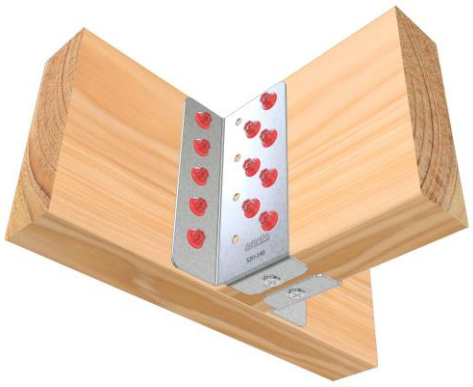
PRODUCT DATA SHEET

PRYDA SJH - SPLIT JOIST HANGER

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



FEATURES AND BENEFITS

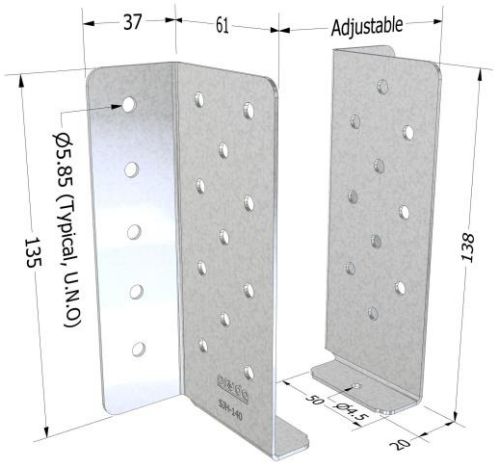
SIMPLE: Can accommodate multiple timber sizes negating the need to carry multiple different joist hangers.

FAST: Can be fastened with Pryda Timber Connector Screws.

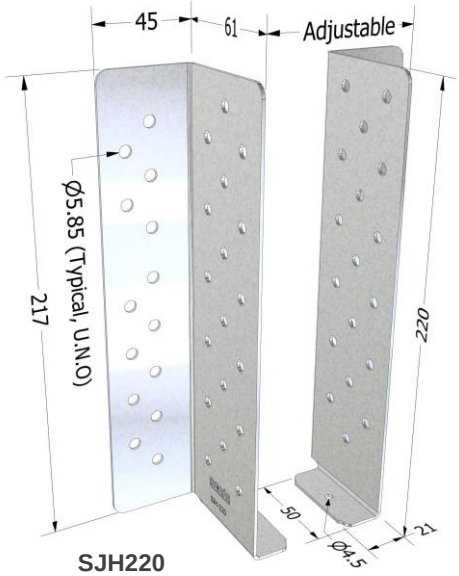
DURABLE: 1.95mm thick galvanised steel. Engineered to resist gravity loads and wind uplift loads.

SPECIFICATIONS

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



SJH140



SJH220

*All dimensions shown are in “mm.”

DURABILITY

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

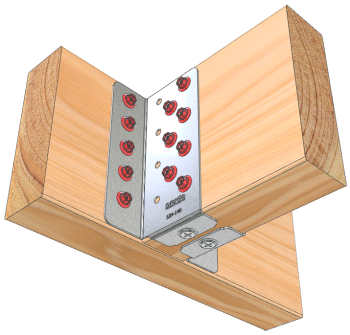
STORAGE AND HANDLING

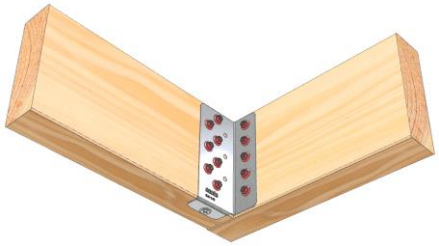
Prior to use, the Pryda products shall be stored in a weatherproof environment and protected from moisture. Care must be taken to avoid any damage to the surface of the products’ protective galvanised coating and profile that may impact performance.

