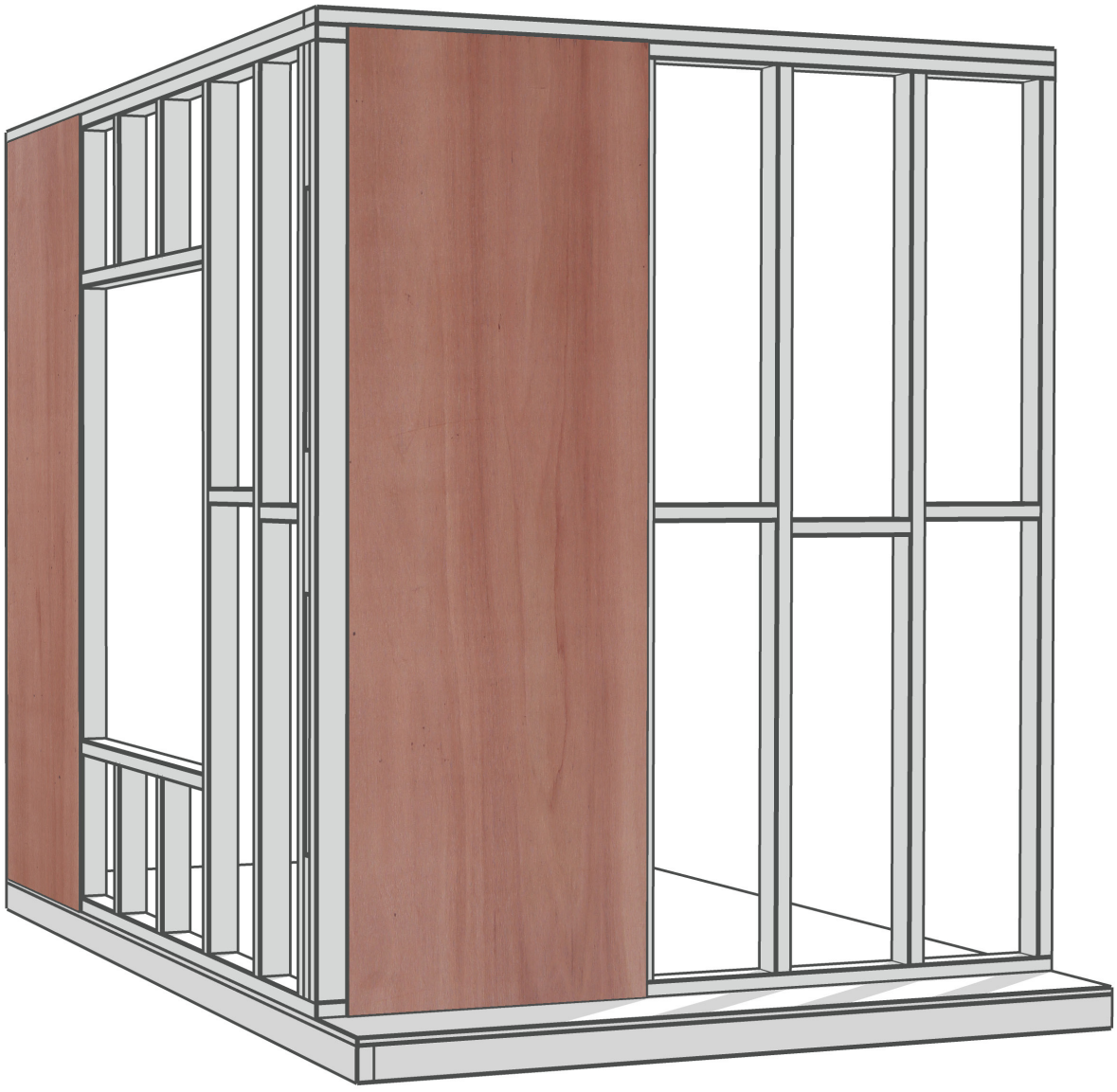
SUPARED BRACE

F27 Hardwood H2S Ply Brace Design Guide



- FSC® Certified
- F27 Hardwood Ply Brace
- Compliant to AS/NZS 2269.0:2012
- H2S Treated, Compliant to AS/NZS 1604.1:2021
  (Suitable for all regions of Australia)

FSC
www.fsc.org
FSC® C212217
The mark of responsible forestry

V1.2-H2S - 06/2026

Scope of this Design Guide

This Design Guide provides users with bracing capacity for SupaRedBrace F27 Hardwood H2S Ply Brace for most of the common structural arrangements in domestic construction in accordance with guidelines in AS 1684.2:2021.

While specific details are given on suitable methods of developing racking resistance, the methods of providing adequate diaphragm support, overall anchorage against wind uplift and overall structural stability are outside the scope of this publication. Information on the above matters can be obtained from AS 1684.2:2021 Residential timber-framed construction code or a structural engineer experienced in timber construction.

Basis of Stated Capacities

The information contained in this product brochure is based on data available to the manufacturer as of June 2026.

The bracing capacities for SupaRedBrace F27 Hardwood H2S Ply Brace manufactured by SWPI within this document have been confirmed with testing carried out by Universal Testing Facility Pty Ltd (UTF) in Dandenong South and are to be interpreted in conjunction with AS 1684.2:2021.

