PRODUCT DATA SHEET

FASTFIX™ INTERNAL WALL SCREW (IWS)

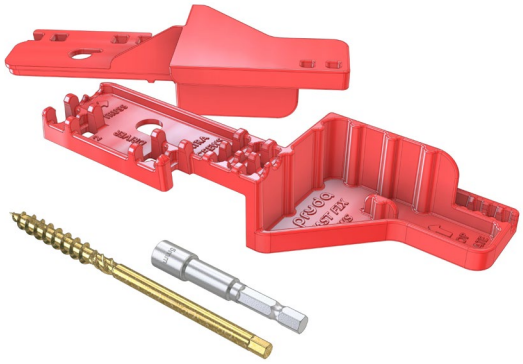
FastFix™ Internal Wall Screw (IWS) laterally stabilises the tops of non-bracing, non-load bearing internal walls by fixing them to the bottom chord of trusses, and trimmers.

FEATURES AND BENEFITS

FAST: Screw self-drilling technology, large thread pitch for faster installation.

EASY: Single component and made easy precision guide for consistent quality installation.

RELIABLE: The IWS has a knurled shank which ensures the screw is firm laterally against the top plate. The head-less plain shank of the screw in the top plate allows for vertical movement in the truss without transferring load to the wall.



SPECIFICATIONS

PRODUCT CODE	IWS
STEEL	ASI -1022 Steel
FASTENER SIZE	M8 x 130 T17
CORROSION RESISTANCE	Yellow Zinc Chromate as per AS/NZS 1789 - 2023

IWS Screw

IWSGN Guide

SCREW AND GUIDE AVAILABILITY

PRODUCT CODE	SIZE	PACK QUANTITY
IWS	M8 X 130mm	400
IWSGN	To be used with IWS	20 Guides, 40 Nut Setters

Note: For compliant and precise installation of the IWS, install with IWSGN.

APPLICATION AND SCOPE OF USE

Internal non-load bearing walls are installed with a clear gap between the top plate and the underside of the roof trusses. Australian standards require a shear connection across this gap to provide stability and robustness for the walls while still allowing the trusses to move up and down under load.

AS1684 provides a detail for these connections that calls up a slotted bracket such as the Pryda Partition Hitch. It is important to note that this does not mean a bracket is the only acceptable connection, as the preface to AS1684 states “this Standard does not preclude the use of framing, fastening or bracing methods or materials other than those specified”.

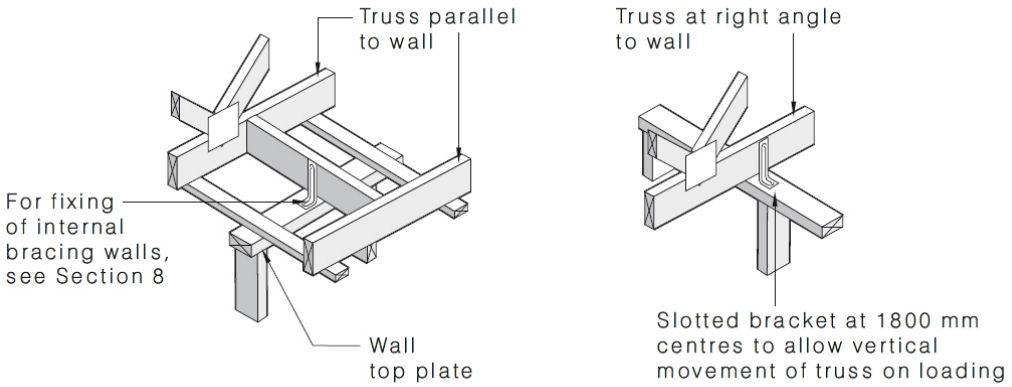


FIGURE 6.11 FIXING OF TRUSSES TO A NON-LOADBEARING INTERNAL WALL

The preface goes on to say, “alternatives may be used, provided they satisfy the requirements of the Building Code of Australia.” In this case that means engaging a structural engineer to design the connection to comply with the timber design standard, AS1720. This design will include requirements for how the connection is installed such as the distance to the edge of the timber and how far the fastener(s) need to penetrate each timber member. If these requirements are not met, the design becomes invalid, and the builder takes on the risk of how the connection performs.

Once the design requirements of AS1720 are satisfied, we also need to look at the performance requirements in AS1684. As noted on the detail for the slotted bracket, this connection must “allow vertical movement of truss on loading.” Loading in this context includes gravity loads (from roof tiles etc.) that push the truss down, and wind loads, which in the case of a sheet roof may in fact cause the truss to deflect upwards.

It is therefore critical that the connection allows movement in both directions, otherwise the non-load bearing wall suddenly becomes load bearing, and the support conditions of the truss are altered, leading to problems such as noise, cracking, and potentially structural damage or failure. This can occur when nails in partition hitches are over-driven, or with headed fasteners such as batten screws.

As the table on the following page shows, Pryda’s FastFix™ Internal Wall Screw (IWS) meets the compliance requirements of AS1684 and AS1720, forming a deemed-to-comply solution under the NCC and delivering reliable performance with its fast, safe, consistent installation process. The IWS provides equivalent or better structural performance than a partition hitch while being less time consuming and easier to install correctly.

Other screw-based solutions such as a typical batten screw are unlikely to be compliant (unless an engineer’s certification is provided) and introduce the risk of re-work, defects and callbacks. They require a multi-stage process to install, including pre-drilling with a larger drill bit then manually driving the screw to just the right depth to achieve enough embedment into the truss and a large enough clearance between the head of the screw and the underside of the top plate. This process is difficult to do consistently and makes it harder for certifiers to be confident that every connection is correct.

PRYDA FASTFIX INTERNAL WALL SCREW

- 8mm shank
- No pre-drilling; CEE thread cleans our the hole to allow free movement
- Free movement under sheet roof uplift
- Engineered design certified by Pryda
- Deemed-to-comply solution according to the NCC
- Every screw is fully driven home by default - consistent embedment into the truss chord

TYPICAL BATTEN SCREW

- 6.5mm shank
- Large pre-drilled hole required
- Screw head may bear on the timber under uplift
- Needs to be signed off by an engineer
- Performance solution report may be required
  May not be covered by the certifier's insurance
- Manual process to get the correct screw embedment, and the actual embedment will vary from screw to screw and installer to installer

To avoid project delays and added costs, builders should pay close attention to the products being used for internal non-load bearing wall connections and how they are being installed. Similarly, building certifiers should ensure that any product non explicitly detailed in AS1684 is supported by the appropriate documentation and requesting that all non-compliant fasteners are removed and replaced.

If in doubt, contact a member of the Pryda Engineering Team for support and clarification.

The Pryda Internal Wall Screw (IWS) is used to provide lateral stability for non-load bearing internal walls without transferring vertical loads. The IWS has a knurled shank which ensures the screw is firm laterally against the top plate. The head-less plain shank of the screw in the top plate allows for vertical movement in the truss without transferring load to the wall.
The product is suitable for internal applications only. It is typically installed directly into:

- Bottom chord of a roof truss.
- Bottom chords of floor trusses, and I-joists.
- Underside of solid joists.
- Trimmer spanning between adjacent trusses for both roof and floor systems.
- Top-down connections onto top plate in situations when installation from below cannot be carried out.

STORAGE AND HANDLING

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

INSTALLATION OPTIONS

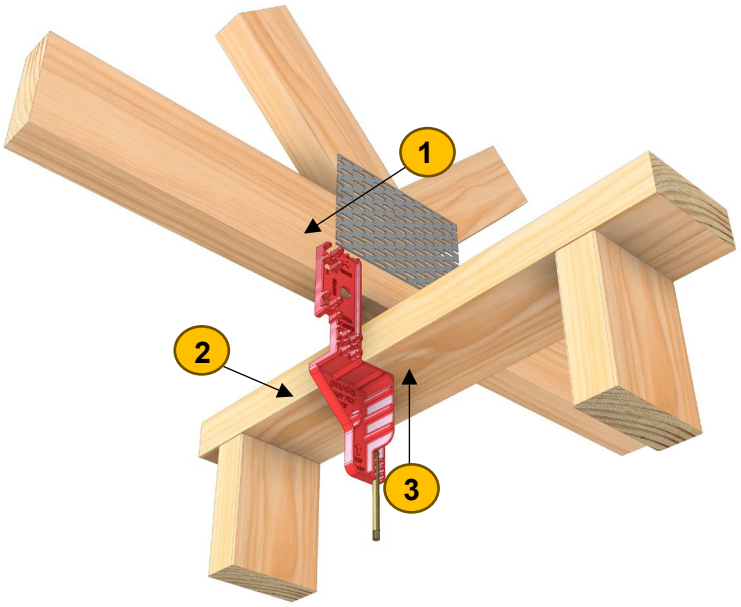
Truss perpendicular to non-braced, non-load bearing internal wall, fix from underside.

