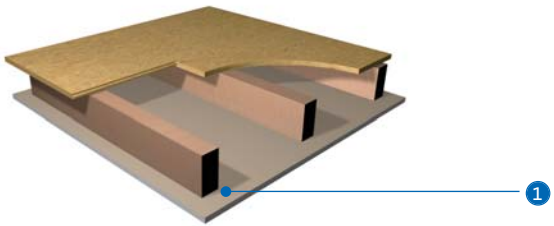
Timber joist

Timber joist ceilings and separating / compartment floors

Ceilings to timber joist floors are an established form of ceiling construction, widely used in both new housing and refurbishment. Separating / compartment floors are often specified as fire and sound resisting floors in residential units, such as flats and apartments, to meet the requirements of national Building Regulations.



1 Gyproc plasterboard - direct fix with Gyproc Drywall Timber Screw
2 Gypframe RB1 Resilient Bar - indirect fix

Key facts

- Traditional and established method
- Versatile
- Use of Gyproc Drywall Timber Screws minimises fixing defects
- Gypframe RB1 Resilient Bar to provide enhanced acoustic performance and eliminate nail-popping
- Can achieve high performance levels
- Quick and easy to install

Components

Gyproc board products

Gyproc WallBoard[1,2]

Thickness	12.5, 15mm
Width	900, 1200mm

Gyproc FireLine[1]

Thickness	12.5, 15mm
Width	1200mm

Gyproc SoundBloc[1]

Thickness	12.5, 15mm
Width	1200mm

Gyproc Plank

Thickness	19mm
Width	600mm

Gyproc 4x2's

Thickness	9.5, 12.5mm
Width	600mm

[1] Moisture resistant boards are specifed in intermittent wet use areas e.g. shower areas, bathrooms, and kitchens.

[2] Also available in DUPLEX grades where vapour control is required.

Glasroc board products

Glasroc MultiBoard

Thickness	6, 10, 12.5mm
Width	1200mm

Glasroc FireCase s

Thickness	15mm
Width	1200mm

Gypframe metal products

Gypframe RB1 Resilient Bar

Prime dimension	16mm

Fixing and finishing products

Gyproc Drywall Timber Screws or Glasroc FireCase Screws
For a positive direct fix of boards to timber joists.

Gyproc Drywall Screws
For fixing ceiling lining boards to Gypframe SureFix Bars or Resilient Bars.

Gyproc Sealant
Sealing air paths for optimum sound insulation.

Gyproc jointing materials
For seamless jointing.

Fixing and finishing products

Gyproc Skimcoat, Gyproc Carlite Finish or Gyproc Board Finish
To provide a plaster skim finish.

Moy Acoustic Roll
For enhanced acoustic performance.

Moy Plus Roll
For providing acoustic / thermal insulation.

Moy Sound Deadening Floor Slab

Stone mineral wool
For providing enhanced fire performance in some applications.

Construction tips

- Estimated construction time 15 - 20m^2 / man hour (single layer ceiling - boarding only) or 8 - 10m^2 / man hour (double layer ceiling - boarding only) ready for finishing
- To minimise the risk of cracking at plasterboard joints, use seasoned timber with a moisture content not exceeding that recommended in *BS5268: Part 2: 1991*. Even timber conforming to the standard will shrink on drying and fixing defects could occur if plasterboard is fixed directly using nails
- To minimise the risk of fixing defects occurring, use Gyproc Drywall Timber Screws for fixing into standard softwood, super-dried timber (approx. 12% moisture content). Fix boards tight to accurately spaced, aligned and levelled framing
- Select the right length of fixing (nominal entry into timber of 25mm, nominal entry into Gypframe RB1 Resilient Bar of 10mm)
- Ensure that the dimensions of timber supports are sufficient to allow positive fixing of plasterboards. Bearing surface of existing framing can be increased by fixing timber battens
- Install cavity barriers where specified
- Air-tightness is essential for optimum sound insuation. While most junctions can be sealed with standard jointing materials, gaps at the perimeter of the ceiling, and other small airpaths, can be sealed using Gyproc Sealant

Construction tips (cont'd)

- Consider fixing DUPLEX grade board as the face layer where a vapour control layer is required
- Consider fixing Gypframe RB1 Resilient Bars to partially isolate linings from the timber framing to provide improved acoustic performance
- The designer should ensure that the floor construction is suitable to support any imposed loads.
- Consider the requirements for timber noggings to support board edges (See **Table 1 – Requirements for timber noggings**)
- Electrical and other small service runs can be routed within the floor cavity
- Minimise the number of service penetrations. Where these occur, they must be adequately fire-stopped by the appropriate contractor
- Fixtures should be made into joists, or to supplementary timber

Table 1 – Requirements for timber noggings [1,2,3]

Board thickness mm	Max. joist centres with noggings mm	Max. joist centres without noggings mm
9.5	450	400
12.5	600	450
15	–	600
19	–	750

[1] Timber noggings are also required at the room perimeter when using 9.5mm or 12.5mm plasterboards.

