



...the right choice

INSTALLATION MANUAL FOR OSB SIMBRACE®

Ideal for Sheeting

Available in both Untreated & H2 Treated

Sheet Sizes

2440 x 900 x 6mm

2745 x 900 x 6mm

3050 x 900 x 6mm

2440 x 1200 x 6mm

2745 x 1200 x 6mm

3050 x 1200 x 6mm

 Distributed By
Simmonds Lumber
Timber importers & wholesalers

 **Simmonds
SimBrace®**

Manufactured By
 **SWISS KRONO**

OSB SIMBRACE® INTRODUCTION

- Oriented Strand Board (OSB) is the most used structural board for timber framed buildings all over the globe – including the USA and Europe.
- Available in both Untreated and H2 Treated Boards.
- High quality, German made product.
- Light weight and extremely strong - has replaced plywood and particleboard in most applications.
- SimBrace® is made of 100% fresh pinewood from thinnings of PEFC®/FSC® certified sustainable forests.
- The strands are glued together with formaldehyde-free binders: SimBrace® can be used for food packaging applications.
- SimBrace® has excellent resistance to water & moisture making it especially suited for exterior bracing in construction applications – especially in areas where moisture is a concern prior to finished sheeting.
- SimBrace® is CE Certified under EN 13986 and produced in accordance with EN 300.
- Ask about our FSC® products. FSC® material available on request - License Code: FSC-C003273
- SimBrace® can be used with standard woodworking tools.
- Can be purchased with PEFC® or FSC® certification on request.
- SimBrace® complies with the Building code of Australia.

OSB SIMBRACE® INSTALLATION INFORMATION

It is required that OSB SimBrace® be installed in compliance with the Australian construction and building standards.

- EN 13986:2004 Service Class 2 – OSB SimBrace® complies with this Australian service class 2 requirement where installed into the cavity of brick veneer households or used on external walls before cladding facade is erected.

MOISTURE LEVELS & OSB SIMBRACE®

- Extended periods in contact with water, moisture and excessive condensation must be avoided.
- OSB SimBrace® has been tested and passed for use in environmentally humid circumstances where moisture content does not surpass 20%.
- OSB SimBrace® requires a minimum of 48 hours to acclimatise naturally to the environmental moisture content found on site – in doing so, you may expect minor dimensional movement across both vertical and horizontal sections of the board. See below important installation instructions that must be adhered to that allow for this slight board movement.

The table below stipulates the environmental moisture content of OSB SimBrace® and the designated use:

Relative Air Humidity	Approx Environmental Moisture Content	Designated Use
30% to 65% (Dry Conditions)	4% to 11%	Dry site and dry install. No risk of OSB SimBrace® boards getting wet in application.
6% to 5% (Dry Conditions)	11% to 17%	Wet site and potential of OSB SimBrace® boards getting wet in application, or sporadically during application.

WORKING WITH OSB SIMBRACE®

First and foremost, ensure that when working and handling OSB SimBrace® boards that you keep safety always in mind.

Use Personal Protective Equipment (PPE) and work in a safe, flat open area with plenty of ventilation and light. Be sure to wear:

- A protective face mask, gloves, eye protection, ear protection and steel cap boots.
- Holes can be made through the OSB SimBrace® board while not compromising its structural integrity, however the following conditions must be adhered to:
 - A maximum hole size of 100mm wide x 100mm high is permitted:
 - a) Inside the envelope range of 100mm from the top and side edges.
 - b) Inside the envelope range of 200mm from the bottom of the bracing board.
 - Numerous holes can be made into the surface of the board on the condition and understanding that:
 - a) The size of the hole cannot exceed 100mm in width x 100mm in height.
 - b) The centre grid lines are spaced not less than 600mm apart.
- Like any other board and panel products, OSB SimBrace® can be cut and shaped with standard carpentry hand tools and power tools. However be sure to practice using a slightly reduced feed rate than that of Plywood or MDF.
 - It is recommended that hand tools are sharpened before use to ensure clean and defined saw lines.
 - When using power tools, it is recommended that you use diamond tipped or carbide tipped cutters to ensure clean and precise saw lines.

