

GIB NOISE CONTROL® SYSTEMS

Noise control for Inter-tenancy situations is comprehensively covered in GIB Noise Control Systems® literature. As these situations are generally subject to building code requirements it is important that that publication is consulted to design and construct Inter-tenancy noise control systems.

For complete system and construction details refer to the publication entitled GIB Noise Control® Systems.

**This is available from most GIB® stockists
OR ph 0800 100 442
OR can be downloaded from www.gib.co.nz**

A range of Sub Inter-tenancy systems (not subject to building code requirements) has been included in the following pages.

Sound Transmission Class (STC)

STC relates to airborne noise such as speech, TV and so on. It is the ability of a wall, ceiling, or floor/ceiling to reduce noise from rooms next door. In general a higher STC means a better performance.

- STC 35-40 means that a radio, TV or normal speech in the room next door may be clearly heard and raised voices can be understood
- STC 40-45 means that a radio, TV or normal speech is still audible. Conversations at a raised voice level are difficult to understand
- STC 45-50 means that radio, TV and raised voices are just audible

Impact Insulation Class (IIC)

IIC measures the ability of a floor or ceiling system to reduce noise resulting from impacts such as footsteps, falling objects and moving furniture. A higher IIC means a better performance. Impact noises easily travel from hard surfaces into the structure and to the room below. Hard surfaces such as finished timber floors and ceramic tiles often cause noise transmission to the room below.

Semi-hard surfaces such as cork tiles and flooring grade vinyl perform a little better, but still do not efficiently absorb impact energy. Installing carpet and underlay is an effective way of reducing impact noise. Installing a GIB Noise Control® System will help reduce impact and airborne noise levels.

Substitution

GIB Noise Control® Systems are not generic. It is important that only GIB® branded components are used when specifying and installing GIB Noise Control® Systems. Substitution is not in accordance with GIB® Systems recommendations and is at the risk of the owner, specifier or builder.

GIB® SUB INTER-TENANCY NOISE CONTROL SYSTEMS

The systems listed below are intended as suggestions for situations where code compliance is not a requirement but reasonable noise control is desirable eg, within residential dwellings, offices, etc.

Different areas of building usage require different levels of noise reduction, and design plays an important part in isolating areas of high volume noise from those requiring near silence. Internal passages, bathrooms and wardrobes etc, can generally isolate such areas.

For best results the specifications given in the following pages should be carefully adhered to and special attention given to junction detailing especially at floor and ceiling junctions.

Best results are achieved on concrete floors or where floors and ceilings are discontinuous. As a rule of thumb the following STC values will reduce the sound level given to an acceptable level for most people. It is intended as a guide only to assist in making an informed choice of which wall type may be appropriate.

STC	NOISE	ROOMS
35	Standard walls: Quiet speech, low level sound	Passage walls, kitchen
42-45	Normal speech, snoring, background music	Bedrooms, home office
48-52	Raised voices, children at play, loud snoring	Master bedroom, rumpus, bathroom/toilet
* 55-62	Loud music, extreme raised voice, machinery	Home theatre, rumpus, garage/workshop

* Information on systems requiring code compliance (eg systems achieving STC55 or greater) are found in GIB Noise Control® Systems literature

Single Steel Frame Systems

Framing

Framing to comply with all relevant sections and clauses of the New Zealand Building Code.

Sound Control Infill

R1.8 Pink® Batts® glasswool insulation installed between the studs and nogs.

Note: 75mm Pink® Batts® Silencer® in place of R1.8 Pink® Batts® will offer up to 2 STC points improvement.

Insulation Thickness shall not exceed the framing thickness

Lining

GIB® plasterboard as prescribed in the tables NC1 and NC2.

Joints of the outer layer are generally offset 600mm from those of the inner layer. The outer layer may be fixed horizontally over vertical inner layer.

Full height sheets are used where possible. Where sheet end butt joints are unavoidable they must be formed over nogs with those of the outer layer offset from those of the inner layer. Sheet joints are touch fitted.

Where a Fire Resistance Rating is required refer to the current GIB® Fire Rated Systems or GIB Noise Control® Systems.