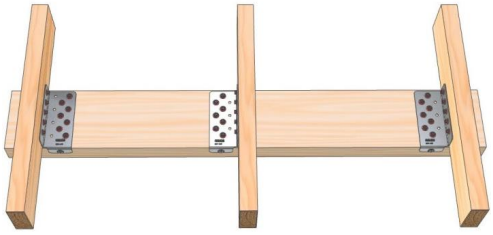
APPLICATION AND SCOPE OF USE

Pryda Split Joist Hangers are certified for use with solid timber when used and installed in accordance with the product datasheet showing connection details. Pryda fasteners approved for the installation form an integral part of the connection and therefore should be used with all Pryda products installation unless otherwise approved by a certified Structural Engineer. Only use the product for its intended applications and the selected product material type within the specified environmental condition.

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





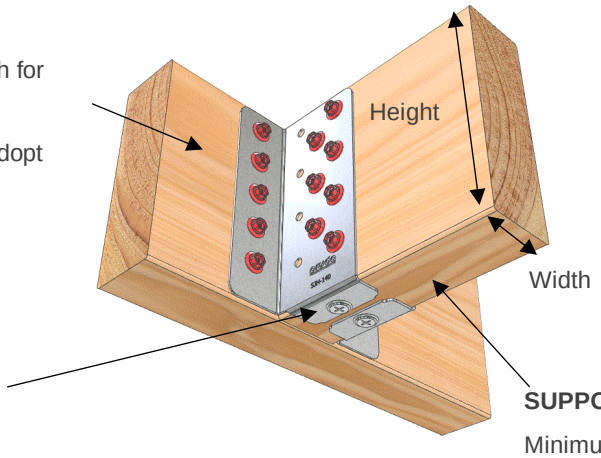


SINGLE SUPPORTING AND SUPPORTED BEAM CONNECTION

SUPPORTING: BEAM A

Minimum 35mm overall width for single beam.

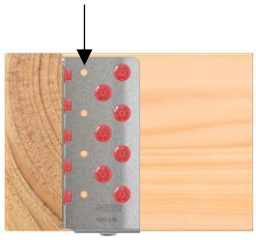
For multi-laminate beams, adopt 65mm length screws.



6G x 25mm Wafer or Pan head hold-down screw to assist with hanger rotation.

Typical

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



SUPPORTED: BEAM B

Minimum 45mm overall width for single beam.

DESIGN CAPACITIES PER PAIR OF SPLIT JOIST HANGERS PERPENDICULAR JOIST SUPPORT

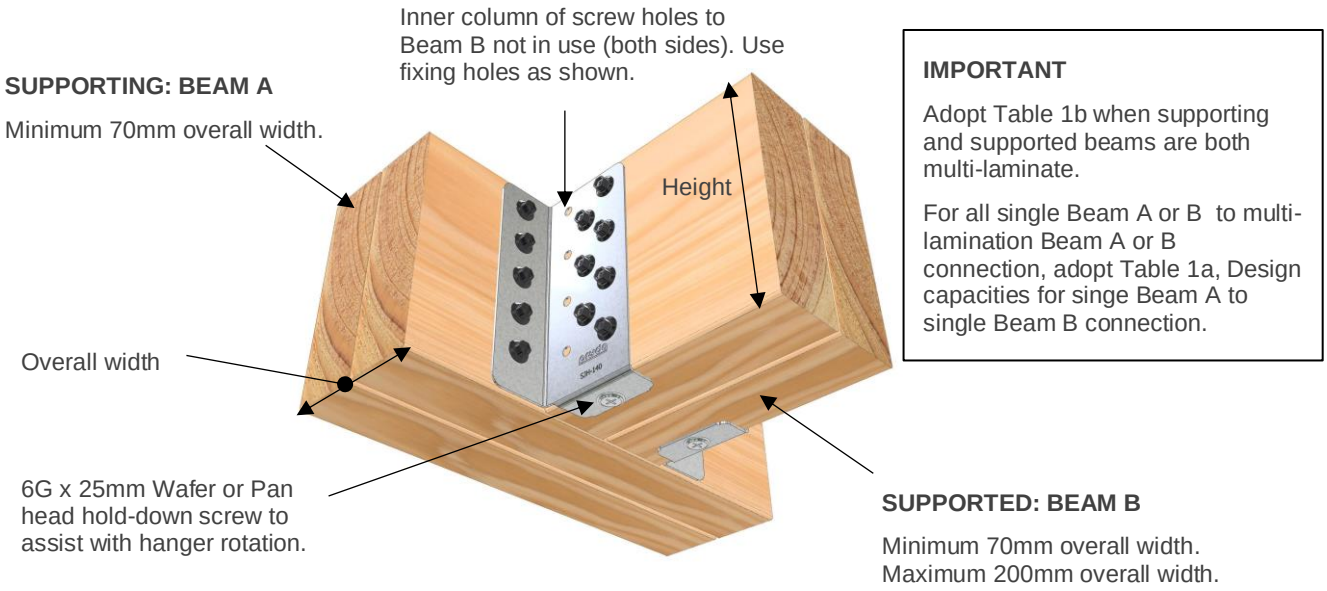
LOAD CASE	DESIGN CAPACITIES (ΦN_J) IN kN PER PAIR OF SJH FOR FASTENERS AND JOINT GROUP					
	SJH140			SJH220		
	PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS			PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS		
	10 screws per pair of hangers to Beam A 14 screws per pair of hangers to Beam B			28 screws per pair of hangers to Beam A 24 screws per pair of hangers to Beam B		
	JD5	JD4	JD3	JD5	JD4	JD3
1.35G	8.2	11.6	16.4	19.7	27.9	39.4
1.2G + 1.5Qr	11.1	15.7	22.1	26.6	37.7	50
1.2G + 1.5Qf	9.9	14	19.8	23.9	33.8	47.7
1.2G + Wd or Wind uplift	16.4	23.2	32.8	39.5	50	50