- To coincide with acclimatisation movement, do not butt join OSB SimBrace® boards tightly – leave a minimum 2mm gap around all sides and edges of the board to allow for slight movement.
- If using OSB SimBrace® boards in a high wind speed area - ensure to consult a qualified engineer to determine the wind forces if they are outside the scope of the Australian Standards 1684-1999. This will ensure compliance with the Australian Standards 4055-1992 and/or 1170.2-1989.

FIXING SYSTEM: NAILS, SCREWS & STAPLES

There are various fastener system types recommended for use with OSB SimBrace®. They include, but not limited to:

- Hand Driven 2.8mm diameter x 30mm flathead hot dipped galvanised or noncorrosive nail (including stainless steel).
- Power Gun Driven 2.8mm diameter x 30mm flathead hot dipped galvanised or stainless steel – in accordance with Australian Standard 1684-1999.
- During fixing applications along top and bottom plates as well as edge studs, a minimum of 15mm spacing must be applied and a where OSB SimBrace® boards are attached to internal framing timbers, a minimum of 8mm spacing must be applied.

USING STAPLES TO SECURE OSB SIMBRACE® BOARD

Due to staples possessing a reduced holding capacity that that of screws or nails – more staples are required to securely and safely hold the OSB SimBrace® board in place. Therefore, when calculating the precise number of staples required, simply multiply the screw or nail spacing by a factor of 0.66. This will ensure the holding strength of staples is the equivalent hold strength of screws or nails.

RECOMMENDED MINIMUM FIXING TYPE FOR OSB SIMBRACE® BOARD

The table below stipulates the suitable fixing type for OSB SimBrace® board while conforming to the EWPA site standards.

Power Gun Driven Nails	Power Gun Driven Staples	Hand Driven Nails
Senco Brand: TN22-38 APB. 2.33mm Dia. x 38mm long Flathead Nail	Senco Brand: N167 BAB Wire Dia. 1.53mm Crown Width: 10.5mm	Hot Dipped Galvanised or Stainless Steel Flathead Clouts or Connector Nails: 2.8mm Dia. x 30mm long
Bostich Brand: AC45P-250-GW 2.5mm Dia. x 38mm long Flathead Nail	Bostich Brand BCS4-1232 Wire Dia. 1.53mm Crown Width: 10.5mm	
Duo-Fast Brand: C27.32GDTN22-38 APB 2.7mm Dia. x 32mm long Gal Nail		
Jambro Brand: B20998 2.8mm Dia. x 32mm long, Zinc Plated Barb		

Important Notes about the above Fixing Type Table

- Other screws, nails and staples can be used other than the ones specifically listed above – however, be certain to ensure they have corresponding fixing dimensions to the items listed above (eg: length and shank diameter).
- All fasteners used with the OSB SimBrace® board must be that of hot dipped galvanised or noncorrosive metal such as stainless steel.
- If using smaller diameter hand driven nails, ensure to make many more fixing points with reduced spacing between these points to ensure the OSB SimBrace® board remains strong and secure.
- Be sure to check the lateral load for the fixing item you wish to use in conjunction with the nail size to ratio found in table 4.1 of the Australian Standards 1720.1: Timber Structures – Design Methods.

BOTTOM PLATES INSTALLED ONTO OSB SIMBRACE®

The installation of bottom plates must be applied as per Australian Standard 1684-1999 and design constraints found in Australian Standard 1720.1-1997.

- Bracing resistance is achieved by the hold down capacity found in the OSB SimBrace® boards.
- In applications where heavy duty resistance is required to prevent uplift – items such as site specific cyclone rods may be required.

USING BRICK TIES WITH OSB SIMBRACE®

Face fixed brick ties must be used when OSB SimBrace® boards are required within cavity of a brick veneer wall. This ensures the Australian Standard 2699 is adhered to. It is required that the brick ties be secured through the OSB SimBrace® boards to the outer face of the framing wall stud.

