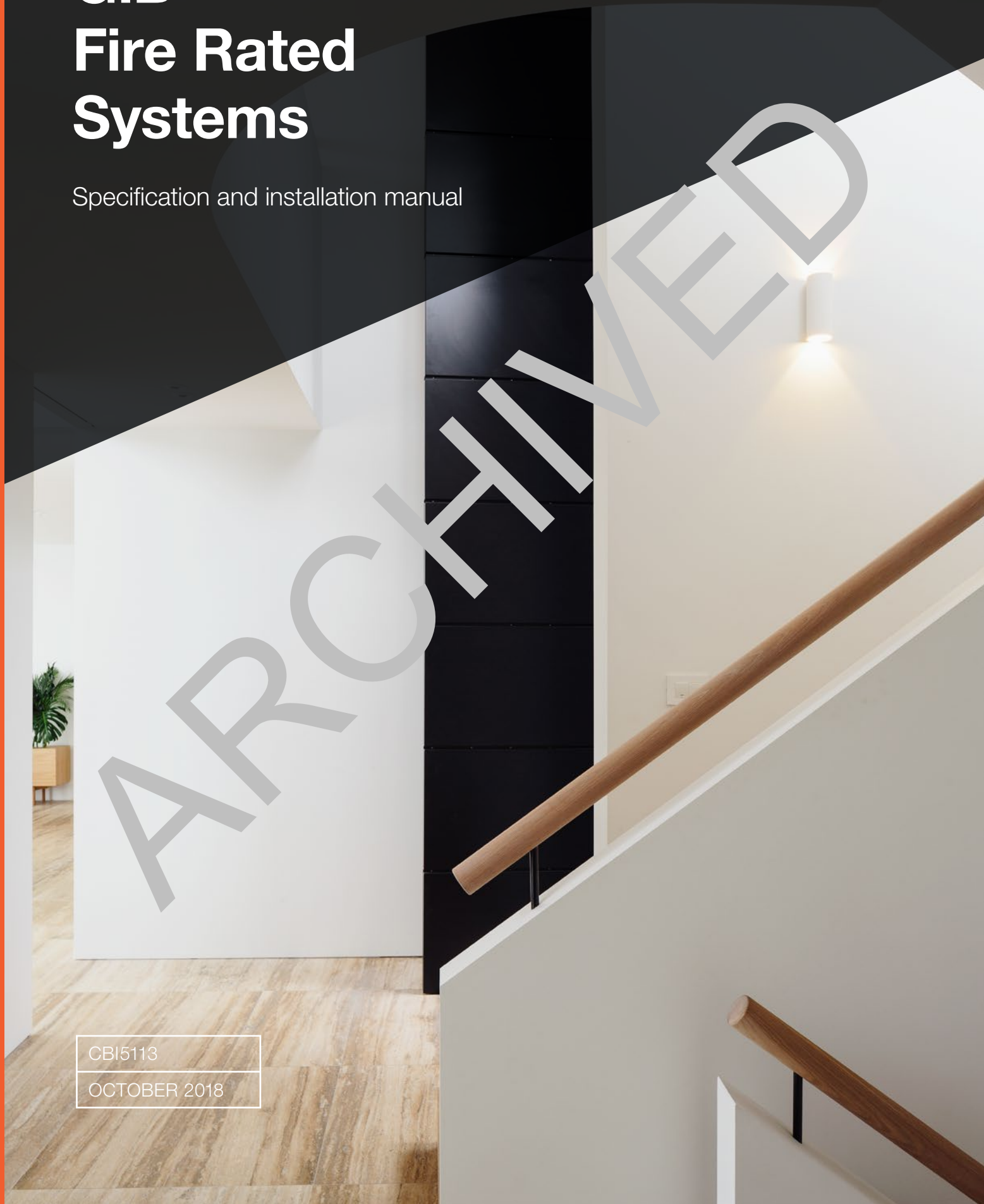
GIB®

Fire Rated Systems

Specification and installation manual



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CBI5113
OCTOBER 2018

NATIONAL SUPPORT

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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. 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 aim to protect adjacent property but not the building itself, nor its contents, and often fall short of what people and businesses expect and find acceptable.

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Most specifications in this technical literature are similar to those published in 'GIB® Fire Rated Systems, October 2012' with the following additions:

NEW PRODUCT
- GIB Fire Soundseal®
- GIB® Grabber® Drill Point Fine Thread screws

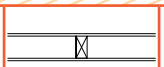
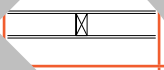
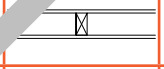
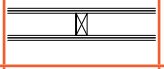
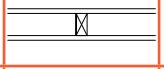
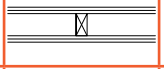
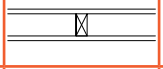
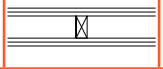
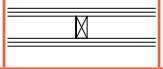
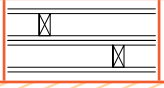
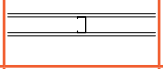
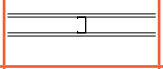
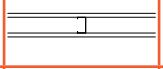
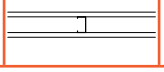
NEW SYSTEMS
- GBSm 10 — Smoke separation wall
- GBTL 30c
- GBUW 60/GBUW 90 — revised
- GBUW 180
- GBS 90b/GBS 60b
- GBS 120b
- GIB® Panel Shaft

OTHER ADDITIONS
- NLB steel stud height guidance
- 'Top-down' fire exposure design guidance
- Metal components used within suspended ceiling grid systems
- Clarifications to junction details including deflection heads

BRANZ Appraised
Appraisal No. 289 [2018]

Fire rated wall systems

Fire rated wall — Two way FRR

Specification number	LB/ NLB	STC/ Rw	FRR	Lining requirements	Detail	Page
Smoke separation - timber or steel frame						
GBSm 10	LB		10/10/10	1 layer 10mm GIB® plasterboard		21
Timber frame						
GBTL 30	LB	33/34	30/30/30	1 layer 10mm GIB Fyreline®		
GBTL 30b	LB	35/35	30/30/30	1 layer 13mm GIB® Standard		
GBTL 30c	LB	33/34	30/30/30	1 layer 10mm GIB® Standard		23
GBTL 60	LB	36/36	60/60/60	1 layer 13mm GIB Fyreline®		24
GBTL 60b	LB	44/43	60/60/60	2 layers 10mm [illegible]line®		25
GBTL 90	LB	36/37	90/90/90	1 [illegible]er 16mm [illegible] Fyreline®		26
GBT 120a	NLB	46/45	–/120/120	2 layers [illegible] GIB Fyre[illegible]®		27
GBT 120b	NLB	33/37	–/120/120	[illegible]yer 19mm GIB [illegible]yreline®		28
GBTL 120	LB	45/[illegible]	120/120/120	2 laye[illegible]6mm GIB Fyreline®		29
GBT 180	NLB	45/4[illegible]	–/180/180	[illegible]2 layers 16mm GIB Fyreline®		30
GBT 240	NLB	[illegible]-55/ [illegible]5-56	–/240/240	4 layers 19mm GIB Fyreline® (Refer to specification for layout)		44
Steel fram[illegible]						
[illegible]SL 15	L[illegible]	35/35	15/15/15	1 layer 13mm GIB® Standard		32
[illegible]S 30	[illegible]	35/35	–/30/30	1 layer 13mm GIB® Standard		33
GBS[illegible]0a	LB	40/40	30/30/30	1 layer 16mm GIB Fyreline®		34
GBSL 30b	LB	45/45	30/30/30	2 layers 10mm GIB Fyreline®		34
GBS 60	NLB	37/37	–/60/60	1 layer 13mm GIB Fyreline®		35
GBSL 60a	LB	40/40	60/60/60	1 layer 19mm GIB Fyreline®		36

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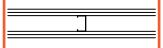
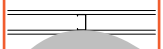
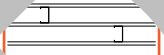
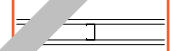
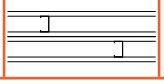
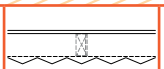
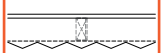
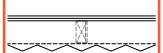
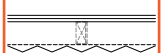
Fire rated wall systems

	Specification number	LB/ NLB	STC/ Rw	FRR	Lining requirements	Detail	Page
Fire rated wall — Two way FRR	GBSL 60b	LB	48/48	60/60/60	2 layers 13mm GIB Fyreline®		36
	GBS 90	NLB	40/42	–/90/90	1 layer 16mm GIB Fyreline®		37
	GBS 90b	NLB	43-51/ 45-53	–/90/90	1 layer 13mm GIB Fyreline® with a 13mm GIB Fyreline® central barrier		38
	GBS 60b	NLB	42-50/ 44-52	–/60/60	1 layer 13mm GIB Fyreline® with a 13mm GIB Fyreline® central barrier		
	GBSL 90	LB	47/46	90/90/90	1 layer 16mm GIB Fyreline® and 1 layer 13mm GIB Fyreline®		40
	GBS 120	NLB	42/42	–/120/120	1 layer 19mm GIB Fyreline®		41
	GBS 120a	NLB	52/52	–/120/120	2 layers 16mm [illegible] Fyreline®		42
	GBS 120b	NLB	48/48	–/120/120	2 layers 13m[illegible]IB Fyreline®		43
	GBS 240	NLB	44-55/ 45-56	–/240/240	4 layers [illegible]mm GIB [illegible]line® (Refer to [illegible]ification fo[illegible]out)		44
Fire rated wall — One way FRR	**Timber or steel frame**						
	GBUW 15	LB/ NLB		15/15/15	1 laye[illegible]mm GIB® Standard		47
	GBUW 30a	LB/ N[illegible]		30/30/30	[illegible] layer 16mm GIB Fyreline®		48
	GBUW 30b	LB/ NLB		30/30/30	2 layers 10mm GIB Fyreline®		48
	GBUW 60	[illegible] LB		60/60/60	2 layers 13mm GIB Fyreline®		49
	GBUW [illegible]	LB/ NLB		90/90/90	1 layer 16mm GIB Fyreline® and 1 layer 19mm GIB Fyreline®		50
	GBUW [illegible]120	LB/ NLB		120/120/120	2 layers 19mm GIB Fyreline®		51
	GBUW [illegible]30	LB/ NLB		180/180/180	3 layers 19mm GIB Fyreline®		52

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Fire rated floor/ceiling systems

Fire rated floor/ceiling

Specification number	LB/ NLB	STC/ Rw	FRR	IIC	Lining requirements	Page
Timber joist						
GBFC 15	LB	38/38	15/15/15	31	1 layer 13mm GIB® Standard	54
GBFC 30	LB	39/40	30/30/30	32	1 layer 13mm GIB Fyreline®	56
GBFC 45	LB	39/40	45/45/45	32	1 layer 13mm GIB Fyreline®	5
GBFC 60	LB	39/40	60/60/60	32	1 layer 16mm GIB Fyreline®	58
GBFC 90	LB	41/41	90/90/90	34	2 layers 16mm GIB [illegible]reline®	60
Timber or steel joist						
GBFC 120	LB		120/120/120		2 layers [illegible] GIB Fyrelin[illegible]	62
Composite joist						
GBCJ 30	LB	39/40	30/30/30	32	[illegible]ayer 13m[illegible]IB Fyreline®	63
GBCJ 45	LB	39/40	45/45/45	32	1 layer [illegible]m GIB Fyreline®	63
GBCJ 60	LB	39/39	60/60/60	32	1 layer 16mm GIB Fyreline®	64
Steel joist						
GBSJ 30	LB	34/34	30/30/30	30	1 layer 13mm GIB Fyreline®	65
GBSJ 60	LB	39/39	60/60/60	32	1 layer 16mm GIB Fyreline®	66
Suspended [illegible]						
[illegible]30	LB	48/47	30/30/30	43	1 layer 13mm GIB Fyreline® (back blocked)	67
GBSC [illegible]a	LB	53/52	60/60/60	43	2 layers 13mm GIB Fyreline®	68
GBSC [illegible]0b	LB	50/49	60/60/60	43	1 layer 16mm GIB Fyreline®	69
GBSC 90	LB	53/52	90/90/90	43	1 layer 13mm GIB Fyreline® and 1 layer 16mm GIB Fyreline®	70

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Fire rated ceiling systems

	Specification number	LB/ NLB	STC/ Rw	FRR	Lining requirements	Page
Fire rated ceiling	**Timber or steel frame**					
	GBUC 15	LB/ NLB		15/15/15	1 layer 13mm GIB Fyreline®	71
	GBUC 30	LB/ NLB		30/30/30	1 layer 16mm GIB Fyreline®	72
	GBUC 60	LB/ NLB		60/60/60	2 layers 13mm GIB Fyreline®	7
	GBUC 90	LB/ NLB		90/90/90	2 layers 19mm GIB Fyreline®	74
	GBUC 120	LB/ NLB		120/120/120	2 layers 19mm GIB Fyreline	74

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Fire rated risers, shafts and ducts

Specification number	LB/ NLB	Fire side	FRR	Lining requirements	Page
GIB® Fyreduct™ 900					
GBFD 900-30	NLB	Either	–/30/30	2 layers 10mm GIB Fyreline®	76
GBFD 900-60	NLB	Either	–/60/60	2 layers 13mm GIB Fyreline®	76
GBFD 900-90	NLB	Either	–/90/90	2 layers 16mm GIB Fyreline®	7
GBFD 900-120	NLB	Either	–/120/120	2 layers 19mm GIB Fyreline®	76
GIB® Fyreduct™ 600					
GBFD 600-30	NLB	Either	–/30/30	2 layers 10mm GIB Fyreline®	78
GBFD 600-60	NLB	Either	–/60/60	2 layers 13mm [illegible]line®	78
GBFD 600-90	NLB	Either	–/90/90	2 [illegible]rs 16mm [illegible] Fyreline®	78
GBFD 600-120	NLB	Either	–/120/120	2 layers [illegible] GIB Fyre[illegible]®	78
GIB® Ventshaft					
GVS 60	NLB	Either	–/60/60	3 [illegible]rs 16mm GIB Fyreline®	80
GIB® Shaftwall					
GBSH 30	[illegible]	Either	–/30/30	[illegible] layer 13mm GIB Fyreline® (2 layers 13mm GIB Fyreline® on shaft side)	82
GBSH 60	NLB	[illegible]haft	–/60/60	1 layer 13mm GIB Fyreline® (2 layers 13mm GIB Fyreline® on shaft side)	82
GBSH 60b	[illegible]LB	Either	–/60/60	2 layers 13mm GIB Fyreline® (2 layers 13mm GIB Fyreline® on shaft side)	82
[illegible]BSH 90[illegible]	NLB	Shaft	–/90/90	2 layers 13mm GIB Fyreline® (2 layers 13mm GIB Fyreline® on shaft side)	82
GB[illegible]90b	NLB	Either	–/90/90	1 layer 16mm GIB Fyreline® and 1 layer 13mm GIB Fyreline® (2 layers 13mm GIB Fyreline® on shaft side)	82
GBSH [illegible]20a	NLB	Shaft	–/120/120	1 layer 16mm GIB Fyreline® and 1 layer 13mm GIB Fyreline® (2 layers 13mm GIB Fyreline® on shaft side)	82
GBSH 120b	NLB	Either	–/120/120	2 layers 19mm GIB Fyreline® (2 layers 13mm GIB Fyreline® on shaft side)	82

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Fire rated protection of columns and beams

Fire rated protection of columns and beams

Specification number	FRR (Structural adequacy rating)	Lining requirements	Page
Timber strapping			
GBCBT 15	15/-/-	1 layer 13mm GIB® Standard	86
GBCBT 30a	30/-/-	1 layer 16mm GIB Fyreline®	86
GBCBT 30b	30/-/-	2 layers 10mm GIB Fyreline®	8
GBCBT 60	60/-/-	2 layers 13mm GIB Fyreline®	86
GBCBT 90	90/-/-	2 layers 16mm GIB Fyreline	86
GBCBT 120	120/-/-	2 layers 19mm GIB Fyreline®	86
GBCBT 180	180/-/-	3 layers 1 m GIB Fyrel	86
Steel clip and channel			
GBCBS 15	15/-/-	1 layer 1 GIB® Sta d	87
GBCBS 30a	30/-/-	ayer 16mm GIB yreline®	87
GBCBS 30b	30/-/-	2 laye 0mm GIB Fyreline®	87
GBCBS 60	60/-/-	layers 13mm GIB Fyreline®	87
GBCBS 90	90/-/-	2 layers 16mm GIB Fyreline®	87
GBCBS 120	0/-/-	2 layers 19mm GIB Fyreline®	87
GBCB	180/	3 layers 19mm GIB Fyreline®	87

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Deflection head det[illegible] 95
Ste[illegible] stud nogging a[illegible]roof detail 96

Penetrati[illegible] GIB® [illegible]e Rated Systems **97–101**

Pr[illegible]ietary penetrati[illegible] seals **102**

Stabilit[illegible] fire rated elements **104–105**

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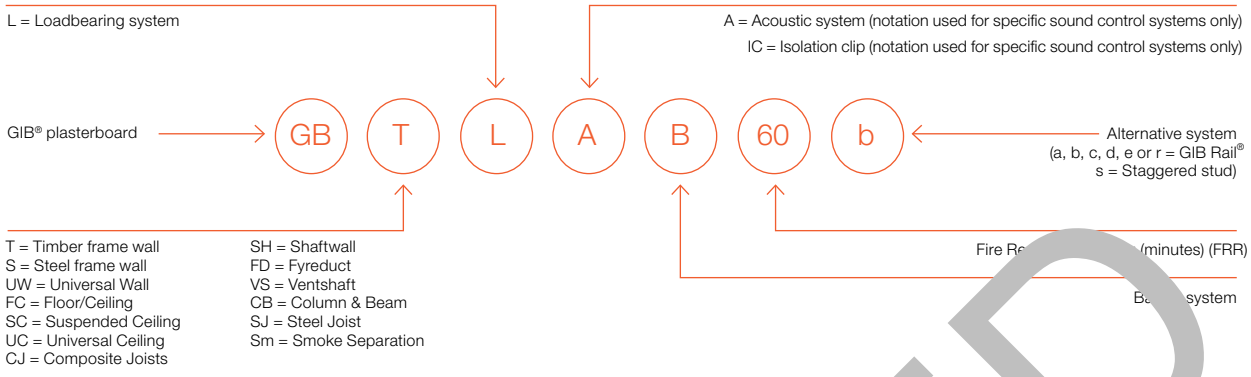
Specification reference example



SPECIFICATION REFERENCE

The specification reference allows a quick and precise reference to a particular system.

SCOPE OF USE

GIB® Fire Rated Systems are designed to provide solutions for fire-resistant vertical and horizontal building elements. The systems offered include both NZBC compliant and discretionary levels of performance. The penetration and junction details in this manual are meant to assist specifiers and builders when designing and constructing buildings that incorporate GIB® Fire Rated Systems.

CUSTOMISED DESIGN SOLUTIONS

The systems detailed in this technical literature shou over mo common situations where fire resistance is required. H /s or special projects where specific performanc essary, can assist you with developing customised tions. Simply cont us through the GIB® Helpline on 0800 00 442.

BEWARE OF SUBSTITUTION

The performance of fire rated systems ery sensitive to sign detailing and construct prac s. All Fire Rate ystems have been develope pecifically r New Zeal nditions and independently te or assesse to ensure the required level of performance. Th re, it is only GIB® branded components where and closely follow the specified design details and cons tion practices, so you can be confident that required level of fi fety is achieved on site.

For fu er infor on substit on please refer to the GIB® Product and Sy m Warr nt that can be found on our website.

FIRE RESISTANCE TING (FR

FRR example:
–/30/30 (i/ii/iii)

i) Structural adeq cy — to p nt coll e of structural (primary) elemen during a fir

/– indicates il rating, e.g. –/30/30 is non-loadbearing.

Integrity reven e passage of flame or hot gases rough fire separ

iii) Ins ion — to prevent the transmission of heat to other fire-c r adjacent property, measured as an average temperat rise of 140°C or a rise of 180°C at any single nt on the exposed face of a specimen.

ONE AND TWO WAY FRRs

An FRR for a wall system generally applies in both directions unless it is a 'one way' specification. Both the exposed and unexposed linings contribute to the performance of a conventional and symmetrical two way FRR specification. The exposed lining mainly protects the framing and acts as a radiation shield for the unexposed lining. As cavity temperatures rise, the unexposed lining delays insulation failure on the unexposed face of the specimen.

Specifications with a one way FRR only protect against fire from the framing side where the protective linings are attached. Cavity temperatures on the unexposed face of the linings can rise to approximately 300°C, but 90mm away the insulation criteria are met. This is why a 90mm cavity is specified with one way systems and even claddings with poor thermal properties, such as thin steel, are permitted. One way specifications also protect timber from char and steel from significant loss of strength, and this is why any timber or steel framing is permitted as long as it has the correct spacing and width for fixing of the linings and meets normal (cold) criteria for strength and serviceability.

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INDEPENDENTLY TESTED

This document has been appraised by the Building Research Association of New Zealand (BRANZ), Appraisal No. 289 [2018] GIB® Fire Rated Systems, 2018.

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 nationwide.

All GIB® branded accessory products are the subject of ongoing quality control to ensure consistency of supply.

To allow positive identification on site, GIB Fyreline® is printed on the board tapers and centreline and the face paper is coloured pink.

COMPLIANCE WITH THE NZ BUILDING CODE

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 Clause C1–C6 — Protection from Fire.

NZBC Clause C6 — Structural Stability

In order to satisfy the requirements of this clause, de[signe]rs must ensure that fire rated elements are supported by e[lements] having at least the same Fire Resistance R[ating] (FRR). Coll[apse] of elements having a lesser FRR shall n[ot] cause the consequ[ential] collapse of elements required to have [a] higher FRR.

Within the context of fire resistance, [th]ere is a clear distinc[tion] between 'structural adequacy' and 's[tab]ility'.

Structural adequacy

Structural adequacy [is] the first n[umb]er in the [FRR] sequence and re[fer]s to the abil[ity] of a specimen to resist applied vertical lo[ads] during t[he] test for fire resistance.

If a floor requires a co[lumn] or vertical support, then the column must have a structural ad[equ]acy rating no less than the FRR of the f[loo]r/ceiling syste[m].

Similar[ly] a wall su[ppo]rting a floor above requires a structural adequa[cy] ratin[g] no less t[han] the FRR of the floor. In this case simply se[lec]ting an FRR may not always be appropriate, such as when the w[all] is located entirely within a fire-cell and is not itself a fire separa[tion]. In a standard furnace test for fire resistance, a specimen is c[om]monly exposed from one side only. If a wall located within a fire-cell is potentially exposed to fire from both sides simultaneously, 'universal' or 'one way' lining protection may need to be provided to both sides.

Lateral stability

Although stability can have a wider meaning, in the context of fire resistance we suggest it is referred to as lateral stability, or the ability of a building element to resist horizontal forces. Provision of lateral stability, where required, is a matter of design and is not determined by standard fire resistance testing.

Lateral stability provisions are usually required for external fire rated walls of single-storey or the top floor of multi-level buildings where support is lost when an unprotected roof structure fails in a fire. In this case external walls are designe[d] [as] cantilever[s] capable of resisting a nominal lateral forc[e]. [De]sign might not be required for external wall[s] [de]signed to be pu[shed] inwards by a collapsing roof structure.

If a wall separates fire-cells an[d] the non-a[ffe]cted fire-cell co[ntin]ues to provide lateral support, [spe]cific lateral stab[ility] provisio[ns] are usually not required.

NZBC Clause G6 — [Air]borne a[nd] Impact Sound

For many specifications [in] the [tech]nical literatu[re] Sound Transmission Cla[ss] (STC / [R]w) and Impact [In]sulation Class (IIC) performances are [giv]en. For hi[gher] perf[orm]ances, including those required by N[Z]BC Clause G[6] Airborne and Impact Sound, co[nsu]lt the current ve[rsi]on of 'GIB Noise Control® Systems'.

HANDLING A[ND] LIM[ITA]TIONS

G[IB®] plasterboard mus[t be] stacked flat and protected from the w[eat]her.

GIB® plas[terb]oard must be handled as a finishing material.

G[IB®] plasterboard linings must not be exposed to liquid water or be [ins]talled in situations where extended exposures to relative humidity above 90% can reasonably be expected.

Adhesive in GIB® Fire Rated Systems cannot be used as an alternative to specified mechanical fasteners.

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

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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 system. The FRR of a wall or floor/ceiling system applies across the entire element, from the exposed to the unexposed face. Temperatures inside the cavity can rise to a critical level for some steel members and it cannot be automatically assumed that a steel member achieves the structural adequacy rating of the cavity system within which it is contained. For guidance on the protection of structural steel members, refer to the columns and beams section of this document.

TIMBER FRAMED WALLS

Loadbearing (LB) and non-loadbearing (NLB) walls

Consult the current edition of NZS 3604 to determine framing dimensions and wall heights for LB and NLB walls. Beyond these limits, specific engineering design is required.

Framing spacing cannot be more and timber dimensions cannot be less than those specified for the relevant GIB® system.

STEEL FRAMED WALLS

Non-loadbearing (NLB) 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.

Loadbearing (LB) walls

The solutions in this technical literature for loadbearing steel stud walls are conservatively based on limiting steel 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 — fire load ÷ capacity), where;

- FRR (LB) is the calculated FRR of the LB wall
- FRR (NLB) is the FRR of the NLB wall with equivalent linings
- Fire 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 loadbearing steel stud has an ambient capacity of 12kN/stud and a fire design load of 7kN/stud. The linings are 13mm GIB Fyreline installed in accordance with NLB specification GBS 60. Estimate the FRR of the equivalent LB system as follows:

FRR (LB) = 60 x (1 – 7 ÷ 12) = 60 x 2/3 = 40 minutes, or

FRR (LB) = 40/60 = 40.

FLOOR/CEILING SYSTEMS

Floor/ceiling systems have generally been tested for a design load of 3kPa. For span tables consult the latest version of NZS 3604 or proprietary joists supplier information.

Flooring shall be nominal 20mm oriented strand board, or 20mm particle board complying with AS/NZS 1860 Part 1:2017 Particleboard flooring — Specifications, or minimum 17mm plywood manufactured to AS/NZS 2269 Part 0:2012 Plywood — Structural — Specifications. Existing tight tongue and groove flooring in good condition and with a minimum thickness of 20mm is acceptable. Do not:

- decrease joist dimensions or increase joist or nog spacing from what has been specified
- substitute alternative type of joist
- exceed the maximum permissible design stress.

The protection of inclined stairs can be determined from floor/ceiling system specifications, provided the average depth of cavity is the same or greater.

