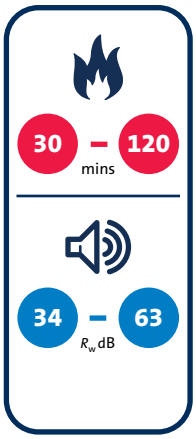
Non-loadbearing timber stud

Traditional stud partitions

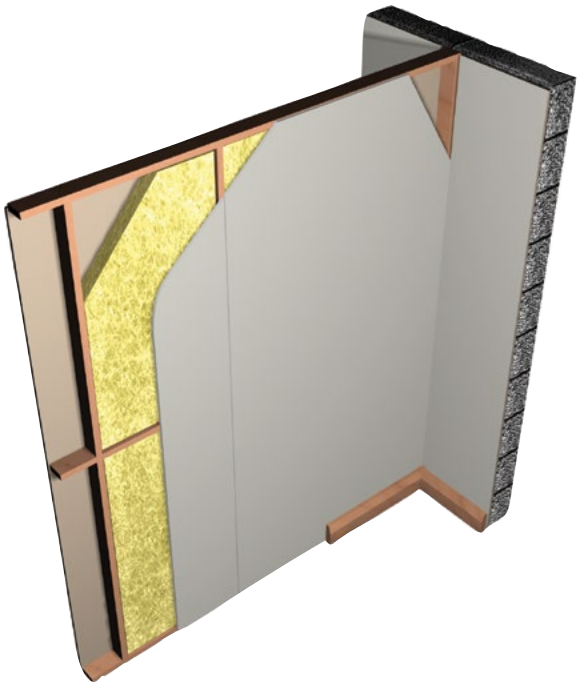
Non-loadbearing timber stud



Timber stud partitions provide basic space division where speed of installation is considered to be a lower priority. A wide range of performances are available depending upon the specification of Gyproc linings, Gypframe metal components and Isover insulation.

Key benefits

- High levels of acoustic performance are achievable through the use of a range of upgrades to the basic timber framework including Gypframe RB1 Resilient Bar, Gyproc SoundBloc and Isover Acoustic Roll
- Can achieve up to 2 hours fire resistance through the use of Gyproc FireLine plasterboard



You may also be interested in...

GypWall QUIET

If you're looking for solutions with a higher level of acoustic and fire performance for use as a separating wall in a residential building, or other more onerous situations

▶ Refer to C04. S07. P219 – **GypWall QUIET**.

If you're looking for a Duty Rating in accordance with *BS 5234: Part 2: 1992*

▶ Refer to C04. S01. P108 – Partitions performance matrix.

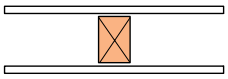
Non-loadbearing timber stud performance

63mm and 75mm timber stud partitions

For details of when to specify fire resistance using EN
▶ Refer to **C02. S01. P18**

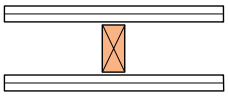
Table 1a — Solutions to satisfy the requirements of *BS EN 1364-1: 1999* (Non-loadbearing)

1



One layer of board each side of timber studs at 600mm centres. Insulation and linings as in table.

2



Two layers of board each side of timber studs at 600mm centres. Insulation and linings as in table.

Detail	Partition thickness mm	Board type	Lining thickness mm	Stud size mm[1]	Sound insulation R_w dB		System reference
					No insulation	With insulation	
30 minutes fire resistance EN							
1	88	Gyproc SoundBloc	1 x 12.5	63 x 38	-	40[2]	A026009
1	93	Gyproc SoundBloc	1 x 15	63 x 38	40	-	A026008
1	93	Gyproc WallBoard	1 x 15	63 x 38	-	40[2]	A026010
1	105	Gyproc WallBoard	1 x 15	75 x 38	37	40[2]	A026002/6
1	105	Gyproc SoundBloc	1 x 15	75 x 38	40	43[2]	A026014/17
60 minutes fire resistance EN							
2	115	Glasroc F MULTIBOARD	2 x 10	75 x 38	38	-	G106004
2	125	Gyproc FireLine	2 x 12.5	75 x 38	38	42[2]	A026028/9
90 minutes fire resistance EN							
2	125	Glasroc F MULTIBOARD	2 x 12.5	75 x 38	37	-	G106005
2	135	Gyproc FireLine	2 x 15	75 x 38	38	42[2]	A026030/1

▶ For further assistance in choosing the right solution for your project, try our System Selector; an online tool that enables quick and easy filtering by performance criteria. It provides system specific information downloads including BIM (Revit) objects. Go to gyproc.ie

[1] Stud sizes quoted are minimum.
[2] 25mm Isover Acoustic Roll insulation.

NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to Gyproc's recommendations. The quoted performances are achieved only if Gyproc and Isover components are used throughout, and the Company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with Gyproc.

NB The maximum substantiated height when a fire resistance is required is 3000mm, for any heights greater than this please contact our Technical Department.

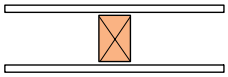
Non-loadbearing timber stud performance (continued)

63mm, 75mm and 100mm timber stud partitions

For details of when to specify fire resistance using BS
▶ Refer to **C02. S01. P18**

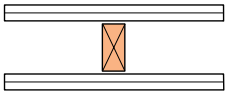
Table 1b — Solutions to satisfy requirements of *BS 476: Part 22: 1987* (Non-loadbearing)

1



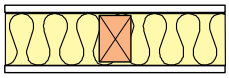
One layer of board each side of timber studs at 600mm centres. Insulation and linings as in table.

2



Two layers of board each side of timber studs at 600mm centres. Insulation and linings as in table.

3



One layer of board each side of timber studs at 600mm centres and 65mm Isover Acoustic Roll in the cavity. Linings as in table.

Detail	Partition thickness mm	Board type	Lining thickness mm	Stud size mm[1]	Sound insulation R_w dB		System reference
					No insulation	With insulation	
30 minutes fire resistance BS							
1	88	Gyproc SoundBloc	1 x 12.5	63 x 38	-	40[2]	A026009
3	88	Gyproc WallBoard	1 x 12.5	63 x 38	-	41	A026012
1	93	Gyproc SoundBloc	1 x 15	63 x 38	40	-	A026008
1	93	Gyproc WallBoard	1 x 15	63 x 38	-	40[2]	A026010
1	100	Gyproc WallBoard	1 x 12.5	75 x 38	35	36[2]	A026001/005
1	100	Gyproc SoundBloc	1 x 12.5	75 x 38	38	40[2]	A026011/016
1	105	Gyproc SoundBloc	1 x 15	75 x 38	40	43[2]	A026014/017
60 minutes fire resistance BS							
1	100	Glasroc F MULTIBOARD	1 x 12.5	75 x 50	34	-	G106003
2	115	Glasroc F MULTIBOARD	2 x 10	75 x 50	38	-	G106004
2	125	Gyproc WallBoard	2 x 12.5	75 x 38	38	42[2]	A026003/007
2	125	Gyproc SoundBloc	2 x 12.5	75 x 38	44	46[2]	A026015/018
1	130	Gyproc FireLine	1 x 15	100 x 50	38	-	A026023
90 minutes fire resistance BS							
2	125	Glasroc F MULTIBOARD	2 x 12.5	75 x 38	37	-	G106005
120 minutes fire resistance BS							
2	160	Gyproc FireLine	2 x 15	100 x 50	41	-	A026025

▶ For further assistance in choosing the right solution for your project, try our System Selector; an online tool that enables quick and easy filtering by performance criteria. It provides system specific information downloads including BIM (Revit) objects. Go to gyproc.ie

[1] Stud sizes quoted are minimum.
[2] 25mm Isover Acoustic Roll insulation.

NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to Gyproc's recommendations. The quoted performances are achieved only if Gyproc and Isover components are used throughout, and the Company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with Gyproc.

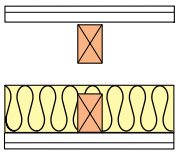
Non-loadbearing timber stud performance (continued)

75mm and 89mm timber stud walls

For details of when to specify fire resistance using EN
▶ Refer to **C02. S01. P18**

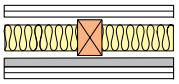
Table 2a — Solutions to satisfy the requirements of *BS EN 1364-1: 1999* (Non-loadbearing)

1



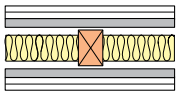
Two separate timber frames spaced 50mm apart, consisting of 89mm x 38mm timber studs at 600mm centres with noggings. Two layers of board each side. 100mm Isover Acoustic Roll between the studs on one side. Linings as in table.