TIMBER FRAMING WITH OSB SIMBRACE®

The detailed racking resistance information located in this OSB SimBrace® Installation Manual were formulated using timbers with nail holding resistance of JD5 and a maximum stud spacing of 600mm centres.

- Note therefore, that there are no reduction factors advised for fixing to JD5.
- Other panels and boards, such as plywood (requires a 12.5% reduction factor) and hardboard (requires a 16% reduction factor) – but with OSB SimBrace® no reduction factors are applicable.

OSB SIMBRACE® UPLIFT RESISTANCE CAPACITY

The table below stipulates the permitted uplift resistance capacity of OSB SimBrace® board when used in enclosed wall systems.

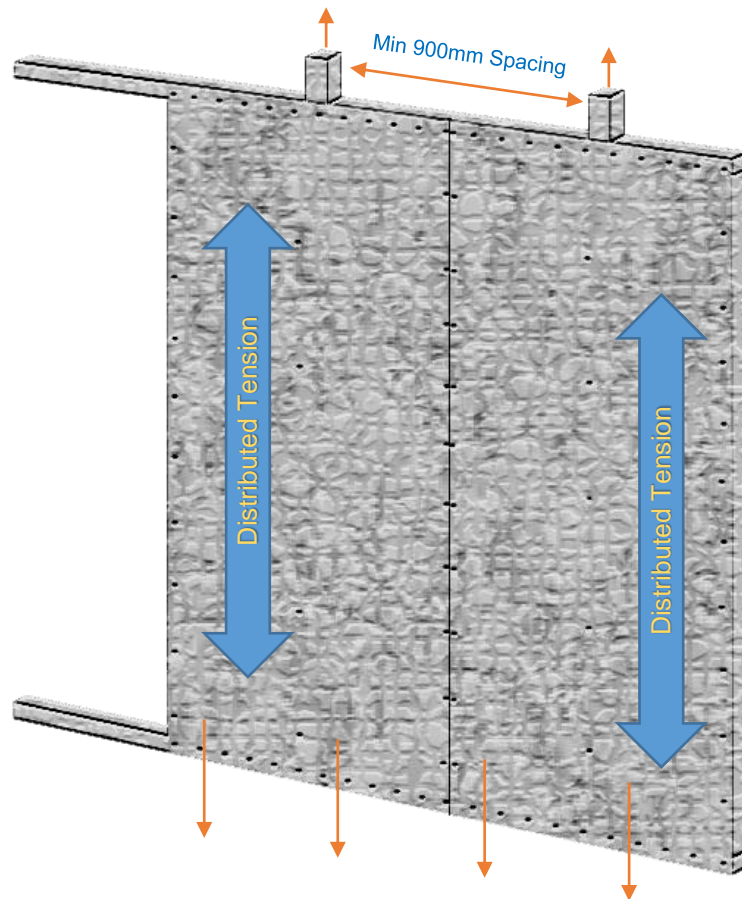
Note: Minimum rafter/truss spacing measured at 900mm.

Permitted Uplift Resistance (kN/Rafter)	Fastener Spacing: Top & Bottom Plates
7.5	80mm
8.5	40mm

The rafter/truss top plate connection is responsible for the distribution of the wind uplift load across the OSB SimBrace® board. This uplift load in question is transferred to the bottom plates then again, distributed across the OSB SimBrace® board. This back and forth tension distribution continues between the plates until the wind pressure subsides.

The OSB SimBrace® board acts as the holding tension between the top and bottom plates. This is shown in the figure below – note the tension spread across the OSB SimBrace® board.

Top plate to rafter/truss connection as per Australian Standard 1684.



Bottom plate to floor or sub floor connection as per Australian Standard 1684.

