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OCT 2012

GIB® Fire Rated Systems

Specification and Installation Manual

BRANZ Appraised
Appraisal No.289 [2012]

GIB®

WHAT IS NEW?

Most specifications in this technical literature are similar to those published in 'GIB® Fire Rated Systems January, 2006' with the following additions;

- Compliance has been aligned with the 2012 provisions of the New Zealand Building Code for the Protection from Fire
- Surface Finish Properties have been tested in accordance with the ISO 5660
- Steel joist floor/ceiling specifications have been added
- Stability of fire rated elements has been clarified and a simple boundary wall detail is included
- Penetration details, previously published in separate literature, have been included. Reference is also made to a listing of proprietary penetration seals now available on www.gib.co.nz or scan the QR code

USE ONLY THE CURRENT SPECIFICATION

This publication may be superseded by a new publication. Winstone Wallboards Ltd accepts no liability for reliance upon publications that have been superseded. Before using this publication check whether this is the current publication; simply call the GIB® Helpline on 0800 100 442 or visit www.gib.co.nz.

THIS BOOK SUPERSEDES THE FOLLOWING PUBLICATIONS

- GIB® Fire Rated Systems - January 2006
- Penetrations in GIB® Fire Rated Systems - August 2003
- GIB® Garage Boundary Wall Technical Bulletin - March 2009

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GIB® Fire Rated Systems

Specification and Installation Manual

NEW ZEALAND BUILDING CODE COMPLIANCE

The New Zealand building code requirements for fire safety represent the minimum allowable standard of protection to ensure the health and life safety of building occupants.

The building code provisions do not aim to protect the building itself, nor its contents, and often fall short of what people and businesses expect and find acceptable.

An effective fire design not only addresses life safety, but also considers personal property protection and ongoing business viability after exposure to a possible fire.

BEWARE OF SUBSTITUTION

The performance of fire rated systems is very sensitive to design detailing and construction practices. All GIB® Fire Rated Systems have been developed specifically for New Zealand conditions and independently tested or assessed to ensure the required level of performance. Therefore, it is important to use only GIB® branded components where specified and closely follow the specified design details and construction practices, so you can be confident that the required level of fire safety is achieved on site.

If you require any further information please don't hesitate to call our GIB® Helpline on 0800 100 442.

GIVING YOU PEACE OF MIND

- The New GIB® Fire Rated Systems 2012 have been BRANZ Appraised, providing assurance that the systems in this technical manual have been sourced from organisations with accredited quality assurance and most importantly, comply with the New Zealand Building Code (NZBC)
- Compliant with the 2012 provisions of the NZBC for Protection from Fire, including new Surface Finish Properties
- Additional performance aspects can be added to the New GIB® Fire Rated Systems 2012 through the substitutions in the table below

CUSTOMISED DESIGN SOLUTIONS

The systems detailed in this book should cover most common situations where fire resistance is required.

However, for special projects where specific performance is necessary, GIB® Technical Services can assist you to develop a customised solution. Simply contact us through the GIB® Helpline on 0800 100 442.

Winstone Wallboards Ltd accepts no liability if GIB® Fire Rated Systems are not used in accordance with instructions contained in this publication.

	ACCEPTABLE ALTERNATE GIB® PLASTERBOARDS				
SPECIFIED GIB® PLASTERBOARD	GIB® STANDARD	GIB BRACELINE® GIB NOISELINE®	GIB AQUALINE®	GIB TOUGHLINE®	GIB ULTRALINE®
10mm GIB FYRELINE®	13mm	10mm or 13mm	10mm or 13mm	13mm	10mm or 13mm
13mm GIB FYRELINE®	N/A	13mm	13mm	13mm	N/A

GIB® FIRE RATED SYSTEMS - SUMMARY TABLE

FIRE RATED WALL SYSTEMS – TWO WAY FRR – TIMBER FRAME						
SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	STC	LINING REQUIREMENTS EACH SIDE OF FRAME	WEIGHT OF SYSTEM (kg/m2)	PAGE
GBT 15	NLB	-/15/15	36	1 layer 10mm GIB® Standard	22	10
GBTL 15	LB	15/15/15	36	1 layer 10mm GIB® Standard	22	10
GBT 30a	NLB	-/30/30	36	1 layer 10mm GIB Fyreline®	22	11
GBTL 30	LB	30/30/30	36	1 layer 10mm GIB Fyreline®	22	11
GBT 30b	NLB	-/30/30	36	1 layer 13mm GIB® Standard	26	12
GBTL 30b	LB	30/30/30	36	1 layer 13mm GIB® Standard	26	12
GBT 60a	NLB	-/60/60	36	1 layer 13mm GIB Fyreline®	27	13
GBTL 60	LB	60/60/60	36	1 layer 13mm GIB Fyreline®	27	13
GBTL 60b	LB	60/60/60	42	2 layers 10mm GIB Fyreline®	39	14
GBT 90	NLB	-/90/90	37	1 layer 16mm GIB Fyreline®	36	15
GBTL 90	LB	90/90/90	37	1 layer 16mm GIB Fyreline®	36	15
GBT 120a	NLB	-/120/120	43	2 layers 13mm GIB Fyreline®	47	16
GBT 120b	NLB	-/120/120	35	1 layer 19mm GIB Fyreline®	43	17
GBTL 120	LB	120/120/120	46	2 layers 16mm GIB Fyreline®	65	18
GBT 180	NLB	-/180/180	46	2 layers 16mm GIB Fyreline®	65	19

FIRE RATED WALL SYSTEMS – TWO WAY FRR – STEEL FRAME						
SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	STC	LINING REQUIREMENTS EACH SIDE OF FRAME	WEIGHT OF SYSTEM (kg/m2)	PAGE
GBSL 15	LB	15/15/15	34	1 layer 13mm GIB® Standard	22	20
GBS 30	NLB	-/30/30	34	1 layer 13mm GIB® Standard	22	21
GBSL 30a	LB	30/30/30	41	1 layer 16mm GIB Fyreline®	29	22
GBSL 30b	LB	30/30/30	44	2 layers 10mm GIB Fyreline®	32	22
GBS 60	NLB	-/60/60	34	1 layer 13mm GIB Fyreline®	23	23
GBSL 60a	LB	60/60/60	42	1 layer 19mm GIB Fyreline®	32	24
GBSL 60b	LB	60/60/60	45	2 layers 13mm GIB Fyreline®	38	24
GBS 90	NLB	-/90/90	41	1 layer 16mm GIB Fyreline®	29	25
GBSL 90	LB	90/90/90	45	1 layer 16mm GIB Fyreline®+ 1 layer 13mm GIB Fyreline®	42	26
GBS 120	NLB	-/120/120	42	1 layer 19mm GIB Fyreline®	32	27
GBS 120a	NLB	-/120/120	47	2 layers 16mm GIB Fyreline®	29	28
GBS 240	NLB	-/240/240	44	4 layers 19mm GIB Fyreline® (Refer to specification for layout)	65	29

FIRE RATED WALL SYSTEMS – ONE WAY FRR – TIMBER OR STEEL FRAME				
SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	LINING REQUIREMENTS ONE SIDE OF FRAME	PAGE
GBUW 15	LB/NLB	(15)/15/15	1 layer 13mm GIB® Standard	31
GBUW 30a	LB/NLB	(30)/30/30	1 layer 16mm GIB Fyreline®	32
GBUW 30b	LB/NLB	(30)/30/30	2 layers 10mm GIB Fyreline®	32
GBUW 60a	LB/NLB	(60)/60/60	2 layers 13mm GIB Fyreline®	33
GBUW 60b	LB/NLB	(60)/60/60	1 layer 16mm GIB Fyreline® + 1 layer 13mm GIB Fyreline®	33
GBUW 90	LB/NLB	(90)/90/90	1 layer 16mm GIB Fyreline® + 1 layer 19mm GIB Fyreline®	34
GBUW 120	LB/NLB	(120)/120/120	2 layers 19mm GIB Fyreline®	35

Note: The STC values shown above relate to non insulated cavities.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

GIB® FIRE RATED SYSTEMS - SUMMARY TABLE

FIRE RATED FLOOR/CEILING SYSTEMS							
SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	STC	IIC	LINING REQUIREMENTS TO UNDERSIDE OF SUPPORT FRAME	WEIGHT OF SYSTEM (kg/m2)	PAGE
GBFC 15	LB	15/15/15	38	31	Timber joists with 1 layer 13mm GIB® Standard	40	36
GBSJ 30	LB	30/30/30	34	30	Steel joists with 1 layer 13mm GIB Fyreline®	38	37
GBFC 45	LB	45/45/45	39	32	Timber joists with 1 layer 13mm GIB Fyreline®	44	38
GBCJ30	LB	30/30/30	39	32	Composite joists with 1 layer 13mm GIB Fyreline®	40	39
GBCJ 45	LB	45/45/45	39	32	Composite joists with 1 layer 13mm GIB Fyreline®	40	39
GBFC 60	LB	60/60/60	39	32	Timber joists with 1 layer 16mm GIB Fyreline®	46	40
GBSJ 60	LB	60/60/60	39	32	1 layer 16mm GIB Fyreline®	40	41
GBCJ 60	LB	60/60/60	39	32	Composite joists with 1 layer 16mm GIB Fyreline®	44	42
GBFC 90	LB	90/90/90	41	34	Timber joists with 2 layers 16mm GIB Fyreline®	63	43
GBFC 120	LB	120/120/120	–	–	Timber or steel joists with 2 layers 19mm GIB Fyreline®	–	44

FIRE RATED FLOOR/CEILING SYSTEMS – SUSPENDED GRID							
SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	STC	IIC	LINING REQUIREMENTS TO UNDERSIDE OF SUPPORT FRAME	WEIGHT OF SYSTEM (kg/m2)	PAGE
GBSC 30	LB	30/30/30	48	43	Timber joists with Rondo® Key-lock™ or USG ScrewFix™ suspension system & 1 layer 13mm GIB Fyreline® (back blocked)	50	45
GBSC 60a	LB	60/60/60	53	43	Timber joists with Rondo® Key-lock™ or USG ScrewFix™ suspension system & 2 layers 13mm GIB Fyreline®	60	46
GBSC 60b	LB	60/60/60	50	43	Timber joists with USG Drywall Grid suspension system & 1 layer of 16mm GIB Fyreline®	54	47
GBSC 90	LB	90/90/90	53	43	Timber joists with USG Drywall Grid suspension system & 1 layer of 13mm GIB® Fyreline® & 1 layer of 16mm GIB Fyreline	64	48

FIRE RATED CEILING SYSTEMS - TIMBER OR STEEL FRAME				
SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	LINING REQUIREMENTS TO UNDERSIDE OF SUPPORT FRAME	PAGE
GBUC 15	LB/NLB	(15)/15/15	1 layer 13mm GIB Fyreline®	49
GBUC 30	LB/NLB	(30)/30/30	1 layer 16mm GIB Fyreline®	50
GBUC 45	LB/NLB	(45)/45/45	2 layers 13mm GIB Fyreline®	51
GBUC 60	LB/NLB	(60)/60/60	1 layer 16mm GIB Fyreline® + 1 layer 13mm GIB Fyreline®	52
GBUC 90	LB/NLB	(90)/90/90	2 layers 19mm GIB Fyreline®	53
GBUC120	LB/NLB	(120)/120/120	2 layers 19mm GIB Fyreline®	53

FIRE RATED RISERS, SHAFTS AND DUCTS			
SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	PAGE
GIB® Fyreduct™	NLB	-/30/30, -/60/60, -/90/90, -/120/120	54
GIB® Ventshaft	NLB	-/60/60	58
GIB® Shaftwall	NLB	-/30/30, -/60/60, -/90/90, -/120/120	61

FIRE RATED STEEL BEAMS AND COLUMNS (GIB FYRELINE® LININGS ON TIMBER STRAPPING OR STEEL CLIP & CHANNEL)	
FIRE RATINGS AVAILABLE	PAGE
15, 30, 60, 90, 120 minutes	64-65

Note: The STC and IIC values shown for Floor/Ceiling systems and Suspended Grid Floor/Ceilings relate to bare particle board flooring without fibreglass between the joists.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

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INTRODUCTION

COMPLIANCE WITH THE NEW ZEALAND BUILDING CODE (NZBC)

NZBC Clause B2 – Durability

Under normal conditions of dry internal use GIB® Fire Rated Systems have a serviceable life in excess of 50 years and satisfy the requirements of NZBC Clause B2 – Durability.

NZBC Clauses C1 – C6 Protection from Fire

GIB® Fire Rated Systems can be used to provide passive fire protection in accordance with the requirements of NZBC Clauses C1 - C6 – Protection from Fire.

NZBC Clause C6 – Structural Stability

In order to satisfy the requirements of this clause, designers must ensure that fire rated elements are supported by elements having at least the same Fire Resistance Rating (FRR). Collapse of elements having a lesser FRR shall not cause the consequential collapse of elements required to have a higher FRR.

NZBC C/AS1 - 7 (2012) now makes clear distinction between '*structural adequacy*' and '*stability*'. *Structural adequacy* is the first number in the x/x/x FRR sequence and simply relates to the ability of a specimen to resist a vertical load applied in the standard furnace test for fire resistance. *Stability* relates to the support provided to a building element having a FRR. The *stability* of an element having a FRR often depends on other elements, such as a column supporting a floor or a section of wall providing lateral support to a firecell boundary wall. Although the supporting element itself may not provide firecell separation, it still needs a FRR no less than the element for which it is providing *stability* in order to avoid consequential collapse.

Simply selecting a FRR may not be appropriate when an element, providing *stability*, does not form part of a firecell boundary and is located entirely within a firecell. A FRR is by definition a result against a standard furnace test for fire resistance where a wall or floor/ceiling specimen is exposed from one side only. A wall located entirely within a firecell will potentially be exposed to fire from more sides simultaneously. In this case 'universal' or 'one way' lining protection may need to be provided to all relevant sides. If the wall provides a lateral support or a bracing function and is located within a firecell, then the bracing system must be protected with a 'universal' or 'one way' lining system.

NZBC Clause G6 – Airborne and Impact Sound

For many specifications in the technical literature Sound Transmission Class (STC) and Impact Insulation Class (IIC) performances are given. For higher performances, including those required by NZBC Clause G6 – Airborne and Impact Sound, reference should be made to the current version of 'GIB® Noise Control Systems'.

HANDLING AND LIMITATIONS

GIB® plasterboard must be stacked flat and protected from the weather.

GIB® plasterboard must be handled as a finishing material.

GIB® plasterboard linings in use must not be exposed to liquid water or be installed in situations where extended exposures to humidity above 90% RH can reasonably be expected.

Adhesive fixing can not be used as an alternative to mechanical fasteners in GIB® fire rated specifications.

In normal use GIB® plasterboard must not be exposed to temperatures in excess of 52° C for prolonged periods.

APPRAISAL AND QUALITY CONTROL

This document has been appraised by the Building Research Association of New Zealand (BRANZ), Appraisal No. 289 [2012] GIB® Fire Rated Systems, 2012.

The FRRs of specifications published in the document have been obtained by independent testing or assessment sourced from organisations with accredited quality assurance. It is of prime importance to comply with the details of design, construction and workmanship in this document.

GIB® plasterboard is manufactured to strict quality standards and formulations are uniform nation-wide. All GIB® branded accessory products are the subject of ongoing quality control to ensure consistency of supply.

To allow positive identification of GIB Fyreline® on site, the face paper of the board is coloured pink.

SUBSTITUTION

When 10mm GIB Braceline® / Noiseline®, 10mm GIB Ultraline®, 10mm GIB Aqualine® or 13mm GIB® Standard are substituted in place of 10mm GIB Fyreline®, the FRR of that system will be maintained.

Similarly the FRR is maintained when 13mm GIB Braceline® / Noiseline®, 13mm GIB Toughline®, or 13mm GIB Aqualine® are substituted for 13mm GIB Fyreline®.

Otherwise, achieving the FRR of GIB® Fire Rated Systems depends on closely following the detailed specifications. Installation of systems outside their stated scope of application, or substituting components, may compromise fire safety.

INTRODUCTION

STRUCTURAL STEEL MEMBERS IN CAVITIES

Structural steel members are sometimes located inside the cavity of a GIB® fire rated system, such as a column in a wall or beam in a floor/ceiling cavity. The FRR of a wall or floor/ceiling system applies across the entire element, from the exposed face to the un-exposed side. Temperatures inside the cavity can rise to levels above the critical temperature for some steel members and it can not be automatically assumed that a structural steel member achieves the structural endurance rating of the cavity system within which it is contained. For guidance on the protection of steel columns and beams refer to the appropriate section of this document. For further assistance contact the GIB® Helpline 0800 100 442.

TIMBER FRAMED WALLS

Load-bearing and non load-bearing walls

Consult the current edition of NZS3604 to determine framing dimensions and wall heights for load-bearing and non load-bearing walls. Beyond these limits specific engineering design is required.

Under no circumstances shall the framing spacing be more or the timber dimensions be less than those specified for the relevant GIB® specification.

STEEL FRAMED WALLS

Non load-bearing walls

Wall heights greater than the specified limit for the relevant GIB® specification are the subject of specific design for serviceability and fire design criteria. Consult the framing supplier for serviceability criteria. For fire design criteria contact the GIB® Helpline 0800 100 442.

Load-bearing walls

The solutions provided in this technical literature for load-bearing steel stud walls are conservatively based on limiting stud temperature. More accurate predictions can be made if the applied stud load (at the time of the fire) and stud capacity (at ambient temperature) are known, using the equation:

FRR (LB) = FRR (NLB) x (1- Applied Load / Capacity), where;

FRR (LB)	is the calculated FRR of the load-bearing wall
FRR (NLB)	is the FRR of the non load-bearing wall with equivalent linings
Applied Load	is the applied stud load at the time of the fire (kN/stud)
Capacity	is the stud capacity at ambient temperature (kN/stud)

Example:

A load-bearing steel frame has a capacity (ambient) of 12 kN / stud and a fire design load of 4 kN / stud.

The linings are 13mm GIB Fyreline® each side of the frame installed in accordance with the equivalent non load-bearing specification GBS60. The FRR of the load-bearing system can be estimated as follows;

FRR (LB) = 60 x (1 – 4 / 12) = 60 x 2/3 = 40 minutes, or

FRR 40/40/40.

FLOOR/CEILING SYSTEMS

Floor/ceiling systems have generally been tested for a design load of 3 kPa at a span of 4 metres. For floor joist span tables consult the latest version of NZS3604 or supplier information with respect to proprietary joists.

Flooring shall be minimum 20 mm particle board complying with AS/NZS 1860 Part 1:2002 Particleboard flooring – Specifications, or minimum 17 mm plywood manufactured to AS/NZS 2269 Part 0:2008 Plywood – Structural - Specifications.

Do not increase joist or nog spacing from what has been specified.

Do not decrease joist dimensions from what has been specified.

Do not exceed the maximum permissible design stress.

Do not substitute alternative type joist to those specified.

SURFACE FINISH PROPERTIES

All paper-faced GIB® plasterboard sheet materials have been tested in accordance with ISO 5660 Reaction to Fire Tests – Heat release, smoke production and mass loss rate Parts 1 and 2 and achieve a **Group 1-S Classification**.

Note that this Classification applies to the plasterboard product without paint or wallpaper finish. The supplier or manufacturer of any selected surface finish must be contacted for their particular product Classification when applied over the relevant substrate.

FIRE RESISTANCE OF CLAD WALLS

Where GIB® fire rated specifications are clad with any of the following materials the lining may be left unstopped;

Timber or wood based products

Steel, flat or profiled

Fibre cement sheets or boards

Insulation and finish systems (EIFS).

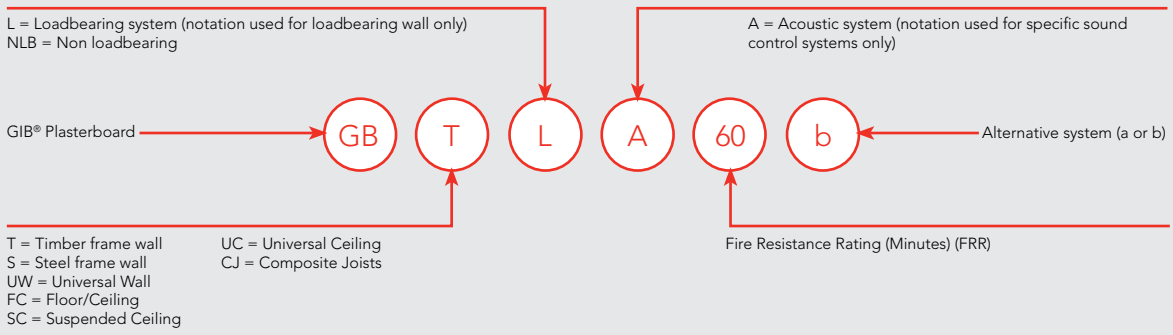
As an alternative to plaster stopping, sheet joints in ceiling voids can be covered with a minimum 150 mm wide strip of GIB® plasterboard, centrally placed over the sheet joint, and screw fixed to the underlying framing at no more than 300 mm centres.

Note that any GIB® plasterboard installed on the external face of a frame must be protected from the weather during installation and in-service. An exterior cladding over the GIB® plasterboard must comply with the current version of NZBC E2/AS1 and be installed over a flexible wall underlay and drained cavity complying with E2/AS1.

INTRODUCTION

SPECIFICATION REFERENCE

System Example



FRR Example

FIRE RESISTANCE RATING (FRR)

i) Structural adequacy – to prevent collapse of structural (primary) elements during a fire. Brackets, e.g. (30)/30/30 indicate that the system may be loadbearing or non-loadbearing depending on the design.

Dash (-) indicates a nil rating, e.g. -/30/30 is NLB

ii) Integrity – To prevent the passage of flame or hot gases through the fire separations or external wall or roofs.

iii) Insulation – To prevent the transmission of heat to other firecells or adjacent property.

SUSTAINABILITY AND THE ENVIRONMENT

Winstone Wallboards is commited to protecting the environment. Environmental matters are integrated into all business activities:

All operations of Winstone Wallboards will strive to exceed all environmental regulatory requirements at all times.

Protection of the environment is a day to day responsibility that we all must accept.

We will allocate appropriate management time and resources to address relevant environmental issues and continuously improve our activities in that area.

We will achieve our standards of performance through positive action, employee involvement and constant communication with our neighbours, local authorities and customers.

Winstone Wallboards is the first manufacturer of plasterboard to have products certified as environmentally preferable through Environmental Choice New Zealand. The Environmental Choice label acknowledges the product as meeting or exceeding the voluntary environmental declaration standard set by the New Zealand Eco-labelling Trust. The standard is a comprehensive lifecycle assessment which is scientifically and internationally recognised.

The Environmental Choice Label covers all GIB® Plasterboard 13mm and greater in thickness.

Specify GIB® Plasterboard with the Environmental Choice label as this ensures that the product selected minimises the impact on the environment. Consideration should be given to minimising on-site waste when designing and/or installing GIB® Plasterboard systems. For larger projects consideration should be given to the utilisation of Winstone Wallboards cut-to-length service to reduce the volume of waste produced.

GIB® Plasterboard off-cuts, if separated from other waste building materials, can be readily recycled. For lager projects the waste can be diverted to compost manufacturers who grind up the GIB® Plasterboard and use it in compost. For smaller projects, the GIB® Plasterboard can be ground up and spread round the building site.

Note: A special cut to length service is available. Please call the GIB® Helpline for more information on this service.

Gypsum Plasterboard
Licence No. 1907032

FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 15	NBL	-/15/15	1 layer 10mm GIB® Standard each side	STC 36	22kg/m²
GBTL 15	LB	15/15/15			

FRAMING

GBT15 Non Loadbearing and GBTL15 Loadbearing

Framing to comply with;

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT15 Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.

GBTL15 Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

1 layer of 10mm GIB® Standard Plasterboard each side of the frame.

Vertical or Horizontal fixing permitted. Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

Fastener Centres

300mm centres around the sheet perimeter.

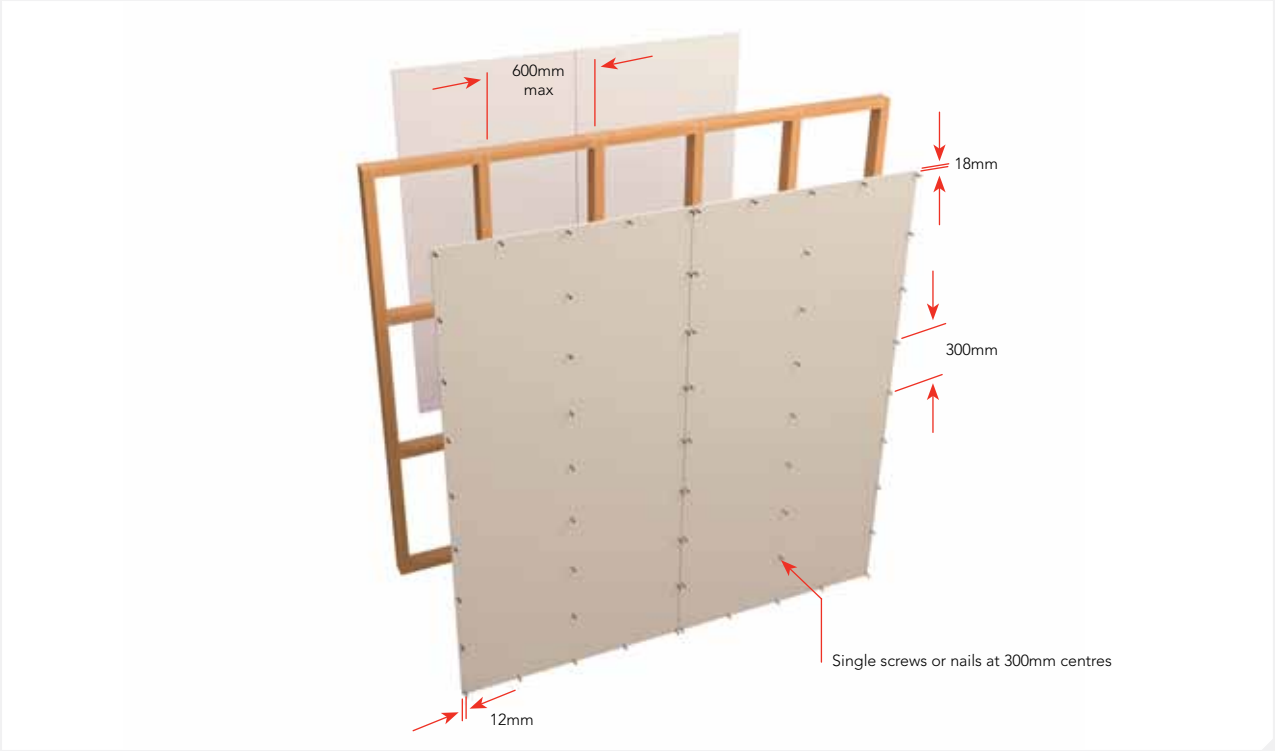
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws or nails at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 30a	NLB	-/30/30	1 layer 10mm GIB Fyreline® each side	STC 36	22kg/m²
GBTL 30	LB	30/30/30			

FRAMING

GBT30a Non Loadbearing and GBTL30 Loadbearing

Framing to comply with;

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT30a Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.

GBTL30 Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

1 layer of 10mm GIB Fyreline® each side of the frame.

Vertical or Horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

Fastener Centres

300mm centres around the sheet perimeter.

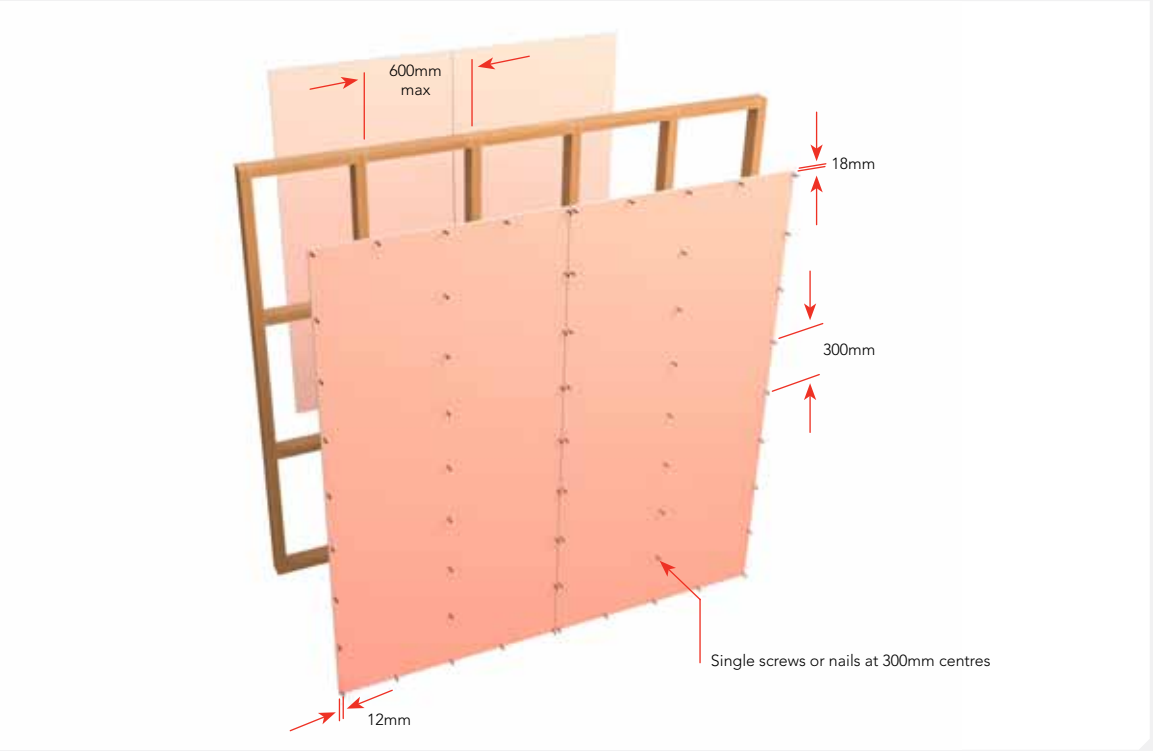
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws or nails at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 30b	NLB	-/30/30	1 layer 13mm GIB®Standard each side	STC 36	26kg/m²
GBTL 30b	LB	30/30/30			

FRAMING

GBT30b Non Loadbearing and GBTL30b Loadbearing

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT30b Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.

GBTL30b Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

1 layer of 13mm GIB® Standard Plasterboard each side of the frame.

Vertical or Horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

Fastener Centres

300mm centres around the sheet perimeter.

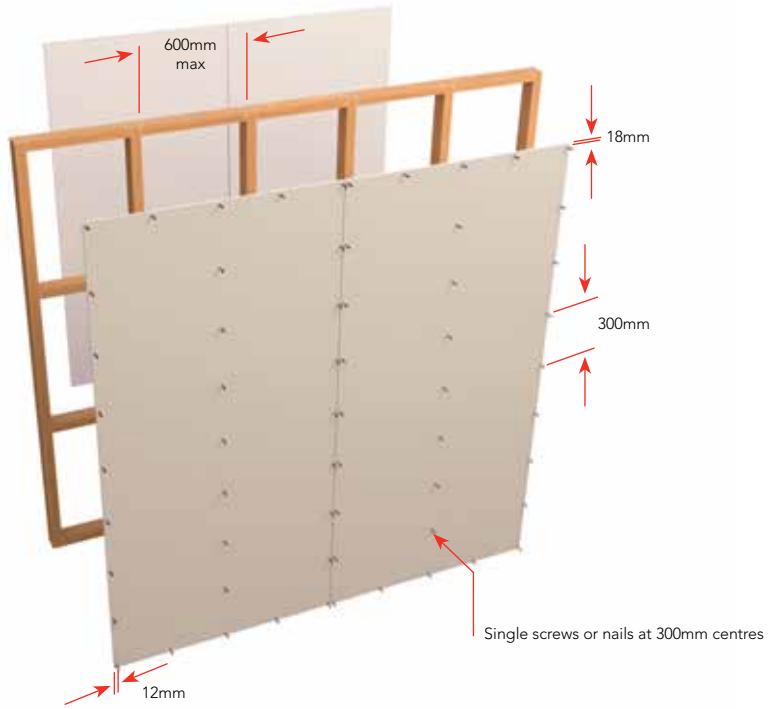
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws or nails at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSIOsN CLASS	SYSTEM WEIGHT APPROX
GBT 60a	NLB	-/60/60	1 layer 13mm GIB Fyreline® each side	STC 36	27kg/m²
GBTL 60	LB	60/60/60			

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT60a Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.

GBTL60 Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

1 layer of 13mm GIB Fyreline® each side of the frame.

Vertical or Horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

Fastener Centres

300mm centres around the sheet perimeter.

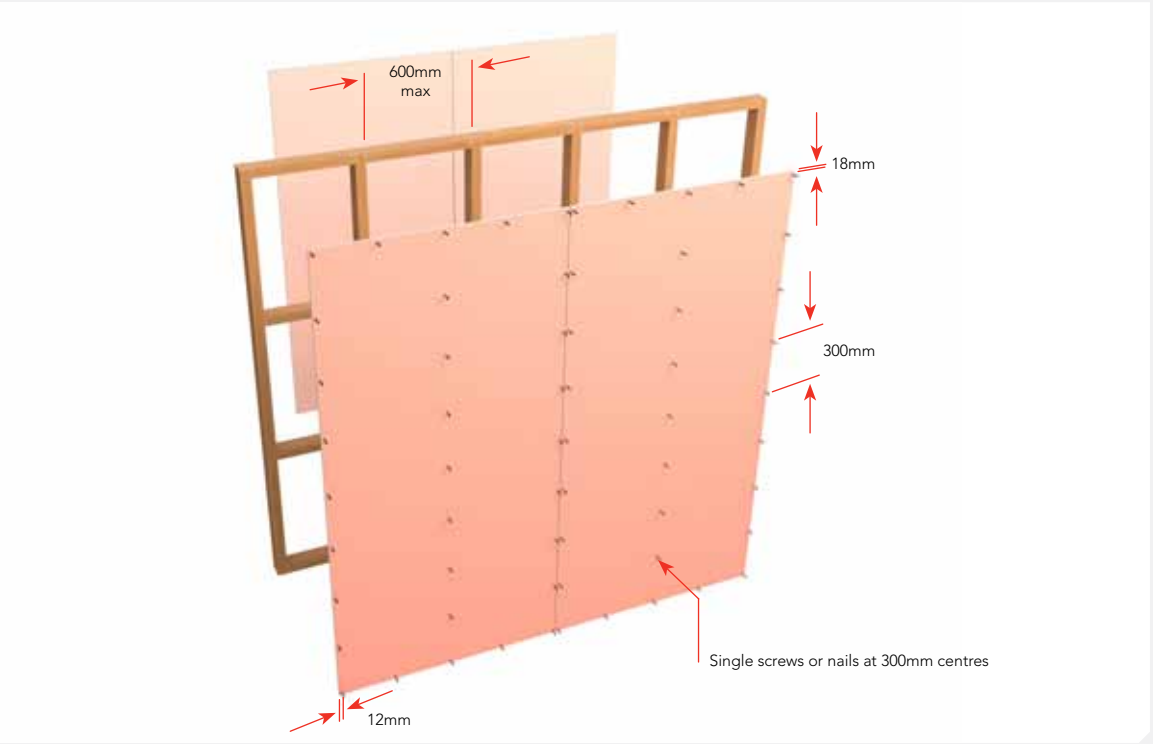
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws or nails at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBTL 60b	LB	60/60/60	2 layers 10mm GIB Fyreline® each side	STC 42	39kg/m²

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

2 layers of 10mm GIB Fyreline® each side of the frame.

Vertical or Horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

Vertical joints of the second layer are staggered from joints in the first layer on the same side of the frame.

