

# Timber Wall Installation

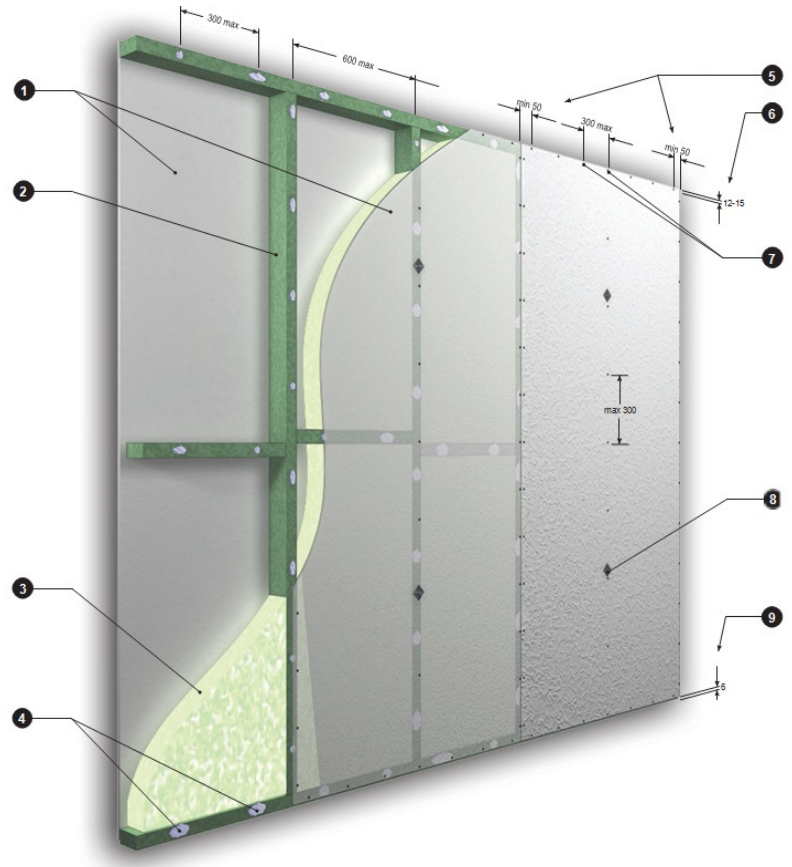
Timber frames are normally only suitable to a maximum of 90 minute fire rating.

The building designer must ensure that load bearing walls have been designed:

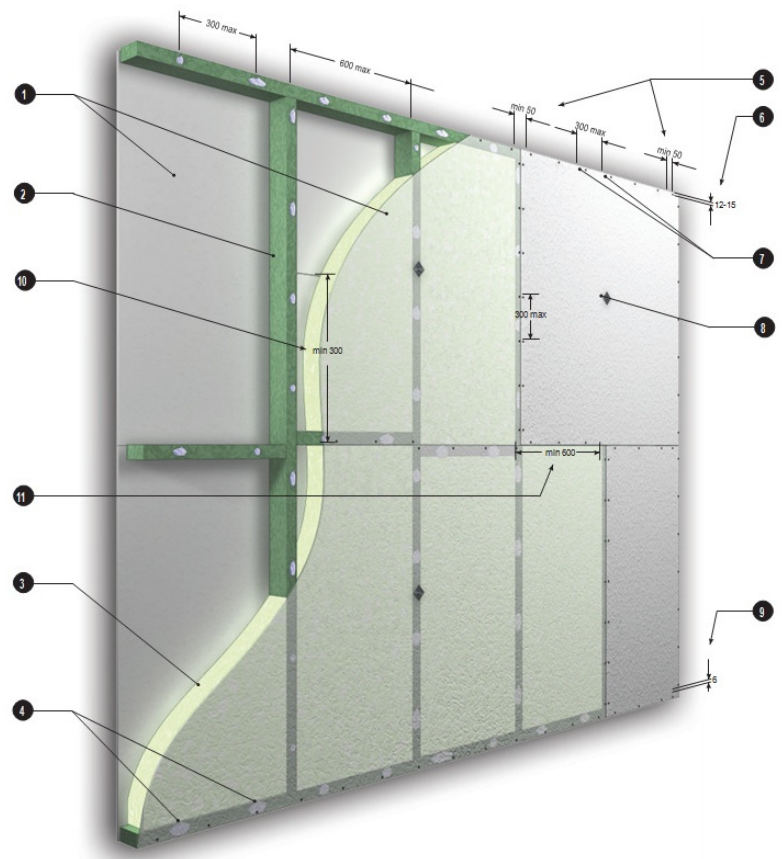
- To resist all applied loads
- To be in accordance with AS4600, AS1684 and AS1720.1, the BCA and all relevant standards
- To assume no axial strength contribution from wall linings. Some wall systems will have their axial load capacities reduced. For timber, it is due to the loss of section as the timber chars.