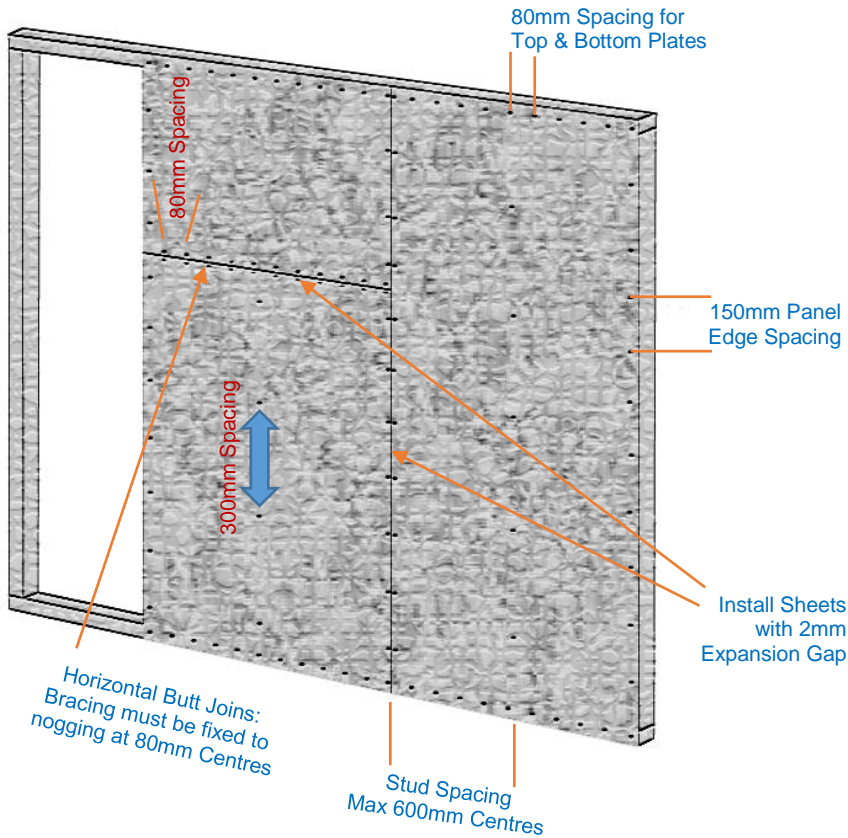
USING OSB SIMBRACE® ON BOTH SIDES OF WALL

This install guide outlines the use of OSB SimBrace® board on one side of the wall, with acceptable racking resistances noted from 3.4kN/M to short wall bracing. OSB SimBrace® board is more than capable to be used as a structural bracing on both sides of the wall on the condition that the hold down requirements of the bottom plate is also doubled.

Note: Ensure the increased bottom plate size is safe and secure before sheets of OSB SimBrace® are fixed to wall framing.

OSB SIMBRACE® WALL DESIGN GUIDE

Listed below is information on four common wall design specifications for OSB SimBrace® board.