When sheet end butts joints are unavoidable, they must be formed over solid framing and staggered.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

INNER LAYER: 41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

OUTER LAYER: 51mm x 7g screws as above.

Fastener Centres

INNER LAYER: 600mm centres horizontally.

800mm centres vertically up each stud.

OUTER LAYER: 300mm centres around the sheet perimeter.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

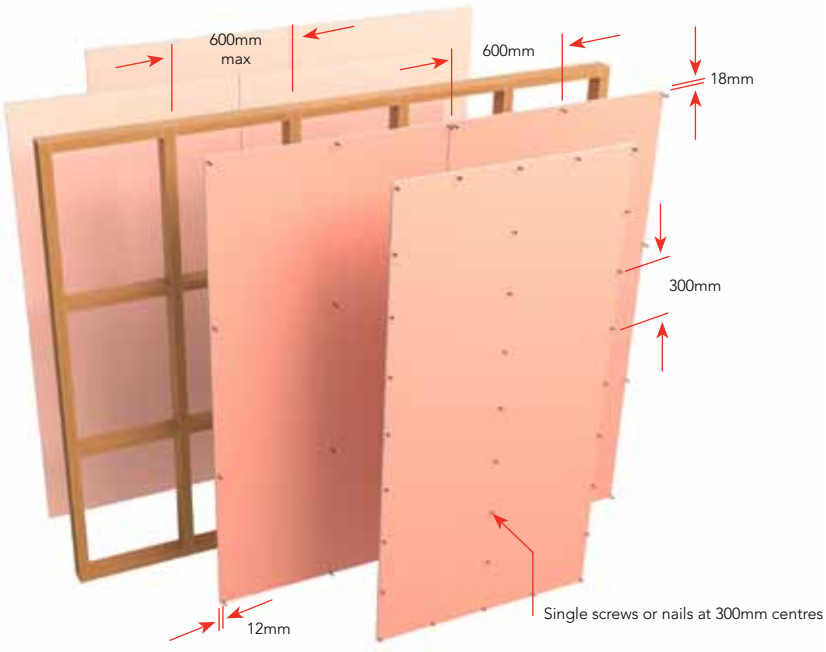
Single screws at 300mm centres to intermediate studs.

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 90	NLB	-/90/90	1 layer 16mm GIB Fyreline® each side	STC 37	36kg/m²
GBTL 90	LB	90/90/90			

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT90 Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.

GBTL90 Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

1 layer of 16mm GIB Fyreline® each side of the frame.

Vertical or Horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

300mm centres around the sheet perimeter.

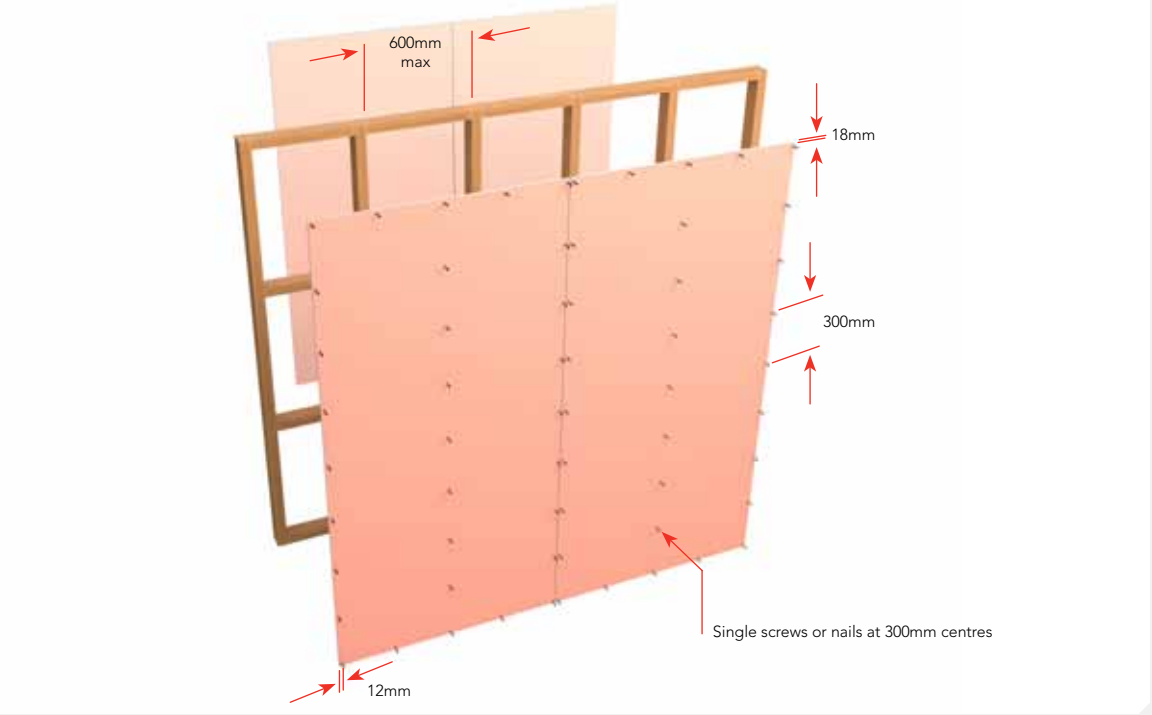
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATINGs	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT120a	NLB	-/120/120	2 layers 13mm GIB Fyreline® each side	STC 43	47kg/m^2

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 800mm centres maximum

WALL HEIGHTS AND FRAMING DIMENSIONS

Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing walls.

LINING

2 layers of 13mm GIB Fyreline® each side of the frame.

Vertical fixing only permitted. Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Vertical joints of the second layer are staggered from joints in the first layer on the same side of the frame.

When sheet end butt joints are unavoidable, they must be formed over solid framing with those of the first layer staggered from those of the second layer.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

INNER LAYER: 51mm x 7g GIB® Grabber® High Thread Drywall Screws.

OUTER LAYER: 63mm x 8g GIB® Grabber® Self Tapping Screws.

Fastener Centres

INNER LAYER: 600mm centres horizontally.

800mm centres vertically up each stud

OUTER LAYER: 300mm centres around the sheet perimeter.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

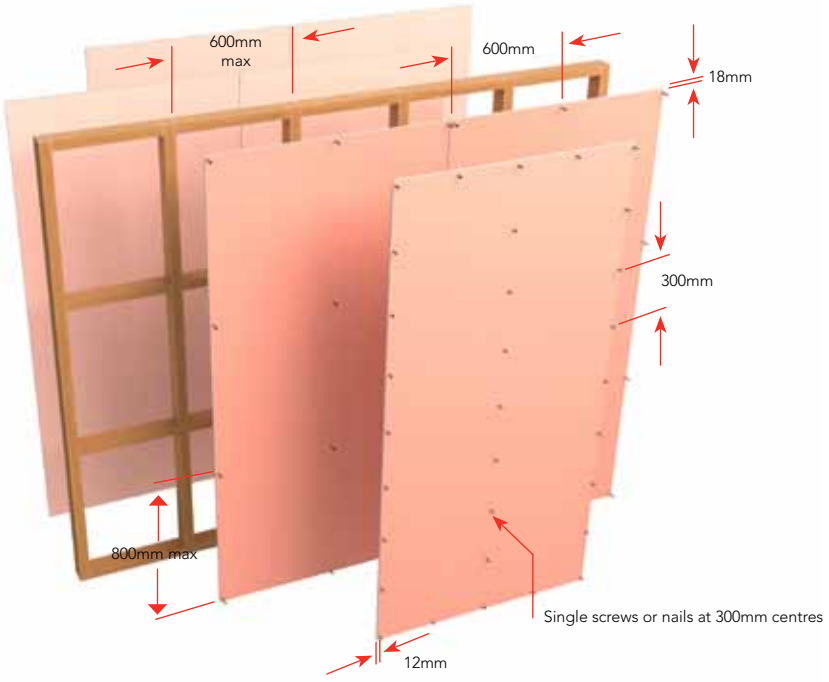
Single screws at 300mm centres to intermediate studs.

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 120b	NLB	-/120/120	1 layer 19mm GIB Fyreline® each side	STC 35	43kg/m²

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing walls.

LINING

1 layer of 19mm GIB Fyreline® each side of the frame.

Vertical or horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing sheets vertically, full height sheets shall be used where possible.

All sheet joints must be formed over.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

300mm centres around the sheet perimeter.

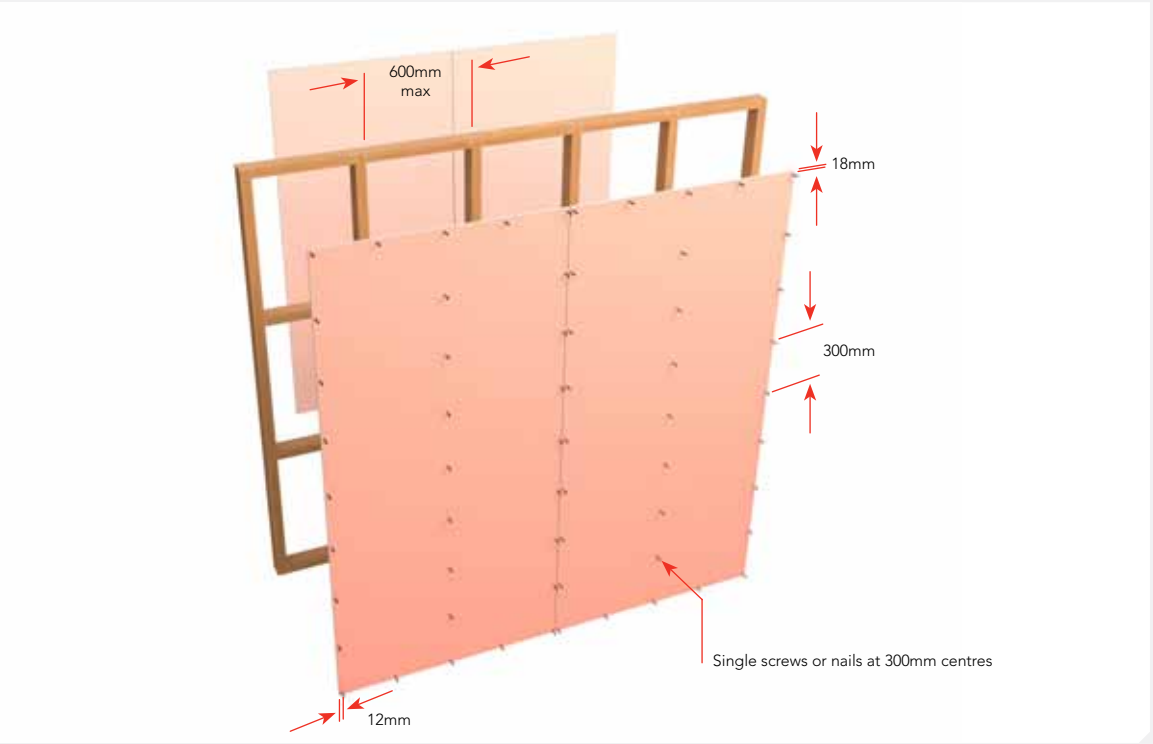
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBTL 120	LB	120/120/120	2 layers 16mm GIB Fyreline® each side	STC 46	65kg/m²

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 800mm centres maximum

WALL HEIGHTS AND FRAMING DIMENSIONS

Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

2 layers of 16mm GIB Fyreline® each side of the frame.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they must be formed over solid framing and staggered from horizontal joints in the first layer.

Joints of the outer layer are staggered from sheet end butt joints in the first layer.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

INNER LAYER: 51mm x 7g GIB® Grabber® High Thread Drywall Screws.

OUTER LAYER: 63mm x 8g GIB® Grabber® Self Tapping Screws.

Fastener Centres

INNER LAYER: 600mm centres vertically up each stud 400mm centres horizontally along top and bottom plates.

OUTER LAYER: 300mm centres around the sheet perimeter.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

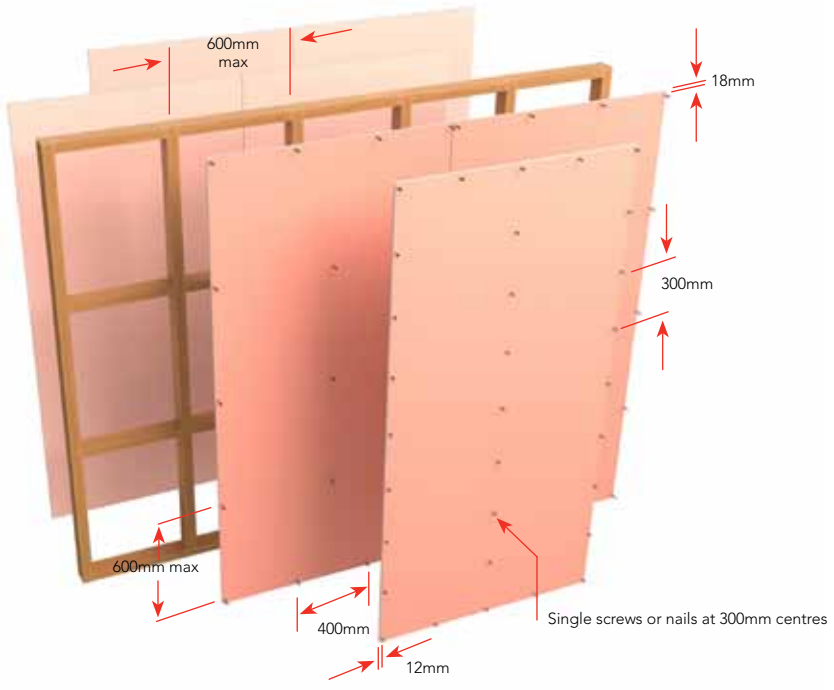
Single screws at 300mm centres to intermediate studs.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 180	NLB	-/180/180	2 layers 16mm GIB Fyreline® each side	STC 46	65kg/m²

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602).
- Studs at 600mm centres maximum
- Nogs at 800mm centres maximum

WALL HEIGHTS AND FRAMING DIMENSIONS

Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing walls.

LINING

2 layers of 16mm GIB Fyreline® each side of the frame.

Vertical fixing only permitted. Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Vertical joints of the second layer are staggered from joints in the first layer on the same side of the frame.

When sheet end butt joints are unavoidable, they must be formed over solid framing with those of the first layer.

FASTENING THE LINING

Fasteners

INNER LAYER: 51mm x 7g GIB® Grabber® High Thread Drywall Screws.

OUTER LAYER: 63mm x 8g GIB® Grabber® Self Tapping Screws.

Fastener Centres

INNER LAYER: 600mm centres horizontally.

800mm centres vertically up each stud.

OUTER LAYER: 150mm centres around the sheet perimeter.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

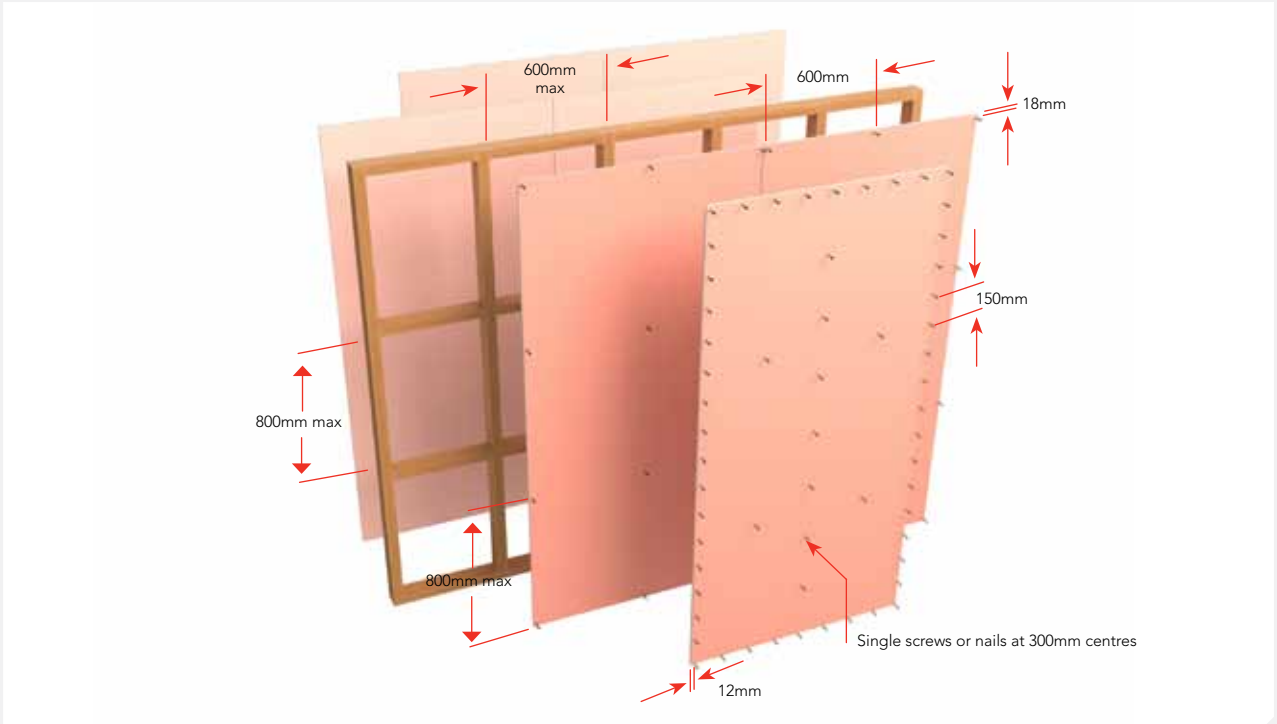
Single screws at 300mm centres to intermediate studs and to the centre of each nog.

JOINTING

FIRST LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBSL 15	LB	15/15/15	1 layer 13mm GIB®Standard each side	STC 34	22kg/m²

FRAMING AND WALL HEIGHT

Any steel frame designed to meet structural criteria for strength and serviceability under dead and live loads.

Stud width shall be 35mm minimum.

Stud spacing at 600mm centres maximum. Frame height as determined by specific design.

LINING

1 layer of 13mm GIB® Standard Plasterboard each side of the frame.

Vertical fixing. Full height sheets shall be used where possible.

Horizontal fixing is permitted as long as all longitudinal sheet joints are formed over nogs.

Sheets shall be touch fitted.

Offset joints between sheets on opposite sides of the frame.

When sheet end butt joints are unavoidable, they shall be fixed at 200mm centres and formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

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

Fastener Centres

300mm centres up each stud.

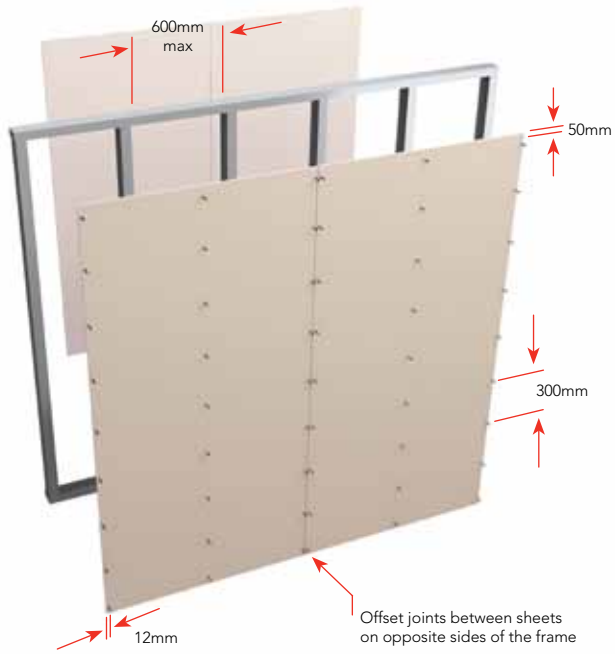
Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

Note: See also page 8, "Loadbearing Steel Framed Walls".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 30	NLB	-/30/30	1 layer 13mm GIB®Standard each side	STC 34	22kg/m²

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.55mm nominal with a 6mm return.

Steel track dimensions to be 64 x 30 x 0.55mm nominal.

Top and bottom tracks are fixed to the floor and ceiling in true alignment.

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channel runners. Light locating fasteners that fail at high temperatures, such as single aluminium rivets may be used. Otherwise positive fixing must be avoided.

Recommended maximum height of partition is 2700mm.

Higher walls are the subject of specific engineering design.

Note: If lighter BMT steel studs are used, verification of performance must be obtained from the supplier of the framing system.

LINING

1 layer of 13mm GIB® Standard Plasterboard each side of the frame.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Offset joints between sheets on opposite sides of the frame. Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

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

Fastener Centres

300mm centres up each stud.

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

Fastening the linings to top and bottom tracks is permitted as long as the fasteners do not connect the studs and tracks.

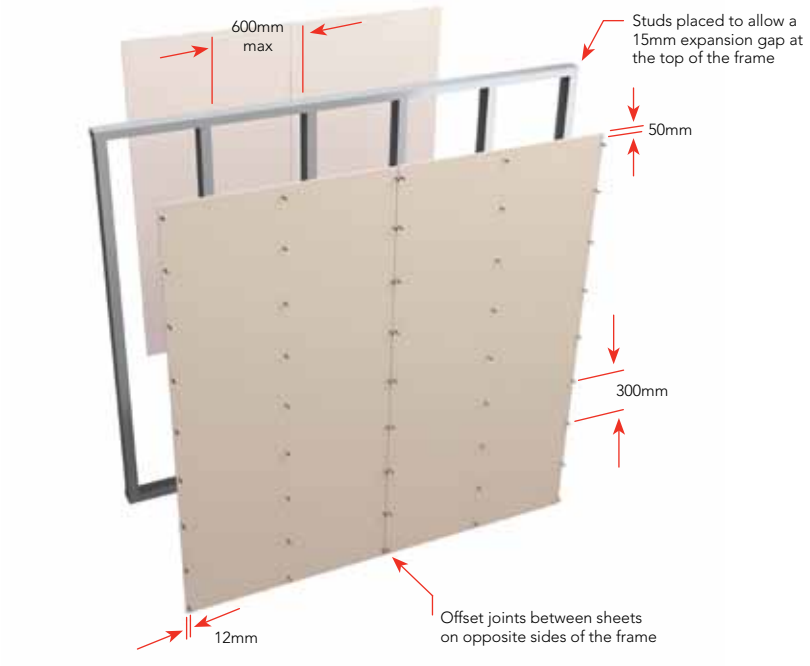
SERVICES

Holes may be drilled or pre-punched in the metal studs to allow installation of electrical service lines and plumbing supply pipes.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBSL 30a	LB	30/30/30	1 layer 16mm GIB Fyreline® each side	STC 41	29kg/m²
GBSL 30b			2 layers 10mm GIB Fyreline® each side	STC 44	32kg/m²

FRAMING AND WALL HEIGHT

Any steel frame designed to meet structural criteria for strength and serviceability under dead and live loads.

Stud width shall be 35mm minimum.

Stud spacing at 600mm centres maximum. Frame height as determined by specific design.

LINING

GBSL 30a – 1 layer of 16mm GIB Fyreline® each side of the frame.

GBSL 30b – 2 layers of 10mm GIB Fyreline® each side of the frame.

Vertical fixing.

Horizontal fixing is permitted as long as all longitudinal sheet joints are formed over nogs.

Sheets shall be touch fitted.

Offset joints on opposite sides of the frame and between sheets in double layered systems.

Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they shall be fixed at 200mm centres and formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

GBSL 30a – 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

GBSL 30b inner layer – 25mm x 6g screws as above.

GBSL 30b outer layer – 32mm x 6g screws as above.

Fastener Centres

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

INNER LAYER: 600mm centres up each stud.

OUTER OR SINGLE LAYER: 300mm centres up each stud.

JOINTING

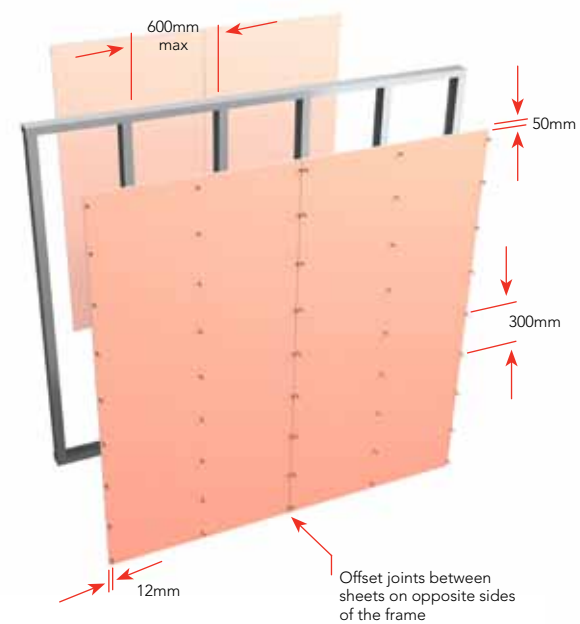
INNER LAYER: Unstopped.

SINGLE OR OUTER LAYERS: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

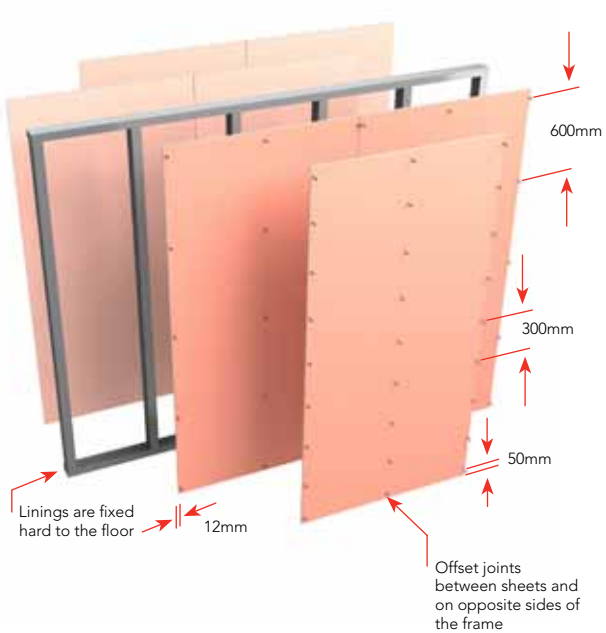
Note: See also page 8, "Loadbearing Steel Framed Walls".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

GBSL 30a



GBSL 30b



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 60	NLB	-/60/60	1 layer 13mm GIB Fyreline® each side	STC 34	23kg/m²

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.55mm nominal with a 6mm return.

Steel channel dimensions to be 64 x 30 x 0.55mm nominal.

Top and bottom tracks are fixed to the floor and ceiling in true alignment.

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channel runners. Light locating fasteners that fail at high temperatures, such as single aluminium rivets may be used. Otherwise positive fixing must be avoided.

Recommended maximum height of partition is 2700mm.

Higher walls are the subject of specific engineering design.

Note: If lighter BMT steel studs are used, verification of performance must be obtained from the supplier of the framing system.

LINING

1 layer of 13mm GIB Fyreline® each side of the frame.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Offset joints between sheets on opposite sides of the frame. Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

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

Fastener Centres

300mm centres up each stud.

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

Fastening the linings to top and bottom tracks is permitted as long as the fasteners do not connect the studs and tracks.

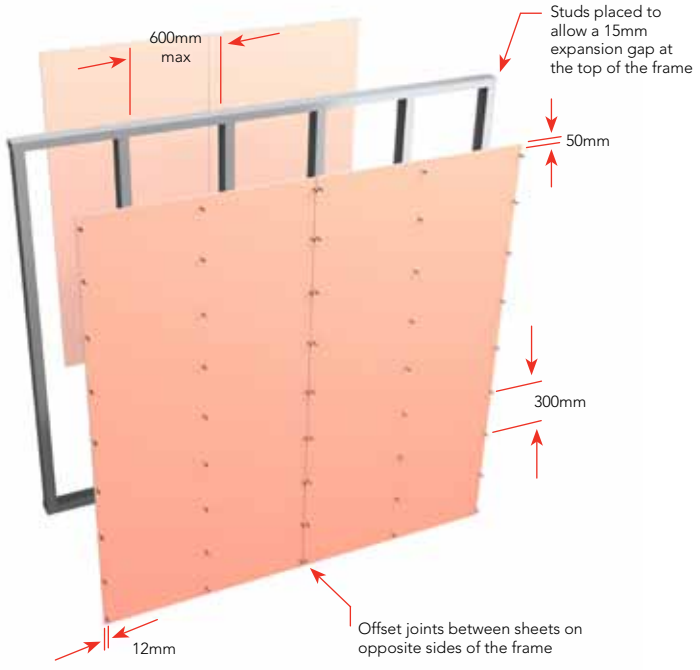
SERVICES

Holes may be drilled or pre-punched in the metal studs to allow installation of electrical service lines and plumbing supply pipes.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBSL 60a	LB	60/60/60	1 layer 19mm GIB Fyreline® each side	STC 42	32kg/m²
GBSL 60b			2 layers 13mm GIB Fyreline® each side	STC 45	38kg/m²

FRAMING AND WALL HEIGHT

Any steel frame designed to meet structural criteria for strength and serviceability under dead and live loads.

Stud width shall be 35mm minimum.

Stud spacing at 600mm centres maximum. Frame height as determined by specific design.

LINING

GBSL 60a – 1 layer of 19mm GIB Fyreline® each side of the frame.

GBSL 60b – 2 layers of 13mm GIB Fyreline® each side of the frame.

Vertical fixing. Full height sheets shall be used where possible.

Horizontal fixing is permitted as long as longitudinal sheet joints are formed over nogs

Sheets shall be touch fitted.

Offset joints on opposite sides of the frame and between sheets in double layered systems.

When sheet end butt joints are unavoidable, they shall be fixed at 200mm centres and formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners Centres

GBSL 60a – 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

GBSL 60b inner layer – 25mm x 6g screws as above.

GBSL 60b outer layer – 41mm x 6g screws as above.

Fastener Centres

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

INNER LAYER: 600mm centres up each stud.

OUTER OR SINGLE LAYER: 300mm centres up each stud.

JOINTING

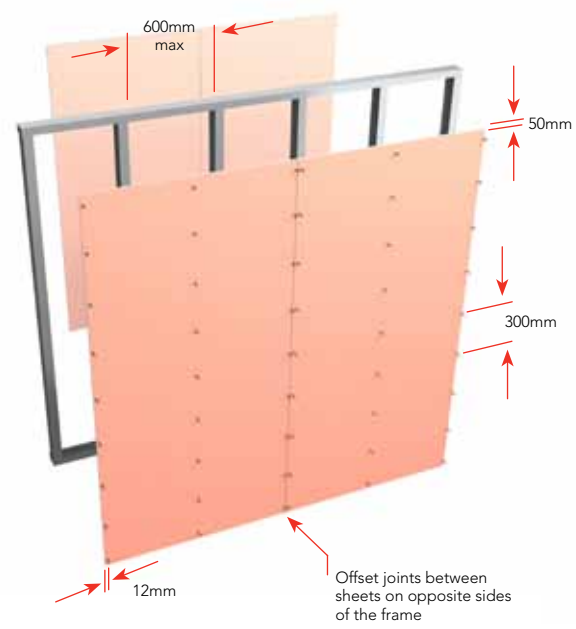
INNER LAYER: Unstopped.

SINGLE OR OUTER LAYERS: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

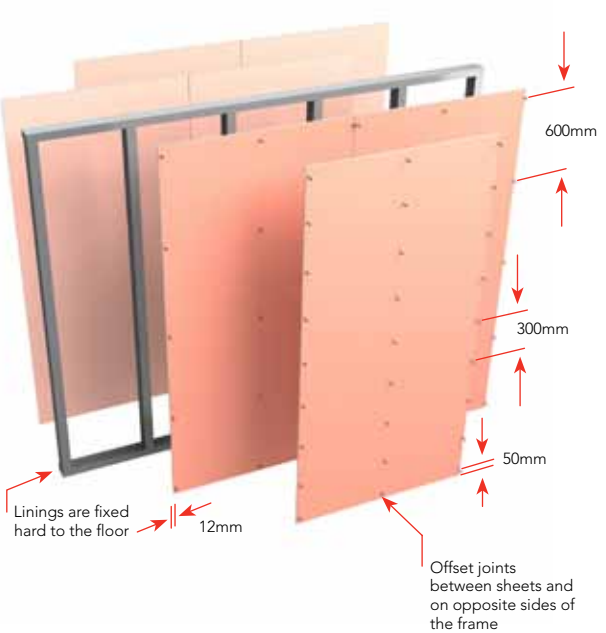
Note: See also page 8, "Loadbearing Steel Framed Walls".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

GBSL 60a



GBSL 60b



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 90	NLB	-/90/90	1 layer 16mm GIB Fyreline® each side	STC 41	29kg/m^2

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.55mm nominal with a 6mm return.

Steel channel dimensions to be 64 x 30 x 0.55mm nominal.

Top and bottom tracks are fixed to the floor and ceiling in true alignment.

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channel runners. Light locating fasteners that fail at high temperatures, such as single aluminium rivets may be used. Otherwise positive fixing must be avoided.

Recommended maximum height of partition is 2700mm.

Higher walls are the subject of specific engineering design.

Note: If lighter BMT steel studs are used, verification of performance must be obtained from the supplier of the framing system.

LINING

1 layer of 16mm GIB Fyreline® each side of the frame.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Offset joints between sheets opposite side of frame. Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Fastener Centres

300mm centres up each stud.

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

Fastening the linings to top and bottom tracks is permitted as long as the fasteners do not connect the studs and tracks.

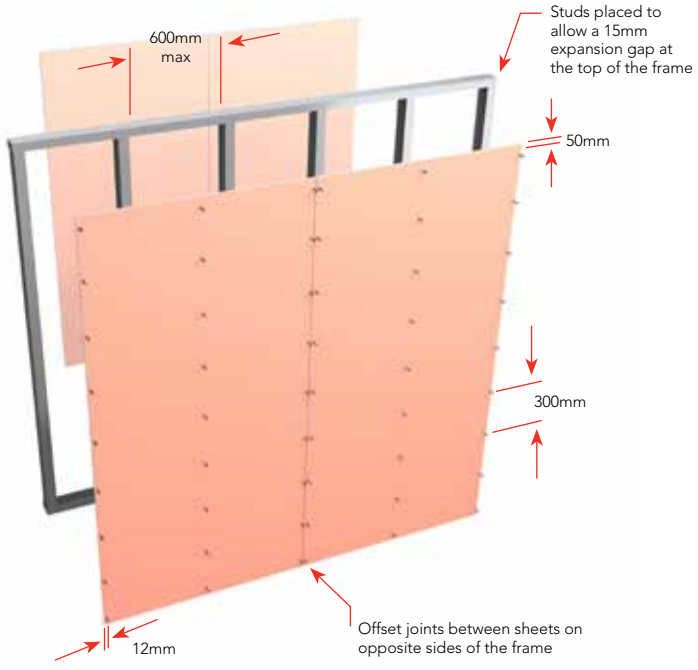
SERVICES

Holes may be drilled or pre-punched in the metal studs to allow installation of electrical service lines and plumbing supply pipes.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBSL 90	LB	90/90/90	1 layer 16mm GIB Fyreline®+ 1 layer 13mm GIB Fyreline® each side	STC 45	42kg/m²

FRAMING AND WALL HEIGHT

Any steel frame designed to meet structural criteria for strength and serviceability under dead and live loads.

Stud width shall be 35mm minimum.

Stud spacing at 600mm centres maximum.

Frame height as determined by specific design.

LINING

1 layer of 16mm GIB Fyreline® plus 1 layer of 13mm GIB Fyreline® each side of the frame.

Vertical fixing. Full height sheets shall be used where possible.

Horizontal fixing is permitted as long as all longitudinal sheet joints are formed over nogs.

Sheets shall be touch fitted.

Offset joints on opposite sides of the frame and between sheets in double layered systems.