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

Notes:

1. Beam A (Supporting Beam) and Beam B (Supported Beam) must be a minimum 140mm height when using SJH140 and 240mm when using SJH220 to achieve above screw capacities. Unless the top of the supported beam is provided with additional lateral restraints, the bracket must cover at least 60% of the height of the supported beam.
2. Single beams minimum width is 45mm and maximum width 63mm when using 35mm length screws.
3. SJH140 and SJH220 must be installed in PAIRS.
4. SJH supports variable widths. Refer to next section for multi-laminated beam design considerations and limitations.
5. Design capacities given are for both Beam A and B having the same joint group. Example, Both Beam A and B are JD5, JD4, or JD3. Alternatively, adopt the lesser joint group of the supporting beam A or supported beam B if they do not share the same joint group. Example, if beam A is JD5 and beam B is JD4, adopt the lesser capacity JD5.
6. The values in the table apply directly for Category 1 joints. Refer to 'General Notes' found in the Pryda Hangers and Truss Boots Guide for advice on how the values should be reduced for Category 2 and Category 3 joints.
7. **Supported Beam prone to Splitting** – SJH brackets are not recommended to resist uplift loads for supported members using timbers that are prone to splitting (like hardwoods-JD3 joint group) unless additional precautions are taken. These can be in the form of pre-bored holes or provision of anti-split nailplates at ends of the supported beam.
8. **Multiple Laminated Supporting/ Supported beams:** Fasteners with longer lengths are required when SJH brackets are fixed into a multiple laminated beam. For double laminates use 65mm long screws. Adequate lamination fixing is required for multi-laminated beams. The lamination fixing procedure is the responsibility of the installer. The beam lamination procedure should be completed in accordance with either AS1684, Engineered Wood suppliers' technical guidelines or a certified Engineering detail.
9. Refer to section "*MULTI-LAMINATE SUPPORTING AND SUPPORTED BEAM CONNECTION*" when both Beam A and Beam B are multi-laminate.
10. **Gap between Supported and Supporting Beams.** A maximum gap of 3mm is permitted without impeding the design capacities. Seek advice from a Pryda engineer for treatment of larger gaps.
11. Provide 6G x 25mm Wafer head or Pan head hold-down screw to underside of each bracket.
12. The given capacities are for vertical loads only.

