woodspan by techlam

PLT PANELS

INSTALL GUIDE



WOODSPAN by Techlam PLT PANELS | PARALLEL LAMINATED TIMBER

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INTRODUCTION

Purpose

This guide applies to the installation of Woodspan PLT panels as interior roof and floor panels.

This guide is intended for use by a skilled builder (LBP) or registered engineer who is either installing or supervising the installation of the panels.

Important documents

In addition to this guide refer to:

- Building Consent documentation which will show spacing, set out and connection and fastener type for
  - Panel to panel joints
  - Panel to building structure connections,
  - Passive fire details,
  - System layout where the panel is part of a system, e.g. acoustic system.
- Engineering documentation

Shop drawings which identify panel set out and assembly sequence.

For more help

Technical assistance is available at www.woodspan.co.nz.

While all reasonable efforts have been made to ensure the accuracy of information provided, this guide is a guide only. It may be subject to change.

For our warranty

Refer to www.woodspan.co.nz.



PRE INSTALLATION

1 KEEP SAFE

Take all necessary steps to ensure your safety and the safety of others:

- Check weight of Woodspan panel and lifting capacity of Hiab/crane,
- Ensure adequate ventilation or mechanical dust extraction when cutting or drilling,
- Ensure the timber is well supported when cutting and nailing,
- Wear appropriate safety equipment, clothing and footwear,
- Use all tools in accordance with relevant instruction manuals,
- Plan and monitor a safe approach for working at height; select and use the right equipment,
- Clear the work area of any obstructions before work starts.

More information can be found at **www.worksafe.govt.nz.**

2 HANDLING & STORAGE

Woodspan PLT Panels will arrive onsite packed as per the pre-determined assembly sequence agreed with the contractor prior to dispatch. Panels are delivered with a factory applied temporary moisture resistance coating, and wrapped in moisture proof packing on evenly spaced timber bearers. The panels will have an equilibrium moisture content (EMC) of 8-14%.

Packed with the PLT Panels will be a plywood box containing: 2 x sets of steel brackets (4 in total), coach screws for fixing of brackets to panel (screw size will suit the relevant panel depth) and d-shackles.

Handling

Refer to Step 4 "Lifting panels into place".

Storage

The panels should be stored in a dry environment; placed horizontally on bearers (no more than 2000 mm apart) which extend across the full width of the pack. Panels stored on or near the ground will absorb moisture. To prevent this a layer of plastic should be laid underneath the bearers.

Where storage inside is not possible remove the weatherproof wrap, place timber spacers on top of the panels then re-wrap and cover with a waterproof cover for additional protection.

Storing the panels this way allows airflow to circulate and prevents condensation.

INSTALLATION

1 CONSIDER MOISTURE CONTROL

During all stages of supply, storage and installation, climatic conditions needs to be as close as possible to in-service conditions.

Timber is an organic product. It will be affected by the environment. Changes in temperature, humidity and exposure to moisture will cause the panels to expand and contract. This means to maintain the look and ensure performance of Woodspan PLT panels, exposure to changes in the environment, particularly moisture, must be controlled.

Generally, over the course of the construction phase any moisture that has been absorbed will dry out with no adverse effect on durability, structural integrity or overall panel dimensions. However, exposure of the panels to the weather and other environmental factors may result in panel discolouration and water staining.

Before the building is closed in,

- ensure water does not pond on the surface,
- sweep ponded water from the surface, and
- cover the construction area where possible.

Cupping of panels across the grain can occur, particularly where the depth to breath ratio is more than 10:1 or if panel is exposed to differential climatic conditions (heat or moisture) on opposite sides. Temporary moisture resistance is provided by the factory applied moisture-resistant coating which will provide a level of protection for up to five weeks.

Where changes to EMC of the PLT panels cannot be avoided, the coefficients for shrinkage and expansion of wood must be taken into consideration.

Best practice is to protect panels from the weather and close the building in as quickly as possible.

2 REVIEW DOCUMENTATION

Access all applicable documentation including the building consent so that the Woodspan PLT panels are lifted and fixed according to the pre-determined assembly plan.

Access and view details in the building consent documentation or access the relevant details from Woodspan at **www.woodspan.co.nz**.

3 CONFIRM RELATED BUILDING WORK

Ensure that the structure to which the panels will be fixed has been carried out in accordance with the building consent and engineering requirements.

4 LIFTING THE PANELS INTO PLACE

Woodspan PLT panels should be lifted by crane or HIAB.

Woodspan recommend the use of screw-on lifting brackets. These are available on-loan from Woodspan and are supplied as two sets. While one panel is being installed, the next panel can be prepared for lifting.

The Woodspan screw-on lifting brackets are supplied with d-shackles for crane to bracket connection, and self-tapping structural screws for temporarily attaching the bracket to the panel.