When sheet end butts joints are unavoidable, they shall be fixed at 200mm centres and formed over framing.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

INNER LAYER: 16mm GIB Fyreline® – 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

OUTER LAYER: 13mm GIB Fyreline® – 41mm x 6g screws as above.

Fastener Centres

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

INNER LAYER: 600mm centres up each stud.

OUTER LAYER: 300mm centres up each stud.

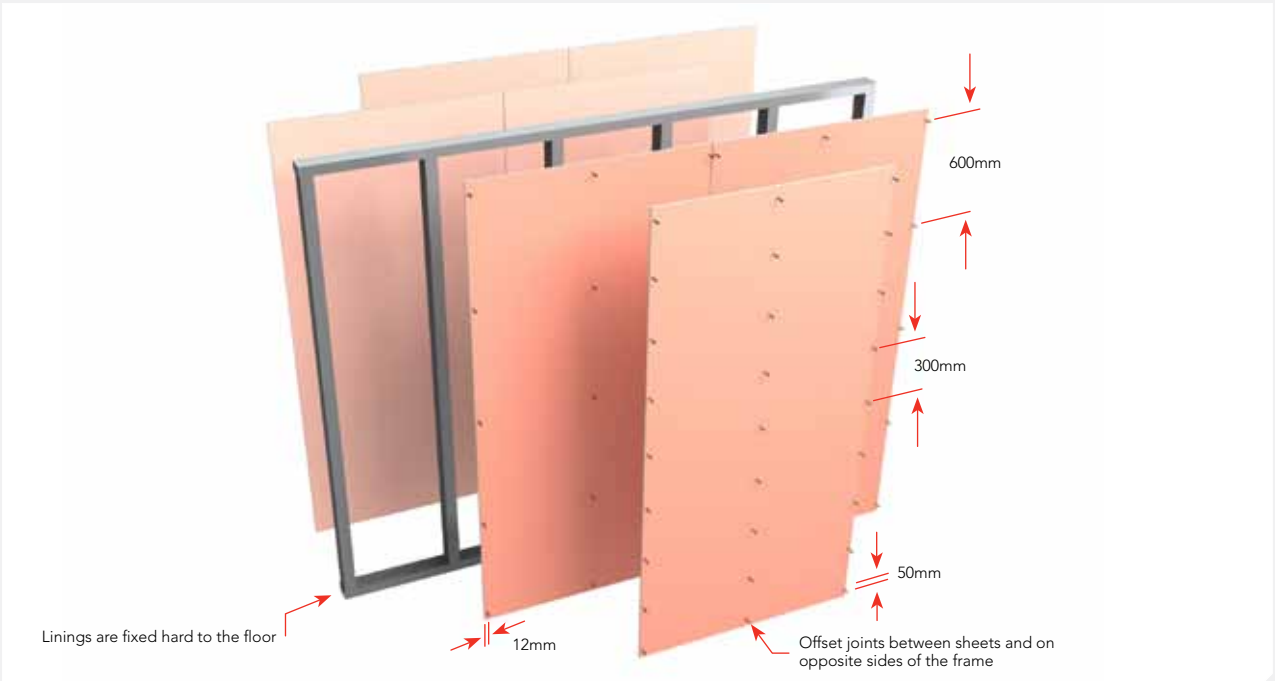
JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

Note: See also page 8, "Loadbearing Steel Framed Walls".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 120	NLB	-/120/120	1 layer 19mm GIB Fyreline® each side	STC 42	32kg/m²

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 100 x 42 x 0.95 mm nominal with a 10 mm return and matching minimum 30 mm deep top and bottom tracks.

Top and bottom tracks are fixed to the floor and ceiling in true alignment.

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channel runners. Light locating fasteners that fail at high temperatures, such as single aluminium rivets may be used. Otherwise positive fixing must be avoided.

Recommended maximum height of partition is 3000mm.

Higher walls are the subject of specific engineering design.

ALTERNATIVE FRAMING

A -/120/90 FRR is achieved with 64 x 34 x 0.55 mm framing, studs at 600 mm centres and a height not exceeding 3000 mm.

If -/120/120 FRR is required with 64 x 34 x 0.55 mm framing, then the 19 mm GIB Fyreline® must be overlaid on both sides of the wall with a minimum of 10 mm GIB® Standard plasterboard fixed at 300 mm centres along each stud with 41mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Offset sheet joints between layers.

LINING

1 layer of 19mm GIB Fyreline® each side of the frame.

Vertical fixing only permitted.

Offset joints between sheets on opposite sides of the frame.

Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they must be formed over nogs.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Fastener Centres

200mm centres up each stud.

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

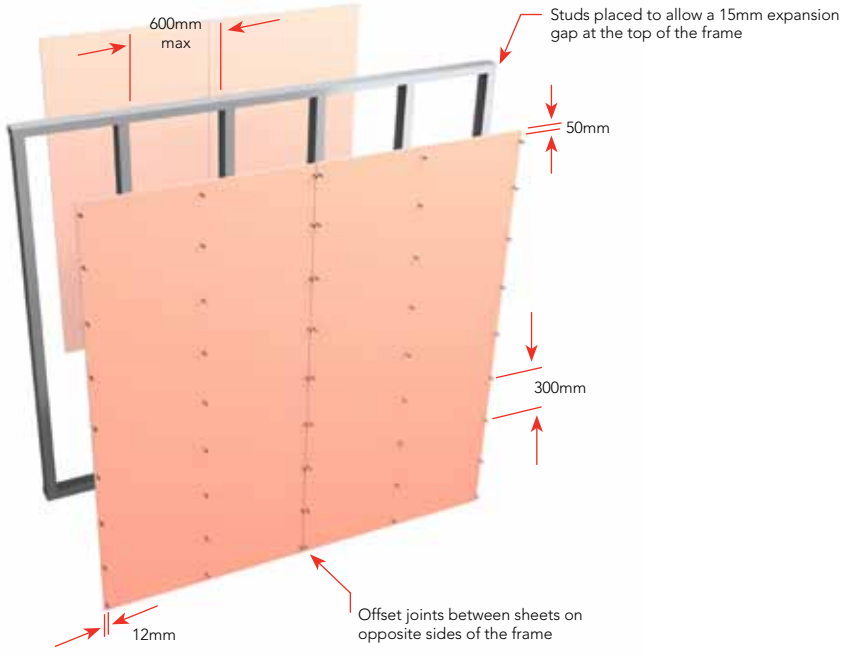
SERVICES

Holes may be drilled or pre-punched in the metal studs to allow installation of electrical service lines and plumbing supply pipes.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 120a	NLB	-/120/120	2 layers 16mm GIB Fyreline® each side	STC 47	29kg/m²

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.55mm nominal with a 6mm return.

Steel channel dimensions to be 64 x 30 x 0.55mm nominal.

Top and bottom tracks are fixed to the floor and ceiling in true alignment.

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channel runners. Light locating fasteners that fail at high temperatures, such as single aluminium rivets may be used. Otherwise positive fixing must be avoided.

Recommended maximum height of partition is 2700mm.

Higher walls are the subject of specific engineering design.

Note: If lighter BMT steel studs are used, verification of performance must be obtained from the supplier of the framing system.

LINING

2 layers of 16mm GIB Fyreline® each side of the frame.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Offset joints between sheets and on opposite side of frame. Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

INNER LAYER: 32 x 6g GIB® Grabber Drywall Self Tapping Screws

OUTER LAYER: 51mm x 7g GIB® Grabber Drywall Self Tapping Screws

Fastener Centres

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

Fastening the linings to top and bottom tracks is permitted as long as the fasteners do not connect the studs and tracks.

INNER LAYER: 600mm centres up each stud.

OUTER LAYER: 300mm centres up each stud.

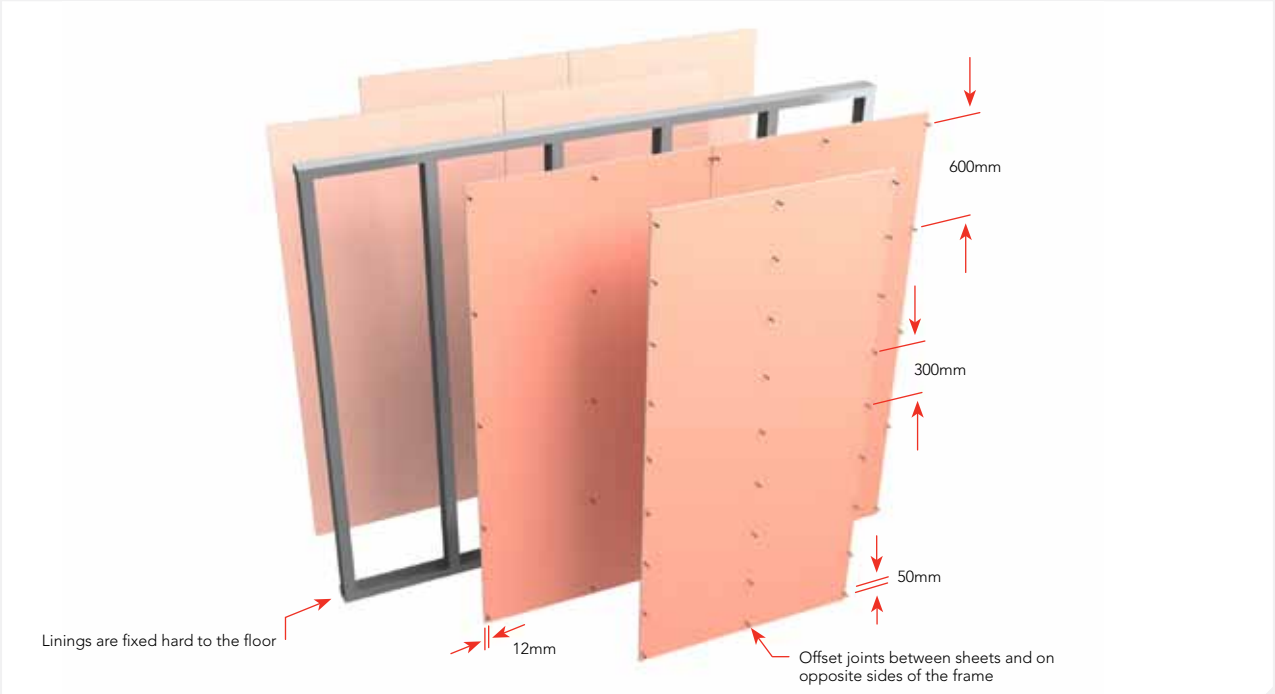
SERVICES

Holes may be drilled or pre-punched in the metal studs to allow installation of electrical service lines and plumbing supply pipes.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 240	NLB	-/240/240	4 layers 19mm GIB Fyreline®	STC 44 (STC 55 with one layer 75mm Fibreglass Batts)	65kg/m² Steel Frame

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.55mm nominal with a 6mm return.

Steel channel dimensions to be 64 x 30 x 0.55mm nominal.

Channel runners are fixed to the floor and ceiling in true alignment.

Double frame (refer to details overleaf)

- Frame 1. Studs at 600mm centres maximum
- Frame 2. Studs at 600mm centres maximum and staggered by 300mm from frame 1
- Place studs to allow a 15mm expansion gap at the top of the frame
- The studs are held in place by the "grip" of the channel runners. No other fixing may be used
- Tested height of partition is 3600mm

LINING

2 layers of 19mm GIB Fyreline® to one side of Frame 1. (refer to details overleaf).

1 layer of 19mm GIB Fyreline® to the outside faces of both Frames 1 and 2.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Offset joints between sheets by 300mm minimum as shown in the sheet layout.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING (STEEL FRAME)

Fasteners

INNER LAYER FRAME 1: 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

SECOND LAYER FRAME 1: 51mm x 7g screws as above.

OUTSIDE FACES FRAMES 1 AND 2: 32mm x 6g screws as above.

Fastener Centres

INNER LAYER FRAME 1: 3 fasteners only fixed to each longitudinal sheet edge. One below and above the top and bottom channels respectively and one at the centre.

ALL OTHER LAYERS: 300mm centres up each stud. Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

JOINTING

Double layer between frames unstopped.

OUTSIDE LAYERS: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

ACOUSTIC SEALANT

To achieve the stated sound transmission class (STC), a bead of acoustic sealant must be placed around the perimeter of the inner layer on Frame 1; the outer layer is then bedded on to the bead.

TIMBER FRAMED ALTERNATIVE

Framing to comply with, • NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)

- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Framing to be set out as described for GBS 240
- Nogs are not required except where sheet end butt joints occur

FASTENING THE LINING (TIMBER FRAME)

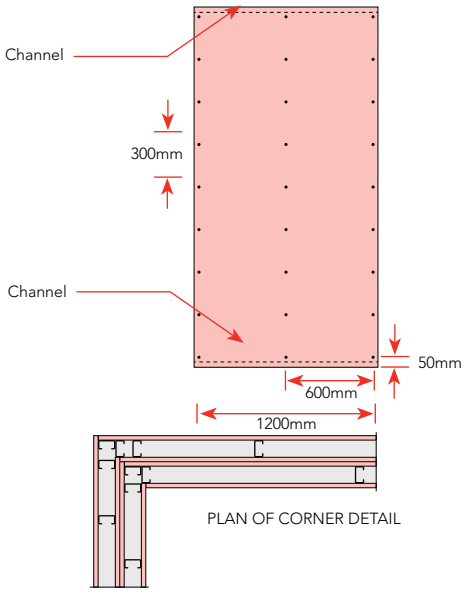
As detailed in GBS 240 except that:

(a) Fasteners for the second layer on Frame 1 shall be 63mm x 8g GIB® Grabber® Self Tapping Screws.

(b) Fasteners for all other layers shall be 41mm x 6g GIB® Grabber® High Thread Drywall Screws.

System weight: approx 70kg/m2 (Continued next page)

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

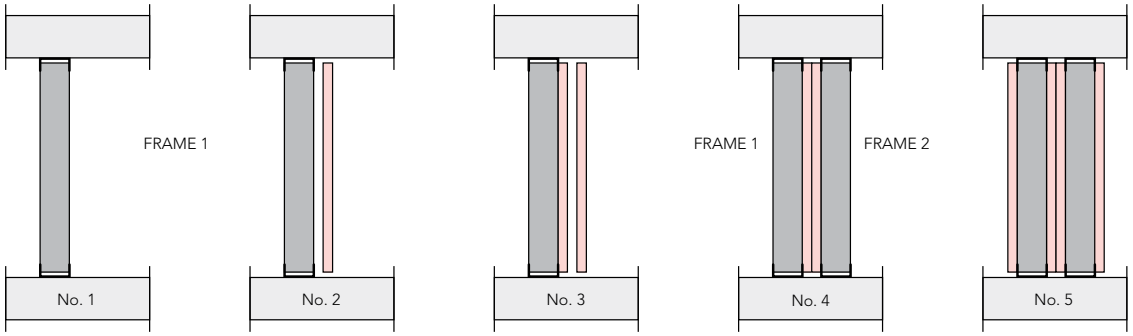


FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

CONSTRUCTION STEPS IN SEQUENCE

(Studs placed to allow a 15mm expansion gap at the top of the frame)

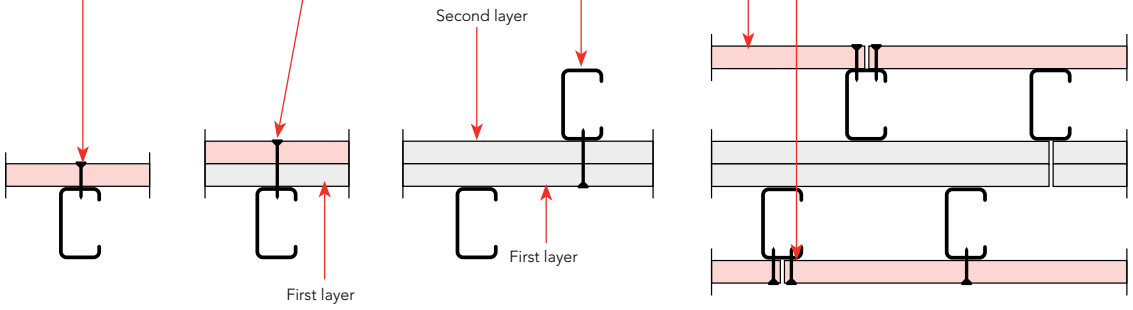


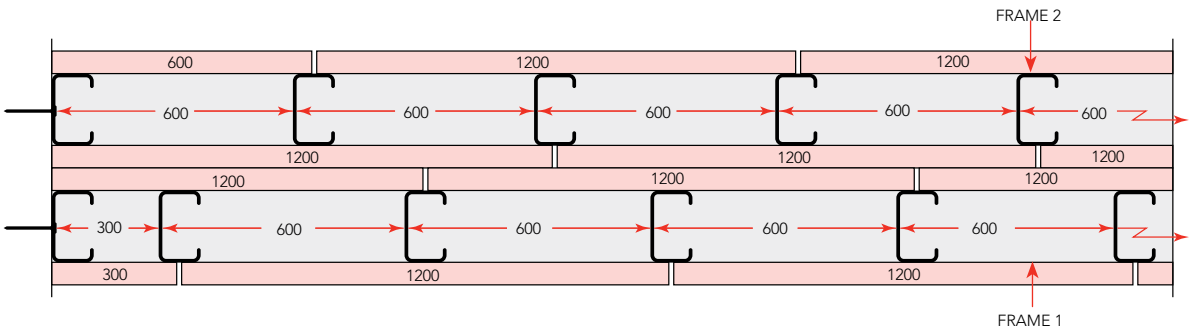
KEY

1. First steel frame fixed in place.
2. First layer of 19mm GIB Fyreline® "tacked" to Frame 1 with 3 only 32mm x 6g self tapping screws to each longitudinal sheet edge. One below and above the top and bottom channels respectively and one at the centre
3. Second layer of 19mm GIB Fyreline® fixed to Frame 1 with 51mm x 7g self tapping screws at 300mm centres up each stud
4. Erect Frame 2 and secure studs to assemble with 51mm x 7g self tapping screws at 300mm centres through the double layer of 19mm GIB Fyreline® on Frame 1 (From the Frame 1 side)

Note: If the timber framed alternative is used, fasten Frame 2 to the assembly with 63mm x 8g GIB® Grabber® Self Tapping Screws®

5. Fix the outer layer of 19mm GIB Fyreline® to the outside faces of Frames 1 & 2 with 32mm x 6g self tapping screws at 300mm centres up ea .
6. No Fixings to top and bottom channel sections.





In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

FIRE RATED WALL SYSTEMS

ONE WAY FRR - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUW 15	LB/NLB	(15)/15/15	1 layer 13mm GIB®Standard one side

FRAMING AND WALL HEIGHT

Timber or steel frame designed to meet durability and structural criteria for strength and serviceability under dead and live loads.

The stud width shall be 35mm minimum with a depth of 90mm minimum.

Stud spacing at 600mm centres maximum.

Frame height and dimensions as determined by NZS 3604 stud tables or specific design.

LINING (FIRE SIDE)

1 layer of 13mm GIB® Standard Plasterboard to one side of the frame.

Vertical or Horizontal fixing permitted. Full height sheets shall be used where possible.

Sheets shall be touch fitted.

When sheet end butt joints are unavoidable, they shall be formed over framing.

All sheet joints must be formed over framing.

In steel framed options, linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

TIMBER FRAME	STEEL FRAME
32mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails	32mm x 6g GIB® Grabber® Drywall Self Tapping Screws

Fastener Centres

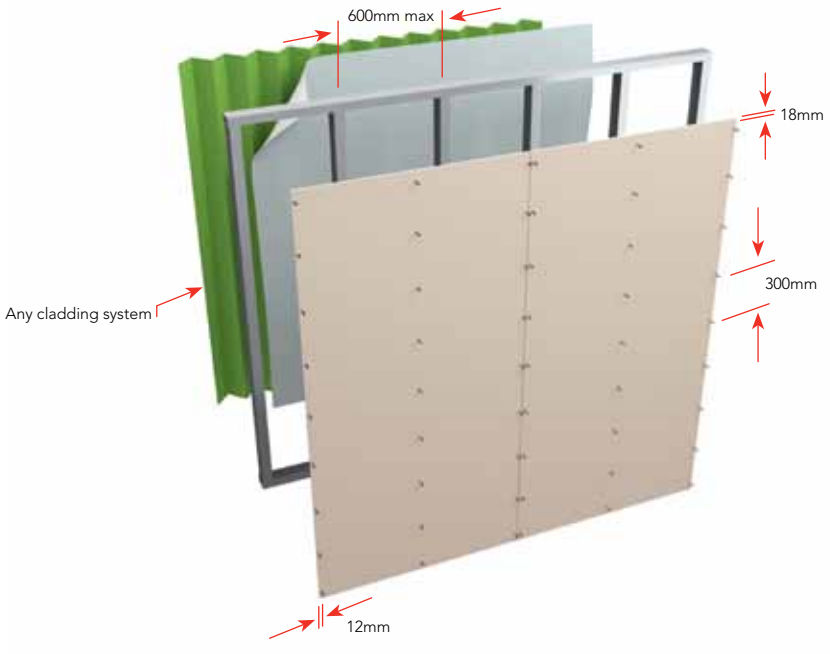
300mm centres up each stud.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

ONE WAY FRR - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUW 30a	LB/NLB	(30)/30/30	1 layer 16mm GIB Fyreline® one side
GBUW 30b			2 layers 10mm GIB Fyreline® one side

FRAMING AND WALL HEIGHT

Timber or steel frame designed to meet durability and structural criteria for strength and serviceability under dead and live loads.

The stud width shall be 35mm minimum with a depth of 90mm minimum.

Stud spacing at 600mm centres maximum.

Frame height and dimensions as determined by NZS 3604 stud tables or specific design.

LINING (FIRE SIDE)

GBUW 30a – 1 layer of 16mm GIB Fyreline® to one side of the frame.

GBUW 30b – 2 layers of 10mm GIB Fyreline® to one side of the frame.

Vertical or Horizontal fixing permitted. Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Offset joints in double layered systems.

When sheet end butt joints are unavoidable, they shall be formed over framing.

All sheet joints must be formed over framing.

In steel framed options, linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

SYSTEM	TIMBER FRAME	STEEL FRAME
GBUW 30a	32mm x 6g GIB® Grabber® High Thread Drywall Screws, or 40mm x 2.8mm GIB® Nails	32mm x x6g GIB® Grabber® Drywall Self Tapping Screws
GBUW 30b Inner layer	32mm x 6g screws as above or 40mm x 2.8mm GIB® Nails	25mm x 6g screws as above
Outer layer	41mm x 6g screws as above or 40mm x 2.8mm GIB® Nails	32mm x 6g screws as above

Fastener Centres

INNER LAYER: 600mm centres up each stud.

OUTER OR SINGLE LAYER: 300mm centres up each stud.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

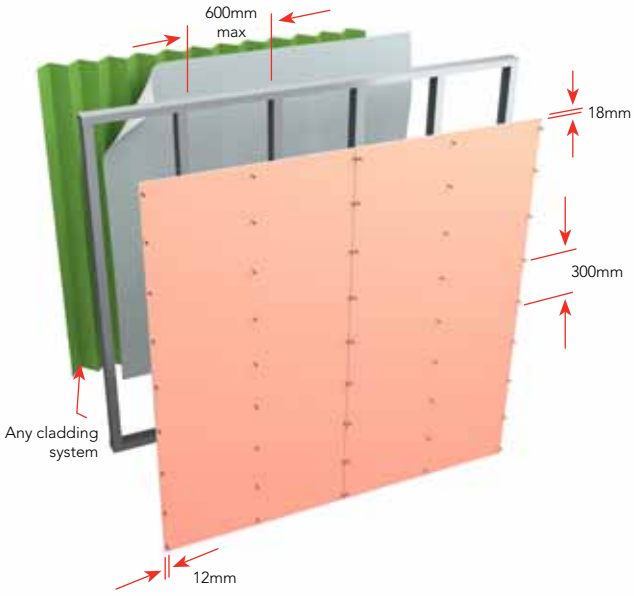
JOINTING

INNER LAYER: Unstopped

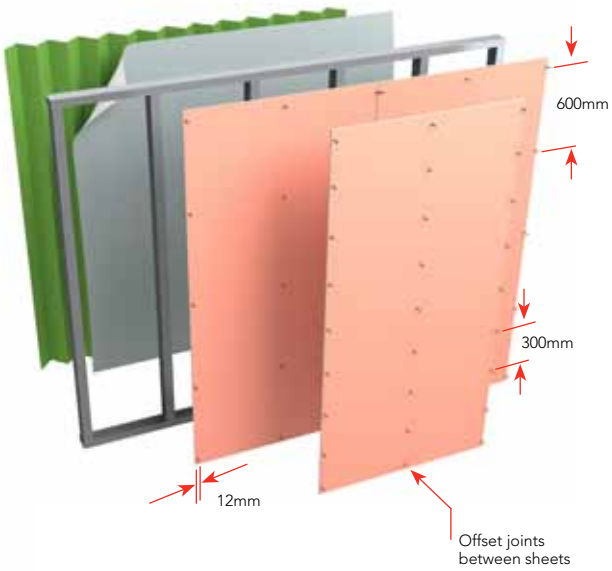
OUTER OR SINGLE LAYER: All screw heads stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

GBUW 30a



GBUW 30b



FIRE RATED WALL SYSTEMS

ONE WAY FRR - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	
GBUW 60a	LB/NLB	(60)/60/60	2 layers 13mm GIB Fyreline® one side	Cladding systems not incorporating foamed polymerics
GBUW 60b			1 layer 16mm GIB Fyreline®+ 1 layer 13mm GIB Fyreline® one side	Any cladding system

FRAMING AND WALL HEIGHT

Timber or steel frame designed to meet durability and structural criteria for strength and serviceability under dead and live loads. The stud width shall be 35mm minimum with a depth of 90mm minimum. Stud spacing at 600mm centres maximum. Frame height and dimensions as determined by NZS 3604 stud tables or specific design.

LINING (FIRE SIDE)

GBUW 60a – 2 layers of 13mm GIB Fyreline® to one side of the frame.

GBUW 60b – 1 layer of 16mm plus 1 layer of 13mm GIB Fyreline® to one side of the frame.

Vertical or Horizontal fixing permitted.

Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Offset joints in double layered systems:

For vertical fixing all sheet joints must be formed over framing and sheet joints must be offset.

The second layer may be fixed horizontally, fixed to all studs. In this case no framing is required behind longitudinal joints.

When sheet end butt joints are unavoidable, they shall be formed over framing.

In steel framed options, linings are fixed hard to floor.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforces and stopped in accordance with the publication entitled "GIB® Site Guide"

FASTENING THE LINING

Fasteners

SYSTEM	TIMBER FRAME	STEEL FRAME
GBUW 60a		
Inner layer	32mm x 6g GIB® Grabber® High Thread Drywall Screws, or 40mm x 2.8mm GIB® Nails	25mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer	41mm x 6g screws as above or 40mm x 2.8mm GIB® Nails	41mm x 6g screws as above
GBUW 60b		
Inner layer (16mm GIB Fyreline®)	32mm x 6g screws as above or 40mm x 2.8mm GIB® Nails	32mm x 6g screws as above
Outer layer (13mm GIB Fyreline®)	51mm x 7g screws as above	41mm x 6g screws as above

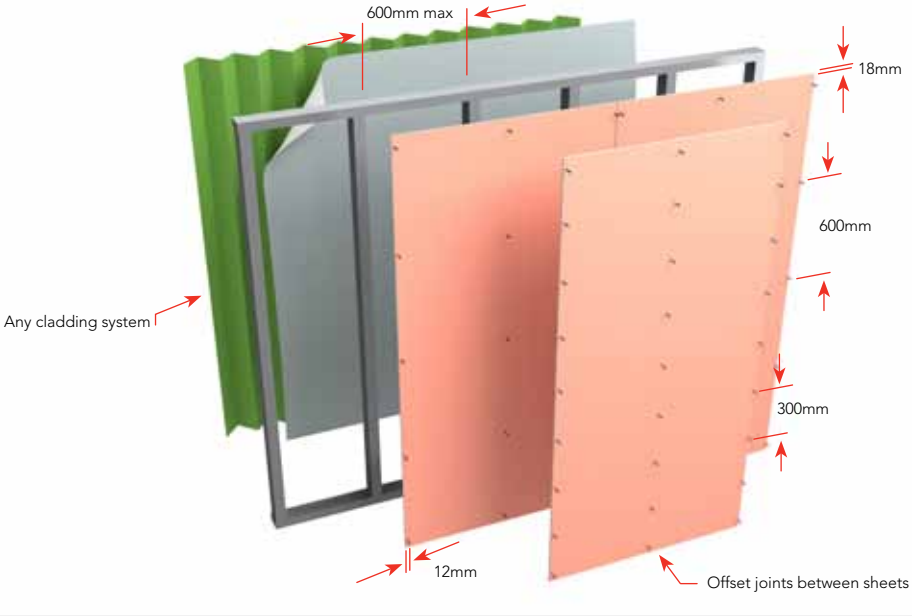
Fastener Centres

INNER LAYER: 600mm centres up each stud.

OUTER LAYER: 300mm centres up each stud.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

ONE WAY FRR - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUW 90	LB/NLB	(90)/90/90	1 layer 16mm GIB Fyreline® layer 19mm GIB Fyreline® one side

FRAMING AND WALL HEIGHT

Timber or steel frame designed to meet durability and structural criteria for strength and serviceability under dead and live loads.

The stud width shall be 35mm minimum with a depth of 90mm minimum.

Stud spacing at 600mm centres maximum.

Frame height and dimensions as determined by NZS 3604 stud tables or specific design.

LINING (FIRE SIDE)

1 layer of 16mm GIB Fyreline® plus one layer of 19mm GIB Fyreline® to one side of the frame.

Vertical or Horizontal fixing permitted.

Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Offset joints in double layered systems:

For vertical fixing all sheet joints must be formed over framing and sheet joints must be offset.

The second layer may be fixed horizontally, fixed to all studs. In this case no framing is required behind longitudinal joints.

When sheet end butt joints are unavoidable, they shall be formed over framing.

In steel framed options, linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer (16mm GIB Fyreline®)	32mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails	32mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer (19mm GIB Fyreline®)	51mm x 7g screws as above	51mm x 7g screws as above

Fastener Centres

INNER LAYER: 600mm centres up each stud.

OUTER LAYER: 300mm centres up each stud.

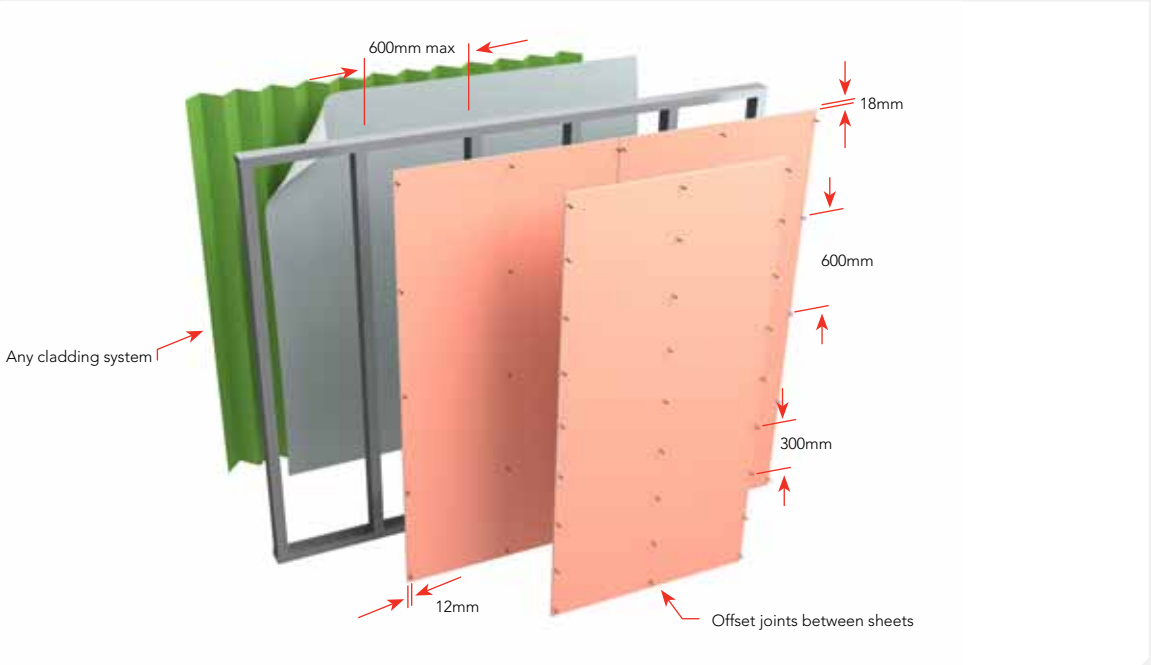
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

ONE WAY FRR - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUW 120	LB/NLB	(120)/120/120	2 layers 19mm GIB Fyreline® one side

FRAMING AND WALL HEIGHT

Timber or steel frame designed to meet durability and structural criteria for strength and serviceability under dead and live loads.

The stud width shall be 35mm minimum with a depth of 90mm minimum.

Stud spacing at 600mm centres maximum.

Frame height and dimensions as determined by NZS 3604 stud tables or specific design.

LINING (FIRE SIDE)

2 layers of 19mm GIB Fyreline® to one side of the frame.

Vertical or horizontal fixing permitted.

Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Offset joints in double layered systems:

For vertical fixing all sheet joints must be formed over framing and sheet joints must be offset.

The second layer may be fixed horizontally, fixed to all studs. In this case no framing is required behind longitudinal joints.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

In steel framed options, linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer	41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails	32mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer	51mm x 7g screws as above	51mm x 7g screws as above

Fastener Centres

INNER LAYER: 600mm centres up each stud.

OUTER LAYER: 300mm centres up each stud.

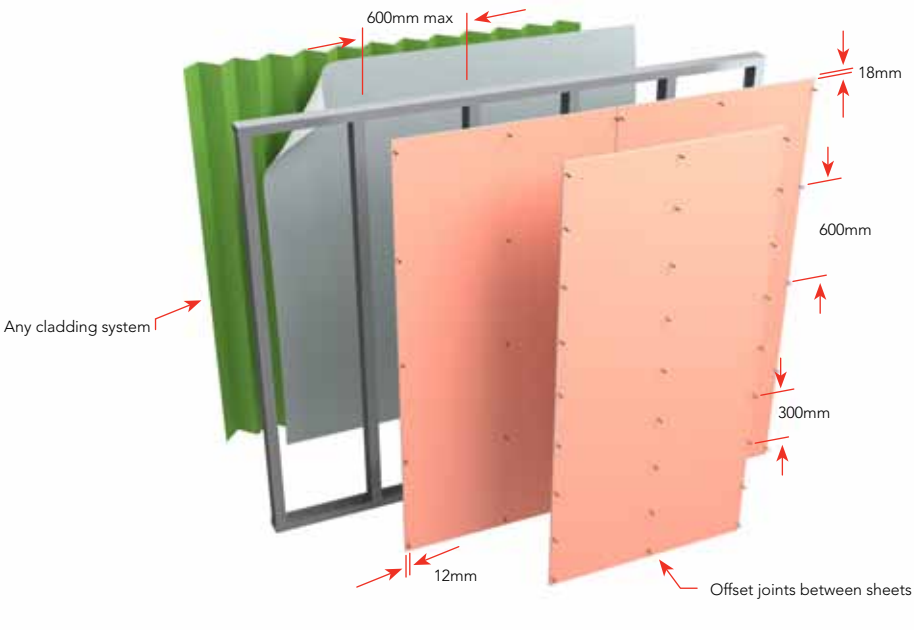
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBFC 15	LB	15/15/15	Timber joists with 1 layer 13mm GIB®Standard	38	31	40kg/m²

FLOOR FRAMING

Floor Joists must comply with NZS 3604 and be a minimum of 150 x 50mm spaced at 600mm maximum. Solid strutting is required in accordance with NZS 3604.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600mm for joists at 600mm or at 1200mm for joists at 400 or 450mm. Nogs/framing is required at the perimeter of the fire rated ceiling.