2



Two layers of board each side of 75mm x 38mm timber studs at 600mm centres with Gypframe RB1 Resilient Bars fixed horizontally to one side at 600mm centres. 50mm Isover Acoustic Roll in the cavity. Linings as in table.

3



Two layers of board each side of 75mm x 38mm timber studs at 600mm centres with Gypframe RB1 Resilient Bars fixed horizontally to both sides at 600mm centres. 50mm Isover Acoustic Roll in the cavity. Linings as in table.

Detail	Partition thickness mm	Board type	Lining thickness mm	Stud size mm	Sound insulation R_w (R_w+ C_{tr}) dB	System reference
60 minutes fire resistance EN						
2	141	Gyproc SoundBloc	2 x 12.5	75 x 38	56 (48)	A046005
3	157	Gyproc SoundBloc	2 x 12.5	75 x 38	59 (51)	A046006
1	293	Gyproc Plank + Gyproc FireLine	1 x 19 + 1 x 12.5	89 x 38	63 (51)	A036003

▶ For further assistance in choosing the right solution for your project, try our System Selector; an online tool that enables quick and easy filtering by performance criteria. It provides system specific information downloads including BIM (Revit) objects. Go to gyproc.ie

NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to Gyproc's recommendations. The quoted performances are achieved only if Gyproc and Isover components are used throughout, and the Company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with Gyproc.

NB The maximum substantiated height when a fire resistance is required is 3000mm, for any heights greater than this please contact our Technical Department.

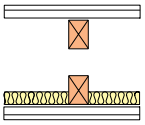
Non-loadbearing timber stud performance (continued)

75mm and 89mm timber stud walls

For details of when to specify fire resistance using BS
▶ Refer to **C02. S01. P18**

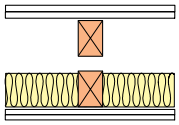
Table 2b — Solutions to satisfy requirements of *BS 476: Part 22: 1987* (Non-loadbearing)

1



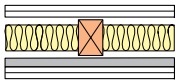
Two separate timber frames spaced 50mm apart, consisting of 89mm x 38mm timber studs at 600mm centres with noggings. Two layers of board each side. 25mm Isover Acoustic Partition Roll (APR 1200) between the studs on one side. Linings as in table.

2



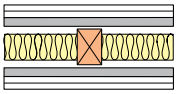
Two separate timber frames spaced 50mm apart, consisting of 89mm x 38mm timber studs at 600mm centres with noggings. Two layers of board each side. 100mm Isover Spacesaver Ready-Cut between the studs on one side. Linings as as in table.

3



Two layers of board each side of 75mm x 38mm timber studs at 600mm centres with Gypframe RB1 Resilient Bars fixed horizontally to one side at 600mm centres. 50mm Isover Acoustic Partition Roll (APR 1200) in the cavity. Linings as in table.

4



Two layers of board each side of 75mm x 38mm timber studs at 600mm centres with Gypframe RB1 Resilient Bars fixed horizontally to both sides at 600mm centres. 50mm Isover Acoustic Partition Roll (APR 1200) in the cavity. Linings as in table.

Detail	Partition thickness mm	Board type	Lining thickness mm	Stud size mm	Sound insulation R_w (R_w + C_{tr}) dB	System reference
60 minutes fire resistance BS						
3	141	Gyproc SoundBloc	2 x 12.5	75 x 38	56 (48)	A046005
4	157	Gyproc SoundBloc	2 x 12.5	75 x 38	59 (51)	A046006
2	290	Gyproc SoundBloc[1]	2 x 15	89 x 38	61 (53)	A036002
1	293	Gyproc Plank + Gyproc WallBoard	1 x 19 + 1 x 12.5	89 x 38	63 (51)	A046022
90 minutes fire resistance BS						
3	151	Gyproc SoundBloc	2 x 15	75 x 38	58 (51)	A046007
4	167	Gyproc SoundBloc	2 x 15	75 x 38	60 (52)	A046008
4	170	Gyproc Plank + Gyproc SoundBloc	1 x 19 + 1 x 12.5	75 x 38	60 (52)	A046024

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[1] Test conducted to *BS 476:Part 21: 1987* (loadbearing)

NB The fire resistance and sound insulation performances are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and filled, or skimmed according to Gyproc's recommendations. The quoted performances are achieved only if Gyproc and Isover components are used throughout, and the Company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with Gyproc.