MULTI-LAMINATE SUPPORTING AND SUPPORTED BEAM CONNECTION



IMPORTANT

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

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

DESIGN CAPACITIES PER PAIR OF SPLIT JOIST HANGERS PERPENDICULAR JOIST SUPPORT

LOAD CASE	DESIGN CAPACITIES (ΦN_J) IN kN PER PAIR OF SJH FOR FASTENERS AND JOINT GROUP					
	SJH140			SJH220		
	PRYDA 12G X 65MM TIMBER CONNECTOR SCREWS			PRYDA 12G X 65MM TIMBER CONNECTOR SCREWS		
	10 screws per pair of hangers to Beam A 14 screws per pair of hangers to Beam B			28 screws per pair of hangers to Beam A 24 screws per pair of hangers to Beam B		
	JD5	JD4	JD3	JD5	JD4	JD3
1.35G	9.7	13.8	19.5	23.4	33.1	46.8
1.2G + 1.5Qr	13.2	18.6	26.3	31.7	44.8	50
1.2G + 1.5Qf	11.8	16.7	23.6	28.4	40.1	50
1.2G + Wd or Wind uplift	19.5	27.6	39	46.9	50	50

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

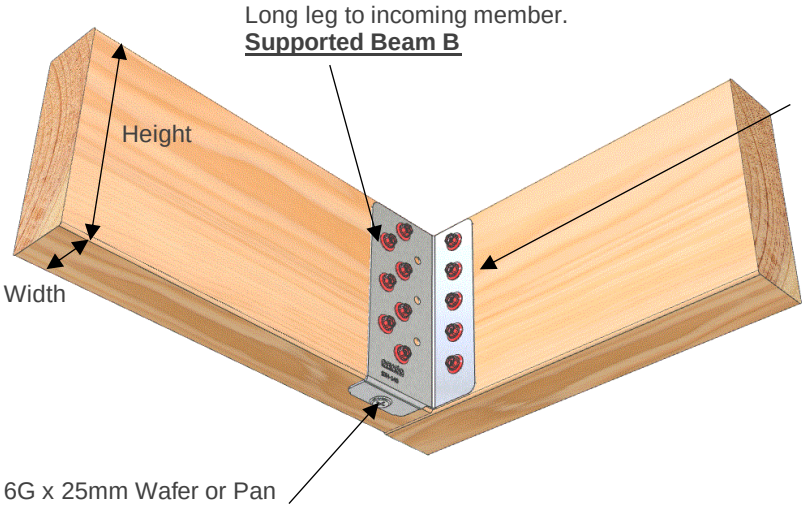
Notes:

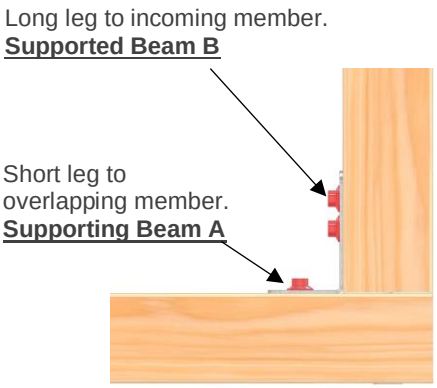
1. Beam A (Supporting Beam) and Beam B (Supported Beam) must be a minimum 140mm height when using SJH140 and 240mm when using SJH220 to achieve above screw capacities. Unless the top of the supported beam is provided with additional lateral restraints, the bracket must cover at least 60% of the height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

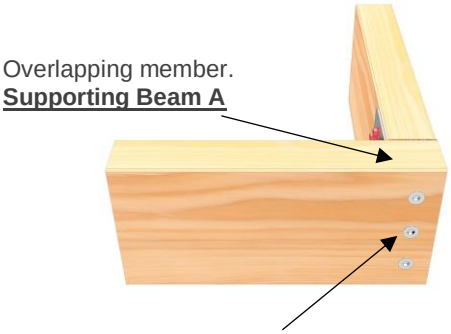
   Double beams using : 35mm or 45mm or 63mm width timbers only.
   Triple beams using : 35mm or 45mm or 63mm with overall width not exceeding 200mm.
4. Design capacities given are for both Beam A and B having the same joint group. Example, Both Beam A and B are JD5, JD4, or JD3. Alternatively, adopt the lesser joint group of the supporting Beam A or supported Beam B if they do not share the same joint group. Example, if beam A is JD5 and beam B is JD4, adopt the lesser capacity JD5.
5. The values in the table apply directly for Category 1 joints. Refer to 'General Notes' found in the Pryda Hangers and Truss Boots Guide for advice on how the values should be reduced for Category 2 and Category 3 joints.
6. **Supported Beam prone to Splitting** – SJH brackets are not recommended to resist uplift loads for supported members using timbers that are prone to splitting (like hardwoods-JD3 joint group) unless additional precautions are taken. These can be in the form of pre-bored holes or provision of anti-split nailplates at ends of the supported beam.
7. **Multiple Laminated Supporting/ Supported beams:** Fasteners with longer lengths are required when SJH brackets are fixed into a multiple laminated beam. For double laminates use 65mm long screws. Adequate lamination fixing is required for multi-laminated beams. The lamination fixing procedure is the responsibility of the installer. The beam lamination procedure should be completed in accordance with either AS1684, Engineered Wood suppliers' technical guidelines or a certified Engineering detail.
8. **Gap between Supported and Supporting Beams.** A maximum gap of 3mm is permitted without impeding the design capacities. Seek advice from a Pryda engineer for treatment of larger gaps.
9. Provide 6G x 25mm Wafer head or Pan head hold-down screw to underside of each bracket.
10. The given capacities are for vertical loads only.