SMOKE SEPARATIONS

Timber or steel stud wall lined on both faces with a minimum of 10mm GIB® plasterboard, and floor/ceiling systems lined with a minimum of 13mm GIB® plasterboard, will meet the requirement for an FRR of at least 10/10/– as required for a Smoke Separation. Linings, installation stopping and finishing must be in accordance with the requirements as published in the GIB® Site Guide. Any remaining perimeter gaps greater than 0.5mm must be sealed to limit the passage of smoke.

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.

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 a relevant substrate.

FIRE RESISTANCE OF CLAD WALLS

GIB® plasterboard installed on the external face of a frame must be protected from the weather during installation and in-service. The FRR of the GIB® System is unaffected by the cladding. Exterior cladding over the GIB® plasterboard must comply with:

- NZBC Clauses C1–6 with respect to exterior surface finishes
- NZBC E2/AS1, and be installed over a flexible wall underlay and drained cavity.

Where GIB® Fire Rated Systems are clad with any of the following materials, sheet joints and screw heads may be left unstopped:

- Timber or wood-based products
- Flat or profiled steel
- Fibre cement sheets or boards
- Exterior insulation and finish systems (EIFS).

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STOPPING ALTERNATIVE

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

TOP-DOWN FIRE RESISTANCE

The New Zealand Building Code documents require floors to be rated from the underside, based on the FRR of the fire-cell below. Although often ignored, potential top-down exposure is sometimes a consequence of building design and layout.

An FRR is by definition the result against a standard furnace test, and furnaces are not designed for top-down exposure. A standard test furnace is placed vertically for wall testing or rotated horizontally for a floor or ceiling specimen. Turning the furnace upside-down to expose an element from above is not practical. Turning the specimen upside-down does not fairly characterise gravity effects and would not be representative of actual construction.

The performance of top-down fire resistance can be assessed by considering wall and floor/ceiling test results. For a given FRR, the performance specification for ceiling linings is generally higher than for walls. Compare, for example, wall specification GBTL 60 (13mm GIB Fyreline® each side of timber studs) with specification GBFC 60 (16mm GIB Fyreline® on timber joists).

Because gravity acts more severely on ceiling linings, a higher performance lining is usually required. However, when installed on top, gravity assists by holding linings on a floor or floor framing.

Non-loadbearing floor/ceiling

A top-down or two way FRR can be created by placing the corresponding wall lining on top of the framing and the relevant ceiling lining below. Figure 1 shows the solution using a 60-minute example.

Loadbearing floor/ceiling

When it is desirable to provide a floor with loadbearing capability, the solution is to first install structural sheet flooring, which in turn is protected against top-down exposure with the corresponding GIB Fyreline® ceiling lining and a thin wear la mdf, carpet or flooring vinyl (depending on inte d use). Th illustrated in Figure 2.

For project-specific advice and further ils, please contac ur GIB® Helpline on 0800 100 44

FIGURE 1 — 60-MINUTE N OP-DOW R

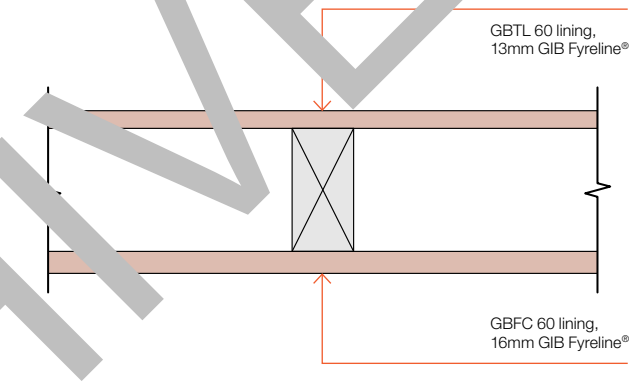
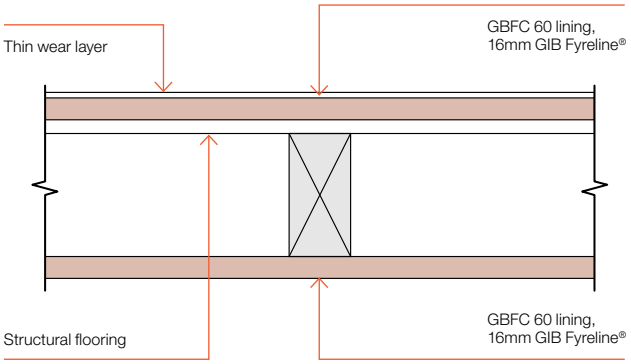


FIGURE 2 — 60-MINUTE LB TOP-DOWN FRR



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BOARD SUBSTITUTION OPTIONS

Acceptable GIB Fyreline® alternatives	
10mm GIB Fyreline® can be replaced with	10mm GIB Braceline®/Noiseline® 10mm GIB Ultraline® 10mm GIB Aqualine® 13mm GIB® Standard
13mm GIB Fyreline® can be replaced with	13mm GIB Braceline®/Noiseline® 13mm GIB Aqualine® 13mm GIB Toughline® 13mm GIB Toughline® Aqua

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.

ACOUSTIC SEALANT

To achieve the sound transmission class (STC) published for the various specifications in this technical literature, a bead of GIB Fire Soundseal® must be placed around the perimeter of the frame or inner layer. The outer layer is then bedded onto the bead.

GIB® SYSTEMS SUPPLEMENTS AND PRODUCT UPDATES

From time to time updated information will be communicated via Systems Supplements, which are available only on the GIB® website at gib.co.nz. Search 'supplem latest updates. Sign up to the GIB® database t sure you a contacted when technical updates ar ade.

The GIB® App gives you key GIB® techni information at yo fingertips for free. Get technic nd event ates instantly on the go, to keep you up t ate. Download t App fro Apple iTunes or the Go Play store day by s for 'GIB plasterboard'.

SUPPORTING OCUM

Where reference i ade in th chnica erature to supporting documents without ing a spec of release, such as NZS 3604 or the GIB ite Guide, th atest version must be consu This is the sion current at the time the project pecification mpile nd submitted for consent.

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SUSTAINABILITY AND THE ENVIRONMENT

Winstone Wallboards is committed to a holistic view of sustainability: environmental, social and economic.

- We manufacture products that are good for the environment.
- We actively consider the full life cycle of our products and support recycling initiatives both from our manufacturing and general construction waste.
- We innovate systems and solutions that keep people safe and protected in buildings.
- We support jobs and growth within our communities.

GIB® PLASTERBOARD — A GREEN BUILDING MATERIAL

GIB® plasterboard is a sustainable, non-toxic, compostable and infinitely recyclable product made from natural gypsum and 100% recycled paper. GIB® plasterboards do not use fly ash, a derivative of coal extraction, as a bulk filler* in place of naturally occurring gypsum. Due to this, unlike many imported alternatives, a range of GIB® plasterboards are considered Red List Free, certified through Declare.

**Note: 10mm GIB Aqualine® board uses less than 0.7% fly ash as a processing agent, not as a bulk filler.*

CERTIFICATIONS

Declare

Winstone Wallboards has Declare certification for a range of our plasterboards. Considered one of the most advanced sustainability certifications in the built environment, Declare is like a nutritional label for building products, offering specifiers, contractors and building users insight into the ingredients used in the manufacture of building products.

Global Greentag

A range of GIB® plasterboards have also achieved Global Greentag certification, one of the world's most robust, trusted and widely recognised eco-labels.

Environmental Product Declaration (EPD)

Winstone Wallboards has been the first and only plasterboard manufacturer in Australia to publish an Environmental Product Declaration (EPD). The EPD quantifies the environmental performance of GIB® plasterboard including its carbon footprint, embodied energy and other data. Projects utilising GIB® plasterboard will qualify for full Green Star points due to Winstone Wallboards holding an EPD for six or more products. The EPD for GIB® plasterboard is available on the GIB® website. Visit gib.co.nz to download the certifications.

WASTE RECYCLING

Winstone Wallboards works closely with local waste companies on initiatives to recycle plasterboard waste. Green Gorilla has introduced a plasterboard recycling service in Auckland. Plasterboard is collected separately from general building and construction waste, the waste volumes and tonnages are recorded and reported per project for builders and their customers, which allow plasterboard recovery statistics to be provided as part of total site landfill diversion and environmental reporting for Green Star and Homestar accreditation. In Christchurch, plasterboard manufacturing waste is processed with offcuts shredded and screened to return it to gypsum form. The recycled gypsum is supplied as a soil conditioner to farms, orchards and vineyards.

LOCAL MANUFACTURE

GIB® plasterboard and compounds are manufactured in New Zealand*. We have complete oversight of our factory conditions and the team who work in our manufacturing plants. Our decision to manufacture locally supports local jobs and directly supports the country's economy.

**Note: GIB Barrierline® plasterboard is manufactured to Winstone Wallboards' specific specification from a reputable overseas manufacturer.*

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Two way FRR and smoke separation — timber or steel frame

Specification number	Performance	Specifications
GBSm 10	**FRR** 10/10/10	**Lining** A minimum of 1 layer of 10mm GIB® plasterboard each side

FRAMING

Timber or steel framing designed to meet relevant criteria for strength, serviceability and durability, and the minimum requirements of the GIB® Site Guide.

Stud width shall be 35mm minimum.

Stud spacing at 600mm centres maximum.

LINING

Minimum 1 layer of 10mm GIB® plasterboard each side of timber or steel framing.

Installation in accordance with the GIB® Site Guide.

Vertical or horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, use full height sheets where possible.

When fixing horizontally, longitudinal sheet joints do not have to be formed directly over solid framing.

PENETRATIONS

Single-sided metal or plumbing services up to 65mm d[iameter] and single-sided electrical services up to 90 x 50[mm] are perm[itted] up to a maximum of two per stud cavity.

FASTENING THE LINING

As a minimum, fix in accordance with the G[IB®] Site G[uide]

Place fasteners at 300mm centres ar[ound] the sheet perim[eter] 12mm from longitudinal sheet edges a[nd] 18mm from sheet [ends].

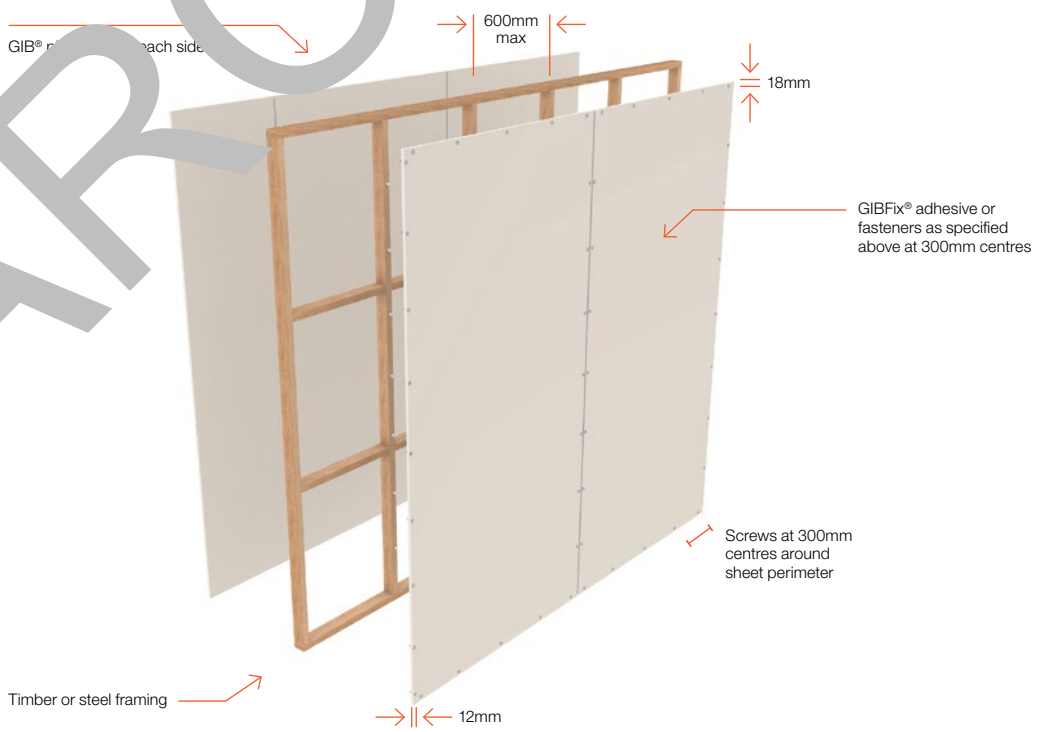
Place fasteners 50mm from s[heet] corners [using] plates. At [internal] corners place an additiona[l] fastener 50–60m[m] vertically closer than 10mm from [stud]-to-stud j[oints].

Fix linings to intermed[iate] studs w[ith] fasteners or GIBFix® adhesive at 300mm cent[res]. Whe[n] [using] adhesive, do [not] place daubs at sheet edges or w[ithin] 200m[m] of mechanic[al] fasteners.

Remaining perimet[er] gaps must [be] filled or stopped or sealed using either a genera[l] purpose flexib[le] sealant or GIB Fire Sou[thern]® to inhibit t[he] passage of smoke.

JOINTING

All fa[stener] heads stopped and all sheet joints tape reinforced and stopped[in] accordance with the GIB® Site Guide.



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Two way FRR — timber frame

Specification number	Performance		Specifications	
GBTL 30	**FRR**	30/30/30	**Lining**	1 layer 10mm GIB Fyreline® each side
	STC	33	**LB/NLB**	Load bearing
	Rw	34		

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 maximum.

WALL HEIGHTS AND FRAMING DIMENSIONS

Non-loadbearing — Framing dimensions and height as determined by NZS 3604 stud tables for non-loadbearing partitions.

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. All sheet joints must be formed over solid timber framing. Sheets shall be tight fitted.

Vertical fixing — Stagger longitudinal sheet joints on opposite sides of the wall. When sheet end butt joints are unavoidable, they shall be formed over nogs and offset on opposite sides of the frame.

Horizontal fixing — Horizontal joints on opposite sides of the wall can be formed over the same row of nogs. Sheet end butt joints shall be formed over studs and offset on opposite sides of the frame.

FASTENING THE LINING

Fasteners
41mm x 6g GIB® Grabber® High Thread Drywall Screws.

Fastener centres
Place fasteners at 300mm centres to perimeter framing and intermediate studs.

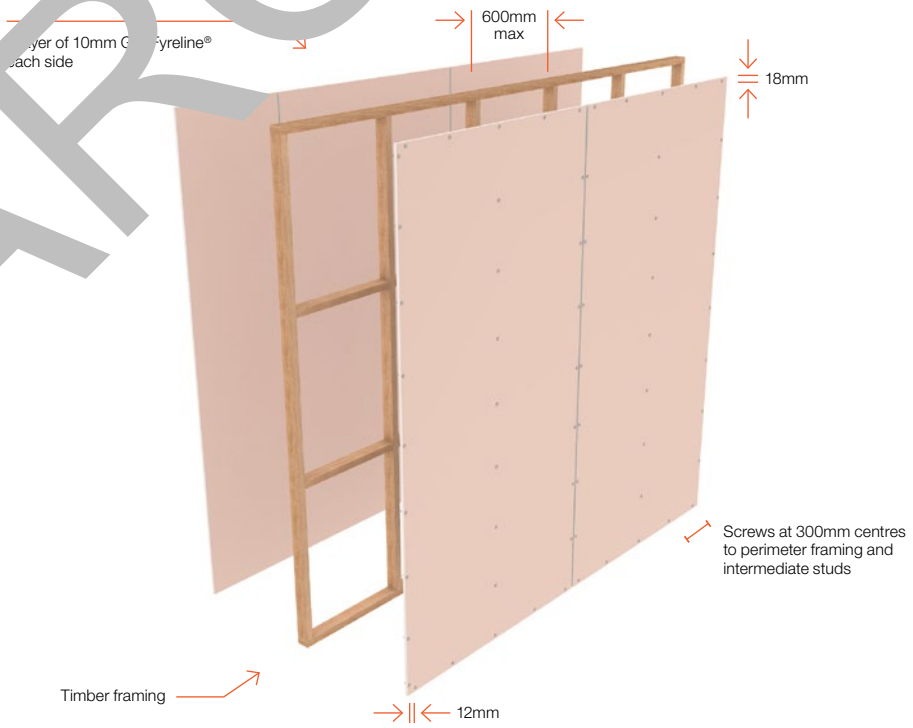
Place fasteners 50mm from sheet corners along plates. At wall corners place additional fastener 50–60mm vertically, no closer than 10mm from plate or stud joints.

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

Place fasteners at 200mm centres along sheet end butt joints.

JOINTING

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



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Two way FRR — timber frame

Specification number	Performance		Specifications	
GBTL 30b	**FRR**	30/30/30	**Lining**	1 layer 13mm GIB® Standard each side
	STC	35	**LB/NLB**	Load bearing
	Rw	35		
GBTL 30c	**FRR**	30/30/30	**Lining**	1 layer 10mm GIB® Standard each side
	STC	33	**LB/NLB**	Load bearing
	Rw	34	**Framing**	Minimum 90mm stud depth

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 maximum.

WALL HEIGHTS AND FRAMING DIMENSIONS

Non-loadbearing — Framing dimensions and height as determined by NZS 3604 stud tables for non-loadbearing partitions.

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

LINING

GBTL 30b — 1 layer of 13mm GIB® Standard each side of the frame.

GBTL 30c — 1 layer of 10mm GIB® Standard each side of the frame.

Vertical or horizontal fixing permitted. All sheet joints must be formed over solid timber framing. Sheets shall be touch fitted.

Vertical fixing — Staggered longitudinal sheet joints on opposite sides of the wall. Where sheet end butt joints are unavoidable, they shall be formed over nogs and offset on opposite sides of the frame.

Horizontal fixing – Horizontal joints on opposite sides of wall can be formed over the same row of nogs. Sheet end butt joints shall be formed over studs and offset on opposite sides of the frame.

FASTENING THE LINING

Fasteners

41mm x 6g GIB® Grabber® High Thread Drywall Screws.

Fastener centres

Place fasteners at 300mm centres to perimeter framing and intermediate studs.

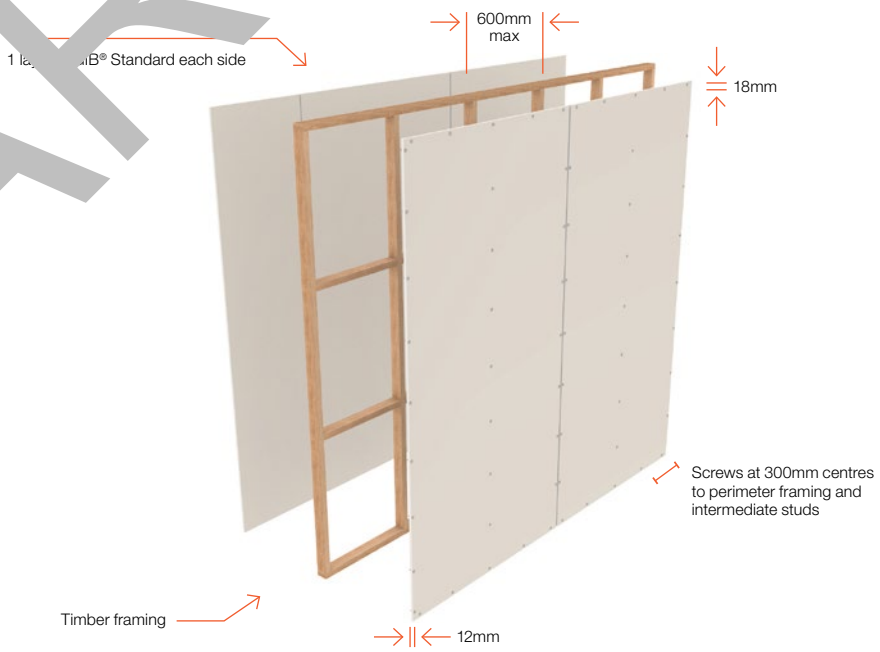
Place fasteners 50mm from sheet corners along plates. At wall corners place an additional fastener 50–60mm vertically, no closer than 100mm from plate-to-stud joints.

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

Place fasteners at 200mm centres along sheet end butt joints.

JOINTING

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



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Two way FRR — timber frame

Specification number	Performance		Specifications	
GBTL 60	**FRR**	60/60/60	**Lining**	1 layer 13mm GIB Fyreline® each side
	STC	36	**LB/NLB**	Load bearing
	Rw	36		

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 maximum.

WALL HEIGHTS AND FRAMING DIMENSIONS

Non-loadbearing — Framing dimensions and height as determined by NZS 3604 stud tables for non-loadbearing partitions.

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. All sheet joints must be formed over solid timber framing. Sheets shall be tight fitted.

Vertical fixing — Stagger longitudinal sheet joints on opposite sides of the wall. When sheet end butt joints are unavoidable, they shall be formed over nogs and offset on opposite sides of the frame.

Horizontal fixing — Horizontal joints on opposite sides of the wall can be formed over the same row of nogs. Sheet end butt joints shall be formed over studs and offset on opposite sides of the frame.

FASTENING THE LINING

Fasteners
41mm x 6g GIB® Grabber® High Thread Drywall Screws.

Fastener centres
Place fasteners at 300mm centres to perimeter framing and intermediate studs.

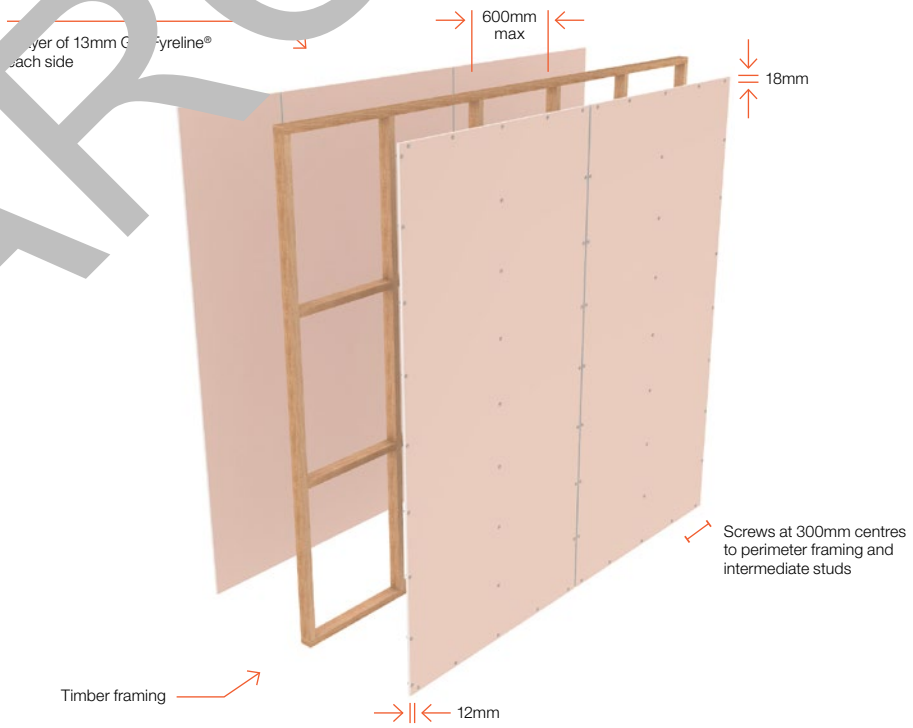
Place fasteners 50mm from sheet corners along plates. At wall corners place additional fastener 50–60mm vertically, no closer than 10mm from plate or stud joints.

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

Place fasteners at 200mm centres along sheet end butt joints.

JOINTING

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



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Two way FRR — timber frame

Specification number	Performance		Specifications	
GBTL 60b	**FRR**	60/60/60	**Lining**	2 layers 10mm GIB Fyreline® each side
	STC	44	**LB/NLB**	Load bearing
	Rw	43		

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 maximum.

WALL HEIGHTS AND FRAMING DIMENSIONS

Non-loadbearing — Framing dimensions and height as determined by NZS 3604 stud tables for non-loadbearing partitions.

Loadbearing — 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. All sheet joints must be formed over solid timber framing. Sheets shall be tightly fitted.

Vertical fixing — Stagger longitudinal sheet joints between layers and on opposite sides of the frame. When short end butt joints are unavoidable, they shall be formed over nogs, staggered between layers and staggered on opposite sides of the wall.

Horizontal fixing — Horizontal joints on opposite sides of the wall can be formed over the same row of nogs but must be staggered between layers. Sheet end butt joints shall be formed over studs, staggered between layers and offset on opposite sides of the frame.

Alternatively, inner layer sheets can be fixed vertically with sheet joints offset on opposite sides of wall and with outer layer sheets fixed horizontally with longitudinal offset joints on opposite sides of the wall formed over the same row of nogs. Sheet end butt joints shall be formed over framing and staggered between layers and staggered on opposite sides of the wall.

FASTENING THE LINING

Fasteners

Inner layer: 41mm x 6g GIB® Grabber® High Thread Drywall Screws.

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

Fastener centres

Inner layer: 600mm centres vertically up each stud.

Outer layer: 300mm centres to perimeter framing and intermediate studs.

Place fasteners 50mm from sheet corners along plates. At wall corners place an additional fastener 50–60mm vertically, no closer than 10mm from plate-to-stud joints.

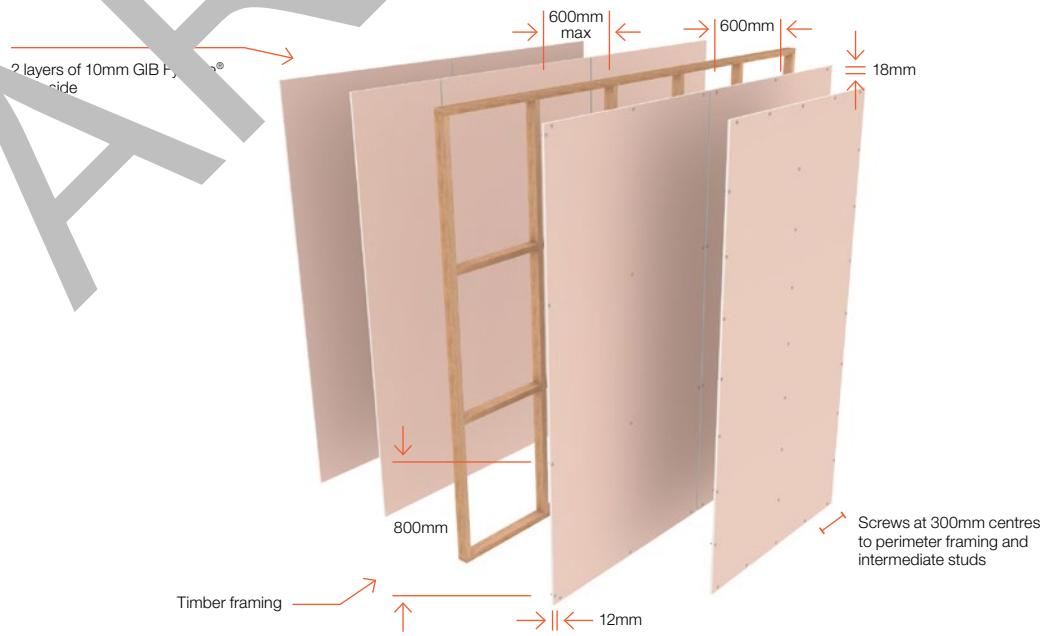
Place fasteners 12mm from longitudinal sheet edges and 18mm from sheet ends.