SWPI has made every effort to ensure the accuracy and reliability of the information contained in this document and to the extent permitted by law, will not be liable for any inaccuracies, omissions or errors in this information nor for any actions taken in reliance on this information.

SWPI reserves the right to change the information contained in this document without prior notice. It is important that you refer to the **citytimber.com.au** website, which will contain the most up-to-date information and product brochure available.

SupaRedBrace F27 Hardwood H2S Ply Brace Properties

SupaRedBrace F27 Hardwood H2S Ply Brace is made from FSC®-Certified tropical hardwood veneers manufactured by SWPI. The manufacturing is carried out under third party audited process control with in-factory testing in the factory's laboratory, and further third-party testing of the Type A bond quality, F grade and racking resistance. These products carry appropriate third-party verification to AS/NZS 2269.0:2012 and JAS/ANZ accreditation.

Features

SupaRedBrace F27 Hardwood H2S Ply Brace is a new bracing product manufactured from Jambu or Hopea, Indonesian tropical hardwoods from 100% FSC-certified forests, and is an economical replacement for many common sheet bracing alternatives.

It is a strong and durable engineered wood panel complying to AS/NZS 2269.0:2012, with superior mechanical properties to many other hardwood ply brace products on the market. It is "H2S" glueline treated complying to AS/NZS 1604.1:2021, and suitable for use in all regions of Australia.

The product has an E0 formaldehyde emission rating.

Applications

SupaRedBrace F27 Hardwood H2S Ply Brace is designed to resist horizontal racking forces applied to buildings such as cavity bracing in external wall frames in brick veneer construction and to resist uplift in braced walled systems.

Copyright

Ordering SupaRedBrace F27 Hardwood H2S Ply Brace

F27 Ply Brace Sizes		Pieces per Pack	Area per Pack (m^2)	Weight per Panel (kg)	Weight per Pack (kg)
Length (mm)	Width (mm)				
2440	1200	150	439.2	8.8	1379
2745			494.1	9.9	1549
3050			549.0	11.0	1723
2440	900	150	329.4	6.6	1033
2745			370.6	7.4	1157
3050			411.8	8.2	1283
2440	460	300	336.7	3.4	1064
2745			378.8	3.8	1188
3050			420.9	4.2	1314

Timber Framing

Timber wall frames should comply with government building regulations and where applicable AS 1684.2:2021. Framing members should be minimum MGP10 stress grade and joint strength group J5 or JD5 (seasoned). Stud spacings should not exceed 600mm centres for 1200mm sheets and 450mm centres for 900mm sheets.

The resistance values in the enclosed tables are stated for either JD4 or JD5 joint strength timbers.

It is essential for the bracing walls to be securely connected to the roof and sub-floor systems. Wind forces acting on the roof must be resisted and transferred to the ceiling diaphragm and through the walls to the sub-floor. The methods of connection are detailed in AS 1684.2:2021, and include nail fixings, galvanised iron straps, framing anchors and bolts.

Weather Exposure

During normal weather conditions, SupaRedBrace F27 Hardwood H2S Ply Brace may be exposed to the weather and subjected to temporary wetting and drying. As the product is supplied in a moisture-conditioned state (seasoned), it is advisable to enclose the building as soon as possible after fixing the sheets. A maximum exposure period of three months is recommended.

SupaRedBrace F27 Hardwood H2S Ply Brace is a wood panel product and therefore some dimensional movement may occur during extended periods of extremely high or low relative humidity, or moisture absorption or release.

Installation

Before installation of SupaRedBrace F27 Hardwood H2S Ply Brace, panels should be checked for:

1. Any physical damage
2. Correct panel thickness
3. Correct panel grade and marking

SupaRedBrace F27 Hardwood H2S Ply Brace should be installed vertically with sheet ends fixed to the top and bottom plates. Support the vertical edges over studs. SupaRedBrace F27 Hardwood H2S Ply Brace like all wood-based products is hygroscopic, meaning the panel will adjust to the equilibrium moisture content of its environment. To allow for small dimensional movement of the SupaRedBrace F27 Hardwood H2S Ply Brace panel, allow a 2mm gap between sheets and raise the sheets 2mm from the floor.

Uplift force may require additional fixings at the end of the bracing panel in accordance with AS 1684.2:2021.

Fix sheets with 2.8mm Ø x 30mm flat head galvanised or corrosive resistant nail, the fastener head should NOT be driven into the sheet. When stressing the frame under high loads, the modes of failure are typically nail pull through failure of the joint between the studs and plates or plate splitting. By staggering the nails, the latter failure is minimised since a common crack line is not induced in the plate.

Simplified Bracing for Non-Cyclonic Areas

Bracing walls are set at right angles to the windward walls.

In accordance with AS 1684.2:2021, they should be evenly distributed throughout each storey of the building. Bracing shall initially be placed in external walls, and where possible, at the corners of the building. Where bracing cannot be placed in external walls because of openings or similar situations, a structural diaphragm ceiling may be used to transfer racking forces to bracing walls that can support the loads.