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

SJH140 INSTALLATION AS CORNER CLEAT







SJH140

Minimum timber height and width:

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

Fixings for each SJH140 :

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

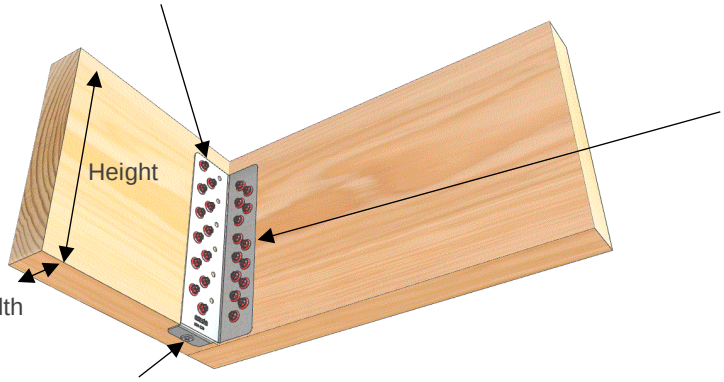
*65mm long screws are required for multi-laminate beams using Pryda TCS12-65.

Using 2 x SJH140, vertically stacked.

SJH220 **NOT recommended to be installed vertically stacked.

SJH220 INSTALLATION AS CORNER CLEAT

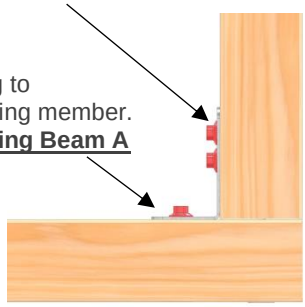
Long leg to incoming member.
Supported Beam B



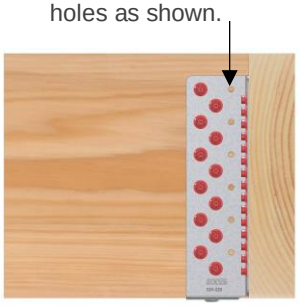
6G x 25mm Wafer or Pan head hold-down screw to hold-down tab.

Long leg to incoming member.
Supported Beam B

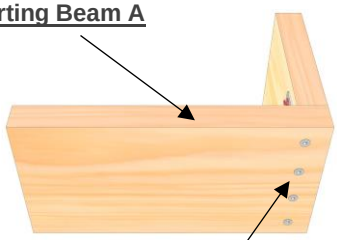
Short leg to overlapping member.
Supporting Beam A



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



Overlapping member.
Supporting Beam A



Additional end restraints required to resist rotation. Seek advice from project designer.

