



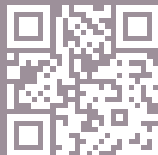


XLT is a range of products by XLAM that bring the benefits of mass timber to residential and light commercial construction. XLT products are 'ready made' building materials that extend insulated panels, structural flooring, beams, columns and portal structures.

Mass timber is strong, sustainable, durable and offers impressive insulation properties. The XLT range is made from Australian grown plantation pine offering painless on-site alterations, easy handling and fast install. Using timber alternatives means that you can remove the reliance on steel fabricators and pair timber XLT products with timber framing.



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XLT FLOOR XLT FLOOR

Refer this document for installation instructions for the XLT Floor system. These instructions are taken from AS 1860.2: Particleboard Flooring Installation, Engineered Wood Products Association of Australia (EWPA) Particleboard Structural Flooring Design Manual, Building Code of Australia (BCA), and relevant timber framing and building standards.

FRAMING REQUIREMENTS:

Ensure framing complies with the relevant standards for timber or cold-formed steel as per the Load Capacity Table. The design must support the permanent action of XLT Floor panels, other linings, permanent fixtures, and any required imposed actions. Consult the project engineer for appropriate loading requirements.

JOIST SPECIFICATIONS:

Timber joists must be a minimum of 40mm wide.
Steel joists must be a minimum of 50mm wide.

ADHESIVE APPLICATION:

Joists should have a continuous solid bead of construction adhesive before laying XLT Floor panels. Ensure any specific guidelines of the adhesive manufacturer are followed.

LOAD SUPPORT:

Line loads and concentrated point loads must have a structural support pathway directly underneath.

JOIST PREPARATION:

Ensure all joists are level and flat to provide even bearing for the support of XLT Floor panels.

The strength of the floor framing in the temporary condition must be confirmed as suitable for supporting the weight of XLT Floor panel pack(s).

PANEL SUPPORT:

Panel ends in the field of the floor must be evenly supported on a joist with a minimum bearing of 30mm for each panel end.

PANEL TRIMMING:

The minimum panel width when trimmed should be 200mm.

PANEL JOINING:

External End Joints: Allow a 10mm spacing with a backing rod and flexible sealant. Internal end & side joints: Allow a 1-2mm spacing.

PANEL SUPPORT ON JOISTS:

Each panel must be supported by at least three joists. If this is not possible, install noggings under the edges of these panels for support.

CONTROL JOINTS:

Control joints perpendicular to the XLT Floor span direction must have two joists, one under each panel, unless the joist is a minimum of 63mm wide at the top. If the joist is 63mm wide, a single joist can be used.

Seal control joints with a backing rod and compatible sealant, 5mm wide x 10mm deep.

MOISTURE CONSIDERATIONS:

XLT Floor panels are not recommended for sub-floors where excessive moisture is expected.

GROUND CLEARANCE:

The BCA (and AS 3660.1: Termite Management) requires a minimum ground clearance of 150mm to underside of bearer where termite inspection is not required. Where termite inspection is required, 400mm minimum height from ground surface is required.

On sloping sites, 400mm clearance may be reduced to 150mm with 2m of external walls.

Where termite barriers are not installed or don't require inspection, a minimum 400mm ground clearance is advised as good practice.

EXPANSION JOINTS:

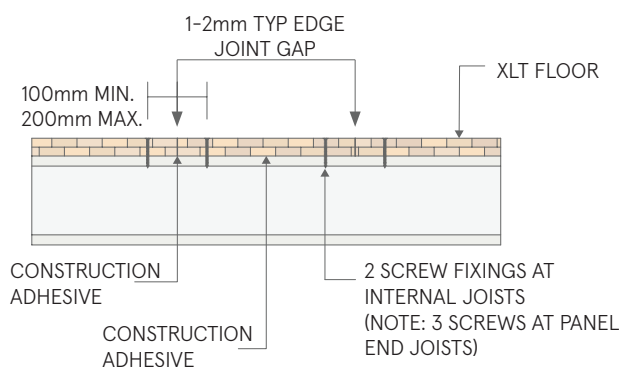
XLT Floor will expand and contract as panels respond to changes in atmospheric moisture. Allowance for this movement must be made throughout the floor area by providing the nominated end and side gaps between each panel and special joints as appropriate to accommodate panel expansion.