Fastening the Lining

Fasteners

Inner and single layers: 25mm x 6g
GIB® Grabber® Self Tapping Drywall Screws.
Outer layer: 41mm x 6g screws as above.

Fastener Centres

Inner layer and outer layer: 300mm centres to perimeter of sheets and to intermediate studs.

Place fasteners no closer than 12mm to the sheet edge and 50mm from sheet ends.

Acoustic Sealant

A continuous bead of GIB Soundseal® acoustic sealant is required around the perimeter of the framing (on single layers) and around the perimeter of the inner lining on double layers. The linings are then bedded onto the bead.

Jointing

Inner layer: Unstopped.

Outer layer: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the instructions on page 75 of this publication. Wall to ceiling junctions are to be reinforced with paper tape and square stopped or finished with GIB-Cove®.

Table NC1

SPEC No.	LININGS	THICKNESS	LAYERS SIDE 1	LAYERS SIDE 2	STC
GSS132	GIB® Standard Plasterboard	13mm	1	1	41
GSS133			1	2	44
GSS134			2	2	48

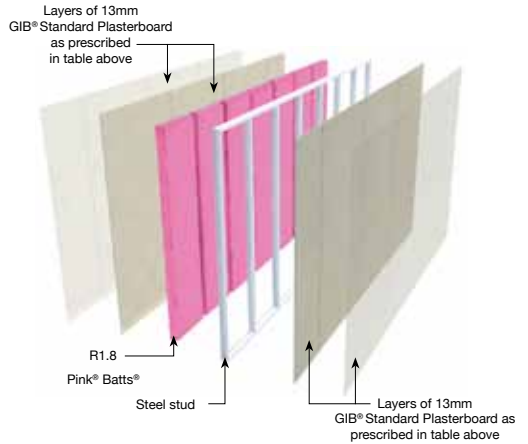
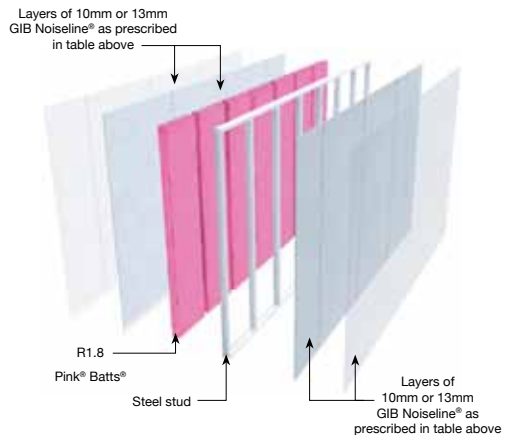


Table NC2

SPEC No.	LININGS	THICKNESS	LAYERS SIDE 1	LAYERS SIDE 2	STC
GNS104	GIB NoiseLine®	10mm	2	2	48
GNS132		13mm	1	1	43
GNS133			1	2	46
GNS134			2	2	52



Single Timber Frame Systems

Framing

Framing to comply with all relevant sections and clauses of the New Zealand Building Code.

Sound Control Infill

R1.8 (90mm) Pink® Batts® glasswool insulation installed between the studs and nogs.

Note: 75mm Pink® Batts® Silencer® in place of R1.8 Pink® Batts® will offer up to 2 STC points improvement.

Insulation Thickness shall not exceed the framing thickness

Lining

GIB® plasterboard as prescribed in the tables NC3 and NC4.

Joints of the outer layer are generally offset 600mm from those of the inner layer. The outer layer may be fixed horizontally over vertical inner layer.

Full height sheets are used where possible.

Where sheet end butt joints are unavoidable they must be formed over nogs with those of the outer layer offset from those of the inner layer. Sheet joints are touch fitted.

Where a Fire Resistance Rating is required refer to the current GIB® Fire Rated Systems or GIB Noise Control® Systems literature.

Fastening the Lining

Fasteners

Inner and single layers: 25mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

Outer layer: 41mm x 6g screws as above or 40mm x 2.8mm GIB® Nails.