For a compliant and reliable installation of the IWS, the IWS guide (IWSGN) should be always used.

It is important all connecting members are square, and internal wall is vertically plumb.

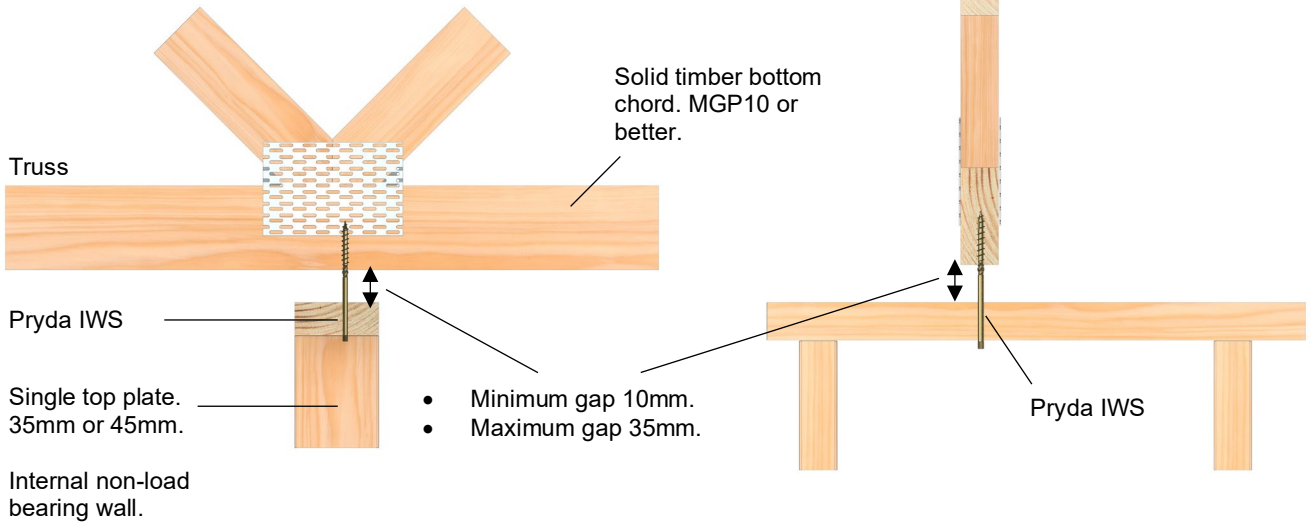
Three point contact of the connection using the guide will deliver a precise installation of the screw. The guide shall be firmly held against the interfaces.

1. Truss face.
2. Edge of top plate.
3. Underside of top plate.



Tip:

Trusses with LVL bottom chord may not be suited for the IWS fixing into edge grain veneers. Seek further advise from the LVL supplier for suitability. Alternatively, use Pryda Wall Hitch with LVL connections.



Clearance between the underside of the truss and the top of the internal wall top plate to allow for the dissipation of the truss pre-camber, and vertical displacement under wind loads without any restriction.

Nogging or trimmer perpendicular to non-braced, non-load bearing internal wall and between 2 trusses, fix from underside.

For a compliant and reliable installation of the IWS, the IWS guide (IWSGN) should be always used.

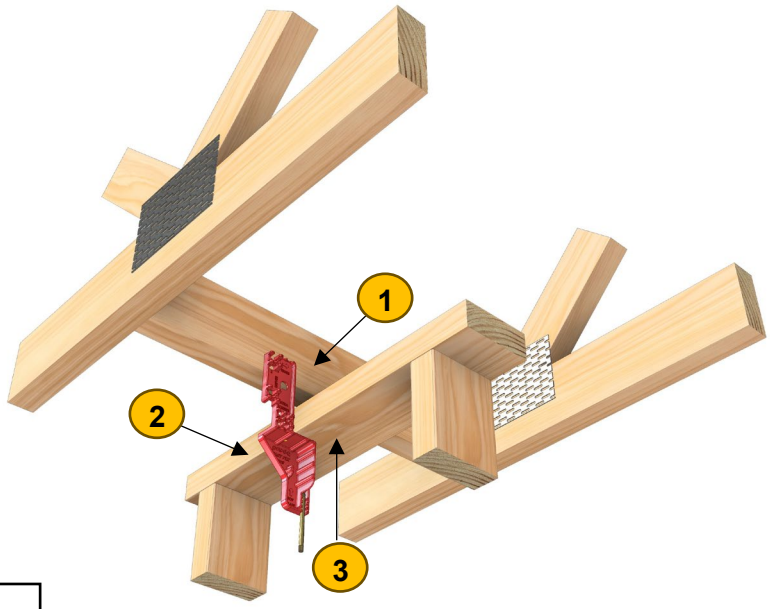
It is important all connecting members are square, and internal wall is vertically plumb.

Three point contact of the connection using the guide will deliver a precise installation of the screw. The guide shall be firmly held against the interfaces.

1) Trimmer / Noggin face.

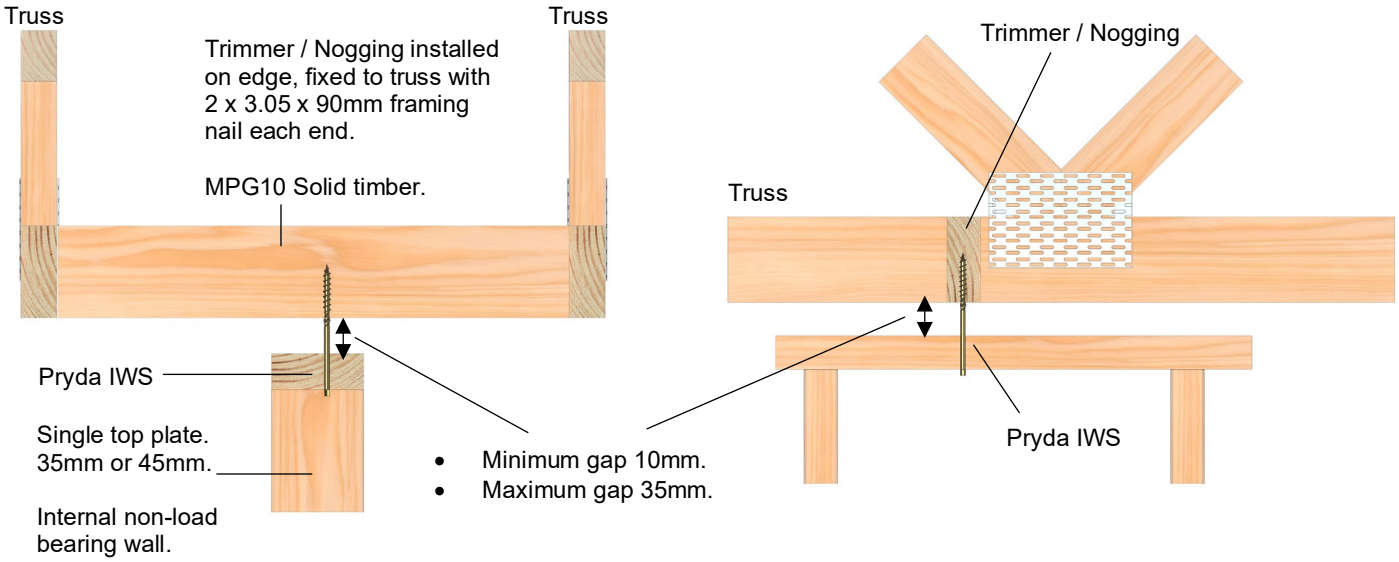
2) Edge of top plate.

3) Underside of top plate.



Tip:

Trimmers / noggins shall be solid structural pine. Avoid using LVLs that is prone to split when fixed through edge grain veneers.



Clearance between the underside of the truss and the top of the internal wall top plate to allow for the dissipation of the truss pre-camber, and vertical displacement under wind loads without any restriction.