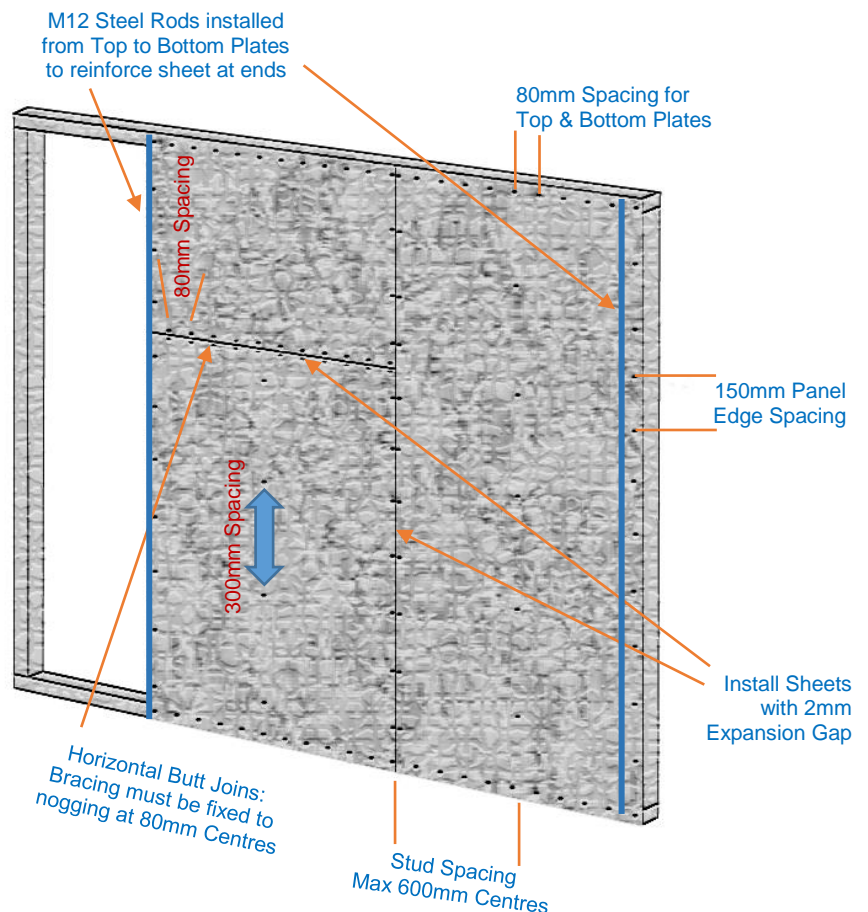


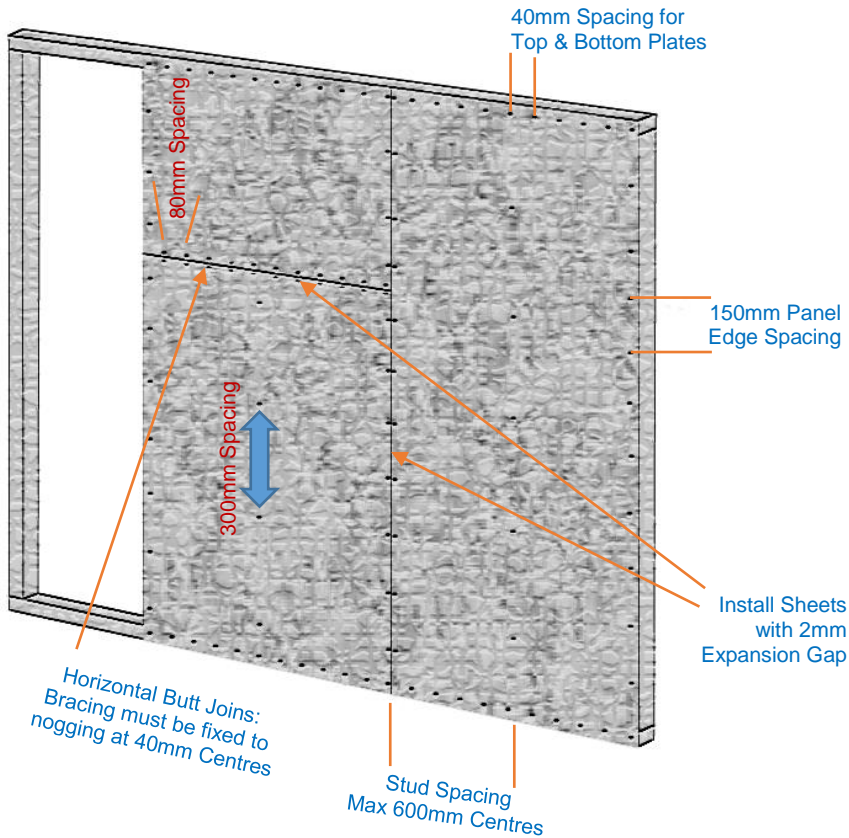
WALL DESIGN (A): 3.4 KN/M

- Minimum bracing measurement: 900mm.
- Do not butt join OSB SimBrace® boards
 - Leave a minimum 2mm gap around all sides and edges of the board allowing for slight expansion.
- For sheet length of 600mm – note that structural bracing capacity is half the strength of 900mm length.
- Minimum Joint strength of framing: JD5.
- No noggings needed for full height sheets unless being used for internal wall bracing.
- Sheets lengths of between 600mm and 900mm, structural bracing strength can be achieved by multiplying the corresponding capacities:
 - 0.5 for 600mm long varying linearly to 1.0 for 900mm long.
- **Fixing Information:**
 - 80mm centres required for Top & Bottom Plates.
 - 150mm centres required for vertical edges.
 - 300mm centres required for studs in-between boards.