ALTERNATIVE FLOOR FRAMING

Hyspan® or Hybeam® HJ series joists may be used as an alternative. Joists must be covered by specific engineering design for strength and serviceability and spaced at no more than 600 mm centres.

Requirements for nogs are the same as for NZS 3604 floor framing above.

Consult the beam manufacturer re construction of the solid blocking contained in floor/ceiling to wall junctions.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

1 layer 13mm GIB® Standard Plasterboard shall be fixed at right angles to the underside of the floor joists.

All joints must occur on joists, solid strutting or nogs. Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

150mm centres around the perimeter of each sheet.

Single screws at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

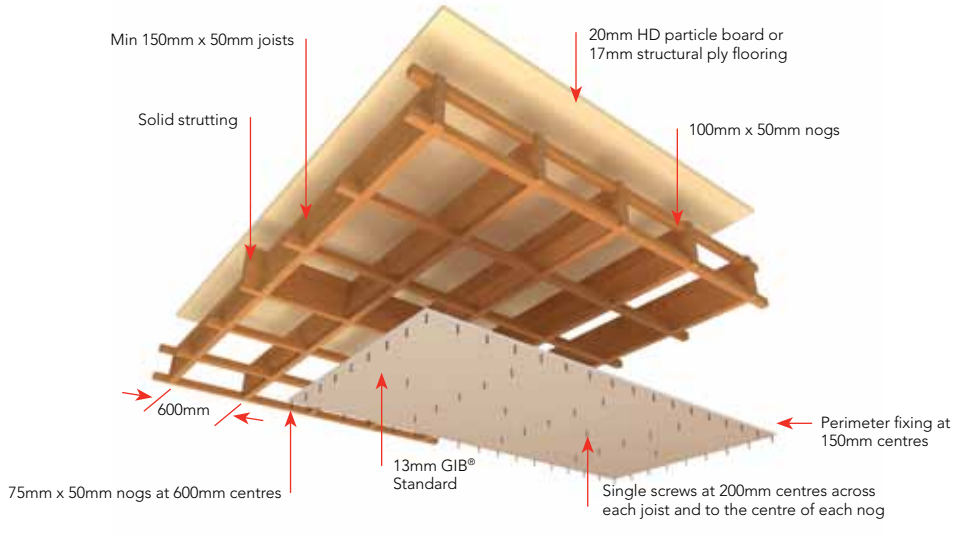
JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

Hyspan® or Hybeam® HJ series joists are manufactured and supplied by Carter Holt Harvey Futurebuild, 0800 808 131. The following alternatives are available. Please check with the supplier for construction details and independent verification.

- Posi Strut® joists – Mitek Group, (09) 274 7109

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

STEEL JOISTS

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBSJ 30	LB	30/30/30	1 layer 13mm GIB Fyreline®	34	30	38kg/m²

FLOOR FRAMING

Steel floor joists shall be minimum 190mm deep C-section with 45mm flanges and a thickness of 1.55mm, spaced at no more than 600mm centres.

Framing is required at the perimeter of the ceiling lining and at longitudinal sheet joints. Suitable perimeter framing includes a minimum 35mm x 35mm x 0.55mm steel perimeter angle or steel nogs.

Longitudinal sheet joints are supported on 0.55mm thick C-section steel nogs connected to the joists. The nogs have a minimum width of 50mm with 25mm vertical legs.

FLOORING

Flooring shall be nominal 20mm particle board or minimum 17mm structural plywood fixed to the joists in accordance with the manufacturers specifications.

Flooring sheet joints must have a tongue and groove jointer or be formed over framing.

CEILING LINING

1 layer of 13mm GIB Fyreline® fixed at right angles to the underside of the floor joists.

All joints must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Scavenger Head Drill Point Drywall screws.

Fastener Centres

150mm centres around the perimeter of each sheet and at 200mm centres along each joist.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

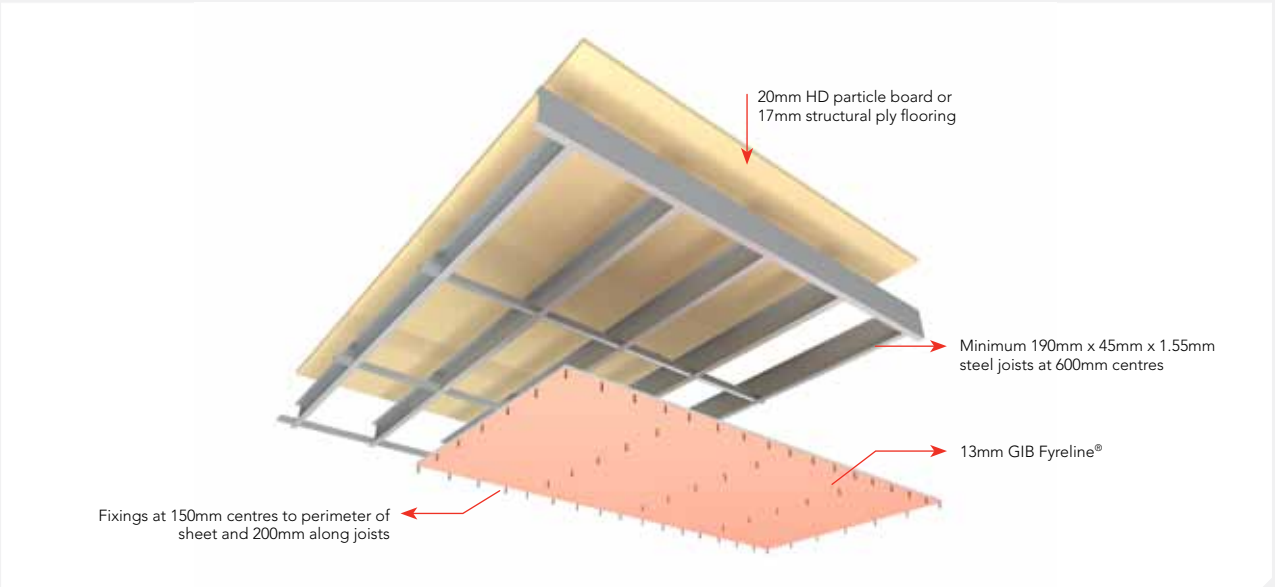
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBFC45	LB	45/45/45	Timber joists with 1 layer 13mm GIB Fyreline®	39	32	44kg/m²

FLOOR FRAMING

Floor Joists must comply with NZS 3604 and be a minimum of 200 x 50mm spaced at 600mm maximum. Solid strutting is required in accordance with NZS 3604.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600mm for joists at 600mm or at 1200mm for joists at 400 or 450mm.

Nogs/framing is required at the perimeter of the fire rated ceiling.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

1 layer of 13mm GIB Fyreline® shall be fixed at right angles to the underside of the floor joists.

All joints must occur on joists, solid strutting or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

150mm centres around the perimeter of each sheet.

Single screws at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

CEILING BATTEN ALTERNATIVE

Where NZS 3604 permits 150mm joists, these may be used with continuous 75 x 50mm ceiling battens at 600mm centres, running across the joists (battens may also be used to level the ceiling in renovation work).

When joists are spaced at 600mm, 50 x 50mm blocking between the ceiling battens is required under all joists.

When joists are spaced at 400mm, blocking on joists is required behind lining joints at 1200mm centres only.

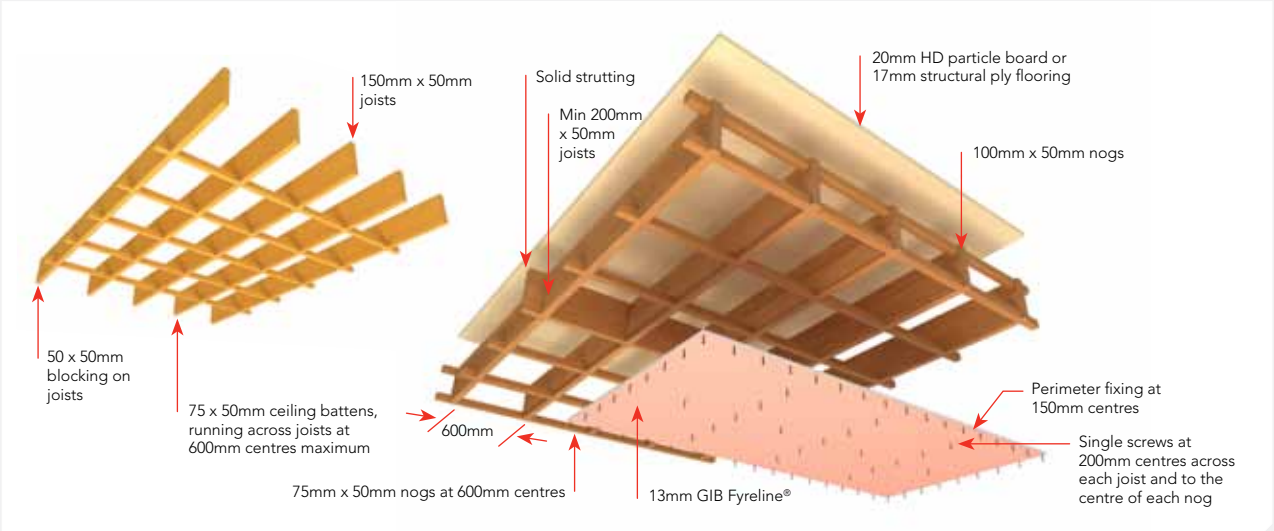
When joists are at 450mm, nogs are required between the battens at 600mm centres (or at 1200mm centres when battens are spaced at 450mm or less).

Nogs/framing is required at the perimeter of the fire rated ceiling.

The lining shall be fixed at right angles to the underside of the battens.

If only a 30/30/30 FRR is required, the use of nominally 70 x 35mm timber battens is permitted or alternatively metal battens can be used provided construction is otherwise in accordance with specification GBSC 30.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBCJ 30	LB	30/30/30	Composite joists with 1 layer 13mm GIB Fyreline®	39	32	40kg/m²
GBCJ 45		45/45/45				

FLOOR FRAMING FASTENING THE LINING

Floor joists may be either Hyspan® or Hybeam® HJ series joists.

Joists shall be covered by specific engineering design for strength and serviceability, have a depth no less than 200mm and spacing no more than 600mm.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600mm for joists at 600mm, or at 1200mm for joists at 400 or 450mm.

Nogs/framing is required at the perimeter of the fire rated ceiling.

Consult the beam manufacturer re construction of the solid blocking contained in floor/ceiling to wall junctions.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

1 layer of 13mm GIB Fyreline® shall be fixed at right angles to the underside of the floor joists.

All joints must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

150mm centres around the perimeter of each sheet.

Single screws at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

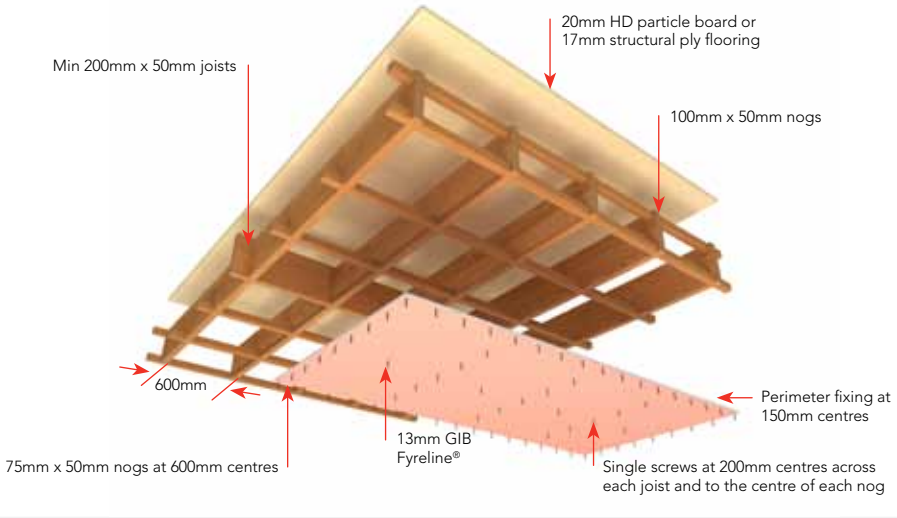
Hyspan® or Hybeam® HJ series joists are manufactured and supplied by Carter Holt Harvey Futurebuild, 0800 808 131. The following alternatives are available. Please check with the supplier for construction details and independent verification.

- Posi Strut® joists – Mitek Group, (09) 274 7109

CEILING BATTENS

If only a 30/30/30 FFR is required, the use of nominally 70 x 35mm timber battens is permitted or alternatively metal battens can be used provided construction is otherwise in accordance with specification GBSC 30.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBFC 60	LB	60/60/60	Timber joists with 1 layer 16mm GIB Fyreline®	39	32	46kg/m²

FLOOR FRAMING

Floor Joists must comply with NZS 3604 and be a minimum of 200 x 50mm spaced at 600mm maximum. Solid strutting is required in accordance with NZS 3604.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600mm for joists at 600mm or at 1200mm for joists at 400 or 450mm.

Nogs/framing is required at the perimeter of the fire rated ceiling.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

1 layer of 16mm GIB Fyreline® shall be fixed at right angles to the underside of the floor joists.

All joints must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

150mm centres around the perimeter of each sheet.

Single screws at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

CEILING BATTEN ALTERNATIVE

Where NZS 3604 permits 150mm joists, these may be used with continuous 75 x 50mm ceiling battens at 600mm centres, running across the joists (battens may also be used to level the ceiling in renovation work).

When joists are spaced at 600mm, 50 x 50mm blocking between the ceiling battens is required under all joists.

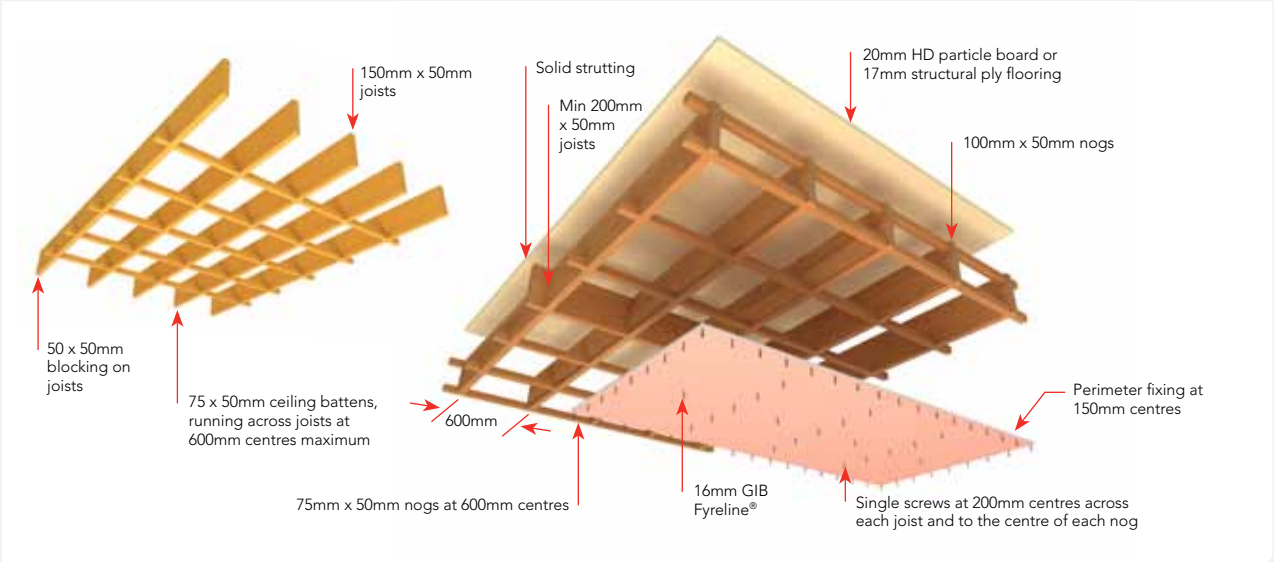
When joists are spaced at 400mm, blocking on joists is required behind lining joints at 1200mm centres only.

When joists are at 450mm, nogs are required between the battens at 600mm centres (or at 1200mm centres when battens are spaced at 450mm or less).

Nogs/framing is required at the perimeter of the fire rated ceiling.

The lining shall be fixed at right angles to the underside of the battens.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

STEEL JOISTS

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBSJ 60	LB	60/60/60	1 layer 16mm GIB Fyreline®	39	32	40kg/m²

FLOOR FRAMING

Steel floor joists shall be minimum 190mm deep C-section with 45mm flanges and a thickness of 1.55mm, spaced at no more than 600mm centres.

Framing is required at the perimeter of the ceiling lining and at longitudinal sheet joints. Suitable perimeter framing includes a minimum 35mm x 35mm x 0.55mm steel perimeter angle or steel nogs.

Longitudinal sheet joints are supported on 0.55mm thick C-section steel nogs connected to the joists. The nogs have a minimum width of 50mm with 25mm vertical legs.

FLOORING

Flooring shall be nominal 20mm particle board or minimum 17mm structural plywood fixed to the joists in accordance with the manufacturers specifications.

Flooring sheet joints must have a tongue and groove jointer or be formed over framing. Joints without a jointer must have a bead of fire rated sealant applied before sheets are locked together. Where tongue and groove jointers or sealant are not used, the fire rating will reduce to 60/60/45.

CEILING LINING

1 layer of 16mm GIB Fyreline® fixed at right angles to the underside of the floor joists.

All joists must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Scavenger Head Drill Point Drywall screws.

Fastener Centres

150mm centres around the perimeter of each sheet and at 200mm centres along each joist.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

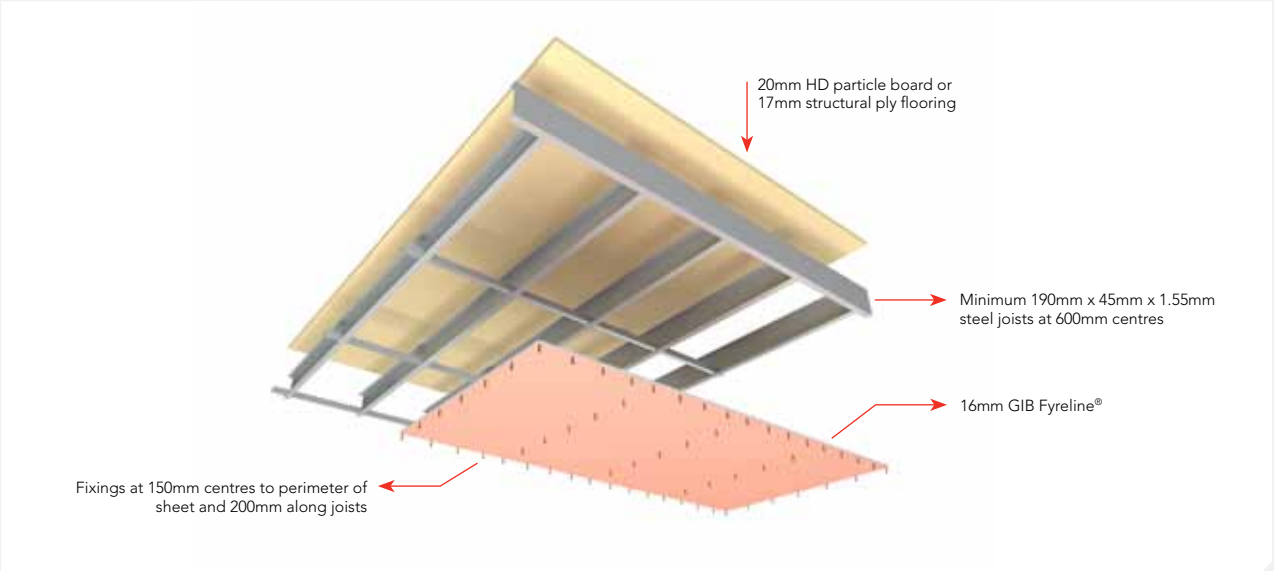
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBCJ 60	LB	60/60/60	Composite joists with 1 layer 16mm GIB Fyreline®	39	32	44kg/m²

FLOOR FRAMING

Floor joists may be either Hyspan® or Hybeam® HJ series joists. Joists shall be covered by specific engineering design for strength and serviceability, have a depth no less than 200mm and spacing no more than 600mm.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600mm for joists at 600mm, or at 1200mm for joists at 400 or 450mm.

Nogs/framing is required at the perimeter of the fire rated ceiling.

Consult the beam manufacturer re construction of the solid blocking contained in floor/ceiling to wall junctions.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

1 layer of 16mm GIB Fyreline® shall be fixed at right angles to the underside of the floor joists.

All joints must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

150mm centres around the perimeter of each sheet.

Single screws at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

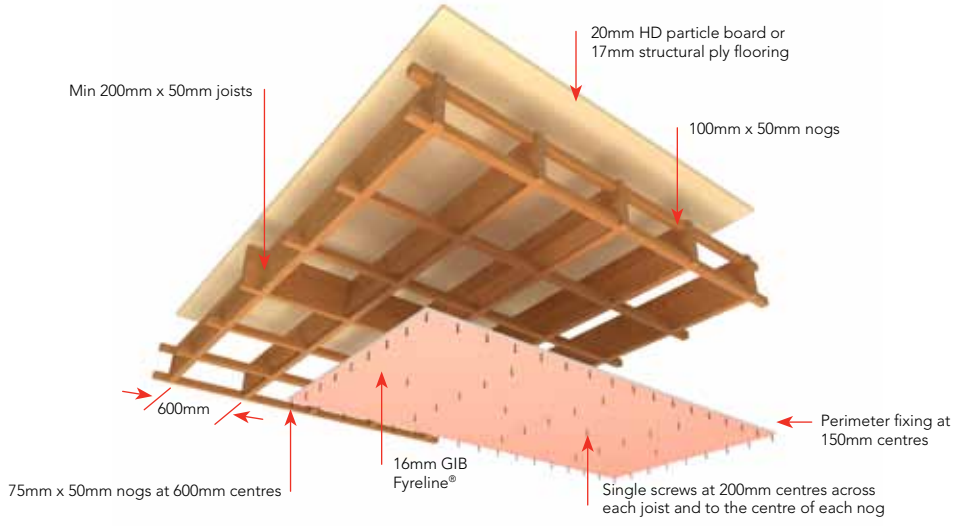
JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

Hyspan® or Hybeam® HJ series joists are manufactured and supplied by Carter Holt Harvey Futurebuild, 0800 808 131. The following alternatives are available. Please check with the supplier for construction details and independent verification.

- Posi Strut® joists – Mitek Group, (09) 274 7109

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBFC 90	LB	90/90/90	Timber joists with 2 layers 16mm GIB Fyreline®	41	34	63kg/m²

FLOOR FRAMING

Floor Joists must comply with NZS 3604 and be a minimum of 200 x 50mm spaced at 400mm maximum. Solid strutting is required at 1800mm centres.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be75 x 50mm minimum spaced at 600 centres.

Nogs/framing is required at the perimeter of the fire rated ceiling.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

2 layers of 16mm GIB Fyreline® shall be fixed at right angles to the underside of the floor joists. The joints of the second layer are to be offset from those of the first layer.

All joints must occur on joists, solid strutting or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

INNER LAYER: 51mm x 7g GIB® Grabber® High Thread Drywall Screws.

OUTER LAYER: 76mm x 8g GIB® Grabber® Self Tapping Screws.

Fastener Centres

INNER LAYER: 150mm centres around the perimeter of each sheet and across each joist and at the centre of each nog.

OUTER LAYER: 150mm centres around the perimeter of each sheet and single screws at 150mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide.

CEILING BATTEN ALTERNATIVE

Where NZS 3604 permits 150mm joists, these may be used with continuous 75 x 50mm ceiling battens at 600mm centres, running across the joists (battens may also be used to level the ceiling in renovation work).

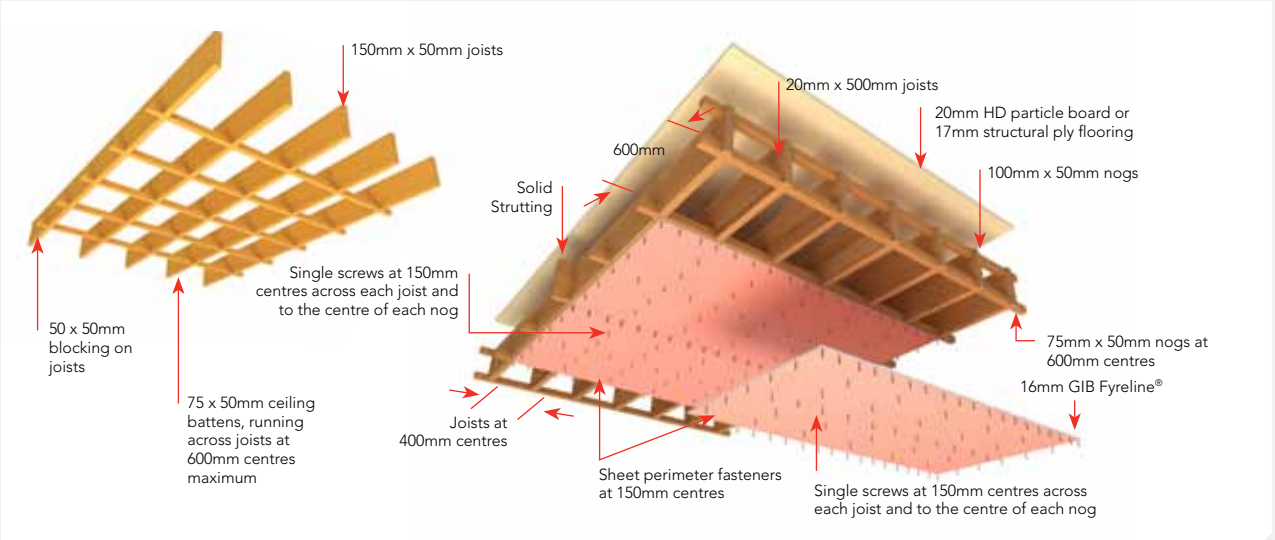
50 x 50mm blocking between the ceiling battens is required under all joists.

Nogs/framing is required at the perimeter of the fire rated ceiling.

The lining shall be fixed at right angles to the underside of the battens.

The joints of the outer layer are to be offset from those of the inner layer.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBFC 120	LB	120/120/120	Timber or steel joists with 2 layers 19mm GIB Fyreline®

FLOOR FRAMING

Timber or steel floor joists designed to meet structural criteria for strength and serviceability under dead and live loads.

Joists at 500mm centres maximum.

The separation distance between the ceiling lining and the flooring shall be 90mm minimum.

Linings shall be supported by framing members with a minimum width of 35mm.

Nogs fixed on the flat to receive the ends of the particle board shall be 100mm x 50mm minimum.

Note: In respect of the FRR for this particular system, nogs are required only at the perimeter of the fire rated ceiling. If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

2 layers of 19mm GIB Fyreline® shall be fixed at right angles to the underside of the floor framing.

The joints of the second layer are to be offset from those of the first layer.

Sheets shall be touch fitted.

All sheet end butt joints must occur over solid framing.

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer	41mm x 6g GIB® Grabber® High Thread Drywall Screws	41mm x 6g GIB® Grabber® Self Tapping Screws
Outer layer	63mm x 8g GIB® Grabber® Self Tapping Screws	51mm x 7g screws as above

Fastener Centres (both layers)

At 200mm centres around the ceiling perimeter, along each framing member, and at 200mm centres to framing members where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

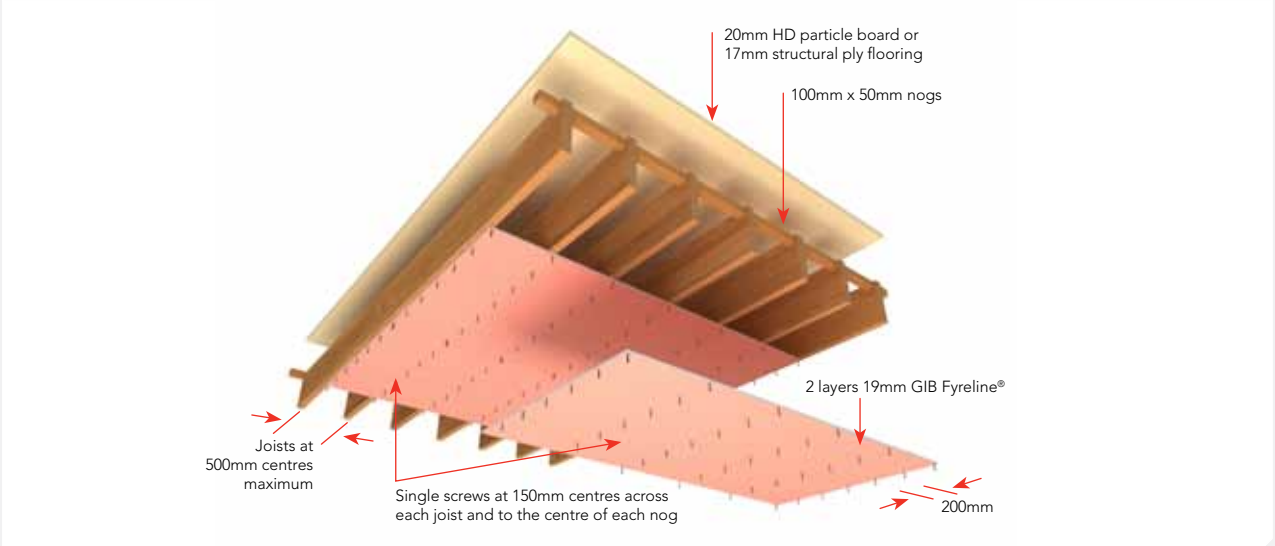
The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

SUSPENDED GRID

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS TO UNDERSIDE OF SUPPORT FRAME	STC	IIC	SYSTEM WEIGHT APPROX
GBSC 30	LB	30/30/30	Timber joists with suspension system & 1 layer 13mm GIB Fyreline® (back blocked)	48	43	50kg/m²

FLOOR FRAMING

Timber floor joists complying with NZS 3604 spaced at 600mm centres maximum.

Alternatively, a proprietary I-joist system may be used subject to specific structural design and approval by the normal building consent process.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

SUSPENSION SYSTEM

Rondo® Key-Lock™ steel frame suspension system comprising 2.5mm wire hangers at 1200mm centres supporting top cross rails (part 128) spaced at 1200mm centres and furring channels (part 129) spaced at 600mm centres maximum.

USG Donn® ScrewFix™ steel frame suspension system comprising 2.5mm wire hangers at 1200mm centres supporting DJ 38 strongback channels spaced at 1200mm centres and FC37 furring channels spaced at 600mm centres maximum.

Direct or clip fixed GIB® Rondo® Ceiling Batten system with full perimeter channel supports.

Note: Suspension system must be installed in accordance with manufacturer's specification.

CEILING LINING

1 layer of 13mm GIB Fyreline® shall be fixed at right angles to the underside of the furring channels.

All sheet end butt joints must occur on the furring channels.

Sheets shall be touch fitted.

Joints formed by sheet edges shall be back blocked between the furring channels with strips of 13mm GIB Fyreline®.

The width of the back blocks shall be 300mm minimum and shall be adhered with GIB-Cove® Bond.

FASTENING THE LINING

Fasteners

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

Fastener Centres

200mm centres along each intermediate furring channel, around the ceiling perimeter and where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

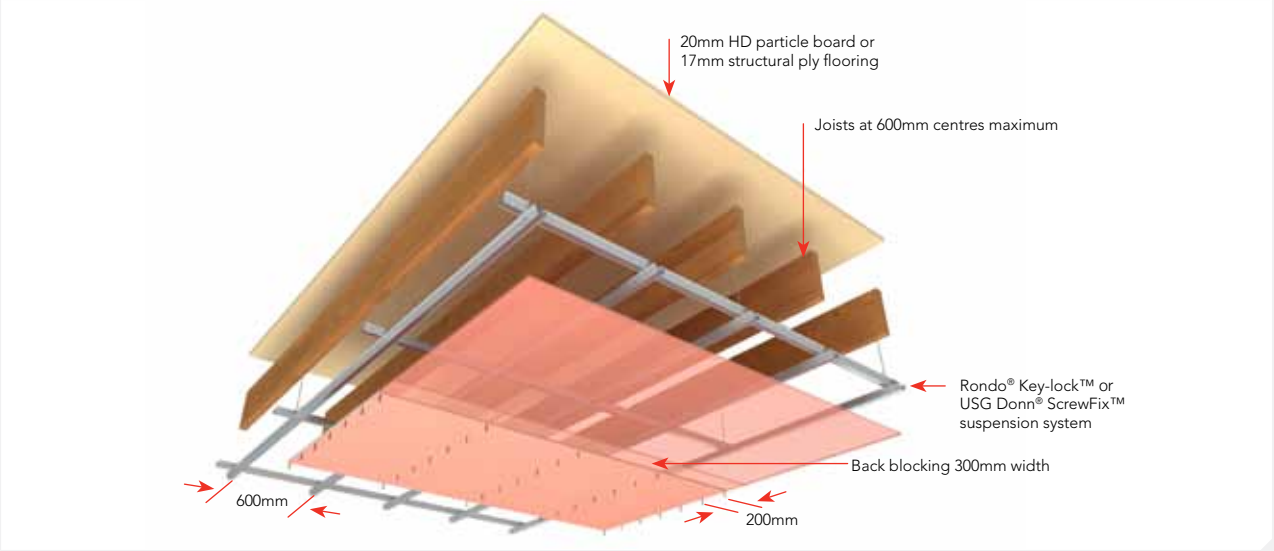
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

SUSPENDED GRID

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBSC 60a	LB	60/60/60	Timber joists with suspension system & 2 layers 13mm GIB Fyreline®	53	43	60kg/m²

FLOOR FRAMING

Timber floor joists complying with NZS 3604 spaced at 600mm centres maximum.

Alternatively, a proprietary I-joist system may be used subject to specific structural design and approval by the normal building consent process.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

SUSPENSION SYSTEM

Rondo® Key-Lock™ steel frame suspension system comprising 2.5mm wire hangers at 1200mm centres supporting top cross rails (part 128) spaced at 1200mm centres and furring channels (part 129) spaced at 600mm centres maximum.

USG Donn® ScrewFix™ steel frame suspension system comprising 2.5mm wire hangers at 1200mm centres supporting DJ38 strongback channels spaced at 1200mm centres and FC37 furring channels spaced at 600mm centres maximum.

Direct or clip fixed GIB® Rondo® Ceiling Batten system with full perimeter channel supports.

CEILING LINING

2 layers of 13mm GIB Fyreline® shall be fixed at right angles to the underside of the furring channels.

The joints of the second layer are to be offset from those of the first layer.

All sheet end butt joints must occur on the furring channels. Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

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

OUTER LAYER: 41mm x 6g screws as above.