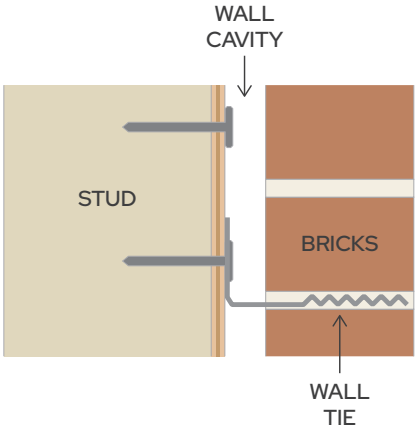
Unless otherwise specified, sheet bracing walls shall be a minimum of 900mm in height. Clause 8.3.6.5 of AS 1684.2:2021 gives limited exceptions to this, and these exceptions are described as part of the capacity diagrams within this Design Guide.

Total bracing requirements for each 'area of elevation' of the windward walls can be obtained from AS 1684.2:2021 Table 8.2. Ensure that the minimum bracing unit requirements for the external walls are satisfied. The additional bracing units can then be evenly distributed throughout the external and internal walls.

For the number of SupaRedBrace F27 Hardwood H2S Ply Brace sheets, divide the bracing unit requirements by the Design Capacity per sheet width in this Design Guide. Where the building elevation contains combinations of pitched roofs, gable or skillion ends, or upper or lower storeys, the 'area of elevation' of each section should be calculated separately to determine the total bracing unit requirements.

Brick Veneer Construction

SupaRedBrace F27 Hardwood H2S Ply Brace is ideal for use as cavity bracing in brick veneer stud construction. Brick wall ties must be the face-fixed type and comply with AS 2699 - Wall Ties for Masonry Construction. The ties should be nailed through the SupaRedBrace F27 H2S Hardwood Ply Brace into the narrow face of the studs.



Wall cavities should be kept clear of obstructions and the wall ties sloped downwards, away from the frame and bracing.

When constructing boxed eaves, the inner ends of soffit bearers or sprockets should not penetrate through the structural sheet bracing. Hangers suspended from the top wall plate or rafters may support the ends.

Standard Fasteners

The racking capacities of the systems in this Design Guide are based upon a 2.8mm Ø x 30mm flat head galvanised or corrosive resistant nail as specified in AS 1684.2:2021. If power driven gun nails are used, the user must ensure the nail holding capacity is at least the equivalent of the hand driven 2.8mm Ø x 30mm flat head galvanised or corrosive resistant nail.

Fastener edge distances along top and bottom plates and edge studs should be a minimum of 15mm and 7mm where panels are fixed to internal framing.

The spacings for staples are two thirds (fastener spacing multiplied by 0.66) of those shown for nails or screws.

Sawing, Drilling and Shaping

SupaRedBrace F27 Hardwood H2S Ply Brace can be sawn and shaped like solid wood in any way with standard wood working tools in a well-ventilated open area to avoid breathing wood dust. If handheld equipment without suction is used, a protective face mask should be worn.

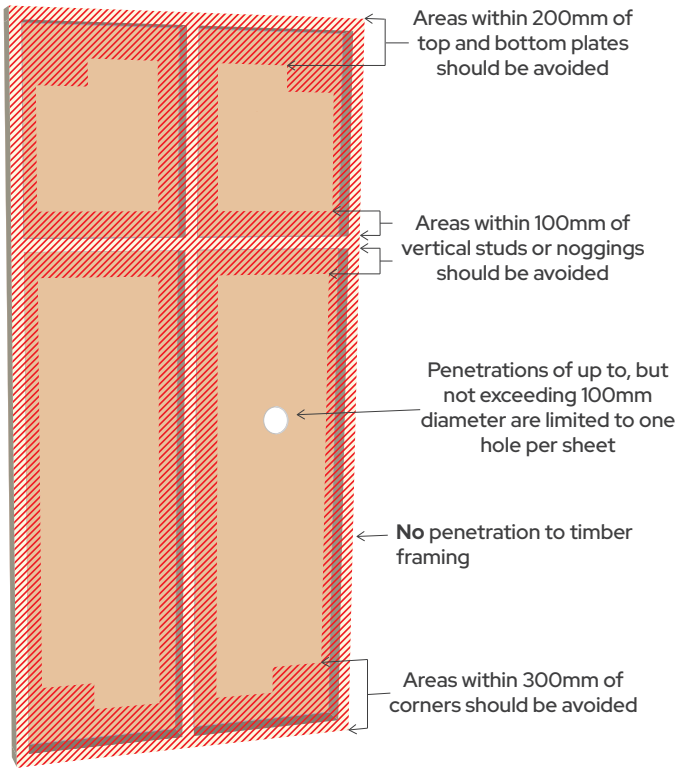
It is recommended that carbide tipped tools are used to provide the neatest cut without damaging the edge of the SupaRedBrace F27 Hardwood H2S Ply Brace panel.

Conventional hand or power drilling tools are suitable for providing penetrations as shown below.