WALL DESIGN (B): 5.6 KN/M

- Minimum bracing measurement: 900mm.
- Do not butt join OSB SimBrace® boards
 - Leave a minimum 2mm gap around all sides and edges of each board allowing for slight expansion.
- Minimum Joint strength of framing: JD5.
- No noggings needed for full height sheets unless being used for internal wall bracing.
- **Fixing Information:**
 - 80mm centres required for Top & Bottom Plates.
 - 150mm centres required for vertical edges.
 - 300mm centres required for studs in-between boards.
 - Vertical M12 metal rods at ends of sheet.



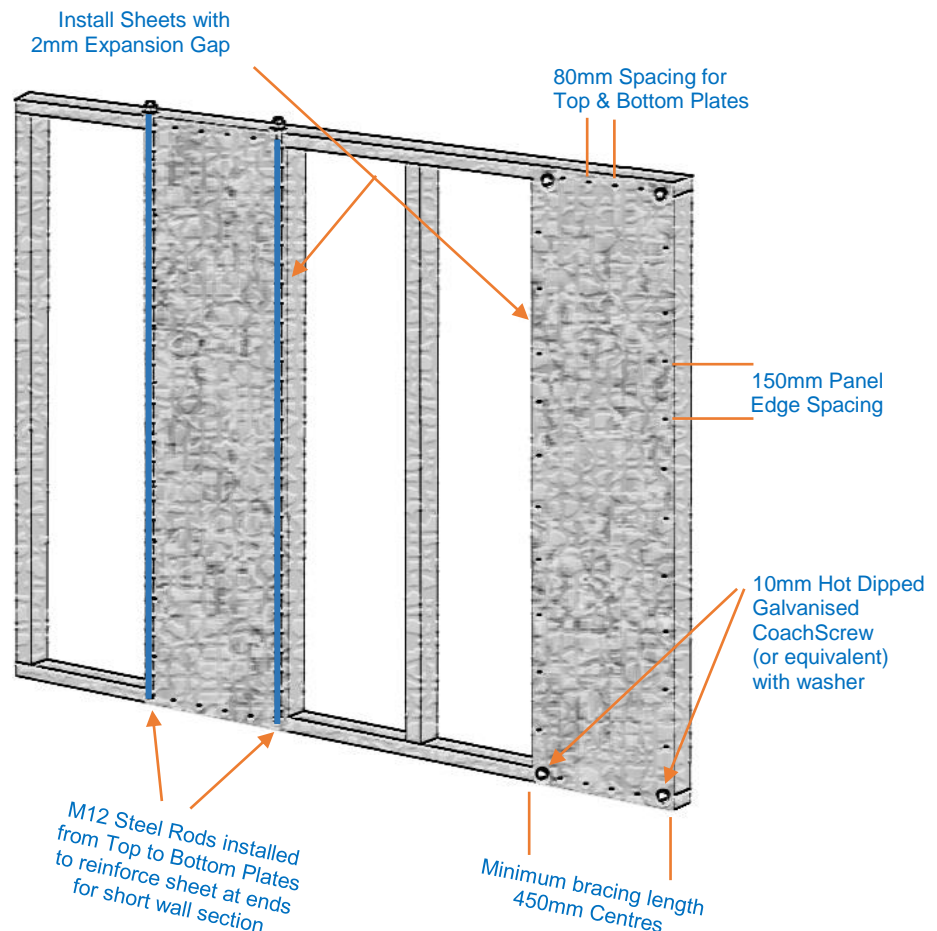


WALL DESIGN (C): 6.0 KN/M

- Minimum bracing measurement: 900mm.
- Do not butt join OSB SimBrace® boards
 - Leave a minimum 2mm gap around all sides and edges of each board allowing for slight expansion.
- Minimum Joint strength of framing: JD5.
- No noggings needed for full height sheets unless being used for internal wall bracing.
- **Fixing Information:**
 - 40mm centres required for Top & Bottom Plates.
 - 150mm centres required for vertical edges.
 - 300mm centres required for studs in-between boards.