See figure 1.1 and 1.2 for installation details. The following are important points to observe:

- Where a double wall system is used, the gap between the walls should be from a minimum of 20mm to a maximum of 50mm.
  - Control joints are to be used where specified, where dissimilar materials abut, or at least every 12 metres.
1. One layer ResCom<sup>R</sup> Board to each side of the wall. Systems can be single layer of ResCom.
  2. Recommended stud spacing maximum 600mm centres on fire rated wall systems.
  3. Bulk insulation may be required to achieve specified thermal, acoustic  $R_w+C_{tr}$  and  $R$  values performances.
  4. Optional: Apply minimum 4mm Full length bead of structural polyurethane or silicon adhesive to studs and noggings.
  5. On sheet corners, keep the first screw or nail 50mm from the edge to avoid breakage of the sheet.
  6. Fasteners at 12-15mm from sheet perimeter edges.
  7. Screws will be Class 3 to 5 (Non Corrosive) minimum No. 8x40 self-drillings countersunk type or non-corrosive nails fixed at maximum 300mm centres, and will finish at approximately 0.5mm below the surface. MgO Corp recommends in highly corrosive areas to use min grade 316 stainless steel non-corrosive fixtures.
  8. Temporary fasteners through.
  9. Keep sheet 6mm from floor. Fill all joints and gaps with approved fire and acoustic sealant.
  10. Where horizontal joints are not backed by noggings, stagger all horizontal joints 300mm minimum.
  11. Stagger butt joints in adjacent sheets one stud minimum.
  12. MgO Corp sheets can be laid vertical or horizontal.
  13. Sheets can be joined mid span between studs by back blocking using 150mm width ResCom<sup>TM</sup> Board strips glued and fixed without loss of structural integrity.



**Figure 1.1 - Timber Fire Wall Installation Detail (Vertical)**



**Figure 1.2 - Timber Fire Wall Installation Detail (Horizontal)**

# Timber Framed Separation Walls

The following table is a guide to the maximum timber heights for applied loads for 15kN/m and stud spacing not exceeding 600mm.

ResCom® Thickness	Single Panel Performance	Single Panel on Stud	Single Panel Either Side of Stud: System Excl Acoustic Requirements
10mm	60 minutes	Non-loadbearing wall -/60/60 Loadbearing wall 60/60/60	Non-loadbearing wall -/60/60 Loadbearing wall 60/60/60 (Thermal Insulation Required in Cavity)
10mm	90 minutes	Non-loadbearing wall -/90/90 Loadbearing wall 90/90/90	Non-loadbearing wall -/90/90 Loadbearing wall 90/90/90 (Thermal Insulation Required in Cavity)
12mm	120 minutes	Non-loadbearing wall -/120/120 Loadbearing wall 120/120/120	Non-loadbearing wall -/120/120 Loadbearing wall 120/120/120 (Thermal Insulation Required in Cavity)
14mm	180 minutes	Non-loadbearing wall -/180/180 Loadbearing wall 180/180/180	Non-loadbearing wall -/180/180 Loadbearing wall 180/180/180 (Thermal Insulation Required in Cavity)
15mm	240 minutes	Non-loadbearing wall -/240/240 Loadbearing wall 240/240/240	Non-loadbearing wall -/240/240 Loadbearing wall 240/240/240 (Thermal Insulation Required in Cavity)
18mm Flooring	120 minutes	Loadbearing Floor 120/120/120	Loadbearing 120/120/120 (Thermal Insulation Required in Ceiling Cavity)