Fastener Centres

200mm centres along intermediate furring channel, around the ceiling perimeter and where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

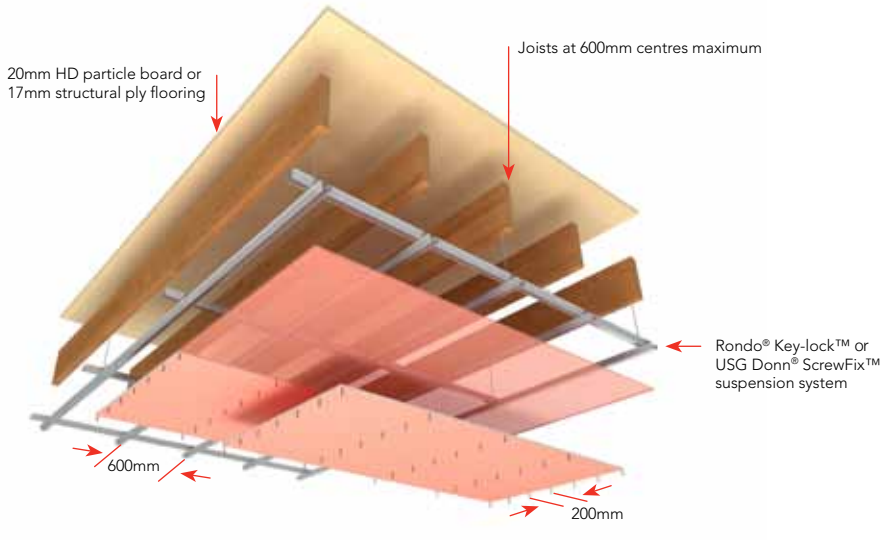
The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

SUSPENDED GRID

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBSC 60b	LB	60/60/60	Timber joists with USG Drywall Grid suspension system & 1 layer of 16mm GIB Fyreline®	50	43	54kg/m²

FLOOR FRAMING

Timber floor joists complying with NZS 3604 spaced at 600mm centres maximum.

Alternatively, a proprietary I-joist system may be used subject to specific structural design and approval by the normal building consent process.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 18mm thick structural plywood fixed to joists in accordance with the manufacturers specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

SUSPENSION SYSTEM

USG Drywall Grid Suspension System comprising 2.5mm wire hangers or DJ4040 wall angles at 1200mm centres maximum. Hangers support DGL40D main tee at 1200mm centres maximum. DGW40D-1200 cross tees installed at 600mm centres. DGW40D-600 cross tees installed at 1200mm centres, parallel with the main tee.

The distance between the underside of the flooring and the top of the ceiling linings shall be a minimum of 450mm.

Note: Suspension system must be installed in accordance with manufacturer's specification.

CEILING LINING

1 layer of 16mm GIB Fyreline® shall be fixed parallel to the main tees and positioned so tapered edges are located on DGW40D-600 cross tees.

All sheet end butt joints must occur on the suspension system.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Fastener Centres

150mm centres around the perimeter of each sheet. Single screws at 200mm centres along each DGL40D main tee and DGW40D-1200 cross tee.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

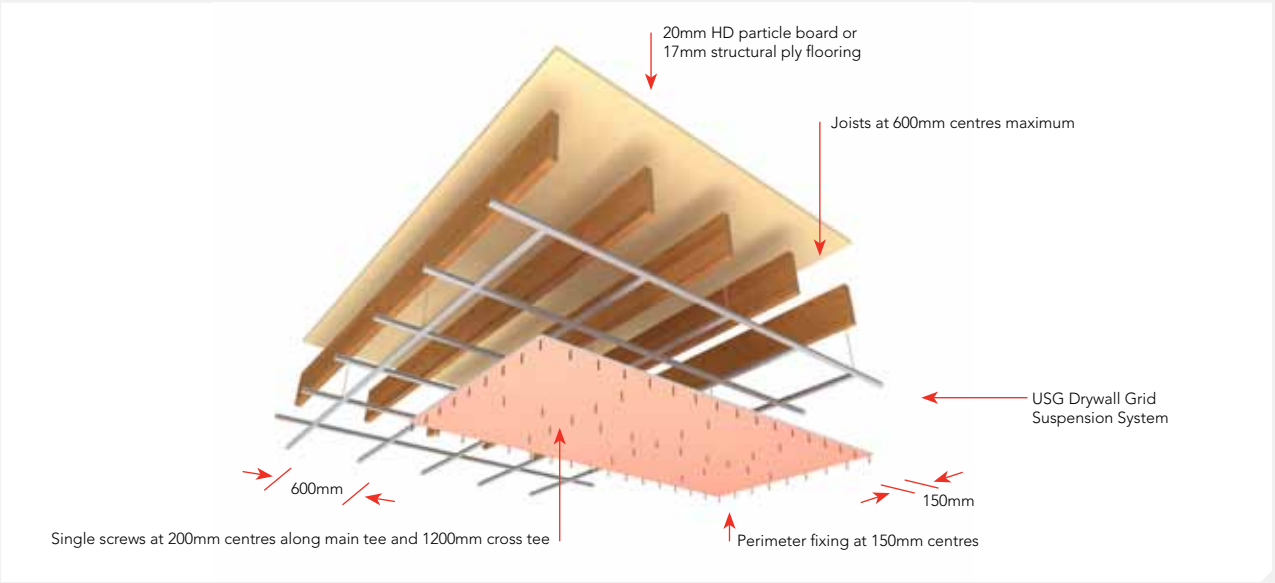
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED FLOOR/CEILING SYSTEMS

SUSPENDED GRID

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBSC 90	LB	90/90/90	Timber joists with USG Drywall Grid suspension system & 1 layer of 13mm GIB Fyreline® + 16mm GIB Fyreline®	53	43	64kg/m²

FLOOR FRAMING

Timber floor joists complying with NZS 3604 spaced at 600mm centres maximum.

Alternatively, a proprietary I-joist system may be used subject to specific structural design and approval by the normal building consent process.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 18mm thick structural plywood fixed to joists in accordance with the manufacturers specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

SUSPENSION SYSTEM

USG Drywall Grid Suspension System comprising 2.5mm wire hangers or DJ4040 wall angles at 1200mm centres maximum. Hangers support DGW55D main tee at 1200mm centres maximum. DGW40D-1200 cross tees installed at 600mm centres.

The distance between the underside of the flooring and the top of the ceiling linings shall be a minimum of 450mm.

Note 1: Additional DGW40D-1200 cross tees are required 200mm both sides of sheet end butt joints.

Note 2: Suspension system must be installed in accordance with manufacturer's specification.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

CEILING LINING

1 layer of 13mm GIB Fyreline® shall be fixed parallel to the DGL55D main tees and positioned so tapered edges are located on the main tee. Sheet end butt joints must occur on DGW40D-1200 cross tees.

One layer of 16mm GIB Fyreline® shall be fixed parallel to main tees but offset by 600mm in both directions. Sheet end butt joints must occur on DGW40D-1200 cross tees. Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

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

OUTER LAYER: 41mm x 6g and 38mm x 10g Laminator screws as above.

Fastener Centres

INNER LAYER: 150mm centres around perimeter of each sheet. Single screws at 200mm centres along each DGW40D-1200 cross tee.

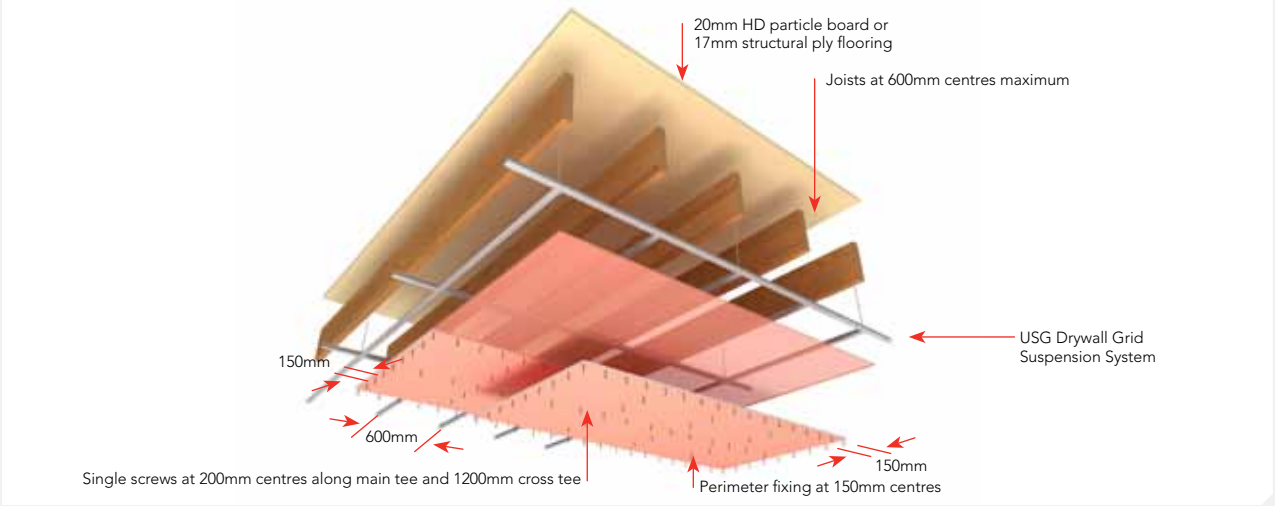
OUTER LAYER: As above. Where sheet perimeter fasteners do not coincide with steel suspension component, GIB® Grabber® Laminator screws are to be used.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED CEILING SYSTEMS

CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUC 15	LB/NLB	(15)/15/15	1 layer 13mm GIB Fyreline®

FRAMING

Timber or steel roof or floor/ceiling framing designed to meet structural criteria for strength and serviceability under dead and live loads.

The separation distance between the ceiling linings and any flooring or roofing material shall be 90mm minimum.

Linings shall be supported by framing members with a minimum width of 35mm spaced at 600mm centres maximum.

Solid nogs shall be provided at 1200mm centres maximum and to the perimeter of the fire rated ceilings.

If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

CEILING LINING

One layer of 13mm GIB Fyreline® shall be fixed at right angles to the underside of the framing members.

Sheets shall be touch fitted.

All sheet joints must occur over solid framing.

Alternatively longitudinal sheet edges may be back-blocked in accordance with the procedure outlined in the "GIB® Site Guide".

FASTENING THE LINING

Fasteners

TIMBER FRAME	STEEL FRAME
41mm x 6g GIB® Grabber® High Thread Drywall Screws	25mm x 6g GIB® Grabber® Drywall Self Tapping Screws

Fastener Centres

200mm centres around the sheet perimeters, along each intermediate framing member and at 200mm centres where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

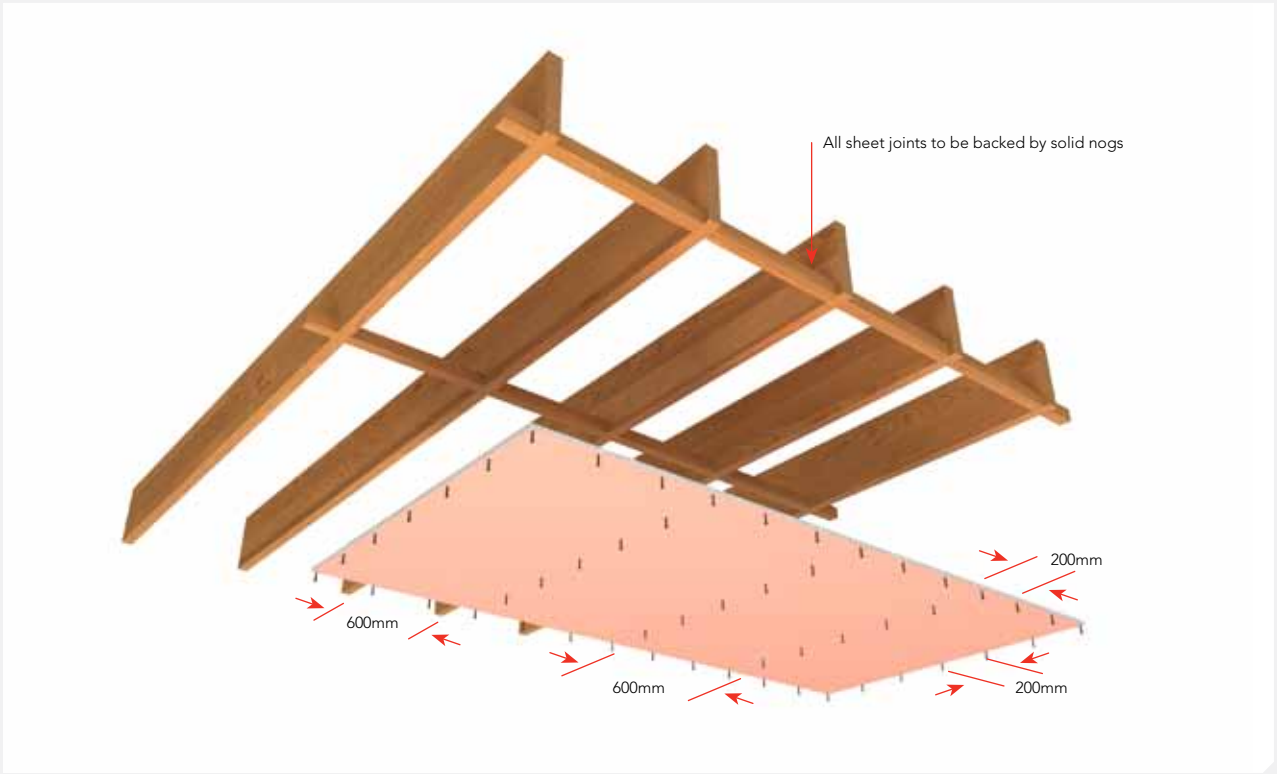
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED CEILING SYSTEMS

CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUC 30	LB/NLB	(30)/30/30	1 layer 16mm GIB Fyreline®

FRAMING

Timber or steel roof or floor/ceiling framing designed to meet structural criteria for strength and serviceability under dead and live loads.

The separation distance between the ceiling linings and any flooring or roofing material shall be 90mm minimum. Linings shall be supported by framing members with a minimum width of 35mm spaced at 600mm centres maximum.

Solid nogs shall be provided at 1200mm centres maximum and to the perimeter of the fire rated ceiling.

If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

CEILING LINING

One layer of 16mm GIB Fyreline® shall be fixed at right angles to the underside of the framing members.

Sheets shall be touch fitted.

All sheet joints must occur over solid framing.

FASTENING THE LINING

Fasteners

TIMBER FRAME	STEEL FRAME
41mm x 6g GIB® Grabber® High Thread Drywall Screws	25mm x 6g GIB® Grabber® Drywall Self Tapping Screws

Fastener Centres

200mm centres around the sheet perimeters, along each intermediate framing member where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

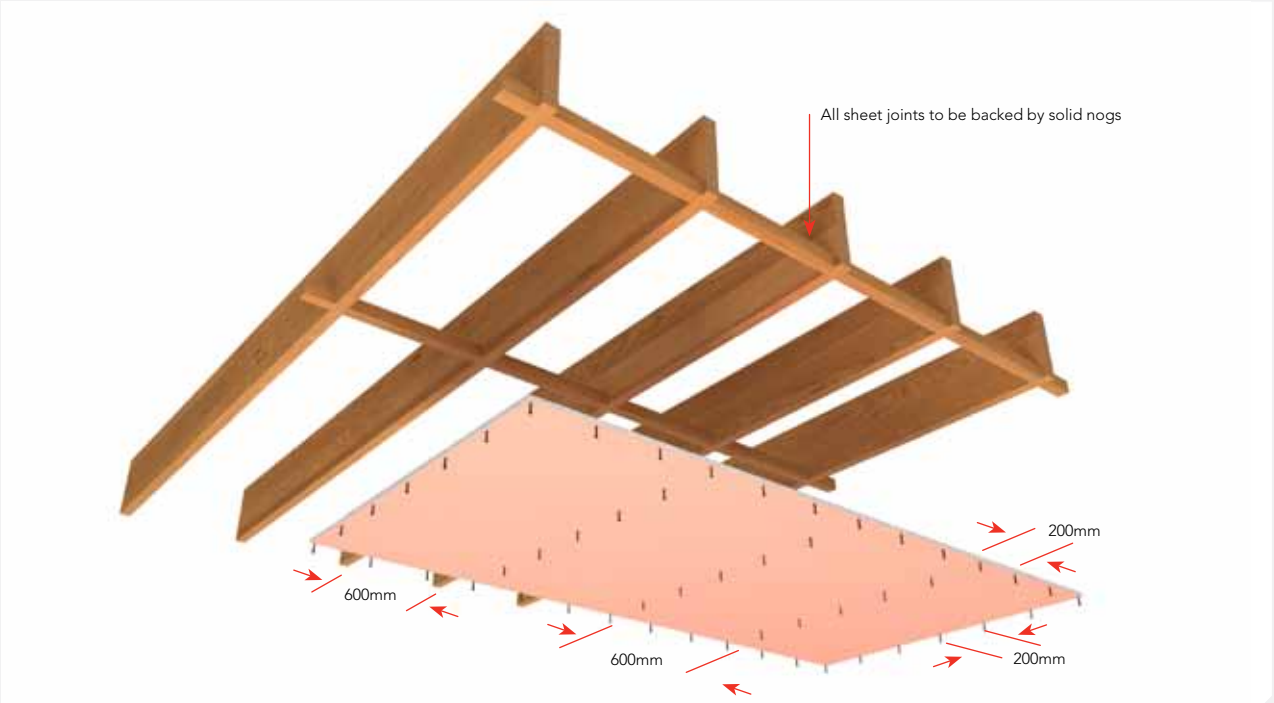
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED CEILING SYSTEMS

CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUC 45	LB/NLB	(45)/45/45	2 layers 13mm GIB Fyreline®

FRAMING

Timber or steel roof or floor/ceiling framing designed to meet structural criteria for strength and serviceability under dead and live loads.

The separation distance between the ceiling linings and any flooring or roofing material shall be 90mm minimum.

Linings shall be supported by framing members with a minimum width of 35mm spaced at 600mm centres maximum.

In respect of the FRR for this particular system, nogs are required only at the perimeter of the fire rated ceiling.

If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

CEILING LINING

2 layers of 13mm GIB Fyreline® shall be fixed at right angles to the underside of the framing members.

The joints of the second layer are offset 600mm from those in the first layer.

Sheets shall be touch fitted.

All sheet end butt joints must occur over solid framing.

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer	41mm x 6g GIB® Grabber® High Thread Drywall Screws	25mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer	51mm x 7g screws as above	41mm x 6g screws as above

Fastener Centres (both layers)

200mm centres around the ceiling perimeter, along each intermediate framing member where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

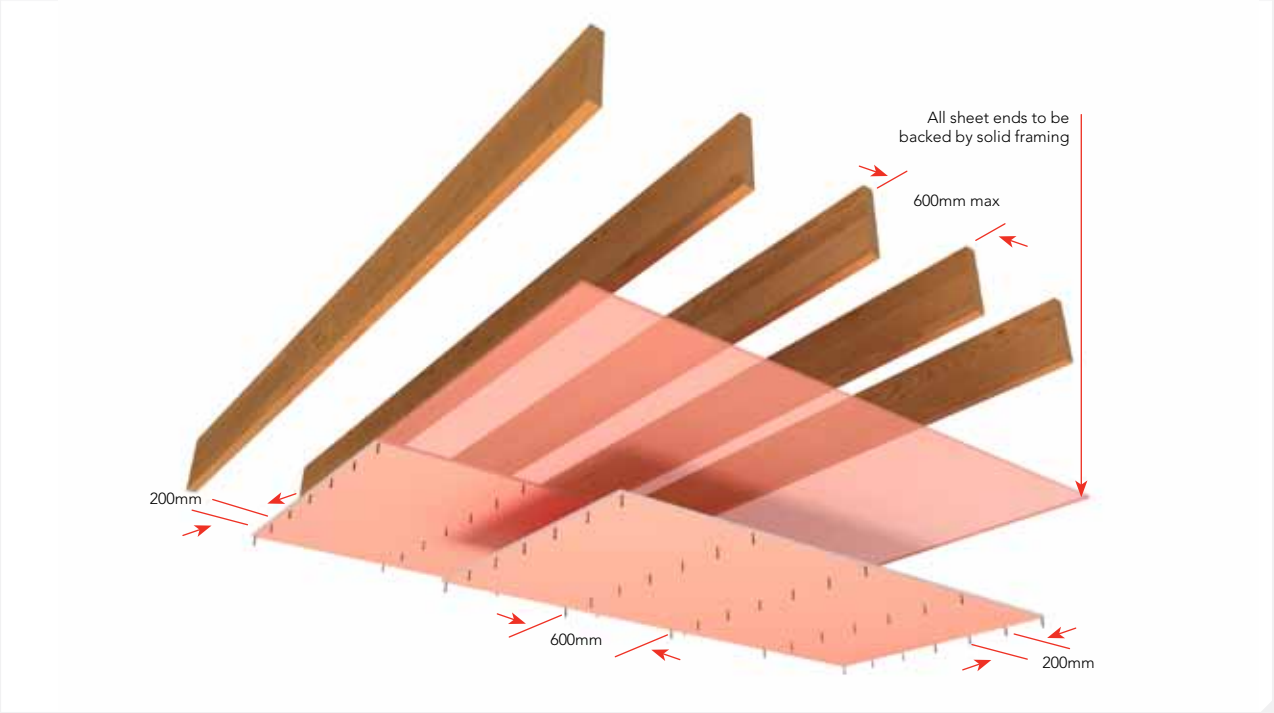
The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED CEILING SYSTEMS

CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUC 60	LB/NLB	(60)/60/60	1 layer 16mm GIB Fyreline®+ 1 layer 13mm GIB Fyreline®

FRAMING

Timber or steel roof or floor/ceiling framing designed to meet structural criteria for strength and serviceability under dead and live loads.

The separation distance between the ceiling linings and any flooring or roofing material shall be 90mm minimum. Linings shall be supported by framing members with a minimum width of 35mm spaced at 600mm centres maximum.

In respect of the FRR for this particular system, nogs are required only at the perimeter of the fire rated ceiling.

If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

CEILING LINING

1 layer of 16mm GIB Fyreline® (Inner layer) plus 1 layer of 13mm GIB Fyreline® fixed at right angles to the underside of the framing members.

The joints of the second layer are offset 600mm from those in the first layer.

Sheets shall be touch fitted.

All sheet end butt joints must occur over solid framing.

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer (16mm GIB Fyreline®)	41mm x 6g GIB® Grabber® High Thread Drywall Screws	25mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer(13mm GIB Fyreline®)	51mm x 7g screws as above	41mm x 6g screws as above

Fastener Centres (both layers)

200mm centres around the ceiling perimeter, along each intermediate framing member and also at 200mm centres where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

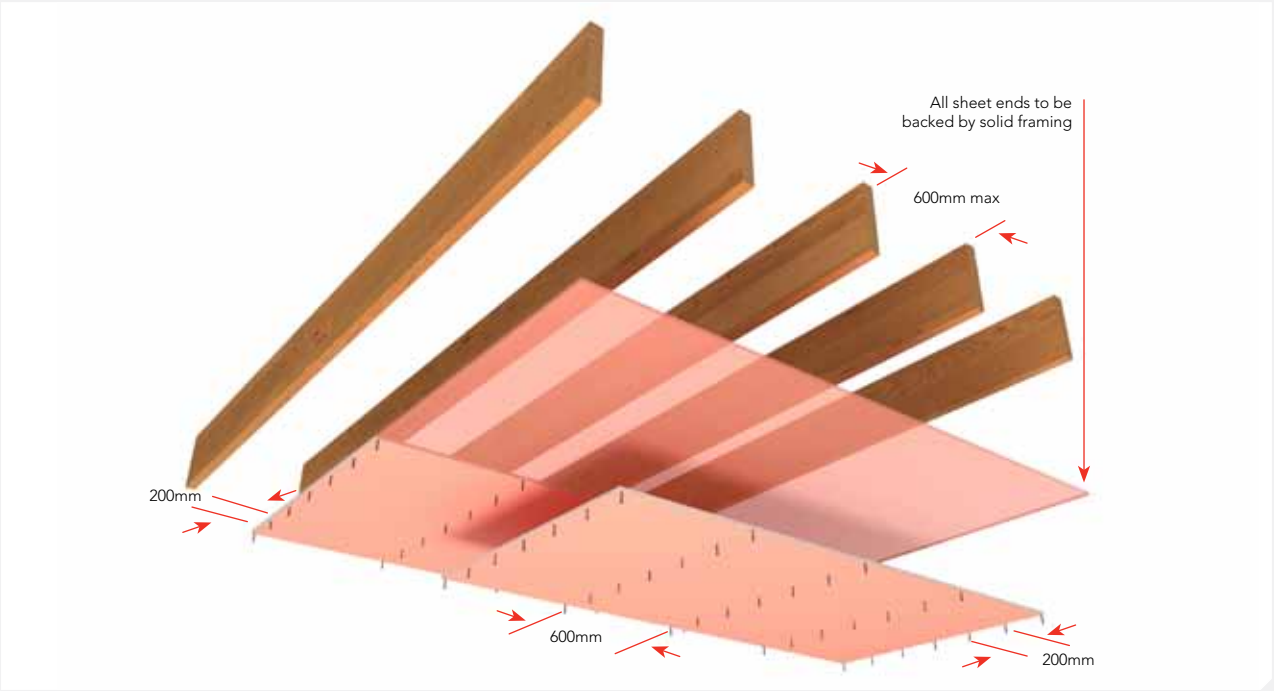
The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED CEILING SYSTEMS

CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUC 90	LB/NLB	(90)/90/90	2 layers 19mm GIB Fyreline®
GBUC 120*		(120)/120/120	

FRAMING

Timber or steel roof or floor/ceiling framing designed to meet structural criteria for strength and serviceability under dead and live loads.

The separation distance between the ceiling linings and any flooring or roofing material shall be 90mm minimum.

Linings shall be supported by framing members with a minimum width of 35mm spaced at 600mm centres maximum.

Nogs are required only at the perimeter of the fire rated ceiling.

If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

CEILING LINING

2 layers of 19mm GIB Fyreline® shall be fixed at right angles to the underside of the framing members.

The joints of the second layer are offset 600mm from those in the first layer.

Sheets shall be touch fitted.

All sheet end butt joints must occur over solid framing.

**Note: A 120 minute FRR (GBUC 120) is achieved with the addition of minimum 50 mm thick mineral or ceramic fibre insulation with a minimum density of 80kg/m³ in the floor cavity.*

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer	41mm x 6g GIB® Grabber® High Thread Drywall Screws	32mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer	51mm x 7g screws as above	51mm x 7g screws as above

Fastener Centres (both layers)

200mm centres around the ceiling perimeter, along each intermediate framing member and also at 200mm centres where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

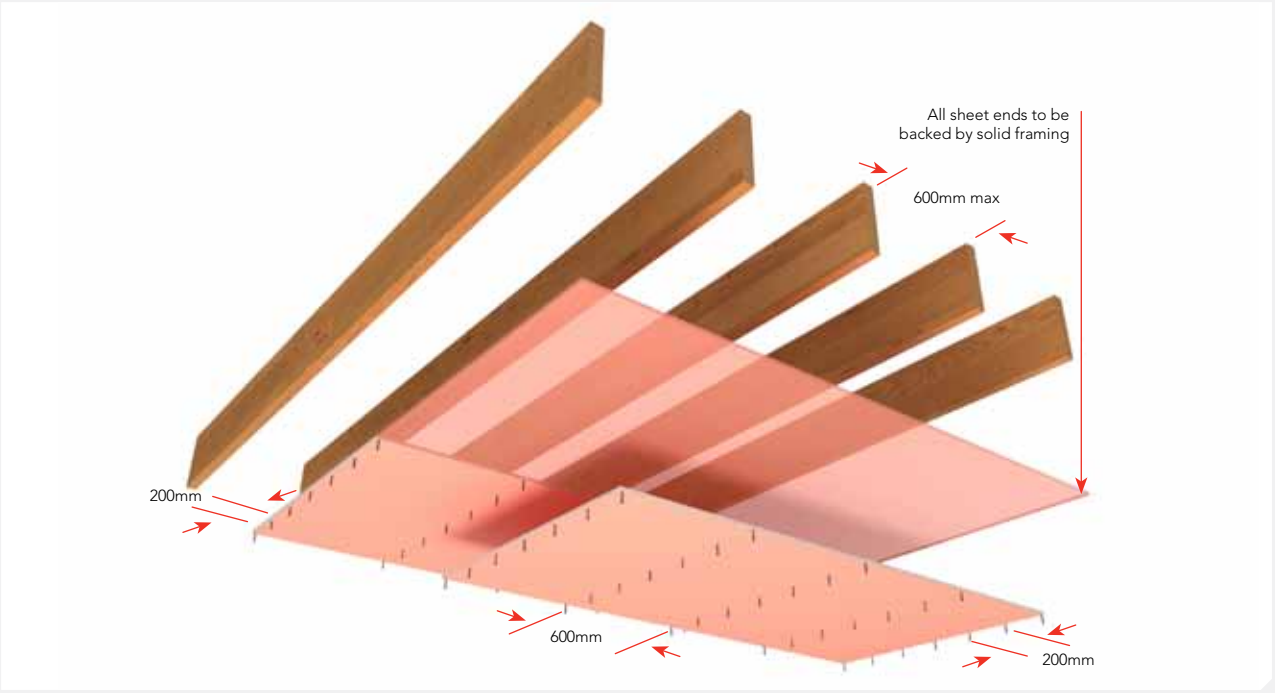
The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



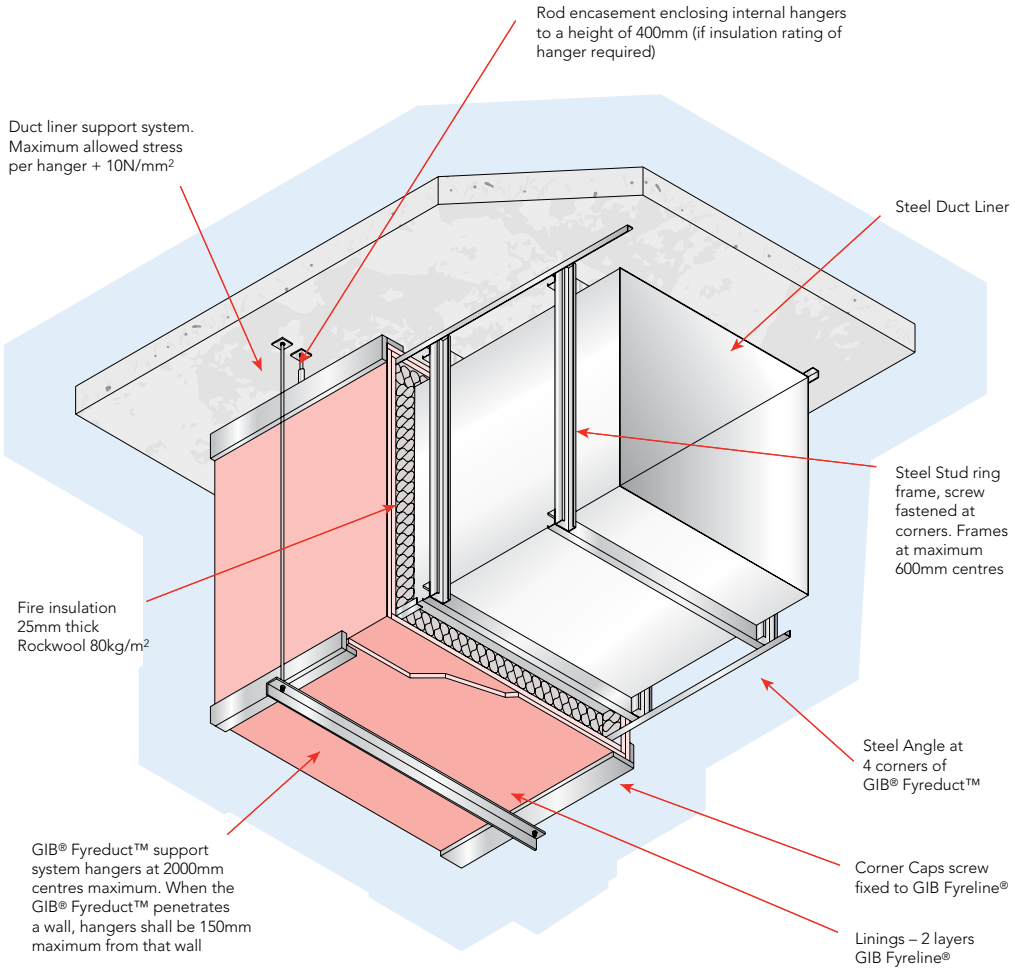
FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® FYREDUCT™ 900

SPECIFICATION NUMBER	LOADBEARING CAPABILITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBFD 900	NLB	-/120/120	2 layers 19mm GIB Fyreline®
		-/90/90	2 layers 16mm GIB Fyreline®
		-/60/60	2 layers 13mm GIB Fyreline®
		-/30/30	2 layers 10mm GIB Fyreline®

DUCT COMPONENTS

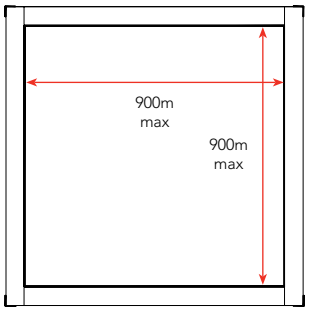
- GIB Fyreline®
- 64 x 34 x 0.55mm C-section galvanised steel stud
- 32 x 32 x 0.55mm galvanised steel angle
- GIB® Grabber® Drywall Self Tapping Screws
- 38mm x 10g GIB® Grabber® Laminator Screws
- Rockwool 80kg/m2
- Steel duct liner
- Duct support system



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

FIRE RATED RISERS, SHAFTS AND DUCTS

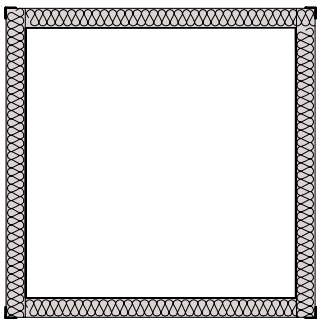
GIB® FYREDUCT™ 900



BUILDING THE DUCT

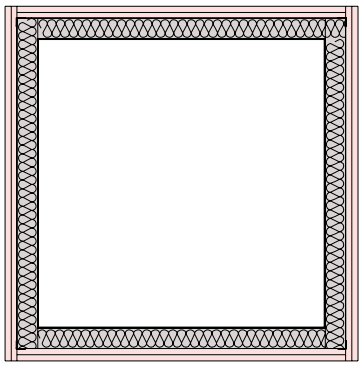
Step 1

Cut C-section studs and screw together at the corners to form ring frames around the steel duct liner.
Fit angles to all corners of the steel frames.
Space frames at 900mm centres maximum.



Step 2

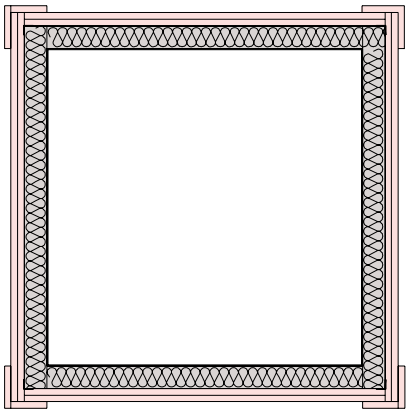
Insert the Rockwool insulation in between the ring frames around all four sides of the duct.



Step 3

Sheets shall be touch fitted.
Offset joints between layers by 600mm.
All sheet joints must be formed over framing.
INNER LAYER: GIB® Grabber® Drywall Self Tapping Screws at 300mm centres to sheet perimeter and intermediate studs. The screw length must ensure 12mm penetration into the steel frame.

OUTER LAYER: GIB® Grabber® Drywall Self Tapping Screws at 300mm centres to sheet perimeter and intermediate studs. The screw length must ensure 12mm penetration into the steel frame.



Step 4

Fit GIB Fyreline® caps to all corners.

Fix corner caps with 38mmx10g GIB® Grabber® Laminator Screws.

INNER LAYER: Unstopped.