[2] Noggings are always required when using DUPLEX grade boards for vapour control.

[3] For fire resisting ceilings, the requirements for noggings are detailed in our Product Manual (www.gypsum.ie).

Installation - direct fix plasterboard ceiling

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Direct fix plasterboard ceiling

- Install boards to ceilings, prior to lining walls and partitions, with the long edges at 90° to the joists. Locate cut ends over a joist or timber nogging support.
- Provide timber noggings (where required) between joists and at perimeter to support board edges.

NB The provision of noggings, minimum 38mm x 38mm, depends on the required performance, thickness of boards used, and the spacing of timber joists (see **Table 1**).

Single layer linings

- Fix boards to timber supports using Gyproc Drywall Timber Screws or Gyproc Nails. The former provide a superior fixing and will minimise any risk of fixing defects occurring.
- Where screws are used, install at 230mm centres.
- Where nails are used, install at 150mm centres

- Lightly butt boards (maximum separation of 3mm), inserting fixings not closer than 10mm from bound edges and 13mm from cut edges.
- Position cut edges to internal angles and remove the paper burr using fine sand paper.
- Stagger all board end joints.

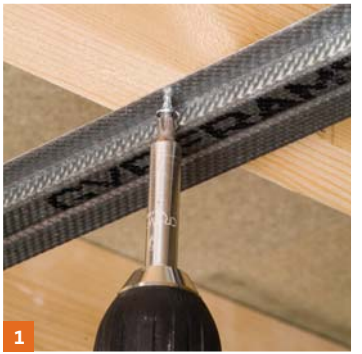
Refer to **Section 1, 'General Site Guidance - Fixing to timber supports'**, for recommendations on fixing tolerances, increasing the bearing surface of 35mm trussed rafters, and length of screw (or nail) fixings required.

NB If fixing 15mm Glasroc FireCase S use 58mm Glasroc FireCase Screws and locate at 150mm centres. In specifications using Glasroc MultiBoard strips in the cavity, fix to the side of joists at 300mm centres (top and bottom).

Double layer linings

- Mark the position of joists and noggings at the perimeter prior to installing first layer boards. After first layer boards have been installed, transfer their dimensions to the lining and mark lines to indicate the position of timber supports.
- Install second layer boards with edges/ends against the centre line of supports with all joints staggered in relation to the first layer.

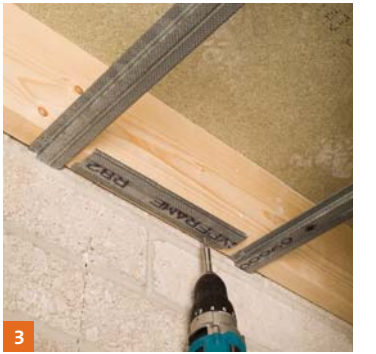
Installation - indirect fix plasterboard ceiling



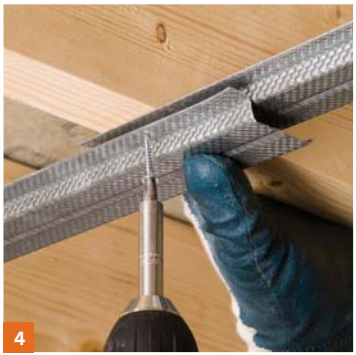
Indirect fix to RB1 Resilient Bars

- Mark the underside of joists at maximum 450mm centres to indicate the positioning of Gypframe RB1 Resilient Bars (centres will be 400mm for 2400mm long board).
- Fix Gypframe RB1 Resilient Bars through their pre-drilled flange to each joist using 36mm Gyproc Drywall Screws.