Place fasteners at 200mm centres along sheet end butt joints.

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".



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Two way FRR — timber frame

Specification number	Performance		Specifications	
GBTL 90	**FRR**	90/90/90	**Lining**	1 layer 16mm GIB Fyreline® each side
	STC	36	**LB/NLB**	Load bearing
	Rw	37		

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 maximum.

WALL HEIGHTS AND FRAMING DIMENSIONS

Non-loadbearing — Framing dimensions and height as determined by NZS 3604 stud tables for non-loadbearing partitions.

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. All sheet joints must be formed over solid timber framing. Sheets shall be tight fitted.

Vertical fixing — Stagger longitudinal sheet joints on opposite sides of the wall. When sheet end butt joints are unavoidable, they shall be formed over nogs and offset on opposite sides of the frame.

Horizontal fixing — Horizontal joints on opposite sides of the wall can be formed over the same row of nogs. Sheet end butt joints shall be formed over studs and offset on opposite sides of the frame.

FASTENING THE LINING

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

Fastener centres
Place fasteners at 300mm centres to perimeter framing and intermediate studs.

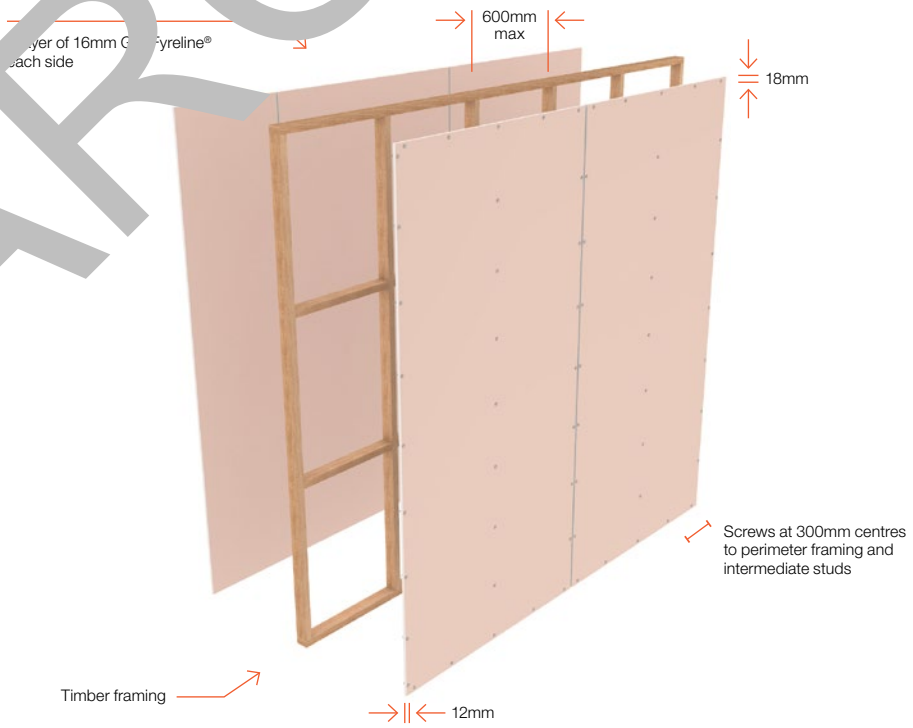
Place fasteners 50mm from sheet corners along plates. At wall corners place additional fastener 50–60mm vertically, no closer than 10mm from plate or stud joints.

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

Place fasteners at 200mm centres along sheet end butt joints.

JOINTING

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



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Two way FRR — timber frame

Specification number	Performance		Specifications	
GBT 120a	**FRR**	–/120/120	**Lining**	2 layers 13mm GIB Fyreline® each side
	STC	46	**LB/NLB**	Non load bearing
	Rw	45		

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 permitted only. All sheet joints must be formed o solid timber framing. Sheets shall be touch fitted.

Stagger longitudinal sheet joints between layers and on opposite sides of the frame. When sheet end butt joints are unavoidable, they shall be formed over nogs, staggered between l s and staggered on opposite sides of the wall.

FASTENING THE LINING

Fasteners

Inner layer: 51mm x 7g GIB® Grabber h Thread Drywall Screws.

Outer layer: 63mm x 8g G Grabber® Self Ta ng Drywall Screws.

Fastener centres

Inner layer: 800 n cent ally up each d.

Outer layer: 300m centres t rimeter ning and intermediate studs.

Pl steners 50mm om sheet corners along plates. At wall corners p n addit al fastener 50–60mm vertically, no ser than 10m m p te-to-stud joints.

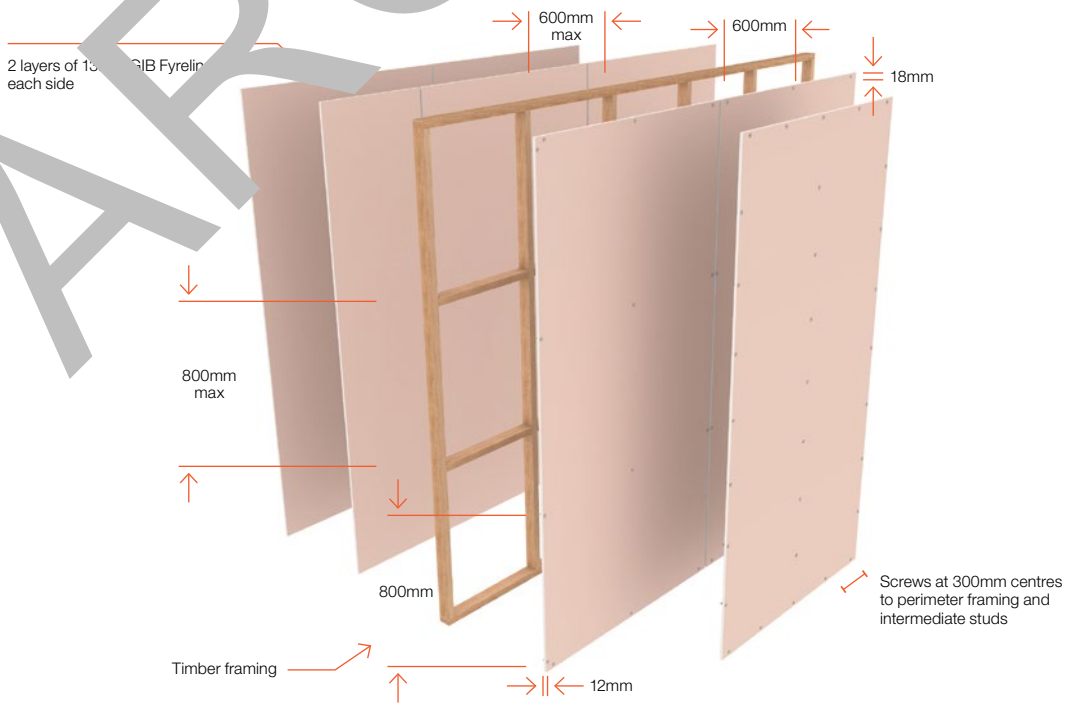
Pla steners 12mm from longitudinal sheet edges and 18mm n sheet ends.

ce faste at 200mm centres along sheet end butt joints.

JOI NG

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".



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Two way FRR — timber frame

Specification number	Performance		Specifications	
GBT 120b	**FRR**	–/120/120	**Lining**	1 layer 19mm GIB Fyreline® each side
	STC	33	**LB/NLB**	Non load bearing
	Rw	37		

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 maximum.

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. All sheet joints must be formed over solid timber framing. Sheets shall be touch fitted.

Vertical fixing — Stagger longitudinal sheet joints on opposite sides of the wall. When sheet end butt joints are unavoidable they shall be formed over nogs and offset on opposite sides of the frame.

Horizontal fixing — Horizontal joints on opposite sides of the wall can be formed over the same row of nogs. Sheet end butt joints shall be formed over studs and offset on opposite sides of the frame.

FASTENING THE LINING

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

Fastener centres
Place fasteners at 300mm centres to perimeter framing and intermediate studs.

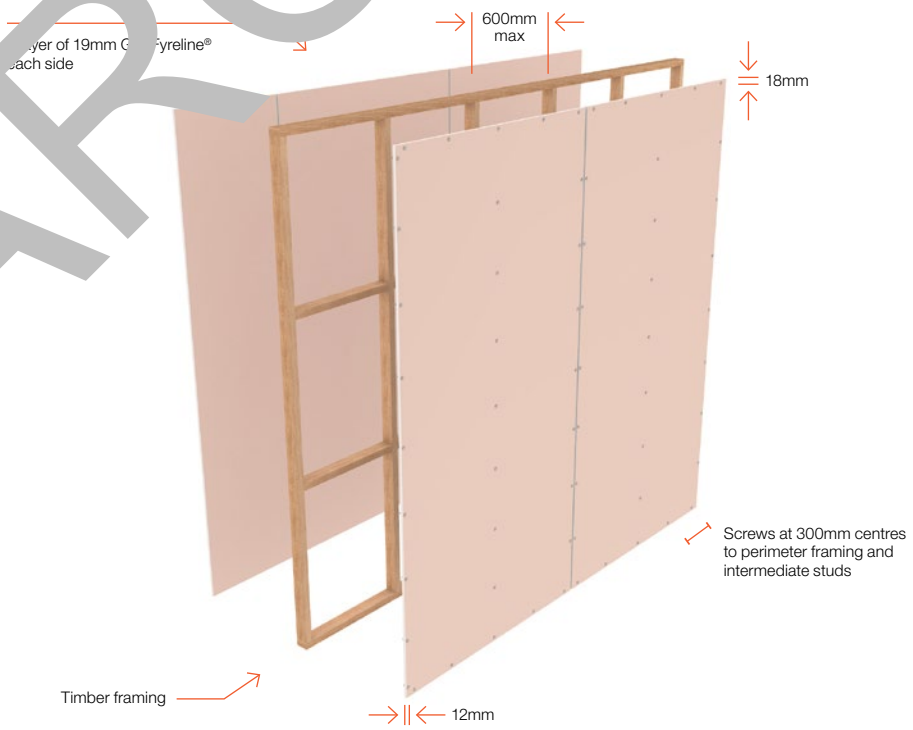
Place fasteners 50mm from sheet corners along plates. At wall corners place additional fastener 50–60mm vertically, no closer than 10mm from plate or stud joints.

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

Place fasteners at 200mm centres along sheet end butt joints.

JOINTING

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



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Two way FRR — timber frame

Specification number	Performance		Specifications	
GBTL 120	**FRR**	120/120/120	**Lining**	2 layers 16mm GIB Fyreline® each side
	STC	45	**LB/NLB**	Load bearing
	Rw	45		

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

Non-loadbearing — Framing dimensions and height as determined by NZS 3604 stud tables for non-loadbearing partitions.

Loadbearing — 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 permitted only. All sheet joints must be formed over solid timber framing. Sheets shall be touch fitted.

Stagger longitudinal sheet joints between layers and on opposite sides of the frame. When sheet end butt joints are unavoidable, they shall be formed over nogs, staggered between layers and staggered on opposite sides of the wall.

FASTENING THE LINING

Fasteners

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

Outer layer: 63mm x 8g GIB® Grabber® Self Tapping Drywall Screws.

Fastener centres

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

Outer layer: 300mm centres to perimeter framing and intermediate studs.

Place fasteners 50mm from sheet corners along plates. At wall corners place additional fastener 50–60mm vertically, no closer than 10mm from face-to-stud joints.

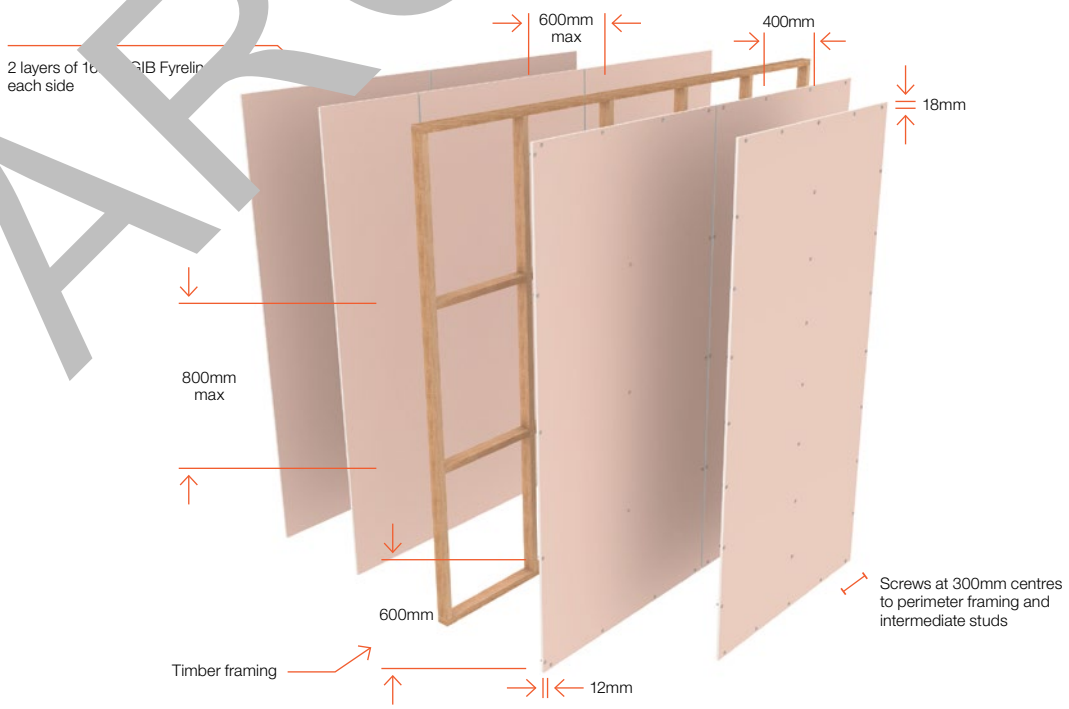
Place fasteners 12mm from longitudinal sheet edges and 18mm from sheet ends.

Place fasteners at 200mm centres along sheet end butt joints.

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".



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Two way FRR — timber frame

Specification number	Performance		Specifications	
GBT 180	**FRR**	–/180/180	**Lining**	2 layers 16mm GIB Fyreline® each side
	STC	45	**LB/NLB**	Non load bearing
	Rw	45		

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 permitted only. All sheet joints must be formed on solid timber framing. Sheets shall be touch fitted.

Stagger longitudinal sheet joints between layers and on opposite sides of the frame. When sheet end butt joints are unavoidable, they shall be formed over nogs, staggered between layers and staggered on opposite sides of the wall.

FASTENING THE LINING

Fasteners

Inner layer: 51mm x 7g GIB® Grabber[illegible]h Thread Drywall Screws.

Outer layer: 63mm x 8g GI[illegible] Grabber® Self Ta[illegible]ng Drywall Screws.

Fastener centres

Inner layer: 800[illegible]n centr[illegible]ally up each [illegible]d.

Outer layer: 150m[illegible] centres a[illegible]d the s[illegible]t perimeter, 300mm centres to [illegible]rmediate s[illegible]d a fastener to the centre of each nog.

Place fa[illegible] 50mm [illegible]m sheet corners along plates. At wall [illegible]rners place a[illegible]ditio[illegible] fastener 50–60mm vertically, no cl[illegible] than 10mm fro[illegible]e-to-stud joints.

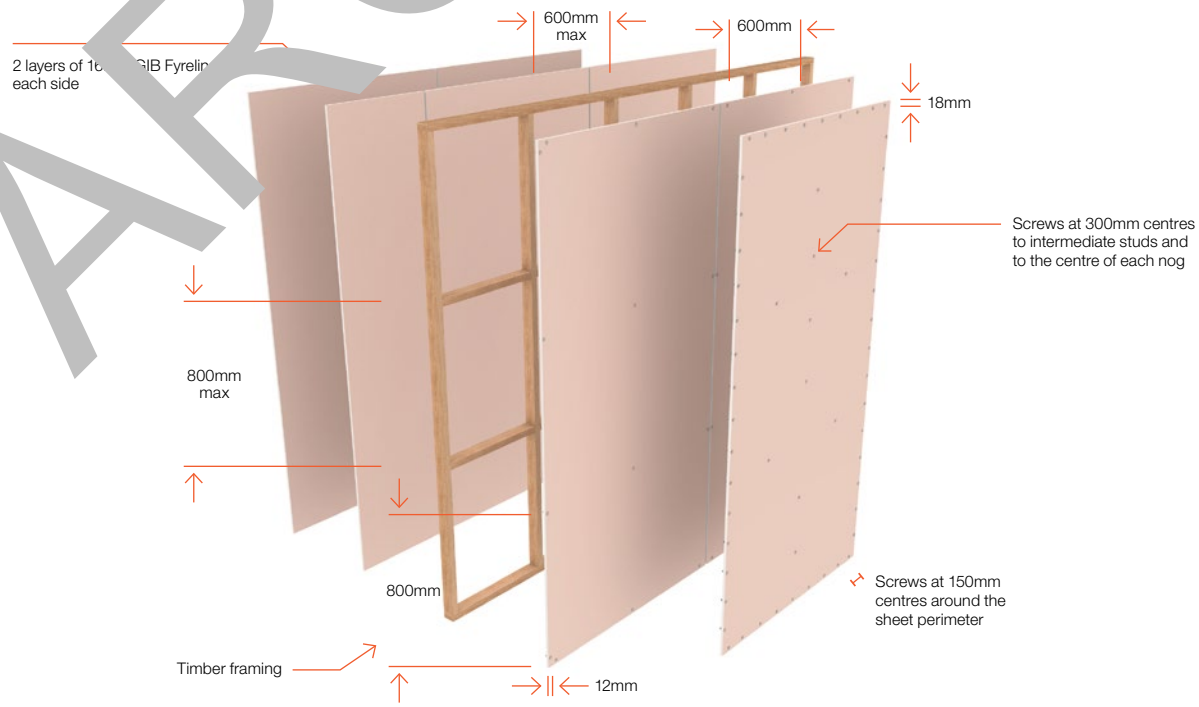
Place [illegible]eners 12mm from longitudinal sheet edges and 18mm fro[illegible]heet ends.

F[illegible] fasteners at 200mm centres along sheet end butt joints.

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".



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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBSL 15	**FRR**	15/15/15	**Lining**	1 layer 13mm GIB® Standard each side
	STC	35	**LB/NLB**	Load bearing
	Rw	35		

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 each side of the frame.

Vertical or horizontal fixing permitted. For vertical fixing, full height sheets shall be used where possible. When fixing horizontally all longitudinal sheet joints must be formed over nogs.

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

Offset joints between sheets on opposite sides of the frame.

Sheets shall be touch fitted.

All sheet joints must be formed over framing.

Linings are installed hard to floor.

FASTENING THE LINING

Fasteners

25mm x 6g GIB® Grabber® Self Tappi… rywall Screws.

Fastener centres

300mm centres up each s…

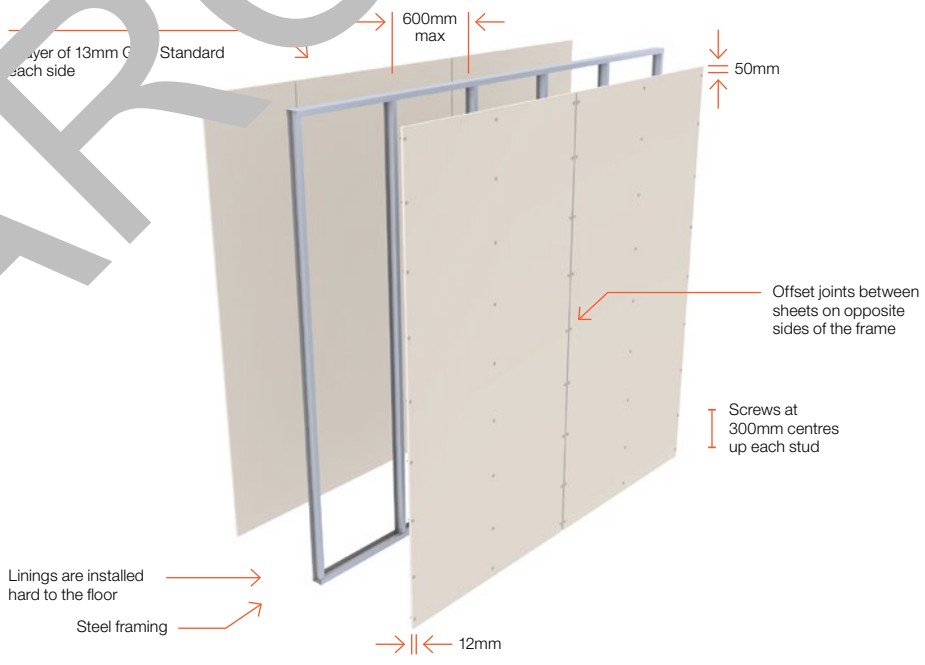
Place fasteners 12mm …m longitudi… sheet edge… d 50mm from sheet end…

Place fasteners …200mm …es along she… end butt joints.

JOINTING

All …w heads stop… d and all sheet joints tape reinforced and st… in accord… ce with the publication entitled …GIB® Site Gu…

No… See also page 14, …teel-framed Walls — Load bearing (LB) w…"



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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBS 30	**FRR**	–/30/30	**Lining**	1 layer 13mm GIB® Standard each side
	STC	35	**LB/NLB**	Non load bearing
	Rw	35		

FRAMING AND WALL HEIGHT

Minimum steel stud dimensions to be 64 x 34 x 0.50mm nominal with a 6mm return.

Minimum steel channel dimensions to be 64 x 30 x 0.50mm nominal.

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

Stud spacing at 600mm centres maximum.

Place studs to allow the nominated expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channels.

Recommended maximum wall height

Note that maximum wall heights for fire rated systems can be lower than what can be achieved with non-fire rated constructio

Nominal stud dimension (mm)	BMT (mm)	Stud centres (mm)	Max wall height (mm)	Expansion t top of ds (m
64 x 34	0.50	600	00	15
		400	3200	15
76 x 34	0.55	600	3200	15
			00	20*
		60	360	*
		4	4200	20*
92 x 34	0.75	00	42	20*
		400	4800	25*

*Use a inimum 3 eep head channel.

LINING

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

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

When sheet end butt join are unavoidable, the all h formed over nogs and ggered.

Offset joints betw een s ts on posite sides f the frame.

Sheets shall be t h fitted.

All sheet joints mus e formed o fr g.

Lini are installed h d to floor.

STENING LIN G

Fa ners

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

Fastener tres

mm centr up each stud.

Place teners 12mm from longitudinal sheet edges and 50mm om sheet ends.

Place fasteners at 200mm centres along sheet end butt joints.

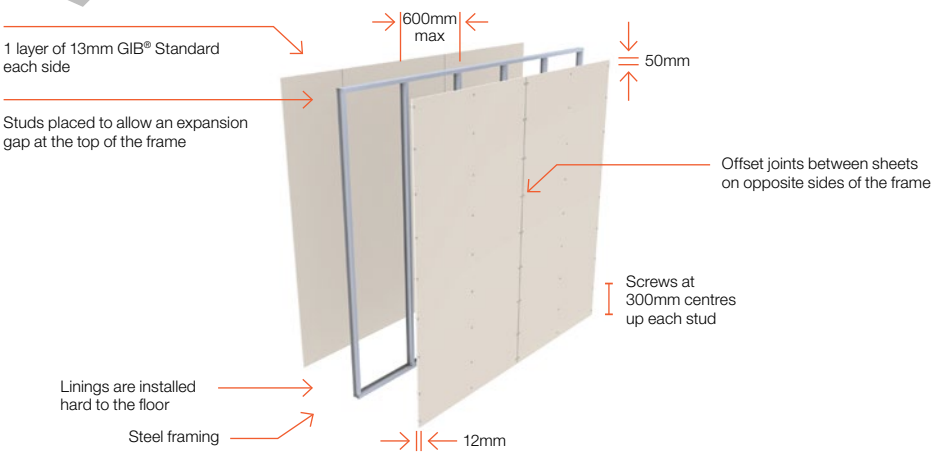
Fastening the linings at 18mm from sheet ends to top and bottom channels is permitted as long as the fasteners do not connect the studs and channels. Do not fix linings to the top track when floor deflection has to be accommodated.

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".



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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBSL 30a	**FRR**	30/30/30	**Lining**	1 layer 16mm GIB Fyreline® each side
	STC	40	**LB/NLB**	Load bearing
	Rw	40		
GBSL 30b	**FRR**	30/30/30	**Lining**	2 layers 10mm GIB Fyreline® each side
	STC	45	**LB/NLB**	Load bearing
	Rw	45		

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 or horizontal fixing permitted. For vertical fixing, full heig sheets shall be used where possible. When fixing horizontally, all longitudinal sheet joints must be formed over nogs.

When sheet end butt joints are unavoidable, they sha form over nogs and staggered.

Offset joints on opposite sides of the fra and between she in double-layered systems.

Sheets shall be touch fitted.

All sheet joints must be formed over fi ing.

Linings are installed ha

FASTENING THE LINING

Fasteners

GBSL 30a — 32mm GIB® Grab Self Tapp Drywall Screws.

GBSL 30b inner er — 2 x 6g GIB® G ber® Self Tapping Drywall Screws.

GBSL 30b outer lay 32mm x 6g Grabber® Self Tapping Dr Screws.

Fastener ce

layer: 600mm up each stud.

Outer single layer: 300mm centres up each stud.

Place fast s 12mm from longitudinal sheet edges and m from s et ends.

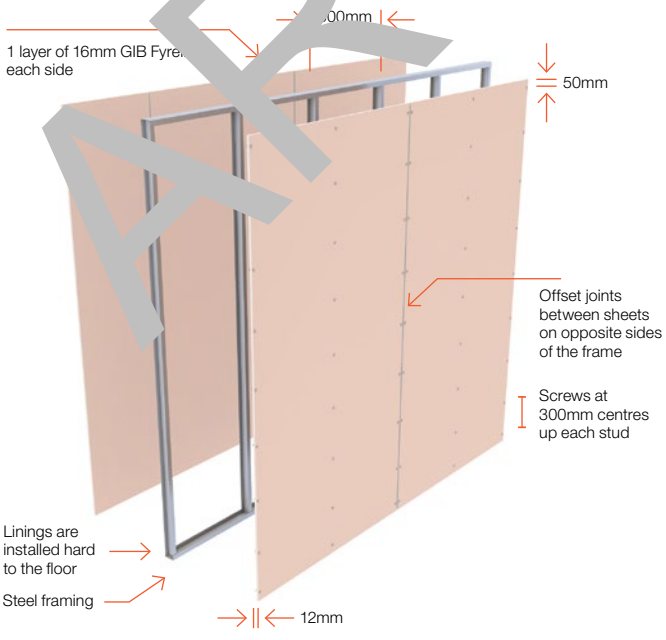
Place teners at 200mm centres along sheet end butt joints.