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

FIRE RATED RISERS, SHAFTS AND DUCTS

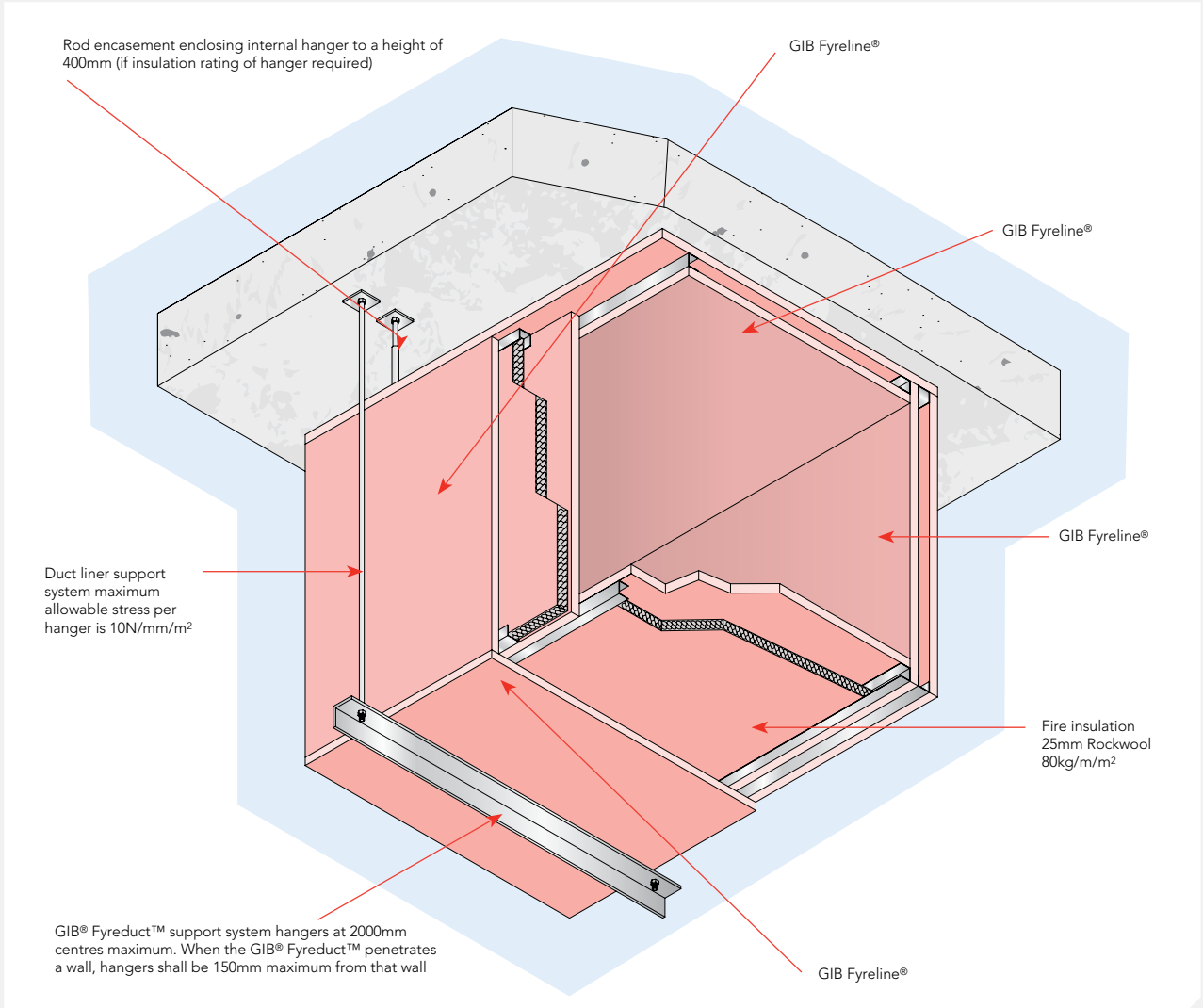
GIB® FYREDUCT™ 600

SPECIFICATION NUMBER	LOADBEARING CAPABILITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBFD 600	NLB	-/120/120	2 layers 19mm GIB Fyreline®
		-/90/90	2 layers 16mm GIB Fyreline®
		-/60/60	2 layers 13mm GIB Fyreline®
		-/30/30	2 layers 10mm GIB Fyreline®

DUCT COMPONENTS

- GIB Fyreline®
- Minimum 30 x 30 x 0.55mm galvanised steel channel
- 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws
- 38mm x 10g GIB® Grabber® Laminator Screws
- Rockwool 80kg/m2
- Duct support system

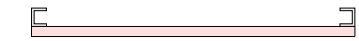
Note: All sheet end butt joints are to be back blocked with a 200mm wide strip of GIB Fyreline®.

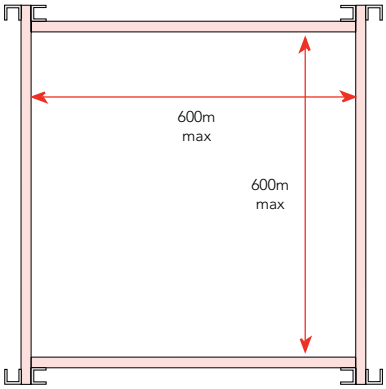


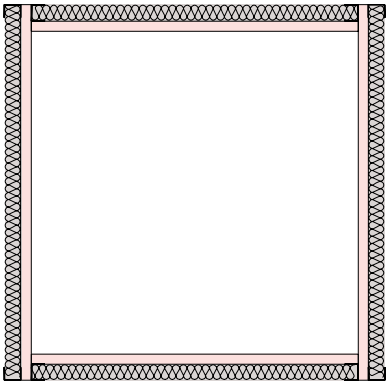
In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

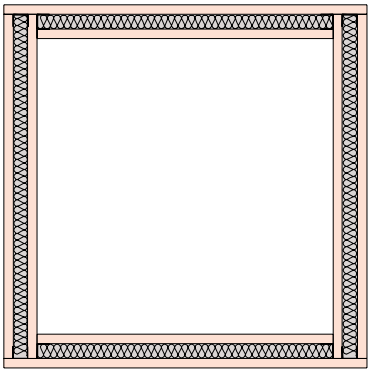
FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® FYREDUCT™ 600









BUILDING THE DUCT

Step 1

Cut 600mm wide strips of GIB Fyreline® to form the bottom and top of the duct.
Attach 63 x 34 x 0.55mm galvanised steel channels to sheet edges with 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws at 300mm centres.
Cut strips of GIB Fyreline® to form the sides of the duct.
Attach 63x34x0.55mm galvanised steel channels to sheet edges with 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws at 300mm centres.

Step 2

Fabricate the duct by attaching 30x30x0.55mm galvanised steel channels at duct corners with 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws at 300mm centres.

Step 3

Insert the Rockwool insulation around all four sides of the duct.
Cut strips of GIB Fyreline® to form the outer layer of the duct.

Step 4

Sheets shall be touch fitted.

Offset joints between layers by 600mm.

All sheet joints must be back blocked with 200mm wide strips of GIB Fyreline® attached to outer lining with 38mmx10g GIB® Grabber® Laminator Screws.

OUTER LAYER: 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws at 300mm centres to sheet edges.

Step 5

INNER LAYER: Unstopped.
OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® VENTSHAFT

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SYSTEM WEIGHT APPROX
GVS60	NLB	-/60/60	3 x 16mm GIB Fyreline®	45kg/m²

GIB® Ventshaft is constructed from the landing side of the shaft.

FRAMING

Primary Horizontal Angles

25mm x 50mm (0.75BMT) metal angles fixed to floor slab and slab soffit on all sides. Ensure a good fit of the angle at the corners. Fix with steel masonry anchors at 400mm centres. Mark the position of the anchors on the slab for future layout reference.

Primary Vertical Angles

25mm x 50mm (0.75BMT) metal angles to all corners full height in one continuous straight length ensuring good fit slab to slab. Fix with 16mm panhead self tapping screws.

Secondary Angles

After the first layer of 16mm GIB Fyreline® has been fixed, fix 25 x 50mm (0.75BMT) metal angles to the base and head positions on all sides ensuring a good fit at all corners. Fix with metal anchors at 400mm centres. Stagger anchors 200mm from primary anchors.

WALL HEIGHT

The wall height is limited to 3000mm.

LINING AND FASTENING

First Layer

Fix the first layer of 16mm GIB Fyreline® to the metal angles at 600mm centres horizontally commencing from one end or corner progressively attaching around the shaft using 32mm x 6g GIB® Grabber® Screws. Fix the 16mm GIB Fyreline® to the metal angles at the corners and walls at 400mm centres commencing 200mm up from the base angle using 32mm x 6g GIB® Grabber® Screws. Plasterboard should be fixed hard to floor slab and slab soffit.

Second Layer Lamination

Cut sheet to provide a good fit slab to slab and/or intersecting walls. Mark up face of the 16mm GIB Fyreline® sheet at 400mm centres vertically. Note the recesses in the previous layer are supported by an additional double line of laminating screws. Mark up the face horizontally at 400mm centres commencing 200mm up from the base.

Stagger/overlap sheets by no less than 300mm. Fix second layer of 16mm GIB Fyreline® to the metal angles at 600mm centres commencing from one end or corner using 41mm GIB® Grabber® Screws. Laminate to the first sheet using 38mm x 10g GIB® Grabber® Laminator Screws.

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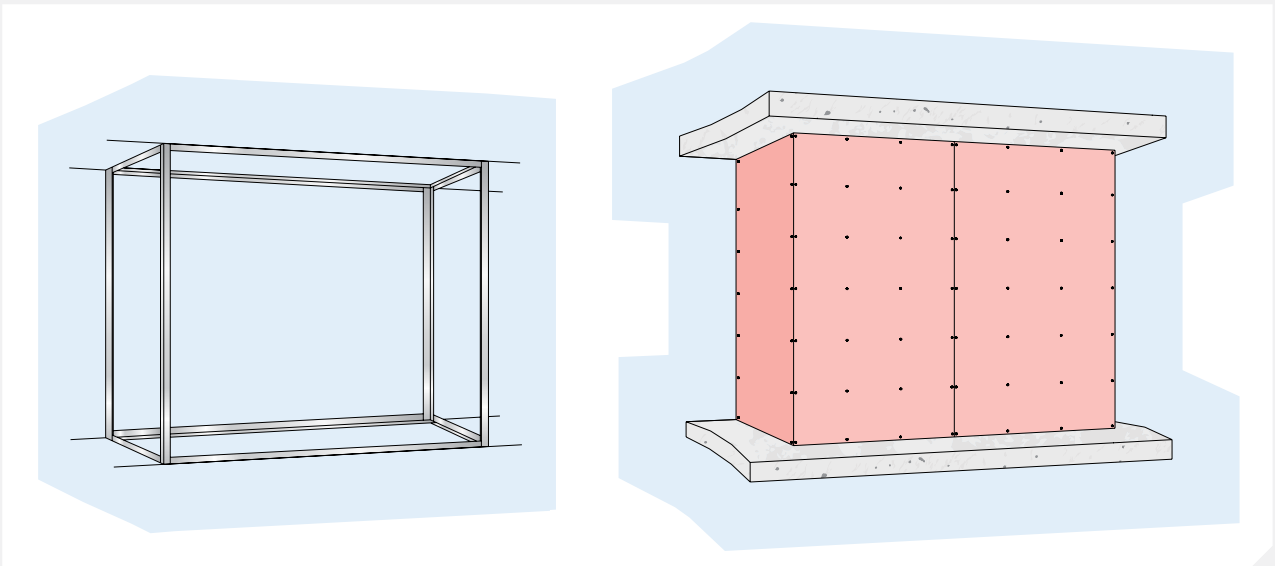


FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® VENTSHAFT

THIRD LAYER LAMINATION

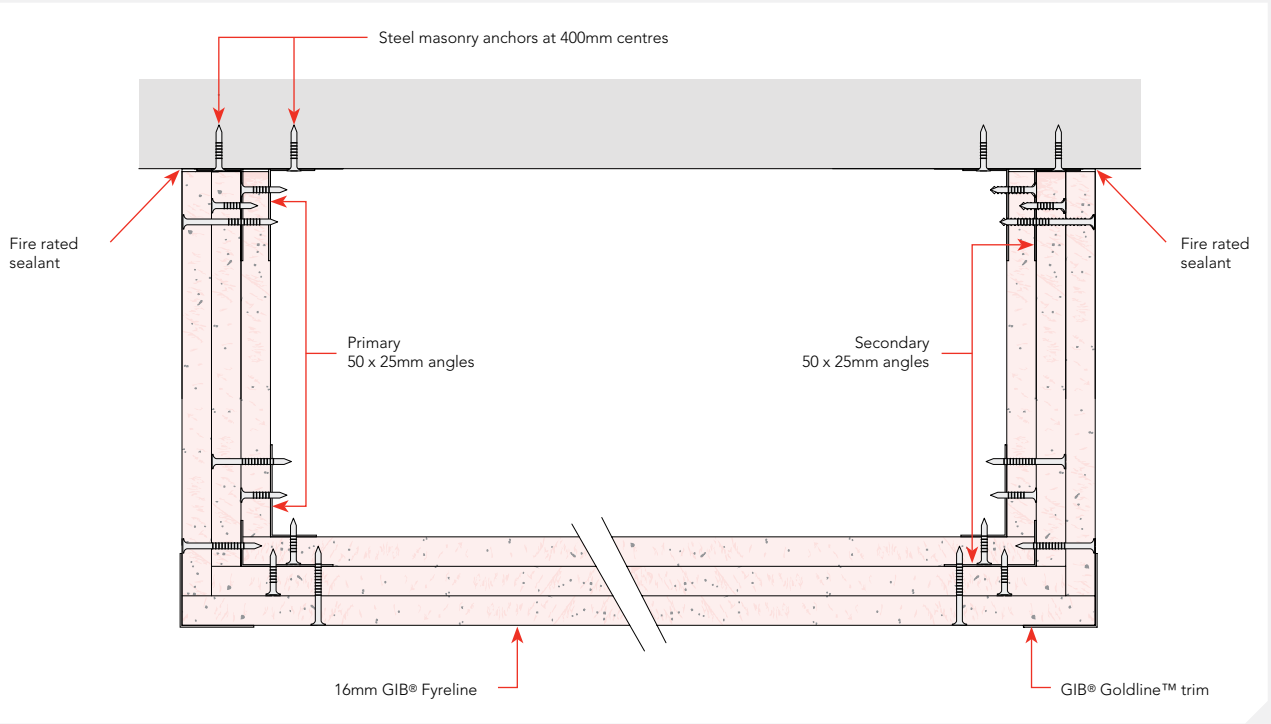
Cut sheet to provide a 10-13mm gap at the base and head where intersecting walls/structures of dissimilar materials occur. Mark up the face of the 16mm GIB Fyreline® at 400mm centres vertically commencing from the recess to provide an even screw stagger. Mark up the face horizontally at 400mm centres commencing from base. Note the recess in the previous layer is supported by an additional double line of laminating screws. Stagger/overlap sheets by no less than 300mm. Screw fix at the perimeter to the metal angles using 63mm GIB® Grabber® Screws ensuring 10-13mm gap is provide for fire rated sealant. Laminate to second layer as first layer sheets using 38mm x 10g GIB® Grabber® Laminator Screws. Apply fire rated sealant to the perimeter. Ensure boards overlap at corners, fix external GIB® Goldline™ trims.

JOINTING

INNER LAYERS: Unstopped.

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED RISERS, SHAFTS AND DUCTS

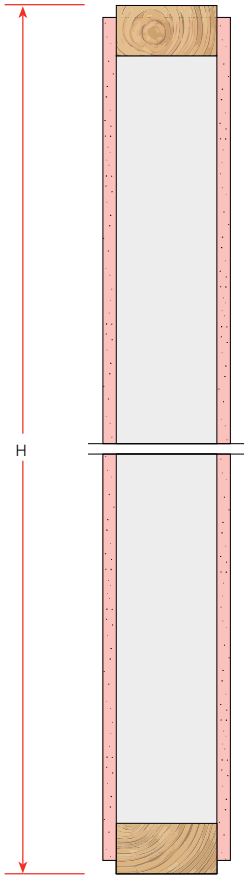
CHASE WALLS

Services may be reticulated within the cavity space between double studded chase walls. Fire protection of fire compartments either side of the chase wall will be achieved when using timber or steel framed non-loadbearing vertical fire separations.

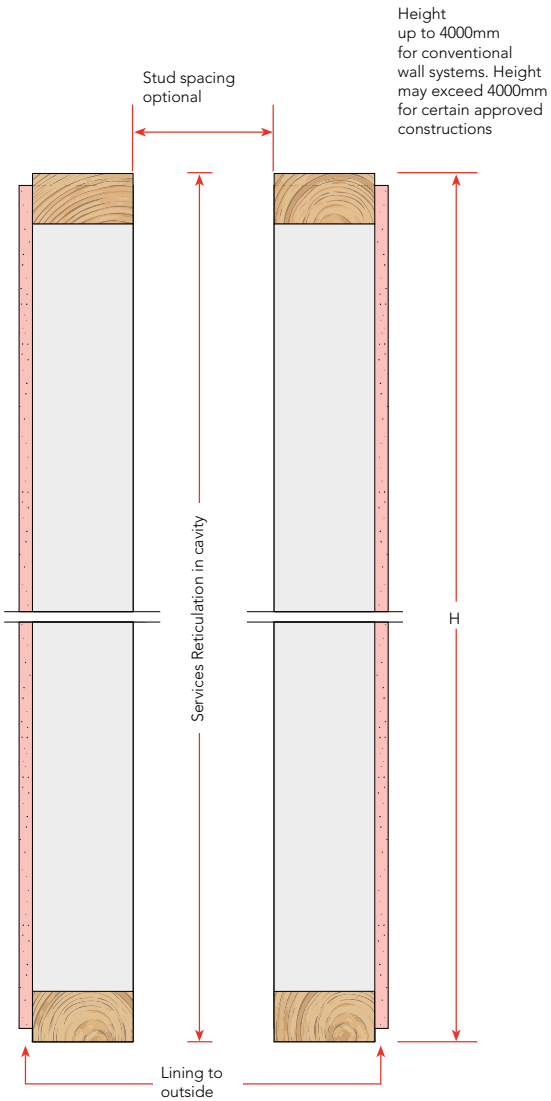
The following conditions apply:

- Any service penetrations must be made in the chase wall as described in this publication, refer pages 73-78
- Non-loadbearing wall constructions only may be used
- Approved variations are:
- Chase Wall systems may be stiffened using cross bracing between opposite framing members comprising either stud sections fastened at intervals to opposing studs or rectangular pieces of GIB® fastened by perimeter fixings to opposing studs
- Stud spacing between walls in the double stud construction is optional

Example of Conventional single stud wall construction for two-way FRR. Framing may be timber or steel.



Example of Chase Wall Construction



FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® SHAFTWALL

Specification number	FRR	Fire side	Landing side lining (Note: Shaft side lining is 2/13 mm GIB Fyreline® in all cases.)	Sound Transmission Class (STC)*			
				64 mm stud		102 mm stud	
				No fill	Fill	No fill	Fill**
GBSH 30	-/30/30	Either	1/13 mm GIB Fyreline®	38	44	41	46
GBSH 60a	-/60/60	Shaft					
GBSH 60b	-/60/60	Either	2/13 mm GIB Fyreline®	42	48	45	49
GBSH 90a	-/90/90	Shaft					
GBSH 90b	-/90/90	Either	Inner layer: 16 mm GIB Fyreline® Outer layer: 13 mm GIB Fyreline®	43	49	45	50
GBSH 120a	-/120/120	Shaft					
GBSH 120b	-/120/120	Either	2/19 mm GIB Fyreline®	45	45	47	50

* To achieve STC ratings an acoustic sealant must be used around the perimeter of the landing linings (between sheets for double layered systems).
** Fill is a minimum 50mm thick glass fibre insulation

GIB® Shaftwall is constructed from the Landing Side of the shaft. All systems are non-load bearing.

FRAMING & WALL HEIGHT

GIB® Shaftwall Framing comprising Rondo® CH stud, Rondo® E stud and Rondo® J-Track.

The Rondo® J-Track is installed at the top and bottom of the wall. Installation starts at one end of the wall using a Rondo® E stud. Rondo® CH studs are spaced at 600mm centres maximum and friction fitted into the top and bottom tracks, there is to be no mechanical fixing. Installation is completed at the other end using a Rondo® J-Track. A 15mm expansion gap is left between the studs and the track at the top of the frame.

Stud depth	Maximum allowable wall height
64mm	3600mm
102mm	4258mm (with lift car)
102mm	4350mm (without lift car)

LINING

2 layers of 13mm GIB Fyreline® on the shaft side and the appropriate number of layers and type of GIB® Plasterboard as detailed in the above table on the landing side.

On the shaft side a single sheet of 13mm GIB Fyreline® is cut lengthwise and placed as a 26mm thick 600mm wide plank vertically in the Rondo® CH stud as shown. Position the board 'taper to a cut-end' to facilitate easy installation in the Rondo® CH stud.

The board is fixed hard to floor and a 15mm gap is left at the top of the frame which is filled with an appropriate fire rated mastic sealant of equivalent fire rating (consult the sealant supplier or manufacturer) prior to lining the floor side of the wall.

Floor side linings are fixed vertically, using full height sheets where possible. Where sheet end butt joints are unavoidable they shall be formed over nogs. All sheet joints must be formed over framing. Linings are fixed hard to the floor. Any gaps that are left at the top of the linings are to be filled with an appropriate fire rated mastic sealant of equivalent fire rating (consult the sealant supplier or manufacturer).

FASTENING THE LINING

Shaft Side

Linings are friction fitted into the Rondo® CH or Rondo® E stud. At the end of the wall, linings are fixed to the Rondo® J track using 40mm x 6g GIB® Grabber® Self Tapping Drywall Screws at 300mm centres.

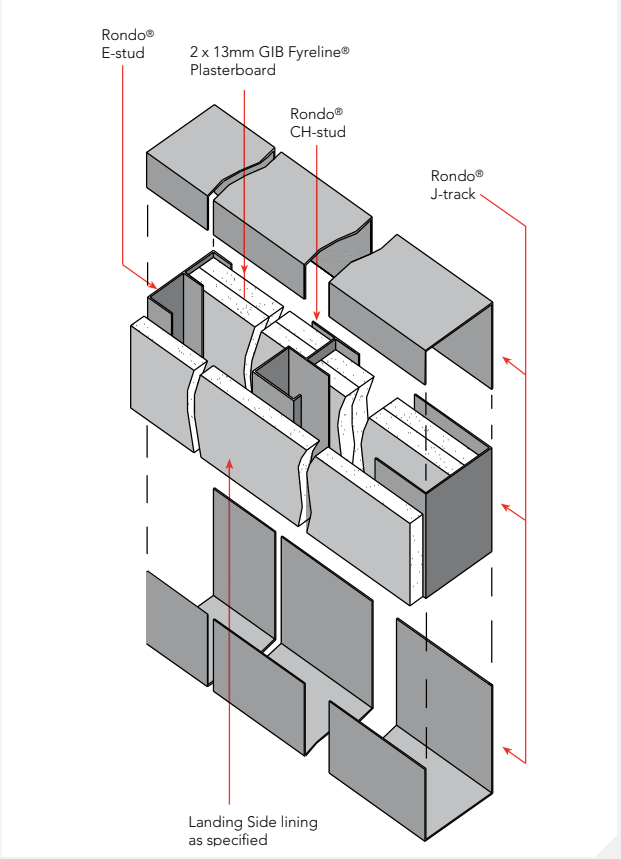
Landing Side

Fix to each stud with 6g GIB® Grabber® Self Tapping Drywall Screws at 300mm centres with the following lengths:

- SINGLE or INNER LAYER (13mm or 16mm GIB® Plasterboard): 32mm
- OUTER LAYER (13mm or 16mm GIB® Plasterboard): 41mm
- 19mm GIB Fyreline®: INNER LAYER: 32mm; OUTER LAYER: 51mm x 7g screws as above

Note: Do not fix to the top and bottom J tracks.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® SHAFTWALL

JOINTING

Shaft Side: Unstopped

Floor Side

INNER LAYER: Unstopped

OUTER LAYER: all screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the "GIB® Site Guide".

INSTALLATION

Top and Bottom Tracks

Rondo® J-Tracks are cut to length and mechanically fixed at each end, and at a maximum of 600mm centres to the floor and upper beam or structural support. Place the long leg of the Rondo® J-Track toward the shaft. For steel frame construction, install Rondo® J-Track prior to any fireproofing spray application.

End Studs

Rondo® E-Stud is cut to full height and mechanically fixed at a maximum of 600mm centres to columns or support structures prior to any fireproofing spray application. A Rondo® J-Track is cut and fixed at the opposite end of the wall in the same manner placing the long leg towards the shaft.

GIB® Plasterboard Linings

Using full height sheets where possible, cut tapered edged 13mm GIB Fyreline® lengthwise in half leaving two 600mm wide panels. In all cases the panels should be cut to length to leave a 15mm clearance between the top of the panel and the Rondo® J-Track. Place the lining back to back with a taper at each side of the 600mm width and starting at the Rondo® E-Stud the two layers are friction fitted into the Rondo® E-Stud on side nearest the shaft.

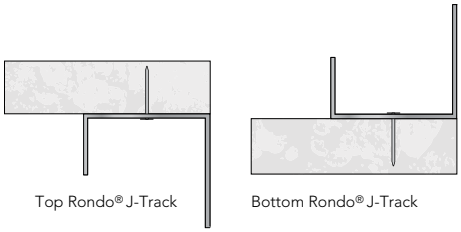
Studs

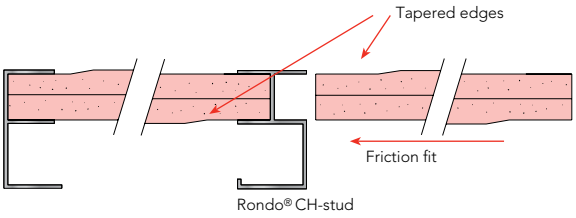
Rondo® CH-Studs are cut 15mm short of the full height between the top and bottom Rondo® J-Tracks and placed vertically into the Rondo® J-Tracks with the H side of the stud towards the Shaft. The stud is then located so that the GIB® lining slips into the H of the Rondo® CH-Stud. Cutting further 600mm wide panels and locating them into the H section this procedure is repeated until the final gap is 600mm or less.

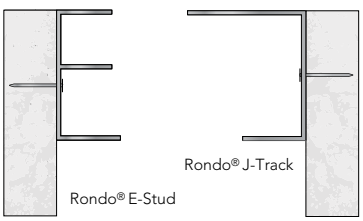
End Lining Panel

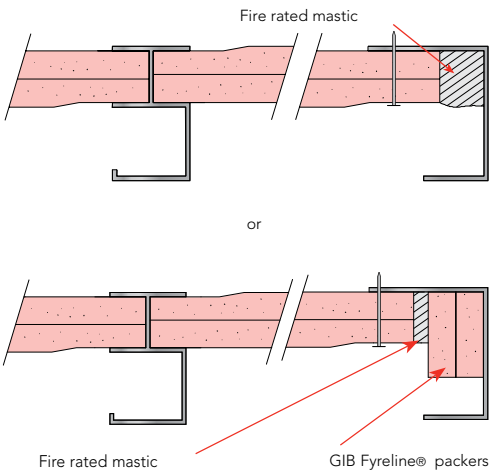
The final lining panel is cut to such a size that it can be angled into the last stud and located into the Rondo® J-Stud already fixed to the structure. This is screw fixed to the long leg of the Rondo® J-Stud using 41mm x 6g GIB® Grabber® Self Tapping Drywall Screws at 300mm centres. To allow entry of the final lining panel, the bottom Rondo® J-Track floor side upstand will require cutting at the last E-Stud and bent down until the liner is in place and then returned to the vertical. Before lining the floor side of the wall the 15mm gap between board and top Rondo® J-Track and the gap between board and Rondo® J-Stud should be completely filled with an appropriate fire rated mastic sealant of equivalent fire rating (consult the sealant supplier or manufacturer). Alternatively the gap can be filled with a GIB Fyreline® packer as shown in the bottom detail below.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.









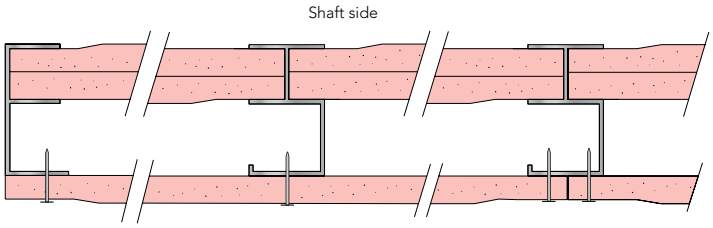
FIRE RATED RISERS, SHAFTS AND DUCTS

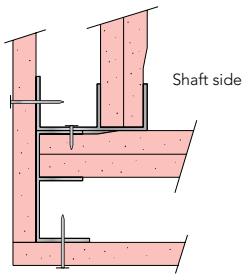
GIB® SHAFTWALL

LANDING SIDE LINING

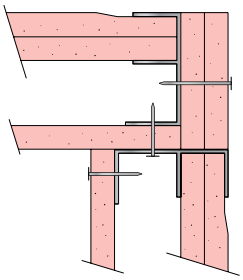
Using full height sheets where possible, tapered edge GIB® Plasterboard is fixed vertically to each stud with GIB® Grabber® Self Tapping Drywall Screws at 300mm centres. In all cases the sheets are to be cut to length. All sheets should be bearing on to the floor and not fixed to either the top or bottom Rondo® J-Tracks. Systems with more than one layer of lining must have staggered joints at alternate studs. Any gaps are to be filled with an appropriate fire rated mastic sealant of equivalent fire rating (consult the sealant supplier or manufacturer).

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

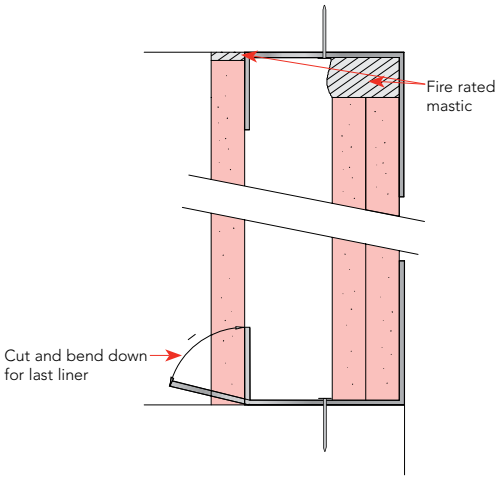




Internal Corner



External Corner



General Head Detail and Floor Detail for Last Shaftwall Bay

FIRE RATED SYSTEMS

FIRE RATED PROTECTION OF STEEL COLUMNS AND BEAMS – TIMBER STRAPPING

SCOPE OF USE

The options offered in this section provide quick reference solutions for the fire protection of structural steel columns and beams.

For engineered solutions, tailored to meet specific column and beam sizes and loading conditions, specific fire engineering design is required.

For further assistance contact the GIB® Helpline 0800 100 442.

FRR (STABILITY RATING IN MINUTES*)	LINING REQUIREMENT COLUMNS AND BEAMS
15	1 x 13mm GIB® Standard
30	1 x 16mm GIB Fyreline®, or 2 x 10mm GIB Fyreline®
60	2 x 13mm GIB Fyreline®
90	2 x 16mm GIB Fyreline®
120	2 x 19mm GIB Fyreline®

* The FRR comprises values for structural adequacy/integrity/ and insulation. For loadbearing structural steel members (primary elements) the structural adequacy rating is usually the only requirement and prevents collapse during a fire.

If the structural member is an integral part of a fire rated wall or floor/ceiling system, then integrity and insulation values may apply. In this case the systems will achieve equal values, e.g. 30/30/30.

STRAPPING

Strap column or beams with a nominal 50mm x 50mm timber cradle frame ensuring that the linings are supported by framing members spaced at 600mm centres maximum.

LINING

Install the linings in accordance with the required FRR as specified above. First and second layer joints must be formed over framing. In double layer systems, the joints between the first and second layer must be offset by 300mm minimum.

FASTENING THE LINING

Fasteners

GIB® Grabber® High Thread Drywall Screws.

The fastener length must ensure a 20mm minimum penetration into the timber framing.

Fastener Centres

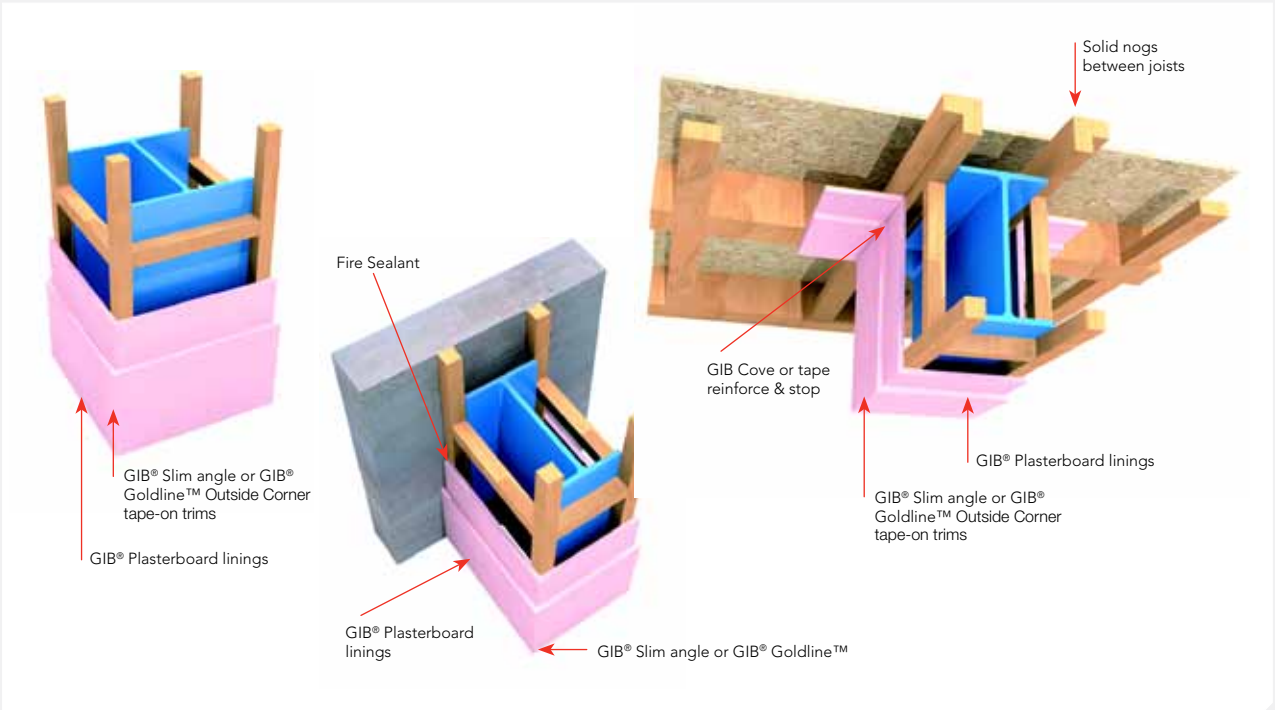
Each layer must be fixed at 300mm centres maximum to framing spaced at 600mm centres maximum.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide"

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED SYSTEMS

FIRE RATED PROTECTION OF STEEL COLUMNS AND BEAMS – STEEL CLIP AND CHANNEL

SCOPE OF USE

The options offered in this section provide quick reference solutions for the fire protection of structural steel columns and beams.

For engineered solutions, tailored to meet specific column and beam sizes and loading conditions, specific fire engineering design is required.

For further assistance contact the GIB® Helpline 0800 100 442.

FRR (STABILITY RATING IN MINUTES*)	LINING REQUIREMENT COLUMNS AND BEAMS
15	1 x 13mm GIB® Standard
30	1 x 16mm GIB Fyreline®, or 2 x 10mm GIB Fyreline®
60	2 x 13mm GIB Fyreline®
90	2 x 16mm GIB Fyreline®
120	2 x 19mm GIB Fyreline®

* The FRR comprises values for structural adequacy/integrity/ and insulation. For loadbearing structural steel members (primary elements) the structural adequacy rating is usually the only requirement and prevents collapse during a fire.