Nogging or trimmer perpendicular to non-load bearing internal wall fixed to AS1684 Table 8.22, detail (e) and between 2 trusses, fix from underside. *Section 1 of 2.*

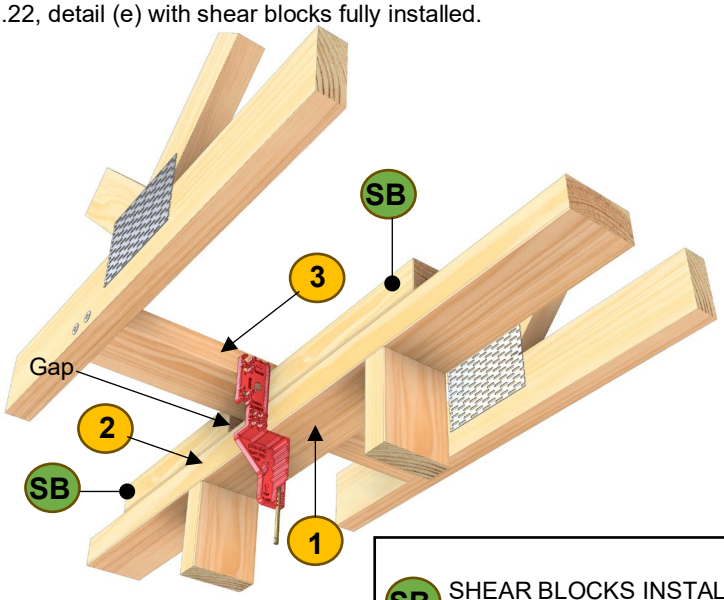
Important: IWS is only providing lateral stability for the internal walls without transferring vertical loads or bracing loads and must be used in conjunction with AS1684 Table 8.22, detail (e) with shear blocks fully installed.

For a compliant and reliable installation of the IWS, the IWS guide (IWSGN) should be always used.

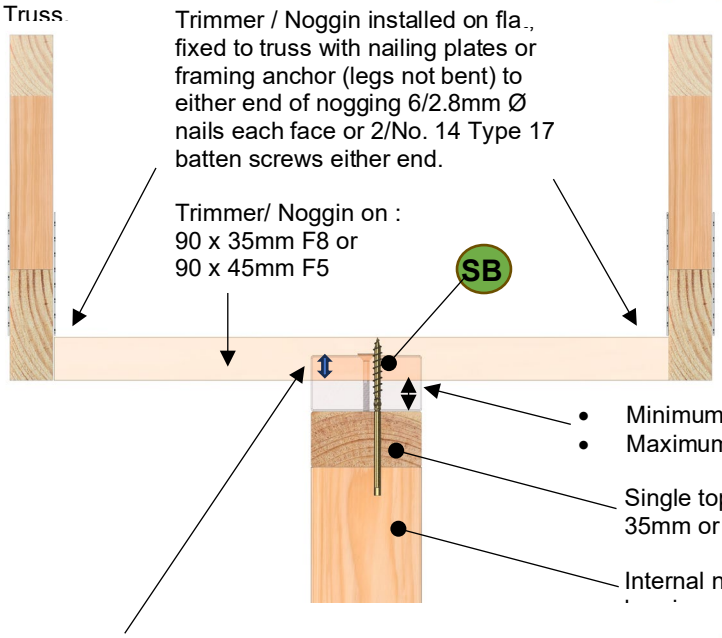
It is important all connecting members are square, and internal wall is vertically plumb.

Three point contact of the connection using the guide will deliver a precise installation of the screw. The guide shall be firmly held against the interfaces.

1. Underside of top plate.
2. Edge of top plate.
3. Edge of trimmer/ noggin.



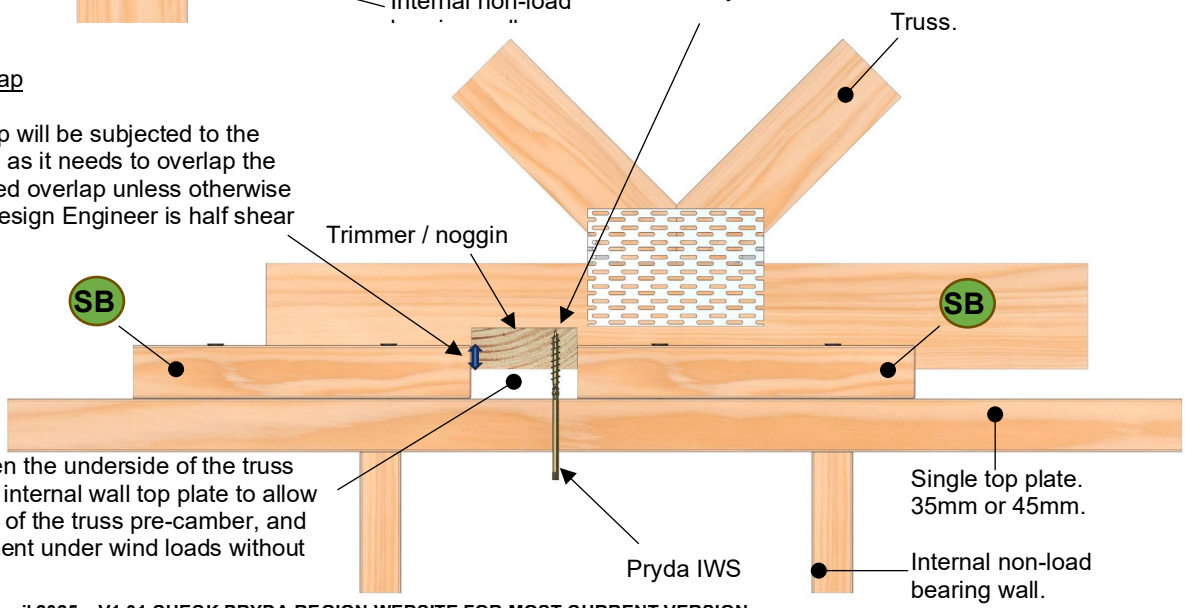
SB SHEAR BLOCKS INSTALLED TO AS1684 TABLE 8.22, (e).



IMPORTANT:
If installation into trimmer / noggin will result in the screw protruding into the roof space, drive the screw to the depth of the trimmer / noggin, and leave the headless end of the screw sitting slightly below the underside of the top plate. Alternatively, nail fix a 150mm length block directly above screw protrusion so the IWS can be fully driven home. This is shown on the following page.