**WALL DESIGN (D): 2.2 KN/M
SHORT WALL BRACING APPLICATIONS**

- Minimum bracing length: 450mm.
- Do not butt join OSB SimBrace® boards
 - Leave a minimum 2mm gap around all sides and edges of each board allowing for slight expansion.
- Minimum Joint strength of framing: JD5.
- No noggings needed for full height sheets unless being used for internal wall bracing.
- **Fixing Information:**
 - 80mm centres required for Top & Bottom Plates.
 - 150mm centres required for vertical edges.
 - 10mm x 70mm Long Hot Dipped Galvanised (or equivalent) CoachScrews in each corner of the short wall section.
 - Use the above CoachScrews in conjunction with 50mm x 50mm x 3mm thick square washers.
- When a 12mm Steel Rod is used in corners of short wall section, instead of CoachScrews – the bracing resistance can be upgraded to 3.2 kN/m.



OSB SIMBRACE® FOR INTERNAL BRACING & LINING

OSB SimBrace® has undergone intensive research and development. Part of this research was the performance testing of OSB SimBrace® working in conjunction with plasterboard – a very common partnership that has now that has seen positive outcomes for years worldwide.

When using OSB SimBrace® boards with plasterboard, the following notations must be observed:

- Leave a minimum 2mm gap around all sides and edges of each OSB SimBrace® board allowing for slight expansion.
- OSB SimBrace® require a minimum of 48 hours to acclimatise naturally to the environmental moisture content found on site – in doing so, you may expect minor dimensional movement across both vertical and horizontal sections of the panel.

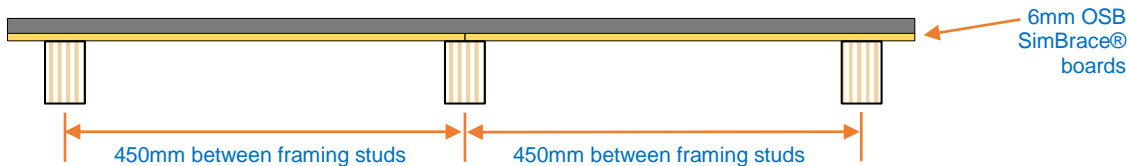
The table below makes note of the increase in moisture content and subsequent slight increase in panel size:

Dimensional changes in OSB SimBrace® board size (mm)		
Increase of Moisture Content	OSB SimBrace® Board width: 900 mm	OSB SimBrace® Board width: 1200 mm
+ 3 %	N/A	1.08 mm
+ 5 %	1.35 mm	1.80 mm
+ 6 %	1.62 mm	2.16 mm