If the structural member is an integral part of a fire rated wall or floor/ceiling system, then integrity and insulation values may apply. In this case the systems will achieve equal values, e.g. 30/30/30.

CLIP AND CHANNEL

Attach Rondo® Clip (part No. BMCL) to column or beam at 600mm centres maximum. Insert Rondo® 140 Perimeter Channel (part No.140) into clips. Ensure that the linings are supported by framing members at 600mm centres maximum.

For beams exposed on three sides. Rondo® Perimeter Angle (part No. NZ 18) is to be secured to provide fixing for the linings.

The Rondo® Angle must be fixed to the underside of the floor at 600mm centres maximum. The Rondo® Angles are to be fixed at a maximum of 100mm centres in from each end.

LINING

Install the linings in accordance with the required FRR as specified above.

First and second layer joints must be formed over framing.

In double layer systems, the joints between the first and second layer must be offset by 300mm minimum.

FASTENING THE LINING

Fasteners

Use GIB® Grabber® Drywall Screws. The screw length must ensure a 12mm minimum penetration into the steel framing.

Fastener Centres

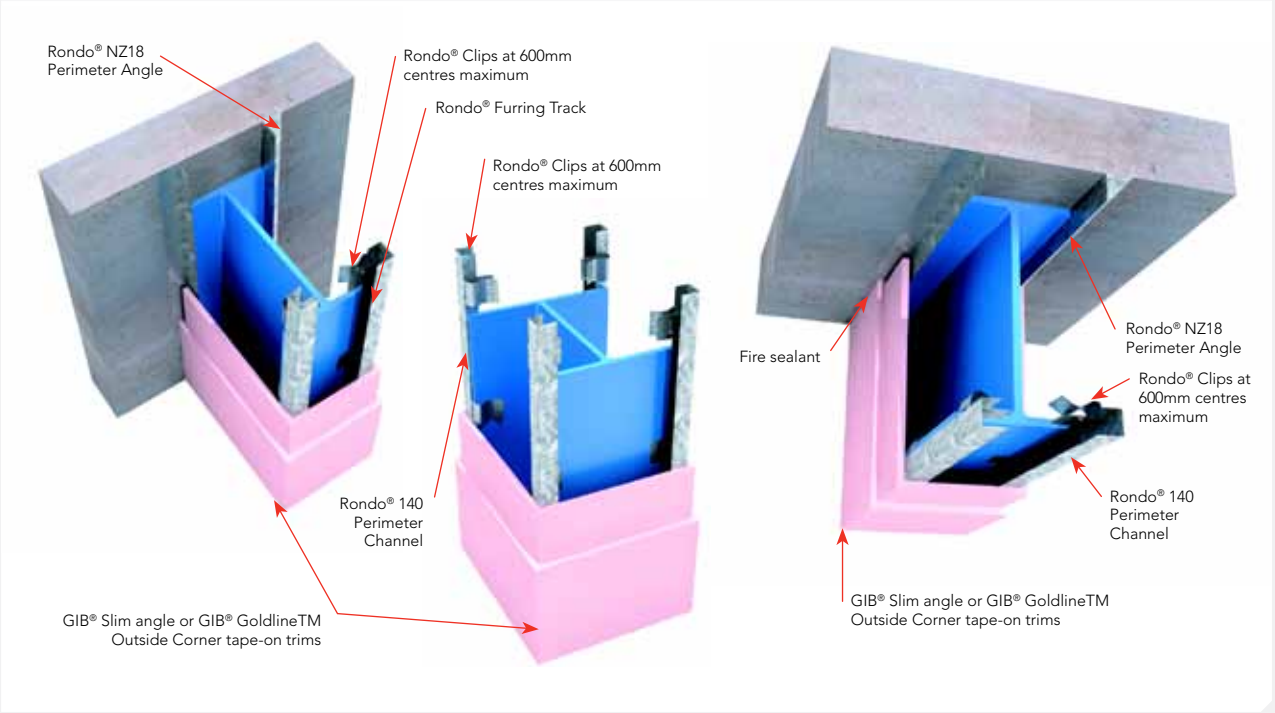
Each layer must be fixed at 300mm centres maximum to framing spaced at 600mm centres maximum.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

CONTROL JOINTS

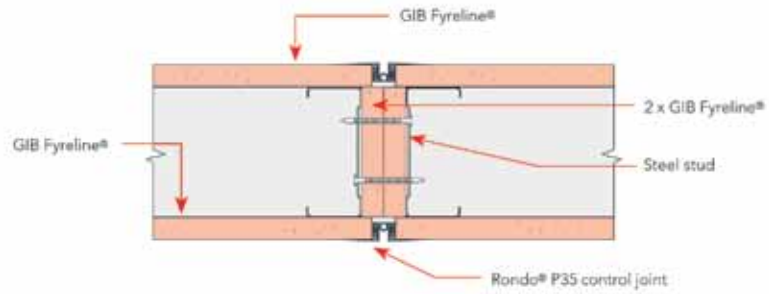
The control joints illustrated here are designed to accommodate small building movements likely to result from the relative movement of different building materials exposed to variations in temperature and humidity. Control joints are intended to eliminate random cracking of gypsum plasterboard joints and must be used in conjunction with our recommendations for installation, fixing, jointing and finishing GIB® Plasterboard.

The control joints illustrated here are not designed to accommodate structural movement such as that required for seismic separation. These building movements joints must be specifically designed.

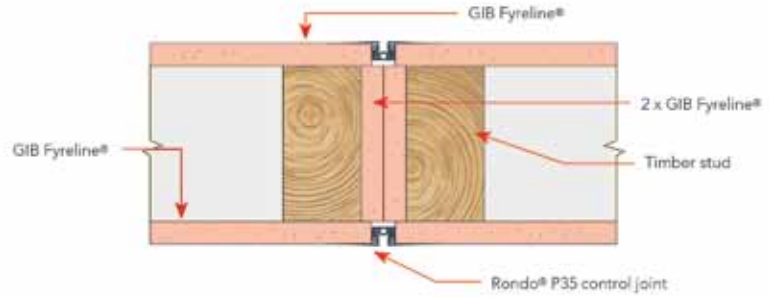
Details below show the principle of creating control joints in GIB® Fire Rated Systems. For assistance with the design of control joints in specific GIB® Systems call GIB® Helpline 0800 100 442.

JOINT POSITION	MAXIMUM CENTRES
Walls	9 metres
Ceilings	9 metres (without perimeter relief) 12 metres (with perimeter relief)

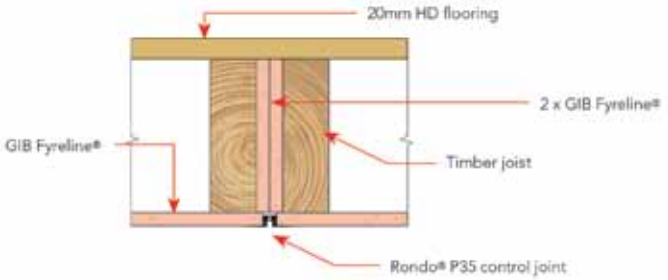
Fire Rated Walls – Steel Frame



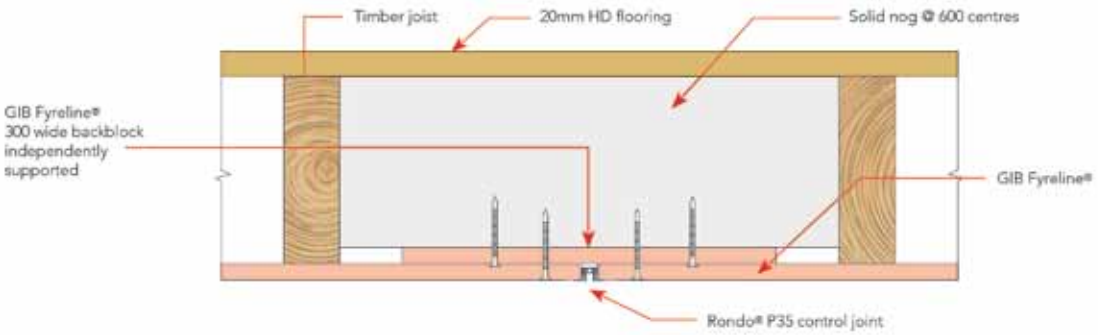
Fire Rated Walls – Timber Frame



Fire Rated Floor/Ceiling



Fire Rated Floor/Ceiling



JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

WALL AND CORNER JUNCTIONS

WALLS

The following junction details preserve the Fire Resistance Rating of any GIB® Fire Rated System to which they are applied. These junction details may also be used in smoke separations for compliance with the New Zealand Building Code Acceptable Solution C3/AS1. Provided any gaps greater than 0.5mm widths are sealed.

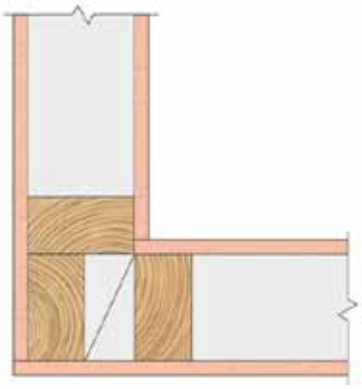
CORNER JUNCTIONS

Internal and external corners may be taped and stopped or reinforced with GIB® Goldline™ tape on trims.

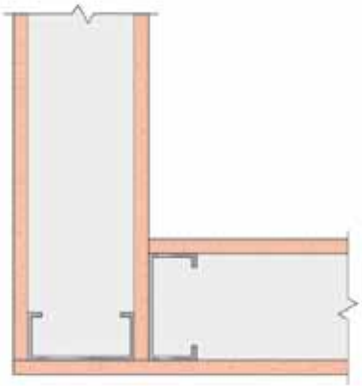
Alternatively, internal and external corners may be reinforced with GIB® Slim Angle.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

GBT or GBTL Systems



GBS or GBSL Systems



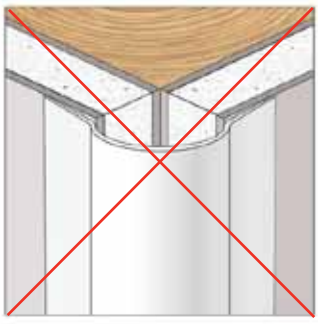
GBS Systems

Nog from ex 64 x 30 x 0.55 steel channel. Stagger nogs by at least 400 mm on opposite sides of the wall

Nog detail if sheet end joints are unavoidable

GIB® GoldlineTM Outside Corner Requires less jointing material, gives a truer right angle. No nails required, thus eliminating nail "pops" and costly maintenance call backs.

Bullnose external corners are not permitted in fire rated systems



GIB® GoldlineTM Internal Coved Corners

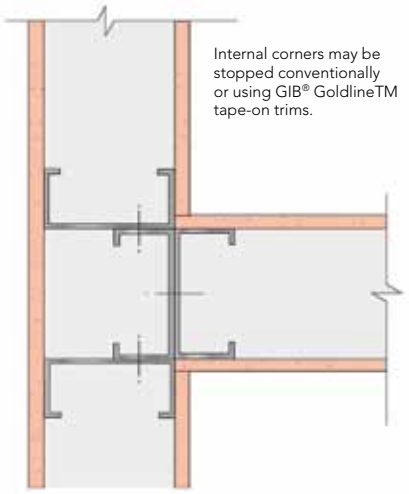
GIB® GoldlineTM Inside Corner Gives a perfect "square set" angle with true/straight inner angle. The steel angle provides a guide for finishing tools thus ensuring perfect appearance. The steel and paper tape strengthen the corner and minimise hairline cracks.

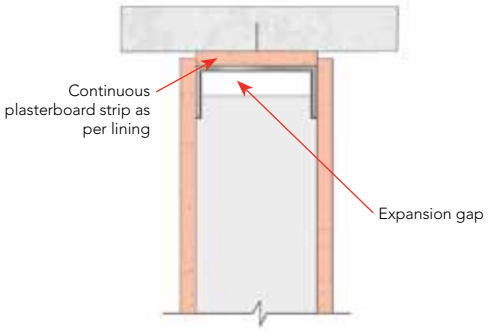
JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

'T' JUNCTIONS

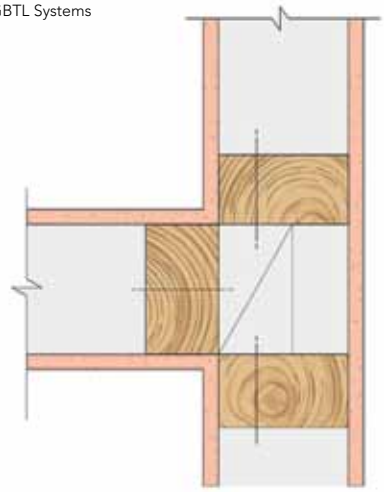
'T' JUNCTIONS FLOOR – WALL JUNCTIONS

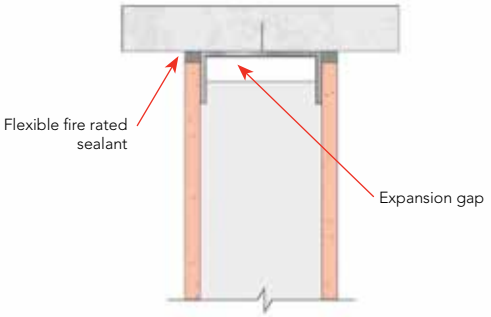
GBS/GBSL Systems



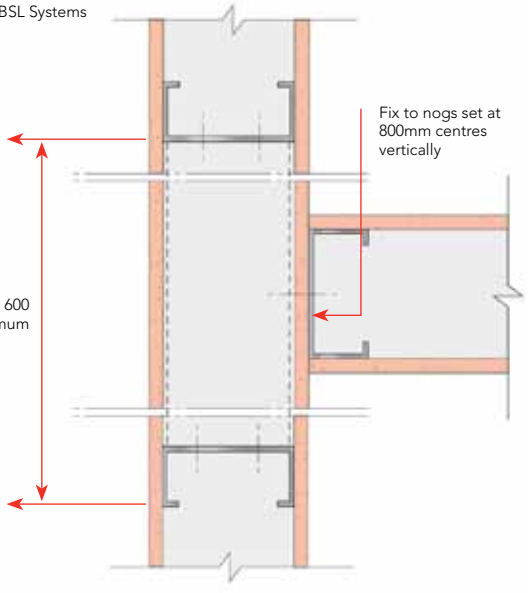


GBT/GBTL Systems

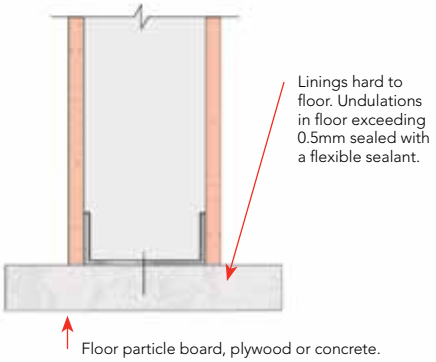




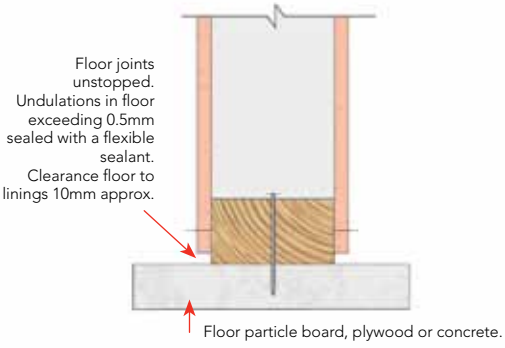
GBS/GBSL Systems



GBS Systems

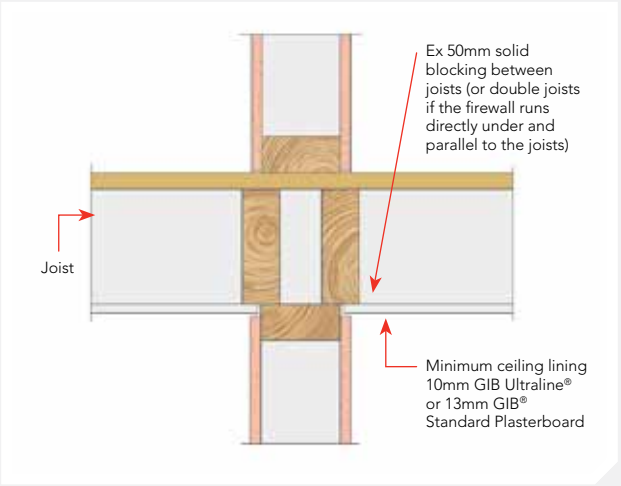


GBT/GBTL Systems

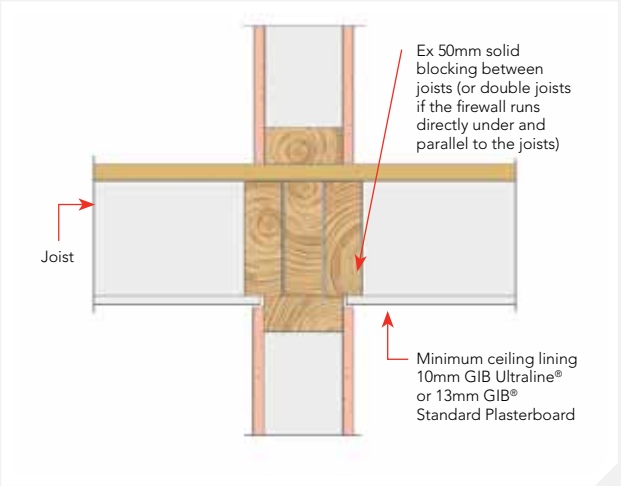


JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

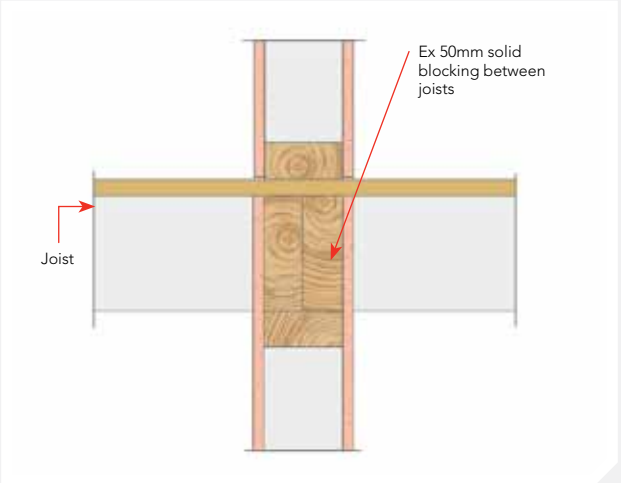
WALL - FLOOR/CEILING JUNCTIONS



Floor/Ceiling junctions where the wall has a FRR of up to 60 minutes. Or greater than 60 minutes if the ceiling has the same FRR as the wall. If the FRR of the wall is less than 60 minutes the ceiling must have the same FRR as the wall.



Floor/Ceiling junctions where the wall has a FRR of 90 or 120 minutes and the FRR of the floor ceiling is less than that of the wall (if the FRR of the ceiling is equal to that of the wall, the top detail applies).



If a ceiling lining is not present, then the void between the wall top plate and the underside of the flooring must be double blocked with solid timber. The fire rated wall linings must be carried up to the underside of the flooring material. Similarly, where the firewall runs directly underneath the joists must be lined in the same manner.

Note: It is the designer's responsibility to consider the collapse mechanism of the building to ensure the stability of the fire rated construction.

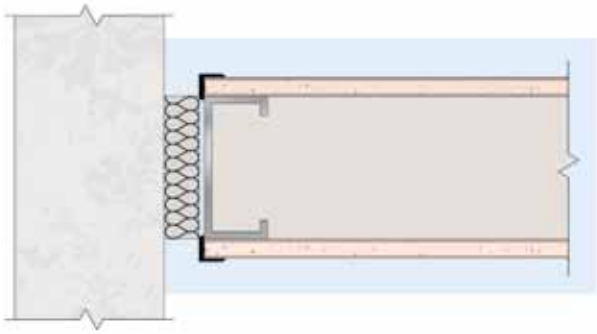
JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

DRYWALL TO MASONRY JUNCTIONS

The details below illustrate rigid joints between GIB® Fire Rated Systems and masonry.

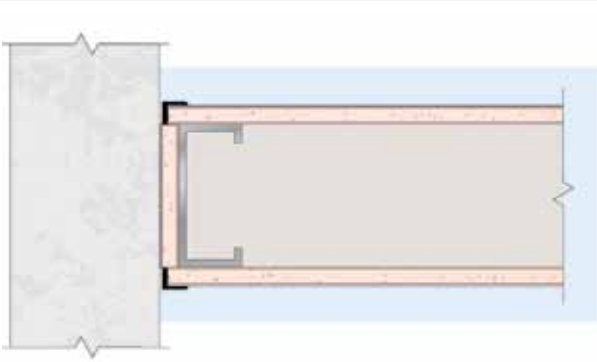
RIGID JOINT:

Kaowool packing to full depth of stud. Kaowool may be capped with any sealant (optional). Linings may overlap Kaowool packing (optional).



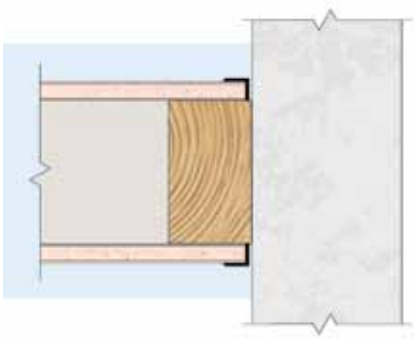
RIGID JOINT:

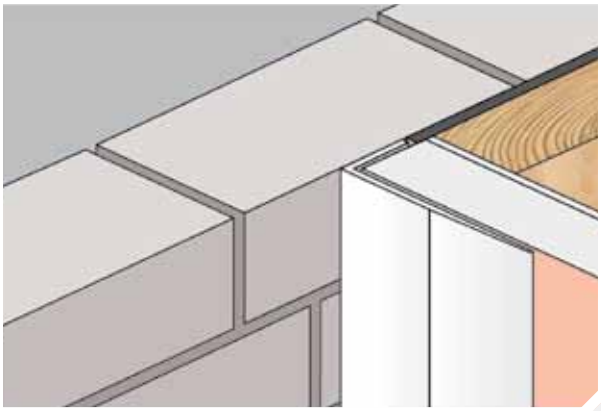
Continuous GIB® Plasterboard strip as per lining. Lining may be finished with GIB® GoldlineTM L-trims.



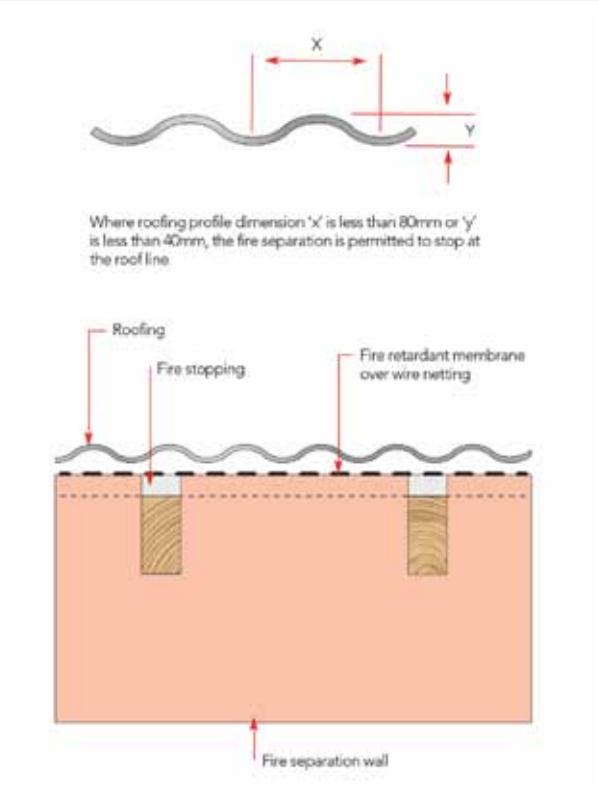
RIGID JOINT:

Conventional GIB® compound stopping or GIB® GoldlineTM L-trims.





GIB® GoldlineTM L-trims This product is used extensively as a trim for plasterboard that abuts suspended ceilings, beams, plaster, masonry and concrete surfaces as well as non-kerfed door and window jambs.



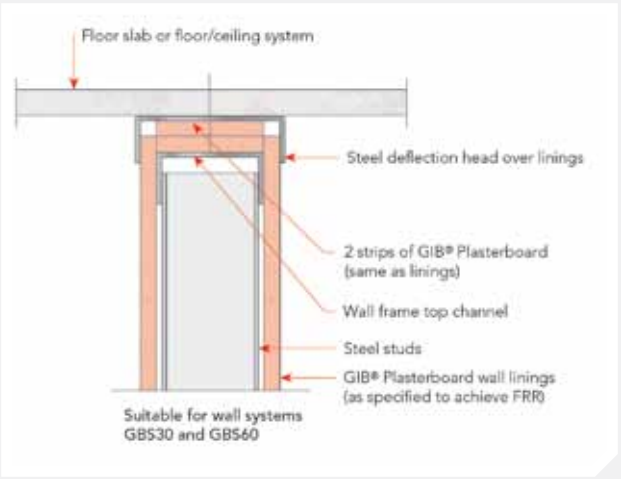
JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

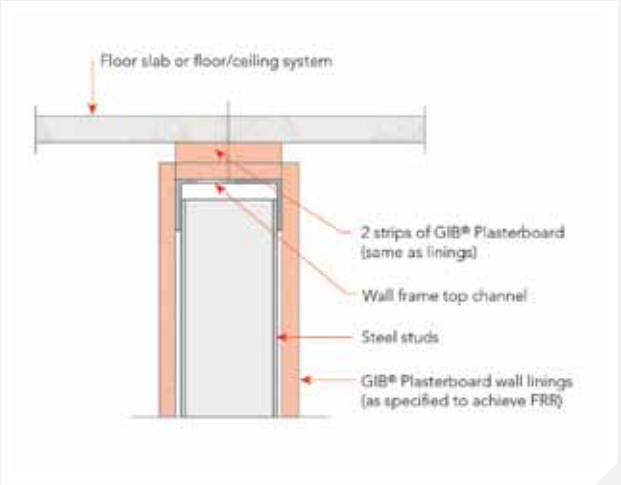
DEFLECTION HEAD DETAILS

FLOOR-WALL JUNCTIONS

Dead and live loads can cause significant deflection in some long-span floor systems. These deflection head details have been designed to avoid the transfer of floor loads onto non-load bearing steel frame fire separations.

METAL STUD DEFLECTION HEADS





TIMBER STUD DEFLECTION HEADS

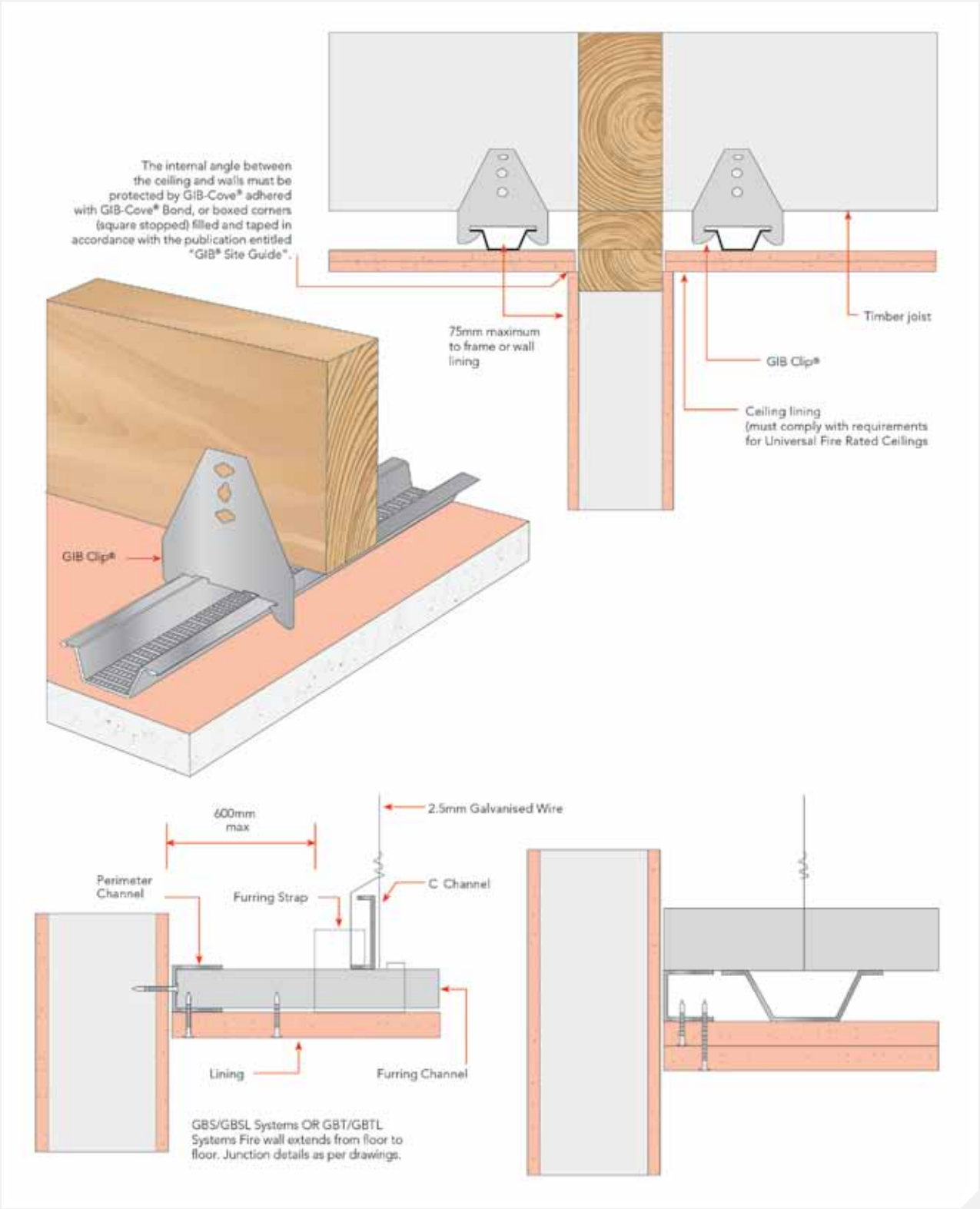
JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

SUSPENDED CEILING TO WALL JUNCTIONS

The junctions below are approved for joining vertical fire separations to fire rated suspended ceiling systems such as suspended grid and the GIB Clip® systems shown below.

GBS/GBSL SYSTEMS OR GBT/GBTL SYSTEMS

Fire wall may extend from floor to floor or may extend only to the ceiling junction as shown. Wall-ceiling junctions without cavity barriers in the concealed space are alternative solutions requiring specific fire engineering justification.



PENETRATIONS IN GIB® FIRE RATED SYSTEMS

INTRODUCTION

Penetrations in fire rated construction can allow spread of fire and smoke from one firecell to another if they are not correctly tested, specified or installed. Penetrations can compromise the FRR and in turn the health and safety of building occupants.

THE NEW ZEALAND BUILDING CODE

Service penetrations through fire rated construction covered by Building Consent must be fire stopped by validated methods in accordance with the requirements of NZBC Clause C and its Supporting Documents for Protection from Fire.

The NZBC requires certain construction elements to provide a FRR. This includes elements such as walls, floor/ceilings, columns, beams, doors and windows. The FRR can arise out of a need to prevent internal fire spread or to prevent fire spread to adjacent property under separate title.

GENERAL NOTES

The following pages give details relating to the installation of penetrations through GIB® Fire Rated Systems.

- The continuity and effectiveness of fire separations must be maintained around penetrations. Where a difference exists between the FRR of the penetration seal or closure and the FRR of the GIB® Fire Rated system, the lower FRR determines the performance of the element
- The penetration details provided in pages 74-78 are generic, have been tested by Winstone Wallboards Ltd, and are covered by BRANZ Appraisal No. 289 [2012]

ONLINE PROPRIETARY PENETRATION SEALS LISTING

Proprietary penetration seals have been listed and continue to be updated on www.gib.co.nz . These proprietary systems have been tested by the penetration seal supplier. Specific details of systems and required installation details must be obtained from the listed supplier. The list does not exclude other proprietary systems where relevant evidence demonstrates suitability for installation in specific GIB® Fire Rated Systems.

TO VIEW THE GIB® FIRE SYSTEMS 2012 ONLINE PROPRIETRY PENETRATIONS LISTING VISIT www.gib.co.nz OR SCAN THE QR CODE

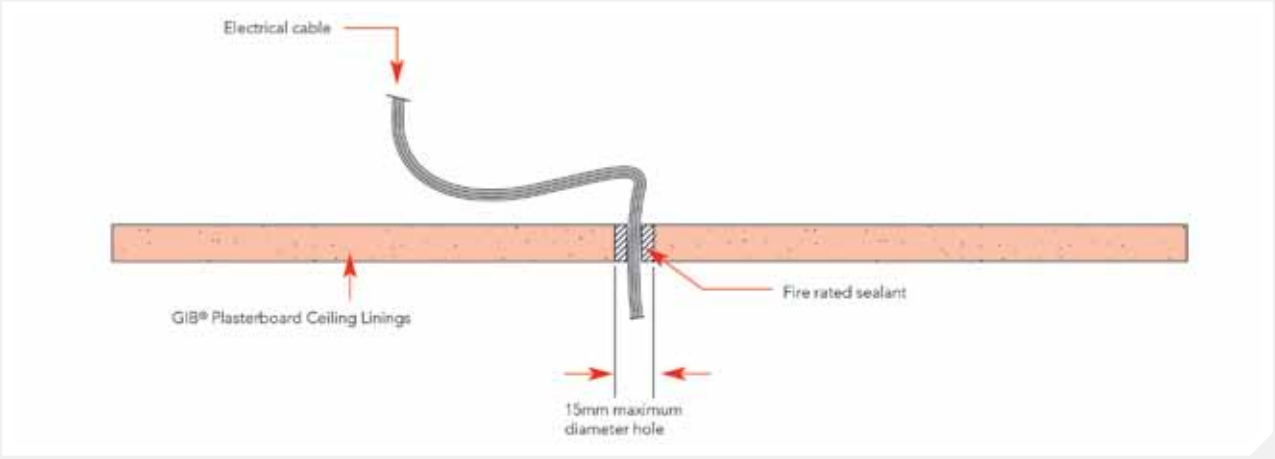
PENETRATIONS IN GIB® FIRE RATED SYSTEMS

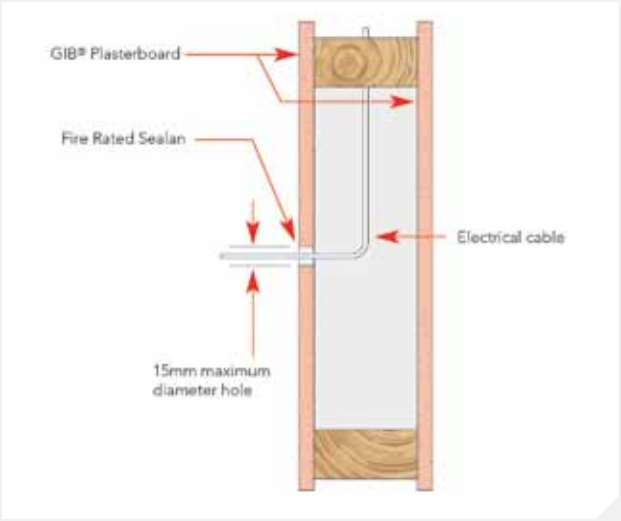
The following penetration details show the general principle of forming simple penetrations through one side of a GIB® fire rated system. Many of the details shown rely on plasterboard baffles to retain the system's FRR. The penetration solutions shown are suitable for a FRR up to (120)/120/120 unless otherwise noted.