Penetrations through SupaRedBrace F27 Hardwood H2S Ply Brace Panels

Should it be necessary to penetrate the SupaRedBrace F27 Hardwood H2S Ply Brace for plumbing or electrical installations the following guidelines should be adhered to:

- Areas within 300mm of corners should be avoided.
- Areas within 200mm of top and bottom plates should be avoided.
- Areas within 100mm of vertical studs or noggings should be avoided.
- Penetrations of up to, but not exceeding 100mm diameter should be limited to one hole per sheet.
- Holes should always be neatly cut and the corners rounded.
- For a larger penetration of up to 400mm maximum, or multiple smaller penetrations, frame around the area to be penetrated with framing members and bracing to be fixed as per the requirements for the top and bottom plate nailing pattern.



Fixing of Bottom Plates

The lateral force effects due to wind and earthquakes are resisted by bracing walls resulting in two separate methods of action on bracing elements. The first action is an in-plane sliding force transferred to the bottom plate. Sufficient fixings of the bottom plate to the sub-floor/slab must be designed to resist this in-plane 'shear' force.

The second action induces rotation or overturning effects. Tie rods extending from the top plate to the sub-floor and located at each end of the bracing wall provide excellent resistance. For bracing elements requiring lower resistance, nominal connection of the bottom plate to the sub-floor/slab can overcome these overturning forces. Nominal fixings (minimum fixings) are defined in Clause 9.5 of AS 1684.2:2021, but for bottom plates the requirement for nominal fixing is shown below.

Wind Classification	Concrete Slab Subfloor	Bottom Plates ≤ 38mm to Joists	Bottom Plates 38 to 50mm to Joists
N1, N2, N3, N4 and C1, C2 and C3	75mm masonry nails, screws or bolts and 1200mm max. centres	2/3.05 Ø x 75mm at a max of 600mm centres	2/3.05 Ø x 90mm at a max of 600mm centres

1. Bottom plate fixing for Type (g) system.

No additional bottom plate fixing other than nominal bottom plate fixing as specified in AS 1684.2:2021 is required for bracing Type (g) systems. However, if the Type (g) system is used on both sides of a frame to double the bracing capacity in that section of wall, then the bottom plate fixing will need to be upgraded to be equivalent for a Type (h) system.

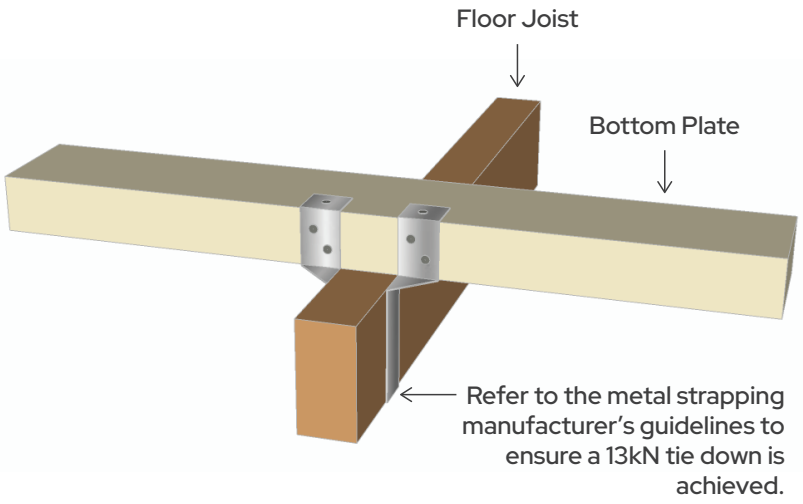
2. Bolt fixing of bottom plates

The tie down capacity of some bolts through a range of timber joint strengths are presented below. If the bolts are used in concrete slabs, they must be appropriately embedded. For lower capacity bolted joints, the resistance can be obtained by reducing the spacing of the bolts.

Joint Strength Group	J2	J3	J4	JD4	JD5	JD6
Bolt Diameter (mm)	Capacity in kN					
10	18	18	18	15	12	9
12	27	27	26	20	16	12
16	50	50	46	35	28	21

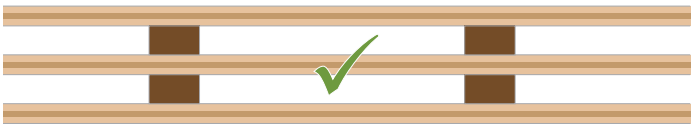
3. Bottom plate fixing for Type (h) systems.

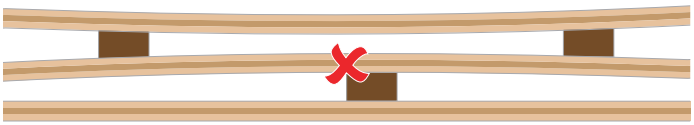
The minimum fixing requirement for both Type (h) systems is 13kN tie down every 1200mm along the bottom plate or equivalent.



Storage and Handling

Correct storage and handling of SupaRedBrace F27 Hardwood H2S Ply Brace is essential to ensure problem-free installation and to guarantee bracing resistance capacities for each panel as specified in this Design Guide.