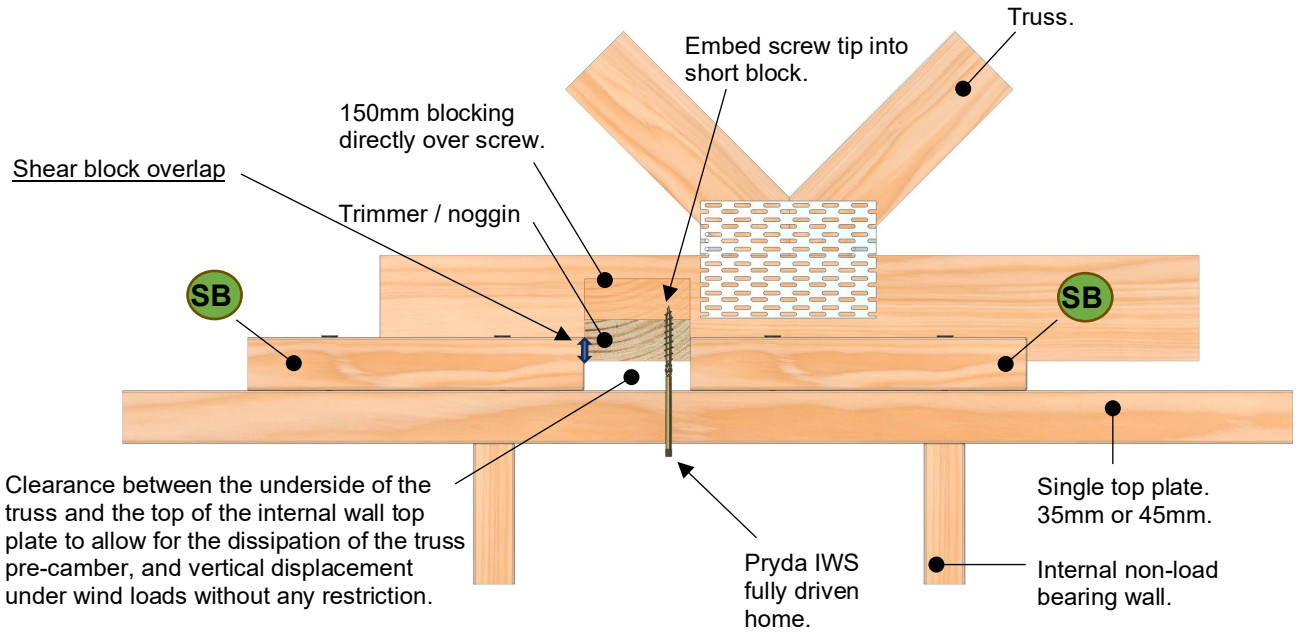
Shear block overlap

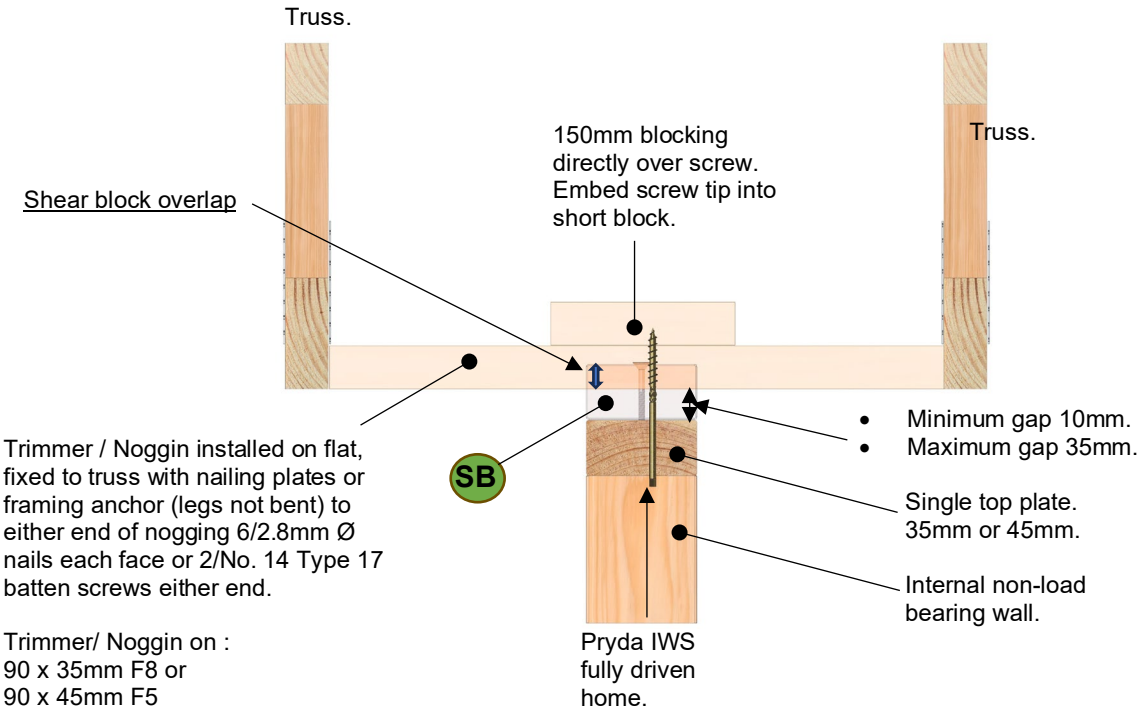
The maximum gap will be subjected to the shear block depth as it needs to overlap the trimmer. Suggested overlap unless otherwise specified by the design Engineer is half shear block depth.



Nogging or trimmer perpendicular to non-load bearing internal wall fixed to AS1684 Table 8.22, detail (e) and between 2 trusses, fix from underside. *Section 2 of 2.*

Important: IWS is only providing lateral stability for the internal walls without transferring vertical loads or bracing loads and must be used in conjunction with AS1684 Table 8.22, detail (e) with shear blocks fully installed.





Nogging or trimmer perpendicular to non-load bearing internal wall fixed to AS1684 Table 8.22, detail (e) and between 2 trusses, fix from top down. *Section 1 of 2.*

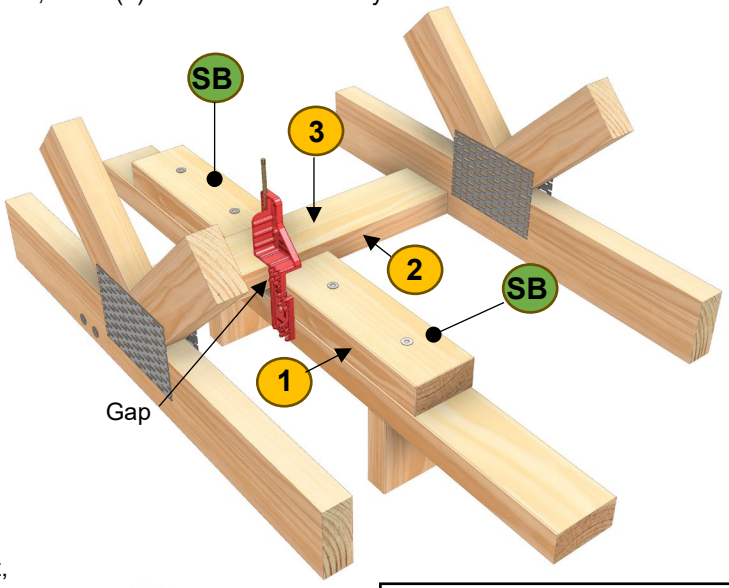
Important: IWS is only providing lateral stability for the internal walls without transferring vertical loads or bracing loads and must be used in conjunction with AS1684 Table 8.22, detail (e) with shear blocks fully installed.

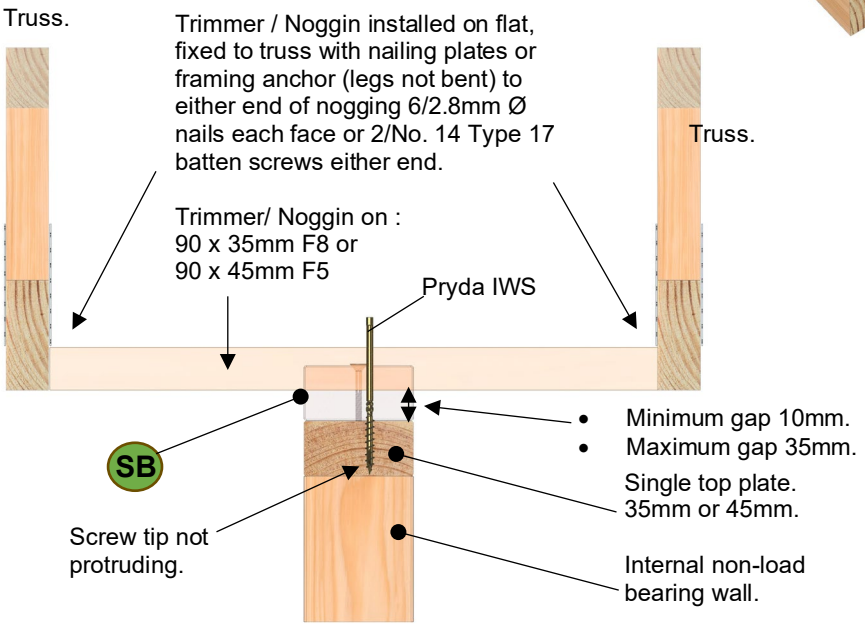
For a compliant and reliable installation of the IWS, the IWS guide (IWSGN) should be always used.

It is important all connecting members are square, and internal wall is vertically plumb.

Three point contact of the connection using the guide will deliver a precise installation of the screw. The guide shall be firmly held against the interfaces.

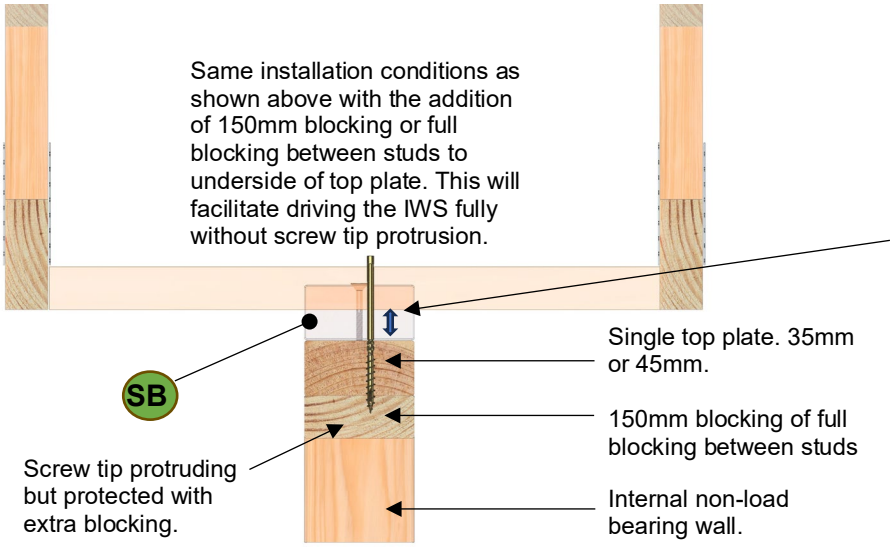
1. Edge of top plate / shear block.
2. Edge of trimmer / noggin.
3. Top of trimmer / noggin.