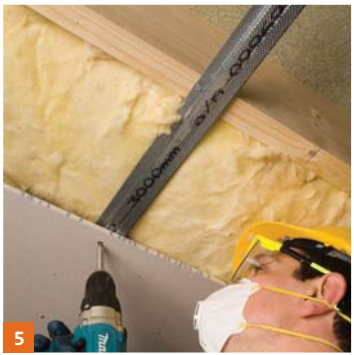
- Fix the first and last rows of Gypframe RB1 Resilient Bars as close to the perimeter wall as possible.



- Fix noggings of Gypframe RB1 Resilient Bar to remaining perimeters i.e. those perimeters parallel to the joists.



• Overlap ends of bars by 75mm minimum over a joist.

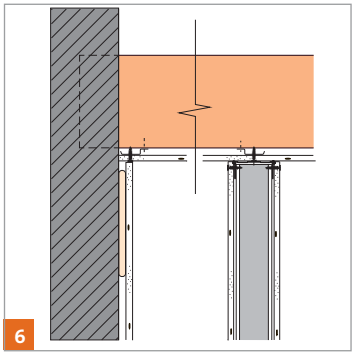


Board fixing

• Fix board at 90° to Gypframe RB1 Resilient Bar with end joints staggered. Locate screws at 230mm centres in the field of the board and 150mm centres at board ends. Insert screws no closer than 10mm from bound board edges and 13mm from cut edges.

NB For a single layer of 12.5mm board and a single layer of 15mm board use 25mm Gyproc Drywall Screws. Take care to ensure the screw-fixing through the plasterboard is **not** driven into the joist.

• If Gyproc Plank is used as an under layer, insert 32mm Gyproc Drywall Screws and 42mm when over boarding with 12.5mm board. Lightly butt all board edges and, in multiple layer applications, position Gypframe RB1 Resilient Bars at 450mm maximum centres with joints between layers staggered.

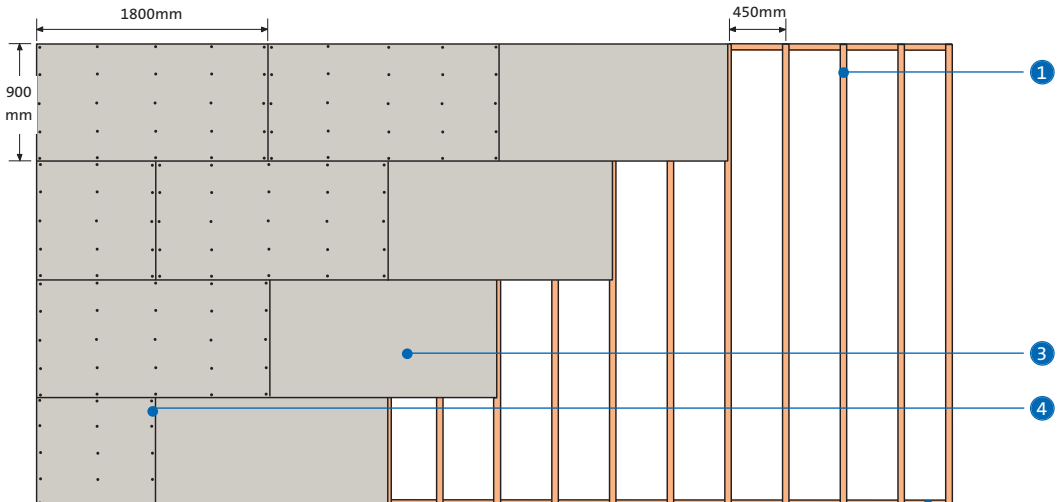


Partition fixing

• If GypWall™ or a similar partition type is to be installed to the underside of the ceiling, provision should be made to fix the head channel of the partition.

• If the partition is at 90° to the Gypframe RB1 Resilient Bar, connection through to it can be made using an appropriate length Gyproc Drywall Screw. If the partition is parallel to the Gypframe RB1 Resilient Bar, an extra length of section should be installed in the line of the partition.