Non-loadbearing timber stud design

Planning – key factors

The position of services and heavy fixtures should be pre-determined and their installation planned into the frame erection stage. If a plastered finish is specified, the thickness of the door or glazing frame must allow for the thickness of the plaster finish.

To minimise the risk of cracking at the plasterboard joints, seasoned timber with a moisture content not exceeding that recommended in *BS 5268* should be used. The contractor should ensure that timber supports are accurately spaced, aligned, and levelled.

Cavity fire barriers

Where required to maintain fire performance, suitable fire stopping (by others) should be installed full filled within the partition cavity to form a suitable closure.

▶ Refer to C06. S06. P422 – Cavity fire barriers.

Services

Penetrations

Penetrations of fire resistant constructions for services need careful consideration to ensure that the integrity of the element is not impaired and also that the services themselves do not act as the mechanism of fire spread.

▶ Refer to C02. S01. P41 – Service installations.

Electrical

Electrical and other small service runs can be routed within the timber stud cavity. The installation of electrical services should be carried out in accordance with *BS 7671*. Switch boxes and socket outlets can be supported from timber stud noggings.

Strength and robustness

Timber should be aligned and level, and should meet the requirements of *BS 5268*. The dimensions and assembly of timber supports should be sufficient to allow positive fixing of plasterboard without bounce or undue deflection. When the above fixing conditions cannot be met, a timber batten should be securely fixed to the side of the timber support to increase the bearing surface.

Where boards are fixed at maximum centres in adverse conditions, the standard of lining can be affected. Adverse conditions can generally be described as conditions where high humidity occurs, principally in the cold, damp, autumn / winter period. They also refer to buildings under construction over this period, where both the structure and wet applications, such as plastering and screeding, are subject to slow drying conditions (refer to table 3).

Table 3 – Gyproc plasterboard or Glasroc F specialist board fixed direct to timber supports

Board type	Thickness mm	Width mm	Maximum recommended stud centres mm
Gyproc WallBoard	12.5	900	450
		1200	600
	15	900	450
		1200	600
Gyproc FireLine	12.5	900	450
		1200	600
	15	900	450
		1200	600
Gyproc Plank	19	600	600
Gyproc SoundBloc	12.5	1200	600
	15	1200	600
Glasroc F MULTIBOARD	10	1200	600
	12.5	1200	600

Partition junctions

At a 'T' junction, a ladder frame should be constructed between studs to provide fixing points for the abutting partition, and to support the lining (refer to construction detail 2). The horizontal members of the frame should be at 600mm maximum centres.

Fixing to super-dried timber

It has been established by test that Gyproc Drywall Screws are the preferred solution for fixing to standard softwood or superdried timber (approximately 12% moisture content).

Nail popping

Loosening of nails in timber can occur through timber shrinkage, or as a result of fixing boards to misaligned or twisted framing.

To reduce the risks, boards should be fixed tight to framing members, using Gyproc Drywall Screws.

Non-loadbearing timber stud design (continued)

Fixtures

Lightweight fixtures can be made directly to the partitions. Medium weight, or heavyweight fixtures such as cisterns, radiators or wash basins, can be made directly into the timber supports.

Additional studs or timber noggings should be installed as appropriate.

Board finishing

▶ Refer to C08. S01. P483 – Finishes.

Tiling

Tiles up to 32kg/m² can be applied to the surface of lightweight partition systems.

▶ Refer to C08. S04. P498 – Tiling.