The length of the screws will depend on the depth of the Woodspan PLT panel. Woodspan recommends a minimum thread embedment to be no less than 50% of the panel depth. Screw holes can be filled or plugged after installation.

Figure 1 Tag lines attached to panel.



Figure 2 Packets lifted using slings.



Figure 3 Bolt on lifting brackets.



5 CREATE PENETRATIONS

Simplified un-reinforced penetrations

Penetrations to be less than 90 mm in diameter.

Penetrations are not permitted within 300 mm, or directly below a load bearing wall.

Penetrations must not be created to go directly through a panel joint.

When using more than 2 openings across the panel or more than 2 penetrations within the whole panel or the penetration is greater than 90 mm, confirm increased stresses within the panel with the designer/engineer.

Allow spacing between the penetrations as follows,

- a minimum 300 mm (midpoint to midpoint) parallel to the lamina,
- a minimum 90 mm (midpoint to midpoint) at 90° to the lamina,
- a minimum of 90 mm (lower edge of penetration) from lap joint.

Fire rated penetrations

Where a fire rated penetration, is required and where insufficient detail has been provided in the consent documentation refer to Woodspan passive fire details.

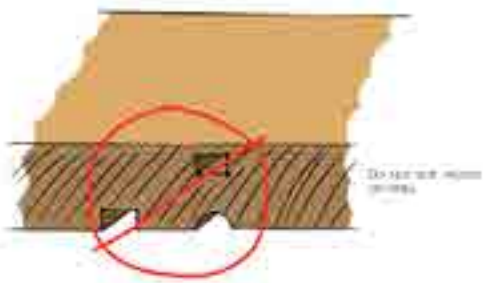
Note the un-reinforced penetrations requirements also apply.

Other penetrations

For all other penetrations consult the engineer if the penetration is not included in the consenting documentations.

Notches and holes

Notches and holes are not permitted.



6 FIX THE PANELS

Woodspan PLT panels should only be enclosed or lined once EMC is ≤ 18%. 5 mm expansion gaps perpendicular to each panel edge must be allowed for.

Ceiling linings susceptible to cracking (e.g stopped plasterboard) should not be fixed directly to the panel. Instead the lining should be installed to battens fixed to the panel as spacings as required by the lining supplier.

Structural fixings

Woodspan PLT Panels should be screwed down immediately after placement. This includes panel to panel jointing and fixing of PLT panels to support structure.

Ensure fixing and finishing is in accordance with the consent and engineering requirements.

Where insufficient information is provided in the consent documentation the following may be relied upon providing that the suitability of the fixings has been confirmed by the supervising engineer.

Lap Joint



Spline Joint



Panel to Panel Joint (Top Spline)

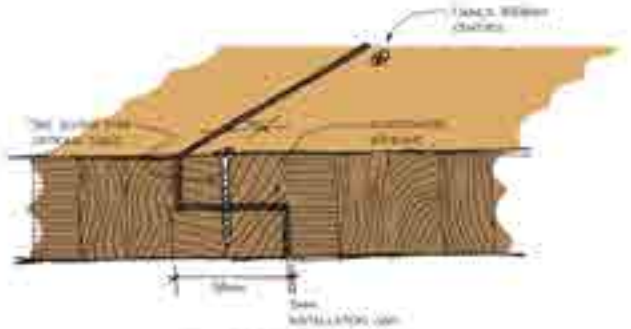
		Screw Type Options					
Panel	**Panel to Panel Plywood** (Diaphragm only) (mm)	**Simpson Strong-Tie QD** (mm)	**Rothoblaas HBS** (mm)	**Eurotec Paneltwistec AG** (mm)	**FH Nail**	**Spacing** (mm)	**Min Edge Distance** (mm)
WS8 – 90	21 x 100 F8	4.8 x 50	5 x 50	5 x 50	60 x 2.8	150	25
WS8 – 117	21 x 100 F8	4.8 x 50	5 x 50	5 x 50	60 x 2.8	150	25
WS8 – 140	21 x 100 F8	4.8 x 50	5 x 50	5 x 50	60 x 2.8	150	25



Top Spline Connection

Panel to Panel Joint (Lap Joint)

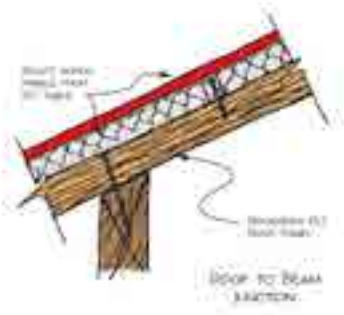
	Screw Type Options				
Panel	**Simpson Strong-Tie SDWS** (mm)	**Rothoblaas HBS** (mm)	**Eurotec Paneltwistec AG** (mm)	**Spacing** (mm)	**Min Edge Distance** (mm)
WS8 – 90	5.6 x 76	5 x 80	5 x 80	150	25
WS8 – 117	5.6 x 102	5 x 100	5 x 100	150	25
WS8 – 140	5.6 x 127	5 x 120	5 x 120	150	25