SB SHEAR BLOCKS INSTALLED TO AS1684 TABLE 8.22, (e).

IMPORTANT:
If installation into top plate will result in the screw protruding into frame space exposing screw end, drive the screw to the depth of the top plate, and leave the headless end of the screw sitting slightly above the top face of the trimmer / noggin. Alternatively, nail fix a 150mm length block or blocking between studs directly below screw protrusion so the IWS can be fully driven home. This is shown on the following page.



<u>Shear block overlap</u>

The maximum gap will be subjected to the shear block depth as it needs to overlap the trimmer. Suggested overlap unless otherwise specified by the design Engineer is half shear block depth.

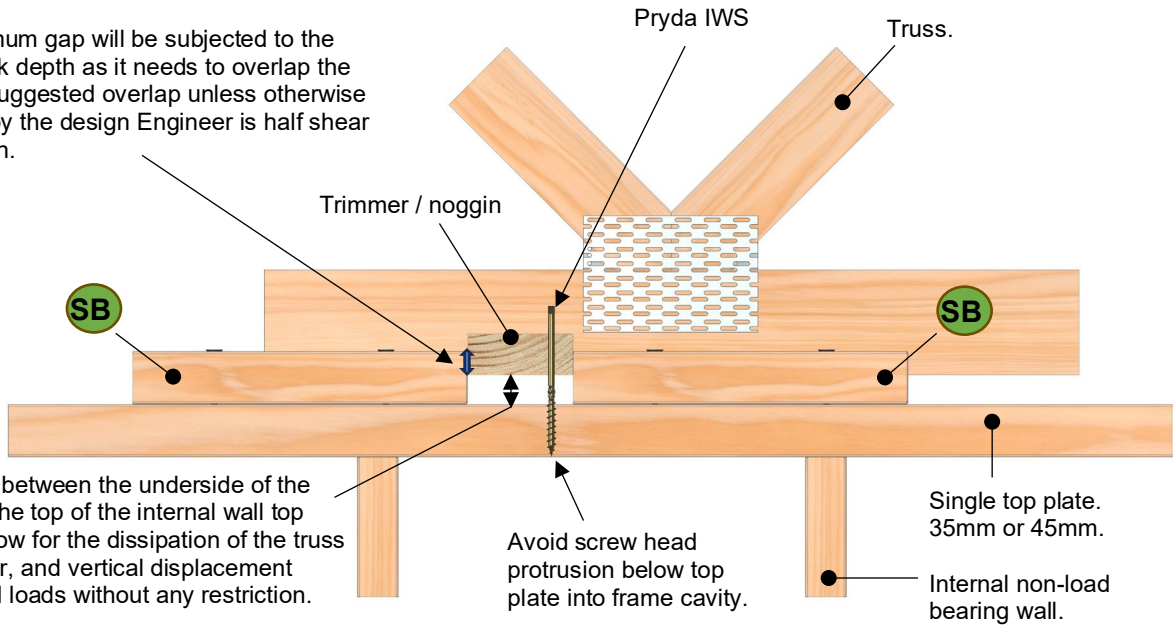
To gain greater overlap, adopt double shear blocks vertically stacked on flat. Each block shall be fixed with suggested fasteners to AS1684.2 Table 8.22, detail (e) to top plate and secondary block to primary block. Alternatively, nail fix primary block to top plate, then secondary plate to primary, then adopting bolt through options as per Table 8.22 through both blocks to top plate.

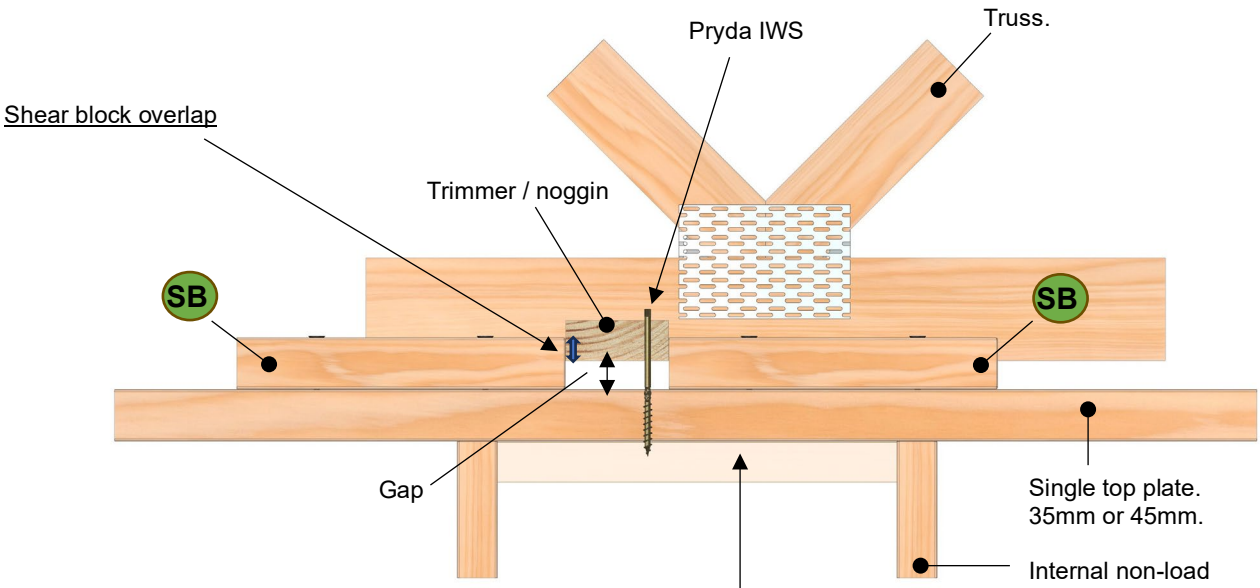
Nogging or trimmer perpendicular to non-load bearing internal wall fixed to AS1684 Table 8.22, detail (e) and between 2 trusses, fix from top down. *Section 2 of 2.*

Important: IWS is only providing lateral stability for the internal walls without transferring vertical loads or bracing loads and must be used in conjunction with AS1684 Table 8.22, detail (e) with shear blocks fully installed.

Shear block overlap

The maximum gap will be subjected to the shear block depth as it needs to overlap the trimmer. Suggested overlap unless otherwise specified by the design Engineer is half shear block depth.





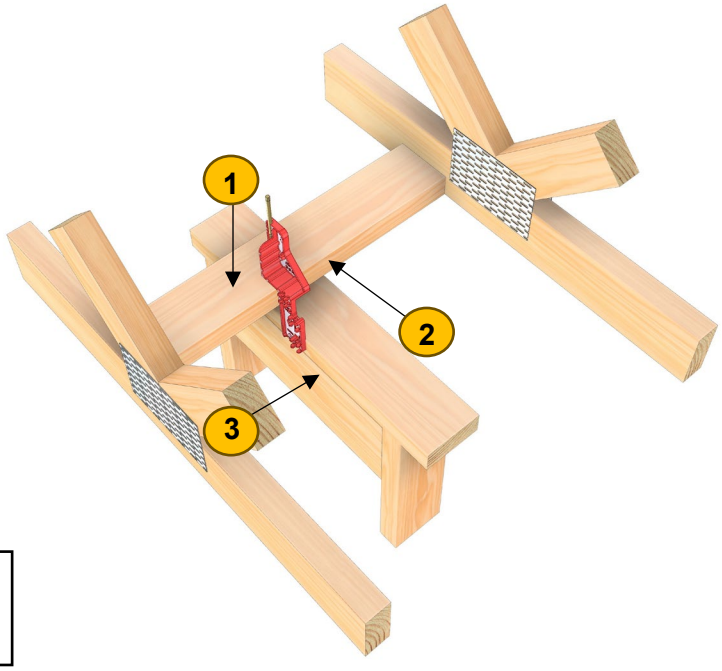
Nogging or trimmer perpendicular to non-bracing, non-load bearing wall with shear blocks and between 2 trusses, fix from top down.

For a compliant and reliable installation of the IWS, the IWS guide (IWSGN) should be always used.