USING OSB SIMBRACE® WITH PLASTERBOARD

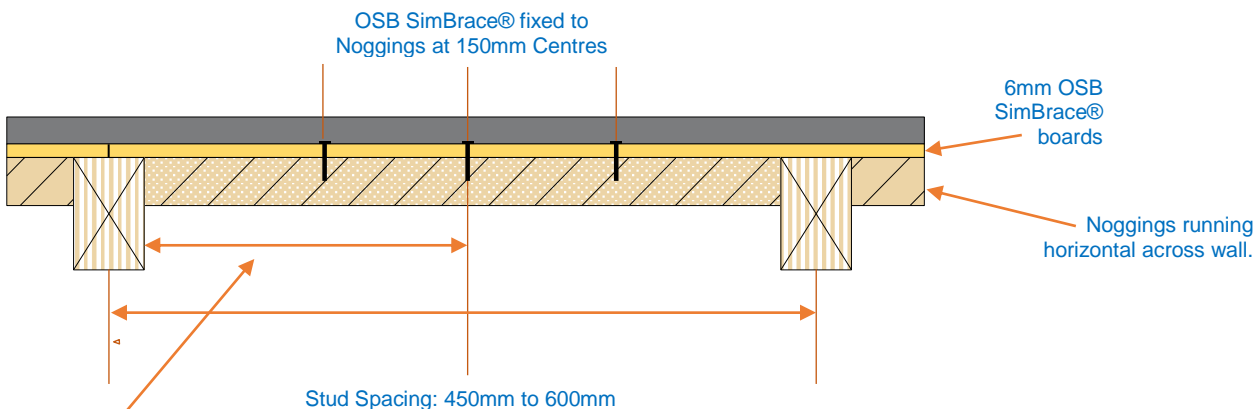
DRAWING 1:

- Maximum span between framing studs: 450mm
- OSB SimBrace® boards – noted in diagram below: Acclimatised to the environmental moisture content found on site. See page 2 “Moisture Levels in OSB SimBrace®”.



DRAWING 2:

- Span between framing studs: 450mm to 600mm.
- OSB SimBrace® boards – noted in diagram below: Acclimatised to the environmental moisture content found on site.
- Horizontal noggings must be distributed over the height of the wall.
 - Wall Height 2440mm: Use 2 Noggings
 - Wall Height 2745mm: Use 2 Noggings
 - Wall Height 3050mm: Use 3 Noggings



Note: This distance is half the width of the chosen stud spacing.

USING OSB SIMBRACE® AS A LINING BOARD

OSB SimBrace® boards are specifically manufactured and intended as use for a bracing panel – nonetheless OSB SimBrace® boards can be used as a lining board as long as appropriate batten support and fixing types are used. These include, but not limited to:

- Hand Driven 2.8mm diameter x 30mm flathead hot dipped galvanised or noncorrosive nail (including stainless steel).
- Power Gun Driven 2.8mm diameter x 30mm flathead hot dipped galvanised or stainless steel – in accordance with Australian Standard 1684-1999.

As an industry rule of thumb – a minimum 12mm thick panel is usually used as a lining board as the outcome is a flatter surface – but with the correct number of fixing points, OSB SimBrace® boards will achieve a positive result as a lining board.

STORAGE & HOLDING: OSB SIMBRACE® BOARDS

It is important to correctly store OSB SimBrace® boards to ensure structural integrity remains in-tact and boards can experience longevity well after installed into their application.

Please note the following guidelines which outline the fundamentals in storing and holding OSB SimBrace® boards:

- All panels should be warehoused horizontally flat using a minimum of 90mm square supports under sheets with a maximum spacing span apart of 800mm. These supports should all be of the same equal height.
- Any metal or plastic strapping should be cut off the pack/s of OSB SimBrace® to allow for on-site acclimatisation to proceed through boards.
- If there are multiple packs that have arrived onsite – ensure that when stacking these packs on top of each other that the corresponding supports are in vertical orientation from base pack to the top pack. Never store the OSB SimBrace® boards directly on the ground without supports. It is not recommended to stack any more than three packs high.
- It is recommended to store OSB SimBrace® sheltered from direct sunlight in a flat, well ventilated area.
- Keep in mind that OSB SimBrace® boards requires a minimum of 48 hours to acclimatise naturally to the environmental moisture content found on site – in doing so, you may expect minor dimensional movement across both vertical and horizontal sections of the board. This acclimatisation process is especially important with using OSB SimBrace® boards internally in conjunction with plasterboard.
- If the OSB SimBrace® is stored outside – it is recommended to envelope cover the panels, especially when it is raining. Covering the panels also protects the boards from winter morning/night dew.



MORE INFORMATION

If you or your client wish to receive more information in relation to OSB SimBrace® Boards – please do not hesitate to contact us using the details below.

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