

ReGen
BUILDING SOLUTIONS



XL - FLOOR 75

**PRODUCT INFORMATION
+ INSTALLATION GUIDE**

**BUILDING BETTER WITH MEGA
MADE IN AUSTRALIA**

CONTENTS

- 3 XL-FLOOR PRODUCT INFORMATION
- 4 COMPOSITE FLOORING SYSTEM
- 5 PANEL SIZES
- 6 LAYING ORDER
- 7 LOADS SPAN TABLES
- 8 INDEPENDENT TESTING
- 8 SUSTAINABILITY VALUES ACOUSTIC TABLES
- 9 AUSTRALIAN STANDARDS
- 10 SAFE WORK PRACTICES
- 12 INSTALLATION
- 22 WARRANTY
- 23 IMPORTANT NOTES



XL-FLOOR PRODUCT INFORMATION

Welcome to XL-Floor, a new and innovative product from ReGen Building Solutions, a wholly Australian owned and operated business.

XL-Floor combines both a floor substrate and embedded insulation to provide a lightweight multi-purpose substrate structural insulated floor.

XL-Floor provides exceptional thermal and acoustic insulation ratings.

Having an insulated barrier between floors ensures that sound transmission is minimised between levels. With an enclosed system, inter-floor noise, and flanking noise can be substantially reduced.

XL-Floor can be used as a subfloor in a range of applications:

- Internal and external
- Suspended floors
- Multi-level construction
- 'Stump'/pier construction with steel or timber frame
- Studios or granny flats
- Transportable homes and offices
- Decking
- Balconies
- Multi-story application
- XL-Floor is suitable for class 1 – 10 building construction.

XL-Floor panels can be fixed in many configurations that would not previously be possible. The spline-based joints ensure the rigidity of the system even with off-joist jointing.

Off-joist panel jointing completely removes the requirement for cutting back flooring substrates to end-meet on a joist. This not only saves material and the environment, but also saves time and labour costs. With four different panel configurations available, starting at the corner of a room. This construction methodology reduces installation time, and hence significantly reduces the total material and install cost per square metre.

The process of laminating the componentry together, combined with the proprietary, independently certified jointing systems means that XL-Floor can achieve improved performance benefits over other comparable products available.

XL-Floor standard panel size is 2400x1200mm and 75mm thick, weight 75kg per panel.

For ease of installation, there are 4 different panel configurations to choose from, depending on the particulars of your job.

MEGABOARD IS SUSTAINABLE AND ECO-FRIENDLY

XL - Floor is a composite flooring system consisting of two primary materials. MEGABOARD, a Magnesia Cement Board (MCB) board, and Expanded Polystyrene (EPS), are combined to create a structural insulated panel.



1. MEGABOARD is used in the manufacture of XL-Floor panels.

MEGABOARD is a sustainable and eco-friendly product that is manufactured using naturally occurring materials. The low energy embodiment is due to the curing process that is carried out at room temperature making it a low-emission product.

MEGABOARD produces about 90% less pollutants than Portland cement products and uses up to 40% less energy in its manufacture.

MEGABOARD is 100% recyclable.

MEGABOARD is non-toxic-does not contain any organic solvents, formaldehyde, asbestos, oils or other toxic substances that can have a negative impact on human health, waterway and the wider environment.

MEGABOARD is mould and fungus resistant, does not off-gas and contains no toxic ingredients. This makes it perfect for those who suffer from allergies, asthma and other chemical and indoor environmental sensitivities.

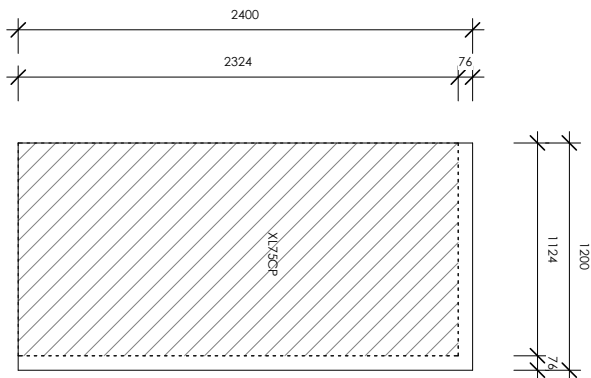
MEGABOARD is termite resistant.

2. EPS Core Expanded Polystyrene

'H' Series, is a lightweight closed cellular plastic that has exceptional insulating properties and is highly durable for its weight. It is also almost entirely water impervious, making it the perfect solution for both interior and exterior applications where water penetration may be a consideration.

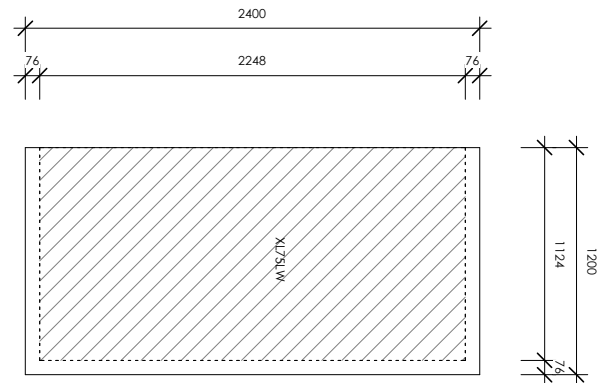
PANEL SIZES

All XL-Floor panels come in 1200 x 2400 mm sizes, and can be cut down to suit the configuration of the space [\[see Laying order\]](#)



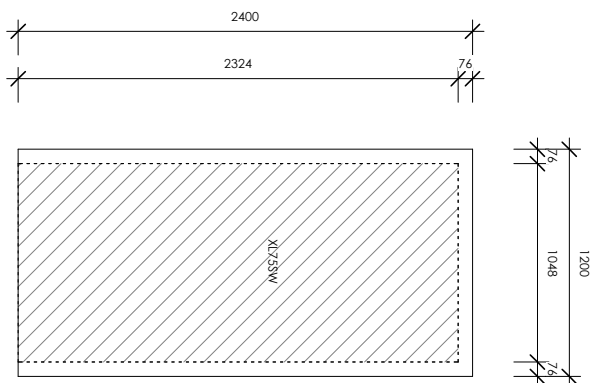
XL75CP – ‘Corner Panel’

One long edge and one short edge is not recessed, the EPS and MEGABOARD sitting flush. Use for starting a room in a corner not under a load-bearing wall.



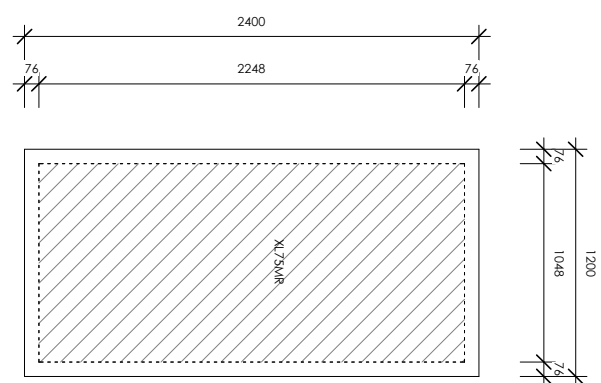
XL75LW – ‘Long Wall’

One long (2400mm) edge is not recessed, the other 3 are. Used against non load-bearing wall perpendicular to the joists.