Fastener Centres

Inner layer and outer layer: 300mm centres around the sheet perimeter and to intermediate studs.

Place fasteners no closer than 12mm to the sheet edge.

Acoustic Sealant

A bead of GIB Soundseal® acoustic sealant is required around the perimeter of the framing (on the single layer side) and around the perimeter of the inner lining on the other side. The linings are then bedded onto the bead.

Jointing

Inner layer: Unstopped.

Outer layer: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the instructions on page 75 of this publication. Wall to ceiling junctions are to be reinforced with paper tape and square stopped or finished with GIB-Cove®.

Table NC3

Spec No.	Linings	Thick-ness	Layers Side 1	Layers Side 2	STC
GST102	GIB® Standard Plasterboard	10mm	1	1	39
GST103			1	2	42
GST104			2	2	44
GST132		13mm	1	1	40
GST133			1	2	43
GST134			2	2	46

Layers of 10mm or 13mm GIB® Standard Plasterboard as prescribed in table above

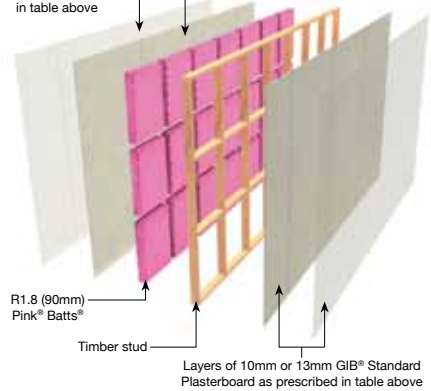
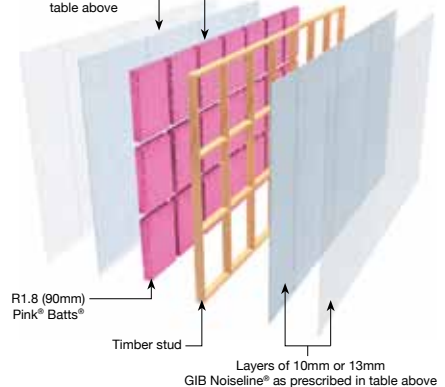


Table NC4

SPEC No.	LININGS	THICK-NESS	LAYERS SIDE 1	LAYERS SIDE 2	STC
GNT102	GIB NoiseLine®	10mm	1	1	41
GNT103			1	2	44
GNT104			2	2	46
GNT132		13mm	1	1	42
GNT133			1	2	46
GNT134			2	2	48

Layers of 10mm or 13mm GIB NoiseLine® as prescribed in table above



GIB® Rondo® Quiet Stud® Steel Frame

SPEC No.	LOADBEARING CAPACITY	STC	RW	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBQSA 60	NLB	50	50	-/60/60	1 x 13mm GIB Noiseline® each side

Framing

GIB® Rondo® Quiet Stud® resilient steel stud 92 x 45 x 0.55mm nominal and placed in 92 x 30 x 0.55mm nominal steel channel.

Channel is fixed to floor and ceiling. Studs are “friction fitted” at 600mm centres maximum with a 15mm expansion gap at the top of the frame. No fixings to the top channel.

Wall Heights

Recommended maximum wall height is 3600mm. For higher walls consult the framing manufacturer.

Sound Control Infill

R1.8 Pink® Batts® glasswool insulation installed between the studs.

Lining

1 layer of 13mm GIB Noiseline® fixed vertically each side of the frame. Vertical joints are offset 600mm from those of the opposing side. Sheets must be fitted hard to floor. Use full height sheets where possible. Sheet joints are touch fitted and must occur over framing. Where sheet end joints are unavoidable they must be over nogs.

Acoustic Sealant

A bead of GIB Soundseal® acoustic sealant is required around the perimeter of the frame, the lining is then bedded onto the bead.

Fastening the Lining

Fasteners

25mm x 6g GIB® Grabber® Self Tapping Drywall Screws.