For small areas, the gaps left between panels when laid by hand should accommodate normal hygroscopic movement. For large floor areas the hygroscopic movement of the XLT Floor panel should be taken into account in the design. Refer to AS 1684. The Building Code of Australia references AS 1684 standard as the Acceptable Construction Manual for timber framed construction.

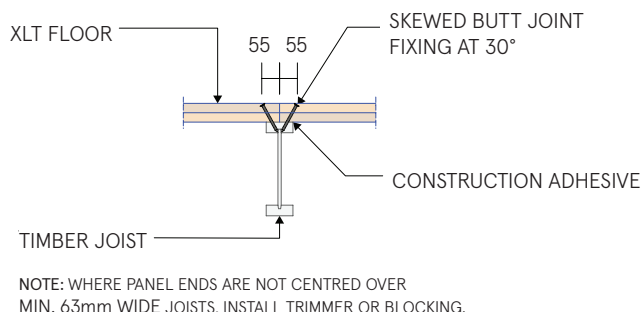
AS 1684 stipulates the following provisions for expansion joints for all flooring material to be: For continuous floor widths over 6m, measured at right angles to flooring, intermediate expansion joints shall be provided in addition to the perimeter gaps. This joint shall be a single 10mm wide gap.

INSTALLATION

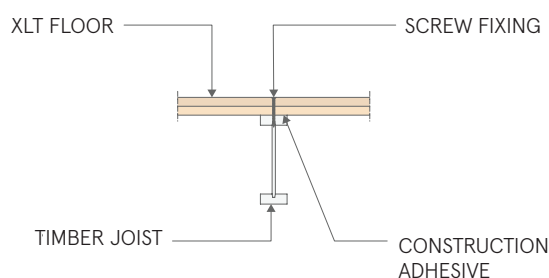
- Prior to commencing installation ensure floor joists have been installed level to allow panels to sit flat.
- One face of the panel is wrapped. The wrapped face is installed face up.
- Clean any dirt, grease or water from surfaces to be bonded.
- Joists should have a continuous solid bead of construction adhesive before laying XLT Floor panels. Ensure any specific guidelines of the adhesive manufacturer are followed.
- Place XLT Floor panels perpendicular to the joists.
- Please ensure all edge distances for fixings are adhered to (refer to details below).
- Remove excess adhesive from panel surface before it dries. Use a scraper and rag dampened with mineral turps (or appropriate solvent).



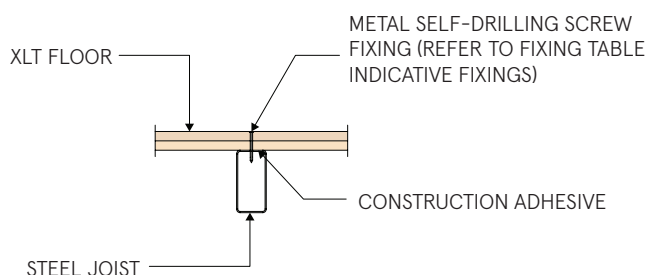
FLOOR SECTION PARALLEL TO TIMBER JOISTS



BUTT JOINT FIXING TO TIMBER JOISTS



FIXING TO TIMBER JOISTS



NOTE: FIXINGS WILL NEED TO BE SUITABLE FOR USE WITH SPECIFIC STEEL SECTION PROPERTIES.