XL75SW – ‘Short Wall’

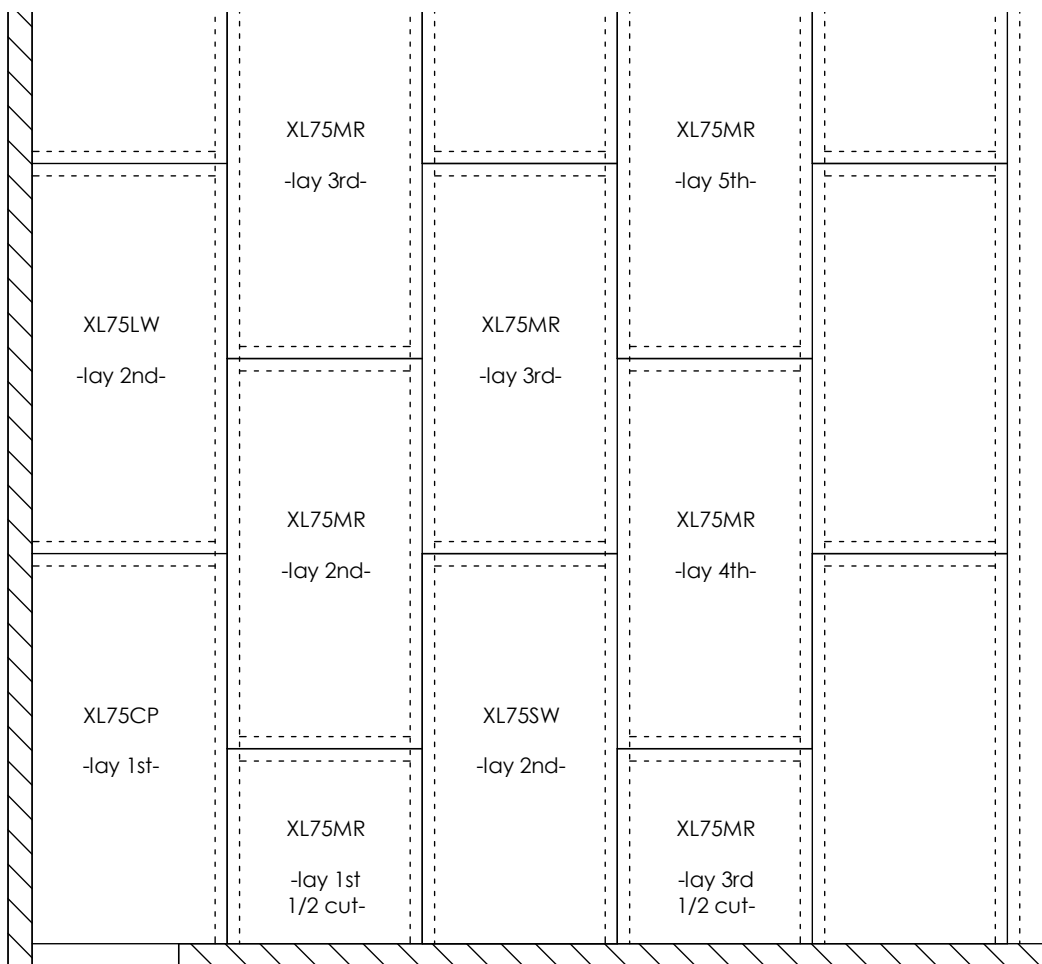
One short (1200mm) edge is not recessed, the other 3 are. Used against non load-bearing wall parallel to the joists.



XL75MR – ‘Mid Panel’

All four edges are fully recessed to allow for spline or LVL nesting. Used in mid-room runs or in any load-bearing wall application with the appropriate LVL nesting.

TYPICAL PANEL INSTALLATION



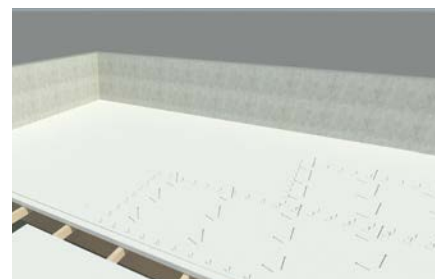
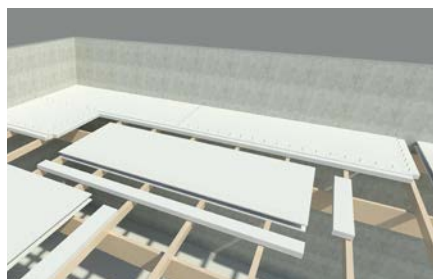
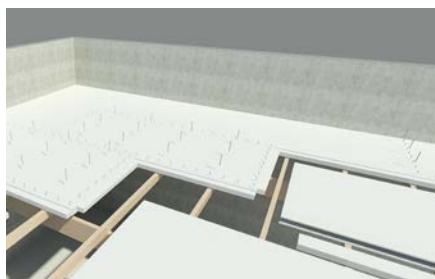
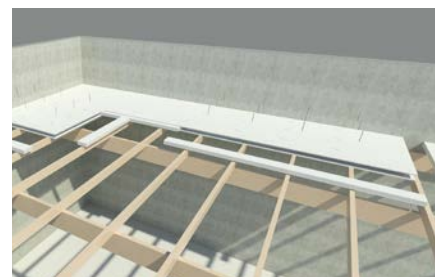
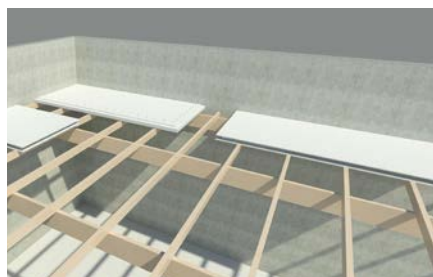
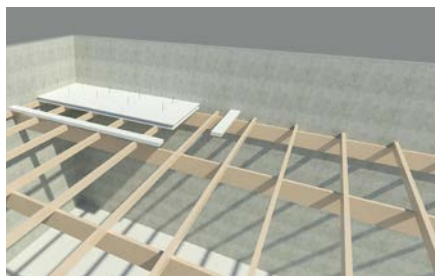
LAYING ORDER

The order in which XL-Floor is layed is simple to understand in practice.

Start at a doorway or the edge of the floor and begin in a corner.

Adding adacent panels will give a flat and safe working platform from which to lay and transport the following panels.

*Independently
tested in Australia*



FLOOR LOADS

XL-Floor 75: Imposed floor actions

Joist Span	Uniformly Distributed Load (kPa)				
	Span/150	Span/200	Span/250	Span/300	Span/400
450	46.00	46.00	46.00	46.00	46.00
600	46.00	46.00	46.00	46.00	46.00

Joist Span	Point Load (kN)				
	Span/150	Span/200	Span/250	Span/300	Span/400
450	1.80	1.80	1.80	1.80	1.80
600	1.80	1.80	1.80	1.80	1.80

XL-Floor was tested for uniform distributed loading (UDL) and concentrated point loading (PL) based on the requirements of AS 1170 –2002/AS 1170.1.