JOINTING

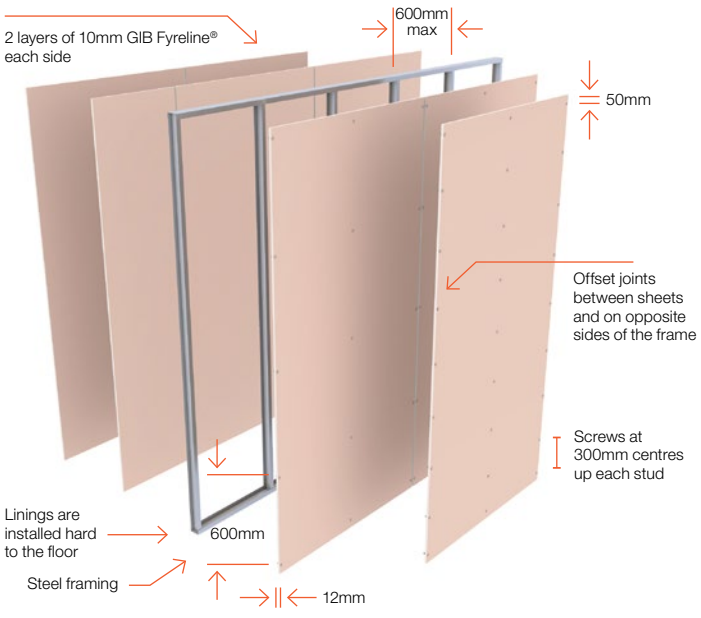
Inner layer: Unstopped.

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 14, "Steel-framed Walls — Load bearing (LB) walls".



GBSL 30a



GBSL 30b

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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBS 60	**FRR**	–/60/60	**Lining**	1 layer 13mm GIB Fyreline® each side
	STC	37	**LB/NLB**	Non load bearing
	Rw	37		

FRAMING AND WALL HEIGHT

Minimum steel stud dimensions to be 64 x 34 x 0.50mm nominal with a 6mm return.

Minimum steel channel dimensions to be 64 x 30 x 0.50mm nominal.

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

Stud spacing at 600mm centres maximum.

Place studs to allow the nominated expansion gap at the top of the frame.

The studs are held in place by the “grip” of the channels.

Recommended maximum wall height

Note that maximum wall heights for fire rated systems can be lower than what can be achieved with non-fire rated constructio

Nominal stud dimension (mm)	BMT (mm)	Stud centres (mm)	Max wall height (mm)	Expansion t top of ds (m
64 x 34	0.50	600	00	15
		400	3200	15
76 x 34	0.55	600	3200	15
			00	20*
		60	360	*
		4	4200	20*
92 x 34	0.75	00	42	20*
		400	4800	25*

*Use a imum 3 eep head channel.

LINING

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

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

When sheet end butt join are unavoidable, the all h formed over nogs and ggered.

Offset joints betw een s ts on posite sides f the frame.

Sheets shall be t h fitted.

All sheet joints mus e formed f ng.

Lini are installed h d to floor.

STENING LIN G

Fa ners

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

Fastener tres

mm centr up each stud.

Place teners 12mm from longitudinal sheet edges and 50mm om sheet ends.

Place fasteners at 200mm centres along sheet end butt joints.

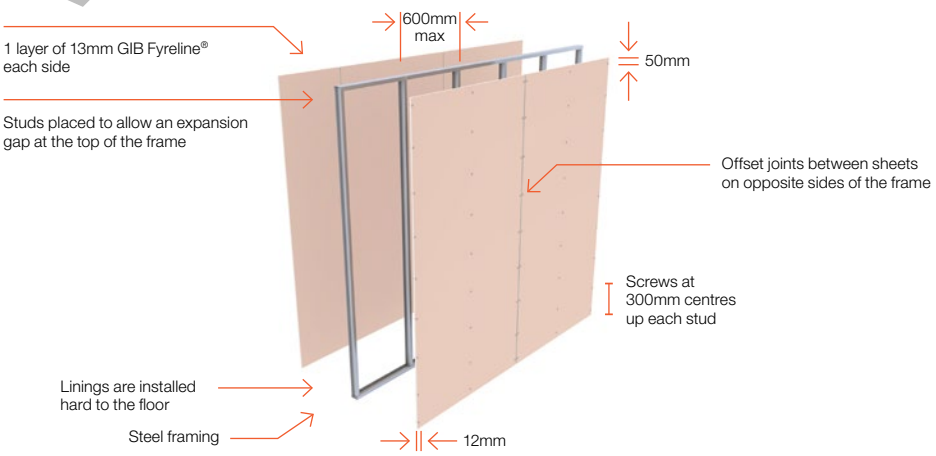
Fastening the linings at 18mm from sheet ends to top and bottom channels is permitted as long as the fasteners do not connect the studs and channels. Do not fix linings to the top track when floor deflection has to be accommodated.

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”.



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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBSL 60a	**FRR**	60/60/60	**Lining**	1 layer 19mm GIB Fyreline® each side
	STC	40	**LB/NLB**	Load bearing
	Rw	40		
GBSL 60b	**FRR**	60/60/60	**Lining**	2 layers 13mm GIB Fyreline® each side
	STC	48	**LB/NLB**	Load bearing
	Rw	48		

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 or horizontal fixing permitted. For vertical fixing, full heig sheets shall be used where possible. When fixing horizontally, all longitudinal sheet joints must be formed over nogs.

When sheet end butt joints are unavoidable, they sha form over nogs and staggered.

Offset joints on opposite sides of the fra and between she in double-layered systems.

Sheets shall be touch fitted.

All sheet joints must be formed over fi ing.

Linings are installed ha

FASTENING THE LINING

Fasteners

GBSL 60a — 32mm GIB® Grab Self Tapp Drywall Screws.

GBSL 60b inner er — 2 x 6g GIB® G ber® Self Tapping Drywall Screws.

GBSL 60b outer lay — 41mm x GIB® Grabber® Self Tapping Dr Screws.

Fastener ce

layer: 600mm up each stud.

Outer single layer: 300mm centres up each stud.

Place fast s 12mm from longitudinal sheet edges and 50mm sheet en s.

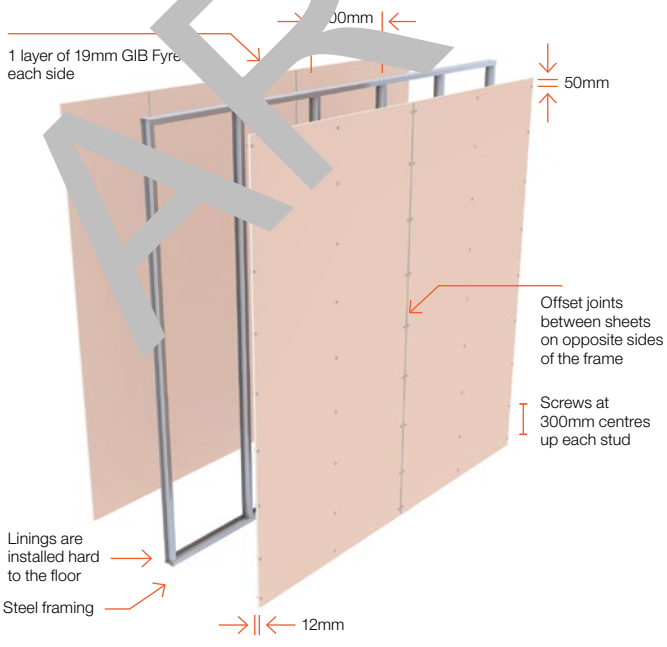
Place teners at 200mm centres along sheet end butt joints.

JOINTING

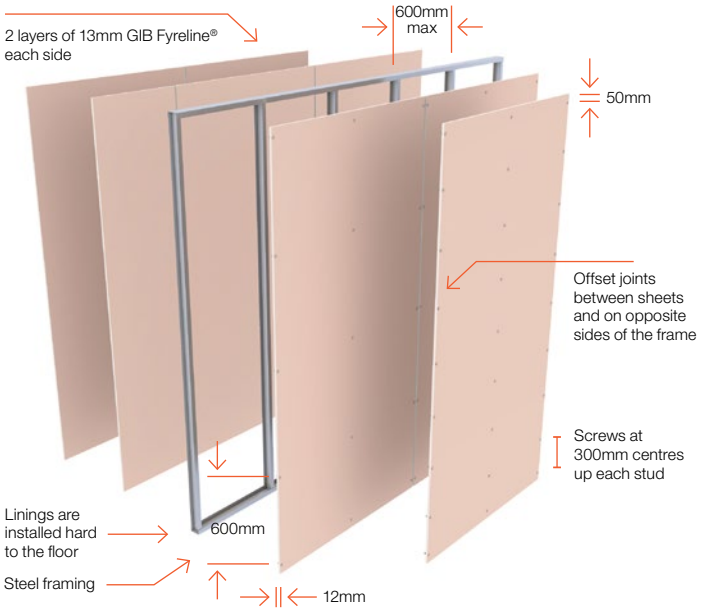
Inner layer: Unstopped.

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 14, "Steel-framed Walls — Load bearing (LB) walls".



GBSL 60a



GBSL 60b

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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBS 90	**FRR**	–/90/90	**Lining**	1 layer 16mm GIB Fyreline® each side
	STC	40	**LB/NLB**	Non load bearing
	Rw	42		

FRAMING AND WALL HEIGHT

Minimum steel stud dimensions to be 92 x 34 x 0.75mm nominal with a 6mm return.

Minimum steel channel dimensions to be 92 x 30 x 0.75mm nominal for the bottom channel and 92 x 50 x 0.75mm nominal for the top channel.

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

Stud spacing at 600mm centres maximum.

Place studs to allow the nominated expansion gap at the top of the frame.

The studs are held in place by the “grip” of channels.

Recommended maximum wall height

Note that maximum wall heights for fire rated systems can be lower than what can be achieved with non-fire rated construction.

Nominal stud dimension (mm)	BMT (mm)	Stud centres (mm)	Max wall height	Expansion [illegible]
92 x 34	0.75	600	3000	15
		400	3400	15
150 x 34	0.75	600	4400	20*
		40	5[illegible]	
	15	60	5000	25*
				30*

*Use a minimum 50mm-deep head channel.

LINING

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

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

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

Offset joints between sheets on opposite sides of the frame.

Sheets shall be tightly fitted.

All sheet joints must be formed on framing.

Linings are installed hard to floor.

FASTENING LININGS

Fasteners

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

Fastener centres

300mm centres up each stud.

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

Place fasteners at 200mm centres along sheet end butt joints.

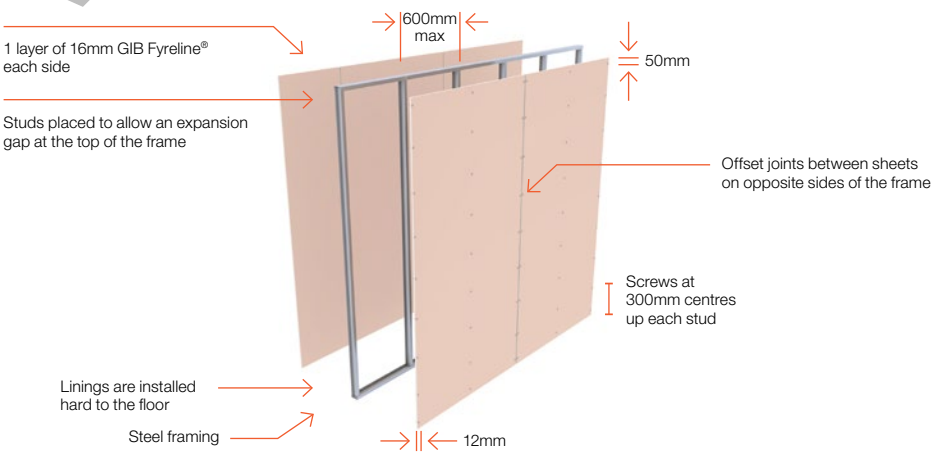
Fastening the linings at 18mm from sheet ends to top and bottom channels is permitted as long as the fasteners do not connect the studs and channels. Do not fix linings to the top track when floor deflection has to be accommodated.

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”.



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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBS 90b	**FRR**	–/90/90	**Lining**	1 layer 13mm GIB Fyreline® each side of a double-stud frame with a 13mm GIB Fyreline® central barrier
	STC	43 (51 with Pink® Batts® R1.2 (50mm) glass wool insulation in both frames)	**LB/NLB**	Non load bearing
	Rw	45 (53 with Pink® Batts® R1.2 (50mm) glass wool insulation in both frames)		
GBS 60b*	**FRR**	–/60/60	**Lining**	1 layer 13mm GIB Fyreline[illegible]ch side of a double[illegible]ud frame with a 13mm [illegible]IB Fyreli[illegible] central barrier
	STC	42 (50 with Pink® Batts® R1.2 (50mm) glass wool insulation in both frames)	**LB/NLB**	Non load bearin[illegible]
	Rw	44 (52 with Pink® Batts® R1.2 (50mm) glass wool insulation in both frames)		

FRAMING AND WALL HEIGHT

Minimum steel stud dimensions to be 64 x 34 x 0.50mm nominal with a 6mm return.

Minimum steel channel dimensions to be 64 x 30 x 0.50mm nominal.

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

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion c[illegible]top of the frame.

The studs are held in place by the "g[illegible]" of the channels.

Recommended maximum height for [illegible]ds at 600mm cen[illegible]s is:

— 3000mm for 64 x 34 [illegible]T fran[illegible]
— 3600mm for 76 x [illegible] x 0.75 B[illegible] framing,
— 4200mm for 92[illegible]4 x 0.75 B[illegible] framing.

For wall heights g[illegible]er than [illegible]inimum 50mm-deep head cr[illegible]nd 20mm expansion tolerance at the top of the studs.

LINI[illegible]

1 layer [illegible]13mm G[illegible]® (the central barrier) to one side of the firs[illegible]

Erect the s[illegible]ond frame against the central barrier with studs offset nomi[illegible] 300mm and no less than 200mm from the first frame and fix[illegible] first layer of 13mm GIB Fyreline® (the central barrier) to the second frame.

Complete the assembly by lining the open side of both frames with a single layer of 13mm GIB Fyreline®.

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

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

Sheets shall be touch fitted.

All [illegible]et joints must [illegible]formed over [illegible]raming.

[illegible]inings are [illegible]lled ha[illegible]o floor.

FA[illegible]ENING THE LIN[illegible]G

Faste[illegible]
[illegible]2mm x 6[illegible]B® Grabber® Self Tapping Drywall Screws.

F[illegible]ner centres
300[illegible]centres up each stud.

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

Place fasteners at 200mm centres along sheet end butt joints.

Fastening the linings at 18mm from sheet ends to top and bottom channels is permitted as long as the fasteners do not connect the studs and channels. Do not fix linings to the top track when floor deflection has to be accommodated.

SERVICES

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

Without penetrations in the outer linings, the system achieves a –/90/90 FRR.

**The FRR is reduced to –/60/60 when the central barrier remains intact but metal or PVC plumbing services up to 90 x 50mm rectangular or 65mm in diameter penetrate the outer linings, without specialist fire stopping. Penetrations must be limited to 2 per stud bay and have neatly cut holes with 6mm maximum clearance filled with either a general purpose flexible sealant or GIB Fire Soundseal®.*

JOINTING

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

The central barrier does not require plaster stopping.

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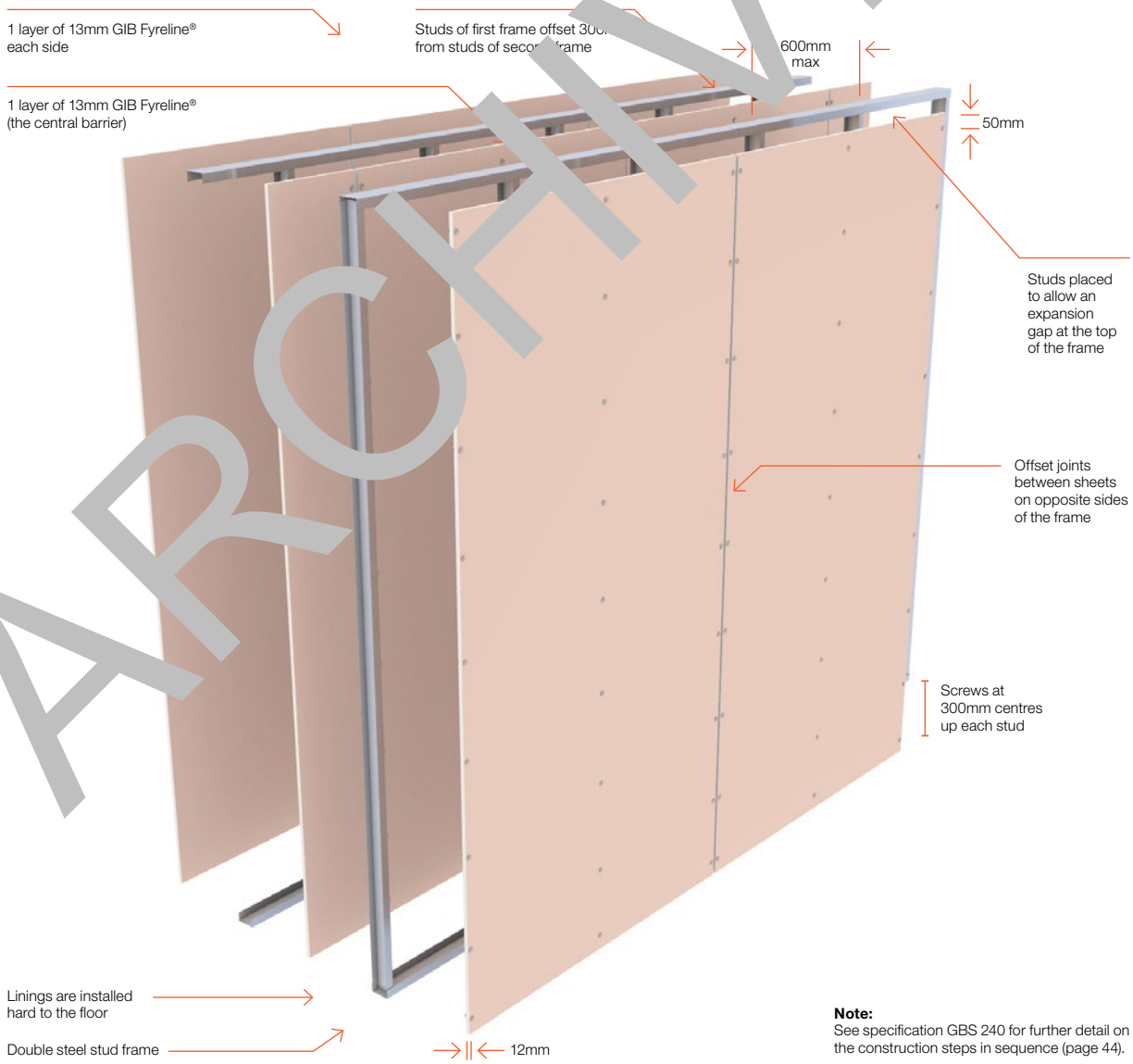
Two way FRR — steel frame

Specification number	Performance		Specifications	
GBS 90b	**FRR**	–/90/90	**Lining**	1 layer 13mm GIB Fyreline® each side of a double-stud frame with a 13mm GIB Fyreline® central barrier
	STC	43 (51 with Pink® Batts® R1.2 (50mm) glass wool insulation in both frames)	**LB/NLB**	Non load bearing
	Rw	45 (53 with Pink® Batts® R1.2 (50mm) glass wool insulation in both frames)		
GBS 60b*	**FRR**	–/60/60	**Lining**	1 layer 13mm GIB Fyreline[illegible]ch side of a doubl[illegible]ud frame with a 13mm [illegible]IB Fyreli[illegible]central barrier
	STC	42 (50 with Pink® Batts® R1.2 (50mm) glass wool insulation in both frames)	**LB/NLB**	Non load bearin[illegible]
	Rw	44 (52 with Pink® Batts® R1.2 (50mm) glass wool insulation in both frames)		



Note:
See specification GBS 240 for further detail on the construction steps in sequence (page 44).

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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBSL 90	**FRR**	90/90/90	**Lining**	1 layer 16mm GIB Fyreline® and 1 layer 13mm GIB Fyreline® each side
	STC	47	**LB/NLB**	Load bearing
	Rw	46		

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 or horizontal fixing permitted. For vertical fixing, full height sheets shall be used where possible. When fixing horizontally, all longitudinal sheet joints must be formed over nogs.

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

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

Sheets shall be touch fitted.

All sheet joints must be formed over framing.

Linings are installed hard to floor.

FASTENING THE LINING

Fasteners

Inner layer: 16mm GIB Fyreline® to 32mm GIB® Grabber Self Tapping Drywall Screws.

Outer layer: 13mm GIB Fyreline® – 41mm x 6g GIB Grabber® Self Tapping Drywall Screws.

Fastener centres

Inner layer: 600mm centres to each stud.

Outer layer: 300mm centres up each stud.

Plasteners 12mm from longitudinal sheet edges and 50mm from sheet ends.

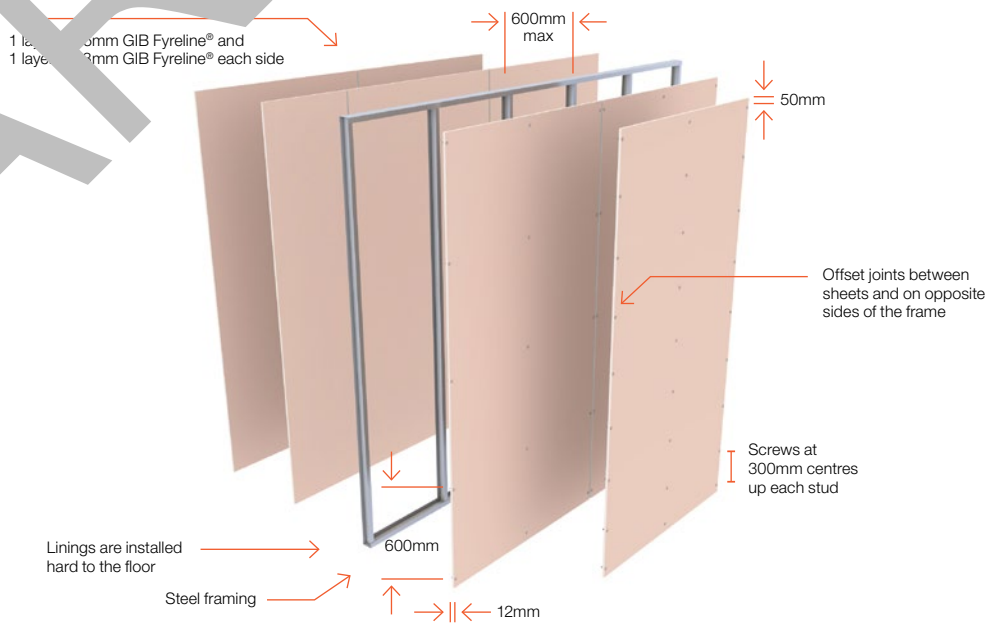
fasteners at centres along sheet end butt joints.

JOINTING

Inner layer: stopped.

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 14, "Steel-framed Walls — Load bearing (LB) walls".



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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBS 120	**FRR**	–/120/120	**Lining**	1 layer 19mm GIB Fyreline® each side
	STC	42	**LB/NLB**	Non load bearing
	Rw	42		

FRAMING AND WALL HEIGHT

Minimum steel stud dimensions to be 92 x 34 x 0.75mm nominal with a 6mm return.

Minimum steel channel dimensions to be 92 x 30 x 0.75mm nominal for the bottom channel and 92 x 50 x 0.75mm nominal for the top channel.

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

Stud spacing at 600mm centres maximum.

Place studs to allow the nominated expansion gap at the top of the frame.

The studs are held in place by the “grip” of the channels.

Recommended maximum wall height

Note that maximum wall heights for fire rated systems can be lower than what can be achieved with non-fire rated construction.

Nominal stud dimension (mm)	BMT (mm)	Stud centres (mm)	Max wall height	Expansion [illegible] (mm)
92 x 34	0.75	600	3000	15
		400	3400	15
150 x 34	0.75	600	4400	20*
		40[illegible]	5[illegible]	[illegible]
	1.15	60[illegible]	5000	25*
		[illegible]	[illegible]	30*

*Use a minimum 50mm-deep head channel.

LINING

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

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

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

Offset joints between sheets on opposite sides of the frame.

Sheets shall be tightly fitted.

All sheet joints must be formed on framing.

Linings are installed hard to floor.

FASTENING AND LINING

Fasteners

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

Fastener centres

300mm centres up each stud.

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

Place fasteners at 200mm centres along sheet end butt joints.

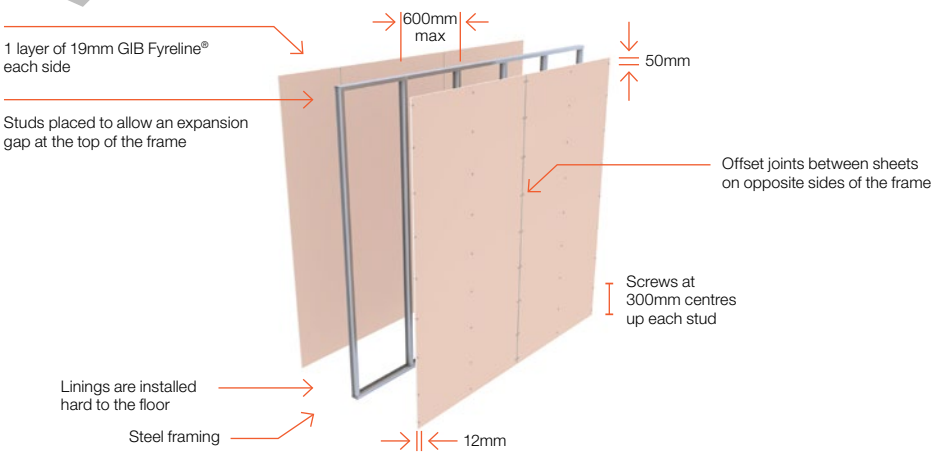
Fastening the linings at 18mm from sheet ends to top and bottom channels is permitted as long as the fasteners do not connect the studs and channels. Do not fix linings to the top track when floor deflection has to be accommodated.