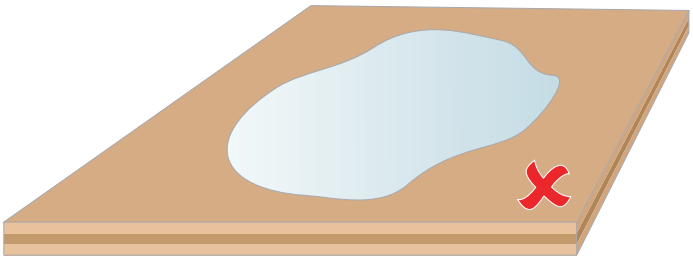
1. Store SupaRedBrace F27 Hardwood H2S Ply Brace panels horizontally on squared bearers of even height.

2. Should packs be stacked on top of each other, bearers should be aligned vertically.

3. Bearer spacing is to be as per the table below.

Thickness (mm)	Width (mm)	Length (mm)	No. of Bearers (pieces)
4	1200	2440	5
		2745	5
		3050	6
	900	2440	5
		2745	5
		3050	6
	460	2440	5
		2745	5
		3050	6

4. SupaRedBrace F27 Hardwood H2S Ply Brace should be stored protected from direct exposure to the weather in a well-ventilated area.



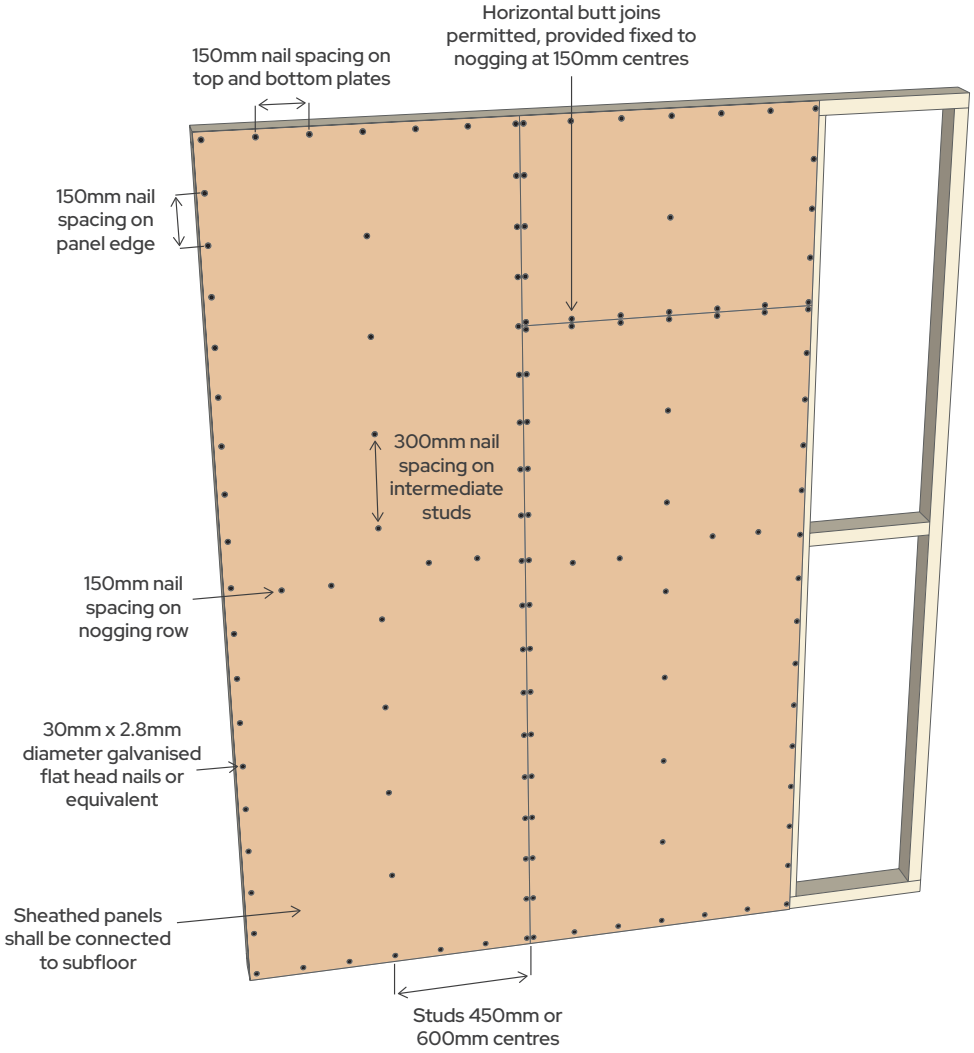
5. SupaRedBrace F27 Hardwood H2S Ply Brace panels should not be stored in direct contact with the ground.

6. If the panels are to be moved by mechanical lifting equipment such as forklifts, the bearers must be of sufficient height to allow forks to slide under the full pack without causing damage to panels.

SupaRedBrace F27 Ply Brace Systems

The allowable racking resistance of SupaRedBrace F27 Hardwood H2S Ply Brace Systems for frames sheathed on one side only, are as follows. The resistance values may be doubled for frames sheathed on both sides provided that the hold down requirements of the bottom plate are also doubled AND the bottom plate checked to ensure satisfactory bending capacity.