In every test XL-Floor exceed the design requirements.

XL-Floor 75 satisfies the listed strength and deflection requirements for imposed floor actions in accordance with AS/NZS 1170.0 and is suitable for joist spans up to 600mm for self-contained dwellings (1.5kPa uniformly distributed actions and 1.8kN concentrated actions)

*Exceeds the design requirements,
made in Australia*

INDEPENDENT TESTING

XL-Floor has been independently tested in Australia by Certified NATA labs and Certified Engineers to provide complete rigidity and strength to flooring, even when the XL-Floor panel joints don't align to the positioning of a joist – a problem constantly experienced by builders

The provision for including load transfer from load-bearing walls has been addressed (*see Load Bearing Elements*).

XL-Floor was tested for uniform distributed loading (UDL) and concentrated point loading (PL) based on the requirements of AS 1170 –2002/AS 1170.1 (*see Floor loads*).

XL-Floor satisfies the listed strength and deflection requirements for imposed floor actions in accordance with AS/NZS 1170.0 and is suitable for joist spans up to 600mm for self-contained dwellings (1.5kPa uniformly distributed actions and 1.8kN concentrated actions) (*See Floor loads*)

ACOUSTIC PERFORMANCE

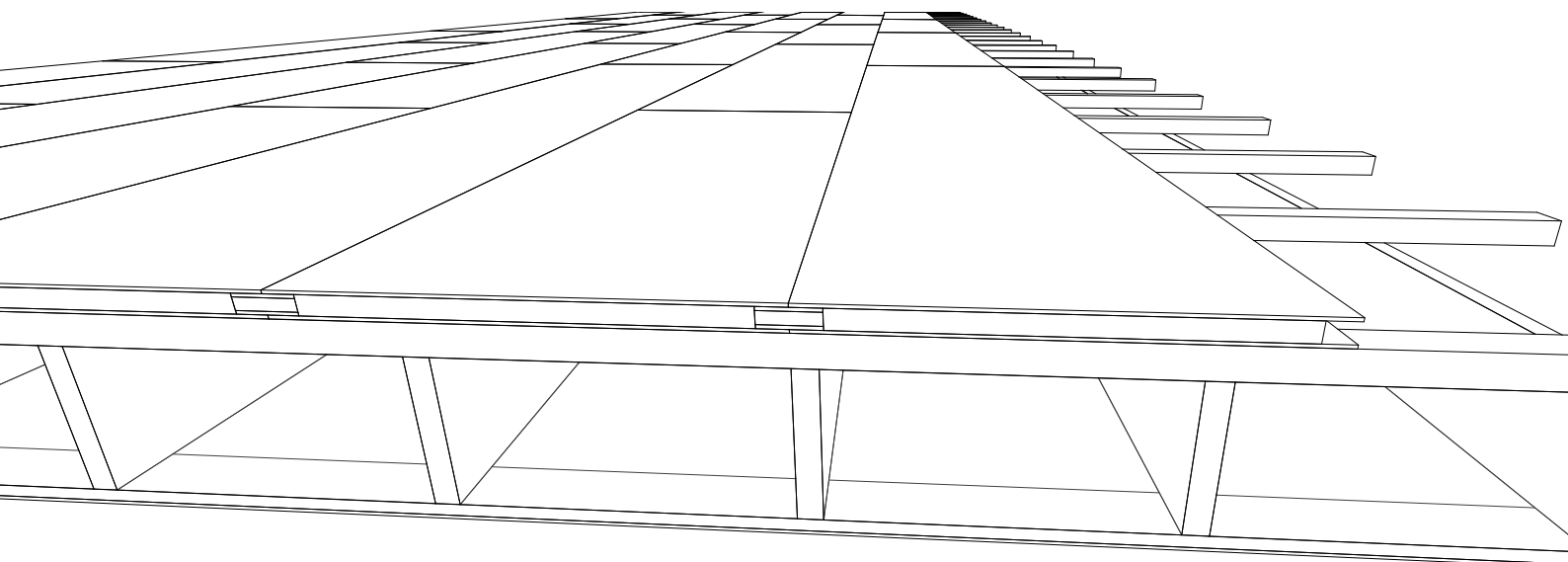
Having an insulated barrier between floors ensures that sound transmission is minimised between levels. With an enclosed system, inter-floor noise, and flanking noise can be substantially reduced.

SUSTAINABILITY

The benefits of sustainable living have been well documented, and integrating XL-Floor into a structure assists in isolating the heat and cool loss between floors.

XL-Floor ensures a reduced carbon footprint of your house by reducing the amount of heating/cooling required in your home for a comfortable living space.

All materials of XL-Floor are fully recyclable.



Exceeding current structural & insulation requirements

Insulation Properties

Enclosed Subfloor (12deg C amb-18deg C int)		
	R(m2K/W)	Delta-T
Winter	2.6	6.00
Summer	2.4	12.00
Unenclosed Non-Reflective Sub-floor + Air Film (36deg C amb-24deg C int)		
	R(m2K/W)	Delta-T
Winter	1.9	6.00
Summer	1.8	12.00

- AS/NZS 4859.1:2002, Amdt.1 2006, Cl. K5(b) - Air Films.
- AIRAH Technical Handbook, Edition 5 2013, pp. 62-75 Thermal Properties of Building and Insulating Material.
- Material R-value tested to AS/NZS 4859.1.
- This table does not consider thermal bridging
- Delta-T is the thermal rate of change



AUSTRALIAN STANDARDS

XL-Floor system from ReGen Building Solutions exceeds the current structural and insulation requirements stipulated in the National Construction Code of Australia (NCC).

By testing systems to all relevant Australian Standards we can provide a comprehensive range of solutions which are all compliant.

AS 1170.1:2002 Structural Design Actions
Part 1: Permanent Imposed and other actions.

AS 2908.2:2000 Cellulose Cement Products
Part 2 Flat Sheets

ASTM D3273-00 Mould Resistance

EN13501-1-2007 Non-combustibility and calorific value Class A1.

Timber framing must be in accordance with **AS 1684** – 'Residential timber-framed construction'.

Steel framing must be in accordance with **AS 3623** – 'Domestic metal framing'.

Megaboard is non-toxic

SAFE WORK PRACTICES

For safety while using XL-Floor, please note:

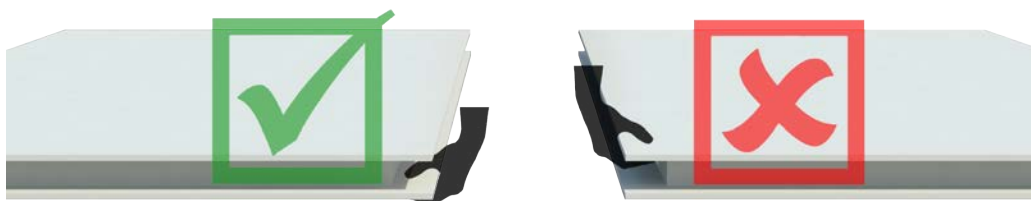
- Do not breathe dust and cut only in a well ventilated area.
- When cutting boards with power tools avoid cutting in an enclosed area.
- Wear safety goggles with side shields.
- If cutting boards in an enclosed space wear P1 or P2 respirator.
- Wear long shirt and long pants to reduce potential skin irritation.
- Wear gloves to reduce possibility of cutting hands when handling boards
- Wear safety footwear as per Aust Standards.
- During clean up use wet clean up methods or HEPA vacuum.
- Refer to website for Safety Data Sheet.
- Panels should be carried by 2 people on edge and safe manual handling procedures should be followed.