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”.



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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBS 120a	**FRR**	–/120/120	**Lining**	2 layers 16mm GIB Fyreline® each side
	STC	52	**LB/NLB**	Non load bearing
	Rw	52		

FRAMING AND WALL HEIGHT

Minimum steel stud dimensions to be 64 x 34 x 0.50mm nominal with a 6mm return.

Minimum steel channel dimensions to be 64 x 30 x 0.50mm nominal.

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

Stud spacing at 600mm centres maximum.

Place studs to allow the nominated expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channels.

Recommended maximum wall height

Note that maximum wall heights for fire rated systems can be lower than what can be achieved with non-fire rated construction.

Nominal stud dimension (mm)	BMT (mm)	Stud centres (mm)	Max wall height (mm)	Expansion at top of studs (mm)
64 x 34	0.50	600	3000	15
		400	3200	15
76 x 34	0.55	600	3200	15
		400	3800	20*
	0.75	[illegible]	[illegible]	20
		400	4200	20*
92 x 34	0.[illegible]	[illegible]	[illegible]	20*
		400	4800	25*

*Use [illegible]50mm-deep [illegible]d channel.

LINING

2 layers of 16mm GIB Fyreline® each s[illegible] of the frame.

Vertical fixing only permitted. Full heigh[illegible]eets shall be used where possible.

When sheet end butt joint[illegible]e unavoidable, th[illegible]hall b[illegible]med over nogs and staggere[illegible]

Offset joints between[illegible]ets and [illegible]pposite sides of the frame.

Sheets shall be [illegible]ch fitte[illegible]

All sheet joints mu[illegible]be formed[illegible]er fram[illegible]g.

Linings are installed [illegible]rd to floor.

FASTEN[illegible]THE LI[illegible]IG

[illegible]steners

In[illegible]ayer: 32mm x 6g C[illegible] Grabber® Self Tapping Drywall Screws.

Outer l[illegible]: 51mm x 7g GIB® Grabber® Self Tapping Drywall Screws.

[illegible]stener c[illegible]tres

I[illegible]layer: 60[illegible]mm centres up each stud.

Outer[illegible]r: 300mm centres up each stud.

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

Place fasteners at 200mm centres along sheet end butt joints.

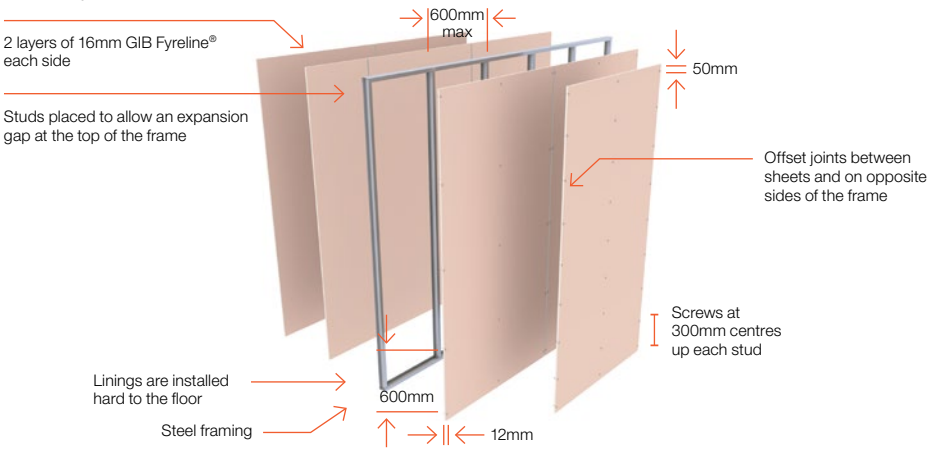
Fastening the linings at 18mm from sheet ends to top and bottom channels is permitted as long as the fasteners do not connect the studs and channels. Do not fix linings to the top track when floor deflection has to be accommodated.

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".



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Two way FRR — steel frame

Specification number	Performance		Specifications	
GBS 120b	**FRR**	–/120/120	**Lining**	2 layers of 13mm GIB Fyreline® each side
	STC	48	**LB/NLB**	Non load bearing
	Rw	48		

FRAMING AND WALL HEIGHT

Minimum steel stud dimensions to be 92 x 34 x 0.75mm nominal with a 6mm return.

Minimum steel channel dimensions to be 92 x 30 x 0.75mm nominal for the bottom channel and 92 x 50 x 0.75mm nominal for the top channel.

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

Stud spacing at 600mm centres maximum.

Place studs to allow the nominated expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channels.

Recommended maximum wall height

Note that maximum wall heights for fire-rated systems can be lower than what can be achieved with non-fire-rated construction.

Nominal stud dimension (mm)	BMT (mm)	Stud centres (mm)	Max wall height	Expansion gap at top of stud (mm)
92 x 34	0.75	600	3000	15
		400	3400	15
150 x 34	0.75	600	4400	20*
		400	5000	
	1.15	600	5000	25*
		400		30*

*Use a minimum 50mm-deep head channel.

LINING

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

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

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

Offset joints between sheets and on opposite side of frame.

Sheets shall be screw fitted.

All sheet joints must be formed over framing.

Linings are installed hard to floor.

FASTENING THE LINING

Fasteners

Inner layer: 32mm x 6g Grabber® Self Tapping Drywall Screws.

Outer layer: 41mm x 6g GIB® Grabber® Self Tapping Drywall Screws.

Fastener centres

Inner layer: 300mm centres up each stud.

Outer layer: 300mm centres up each stud.

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

Place fasteners at 200mm centres along sheet end butt joints.

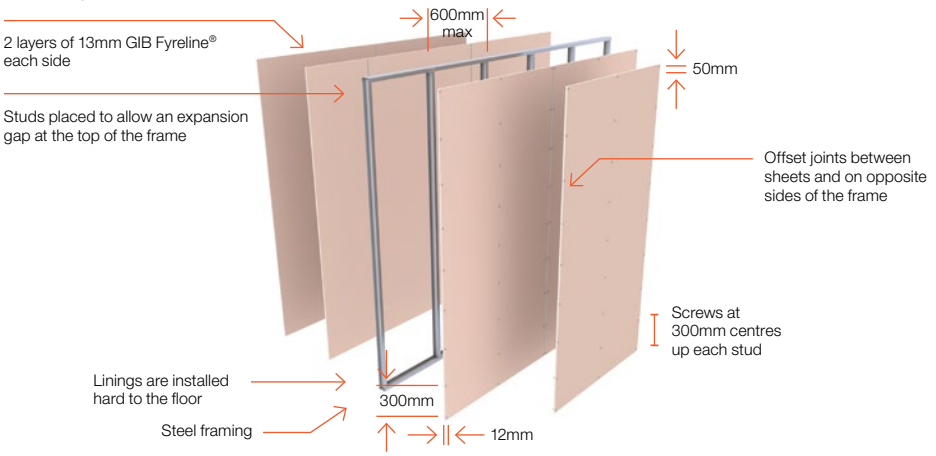
Fastening the linings at 18mm from sheet ends to top and bottom channels is permitted as long as the fasteners do not connect the studs and channels. Do not fix linings to the top track when floor deflection has to be accommodated.

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".



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Two way FRR — steel or timber frame

Specification number	Performance		Specifications	
GBS 240	**FRR**	–/240/240	**Lining**	4 layers 19mm GIB Fyreline® on a double steel frame
	STC	44 (55 with one layer Pink® Batts® BIB R1.8 (75mm) glass wool insulation)	**LB/NLB**	Non load bearing
GBT 240	**Rw**	45 (56 with one layer Pink® Batts® BIB R1.8 (75mm) glass wool insulation)	**Lining**	4 layers 19mm GIB Fyreline® on a double timber frame
			LB/NLB	Non load bearing

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.50mm nominal with a 6mm return.

Steel channel dimensions to be 64 x 30 x 0.50mm nominal.

Channels are fixed to the floor and ceiling in true alignment.

Double frame (refer to details on next page):

— 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 channels. No other fixing may be used.
— Tested height of partition is 3600mm. Specific design is required for greater heights.

LINING

2 layers of 19mm GIB Fyreline® to one side of Frame 1.

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

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

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

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

Sheets shall be touch fitted.

All sheet joints to be formed over framing.

Linings to be installed hard to floor.

FASTENING THE LINING (STEEL FRAME)

Fasteners

Inner layer Frame 1: 32mm x 6g GIB® Grabber® Self Tapping Drywall Screws.

Second layer Frame 1: 51mm x 7g GIB® Grabber® Self Tapping Drywall Screws.

Outside faces Frames 1 and 2: 32mm x 6g GIB® Grabber® Self Tapping Drywall Screws.

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 longitudinal sheet edges and 50mm from sheet ends.

Place fasteners 200mm centres along sheet end butt joints.

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”.

TIMBER FRAMED ALTERNATIVE

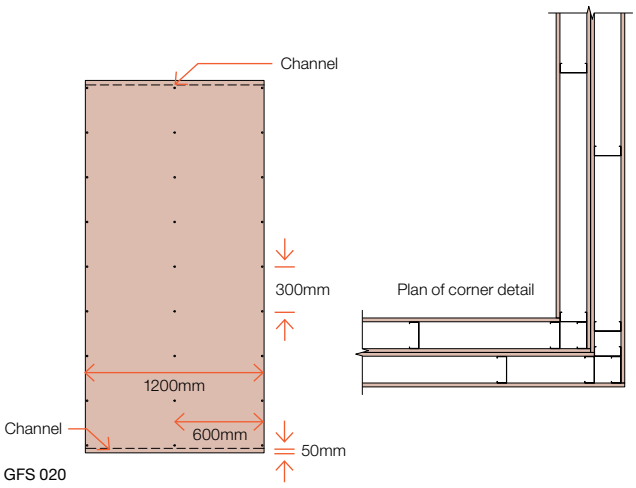
Framing to comply with:

— NZBC B1 — Structure: AS1 Clause 3 — Timber (NZS 3604) or AS1 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 and for connecting Frame 2 shall be 63mm x 8g GIB® Grabber® Self Tapping Drywall Screws.
(b) Fasteners for all other layers shall be 41mm x 6g GIB® Grabber® High Thread Drywall Screws.



GFS 020

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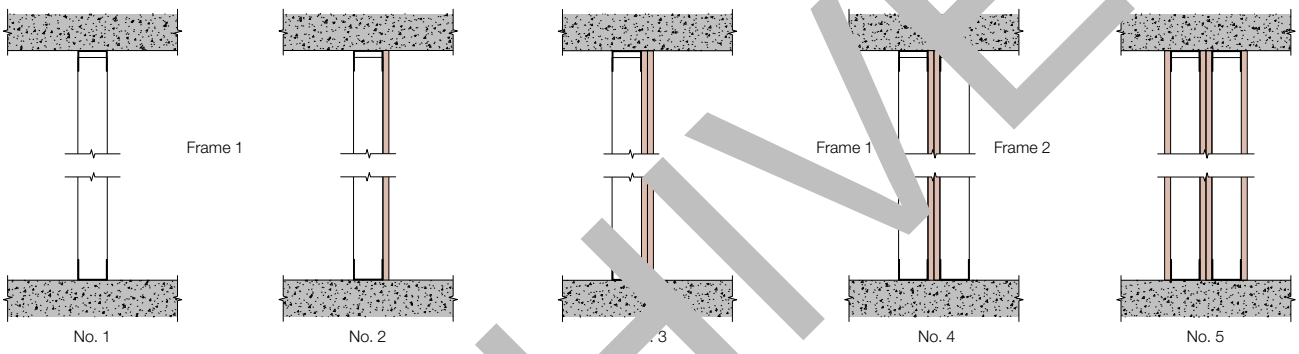
Two way FRR — steel or timber frame

Specification number	Performance		Specifications	
GBS 240	**FRR**	–/240/240	**Lining**	4 layers 19mm GIB Fyreline® on a double steel frame
	STC	44 (55 with one layer Pink® Batts® BIB R1.8 (75mm) glass wool insulation)	**LB/NLB**	Non load bearing
GBT 240	**Rw**	45 (56 with one layer Pink® Batts® BIB R1.8 (75mm) glass wool insulation)	**Lining**	4 layers 19mm GIB Fyreline® on a double timber frame
			LB/NLB	Non load bearing

CONSTRUCTION STEPS IN SEQUENCE

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

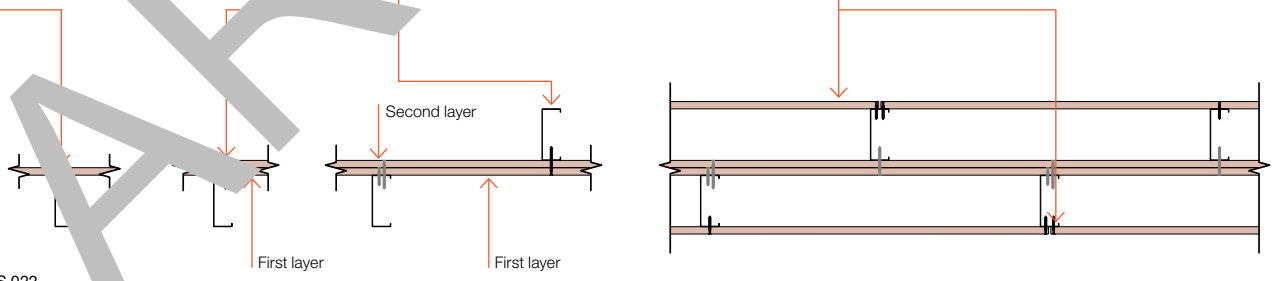
SECTION VIEW



GFS 021

PLAN VIEW

1. First steel frame fixed in place.
2. First layer of 19mm GIB Fyreline® "tacked" to Frame 1 with 3/32mm x 6g GIB® [illegible] Self Tapping Drywall Screws to [illegible]inal sheet edge. One below and [illegible]ve the top and bottom channels respec[illegible] and one at t[illegible]entre.
3. Second laye[illegible] 19mm GIB Fyreline® fixed to Frame 1 with 51mm [illegible] GIB® Grabber® Self Tapping Drywall Screws at [illegible]nm centres up each stud.
4. Erect Fr[illegible]2 and secure studs to assembly with [illegible]g GIB® Grabber® Self Tapping Drywall Screws [illegible]0mm centres through the double layers of 19mm GIB Fyreline® on Frame 1 (from the Frame 1 side).
5. Fix the outer layer of 19mm GIB Fyreline® to the outside faces of Frames 1 and 2 with 32mm x 6g GIB® Grabber® Self Tapping Drywall Screws at 300mm centres up each stud.
6. No fixings to top and bottom channel sections.



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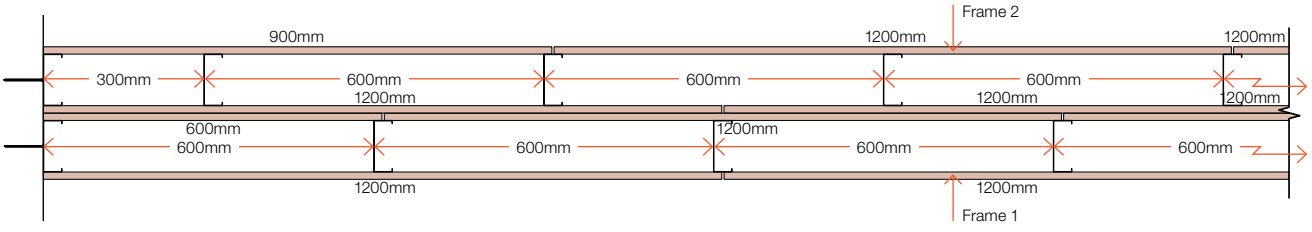

GFS 023

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One way FRR — timber or steel frame

Specification number	Performance	Specifications	
GBUW 15	**FRR** 15/15/15	**Lining**	1 layer 13mm GIB® Standard one side
		LB/NLB	Load bearing

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 width of framing supporting the linings shall be 35mm minimum.

The cavity depth shall be 90mm minimum.

Framing spacing shall be at 600mm centres maximum.

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

LINING (FIRE SIDE)

1 layer of 13mm GIB® Standard 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 installed [illegible] floor.

FASTENING THE LINING

Fasteners

Timber frame	Steel frame
32mm x 6g GIB® Grabber® High Thread Drywall Screw	32mm [illegible] GIB® Grabber Self Tapping Drywall Screws

Fastener centres

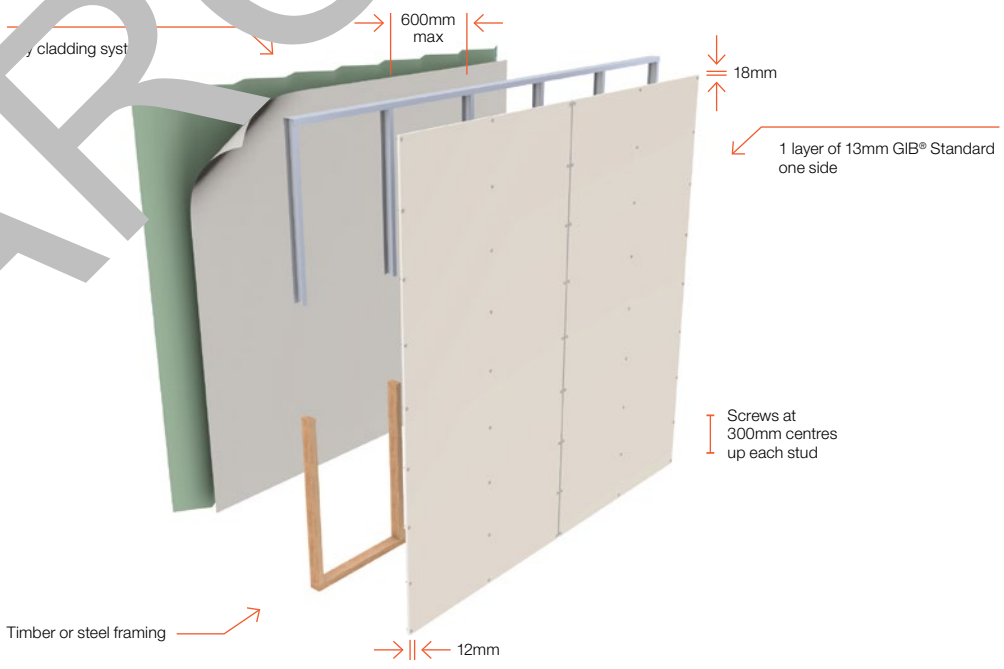
300mm centres up each stud.

Place fasteners 1[illegible]m from [illegible]itudinal sheet edges and 18mm from sheet ends.

Place fasteners at 20[illegible]mm centres [illegible]ng sheet end butt joints.

JOINTING

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



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One way FRR — timber or steel frame

Specification number	Performance	Specifications	
GBUW 30a	**FRR** 30/30/30	**Lining** **LB/NLB**	1 layer 16mm GIB Fyreline® one side Load bearing
GBUW 30b	**FRR** 30/30/30	**Lining** **LB/NLB**	2 layers 10mm GIB Fyreline® one side Load bearing

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 width of framing supporting the linings shall be 35mm minimum.

The cavity depth shall be 90mm minimum.

Framing spacing shall be at 600mm centres maximum.

Timber 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. For vertical fixing full height sheets shall be used where possible.

Sheets shall be touch fitted.

All sheet joints must be formed over framing, except for longitudinal joints when the outer layer is fixed horizontally.

Offset sheet joints in double-layered systems.

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

In steel-framed conditions, linings shall be installed hard to floor.

FASTENING THE LINING

Fasteners

System	Timber frame	Steel frame
GBUW 30a	41mm x 6g GIB® Grabber® High Thread Drywall Screws	32mm x 6g GIB® Grabber® Self Tapping Drywall Screws
GBUW 30b Inner layer	41mm x 6g GIB® Grabber® High Thread Drywall Screws	25mm x 6g GIB® Grabber® Self Tapping Drywall Screws
GBUW 30b Outer layer	41mm x 6g GIB® Grabber® High Thread Drywall Screws	32mm x 6g GIB® Grabber® Self Tapping Drywall Screws

Fastener centres

Inner layer: 600mm centres up each stud.

Outer or single layer: 300mm centres up each stud.

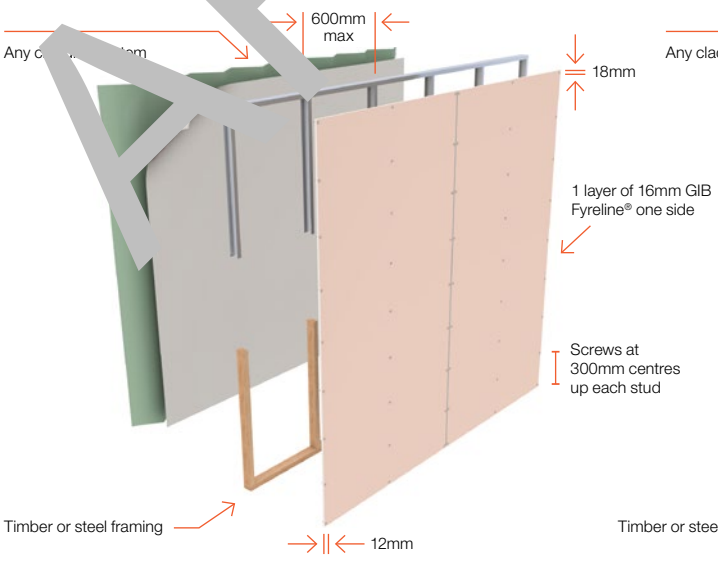
Place fasteners 12mm from longitudinal sheet edges and 18mm from sheet ends.

Place fasteners at 200mm centres along sheet end butt joints.

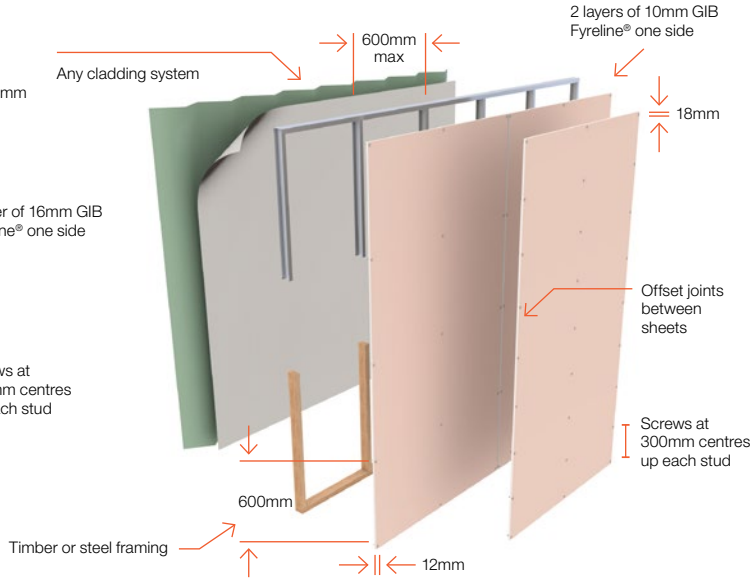
JOINTING

Inner layer: Unstopped.

Outer or single layer: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled “GIB® Site Guide”.



GBUW 30a



GBUW 30b

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One way FRR — timber or steel frame

Specification number	Performance	Specifications	
GBUW 60	**FRR** 60/60/60	**Lining**	2 layers 13mm GIB Fyreline® one side
		LB/NLB	Load bearing

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 width of framing supporting the linings shall be 35mm minimum.

The cavity depth shall be 90mm minimum.

Framing spacing shall be at 600mm centres maximum.

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

LINING (FIRE SIDE)

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

Vertical or horizontal fixing permitted. For vertical fixing, full height sheets shall be used where possible.

Sheets shall be touch fitted.

All sheet joints must be formed over framing, except for longitudinal joints when the outer layer is fixed horizontally.

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

Offset sheet joints between layers.

In steel-framed options, linings are in lled hard to floor.

FASTENING THE LINING

Fasteners

Layer	Timber frame	Steel frame
Inner layer	32mm x 6g C® Grabber® gn Thread Dryw crews	mm x 6g GIB® G ber® Dryw Self ing rews
Outer layer	51 x 6g GIB Grabb Di hread rywall Sc s	41mm x 6g GIB® Gr er® Drywall Tapping Screws

Fastener centres

Inne 600mm ce es up each stud.

ter layer: 30 cen s up each stud.

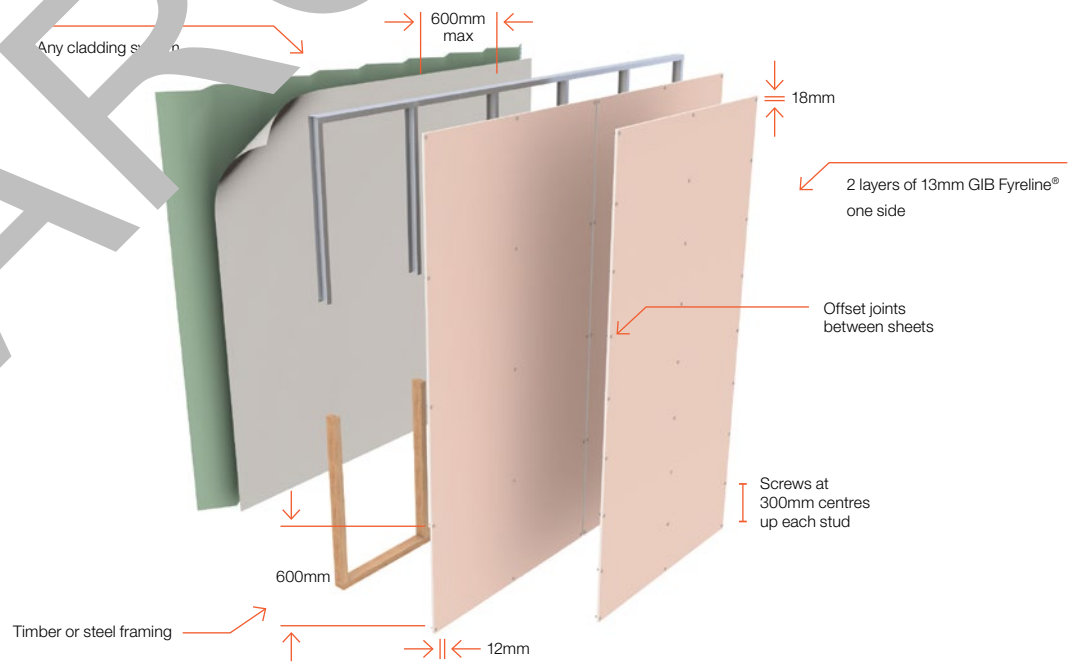
Pla steners 12mm from longitudinal sheet edges and 18mm n sheet ends.

ce faste at 200mm centres along sheet end butt joints.