Racking Setup - Type (g) (refer AS 1684.2:2021 Table 8.18)



Wall Capacity - Type (g)

Wall Height (mm)	JD4	JD5
2400	4.8 kN/m	4.3 kN/m
2700	4.3 kN/m	3.8 kN/m
3000	3.9 kN/m	3.4 kN/m
3300	3.4 kN/m	3.1 kN/m
3600	3.2 kN/m	2.9 kN/m
3900	3.0 kN/m	2.7 kN/m
4200	2.8 kN/m	2.4 kN/m

Type (g) System

Notes:

1. Framing members should be minimum MGP10.

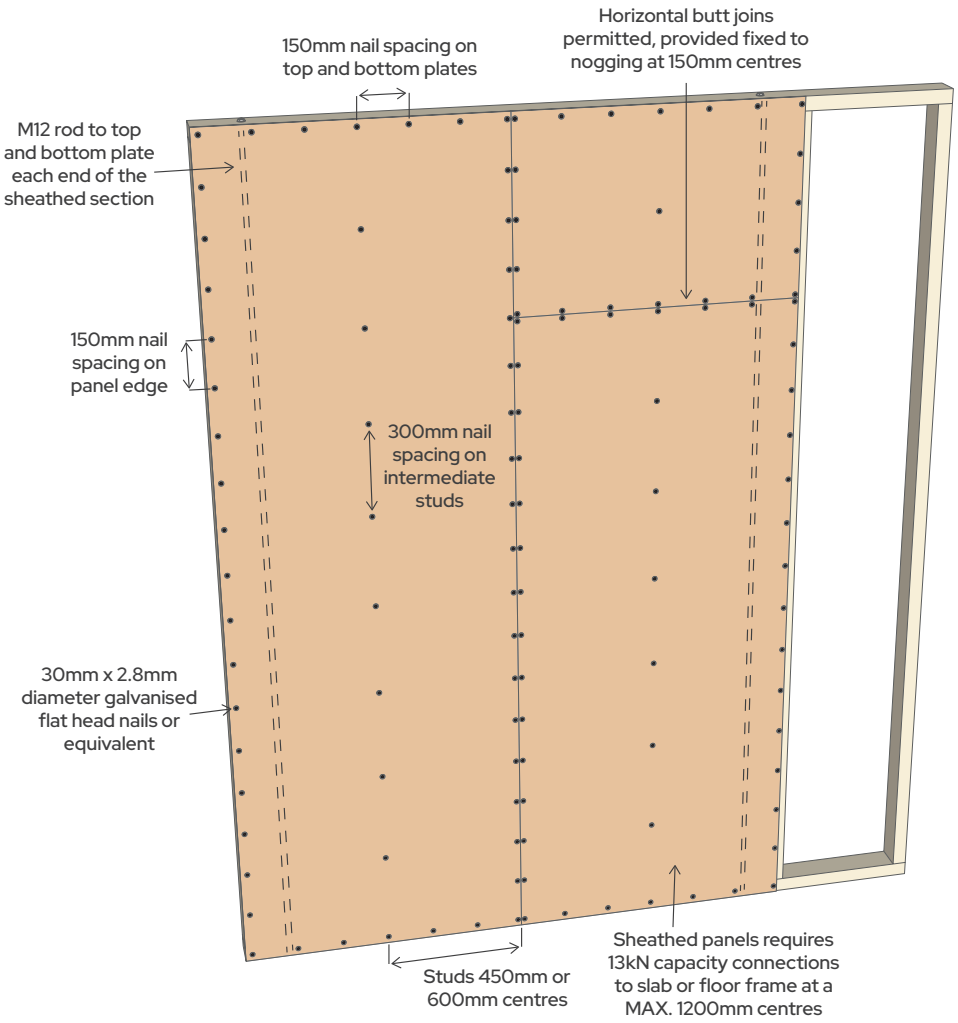
2. For both 450mm and 600mm stud spacing

3. Fastener centres:
   - 150mm for top and bottom plates, and noggings
   - 150mm for vertical edges
   - 300mm for intermediate studs

4. Minimum bracing panel length of 900mm to achieve the above capacity. For panel length of 600mm, the bracing capacity shall be 50% (½) of that for a 900mm panel. For panel length between 600mm and 900mm, the bracing capacity may be determined by multiplying the above capacity by 0.5 for 600mm long varying linearly to 1.0 for 900mm.

5. 2mm expansion gap around perimeter of every panel.