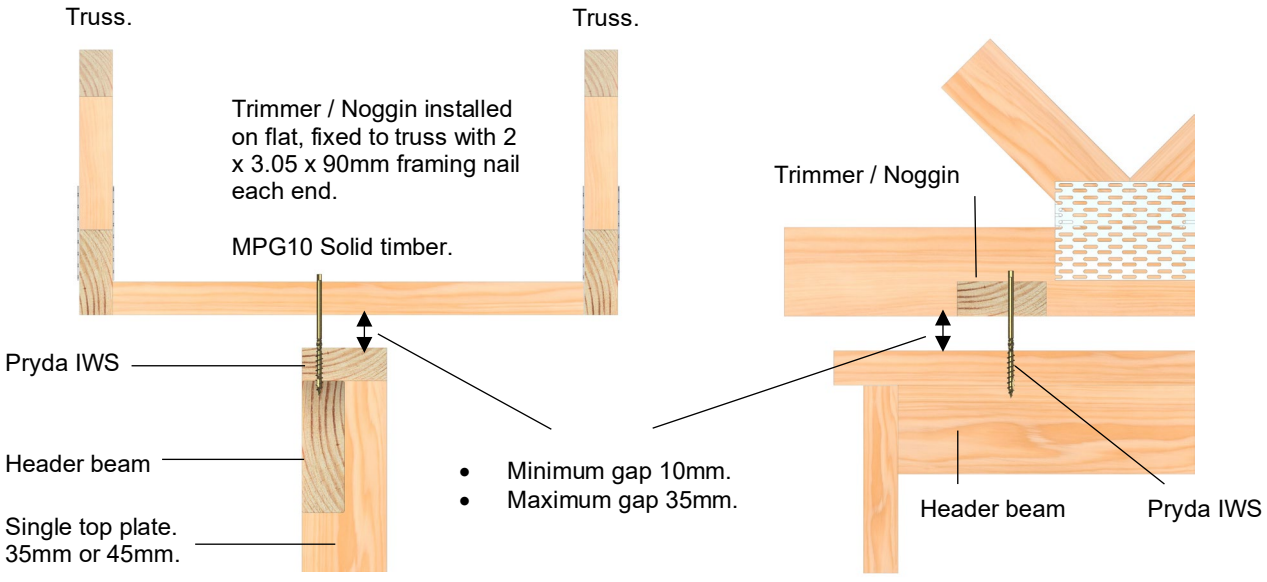
It is important all connecting members are square, and internal wall is vertically plumb.

Three point contact of the connection using the guide will deliver a precise installation of the screw. The guide shall be firmly held against the interfaces.

4. Top face of trimmer / noggin.
5. Edge of trimmer / noggin.
6. Edge of top plate.



Tip:
Install screw above header to conceal screw tip penetration through top plate.



Clearance between the underside of the truss and the top of the internal wall top plate to allow for the dissipation of the truss pre-camber, and vertical displacement under wind loads without any restriction.

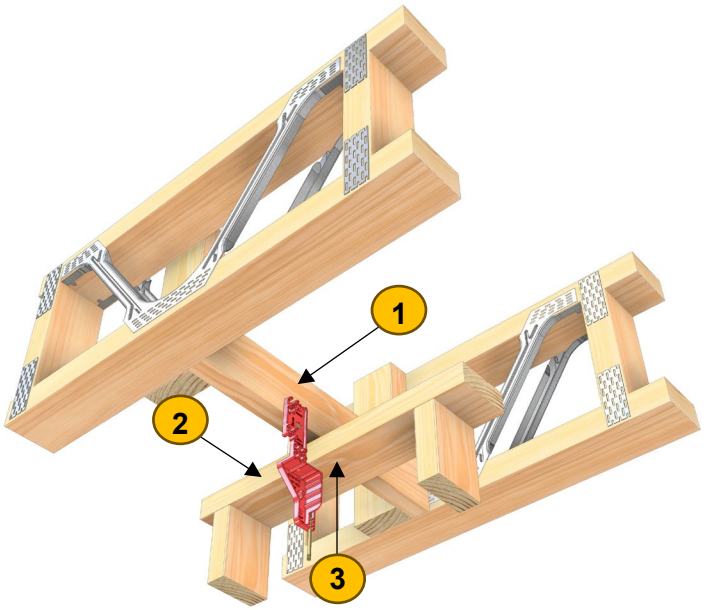
Nogging or trimmer perpendicular to non-braced, non-load bearing internal wall and between 2 floor trusses, fix from underside.

For a compliant and reliable installation of the IWS, the IWS guide (IWSGN) should be always used.

It is important all connecting members are square, and internal wall is vertically plumb.

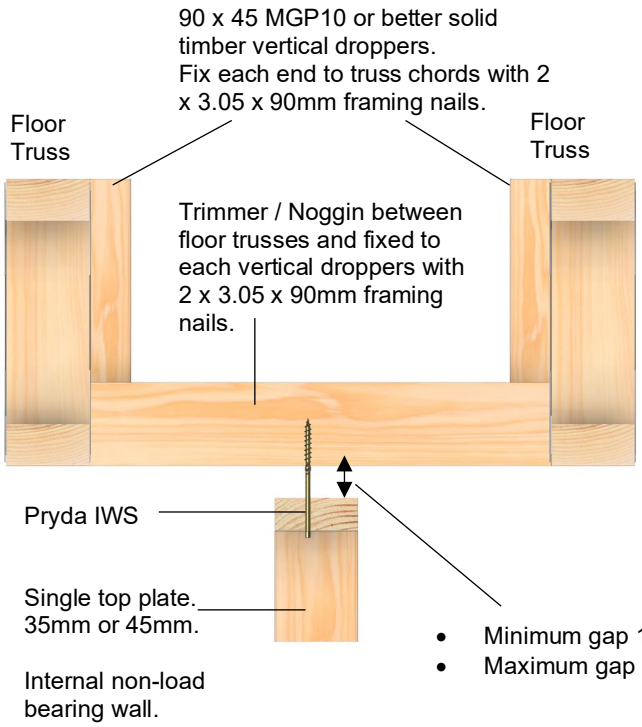
Three point contact of the connection using the guide will deliver a precise installation of the screw. The guide shall be firmly held against the interfaces.

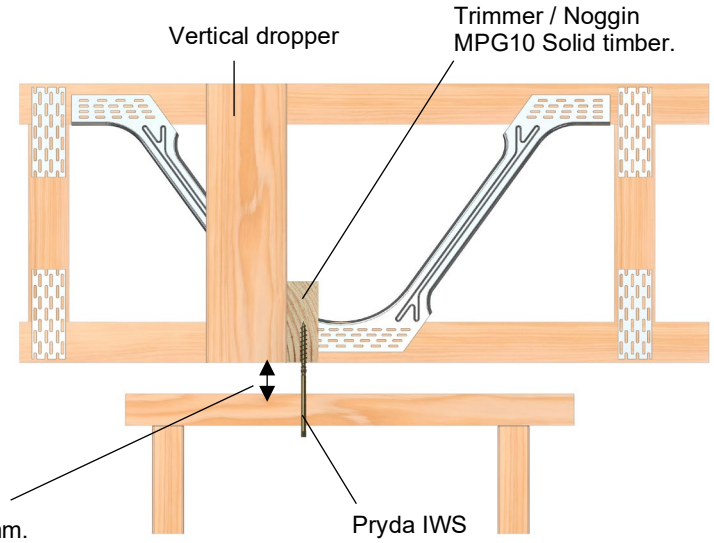
1. Side face of trimmer / noggin.
2. Edge of top plate
3. Underside of top plate.



Tip:

Trimmers / noggins shall be solid structural pine. Avoid using LVLs that is prone to split when fixed through veneers.





- Minimum gap 10mm.
- Maximum gap 35mm.

Clearance between the underside of the truss and the top of the internal wall top plate to allow for the dissipation of the truss pre-camber, and vertical displacement under wind loads without any restriction.

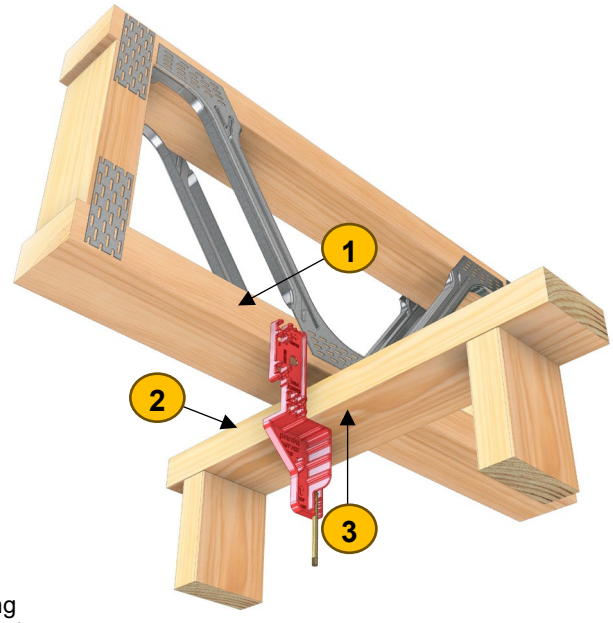
Floor truss perpendicular to non-braced, non-load bearing internal wall, fix from underside.