JOI NG

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".



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One way FRR — timber or steel frame

Specification number	Performance	Specifications	
GBUW 90	**FRR** 90/90/90	**Lining**	1 layer 16mm GIB Fyreline® and 1 layer 19mm GIB Fyreline® one side
		LB/NLB	Load bearing

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 width of framing supporting the linings shall be 35mm minimum.

The cavity depth shall be 90mm minimum.

Framing spacing shall be at 600mm centres maximum.

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

LINING (FIRE SIDE)

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

Vertical or horizontal fixing permitted. For vertical fixing, full height sheets shall be used where possible.

Sheets shall be touch fitted.

All sheet joints must be formed over framing, excep[t] longitudinal joints when the outer layer is fixed horizont[ally]

When sheet end butt joints are unavoidab[le] [s]hall be formed over framing.

Offset sheet joints between layers.

In steel-framed options, linings are ins[tal]led hard to floor.

FASTENING THE LINING

Fasteners

Layer	Timber frame	Steel frame
Inner layer (16mm GIB Fyreline®)	41mm x [6] GIB® Grabb[er] High Thread Dr[ywall] Screws	[3]2 x 6g GIB® Grab[ber]® S[elf] Tapping Drywall [Screws]
Outer layer (19mm GIB Fyreline®)	[5]7mm [x] [6]g GIB® [G]rabber® [H]igh Thread [D]rywall Screw[s]	51 x 7g GIB® [G]rabber® Self Tapping Drywall Screws

Fast[ening] centres

[I]nner layer: [3]00mm cen[tres] up each stud.

O[uter] layer: 300mm ce[ntres] up each stud.

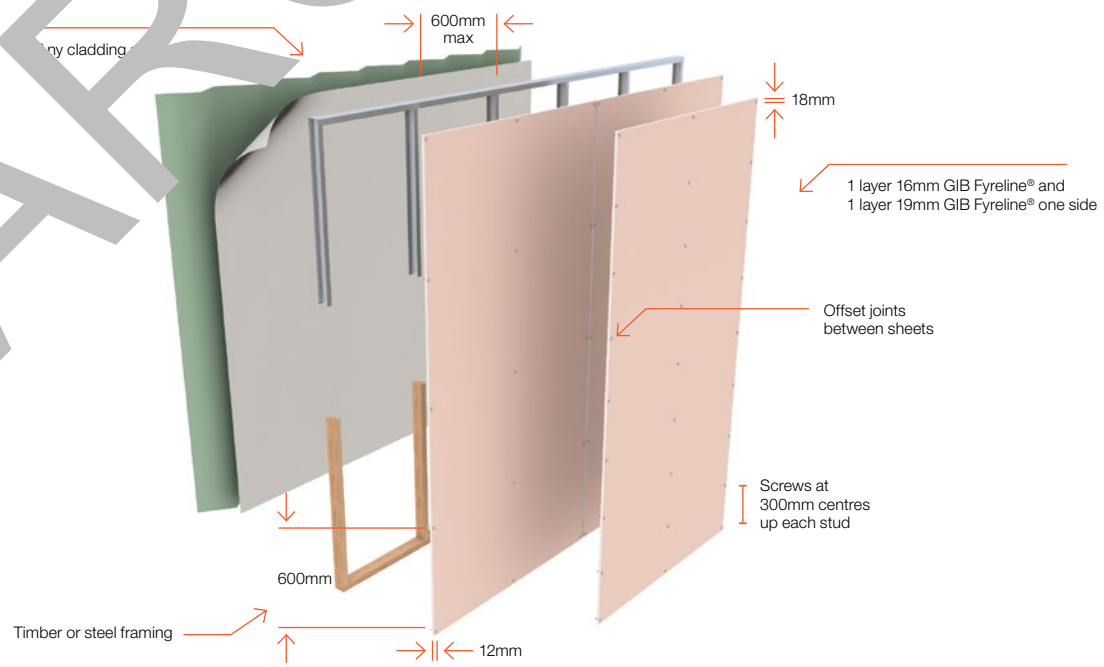
Place [fas]teners 12mm from longitudinal sheet edges and [1]8mm fro[m] sheet ends.

P[lace] fasteners at 200mm centres along sheet end butt joints.

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".



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One way FRR — timber or steel frame

Specification number	Performance	Specifications	
GBUW 120	**FRR** 120/120/120	**Lining**	2 layers 19mm GIB Fyreline® one side
		LB/NLB	Load bearing

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 width of framing supporting the linings shall be 35mm minimum.

The cavity depth shall be 90mm minimum.

Framing spacing shall be at 600mm centres maximum.

Timber 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. For vertical fixing, full height sheets shall be used where possible.

Sheets shall be touch fitted.

All sheet joints must be formed over framing, except for longitudinal joints when the outer layer is fixed horizontally.

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

Offset sheet joints between layers.

In steel-framed options, linings are in lled hard to floor.

FASTENING THE LINING

Fasteners

Layer	Timber frame	Steel frame
Inner layer	41mm x 6g C® Grabber® gn Thread Dryw crews	mm x 6g GIB® G er® Self T ping Dryw Scre
Outer layer	57 x 7g GIB Grabb Di hread rywall Sc s	51mm x 7g GIB® Gr er® Self Tapping ywall Screws

Fastener centres

Inner 600mm ce es up each stud.

ter layer: 30 cen s up each stud.

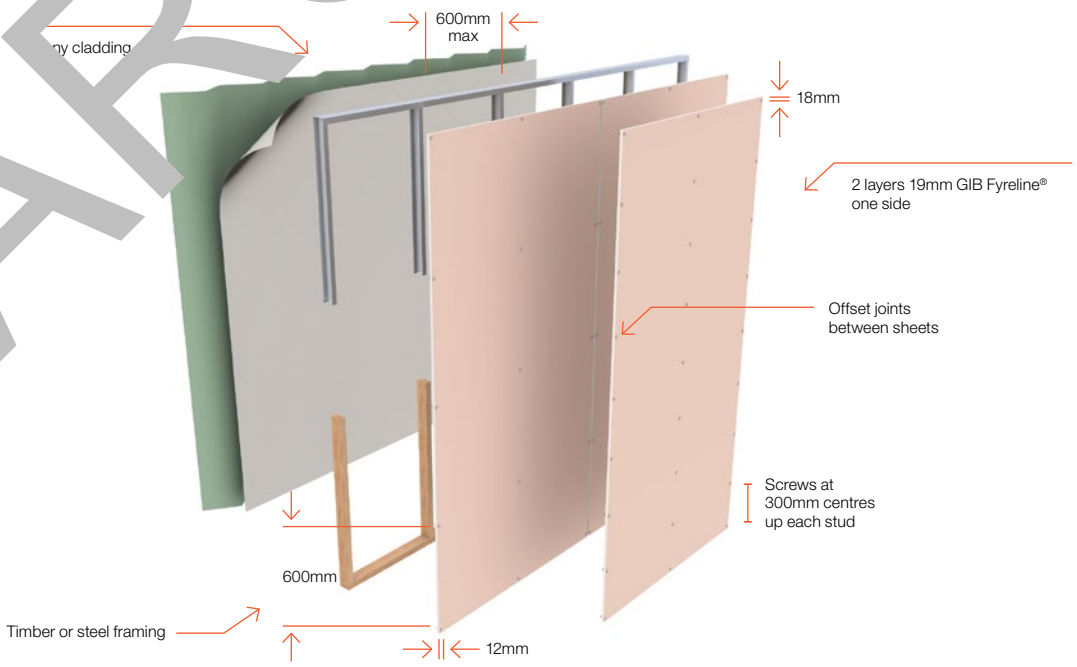
Pla steners 12mm from longitudinal sheet edges and 18mm n sheet ends.

ce faste at 200mm centres along sheet end butt joints.

JOI NG

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".



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One way FRR — timber or steel frame

Specification number	Performance	Specifications	
GBUW 180	**FRR** 180/180/180	**Lining**	3 layers 19mm GIB Fyreline® one side
		LB/NLB	Load bearing

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 width of framing supporting the linings shall be 35mm minimum.

The cavity depth shall be 90mm minimum.

Framing spacing shall be at 600mm centres maximum.

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

LINING (FIRE SIDE)

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

Vertical or horizontal fixing permitted. For vertical fixing, full height sheets shall be used where possible.

Sheets shall be touch fitted.

All sheet joints must be formed over framing, except for longitudinal joints when the outer layer is fixed horizontally.

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

Offset sheet joints between layers.

In steel-framed options, linings are in lled hard to floor.

FASTENING THE LINING

Fasteners

Layer	Timber frame	Steel frame
Inner layer	41mm x 6g C Grabber® Thread Drywall crews	mm x 6g GIB® ber® Self T ing Dry Scre
Second layer	57 x 7g GIB® Grab Hig hread rywall s	51mm x g GIB® Gra ber® Self Tapping wall Screws
Third layer	mm x 8g G ber® Self Ta g Dry ll Screws	76mm x 8g GIB® Grabber® Self Tapping Drywall Screws

ener centres

Inn er: 600mm centres up each stud.

Second third layers: 300mm centres up each stud.

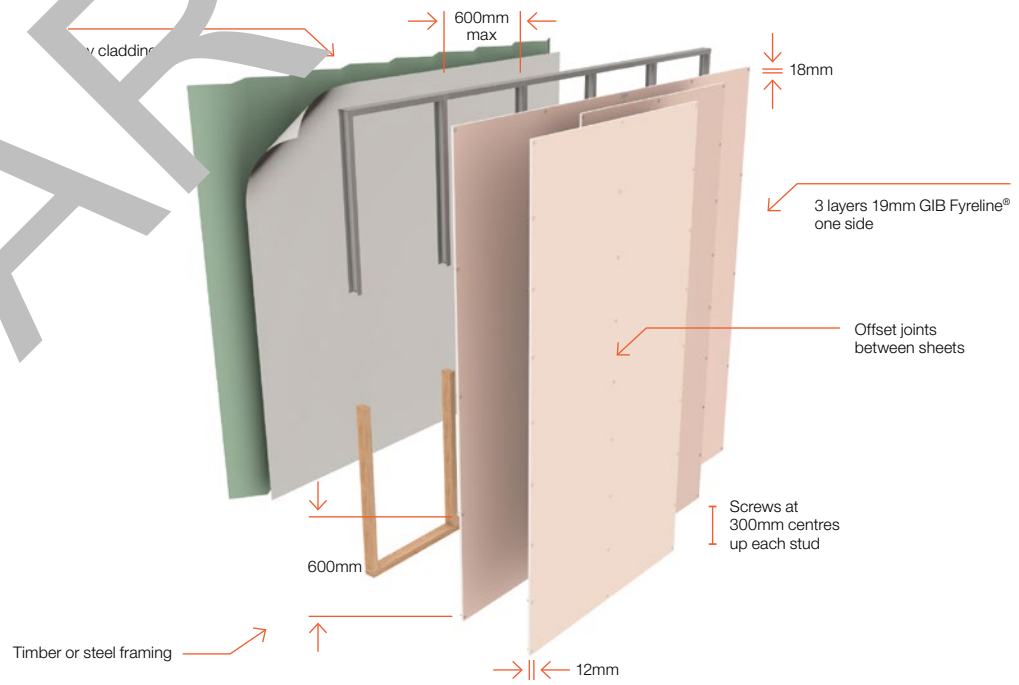
e fastene 12mm from longitudinal sheet edges and 18 from sheet ends.

Place fasteners at 200mm centres along sheet end butt joints.

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".



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Timber joist

Specification number	Performance		Specifications	
GBFC 15	**FRR**	15/15/15	**Lining**	1 layer 13mm GIB® Standard
	STC	38	**LB/NLB**	Load bearing
	Rw	38		
	IIC	31		

FLOOR FRAMING

Floor joists must comply with NZS 3604 and be a minimum of 140mm x 45mm 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 90mm x 45mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 70mm x 45mm minimum spaced at 600mm for joists at 600mm, or at 1200mm for joists at 400mm or 450mm. Nogs/framing is required at the perimeter of the fire rated ceiling.

ALTERNATIVE FLOOR FRAMING

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

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

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

FLOORING

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

Flooring sheet joints must have polypropylene tongue and groove jointer or be trimmed over framing.

CEILING LINING

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

All sheet joints must occur over joists, solid strutting or nog.

Sheets shall be touch fixed.

FASTENING TO LINING

Fasteners

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

Fastener centres

Place fasteners at 150mm centres around the perimeter of each sheet and at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from longitudinal 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® and hyJOIST® are manufactured and supplied by Carter Holt Harvey Futurebuild, 0800 808 131. Check with the supplier for construction details and independent verification.

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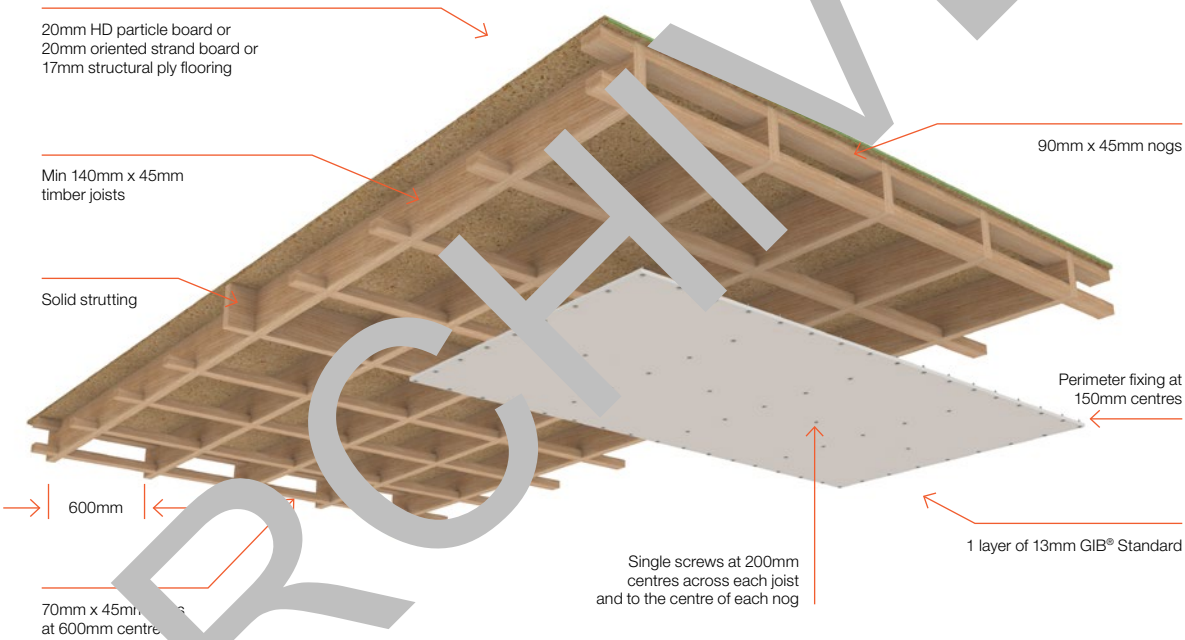
Timber joist

Specification number	Performance		Specifications	
GBFC 15	**FRR**	15/15/15	**Lining**	1 layer 13mm GIB® Standard
	STC	38	**LB/NLB**	Load bearing
	Rw	38		
	IIC	31		



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Timber joist

Specification number	Performance		Specifications	
GBFC 45	**FRR**	45/45/45	**Lining**	1 layer 13mm GIB Fyreline®
	STC	39	**LB/NLB**	Load bearing
	Rw	40		
	IIC	32		
GBFC 30*	**FRR**	30/30/30	**Lining**	1 layer 13mm GIB Fyreline®
	STC	39	**LB/NLB**	Load bearing
	Rw	40		
	IIC	32		

FLOOR FRAMING

Floor joists must comply with NZS 3604 and be a minimum of 190mm x 45mm or 140mm x 45mm when using the ceiling batten alternative. Joists are 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 90mm x 45mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 70mm x 45mm minimum spaced at 600mm for joists at 600mm, or at 1200mm for joists at 400mm or 450mm.

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

FLOORING

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

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

CEILING LINING

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

All sheet joints must occur over joists, solid strutting or nogs.

Sheets shall be touch fitted.

FASTENING OF LINING

Fasteners
51mm x GIB Grabber® High Thread Drywall Screws.

Fastener centres
Place fasteners at 150mm centres around the perimeter of each sheet and at 300mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from longitudinal 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 to boxed corners (square stopped) 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 140mm joists, these may be used with continuous 70mm x 45mm ceiling battens at 600mm centres, running across the joists (battens may also be used to level the ceiling in renovation work). Linings are installed perpendicular to the battens.

When joists are spaced at 600mm, 45mm x 45mm blocking between the ceiling battens is required under all joists.

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

When joists are at 450mm, 70mm x 45mm 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.

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

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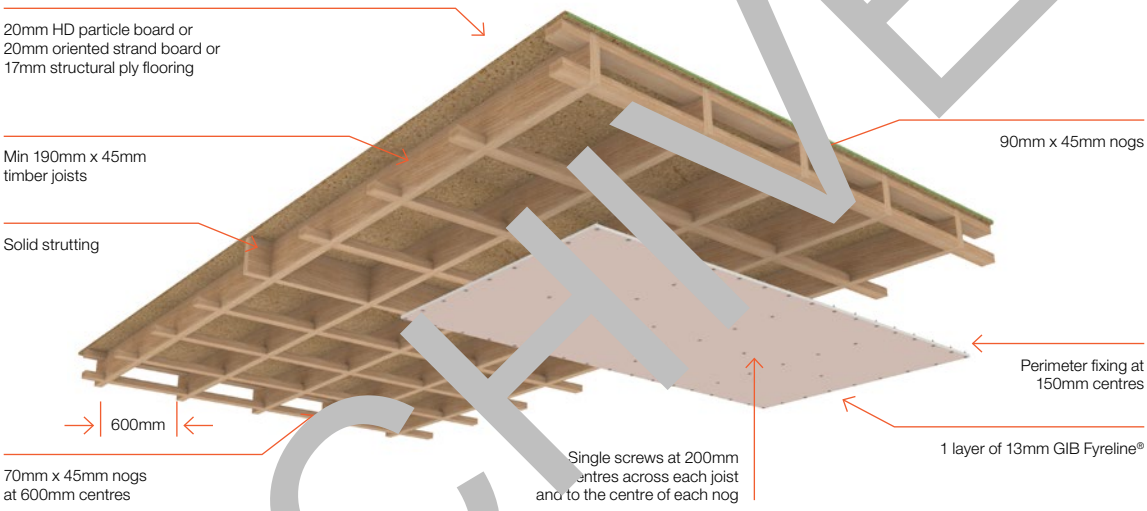
Timber joist

Specification number	Performance		Specifications	
GBFC 45	**FRR**	45/45/45	**Lining**	1 layer 13mm GIB Fyreline®
	STC	39	**LB/NLB**	Load bearing
	Rw	40		
	IIC	32		
GBFC 30*	**FRR**	30/30/30	**Lining**	1 layer 13mm GIB Fyreline®
	STC	39	**LB/NLB**	Load bearing
	Rw	40		
	IIC	32		



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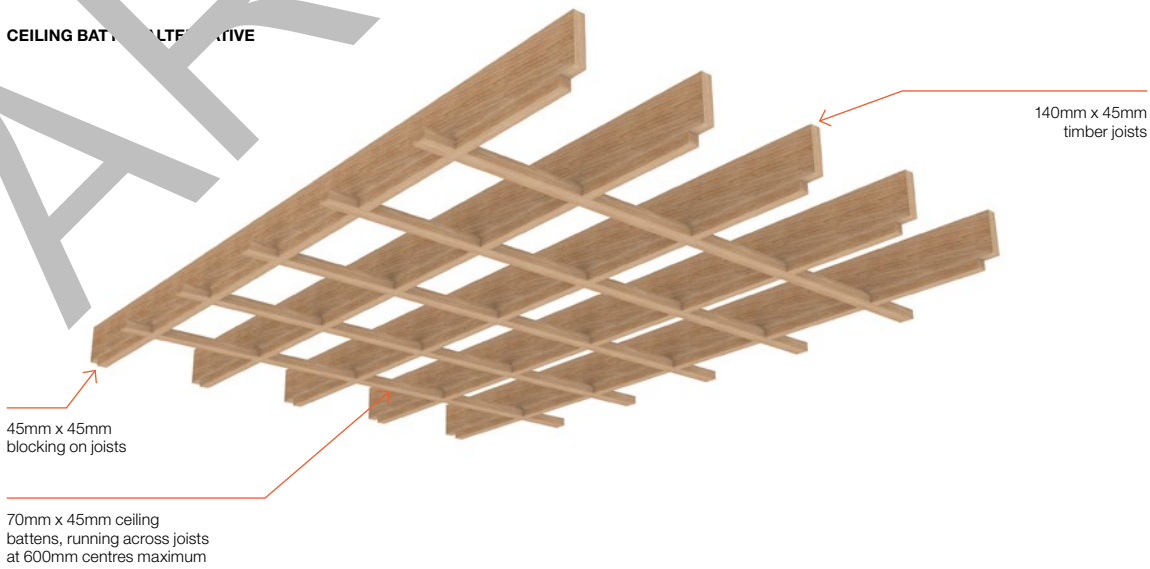

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Timber joist

Specification number	Performance		Specifications	
GBFC 60	**FRR**	60/60/60	**Lining**	1 layer 16mm GIB Fyreline®
	STC	39	**LB/NLB**	Load bearing
	Rw	40		
	IIC	32		

FLOOR FRAMING

Floor joists must comply with NZS 3604 and be a minimum of 190mm x 45mm or 140mm x 45mm when using the ceiling batten alternative. Joists are 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 90mm x 45mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 70mm x 45mm minimum spaced at 600mm for joists at 600mm, or at 1200mm for joists at 400mm or 450mm.

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

FLOORING

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

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

CEILING LINING

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

All sheet joints must occur on joists or nogs.

Sheets shall be touch fit.

FASTENING THE LINING

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

Fastener centres
150mm c/c around the perimeter of each sheet.

Place fasteners at 300mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from longitudinal 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 taped corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

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

CEILING BATTEN ALTERNATIVE

Where NZS 3604 permits 140mm joists, these may be used with continuous 70mm x 45mm ceiling battens at 600mm centres, running across the joists (battens may also be used to level the ceiling for renovation work).

When joists are spaced at 600mm, 45mm x 45mm 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.

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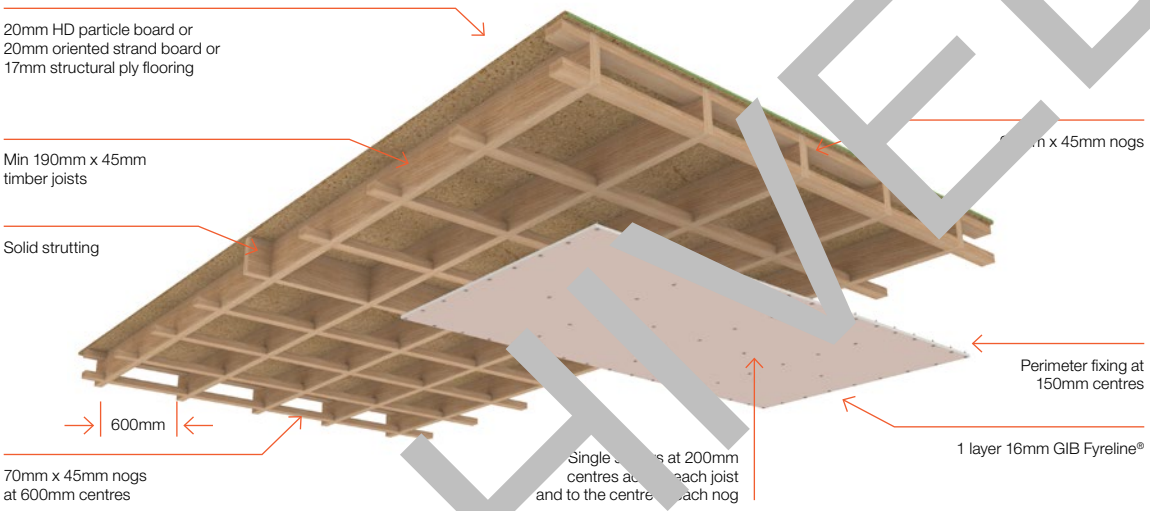
Timber joist

Specification number	Performance		Specifications	
GBFC 60	**FRR**	60/60/60	**Lining**	1 layer 16mm GIB Fyreline®
	STC	39	**LB/NLB**	Load bearing
	Rw	40		
	IIC	32		



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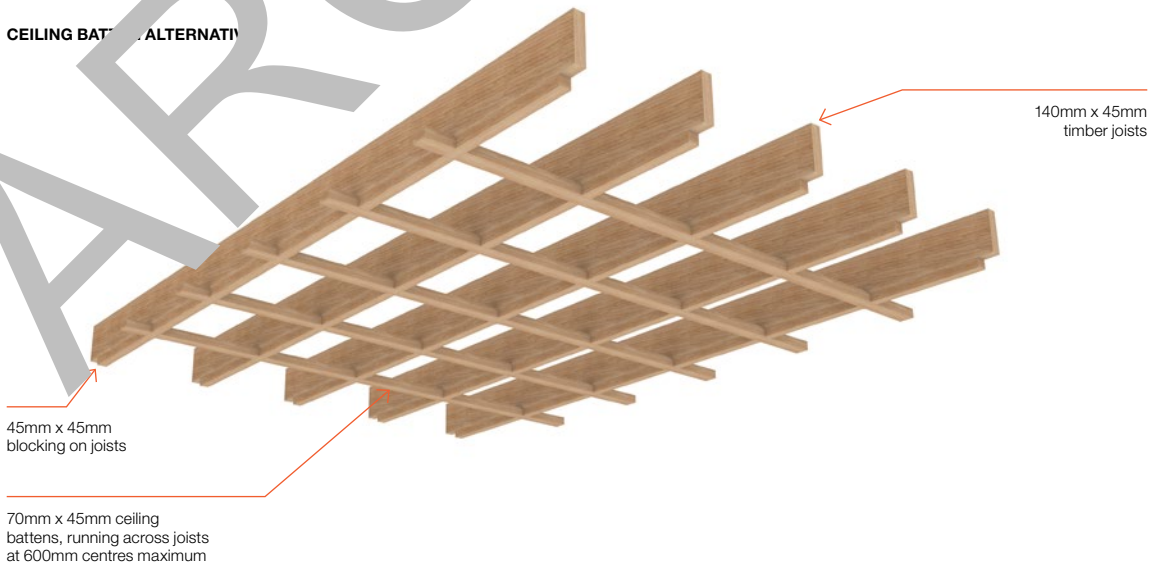

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Timber joist

Specification number	Performance		Specifications	
GBFC 90	**FRR**	90/90/90	**Lining**	2 layers 16mm GIB Fyreline®
	STC	41	**LB/NLB**	Load bearing
	Rw	41		
	IIC	34		

FLOOR FRAMING

Floor joists must comply with NZS 3604 and be a minimum of 190mm x 45mm 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 90mm x 45mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 70mm x 45mm minimum spaced at 600mm centres.