Racking Setup - Type (h), Method A (refer AS 1684.2:2021 Table 8.18)



Wall Capacity - Type (h), Method A

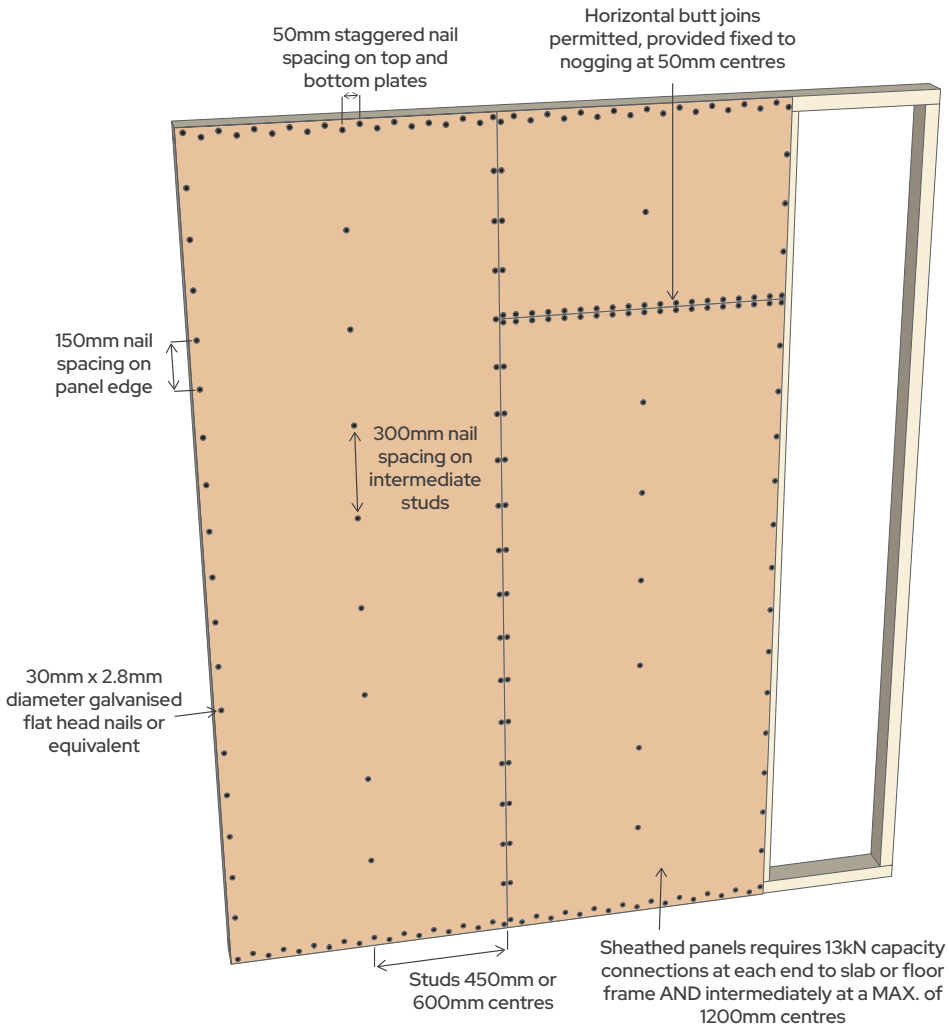
Wall Height (mm)	JD4	JD5
2400	7.5 kN/m	6.7 kN/m
2700	6.7 kN/m	6.0 kN/m
3000	6.0 kN/m	5.4 kN/m
3300	5.4 kN/m	4.8 kN/m
3600	5.0 kN/m	4.5 kN/m
3900	4.7 kN/m	4.2 kN/m
4200	4.3 kN/m	3.8 kN/m

Type (h), Method A System

Notes:

1. Framing members should be minimum MGP10.
2. For both 450mm and 600mm stud spacing
3. Fastener centres:
   - 150mm for top and bottom plates, and noggings
   - 150mm for vertical edges
   - 300mm for intermediate studs
4. Minimum bracing panel length of 600mm.
5. 2mm expansion gap around perimeter of every panel.
6. M12 rods shall be used at each end of the sheathed section top plate to bottom plate/floor frame.
7. Requires 13kN capacity connection at a maximum of 1200mm centres.

Racking Setup - Type (h), Method B (refer AS 1684.2:2021 Table 8.18)



Wall Capacity - Type (h), Method B

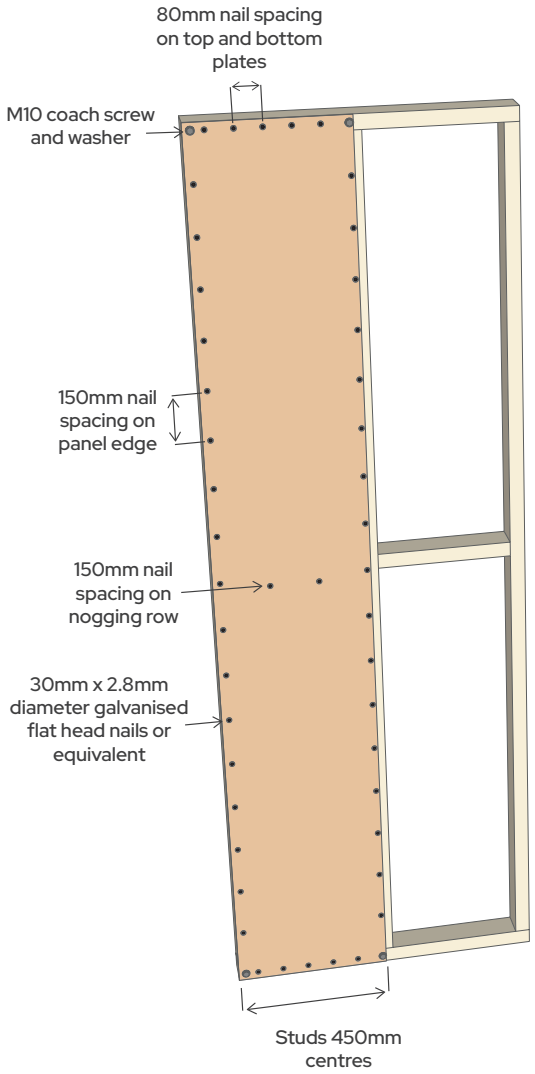
Wall Height (mm)	JD4	JD5
2400	6.9 kN/m	6.2 kN/m
2700	6.2 kN/m	5.5 kN/m
3000	5.6 kN/m	5.0 kN/m
3300	5.0 kN/m	4.4 kN/m
3600	4.7 kN/m	4.1 kN/m
3900	4.3 kN/m	3.9 kN/m
4200	4.0 kN/m	3.5 kN/m

