.0*
	G - Wu	20.0*	20.0*	20.0*	20.0*	20.0*	20.0*

NOTES:

1. “Screws Only” capacities for 70 mm girder trusses (double girders), the laminates of the girder truss must be fixed together in accordance with the Fixing Details for Double & Triple Girders requirements in our Hangers and Truss Boots Design Guide.

DESIGN CAPACITIES FOR MULTI-FIX TRUSS BOOTS

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

PRODUCT CODE	LOAD CASE	DESIGN CAPACITY ΦNJ (KN) - JOINT GROUP:					
		JD3			JD4		
		FIXING OPTION:					
		BOLTS ONLY	SCREWS ONLY	BOLTS + SCREWS	BOLTS ONLY	SCREWS ONLY	BOLTS + SCREWS
TBJ70	G	25.0*	25.0*	25.0*	21	25.0*	25.0*
	G + Qr	25.0*	25.0*	25.0*	25.0*	25.0*	25.0*
	G + Wd	25.0*	25.0*	25.0*	25.0*	25.0*	25.0*
TBJ35 TBJ35/T	G	13.6	21.8	24.9	9.4	15.1	17.4
	G + Qr	21.5	25.0*	25.0*	14.8	22.5	25.0*
	G + Wd	25.0*	25.0*	25.0*	17	25.0*	25.0*
TBJ45	G	17.6	25.0*	25.0*	12.1	17.3	20.2
	G + Qr	25.0*	25.0*	25.0*	19.2	25.0*	25.0*
	G + Wd	25.0*	25.0*	25.0*	25	25.0*	25.0*
TB35/12	G	16	25.0*	25.0*	11.2	18.4	22.4
	G + Qr	24.8	25.0*	25.0*	17.2	25.0*	25.0*
	G + Wd	25	25.0*	25.0*	20.6	25.0*	25.0*
TB35/16	G	17.9	25.0*	25.0*	12.5	18.4	23.8
	G + Qr	25.0*	25.0*	25.0*	19	25.0*	25.0*
	G + Wd	25.0*	25.0*	25.0*	23.3	25.0*	25.0*
TB45/16	G	23.1	25.0*	25.0*	16.2	20.5	25.0*
	G + Qr	25.0*	25.0*	25.0*	25.0*	25.0*	25.0*
	G + Wd	25.0*	25.0*	25.0*	25.0*	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 minimums. Supported truss thicknesses are minimums for bolt capacity and maximums (3 mm tolerance for two nail plates) for fitting the timber into the boot. 70 mm thickness can be made from 2@ 35 mm trusses, nail or bolt laminated together as specified by the truss designer.
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. The values in the table apply directly for Category 1 joints. For category 2 joints reduce the design capacity by a factor of 0.94 and for Category 3 joints reduce by a factor of 0.88.
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. The capacities with a plus sign (+) are governed by steel strength screw or bolt bearing on steel.
8. Use appropriate bolt lengths:

   Min. 100mm bolts for up to 2/35 trusses (use Pryda OBS12/100 or Pryda OBS16/110).

   Min. 120mm bolts for up to 2/45 trusses.

   Min. 140mm bolts for up to 3/35 trusses.

DESIGN CAPACITIES FOR MULTI-FIX TRUSS BOOTS

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

PRODUCT CODE	THICKNESS (MM)	FIXING METHOD	DES.CAP. ΦNJ (KN) WIND UPLIFT (G-WU)	
			K1 = 1.14	
			JD3	JD4
TBJ35 TBJ35/T	35	8 screws	20.0*	18
		1/M12 bolt	5.5	4.1
		Bolt + screws	20.0*	20.0*
TBJ45	45	8 screws	20	18
		1/M12 bolt	7.1	5.2
		Bolt + screws	20.0*	20.0*
TBJ70	70	6 screws	18	13.5
		1/M12 bolt	11	8.1
		Bolt + screws	20.0*	20.0*
TB35/12 TB35/16	35	12 screws	20.0*	20.0*
		2/M12 bolts	11.1	8.1
		Bolts + screws	20.0*	20.0*
TB45/16	45	12 screws	20.0*	20.0*
		2/M12 bolts	14.2	10.5
		Bolts + screws	20.0*	20.0*

NOTES:

1. For wind uplift, take the lower of the capacities for the supported truss and girder, ie: look up both tables.
2. The values in the table apply directly for Category 1 joints. For category 2 joints reduce the design capacity by a factor of 0.94 and for Category 3 joints reduce by a factor of 0.88.
3. The capacities with '*' are governed by steel strength of the truss boot.

IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA HANGERS & TRUSS BOOTS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

EXAMPLES

Below are examples of selecting a suitable Pryda Truss Boot based on the Design Capacities tables.

EXAMPLE 1

DESIGN DATA				
Supported truss thickness	35mm			
Supported truss timber	MGP12 dry pine (JD4)			
Girder truss thickness	45 mm			
Girder truss timber	F17 dry hardwood (JD3)			
Preferred fixing method	Screws			
DESIGN LOADS				
Load case	1.35G	G + Qr	G + Wd	G – Wu
Load (kN)	3.5	6.8	5.4	1.6

Try TBS35: which suits the 35 mm supported truss: Looking up tables: TB1(JD3, 45) and TB2(JD4) for: Screws only.

LOAD CASE	TB1	TB2	DESIGN	LOAD	SUIT
G =	14.1	15.1	14.1	3.5	OK
G + Qr =	19.1	20.0	19.1	6.8	OK
G + Wd =	20.0	20.0	20.0	5.4	OK
Uplift: Looking up Table TB3 for JD4 – Screws Only					
LOAD CASE	**TB1**	**TB3**	**DESIGN**	**LOAD**	**SUIT**
G - Wu	15.0	13.5	13.5	1.6	OK

Therefore, a TBS35 is suitable.

EXAMPLE 2

DESIGN DATA	
Supported truss thickness	35mm
Supported truss timber	MGP12 dry pine (JD4)
Girder truss thickness	70 mm
Girder truss timber	F17 dry hardwood (JD3)
Preferred fixing method	Bolts
DESIGN LOADS	
1.35G	1.5 kN
1.2G+1.5Qr	4.8 kN
1.2G+Wd	7.3 kN
0.9G-Wu (Wind uplift)	-11.9 kN

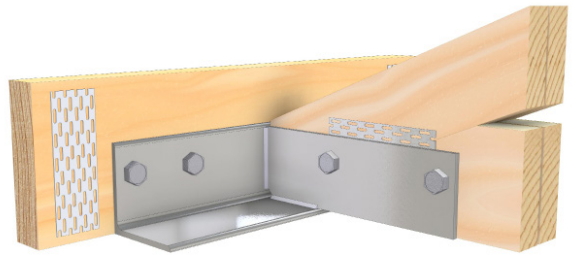
Try TBJ35: which suits the 35 mm supported truss: Looking up tables TB1(JD3, 70) and TB2 (JD4) for TBJ35, Bolts only.

LOAD CASE	TB1	TB2	DESIGN	LOAD	SUIT
G =	9.1	9.4	9.1	1.5	OK
G + Qr =	12.2	14.8	12.2	4.8	OK
G + Wd =	17.6	17.0	17.0	7.3	OK
LOAD CASE	**TB1**	**TB3**	**DESIGN**	**LOAD**	**SUIT**
G - Wu	17.6	3.6	4.1	11.9	NS
LOAD CASE	**TB1**	**TB3**	**DESIGN**	**LOAD**	**SUIT**
G - Wu	20.0	18.0	18.0	11.9	OK

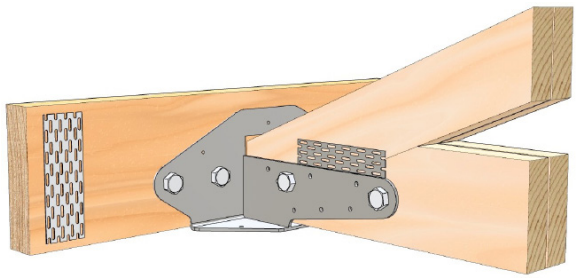
Therefore, a TBJ35 is suitable with screw fixing of supported truss.