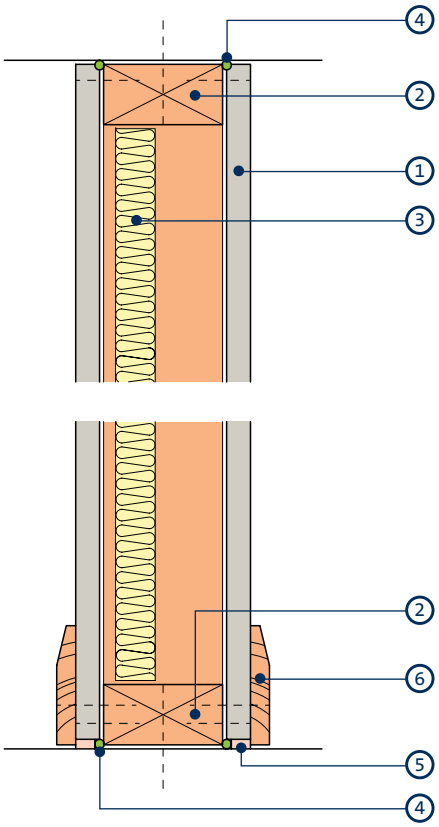
Important information

Ensure Gyproc Drywall Screws have a minimum of 25mm penetration into the timber frame.

When using Gypframe RB1 Resilient Bar specifications, screw length selection is critical. Ensure the size of Gyproc Drywall Screws selected to fix the lining to the Gypframe RB1 Resilient Bar do not penetrate the timber frame and therefore compromise the partition's acoustic performance.

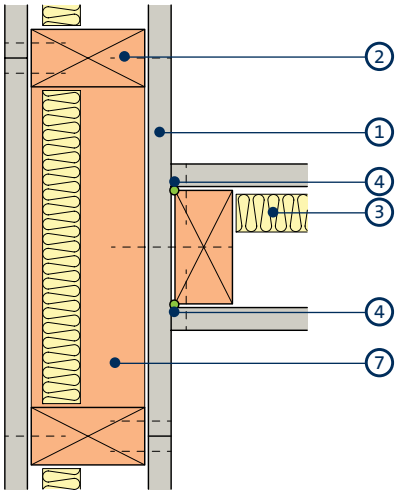
Non-loadbearing timber stud construction details

1



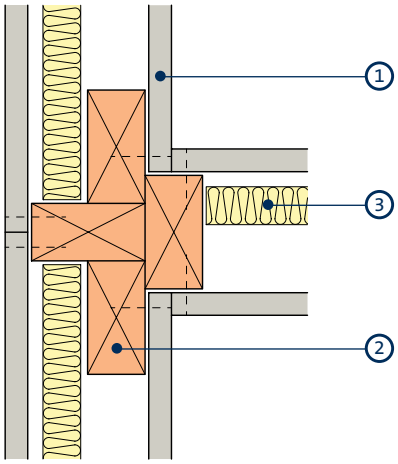
Head and base

2



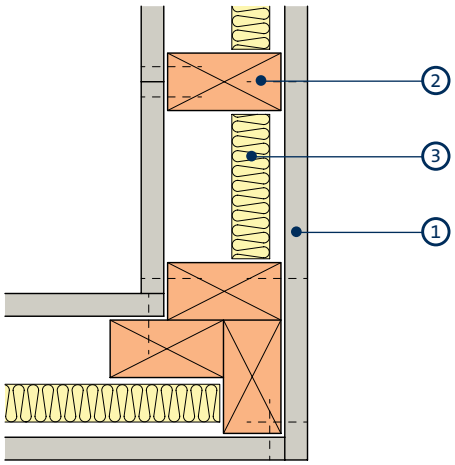
'T' junction between studs

3



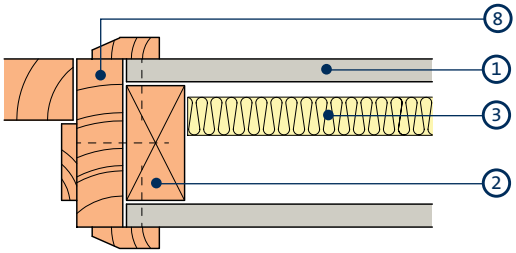
'T' junction at stud

4



Internal / external corner

5

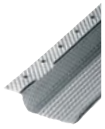


Door jamb

1 Gyproc plasterboard
2 Timber framing
3 Isover insulation
4 Gyproc Sealant
5 Bulk fill with Gyproc jointing materials (where gap exceeds 5mm)
6 Skirting
7 Timber noggings at 600mm centres
8 Timber door frames and architrave

Non-loadbearing timber stud system components

Gypframe metal components



Gypframe RB1 Resilient Bar
Acoustically engineered channel to separate board fixing from the primary frame. Fixed horizontal to face of studs.