For a compliant and reliable installation of the IWS, the IWS guide (IWSGN) should be always used.

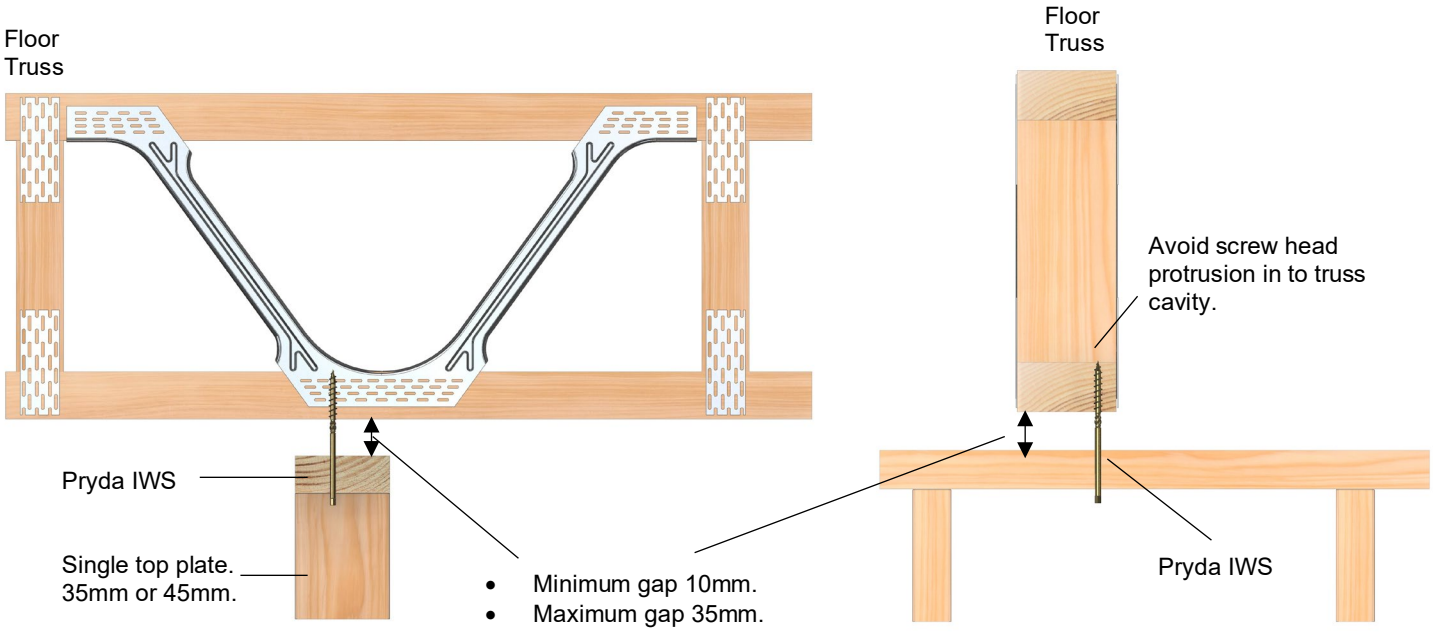
It is important all connecting members are square, and internal wall is vertically plumb.

Three point contact of the connection using the guide will deliver a precise installation of the screw. The guide shall be firmly held against the interfaces.

1. Side face of floor truss.
2. Edge of top plate
3. Underside of top plate.



IMPORTANT:
If installation into floor truss chords will result in the screw protruding into the floor void, drive the screw to the depth of the truss chord and leave the headless end of the screw sitting slightly below the underside of the top plate. Where possible, align screws with truss web or strongback locations so it can be fully driven home.



Clearance between the underside of the truss and the top of the internal wall top plate to allow for the dissipation of the truss pre-camber, and vertical displacement under wind loads without any restriction.

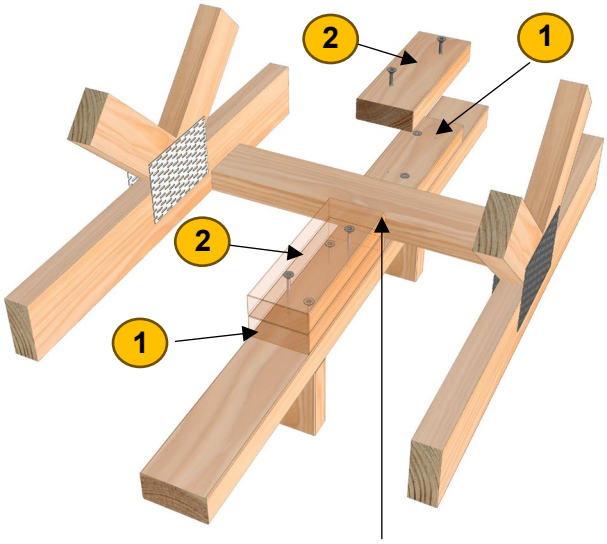
Double 35mm Shear Block fixing details.

To gain greater overlap, adopt double shear blocks vertically stacked on flat. Each block shall be fixed with suggested fasteners to AS1684.2 Table 8.22, detail (e) to top plate and secondary block to primary block. Alternatively, nail fix primary block to top plate, then secondary plate to primary, then adopting bolt through options as per Table 8.22.

Screw fix using 4 x 14G x 65mm Type 17 screws is shown in the example. Framing setup is as follows:

1. Primary block installed directly to 90 x 35mm top plate using 2 screws.
2. Secondary plate fixed to primary plate using 2 screws. Stagger screws to avoid clashing.

   Blockings installed to both sides of trimmer to AS1684. Table 8.22, detail (e)

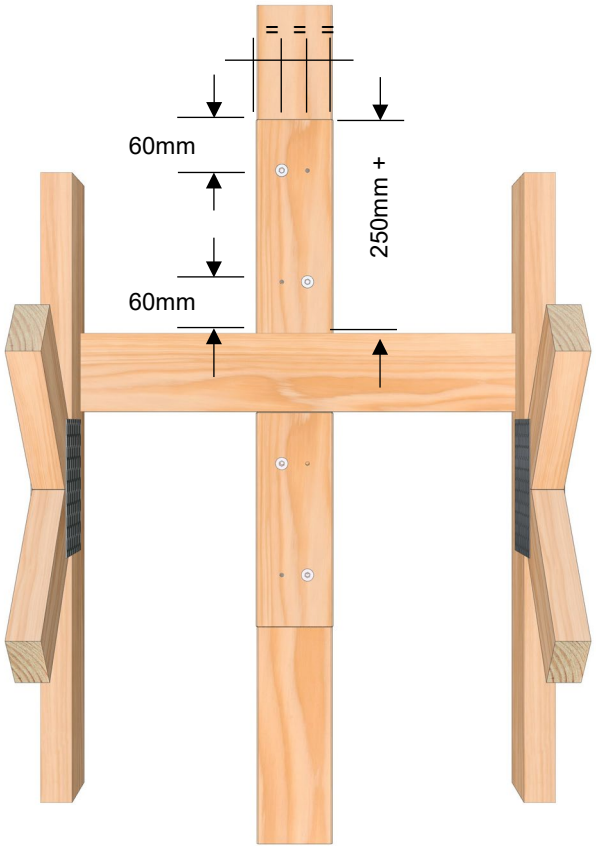


Shear block overlapping trimmer

The maximum gap will be subjected to the shear block depth as it needs to overlap the trimmer. Suggested overlap unless otherwise specified by the design Engineer is half shear block depth.