Truss Boots Heavy Duty

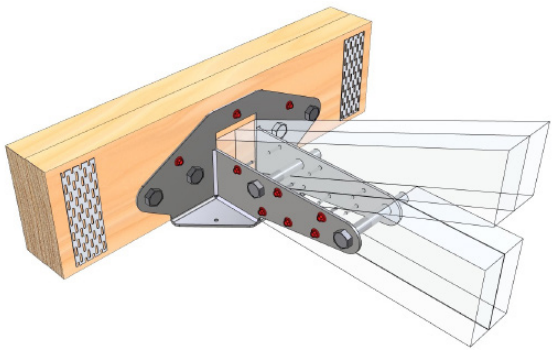
Brackets for Beam to Beam or Beam to Brickwork/Concrete Connections.



TB80 Truss Boot



TBHD75 Truss Boot



TBHD75/T Truss Boot with Twin Fin

Only suitable for Double 35mm thick supported trusses.

Features

The long anti-rotation fin 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. Consequently, anti-rotation bars are not necessary. Useful variations of this product have welded hinges to allow for any angle (TB80V).

The TBHD75 and TBHD75/T 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.
- The twin-fin of TBHD75/T has been specially developed to enhance uplift capacities and meet the demands of girder to girder connections in cyclonic regions. Note: Screws are required in combination with bolts to achieve the desired uplift capacities.

Installation

Pryda Heavy Duty Truss Boots are installed with 6/ M16 bolts and with 63x4 mm 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. Refer to bolt specification in page 30 for further information.

Screws used on the TBHD75/T Truss Boot are to be Pryda TCS12-35 (No. 12x35 mm Type 17 hex head screws).

Specification

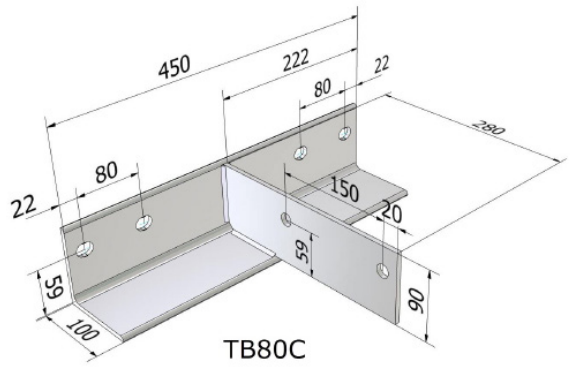
Pryda Heavy Duty Truss Boots are made to the following specification:

SIZES	SEE DIMENSIONS NEXT PAGE
Steel	Mild steel, hot dipped galvanized- thickness: - 5 mm for TB80 range - 4 mm for TBHD75, TBHD75/T
Product Codes	TB80C, TB80V, TBHD75, TBHD75/T C denotes anti-rotation fin located centrally V denotes variable angle (hinged)
Packing	TBHD75 - 4 per bundle TBHD75/T - sold as singles TB80C, TB80V - sold as singles

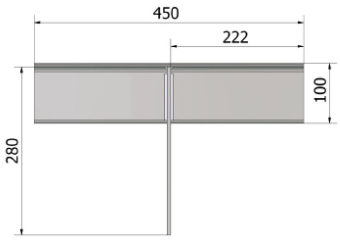
Important: The roof cladding (tiles, sheet steel etc) must be installed only after the truss boots are fully fixed into both the girder and supported truss, with all bolts and washers in place.

Dimensions

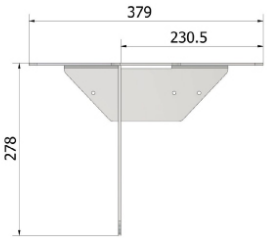
The dimensions of Heavy Duty Truss Boots are:



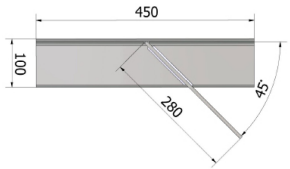
TB80C



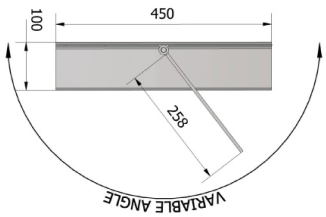
TB80C



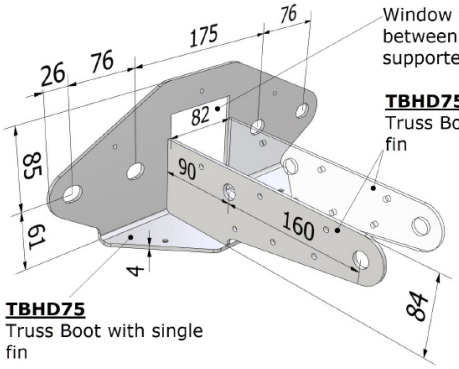
TBHD75



TB80C-45R



TB80V

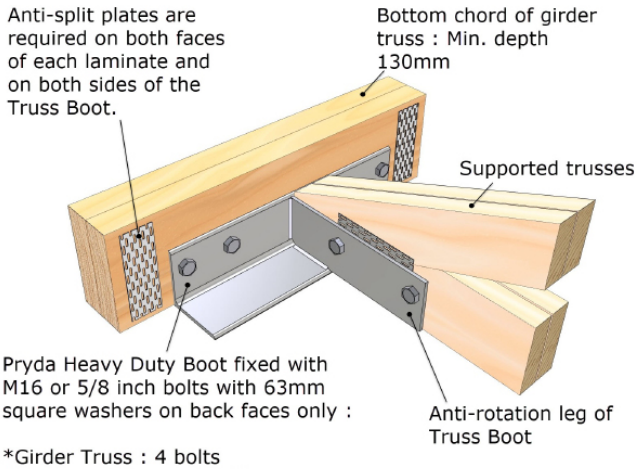


Window for flush finish between girder and supported truss

TBHD75/T
Truss Boot with twin fin

TBHD75
Truss Boot with single fin

Applications



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DESIGN CAPACITIES FOR HEAVY DUTY TRUSS BOOTS

SINGLE FIN TRUSS BOOTS - TBHD75/TB80C/TB80V

DESIGN CAPACITIES (KN) FOR VARYING LOAD CASES AND SUPPORTED TRUSS JOINT GROUPS													
GIRDER TRUSS THICKNESS (MM)	SUPPORTED TRUSS THICKNESS (MM)	SUPPORTED TRUSS = JD5				SUPPORTED TRUSS = JD4				SUPPORTED TRUSS = JD3			
		1.35G (DEAD ONLY)	1.2G+ 1.5Q (DEAD +LIVE)	WIND UPLIFT		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			BOLTS ONLY	BOLTS+ SCREWS
JD4 GIRDER TRUSS BOTTOM CHORD OF MINIMUM 130MM DEPTH (E.G: MGP12, MGP15, HYCHORD, E-BEAM ETC)													
35	35	13.6	18.3	7.8	15.8	12	16.2	10.9	22.2	13.6	18.3	14.8	24
	2/35	13.6	18.3	15.6	23.6	13.6	18.3	21.7	27.2	13.6	18.3	27.1	27.1
45	35	14.5 (1)	22.3 (1)	6.9	14.9	15.3	20.8	10.9	22.2	17.4	23.6	14.8	30.0 (2)
	2/35	17.4	23.6	15.6	23.6	17.4	23.6	21.7	30.0 (2)	17.4	23.6	29.5	30.0 (2)
2/35	35	14.5 (1)	22.3 (1)	6.9	14.9	17.3 (1)	28.3 (1)	10.9	22.2	24.3	33	14.8	29
	2/35	24.4	33	15.6	23.6	24.4	33	21.7	30.0 (2)	24.4	33	29.5	30.0 (2)
3/35	35	14.5 (1)	22.3 (1)	6.9	14.9	17.3 (1)	28.3 (1)	10.9	22.2	24.3 (1)	35.6	14.8	29
	2/35	26.4	35.6	15.6	23.6	26.4	35.6	21.7	30.0 (2)	26.4	35.6	29.5	30.0 (2)
JD3 GIRDER TRUSS BOTTOM CHORD OF MINIMUM 130MM DEPTH (E.G: F17, E-BEAM+ ETC)													
35	35	14.5 (1)	22.3 (1)	7.8	15.8	17.3 (1)	28.3 (1)	10.9	20.9	18.5	24.9	14.8	30.0 (2)
	2/35	18.5	24.9	15.6	23.6	18.5	24.9	21.7	30.0 (2)	18.5	24.9	29.5	30.0 (2)
45	35	14.5 (1)	22.3 (1)	6.9	14.9	17.3 (1)	28.3 (1)	10.9	22.2	23.7	32	14.8	30.0 (2)
	2/35	23.7	32	15.6	23.6	23.7	32	21.7	30.0 (2)	23.7	32	29.5	30.0 (2)
2/35	35	14.5 (1)	22.3 (1)	6.9	14.9	17.3 (1)	28.3 (1)	10.9	22.2	24.3	40.0 (2)	14.8	29
	2/35	28.8	40.0 (2)	15.6	23.6	27.1 (1)	40.0 (2)	21.7	30.0 (2)	31.6	40.0 (2)	29.5	30.0 (2)
3/35	35	14.5 (1)	22.3 (1)	6.9	14.9	17.3 (1)	28.3 (1)	10.9	22.2	24.3 (1)	40.0 (2)	14.8	29
	2/35	28.8	40.0 (2)	15.6	23.6	27.1 (1)	40.0 (2)	21.7	30.0 (2)	31.6	40.0 (2)	29.5	30.0 (2)