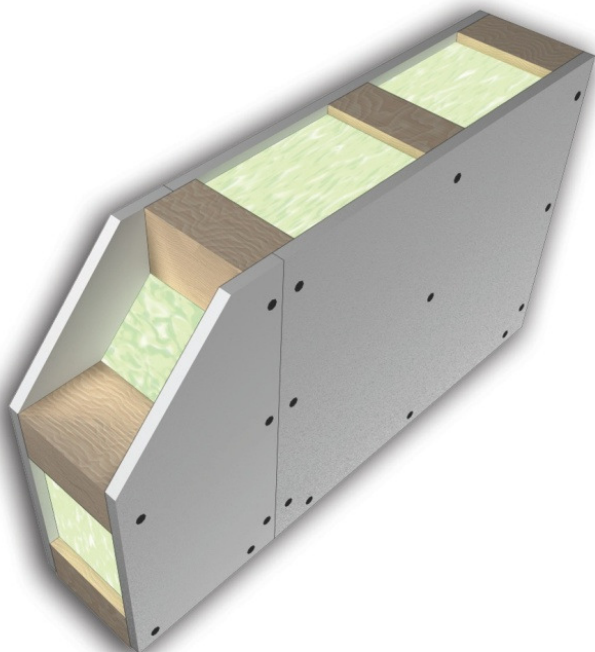


Figure 1.3.1 - Timber Fire Wall with Single Board Each Side

Stud Size	MGP 10		MGP 12	
	Non-load bearing	Load bearing	Non-load bearing	Load bearing
70x35	3.0	-	3.5	-
70x45	3.6	3.0	3.9	3.0
90x35	4.2	3.0	4.6	3.0
90x45	4.6	3.3	5.0	3.6

A professional engineer should determine the structural design of load bearing fire walls.

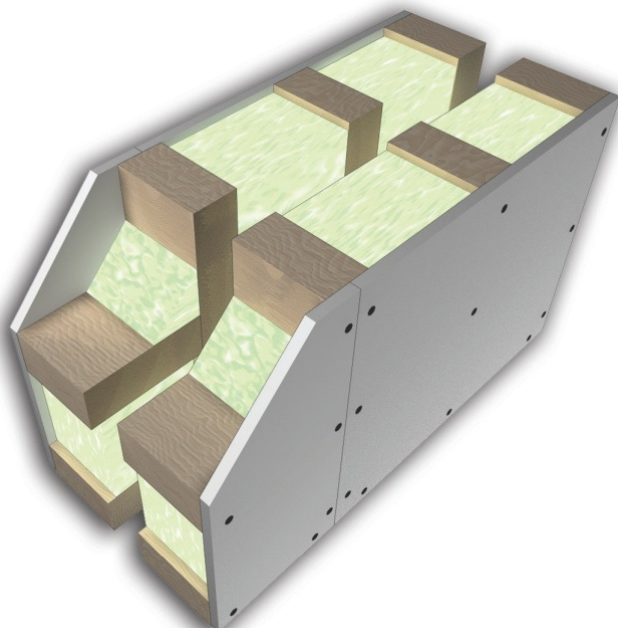


Figure 1.3.2 - Timber Fire Wall Double Stud with Single Board Each Side



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