Failure to install, finish or maintain this product in accordance with relevant building codes, regulations, standards and ReGen's current published instructions may lead to personal injury, affect system performance, violate local building codes, and possibly void the product warranty.

ReGen advises that XL-Floor contains fiberglass reinforcing and causes fine dust when cutting or machining. Continuous or excessive inhalation of fine dust containing fiberglass particles can cause irritation and may cause lung scarring (silicosis). Exposure to such dust may cause irritation to the skin or other body surfaces.

STORAGE AND HANDLING

To minimise product damage products supplied by ReGen Building Solutions should be stored where possible with the edges and corners of the panels protected from accidental damage. When storing, place on bearers or other structurally sound supporting system off the ground. Ensure panels are placed horizontally flat, under cover. Ensure that panels are picked up from the bottom leaf, rather than the top. See Below



A modern living room interior featuring a large, multi-level ceiling with a prominent skylight. A large, beige sectional sofa is positioned in the foreground. In the background, there is a dark wood entertainment unit with a television and white storage cabinets. A stone fireplace wall is visible on the right side of the image. The floor is covered with a dark brown carpet.

**XL-FLOOR ENSURES
A REDUCED CARBON
FOOTPRINT OF YOUR
HOUSE BY REDUCING
THE AMOUNT OF
HEATING/COOLING
REQUIRED IN YOUR
HOME**

PANEL INSTALLATION





It is almost unheard of to find a system that is as fast as it is strong, as easy to install as it is effective, or as green as it is cost efficient.



ReGen's XL-Floor provides a state of the art solution to flooring that supersedes other conventional substrates in every way, and is just as easy to install!

Only basic tools are required for the install of generic XL-Floor panels.

You will need:

- XL-Floor panels (see configuration diagram for layouts)
- XL-Floor construction adhesive
- 120mm bugle screws
- 25mm bugle screws
- Hammer or mallet
- Impact driver or drill
- Stringline or chalk-line
- Circular saw
- Pencil

	Cordless driver
	Tape measure
	Mallet or hammer
	Pencil

	Chalk line reel
	Circular saw

STEP 1

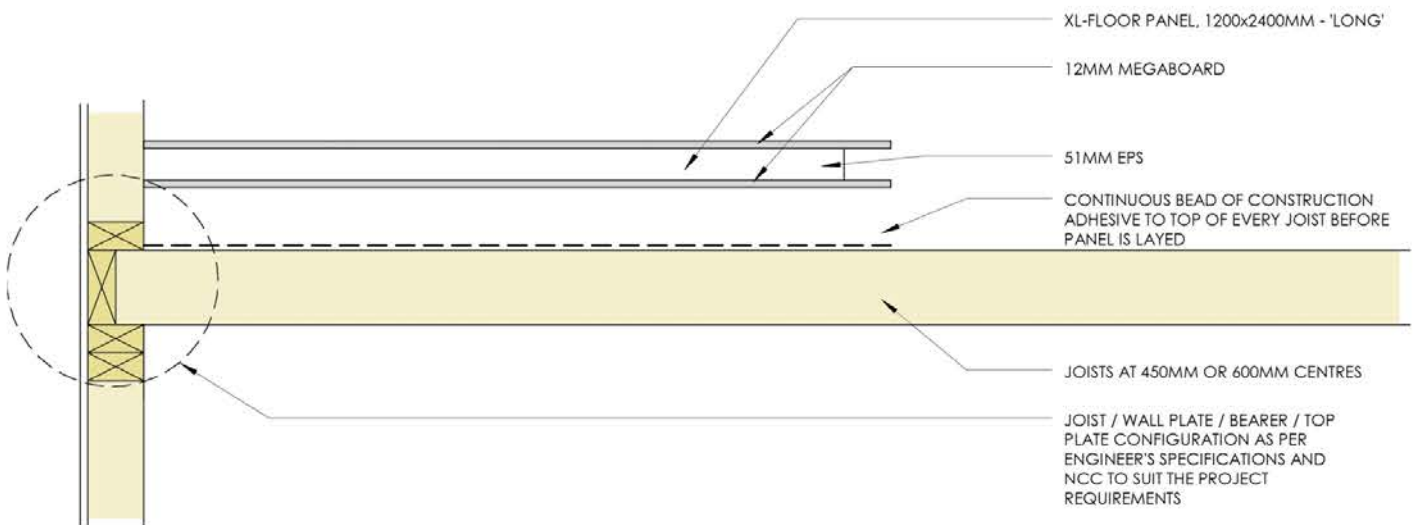
1.1 Firstly ensure that your worksite is safe, with temporary work platforms available to work from. Working from open joists is bad construction practice and can be dangerous. Everyone deserves to go home from work every night safe, healthy and happy. XL-Floor panels not yet in use provides an excellent base for working from and enables fast installation.

1.2 Start from a corner of the room with existing walls, and carry a corner panel **XL75CP** to near the panel's final position.

1.3 Apply the construction adhesive as directed. It is very important that this is undertaken as it will ensure a strong corner as the adhesive cures. The adhesive should be applied in an 'S' configuration along the length of the joists, and covering the full area the panel is to rest on.

1.4 Place the **XL75CP** into position, ensuring that the non-recessed corner of the panel is firmly pressed into the corner. You should notice that the edges of the panel are flush with the existing walls.

1.5 N.B. it is critical to ensure that the length of the board being used is perpendicular (running at right angles) to the span direction of the joists.



STEP 2

2.1 Using a ruler or XL-Floor Spline piece, mark with a pencil the line of all of the supporting joists. At equal thirds along each joist line, mark three points, nominally 300mm from each other. These will become the points for the bugle screw insertion.