NOTES:

1. The above capacities (except Bolts+Screws) are valid for TB80C and TB80V truss boots. See note (3) for steel limits.
2. The values with a superscript (1) refers to the design capacities that are limited by bearing- i.e crushing of the supported truss against the seat of the truss boot.
3. 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. The limiting steel value for TB80V equals 26 kN (downward loads) and 18.0 kN (uplift).
4. 2/35 refers to 35mm thick double laminated truss and 3/35 refers to 35mm thick triple laminated truss.
5. The values in the table apply directly for Category 1 joints. For category 2 joints reduce the design capacity by a factor of 0.94 and for Category 3 joints reduce by a factor of 0.88.
6. 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.
7. 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.
8. It is important to use the specified washer (63 x 5 square) against the timber face to achieve full capacity of M16 bolts.

DESIGN CAPACITIES FOR HEAVY DUTY TRUSS BOOTS

DOUBLE FIN TRUSS BOOTS - TBHD75/T (SUITABLE ONLY FOR DOUBLE 35MM SUPPORTED TRUSSES)

DESIGN CAPACITIES (KN) FOR VARYING LOAD CASES AND SUPPORTED TRUSS JOINT GROUPS													
GIRDER TRUSS THICKNESS (MM)	SUPPORTEDTRUSS THICKNESS (MM)	SUPPORTED TRUSS = JD5				SUPPORTED TRUSS = JD4				SUPPORTED TRUSS = JD3			
		1.35G (DEAD ONLY)	1.2G+ 1.5Q (DEAD +LIVE)	WIND UPLIFT		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			BOLTS ONLY	BOLTS+ SCREWS
JD4 GIRDER TRUSS BOTTOM CHORD OF MINIMUM 130MM DEPTH (E.G: MGP12, MGP15, HYCHORD, E-BEAM ETC)													
35	2/35	13.6	18.3	15.6	27.2 (3)	13.6	18.3	21.7	27.2 (3)	13.6	18.3	27.2 (3)	27.2 (3)
45	2/35	17.4	23.6	15.6	32.6	17.4	23.6	21.7	34.9 (3)	17.4	23.6	29.5	34.9 (3)
2/35	2/35	24.4	33	15.6	32.6	24.4	33	21.7	45.7	24.4	33	29.5	48.8 (3)
3/35	2/35	26.4	35.6	15.6	32.6	26.4	35.6	21.7	45.7	26.4	35.6	29.5	50.0 (2)
JD3 GIRDER TRUSS BOTTOM CHORD OF MINIMUM 130MM DEPTH (E.G: F17, E-BEAM+ ETC)													
35	2/35	18.5	24.9	15.6	32.6	18.5	24.9	21.7	36.9 (3)	18.5	24.9	29.5	36.9 (3)
45	2/35	23.7	32	15.6	32.6	23.7	32	21.7	45.7	23.7	32	29.5	47.4 (3)
2/35	2/35	28.8	42.7	15.6	32.6	28.8	42.7	21.7	45.7	28.8	42.7	29.5	50.0 (2)
3/35	2/35	28.8	42.7	15.6	32.6	28.8	42.7	21.7	45.7	28.8	42.7	29.5	50.0 (2)