Timber (by others)
Typically 63mm to 100mm depth; 30mm to 50mm width.

Board products (continued)

Gyproc WallBoard
Standard gypsum plasterboard.

Gyproc Plank
Standard gypsum plasterboard located as an inner layer.

Gyproc DuraLine[1]
Gypsum plasterboard with fire resistant additives and a high density core for enhanced sound insulation and impact resistance performance.

Gyproc Moisture Resistant
Gypsum plasterboard with moisture resistant additives in the core and special green lining paper for easy recognition. Used as outer layer.

Glasroc F MULTIBOARD
Non-combustible glass-reinforced gypsum board.

Gyproc FireLine[1]
Gypsum plasterboard with fire resistant additives.

Glasroc H TILEBACKER
Non-combustible glass-reinforced gypsum board with a water resistant pre-primed acrylic coating to receive tiling.

Gyproc SoundBloc[1]
Gypsum plasterboard with a high density core for enhanced sound insulation performance.

[1] Also available in a Moisture Resistant (MR) version. MR boards are specified in intermittent wet use areas.

Fixing products

Gyproc Drywall Screws
Corrosion resistant self-tapping steel screws for fixing board-to-timber and board-to-metal framing less than 0.8mm thick

Gyproc Collated Drywall Screws
Corrosion resistant self-tapping steel screws for fixing board-to-timber and board-to-metal framing less than 0.8mm thick.

Non-loadbearing timber stud components (continued)

Plasterboard accessories

Gyproc Jointing Material
Jointing compounds, ready mixes and adhesives for reinforcement and finishing of board joints.

Gyproc Sealant
Used to seal air paths for optimum sound insulation.

Gyproc Corner Tape
A paper tape bonded to two corrosion resistant steel strips.

Gyproc Drywall Primer
Used to prepare for painting.
Tub contents 10 litre

Gyproc Paper Joint Tape
A paper tape designed for reinforcement of flat joints or internal angles.

Finishing products

Gyproc Skimcoat
To provide a plaster skim finish on most common backgrounds including undercoat plasters and plasterboard. Can provide enhanced acoustic performance.

Gyproc Carlite Finish
To provide a plaster skim finish on most common backgrounds including undercoat plasters and plasterboard. Can provide enhanced acoustic performance.

Gyproc Carlite Ultra Finish
Offers all the benefits of Gyproc Skimcoat and Gyproc Carlite Finish with a reduced set time of 90-120mins, making it ideal for smaller jobs.

Plaster accessories
Designed for the reinforcement and finishing of board joints before plaster skimming.

Insulation products

Isover Acoustic Roll
Glass mineral wool for enhanced acoustic and thermal performance.

Non-loadbearing timber stud installation overview

This is intended to be a basic description of how the system is built.

Timber framing is fixed to the perimeter, abutments, and to frame any openings, using suitable fixings. Timber studs are fixed at specified centres.

Door openings are formed by fixing full height timber studs to each side, together with a timber head piece. Door casings are then fixed to the timber ground. Additional framing is installed as required to support heavy fixtures.

M&E services can be located within the partition cavity before the partition has been boarded. Timber noggings are fixed to support recessed switch boxes / socket outlets.

Where Gypframe RB1 Resilient Bars are required, these are fixed horizontally to the timber studs to one or both sides as specified.

Isover insulation can also be added to the partition cavity for increased acoustic performance.

The perimeter of the partition is sealed on both sides with Gyproc Sealant.

Gyproc plasterboards are screw-fixed to all timber supports with Gyproc Drywall Screws, or to the Gypframe RB1 Resilient Bars with Gyproc Drywall Screws.

Horizontal board joints are backed with timber noggings or Gypframe RB1 Resilient Bars as required.

NB The correct length of fixings must be used when installing the Gyproc board to the Gypframe RB1 Resiliant Bars to ensure that the acoustic performance is not compromised.

Additional information

For full installation details, refer to the **Gyproc Installation Guide**, available to download from gyproc.ie