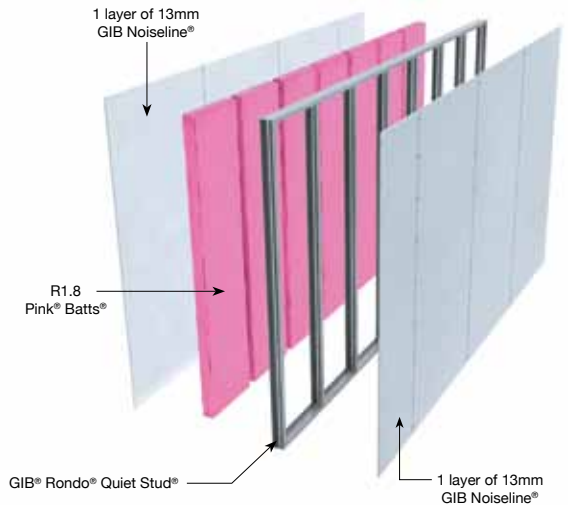
Fastener Centres

300mm centres up each stud.

Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

Jointing

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the instructions on page 75 of this publication. Wall to ceiling junctions are to be reinforced with paper tape and square stopped or finished with GIB-Cove®.



STUD SIZE	SPACE BETWEEN FRAMES	PARTITION WIDTH
92 x 45 x 0.55mm	N/A	118mm

Floor/Ceiling - Timber Joists

SPEC No.	LOADBEARING CAPACITY	STC	RW	IIC	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBDFA 30d	LB	51	51	* 68	#	1 x 13mm GIB Noiseline®

Floor Framing

Floor joists shall comply with NZS 3604, be spaced at 600mm centres maximum and have a depth of 200mm minimum.

Alternative Floor Framing

Use either Hyspan® or Hybeam® HJ series joists designed for strength and serviceability, no less than 150mm deep and spaced at no more than 600mm. Consult the joist manufacturer regarding construction of the solid blocking contained in the floor/ceiling to wall junctions.

Flooring

Minimum flooring shall be nominal 20mm particle board or minimum 17mm thick structural plywood fixed to the manufacturer's instructions. Nogs of a minimum of 100 x 50mm are required behind sheet joints. If tongue and groove flooring is used verification of performance must be obtained from the supplier of the flooring system.

GIB Quiet Clip® and Battens

The GIB Quiet Clip® shall be fastened to the joists at maximum 1200mm centres (and no less than 900mm centres) to support the GIB® Rondo® metal ceiling battens. The battens shall be spaced at 600mm centres maximum.

Installing the GIB Quiet Clip®

Use 3 x 32mm x 8g GIB® Grabber® Wafer Head Screws. Insert the first screw into the middle rubber grommet, tighten enough to hold the GIB Quiet Clip® in place, adjust the clip to the correct height, insert the remaining two screws and tighten.

Do not over tighten the screws to a point where the grommet is crushed. The screws should be tightened enough to allow the flexibility to remain in the connection between the grommet and the joists.

Sound Control Infill

Ceiling overlaid with 100mm Pink® Batts® Silencer® glasswool insulation.

Ceiling Lining

1 layer of 13mm GIB Noiseline® fixed at right angles to the battens. All sheet end butt joints shall occur on the battens. Sheet joints are touch fitted. Where a fire resistance rating is required all joints must be back-blocked in accordance with the instructions on page 46 of this publication.

#Note: If a Fire Resistance Rating is required, refer system GBSC 30 in the publication "GIB® Fire Rated Systems literature".

Fastening the Lining

Fasteners

25mm x 6g GIB® Grabber® Self Tapping Drywall Screws.

Fasteners Centres

200mm centres along each batten and 100mm centres along sheet end butt joints. Place fasteners no closer than 12mm to the sheet edges.

Acoustic Sealant

A bead of GIB Soundseal® acoustic sealant is required around the ceiling perimeter.