2.2 Using a drill or impact driver screw a bugle screw into the joists below at the marked locations.

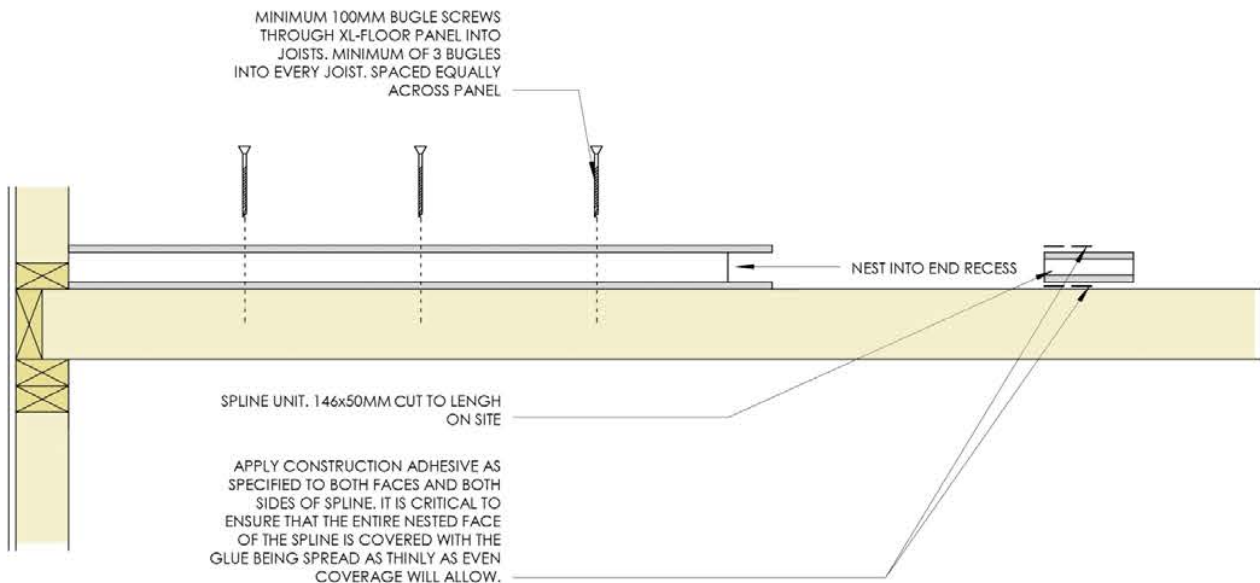
2.3 Ensure that the head of the bugle is flush with, or fractionally below the surface of the MEGABOARD sheet to ensure there is no disruption in the laying of the flooring.

2.4 Using a circular saw, cut back a Spline to fit the short ends of the panel. N.B. it is very important to ensure that the short Splines get cut to the precise length of the EPS in the panel.

2.5 Apply a bead of adhesive to the top of the lower leaf of the short side of the panel already in place. Then apply a bead of adhesive to the top edge of the Spline, ensuring that the 'S' shape covers no more than half of the width of the Spline.

2.6 Using gentle persuasion, slide the Spline into the short edge of the panel. N.B. it is important to tap the Spline in equally, rather than fully nesting one corner then trying to work along from that point.

2.7 Repeat steps 2.5 and 2.6 for the long Spline, running the length of the panel



STEP 3

3.0 Screw fix the Spline at through the 150mm centres around the outside.

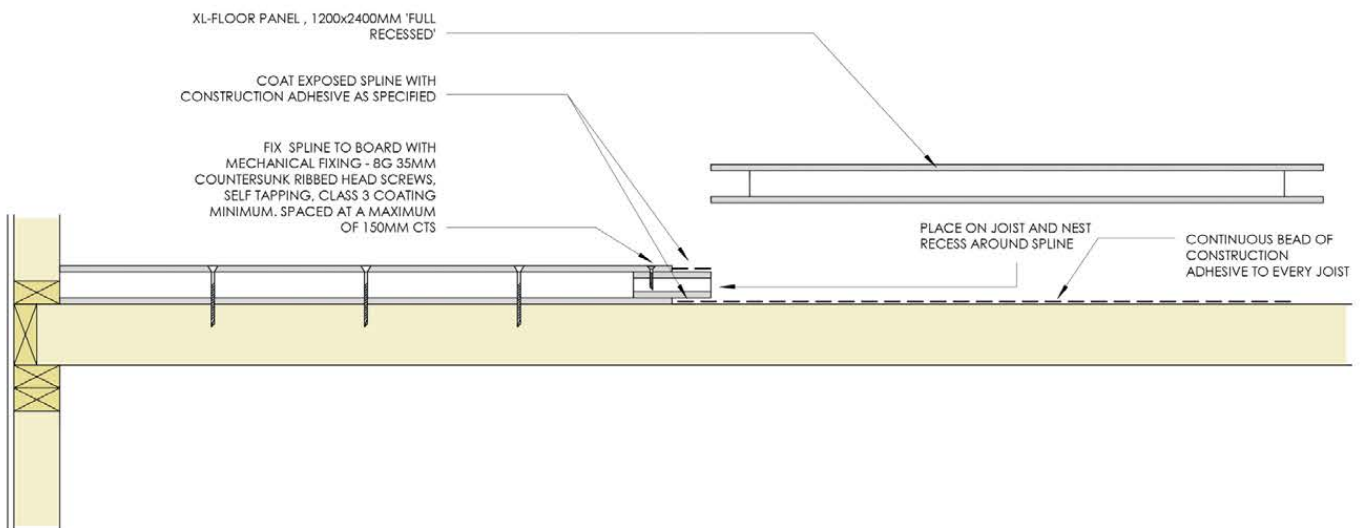
3.1 Get the next panels that you will be laying along a wall, either an **XL75LW** or **XL75SW**.

3.2 Using construction adhesive, apply the required bead over the joists that will be supporting the new panel.

3.3 Apply the adhesive to the top face of the Spline, and the top face of the bottom leaf of MEGABOARD.

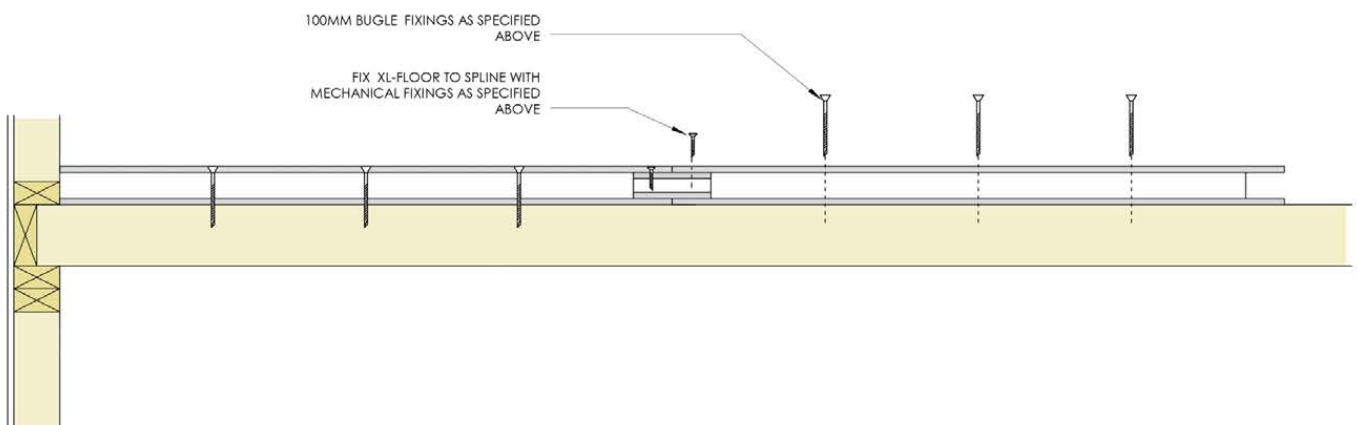
3.4 Slide the panel into place, using some gentle persuasion if required.

3.5 N.B. Boards need to be staggered lengthways, so when an **XL75MP** is put in place next to the corner panel it will need to be cut down to approximately half the length, allowing a stagger.