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

FLOORING

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

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

CEILING LINING

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

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

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

Inner layer: 51mm x 6g GIB® Grabber® Thread Drywall Screws.

Outer layer: 76mm x 8g GIB® Grabber® Self Tapping Drywall Screws.

Fastener centres

Inner layer: Place fasteners at 150mm centres around the perimeter of each sheet, across each joist and at the centre of each nog.

Outer layer: Place fasteners at 150mm centres around the perimeter of each sheet, across each joist and at the centre of each nog.

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

WALL/CEILING JUNCTIONS

The internal angle between wall and ceiling and wall to wall 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 140mm joists, these may be used with continuous 70mm x 45mm ceiling battens at 600mm centres, running across the joists (battens may also be used to level the ceiling in renovation work).

45mm x 45mm 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.

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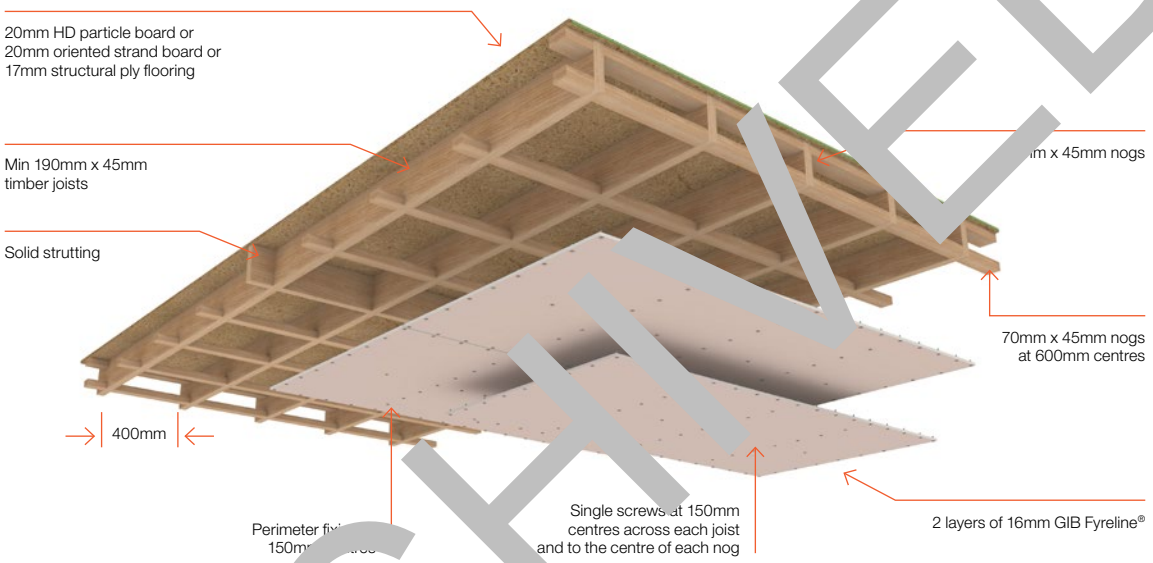
Timber joist

Specification number	Performance		Specifications	
GBFC 90	**FRR**	90/90/90	**Lining**	2 layers 16mm GIB Fyreline®
	STC	41	**LB/NLB**	Load bearing
	Rw	41		
	IIC	34		



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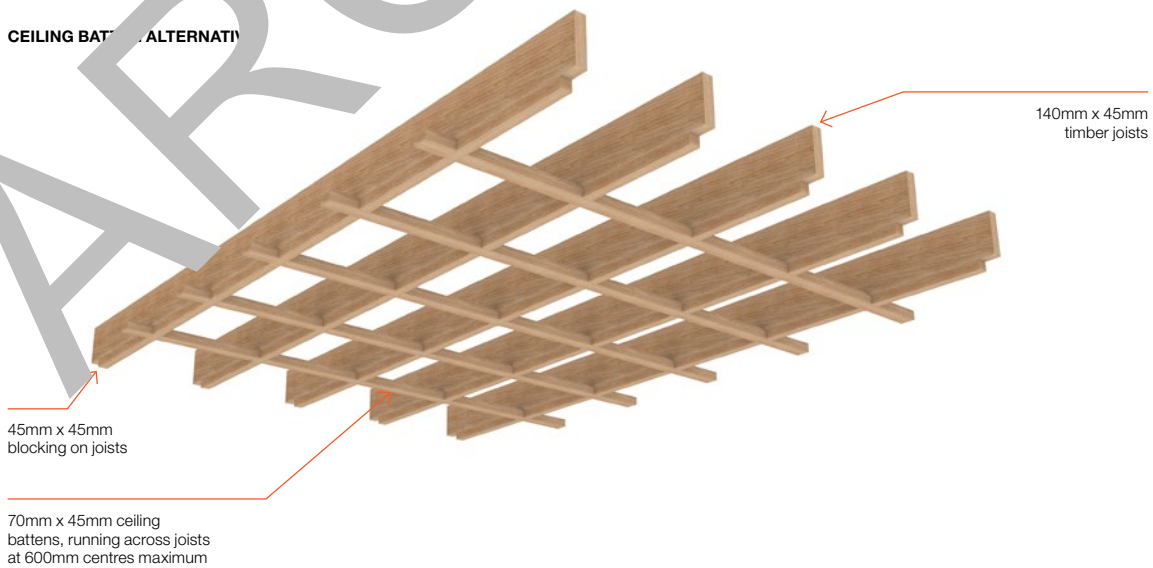


ARCHIVED

Timber or steel joist

Specification number	Performance	Specifications	
GBFC 120	**FRR** 120/120/120	**Lining**	2 layers 19mm GIB Fyreline®
		LB/NLB	Load bearing

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 90mm x 45mm 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 70mm x 35mm minimum.

FLOORING

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

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

CEILING LINING

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

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

All sheet end butt joints must occur over solid framing.

Sheets shall be tou[illegible]

FASTENING THE LINING

Fasteners

Layer	Timber frame	Steel frame
Inner layer	41mm x 6g GIB® Grabber® [illegible]n Thread Drywall [illegible]rews	[illegible]mm x 6g GIB® [illegible]ber® Self T[illegible]ping Dry[illegible]Scre
Outer layer	6[illegible] x 8g GIB® Grab[illegible] Sel[illegible]pping [illegible]rywall [illegible]s	51mm x [illegible]g GIB® Gra[illegible]ber® Self Tapping D[illegible]wall Screws

Fastener centres (both layers)

Pla[illegible]steners at 20[illegible]m centres around the ceiling perimete[illegible]g each f[illegible]ming member and where sheet end butt joints occu[illegible]

Pla[illegible]steners 12mm fro[illegible]n longitudinal sheet edges and 18mm [illegible]m sheet ends.

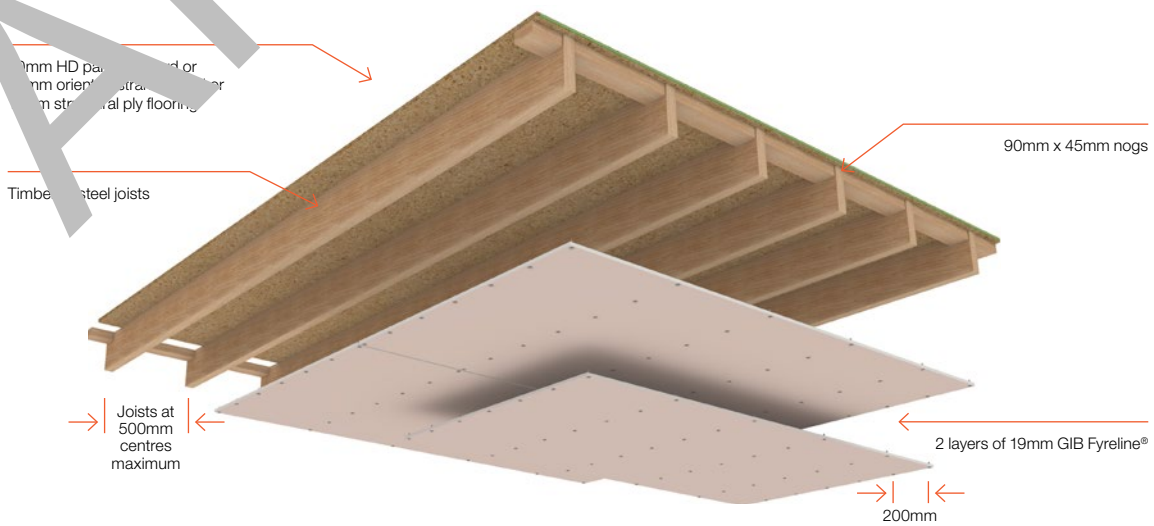
[illegible]LL/CEI[illegible]G JUNCTIONS

The [illegible]rnal angle between the ceiling and walls must be protec[illegible] 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".



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Composite joist

Specification number	Performance		Specifications	
GBCJ 45	**FRR**	45/45/45	**Lining**	1 layer 13mm GIB Fyreline®
	STC	39	**LB/NLB**	Load bearing
	Rw	40		
	IIC	32		
GBCJ 30*	**FRR**	30/30/30	**Lining**	1 layer 13mm GIB Fyreline®
	STC	39	**LB/NLB**	Load bearing
	Rw	40		
	IIC	32		

FLOOR FRAMING FASTENING THE LINING

Floor joists may be either hySPAN® or hyJOIST®.

Joists shall be covered by specific engineering design for strength and serviceability, have a depth no less than 190mm and spacing no more than 600mm.

Nogs fixed on the flat to receive the ends of flooring material shall be 90mm x 45mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 70mm x 45mm minimum spaced at 600mm for joists at 600mm, or at 1200mm for joists at 400mm or 450mm.

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

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

FLOORING

Minimum flooring shall be nominal 20 m oriented strand board or particle board, or minimum 17mm-th structural plywoo xed to the joists in accordance with the man cturers' specificat ns.

Flooring sheet joints mu olypro ne tongue d groove jointer or be f ed over ming.

CEILING LINI

1 layer of 13mm GIB shall be fixed at right angles to the underside of the floo ists.

All s must occur o sts or nogs.

Sheets all be to d

FASTEN HE LINING

Fasteners

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

Fastener centres

Place fasteners at 150 centre ound the perimeter of each sheet and at 20 m cen g each joist d at the centre of each nog.

Place fasteners 12r from longit sheet edges and 18m from sheet en

ALL/CEI UNC IONS

T ternal angle bet the ceiling and walls must be prote d by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners are stopped) filled and taped in accordance with the blicatio itled "GIB® Site Guide".

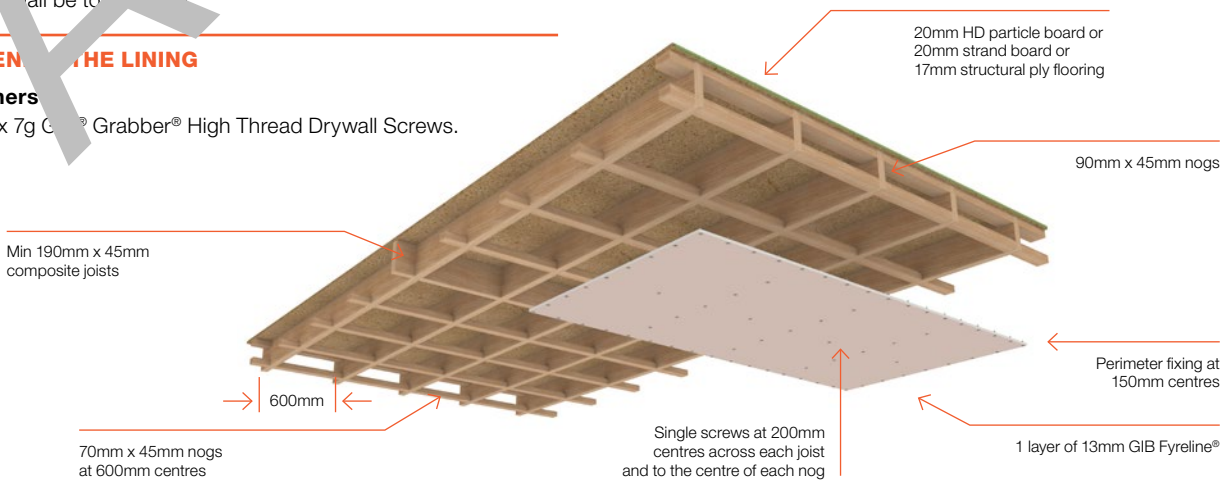
JOI NG

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

hySPAN® and hyJOIST® are manufactured and supplied by Carter Holt Harvey Futurebuild, 0800 808 131. Check with the supplier for construction details and independent verification.

CEILING BATTENS

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



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Composite joist

Specification number	Performance		Specifications	
GBCJ 60	**FRR**	60/60/60	**Lining**	1 layer 16mm GIB Fyreline®
	STC	39	**LB/NLB**	Load bearing
	Rw	39		
	IIC	32		

FLOOR FRAMING

Floor joists may be either hySPAN® or hyJOIST®. Joists shall be covered by specific engineering design for strength and serviceability, have a depth no less than 190mm and spacing no more than 600mm.

Nogs fixed on the flat to receive the ends of flooring material shall be 90mm x 45mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 70mm x 45mm minimum spaced at 600mm for joists at 600mm, or at 1200mm for joists at 400mm 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 oriented strand board or particle board, or minimum 17mm-thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Flooring sheet joints must have a polyprop gue and groove jointer or be formed over framin

CEILING LINING

1 layer of 16mm GIB Fyreline® shall b ed at right angles the underside of the floor j

All sheet joints must ur on jo or nogs.

Sheets shall be h fitted.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® Hig hread D all Screws.

Fastener centres

Place fasteners at 150 centres ar d the per of each sheet and at 200mm tres alon ch joist and at he centre of each nog.

Place fasteners 1 m from itudinal sh edges and 18mm from sheet ds.

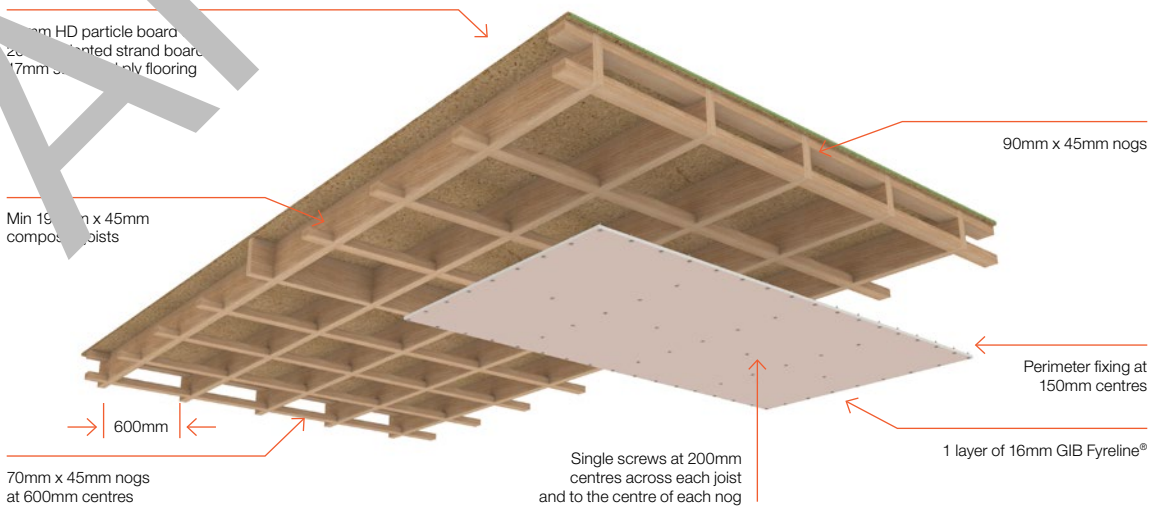
W EILING JU TIONS

The interna betw n the ceiling and walls must be ected by GIB-C ® hered with GIB-Cove® Bond, or boxed co (square stopped) illed and taped in accordance with the public entitled "GIB® Site Guide".

NTING

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

hySPAN® and hyJOIST® are manufactured and supplied by Carter Holt Harvey Futurebuild, 0800 808 131. Check with the supplier for construction details and independent verification.



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Steel joist

Specification number	Performance		Specifications	
GBSJ 30	**FRR**	30/30/30	**Lining**	1 layer 13mm GIB Fyreline®
	STC	34	**LB/NLB**	Load bearing
	Rw	34		
	IIC	30		

FLOOR FRAMING

The steel floor structure shall be specifically designed and have minimum 190mm-deep C-section joists 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

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

Flooring sheet joints must have a polypropylene 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 sheet joints must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

32mm x 8g GIB® Grabber® Drill Point Fine Head Screws.

Fastener centres

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

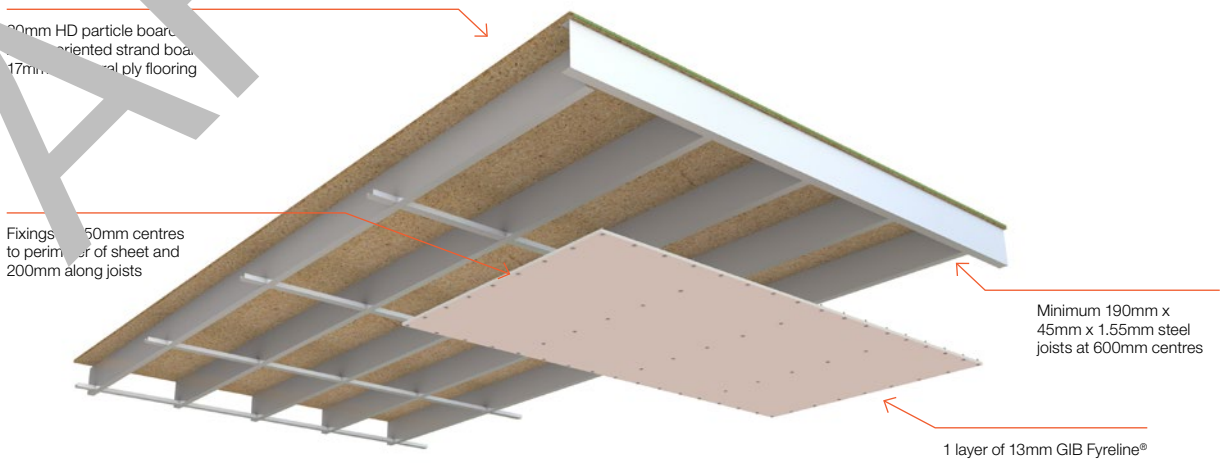
Place fasteners 10mm from longitudinal sheet edges and 18mm from sheet ends.

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 (where 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".



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Steel joist

Specification number	Performance		Specifications	
GBSJ 60	**FRR**	60/60/60	**Lining**	1 layer 16mm GIB Fyreline®
	STC	39	**LB/NLB**	Load bearing
	Rw	39		
	IIC	32		

FLOOR FRAMING

The steel floor structure shall be specifically designed and have minimum 190mm-deep C-section joists 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

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

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

Flooring sheet joints without a jointer must have a bead of Fire Soundseal® 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® applied at right angles to the underside of the floor joists.

All sheet joists must occur on joists or nogs.

Sheets shall be tou[illegible]tted.

FASTENING THE LINING

Fasteners

32mm x 8g GIB® Grabber® Drill Point Fine Head Screws.

Fastener centres

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

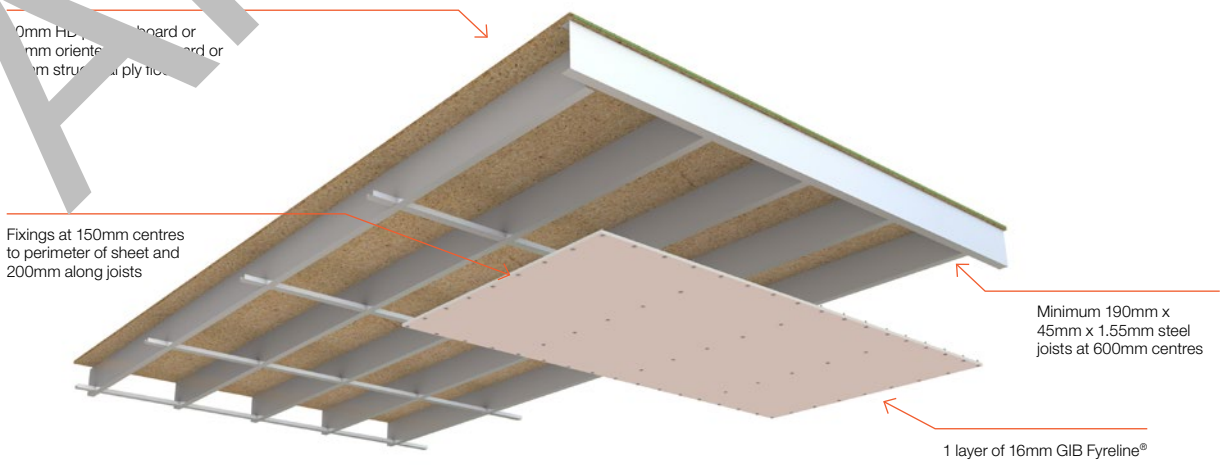
Place fasteners 10mm from longitudinal sheet edges and 18mm from sheet ends.

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 and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

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



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Suspended grid

Specification number	Performance		Specifications	
GBSC 30	**FRR**	30/30/30	**Lining**	1 layer 13mm GIB Fyreline® (back-blocked)
	STC	48	**LB/NLB**	Load bearing
	Rw	47		
	IIC	43		

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 oriented strand board or particle board, or minimum 17mm-thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

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

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.

Rondo Donn® ScrewFix™ steel frame suspension system comprising 2.5mm wire hangers at 1200mm centres supporting F38 strongback channels spaced at 1200mm centres and F37 furring channels spaced at 600mm centres maximum.

Direct or clip fixed GIB® Rondo® Ceiling batten system with full perimeter channel support.

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 channel.

Sheets shall be touch fixed.

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 OF THE LINING

Fasteners

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

Fastener centres

Place fasteners 12mm from longitudinal sheet edges and 10mm from sheet ends. This distance may be reduced to 12mm from sheet ends at butt joints on furring channels.

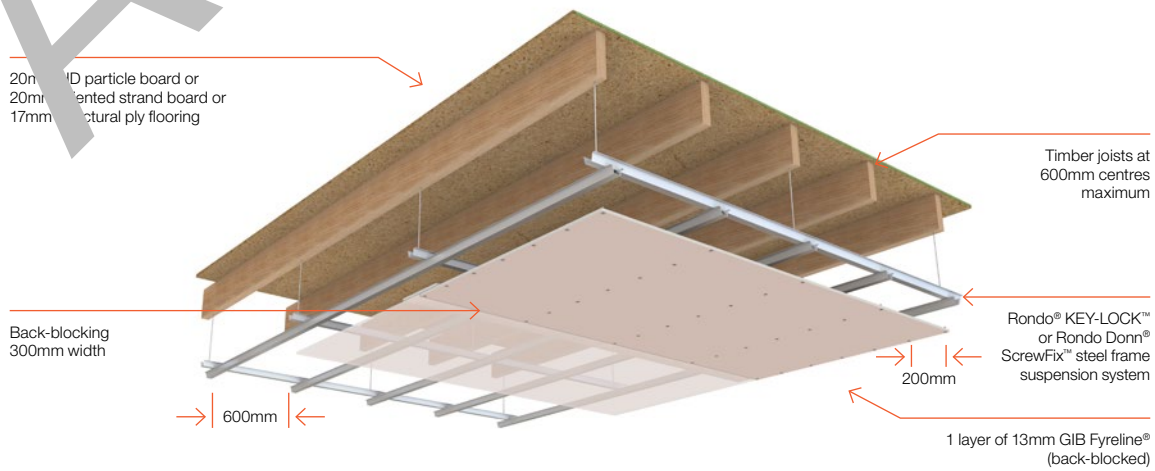
Place fasteners at 200mm centres along each intermediate furring channel, around the ceiling perimeter and where sheet end butt joints occur.

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".



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Suspended grid

Specification number	Performance		Specifications	
GBSC 60a	**FRR**	60/60/60	**Lining**	2 layers 13mm GIB Fyreline®
	STC	53	**LB/NLB**	Load bearing
	Rw	52		
	IIC	43		

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 oriented strand board or particle board, or minimum 17mm-thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

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

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.

Rondo Donn® ScrewFix™ steel frame suspension system comprising 2.5mm wire hangers at 1200mm centres supporting F38 strongback channels spaced at 1200mm centres and F37 furring channels spaced at 600mm centres maximum.

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

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 joints must occur on the furring channels.

Sheets shall be butt fitted.

FASTENING THE LINING

Fasteners

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

Outer layer: 41mm x 6g GIB® Grabber® Self Tapping Drywall Screws.

Fastener centres

Place fasteners 10mm from longitudinal sheet edges and 18mm from sheet ends. The distance may be reduced to 12mm from sheet ends at butt joints on furring channels.

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

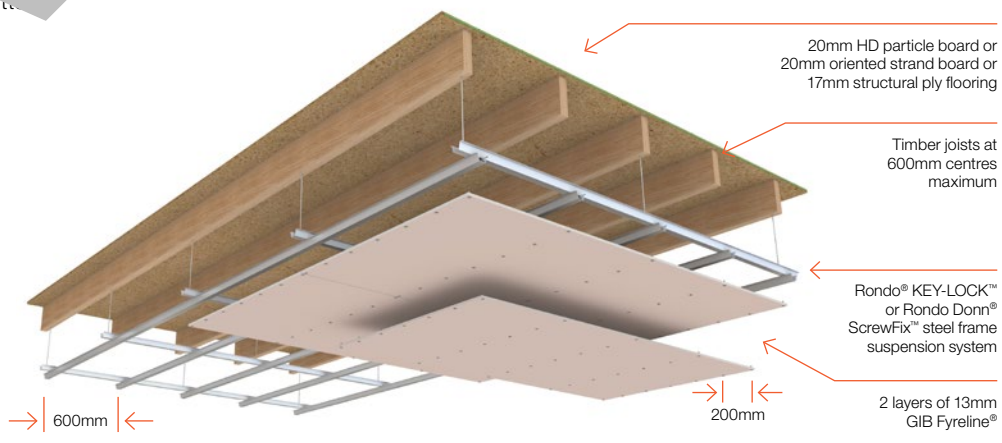
WALL/CEILING JUNCTIONS

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".