Wall/Ceiling Junctions

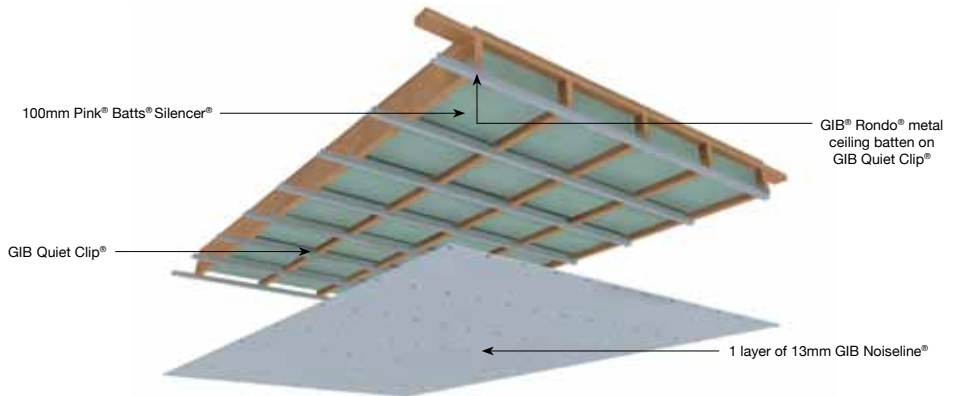
The internal angle between the ceiling and the walls are finished with GIB-Cove® adhered with GIB-Cove® Bond or boxed corners (square stopped) filled and taped.

Jointing

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the instructions on page 75 of this publication.

* Impact Insulation Class (IIC)

The above IIC performance is achieved with a 48oz hard twist wool hessian backed carpet over a rubber waffle underlay.



GIB Noise Control® Systems Installation Issues

The success of GIB Noise Control® Systems is not only dependent on accurate installation but also on ensuring there are no sound leaks in the system through perimeter details or penetrations such as doors, power points and lights.

Below are some basic rules that will help achieve the desired result.

For a more comprehensive guide refer to the literature GIB Noise Control® Systems literature.

Acoustic Sealant

It is important that the perimeter edge of the GIB Noise Control® System is sealed using GIB Soundseal® Acoustic Sealant.

Apply GIB Soundseal® to the entire perimeter of the sound wall. Ensure that all gaps between GIB Noiseline® at the floor, walls and ceiling junctions are completely sealed.

Power Outlets / Light Switches / Lights

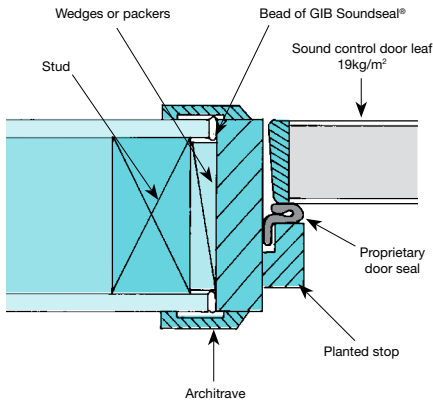
Avoid penetrations in noise control systems wherever possible. Where penetrations such as electrical outlets are unavoidable, use only certified fire and acoustic rated fittings. Use only one outlet per stud cavity and never place them back to back.

Use surface mounted light fittings where possible. Recessed lights will significantly reduce the noise control performance of the system.

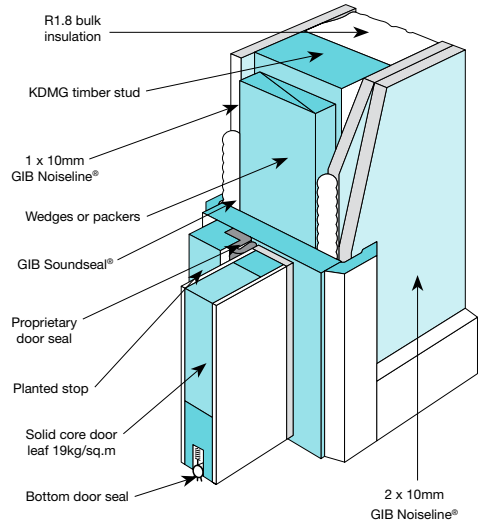
Doors

A significant amount of sound is transmitted through doors and around the door frame. Careful design and installation will provide increased noise control.

Typical Junctions Noise Door



Noise Control Door Systems



Note: Specify wider door jambs for 3 and 4 layer systems