STEP 4

4.1 Fix with bugle screws and repeat the process moving out from the corner.



LOAD BEARING ELEMENTS

Intermediate load bearing walls placed on XL-Floor can be accommodated with the simple nesting of an LVL



LOAD PATHS AND SUPPORTS

Load must always pass through the structure to the footings of any given building, and XL-Floor has a way to do just that without compromising the integrity of the insulation or needing excess complex work.

This is critical when a building has been designed to have the load bearing walls placed on the flooring substrate. In these instances the engineer or designer will have specified a bearer or other load bearing element to support the load above, and transfer it to wall elements or posts. Ensuring that load bearing walls or points can pass through XL-Floor and into the structure is as easy as replacing the use of a Spline with a 150x50mm LVL

RUNS AND LVLS

Nesting LVLs in place of splines ensures that the EPS in XL-Floor cannot be crushed by excess weight. Using a 150x50mm LVL directly replaces the Spline.

It is important to note that if a load bearing wall is in the middle of a floor, rather than the edge, the panel configuration must be slightly adjusted to ensure the jointing of the panels runs down the length of the wall. It is critical to ensure that the ensure length of the load bearing wall has a nested LVL under it.

Adjusting the runs to suit in this fashion will mean that it may be necessary to cut the panels back to the right size around some of the perimeters.

STEP 1

1.1 Start with one XL-Floor panel at the edge of the room, and fix one to the joists as described above using construction adhesive and 3x bugle screws to each joist.

1.2 Instead of nesting a Spline, use an LVL cut to length instead, and glue using construction adhesive. Ensure that that LVL is screwed through the top leaf of the MEGABOARD into the bearing element below with bugle screws at a maximum of 600mm centres.

1.3 If you have a situation of one panel supporting two load bearing walls (as illustrated) then the edge panel will need to be cut back.

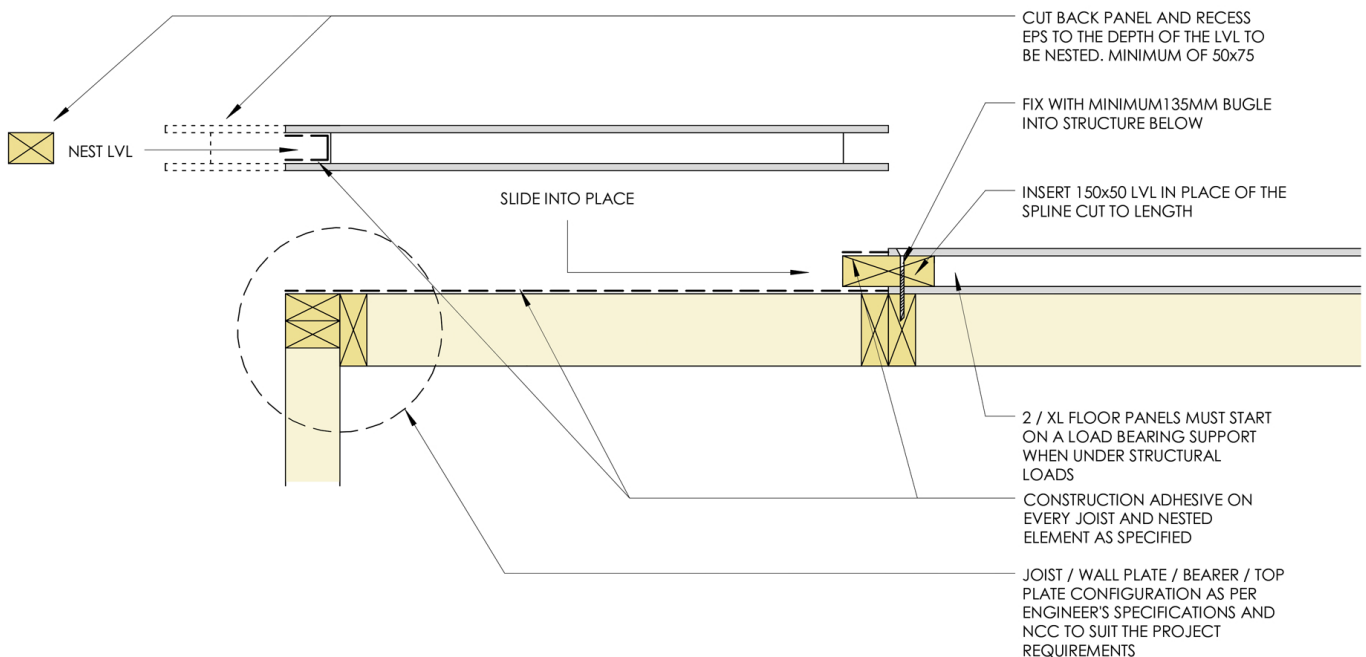
1.3.1 Using a circular saw, mark the length of the panel and cut back to suit.

1.3.2 Using a hot wire, or ReGen's EPS cutting tool, remove 75mm of EPS and clean the board surface on both sides with a blade or spatula.

1.3.3 Apply construction adhesive to all three edges of the nesting area, upper and lower MEGABOARD leaf, and the EPS at the back and insert a 75x50mm LVL.

1.4 Apply glue to the joists that will be supporting the second (cut back) panel, the bottom MEGABOARD leaf of the cut panel and the top of the LVL

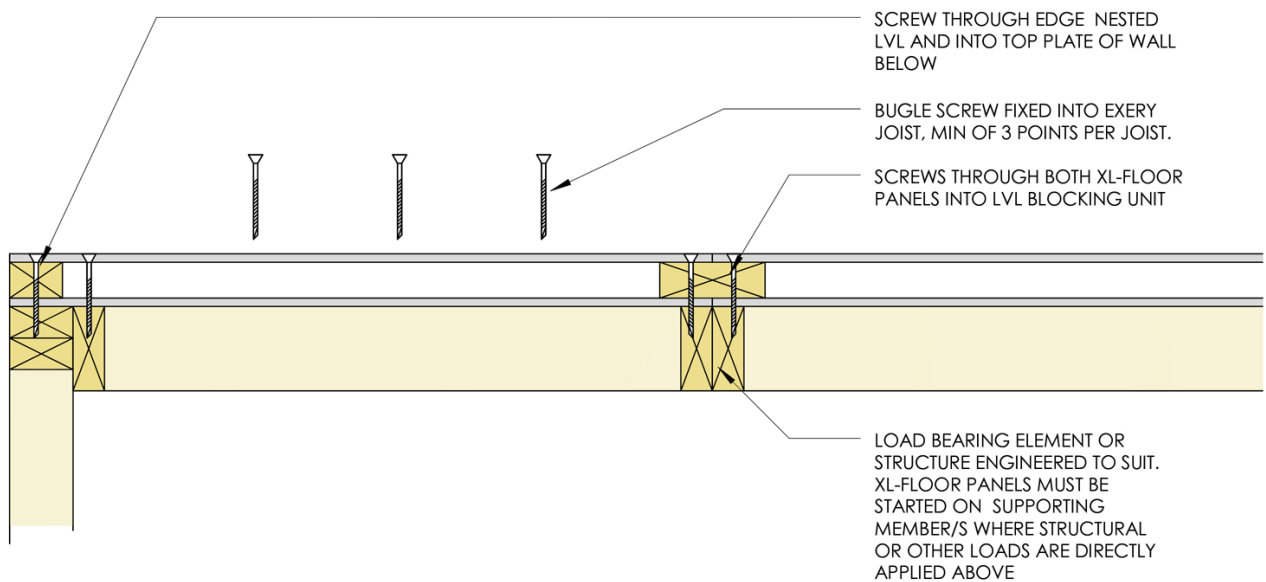
1.5 Slide the nested panel into position, ensuring that the two panels sit flush together.