SJH220

Minimum timber height and width:

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

Fixings for each SJH220 :

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

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

SEE NEXT PAGE FOR DESIGN CAPACITIES

DESIGN CAPACITIES FOR SINGLE SPLIT JOIST HANGER PERPENDICULAR CORNER SUPPORT

LOAD CASE	DESIGN CAPACITIES (ΦN_J) IN kN FOR EACH SINGLE SJH FOR FASTENERS AND JOINT GROUP					
	SJH140			SJH220		
	PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS			PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS		
	5 screws to each single hanger to Beam A 7 screws to each single hanger to Beam B			14 screws to each single hanger to Beam A 12 screws to each single hanger to Beam B		
	JD5	JD4	JD3	JD5	JD4	JD3
1.35G	2.8	3.9	5.5	6.7	9.5	13.4
1.2G + 1.5Qr	3.7	5.3	7.5	9	12.8	17
1.2G + 1.5Qf	3.3	4.7	6.7	8.1	11.5	16.2
1.2G + Wd or Wind uplift	5.6	7.9	11.1	13.4	17	17

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

NOTES:

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

2. **Multiple Laminated Supporting/ Supported beams:** Fasteners with longer lengths are required when SJH brackets are fixed into multiple laminated beams. For double laminates use 65mm long screws. Adequate lamination fixing is required for multi-laminated beams. The lamination fixing procedure is the responsibility of the installer. The beam lamination procedure should be completed in accordance with either AS1684, Engineered Wood suppliers' technical guidelines or a certified Engineering detail.

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

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

Fixings for a 2 x SJH140 vertically stacked:

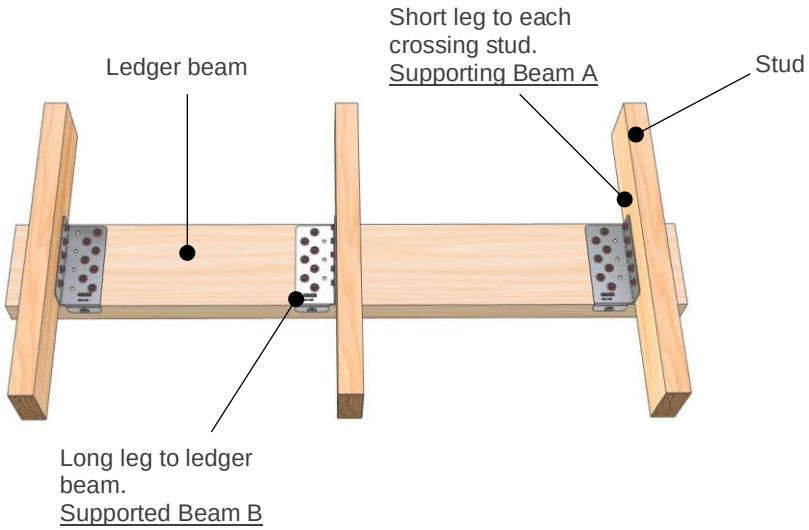
- 14 x Pryda TCS12-35 screws on long leg – incoming member, supported Beam B.
- 10 x Pryda TCS12-35 screws on short leg – overlapping member, supporting Beam A.

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

5. Provide 6G x 25mm Wafer head or Pan head hold-down screw to hold-down tab.

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

LEDGER PLATE / WALING PLATE SUPPORT AND DESIGN CAPACITIES



DESIGN CAPACITIES FOR SINGLE SPLIT JOIST HANGER LEDGER BEAM SUPPORT

LOAD CASE	DESIGN CAPACITIES (ΦN_J) IN kN FOR EACH SINGLE SJH FOR FASTENERS AND JOINT GROUP					
	SJH140			SJH220		
	PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS			PRYDA 12G X 35MM TIMBER CONNECTOR SCREWS		
	5 screws to each single hanger to Beam A 7 screws to each single hanger to Beam B			14 screws to each single hanger to Beam A 12 screws to each single hanger to Beam B		
	JD5	JD4	JD3	JD5	JD4	JD3
1.35G	2.8	3.9	5.5	6.7	9.5	13.4
1.2G + 1.5Qr	3.7	5.3	7.5	9	12.8	17
1.2G + 1.5Qf	3.3	4.7	6.7	8.1	11.5	16.2
1.2G + Wd or Wind uplift	5.6	7.9	11.1	13.4	17	17

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

NOTES:

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

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

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

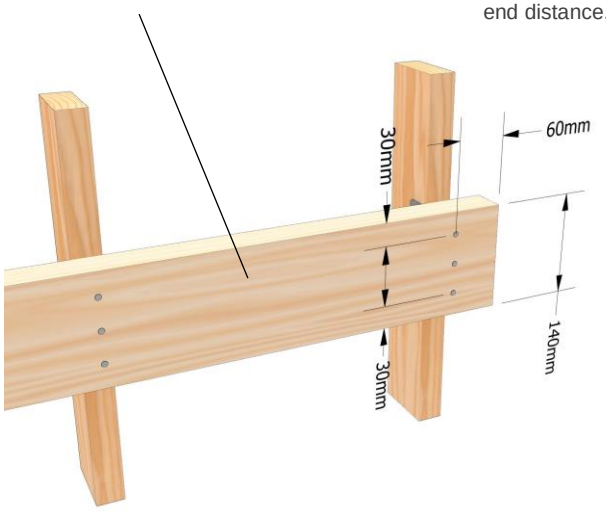
3. Design capacities given are for both supporting stud A and supported ledger, Beam B, having the same joint group. Example, both stud A and Beam B are JD5, JD4, or JD3. Alternatively, adopt the lesser joint group of the supporting stud or supported Beam B if they do not share the same joint group.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

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

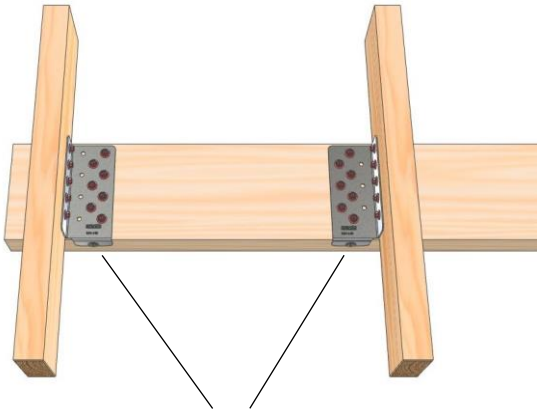
5. Provide 6G x 25mm Wafer head or Pan head hold-down screw to hold-down tab.

LEDGER PLATE / WALING PLATE INSTALLATION

Ledger : 140mm or 240mm



Nail minimum edge and end distance.



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

For 140mm ledger :

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

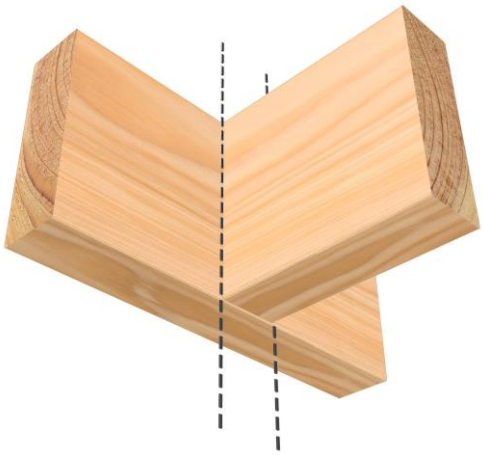
For 240mm ledger:

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

INSTALLATION OF SPLIT JOIST HANGER PERPENDICULAR JOIST SUPPORT

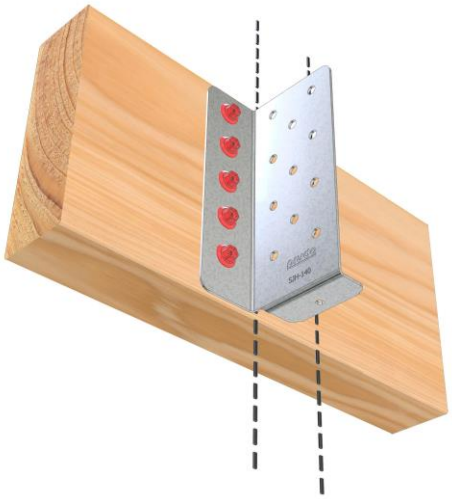
STEP 1

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



STEP 2

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

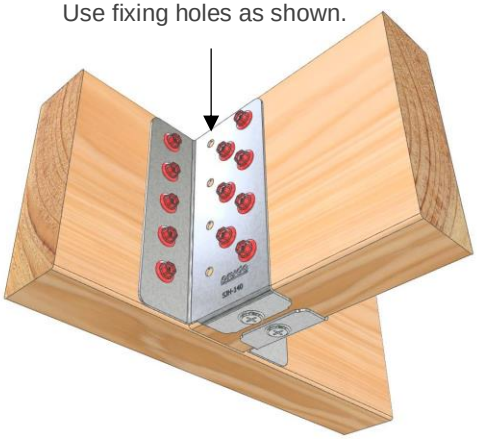


STEP 3

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

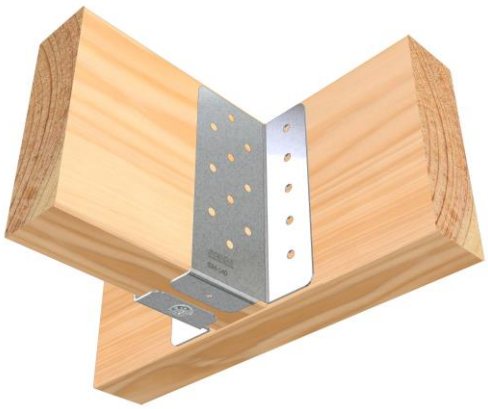
Refer to Table 1a notes for beam size constraints.

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



STEP 4

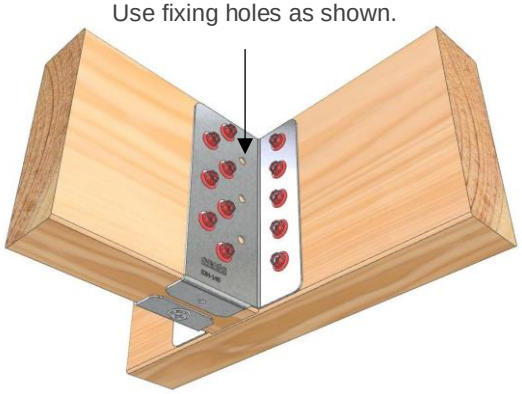
Position the second Split Joist Hanger ensuring it is up tight against supporting beam and supported joist.

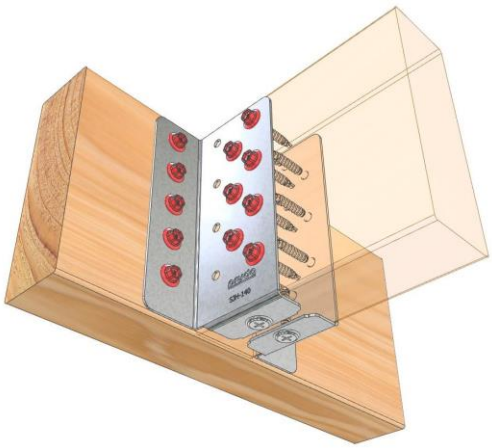


STEP 5

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

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





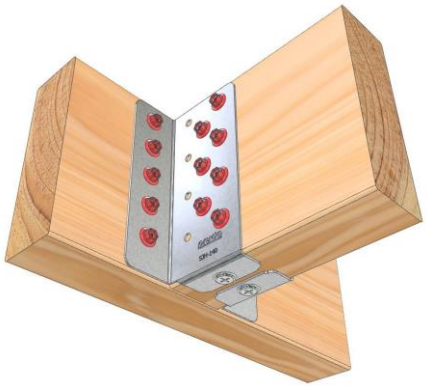
BEAM COMBINATION TYPES, SCREW FIXING PATTERN AND TABLE SELECTION GUIDE

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

Adopt Table 1a.

Single Supporting Beam A , single Supported Beam B.

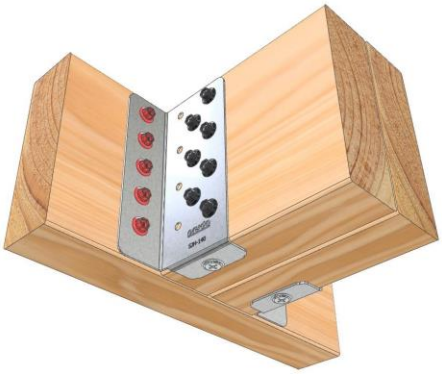
Adopt Table 1a.



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

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

Adopt Table 1a.



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

Adopt Table 1b.