Type (h), Method B System

Notes:

1. Framing members should be minimum MGP10.
2. For both 450mm and 600mm stud spacing
3. Fastener centres:
   - 50mm (staggered) for top and bottom plates
   - 50mm for noggings
   - 150mm for vertical edges
   - 300mm for intermediate studs
4. Minimum bracing panel length of 900mm.
5. 2mm expansion gap around perimeter of every panel.
6. Requires 13kN capacity connection at each end and intermediately at a maximum of 1200mm centres.

Racking Setup - Type 1, 450mm Short Wall



Wall Capacity - Type 1, 450mm Short Wall

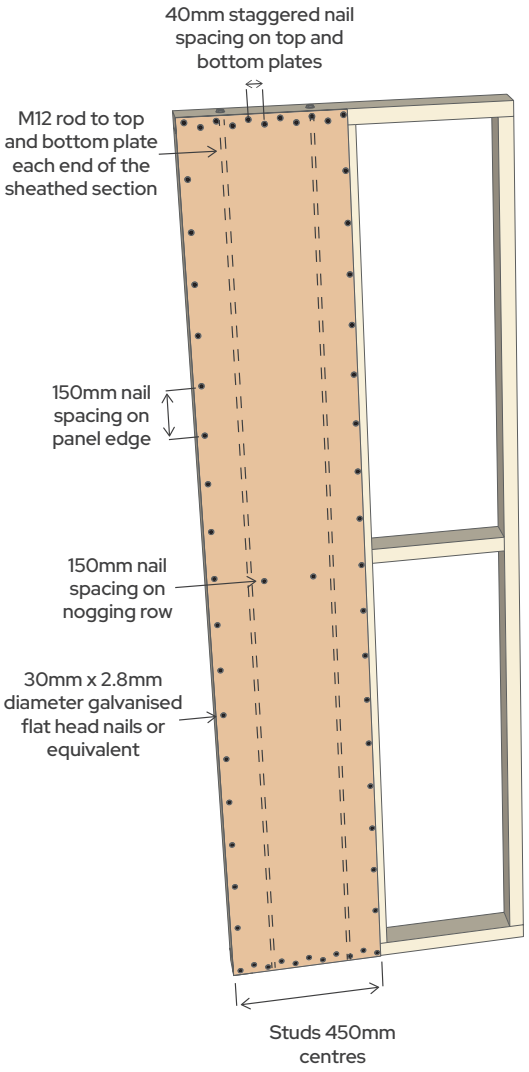
Wall Height (mm)	JD4	JD5
2400	2.5 kN/m	2.2 kN/m
2700	2.3 kN/m	2.0 kN/m
3000	2.0 kN/m	1.8 kN/m
3300	1.8 kN/m	1.6 kN/m
3600	1.7 kN/m	1.5 kN/m
3900	1.6 kN/m	1.4 kN/m
4200	1.4 kN/m	1.3 kN/m

Type 1 - 450 mm Short Wall System

Notes:

1. Framing members should be minimum MGP10.
2. For 450mm stud spacing.
3. Fastener centres:
   - 80mm for top and bottom plates
   - 150mm for vertical edges
   - 150mm for noggings
4. M10 x 50 coach screws in each corner of the sheathed panel.
5. 2mm expansion gap around perimeter of every panel.

Racking Setup - Type 2, 450mm Short Wall



Wall Capacity - Type 2, 450mm Short Wall

Wall Height (mm)	JD4	JD5
2400	2.9 kN/m	2.6 kN/m
2700	2.6 kN/m	2.3 kN/m
3000	2.3 kN/m	2.1 kN/m
3300	2.1 kN/m	1.8 kN/m
3600	1.9 kN/m	1.7 kN/m
3900	1.8 kN/m	1.6 kN/m
4200	1.7 kN/m	1.5 kN/m

Type 2 - 450 mm Short Wall System

Notes:

1. Framing members should be minimum MGP10.
2. For 450mm stud spacing.
3. Fastener centres:
   - 40mm (staggered) for top and bottom plates
   - 150mm for vertical edges
   - 150mm for noggings
4. M12 rod at each end of the sheathed section.
5. 2mm expansion gap around perimeter of every panel.