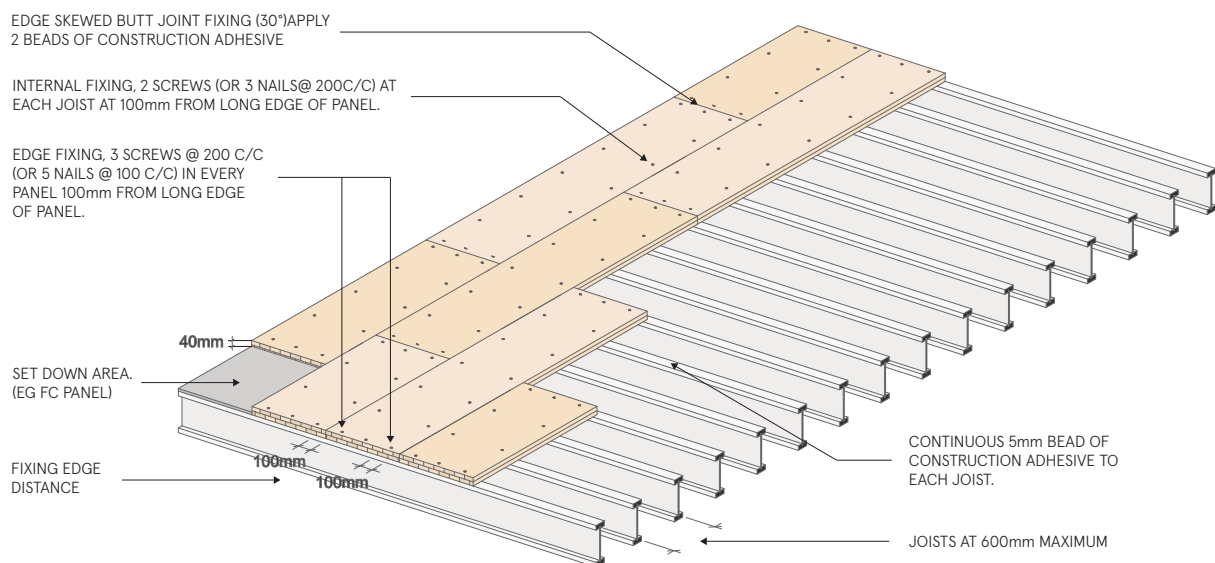
FIXING TO STEEL JOISTS

- Please follow the Fixings Specification for your joist type.
- If XLT Floor panels are anticipated to be exposed for a longer than typical construction period, it is recommended to install a 100mm wide tape that is compatible with Pro-Clima adhero visto weather resistant membrane to provide additional protection to panel joints, edges and screw heads.

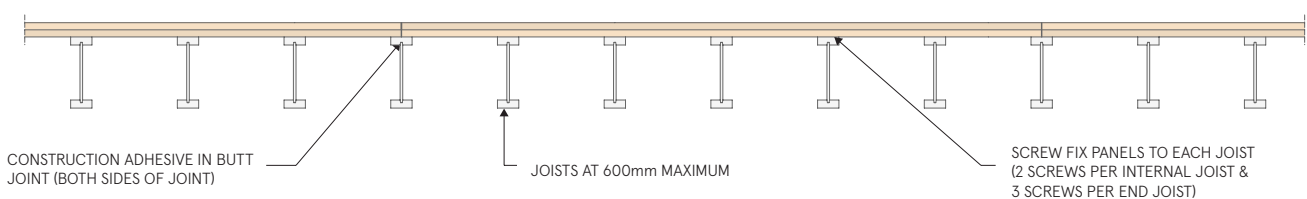
CUTTING XLT FLOOR PANELS:

Be aware that the lamellas are not edge-glued. This may result in narrow sections (1-8mm) of lamellas breaking off during the cutting process. This will not impact the structural integrity of the XLT Floor panel.

Immediately apply end grain sealer to all cut edges, to seal cut edges of XLT Floor panels, apply a couple of beads of adhesive to the edge. Butt joint the edge up to the adjoining panel and remove excess adhesive. Alternatively, the adhesive may be spread over the cut edge with a spatula.



FLOOR CONFIGURATION



FIXING SPECIFICATION

Suggested XLT Floor Fixings (Timber & Steel Joists).