NOTES:

1. 2/35 refers to 35mm thick double laminated truss and 3/35 refers to 35mm thick triple laminated truss.
2. The values (50 kN) with a superscript (2) refers to the capacities that are limited by steel strength of TBHD75/T in uplift. The limiting steel value for ‘’down-loading’ is 50 kN.
3. Uplift Capacities - The values with a superscript (3) are limited by 4/M16 bolt fixings in girder truss. U.N.O in Notes 2 and 3, fixing into supported truss governs for UPLIFT.
4. The values in the table apply directly for Category 1 joints. For category 2 joints reduce the design capacity by a factor of 0.94 and for Category 3 joints reduce by a factor of 0.88.
5. 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.
6. 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.
7. It is important to use the specified washer (63 x 5 square) against the timber face to achieve full capacity of M16 bolts. Required only against Girder truss when using TBHD75/T.

IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA HANGERS & TRUSS BOOTS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

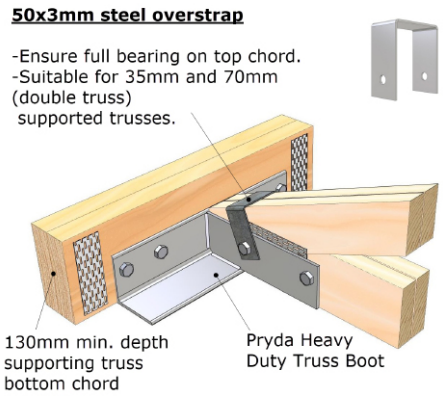
DESIGN CAPACITIES FOR HEAVY DUTY TRUSS BOOT UPLIFT REINFORCEMENT

Where necessary, TB80 and TBHD75 truss boots can be reinforced to provide additional uplift resistance as follows:

UPLIFT CAPACITY (KN) FOR TIMBER JOINT GROUP & STRENGTH GROUP						
SUPP. THICK.	J4 (S6)	J3 (S4)	J2 (S3)	JD5 (SD7)	JD4 (SD6)	JD3 (SD5)
35	11.5	18.3	25.2	13.9	18.3	25.2
70	20.6	31.4	35.0	21.4	26.7	35.0

NOTES:

1. The capacities for details with the overstrap, are limited by either 4@ M16 bolts bearing on carrying truss or based on Details TD-06/ TD-07 published by TRADAC (December 2000). For these tabulated capacities, the bolt through the over-strap must be installed through or above the heel joint nailplates.
2. The bottom chord of carrying (girder) truss shall be a minimum of 130 mm deep. A 120mm deep bottom chord for girder trusses may be used provided the truss boot is located at a panel point or when uplift capacity is not critical
3. Fix the over-angle to the TB80 or TBHD75 with the M16 H.S bolt and nut used for fixing the Truss Boot to the supported truss. Install 63x5 mm square washers where the bolt or nut bears directly onto timber.



BOLT SPECIFICATIONS

Hot dipped galvanised Kits of bolts, nuts and washers are available to suit all bolt fixed truss boots. Details are:

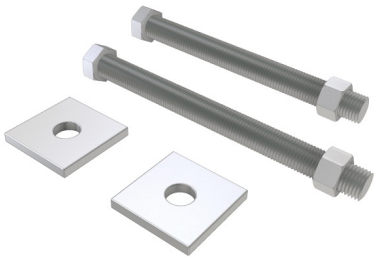
PRODUCT CODE	OBK312	OBK316	OBK816
To suit	TBJ35/45/70 TB35/12	TB35/16 TB45/16	TB80 TBHD75
Packed	80	80	60
Bolts (mm)	2/M12x65 into supported truss 2/M12x100 into supporting truss (up to 2/35mm thk)	2/M12x65 into supported truss 2/M16x110 into supporting truss (up to 2/35mm thk)	2/M16x110 into supported truss 4/M16x110 into supporting truss (up to 2/35mm thk)
Washers (square)	4/55x3	2/55x3 2/63x5	6/63x5

NOTES:

1. Adopt the following bolt specification for supported truss thickness that are not included above. All bolts shall be commercial hex-head, Class 4.6 to AS 1111-2000 or high strength Class 8.8 to AS1252-1996. Cup-head bolts are not acceptable

   Min. 130mm long bolts for up to 2/45 trusses

   Min. 150mm long bolts for up to 3/35 trusses



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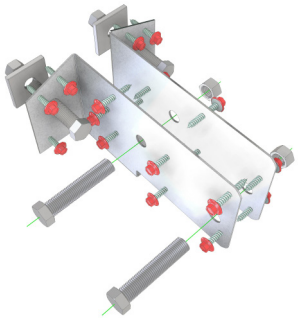
INSTALLATION

STEP 1

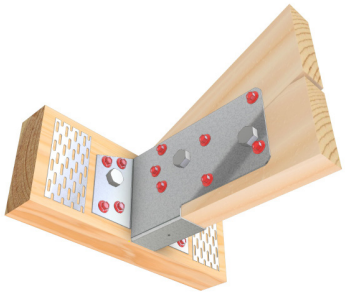


- Refer to the specification table on page 2 to gather the correct fasteners for the Truss Boot including the correct washer size when using bolts.

STEP 2

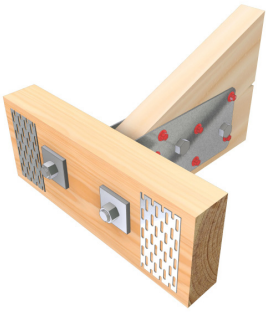
- Always fix to the supporting truss first, if the supporting girder truss is double or triple laminated, ensure the lamination connection method is adequate.
- Refer to our Hangers and Truss Boots design guide for details on appropriate girder lamination fixings.

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.

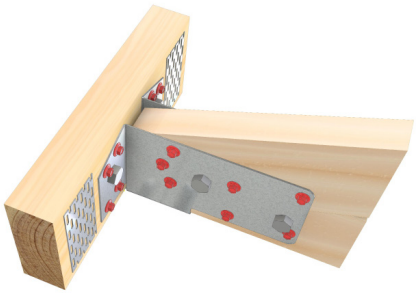
STEP 4



- 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 Code	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.

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 fasteners fully installed. i.e. Screws, Bolt assemblies etc.

PRODUCT DATA SHEET

HIP SUPPORT BRACKET (HSB)

FEATURES AND BENEFITS

EASY: Simple design.

FAST: Fixed with Pryda 12-35mm Screws.

STRONG: 3mm thick galvanised steel.

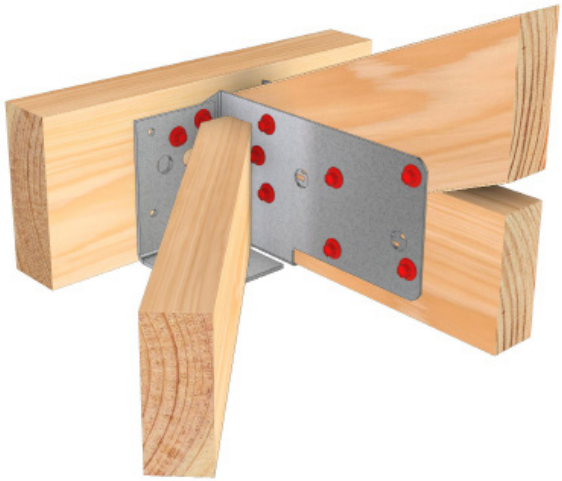
AS1684 & AS1720 COMPLIANT

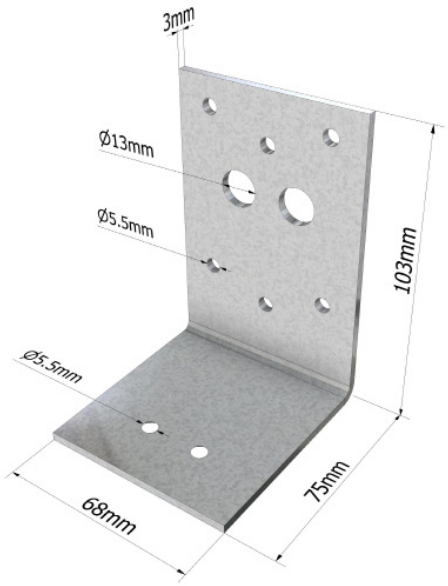
- More than the minimum Z275 galvanised steel
- Design values tested in accordance to the relevant standard