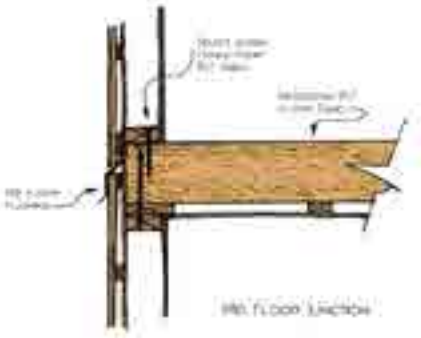


Lap Joint Connection

Panel to Beams or Supporting Members

	Screw Type Options					
Panel	**Simpson Strong-Tie ESCRC** (mm)	**Rothoblaas VGS EVO** (mm)	**Spax Delta Seal** (mm)	**Eurotec KonstruX ST** (mm)	**Spacing** (mm)	**Min Edge Distance** (mm)
WS8 – 90	8 x 180	8 x 180	8 x 180	8 x 195	150	25
WS8 – 117	8 x 220	8 x 220	8 x 220	8 x 220	150	25
WS8 – 140	8 x 240	8 x 240	8 x 240	8 x 245	150	25

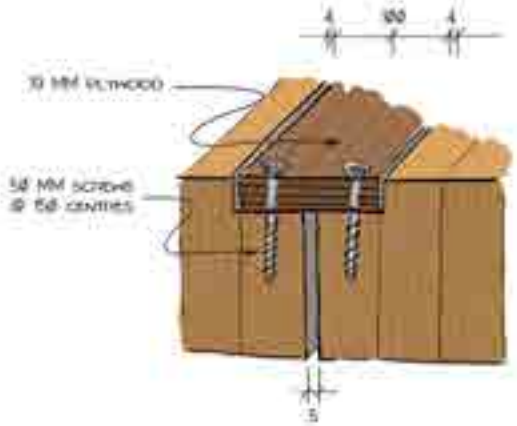




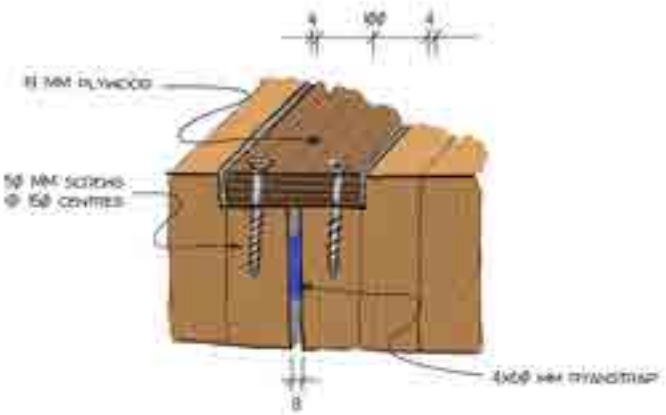
Fire Rated Panel to Panel Joint (Top Spline)

Note these fixings apply to both FRR 30/30/30 and FRR 60/60/60.

		Screw Type Options				
Panel	**Panel to Panel Plywood** (mm)	**Simpson Strong-Tie QD** (mm)	**Rothoblaas HBS** (mm)	**SPAX Delta Seal** (mm)	**Spacing** (mm)	**Min Edge Distance** (mm)
WS8 – 90	19 x 100 F8	10 x 50	5 x 50	5 x 60	150	25
WS8 – 117	19 x 100 F8	10 x 50	5 x 50	5 x 60	150	25
WS8 – 140	19 x 100 F8	10 x 50	5 x 50	5 x 60	150	25



FRR 30/30/30 JOINT



FRR 60/60/60 JOINT

7 FINISHING THE PANELS

Woodspan PLT is typically used as a structural member and is concealed by floor and ceiling linings. In these situations, no additional finishing including the application of a coating system is required.

Where it is to be used as an exposed ceiling or floor Woodspan PLT can be supplied finished to visual grade. If it is to be left exposed the panels should be protected from the effects of weather and moisture during the construction phase. As part of finishing some minor remediation of panels due to watermarking, transport and construction damage is likely.

Woodspan requires that the panels are finished with a protective coating system such as stain, sealer, polyurethane, or oil.

For more information visit Woodspan website.



INSTALLED IN HOURS. NOT DAYS.

Our PLT products are quick and easy to install, without the need for an entire construction crew. We'll ensure you can keep your overheads as low as possible.

CHAT WITH US

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