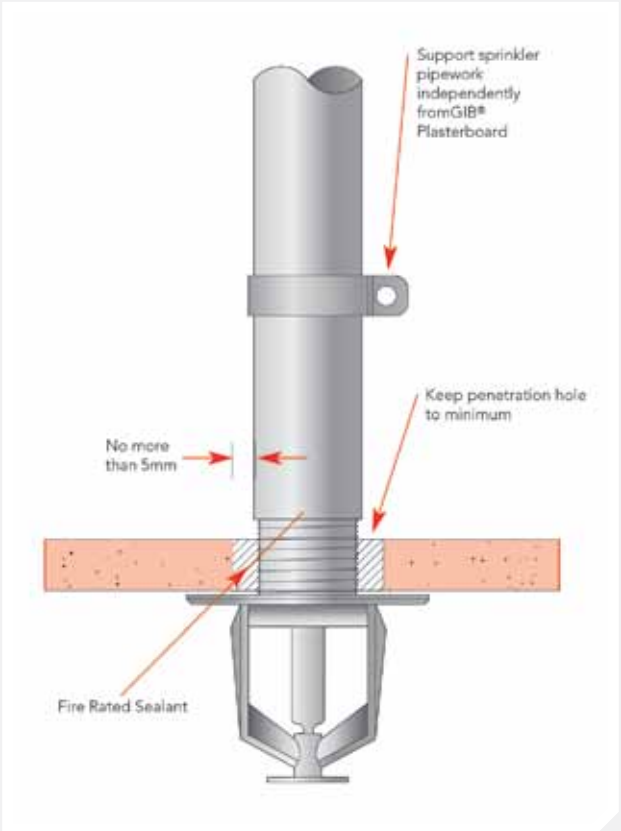
Sometimes more 'elegant' proprietary penetration seals exist such as metal switch boxes with intumescent pads. For proprietary systems contact the relevant penetration seal supplier.

Through penetrations such as metal or plastic pipes, cable trays, ducts, etc. are not shown here and rely on proprietary products and penetration seals.

SINGLE CABLE PENETRATION FOR SURFACE MOUNTED ELECTRICAL FIXTURES

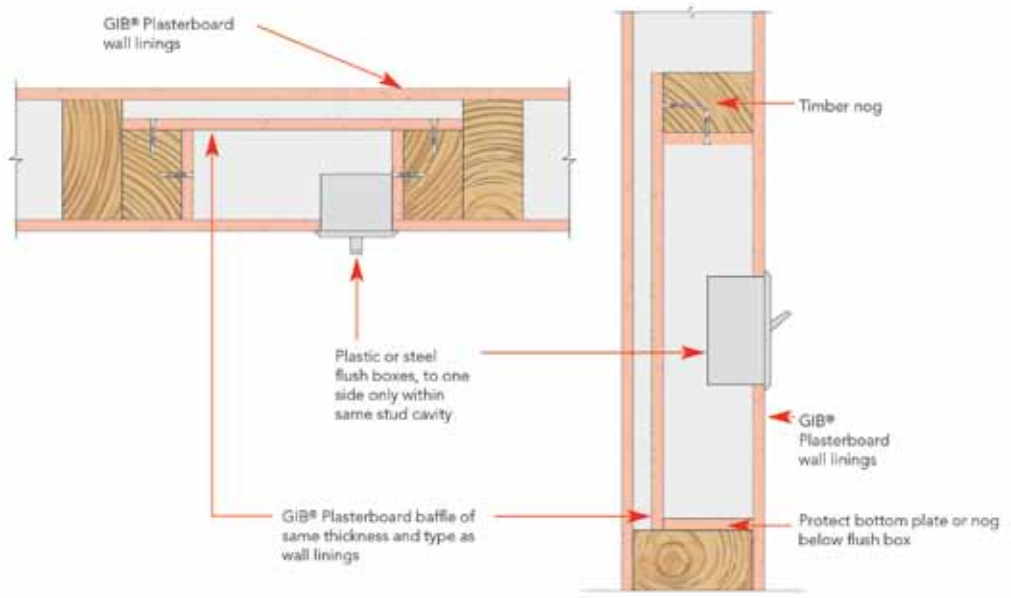




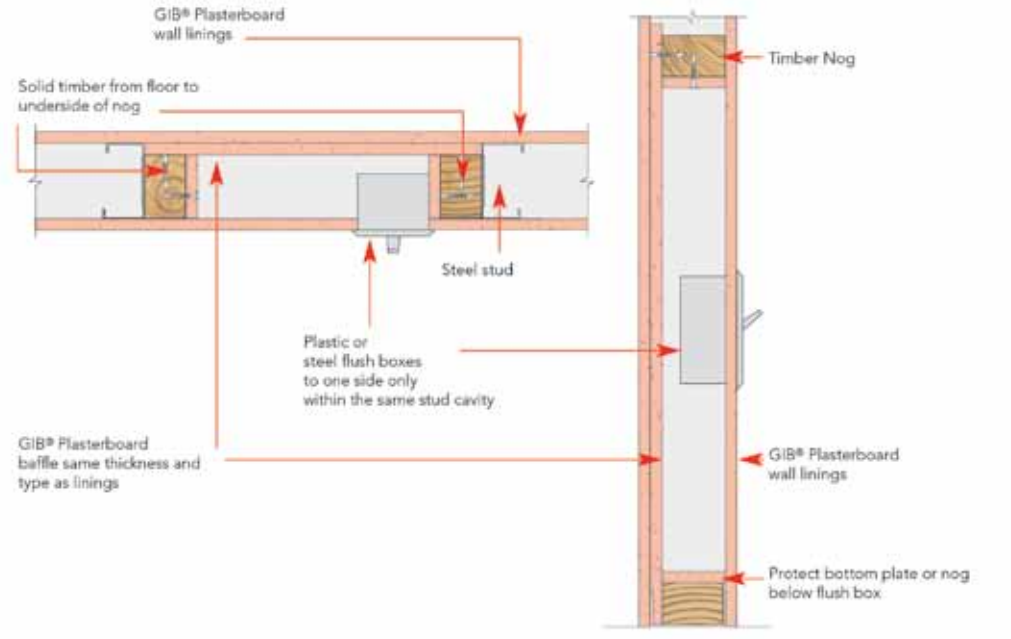


PENETRATIONS IN GIB® FIRE RATED SYSTEMS

FLUSH BOXES IN TIMBER STUD WALLS

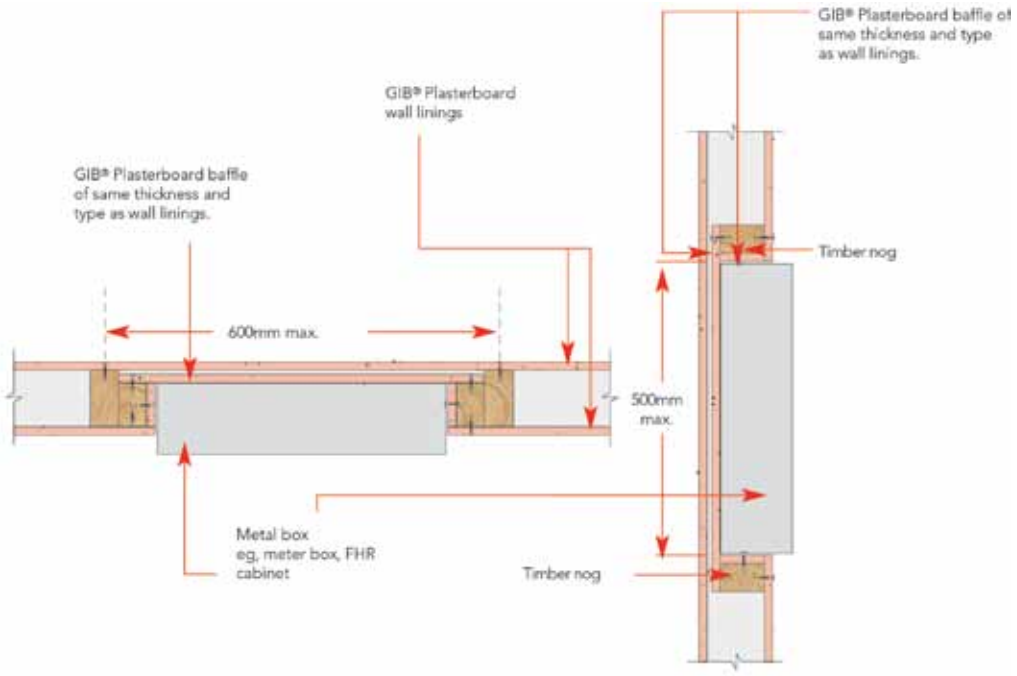


FLUSH BOXES IN METAL STUD WALLS

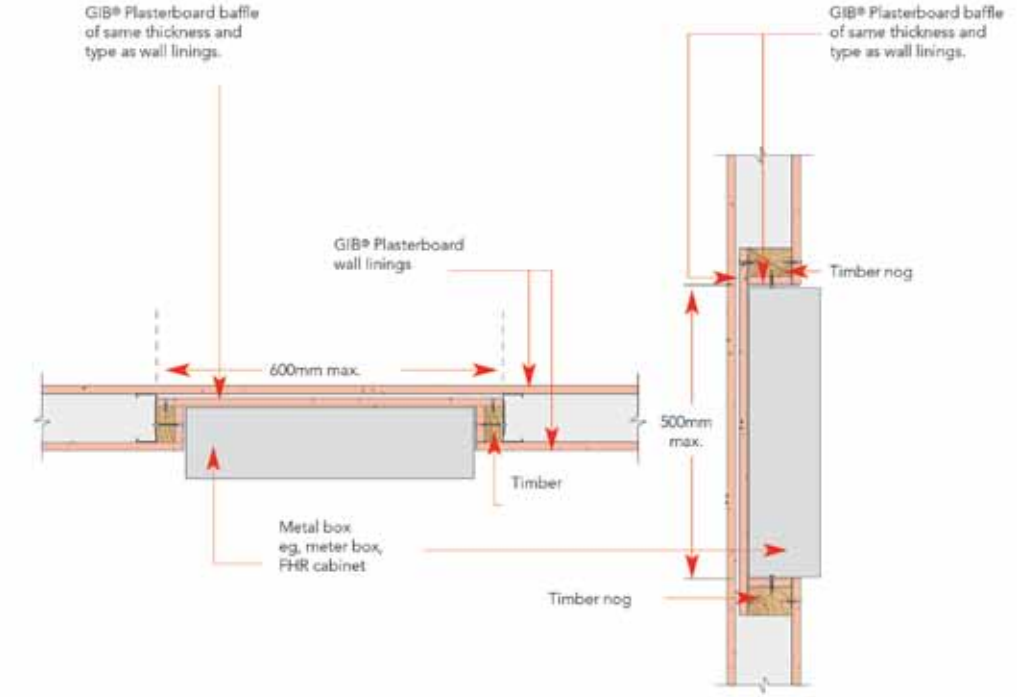


PENETRATIONS IN GIB® FIRE RATED SYSTEMS

LARGER RECESSES IN TIMBER STUD WALLS

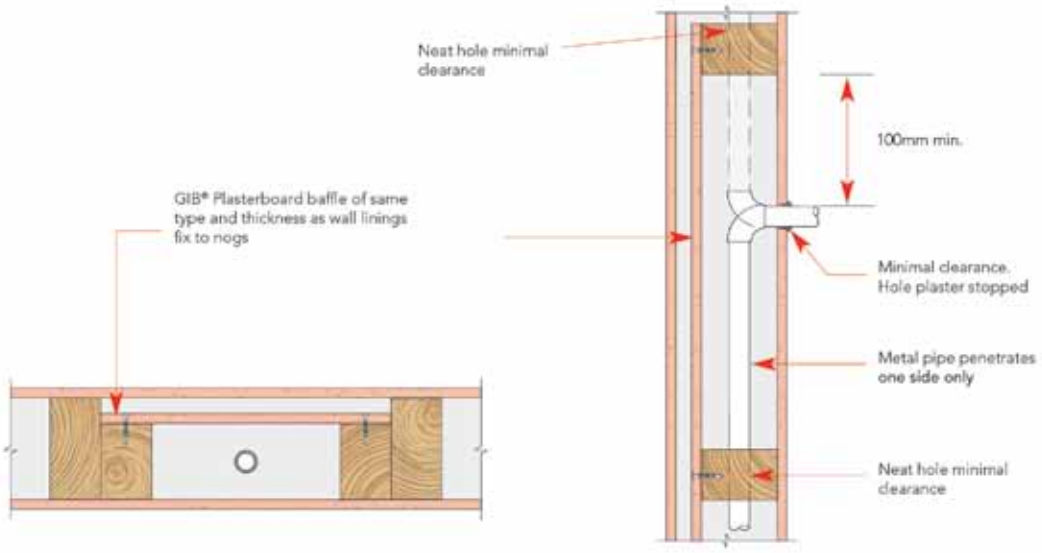


LARGER RECESSES IN METAL STUD WALLS

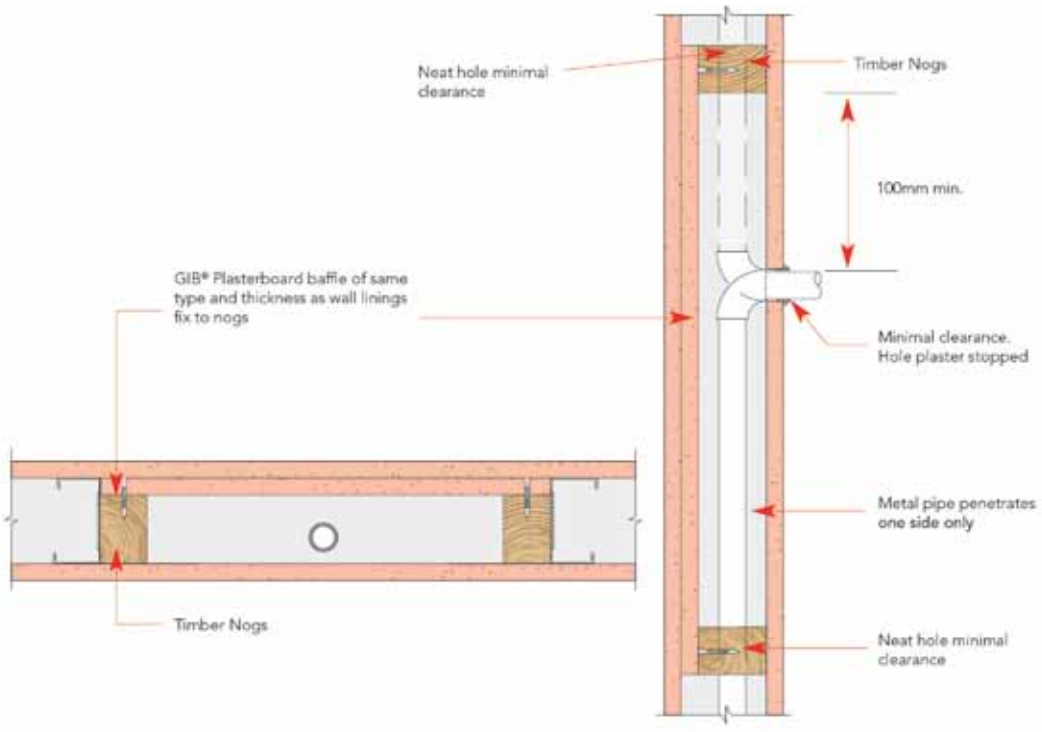


PENETRATIONS IN GIB® FIRE RATED SYSTEMS

METAL PIPE IN TIMBER STUD WALL

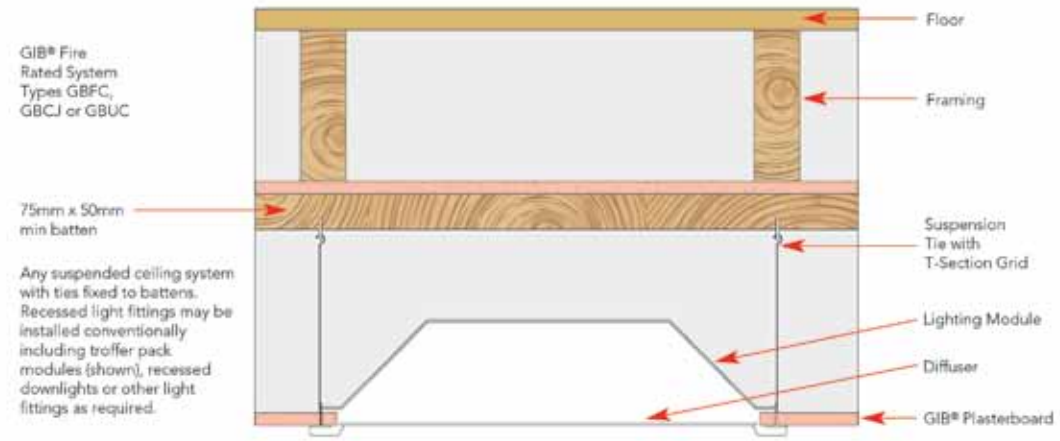


METAL PIPE IN METAL STUD WALL

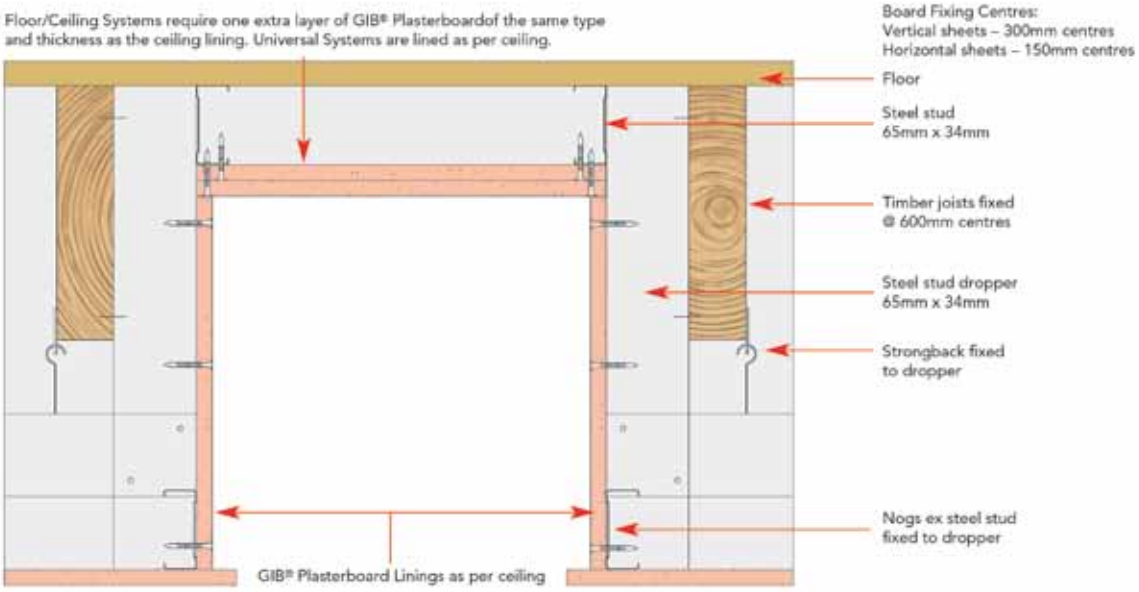


PENETRATIONS IN GIB® FIRE RATED SYSTEMS

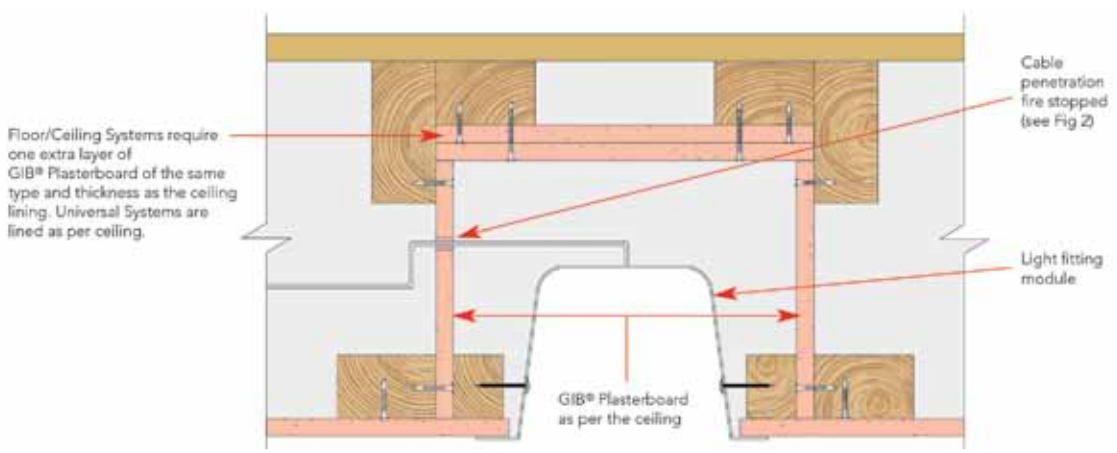
SUSPENDED CEILING



SPRING OR CLIP FIXED LIGHT FITTING



FRAME FIXED LIGHT FITTING



The suitability of these details must be verified with the supplier of the light fitting for each particular installation. Ensure adequate separation distances from surrounding materials.

PROPRIETARY PENETRATION SEALS

Resolve and specify fire rated service penetrations in the design office rather than on-site. Combine services as much as possible in service shafts which can themselves be fire rated, eliminating the need for many different and individual penetrations.

ENSURE FITNESS FOR PURPOSE

Fire test results for penetration seals, such as plastic pipe collars that have been tested in concrete, can not be simply transferred to other types of construction such as framed cavity construction lined with gypsum plasterboard.

Many suppliers of penetration seals in New Zealand rely on overseas or local tests carried out on gypsum plasterboard assemblies with significantly greater fire resistance than what is claimed for the penetration seal.

Check test reports and manufacturer's information carefully. A penetration seal must be suitable for the construction type it is intended to be installed in.

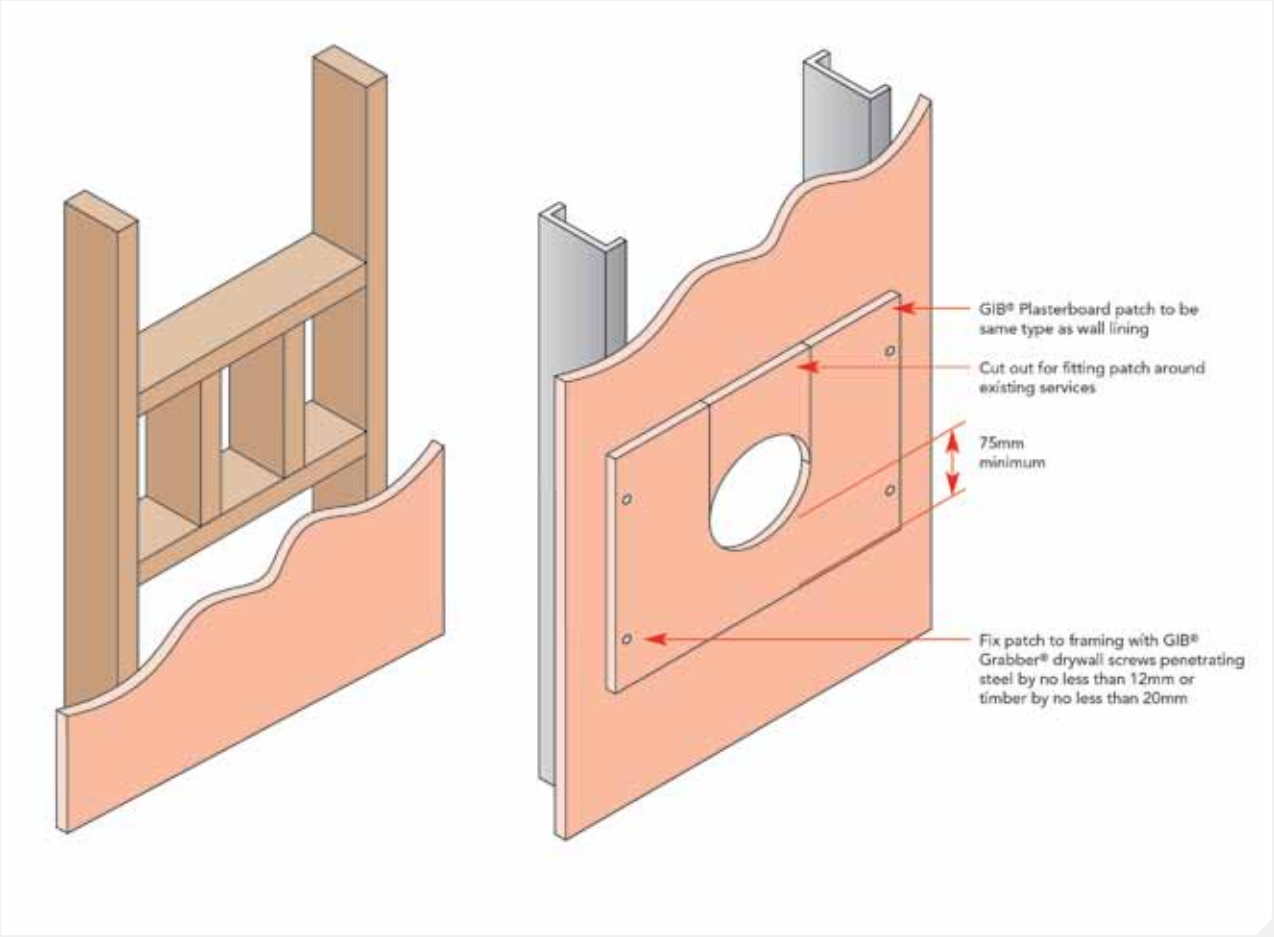
SUPPORT PENETRATION SEALS

To erase doubt, ensure penetration seals are supported by framing around the aperture and not directly by gypsum plasterboard linings. Installation of additional framing members is often required.

Alternatively an additional strip of plasterboard can be installed over the existing lining and supported by adjacent framing members. This option is suitable for penetration seals such as cable bundles, metal pipes and PVC pipe collars.

Penetration patches are not required when penetration seals are installed in one-way universal (UW) systems.

Heavy penetrating items such as cable trays and ducts must have separate supports, such as hangers to the floor above.



STABILITY OF FIRE RATED ELEMENTS

STRUCTURAL STABILITY DURING FIRE

In order to satisfy the requirements of NZBC Clause C4 – Structural Stability during Fire, designers must ensure that fire rated elements are supported by elements having at least the same FRR. Collapse of elements having a lesser FRR shall not cause the consequential collapse of elements required to have a higher FRR.

The stability of an element having a FRR can depend on other elements, such as a column supporting a floor or a section of wall providing lateral support to a firecell boundary wall. Although the supporting element itself may not provide firecell separation, it still needs a FRR no less than the element for which it is providing stability.

A FRR represents a result against a standard furnace test where a wall or floor/ceiling is exposed from one side. A construction element providing stability and located entirely within a firecell will potentially be exposed to fire from more than one side simultaneously. In this case 'universal' or 'one way' lining protection needs to be provided to all relevant sides. If the element provides lateral support or bracing and is located within a firecell, then the bracing must be protected with a 'universal' or 'one way' lining system.

BOUNDARY WALLS, PROPERTY RATINGS AND STABILITY

When a building is located sufficiently close to a property boundary, a fire rating (FRR) is often required to minimise the risk of fire spreading externally to the neighbour's property. NZBC Clause B1 – Verification Method B1/VM1 also provides guidelines for checking the strength and structural stability of boundary elements in the case of a fire. The simplest and most commonly applied criterion for boundary walls is the ability to resist a post-fire force in accordance with Clause 2.2.4 (iii), equal to 'a uniformly distributed face load of 0.5 kPa in any direction'.

The building designer must ensure that structural stability is maintained for the specified time of fire resistance, taking into account all effects of fire and the provisions of NZBC Clause B1. The solution will often require project specific considerations and could involve fire rated return walls, a fire rated ceiling or cantilever detail similar to the one described opposite for simple single storey light timber framed structures. For more complex structures, such as multi-storey buildings or portal frame industrial structures, specific design is required.

SINGLE STOREY LIGHT TIMBER FRAMED BOUNDARY FIRE WALL

The following details have been developed for simple single storey light timber framed structures such as residential garages or other single storey structures designed within the scope of the latest version of NZS3604.

The detail relies on the bottom plate fixing detail and cantilever action of the wall to resist an imposed 0.5 kPa face load in any direction.

Timber framing grade, construction details for the framing and concrete slab, and timber treatment are in accordance with the latest versions of NZS3604 and NZS3602.

The required FRR is determined in accordance with NZBC Clause C/VM2 or C/AS1-7 and the appropriate GIB® specification is selected. Check to see if a one-way protection is permitted.

Install the relevant FRR system in accordance with the appropriate GIB® specification from this literature.

If a two way FRR is required, note that sheet joints and fastener heads in the GIB® plasterboard under the external cladding do not require stopping.

Cladding systems must be separated from GIB® plasterboard by means of a flexible underlay and drained cavity system compliant with NZBC Clause E2/AS1. Sequence installation so that the GIB® plasterboard is kept dry during installation.

This detail which includes a NZBC E2/AS1 compliant cladding system, drained cavity and flexible underlay over GIB® plasterboard, has a serviceable life in excess of 15 years and satisfies the requirements of NZBC Clause B2 - Durability for an external wall cladding.

The cladding system must be maintained so that the GIB® plasterboard remains dry in-service.

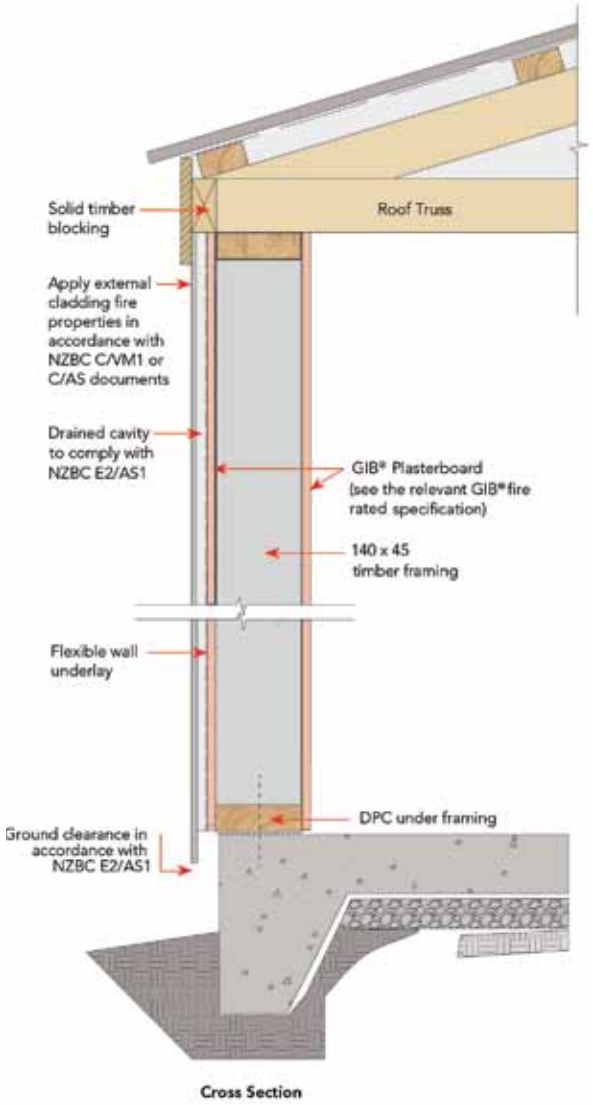
Use claddings with exterior surface finish properties that fall within the limits set by NZBC Clause C/VM2 or C/AS1-7.

Walls with a stud height of 2.4 metres require a minimum stud size of nominally 140 x 45 mm spaced at 600 mm centres.

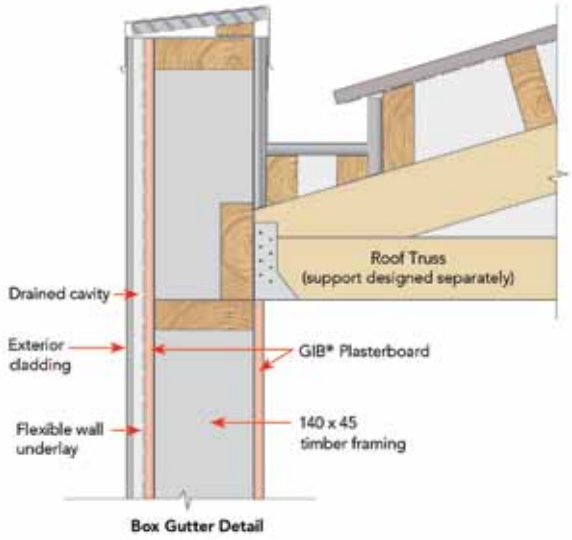
Walls with a stud height of 3.0 metres require a minimum stud size of nominally 140 x 45 mm spaced at 400 mm centres.

With the GIB HandiBrac® use a proprietary concrete anchor with a minimum characteristic uplift capacity of 8 kN as verified by the supplier.

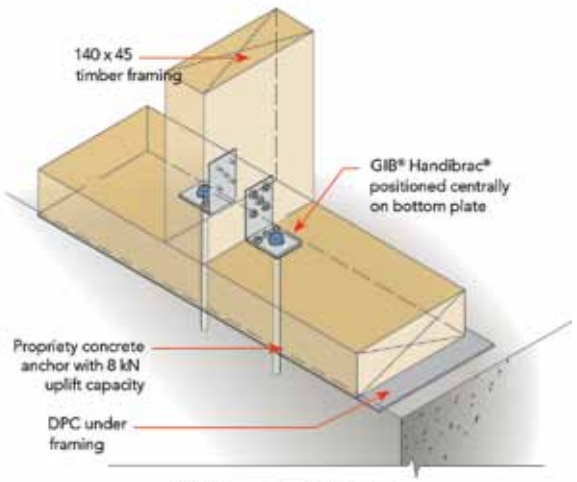
STABILITY OF FIRE RATED ELEMENTS



Cross Section

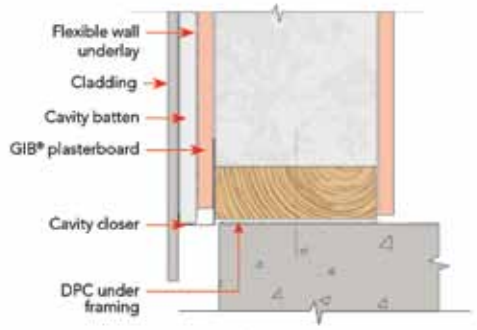


Box Gutter Detail



Hold Down Detail (All Studs)

These drawings are schematic and full construction and cladding details must comply with NZS 3604 and NZBC E2/AS1 and incorporate a drained cavity for all cladding types



Cavity Closer Detail

NOTES

GIB® FIRE RATED SYSTEMS, OCTOBER 2012

Winstone Wallboards Ltd accepts no liability if the GIB® Fire Rated system is not designed and installed in strict accordance with instructions contained in this publication.

Use only the current specification

This publication may be superseded by a new publication. Winstone Wallboards accepts no liability for reliance upon publications that have been superseded. You should check the current index of publications contained in your GIB® Technical Manual before using this publication. If you are unsure whether this is the current publication, simply call the GIB® Helpline on 0800 100 442.

Substitution

GIB® Fire Rated Systems are not generic. Where specified, GIB® branded components must be used when specifying and installing GIB® Fire Rated Systems. Substitution is not in accordance with the instructions contained in this publication.

Trademarks

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