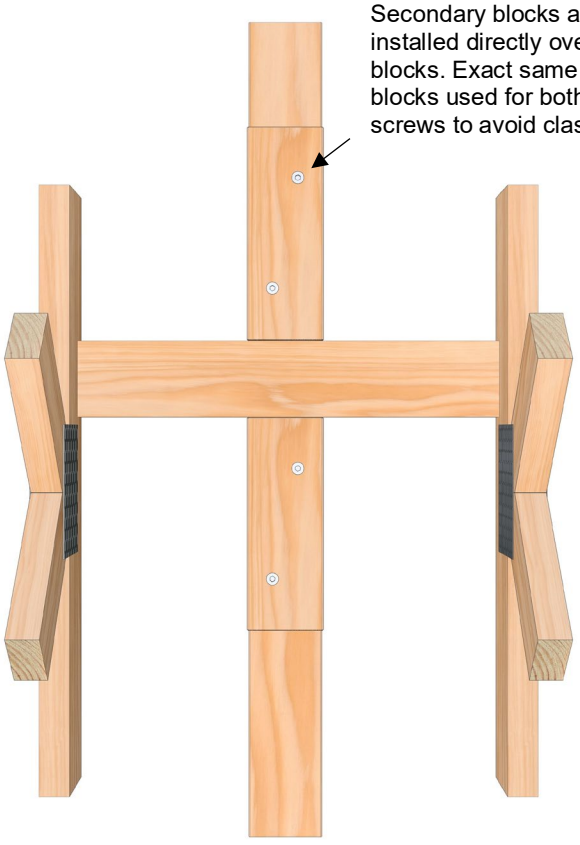
Suggested screw pattern for blocking connections.

Equally spaced across the width.



Primary blocks installation.

Secondary blocks are installed directly over primary blocks. Exact same size blocks used for both. Stagger screws to avoid clashing.



Secondary blocks installation.

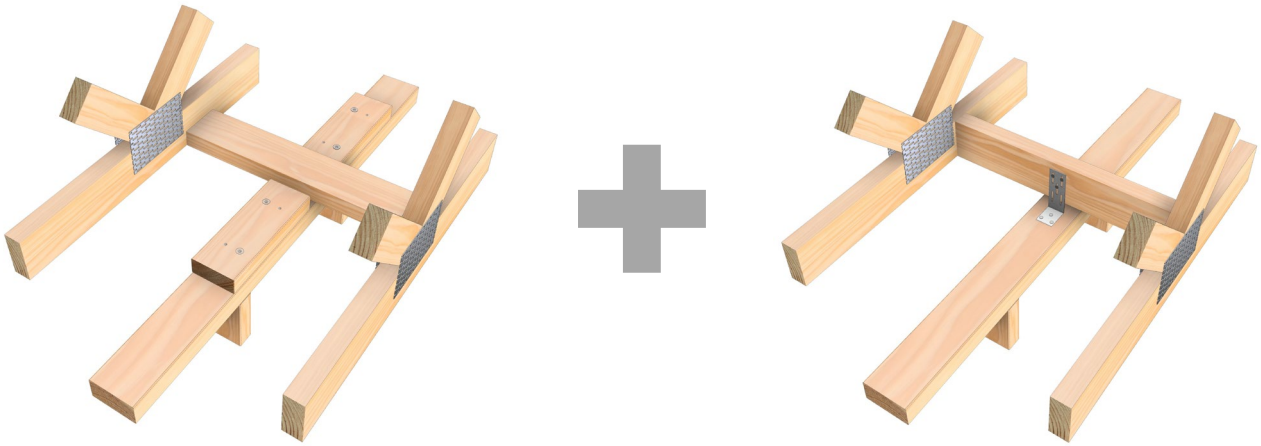
BENEFITS AND BEST SOLUTION WHEN USING IWS WITH SHEAR BLOCK SETUP

By incorporating the Pryda IWS with AS1684 Table 8.22 detail (e).The installer can save time by using the same connection for wall lateral restraint.

Typically, 2 blocking systems will be required for the same non-load bearing internal braced wall as an absolute minimum.

Blocking system one
Shear Block connection required for transferring bracing load for non-load bearing internal braced wall.

Blocking system two
Wall hitch connection required for lateral stability of internal non-load bearing wall.

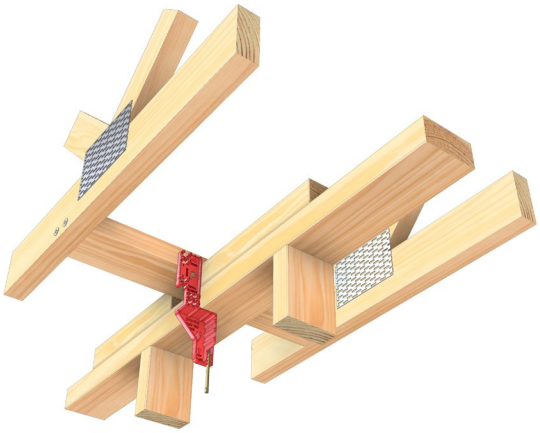


By using the same shear block connection with Pryda IWS, this will combine the required wall restraint details into one.

Example 1 :

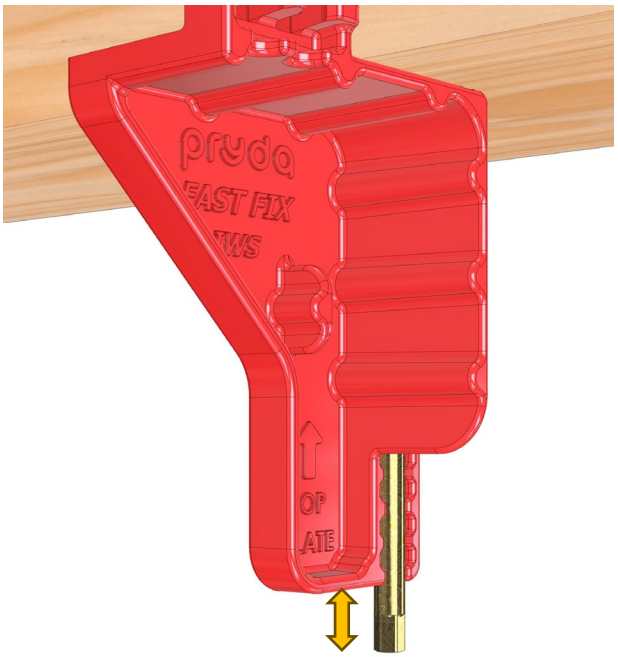
If an internal non-load bearing braced wall requires one shear block connection and one wall hitch connection for wall lateral restraint, this can be simplified using the one blocking system when the IWS is incorporated into the shear block detail, saving time and construction cost.

Blocking system one
Shear Block connection required for transferring bracing load for non-load bearing internal braced wall combined with IWS for wall lateral restraint.

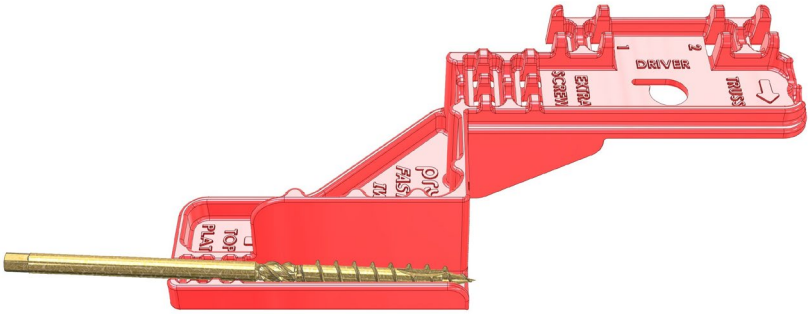


INSTALLATION TIPS

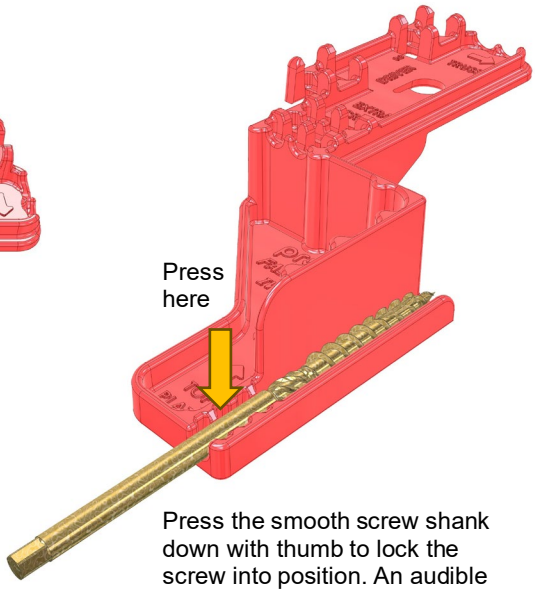
Do not overdrive the screw to the point the socket hits the guide. Stop short 10mm between socket and guide. This will assist with removal of the guide before driving screw home.



To remove guide, rotate the guide clockwise to unclip the guide from screw.



To load the screw into clip simply place the screw into channel as shown with screw threads fully resting within channel.



Press the smooth screw shank down with thumb to lock the screw into position. An audible ‘click’ can be heard when this happens.

Use the guide to store 2 IWS screws and driver socket for next connection. Offset the screw as shown to make it easier to remove single screw when needed.