TYPE	HEAD TYPE	DIA.	LENGTH	FINISH	STANDARD
Timber Joist Screw - Bugle Batten	Bugle Head/Type 17	12g	100mm	Zinc Plated or HDG	AS 3566.1
Timber Joist - Collated Nail	D-Shaped Head	3.15g	90mm	HDG	AS 2334
Steel Joist Screw - Metal Drilling Bugle Batten	Bugle Head/Type 17	14g	75 or 100mm	HDG	AS 3566.1

The use of construction grade adhesive in conjunction with mechanical fixings is mandatory.

Panels should have fixings installed immediately after being installed in position. Panels should not be left without fixings in place.

PRODUCT NOTES

DIMENSIONAL STABILITY

Panel length: 0.01-0.02% per % change in MC

Panel width: 0.2-0.25% per % change

Panel thickness: 0.2-0.25% per % change

Note: Moisture content at delivery < 15%

CONNECTIONS

Designed in accordance with AS 1720.1 for nails, screws, bolts. Joint group: JD5. Refer to XLT Floor standard fixing details.

Alternative screw-fixed connections may be designed in accordance with a relevant ETA using characteristic density: 430 kg/m³

XLT FLOOR LAY-UP

XLT Floor panels face-glued laminated panel product manufactured using the 2 layers of 85mm wide and 30mm thick laminates which are staggered by 1/2 of the laminate width.

HOLES AND NOTCHING

XLT Floor panels should not have notches, rebates or chases cut into the panel unless these are directly supported by blocking.

Single holes may be drilled in XLT Floor panels up to a maximum diameter of 110mm, with no restriction on position.

If more than one hole is required in a single XLT Floor panel, the sum of the diameters of the holes should not exceed 110mm. Otherwise blocking should be provided.

FLOOR DIAPHRAGM

The system should be considered as a conventional flooring system (e.g. particleboard) with respect to the required placement of bracing walls to AS 1684 requirements.

DURABILITY

The XLT Floor product range is manufactured from kiln dried timber. Throughout the products service life, it must be protected from exposure and moisture cycling that can occur from:

- Exposure to direct sun and rain in service
- Direct or close contact with supporting structures without air gap or damp-proof course material
- Exposure to an environment with extreme moisture or elevated humidity.

Applications of XLT are to be limited to the internal building areas. It is not recommended to use XLT Floor as a substrate in wet areas or external terraces.

Note: Where used as a timber sub-floor, XLT Floor is not recommended in applications where a dry, well-ventilated sub-floor space can't be ensured.

FIRE DESIGN

XLT Floor is limited to applications without FRL requirements.

TERMITE PROTECTION

An effective termite protection strategy in line with NCC requirements must be in place including physical or chemical barrier systems.

HEALTH & SAFETY

Please contact XLAM for XLT Floor Safety Data Sheet (SDS).

The normal health and safety precautions should be taken when working with timber products.

Machine tools should be fitted with dust extractors and work areas kept clean. If dust levels exceed Worksafe Australia standards, then wearing of a dust mask (AS/NZS 1715 and AS/NZS 171) and safety glasses (AS/NZS 1337) is recommended.

Storage and work areas should be adequately ventilated.

MANUAL & ASSISTED HANDLING

XLT Floor panels are to be handled and worked on-site as per similar generally accepted timber products with installation contractors providing relevant safe work method statements.

Two person lift required for XLT Floor panels.

XLAM recommends using mechanical aids to assist with movement where panels cannot be safely manually handled. Physical & manual movement of XLT Floor should be kept to a minimum.

The strength of the floor framing in the temporary condition must be confirmed as suitable for supporting the weight of XLT Floor panel pack(s). Suitable storage locations shall be agreed.

DISCLAIMER

This design guide has been prepared for use by suitably qualified construction professionals to assist in the design and specification of XLAM XLT Floor panels. Products referred to in this document other than XLAM panels are presented for information purposes only and due regard should be given to the relevant Australian Standards and other manufacturer's literature. Advice on overall building design issues including, but not limited to: stability, loading, temporary stability during construction, fixings, waterproofing, engineering and overall acoustic performance are not covered by this guide and advice should be sought from suitably qualified professionals. It is the responsibility of the user to ensure that the use of this design guide is appropriate and to exercise their own professional judgment when using the document.

MASS TIMBER MADE EASY.



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