SPECIFICATIONS

PRODUCT CODE	HSB
STEEL	G300
THICKNESS	3mm
CORROSION RESISTANCE	Z275
FASTENERS REQUIRED	Pryda Red Painted hex head 12G x 35mm Screws and/or M12 bolts. Refer to the Truss Boots data sheet and Pryda Hangers and Truss Boots Design Guide for fastener types and quantities.
QUANTITY	50

Strong support for hip trusses/rafters at girder truss junctions.





DESIGN CAPACITIES

DOWNWARD LOADS

JOINT GROUP OF SUPPORTING TRUSS	HSB CAPACITY (KN) FIXING: 4/PRYDA TCS12-35 SCREWS INTO SUPPORTING TRUSS		HSB+TB35 CAPACITY (KN) FIXING: 8/PRYDA TCS12-35 SCREWS INTO SUPPORTING TRUSS	
	1.35G	1.2G + 1.5QR	1.35G	1.2G + 1.5QR
JD4	4.8	6.5	9.3	12.6
JD3	6.8	9.2	13.2	17.8

NOTES:

1. The HSB+TB35 capacity in the above table is the same as the TB35 capacity by itself as it is based on the 8/Pryda TCS12-35 screws into the supporting truss. These values therefore relate to the maximum combined load that can be resisted (i.e. load from hip truss + supported girder)
2. Screws with longer lengths are required when HSBs are fixed into multiple laminated trusses. For double laminates, use 65mm long screws into supporting truss.

UPLIFT LOADS

MINIMUM JOINT GROUP	UPLIFT CAPACITY (KN)	
	HSB	HSB + TB35
JD5	1.5	13.2
JD4	2.0	18.7
JD3	2.5	20.0

NOTES:

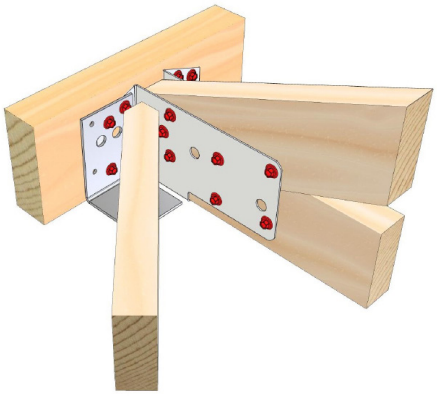
1. The Uplift Capacity of HSB is based on 1/No.12 x 35mm Type 17 screw in withdrawal. This value relates to the maximum uplift reaction of the hip truss that can be resisted. The uplift capacity may be enhanced using alternative tie-down fixings like cyclone straps etc.
2. The HSB+TB35 capacity relates to the maximum combined uplift resisted, provided the hip reaction does not exceed the HSB capacity on its own.

IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA HANGERS & TRUSS BOOTS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

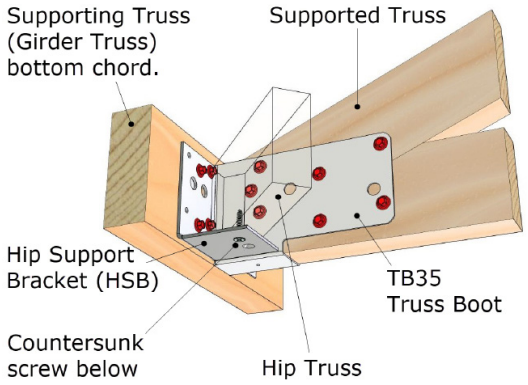
INSTALLATION

STEP 1



- Align the holes in the Hip Support Bracket with those in the Truss Boot and fix them both to the supporting truss.
- Refer to the Truss Boots data sheet and Pryda Hangers and Truss Boots Design Guide for fastener types and quantities.

STEP 2



- Sit the hip truss on the bracket and install a countersunk screw up through the bottom of the bracket to secure the truss in place.
- Either screw hole may be used, to suit the alignment of the truss.

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