STEP 2

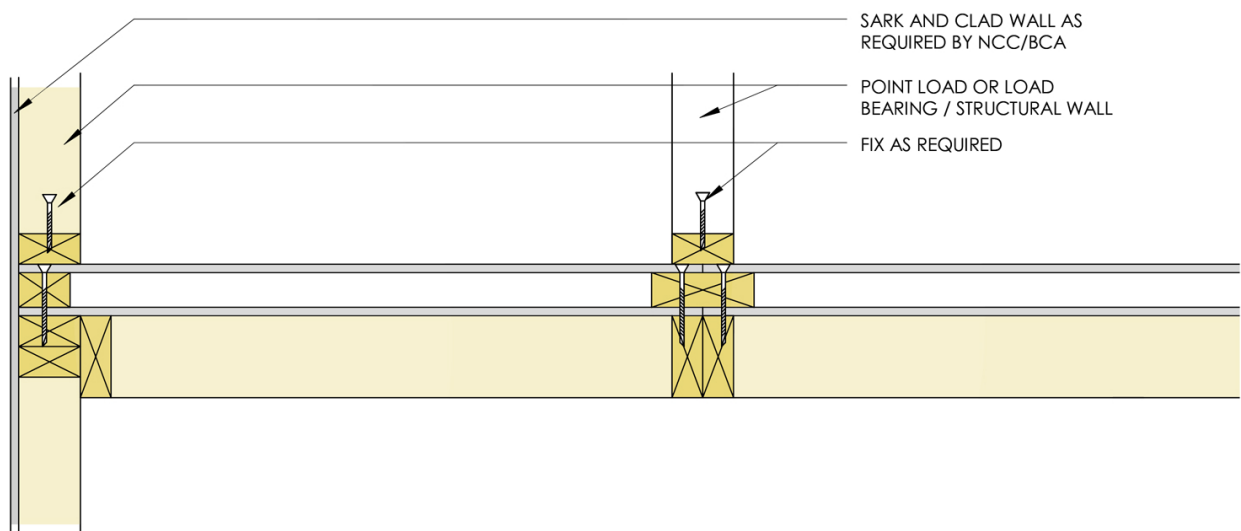
2.1 Screw the panel in place as per typical installation methods, marking out nominally 300mm apart on the line of the joists.

2.2 Ensure that the edge of the panel where it has a nested LVL is screwed through each joist, or a maximum of 600mm centres, whichever is lesser.



STEP 3

3.1 Using standard construction methods, fix the bottom plates/tracks to the nested LVL through the MEGABOARD sheet.





**MEGABOARD IS
A SUSTAINABLE
AND ECO-FRIENDLY
PRODUCT THAT IS
MANUFACTURED
USING NATURALLY
OCCURRING
MATERIALS.**



IRREGULAR RUN ENDS - EXISTING

Areas that are not divisible by the full panel system will need to be adjusted on site. This simple, logical and efficient process allows for perpendicular and off-angle walls without compromising the flooring system

GRIDLINES AND MODULAR BUILDING

The best way to save time, cost and materials in any building project is to ensure that the design of the structure is based around modular gridlines. This could be done in many ways, either working on a 300mm or 600mm square grid, or even a 2400mm x 1200mm rectangular grid. They can be set from the distance of the internal of the walls or the wall centreline, both options make the building process smoother. The only requirement is for consistency.

If the building designer or architect follows these simple steps then having to modify regular building elements becomes a thing of the past.

BENEFITS OF REGULARITY AND FULL SYSTEMS

Designing systems that conform to a regular grid can make a substantial time and cost saving to a project, allowing for the fast and seamless installation of XL-Floor without the need for any cutting.

Reduction in waste is of exceptional importance in the modern world, and sustainable use of material in manufacture, efficiency and off-cuts can greatly improve the long term performance of a building and the planet.

CUTTING THROUGH A PANEL IN FULL

In the instance that a panel needs to be trimmed to fit against an existing wall, this can be done very easily.

Using a tape measure, ruler (or piece of Spline) and a circular saw cut back the final panel, measuring from the edge of the full board. This cut should be through the entire panel, providing a smooth and flush finished surface.

CUTTING THE LOWER LEAF

In order to drop the panel into position, the lower leaf of the board must be removed where it will be intersecting with a Spline.

To undertake this, firstly flip the panel upside-down and set the depth of your saw to be enough to cut through one leaf of the board.

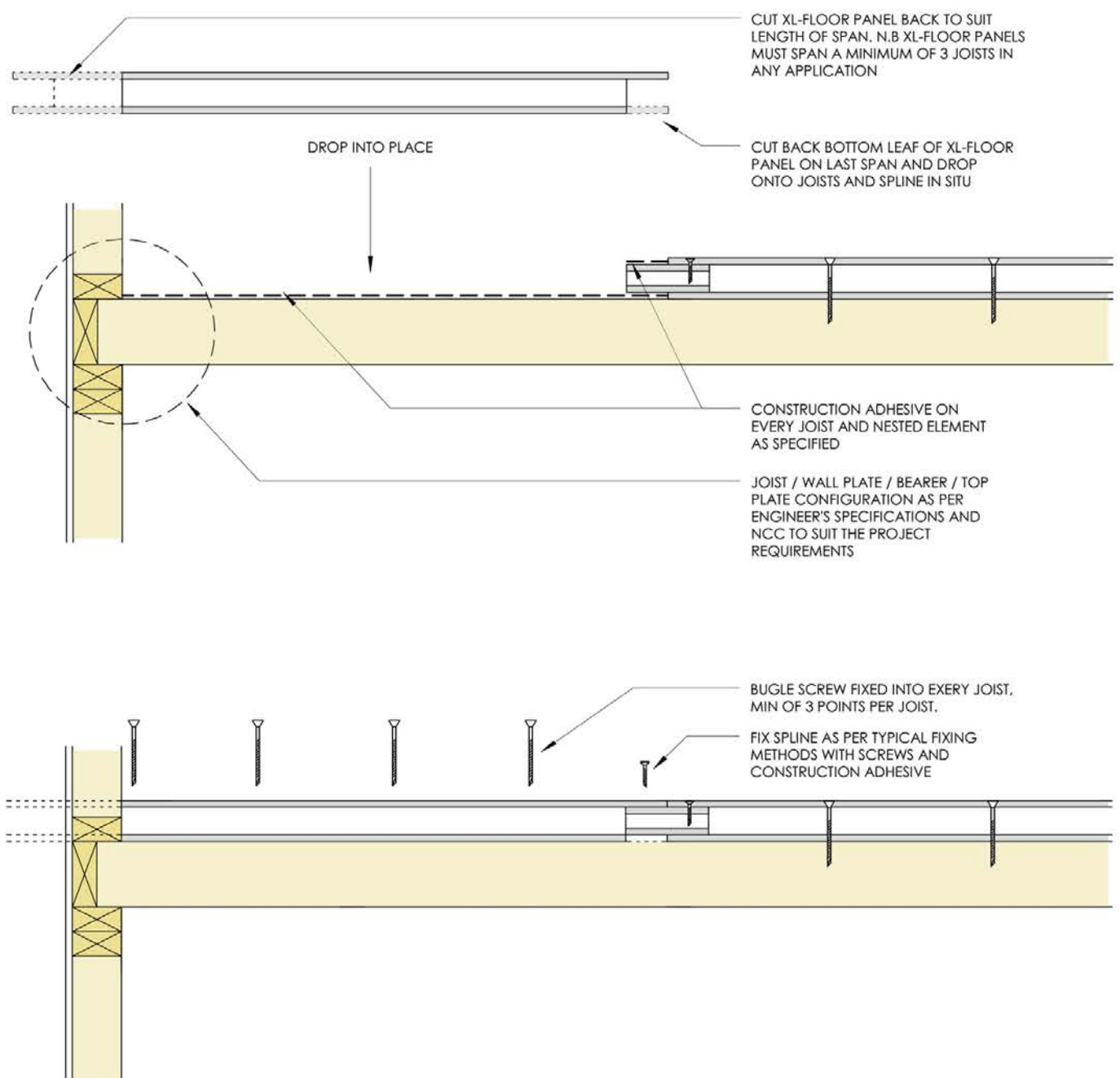
Mark out 75mm from each edge of the panel that will be sitting on a Spline, and cut along the line. Then flip the panel back over. This should produce a panel with the top board the same dimensions as the area to be filled, and the bottom board (and EPS) the same dimensions as the area to be filled after the Splines.