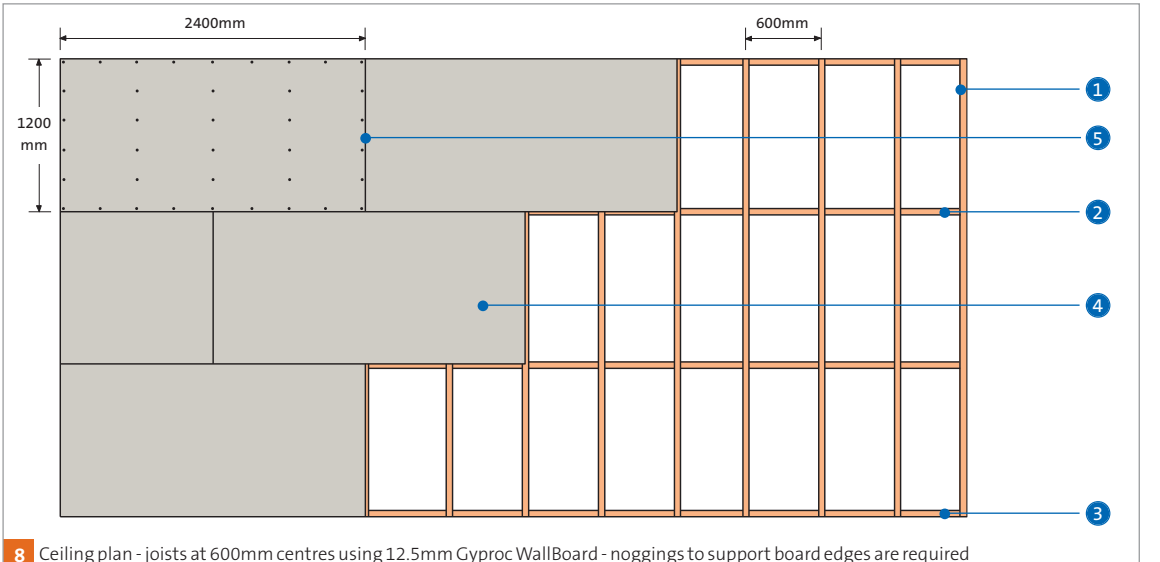
Ceiling plan – direct fix to timber joist



7 Ceiling plan - joists at 450mm centres using 12.5mm Gyproc WallBoard - noggings to support board edges are not required

1. Timber joists
2. Noggings to provide support at the perimeter
3. Gyproc WallBoard
4. Gyproc Drywall Timber Screws at 230mm centres

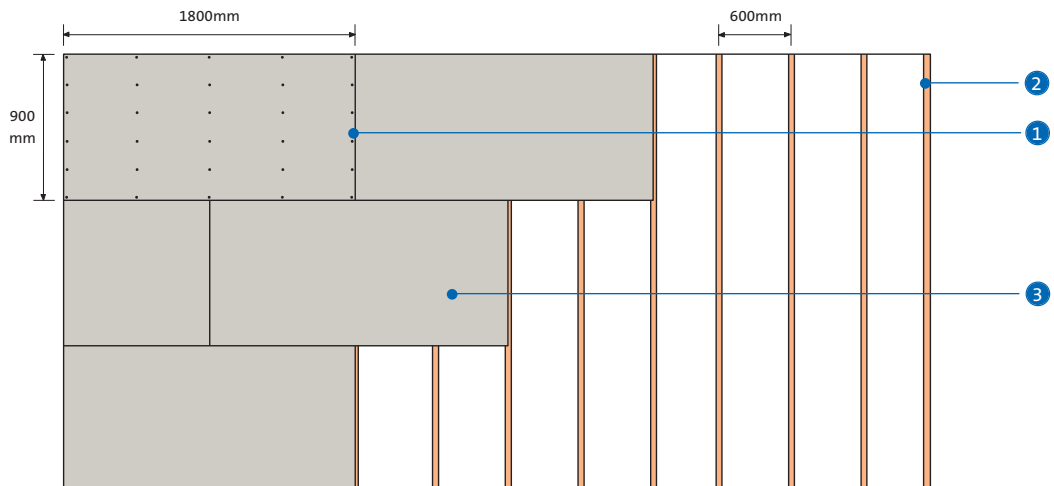
Ceiling plan – direct fix to timber joist



8 Ceiling plan - joists at 600mm centres using 12.5mm Gyproc WallBoard - noggings to support board edges are required

1. Timber joists
2. Noggings to support board edges
3. Noggings to provide support at the perimeter
4. Gyproc WallBoard
5. Gyproc Drywall Timber Screws at 230mm centres

Ceiling plan – direct fix to timber joist



9 Ceiling plan - joists at 600mm centres using 15mm Gyproc WallBoard

1. Gyproc Drywall Timber Screws at 230mm centres
2. Timber joist
3. Gyproc WallBoard