PLACEMENT AND FIXINGS

Double check the dimensions of the lower leaf of board and the EPS. They should be able to slip snugly between the splines in place, and the existing edge wall.

Apply construction adhesive to the joists, and to the top of the Splines the board will be in contact with, and gently place the panel in situ.

Using an impact driver or drill, screw fix the board in place with bugle screws, making sure there is one extra fixing 45mm away from the perimeter of the panel against the wall.





A 10 Year Warranty

10 YEAR WARRANTY

ReGen Building Solutions warrants to the original purchaser of XL-Floor (Product) that are subject to the Conditions of Warranty below. ReGen Building Solutions will provide a 10 year manufacturer Warranty when installed in strict accordance with this document and all other Australian Codes and Standards.

a) The warranty period will be for a period of 10 years from the date of purchase. XL-Floor will be free from defects due to defective factory workmanship or materials and are of merchantable quality and are solely for the purpose prescribed for the XL-Floor System.

b) For a period of 10 years from the date of purchase XL-Floor will be resistant to cracking, moisture, rotting, fire and termites. Note: Cracking does not include where the board is subject to loads beyond the loads indicated in the approved building system or within this document.

c) For the purpose of this warranty a defect in respect of the product means it does not comply with: -

- AS/NZ 2908 2:2000 Cellulose-cement products – Flat sheet.

10 YEAR SYSTEM

ReGen Building Solutions warrants to the owner for 10 years from the date of purchase that the XL-Floor system will remain fit for purpose (i.e. use in the XL-Floor system) provided it is installed in accordance to the Build System provided by the distributor and issued through the manufacturer. (Refer to the Distributors website for Build system).

LIMITATIONS OF LIABILITY

I. ReGen Building Solutions will not be responsible for breach of warranty unless the purchaser provides proof of purchase and makes a written claim at the address provided below, either within 30 days after the defect became reasonably apparent, or if the defect was reasonably apparent prior to installation.

II. The product is subject to natural variation in the manufacture process. The purchaser must ensure the product meets aesthetic requirements before installation. ReGen Building Solutions is not responsible for claims that are made that could have been reasonably assessed prior to installation.

iii. This warranty is not transferable to any other party (other than through an Approved Distributor) than the buyer.

iv. XL-Floor must be installed in strict accordance with the design specification provided in the literature current at the time of the installation. Copies of the literature can be provided by Approved Distributors of the Product or from the supplier's website.

v. ReGen Building Solutions shall not (except as provided for in this warranty) be liable for any direct, indirect or consequential loss or damage which any user suffers, incurs or is liable for in connection with the supply of ReGen Building Solutions products.

vi. ReGen Building Solutions shall not (except as provided for in this warranty) be liable for any direct, indirect or consequential loss or damage which any user suffers, incurs or is liable for that exceeds the cost of any one of the remedies described herein.

vii. No other warranty, term, condition or representation is made or implied and all are excluded to the fullest extent legally possible.

Exceeding current structural & insulation requirements

vii. None of the above warranties:

a. Apply to any of the components which are not supplied by ReGen Building Solutions. The Approved Distributors may at their own discretion provide a third party warranty or, assist the owner to make any bona fide claim upon the manufacturer or supplier of any such component that the manufacturer or distributor-tor considers reasonable.

b. Relate to the XL-Floor systems which have not been stored or maintained in accordance to any published guidelines including documentation, training manuals or other information relating to the system that was supplied to the purchaser or was made known to the purchaser.

c. Apply to any part of the XL-Floor system which is damaged in anyway as a result of transport or handling.

viii. The XL-Floor System has been designed to be used in conjunction with only those components that are manufactured, sold or recommended by the manufacturer or Approved Distributor for use with the XL-Floor system. To the fullest extent possible, all warranties given by ReGen Building Solutions exclude and do not cover defects in faults of, damage to, and/or the failure (in whole or in part) of any components of its (Failure) wherein the sole judgement of ReGen Building Solutions, such failure arose from misuse, negligence, accident, failure to use approved components, unauthorised modification, improper use, storage or handling, faulty installation or tampering by the owner or any third party.

Claims should be made in writing to:

AR Building Solutions Pty Ltd

**16-20 Millers Road
Wingfield SA 5013**

IMPORTANT NOTES

1. This product is suitable for tiling, floating floor and carpet surface application.

2. XL-Floor is suitable for internal and external applications.

3. Failure to install in accordance with the installation manual or in accordance with the relevant building regulations may affect the systems performance and void the warranty.

4. Please ensure you have the latest copy of the Technical and Installation guide. Please visit ReGen Building Solutions website or call us on (08) 84640199

DISCLAIMER

Every effort has been made to ensure that the information contained within this document is correct at the time of issue. ReGen Building Solutions reserves the right to change the specifications of all products referred to in this document at any time. Changes made are uploaded on to the ReGen Building Solutions website.

PROUDLY BROUGHT TO YOU BY

ReGen
BUILDING SOLUTIONS



FOR ORDERS AND ENQUIRIES

(08) 8464 0199

regenbuilding.com.au

regen@regenbuilding.com.au

16-20 Millers Road, WINGFIELD, SA, 5013