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Suspended grid

Specification number	Performance		Specifications	
GBSC 60b	**FRR**	60/60/60	**Lining**	1 layer 16mm GIB Fyreline®
	STC	50	**LB/NLB**	Load bearing
	Rw	49		
	IIC	43		

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 oriented strand board or particle board, or minimum 17mm-thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

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

SUSPENSION SYSTEM

Rondo Xpress® Drywall Grid Ceiling System comprising 2.5mm wire hangers or XD50 wall angles at 1200mm centres maximum. Hangers support XD24 main tee at 1200mm centres maximum XD21200 cross tees installed at 600mm centres. Install 20 0 cross tees at 1200mm centres, parallel with in 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 d parallel to the m tees and positioned so tapered dges are ated on cross s.

All sheet end butt joints m occur on the sus sion s em.

Sheets shall be touch ed.

FASTENING T LINI

Fasteners

32mm x 6g GIB® G ber® Self rywall Screws.

Fa er centres

Place fa s 12mm m longitudinal sheet edges and mm from sh ds. is distance may be reduced to 12 from sheet end utt joints on cross tees.

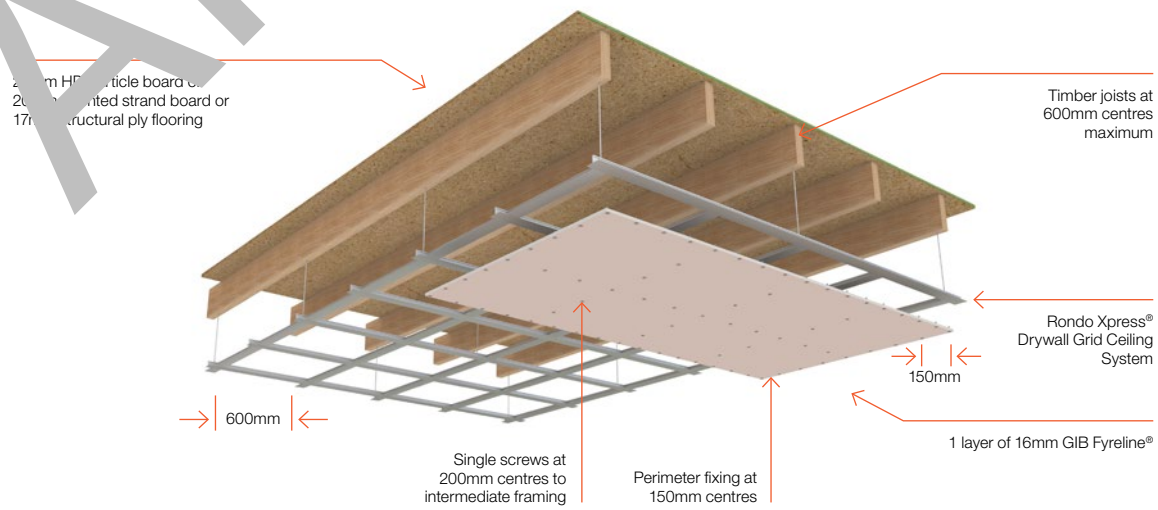
Place eners at 150mm centres around the perimeter of each sheet and 200mm centres to intermediate framing.

WA /CEILING JUNCTIONS

The int al 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".



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Suspended grid

Specification number	Performance		Specifications	
GBSC 90	**FRR**	90/90/90	**Lining**	1 layer 13mm GIB Fyreline® and 16mm GIB Fyreline®
	STC	53	**LB/NLB**	Load bearing
	Rw	52		
	IIC	43		

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 oriented strand board or particle board, or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

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

SUSPENSION SYSTEM

Rondo Xpress® Drywall Grid Ceiling System comprising 2.5mm wire hangers or XD50 wall angles at 1200mm centres maximum. Hangers support XDH1 main tee at 1200mm centres maximum. Install XD21200 cross tees at 600mm centres.

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

Note 1: Additional XD21200 cross tees are required 200mm both sides of sheet end butt joints.

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

CEILING LINING

1 layer of 13mm GIB Fyreline® parallel to the main tees and positioned so sheet edges are located on the main tee. Sheet end butt joints must occur on cross tees.

1 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 cross tees.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

Inner layer: 25mm x GIB® Grabber® Self Tapping Drywall Screws.

Outer layer: 41mm x 6g GIB® Grabber® Self Tapping Drywall Screws and 38mm x 10g GIB® Grabber® Laminator Screws.

Fastener centres

Place fasteners 12mm from longitudinal sheet edges and 18mm from sheet ends. This distance may be reduced to 12mm from sheet ends for butt joints on cross tees.

Inner layer: Place fasteners at 150mm centres around the sheet perimeter to main and cross tees. Place fasteners at 200mm centres along intermediate cross tees.

Outer layer: Place fasteners at 150mm centres along cross tees at butt ends and at 200mm centres along intermediate framing members. Use GIB® Grabber® Laminator Screws at 150mm centres along longitudinal sheet edges where they do not coincide with framing.

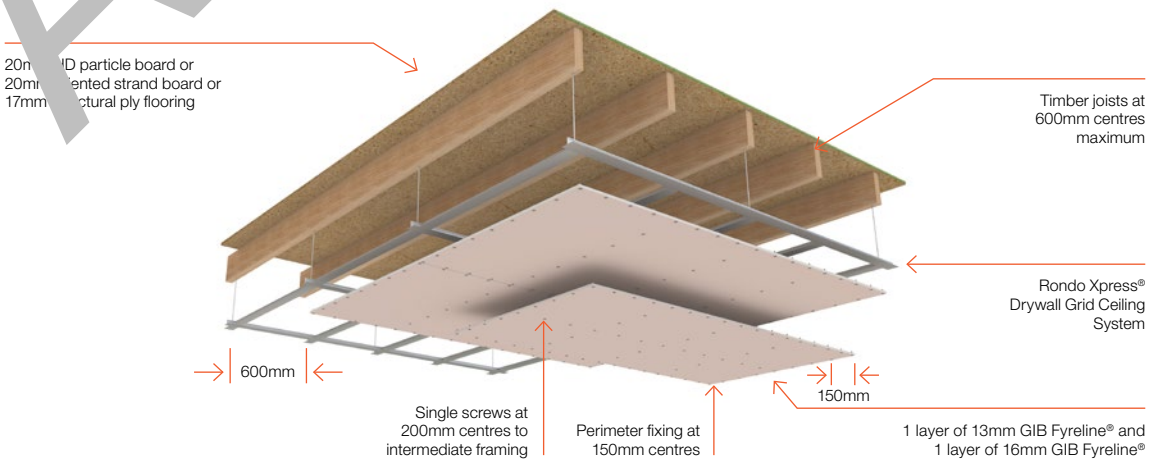
WALL/CEILING JUNCTIONS

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".



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Universal ceiling systems

Specification number	Performance	Specifications	
GBUC 15	**FRR** 15/15/15	**Lining**	1 layer 13mm GIB Fyreline®
		LB/NLB	Load bearing

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 70mm x 35mm minimum.

CEILING LINING

1 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 using a 200mm wide strip of 13mm GIB Fyreline® adhered with GIB-Cove® Bond in accordance with the procedure contained in the current GIB® Site Guide.

FASTENING THE LINING

Fasteners

Timber frame	Steel frame
41mm x 6g GIB® Grabber® High Thread Drywall Screw	25mm x 6g GIB® Grabber® Self Tapping Drywall Screws

Fastener centres

Place fasteners 12mm from longitudinal sheet edges and 18mm from sheet ends. This distance may be reduced to 12mm from sheet ends at butt joints on furring channels.

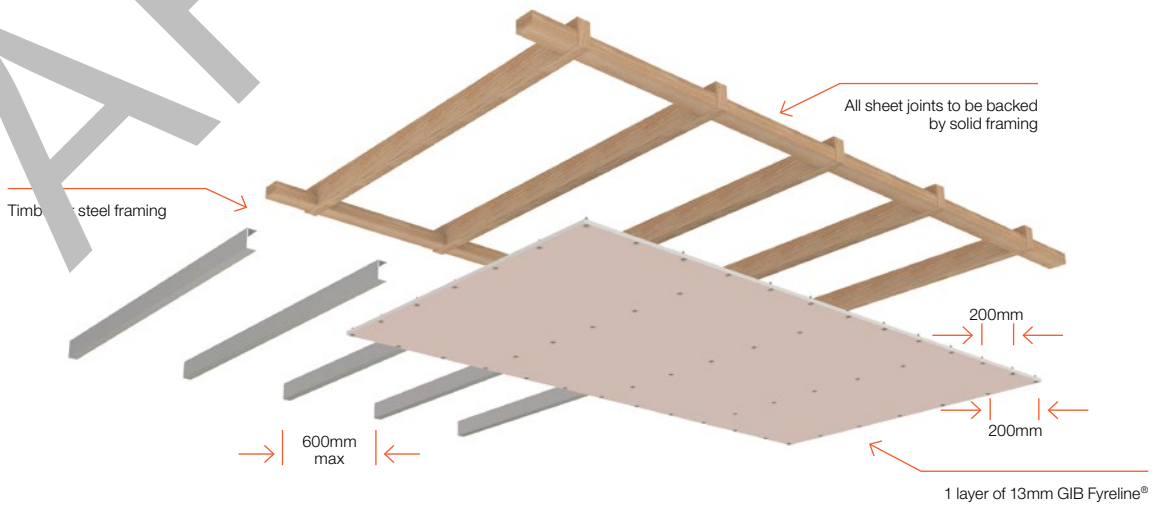
Place fasteners at 200mm centres around the sheet perimeters, along each intermediate framing member and where sheet end butt joints occur.

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".



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Universal ceiling systems

Specification number	Performance	Specifications	
GBUC 30	**FRR** 30/30/30	**Lining**	1 layer 16mm GIB Fyreline®
		LB/NLB	Load bearing

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 70mm x 35mm minimum.

CEILING LINING

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

All sheet joints must occur over solid framing.

Sheets shall be touch fitted.

Alternatively, longitudinal sheet edges may be back-blocked using a 300mm-wide strip of 16mm GIB Fyreline® adhered with GIB-Cove® Bond in accordance with the procedure outlined in the current “GIB® Site Guide”.

FASTENING THE LINING

Fasteners

Timber frame	Steel frame
41mm x 6g GIB® Grabber® High Thread Drywall Screw	32mm GIB® Grabber Self Tapping Drywall Screws

Fastener centres

Place fasteners 12mm from longitudinal sheet edges and 18mm from sheet ends. This distance may be reduced to 12mm from sheet ends at butt joints on furring channels.

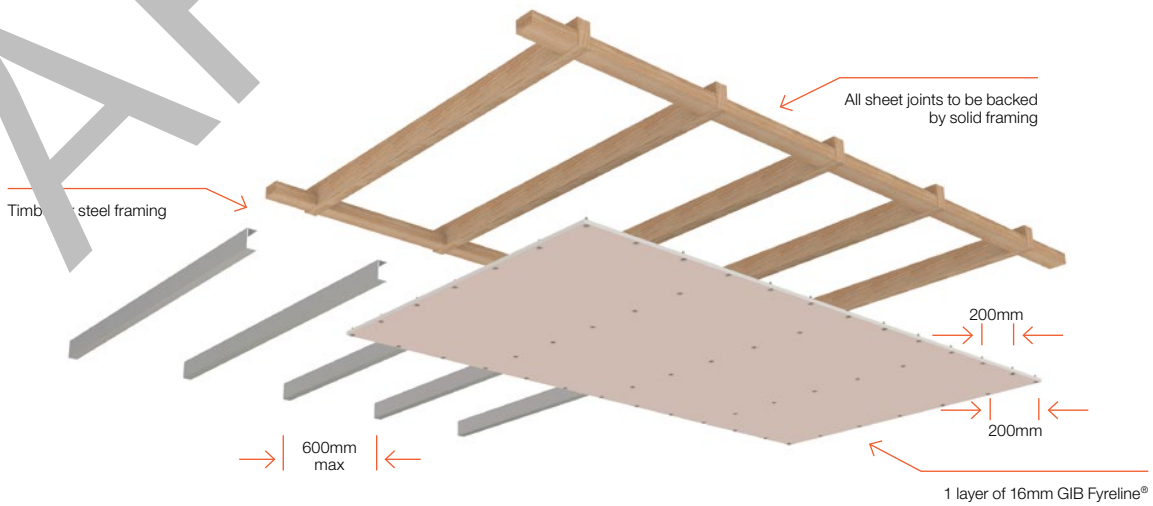
Place fasteners at 200mm centres around the sheet perimeters, along each intermediate framing member and where sheet end butt joints occur.

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”.



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Universal ceiling systems

Specification number	Performance	Specifications	
GBUC 60	**FRR** 60/60/60	**Lining**	2 layers 13mm GIB Fyreline®
		LB/NLB	Load bearing

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 70mm x 35mm 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.

All sheet end butt joints must occur over solid framing.

Sheets shall be touch fitted.

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 Drywall Screws
Outer layer	51mm x 7g GIB® Grabber® High Thread Drywall Screws	41mm x 6g GIB® Grabber® Self Tapping Drywall Screws

Fastener centres (both layers)

Place fasteners 12mm from longitudinal sheet edges and 18mm from sheet ends. This distance may be reduced to 10mm from sheet ends at butt joints on furring channels.

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

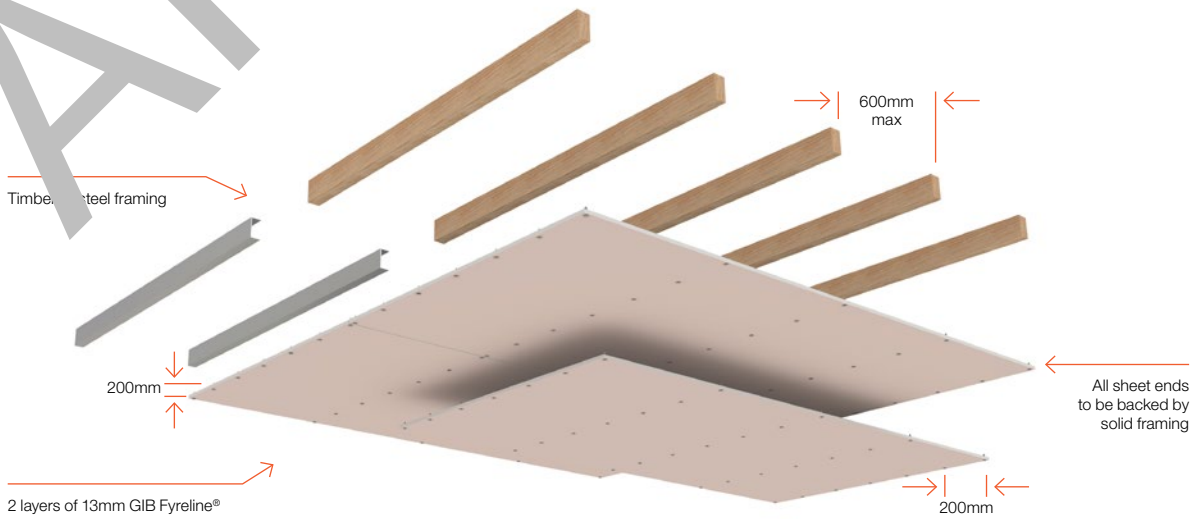
WALL/CEILING JUNCTIONS

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”.



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Universal ceiling systems

Specification number	Performance	Specifications	
GBUC 90	**FRR** 90/90/90	**Lining** **LB/NLB**	2 layers 19mm GIB Fyreline® Load bearing
GBUC 120*	**FRR** 120/120/120	**Lining** **LB/NLB**	2 layers 19mm GIB Fyreline® Load bearing

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 70mm x 35mm 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 fro hose in the first layer.

All sheet end butt joints must occur over s ing.

Sheets shall be touch fitted.

**Note: A 120-minute FRR (GBUC 120 achieved with a r mum 200mm separation distance betwee e ceiling linings ar ny flooring or roofing material, or with the dition of Pink® B s® BIB R1.8 (75mm) glass woo dia installe tween th aming.*

FASTENING THE LINING

Fasteners

Layer	Timber me	St frame
Inner layer	41m x 6g GIB® Gr er® High T ad Drywa re	32mm IB® Grabber® Self Tapping Dr ll Screws
Outer layer	mm x 7g R® bber® High re Dr all Screws	mm x 7g GIB® Grabber® Self Tapping Drywall Screws

stener ce (bot layers)

fasteners 12m longitudinal sheet edges and 18mm fro eet ends. This distance may be reduced to 12mm from sheet e at butt joints on furring channels.

ce faste at 200mm centres around the ceiling perimeter, a each intermediate framing member and where sheet end butt j s occur.

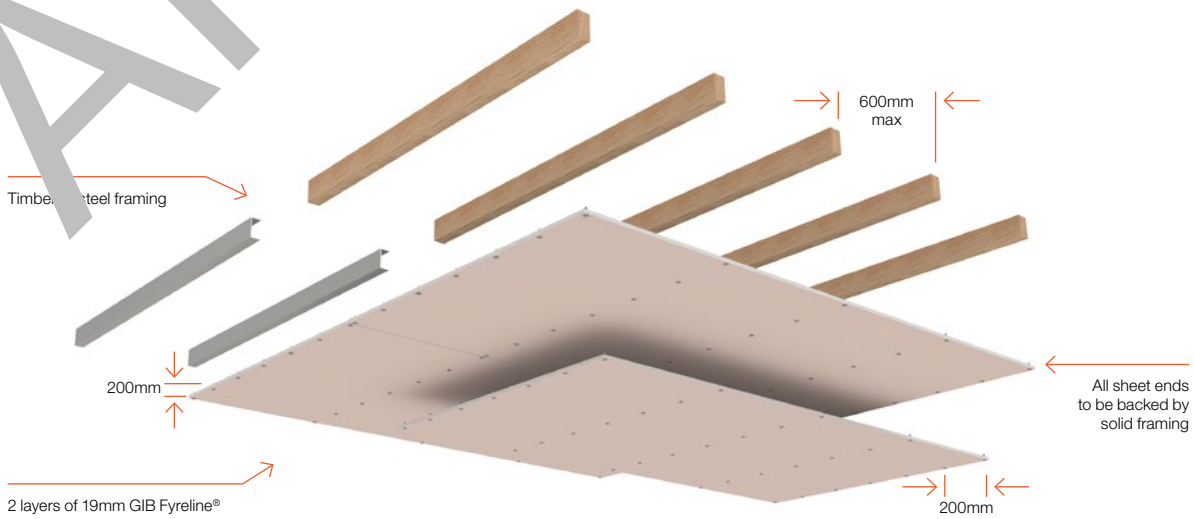
WALL/CEILING JUNCTIONS

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".



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GIB® Fyreduct™ 900

Specification number	Performance	Specifications	
GBFD 900—30	**FRR** –/30/30	**Lining** **LB/NLB**	2 layers 10mm GIB Fyreline® Non load bearing
GBFD 900—60	**FRR** –/60/60	**Lining** **LB/NLB**	2 layers 13mm GIB Fyreline® Non load bearing
GBFD 900—90	**FRR** –/90/90	**Lining** **LB/NLB**	2 layers 16mm GIB Fyreline® Non load bearing
GBFD 900—120	**FRR** –/120/120	**Lining** **LB/NLB**	2 layers 19mm GIB Fyreline Non load bearing

DUCT COMPONENTS

- GIB Fyreline®
- 64 x 34 x 0.5mm C-section galvanised steel stud
- 32 x 32 x 0.5mm galvanised steel angle
- GIB® Grabber® Self Tapping Drywall Screws
- 38mm x 10g GIB® Grabber® Laminator Screws or 40mm x 8g Chipboard Screws
- Mineral wool vity ins 80kg/m³
- Steel duct line
- Duct support sy m

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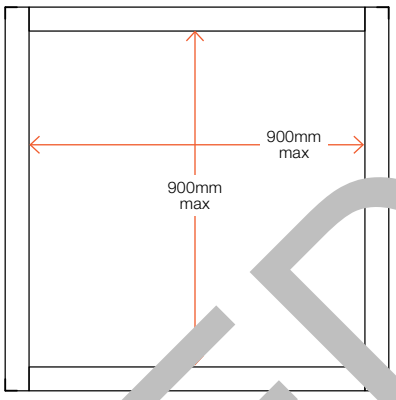
GIB® Fyreduct™ 900

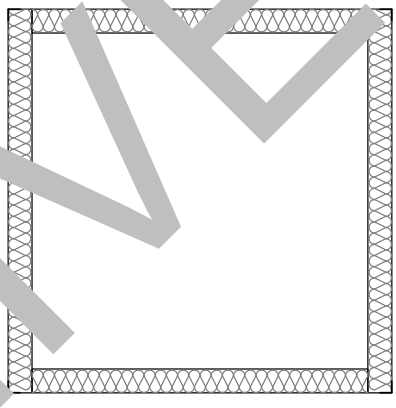
BUILDING THE DUCT

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 600mm centres maximum.



Step 2
Insert the mineral wool cavity insulation in between the ring frames around all four sides of the duct.



Step 3
Line the frames with the appropriate l ng(s) depending on the required FRR .

Sheets shall be touch fitted.

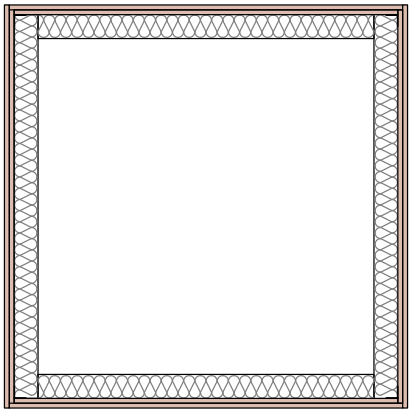
Offset joints between la inimu 300mm.

All sheet joints mus e formed c framing.

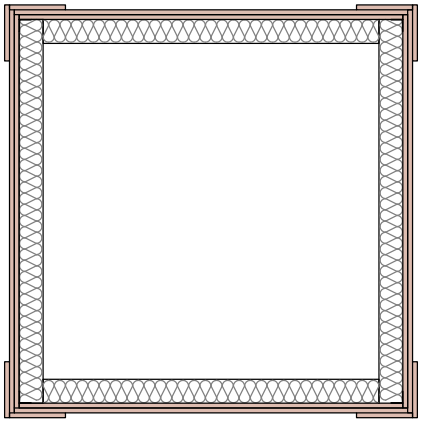
Inner layer: GIB bber® Sc Drywall Screws at 300mm centres to s t p meter and inte mediate framing.

Outer layer: GIB® Grabbe Self Tapping Drywall Screws at 300 res to sheet pe ter and intermediate framing.

Screw ngth mus e 12mm penetration through the steel.



Step 4
Fit 150mm- e GIB Fyreline® caps to all corners using GIB® Grabber® Se apping Drywall Screws into the steel framing or laminate using 38mm x 10g GIB® Grabber® Laminator Screws.



JOINTING

Inner layer: Unstopped.

Outer layer: All screw heads stopped and sheet joints tape reinforced and stopped in accordance with the publication entitled “GIB® Site Guide”. Capped external corners can be left unstopped.

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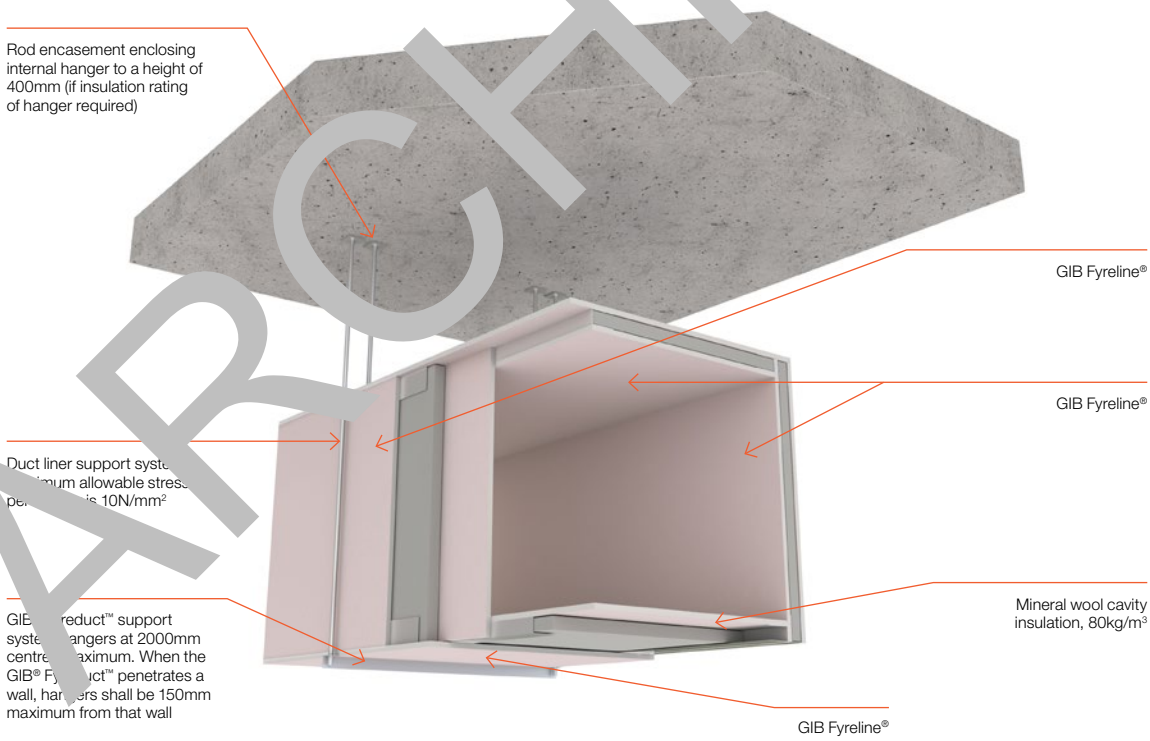
GIB® Fyreduct™ 600

Specification number	Performance	Specifications	
GBFD 600—30	**FRR** –/30/30	**Lining** **LB/NLB**	2 layers 10mm GIB Fyreline® Non load bearing
GBFD 600—60	**FRR** –/60/60	**Lining** **LB/NLB**	2 layers 13mm GIB Fyreline® Non load bearing
GBFD 600—90	**FRR** –/90/90	**Lining** **LB/NLB**	2 layers 16mm GIB Fyreline® Non load bearing
GBFD 600—120	**FRR** –/120/120	**Lining** **LB/NLB**	2 layers 19mm GIB Fyreline Non load bearing

DUCT COMPONENTS

— GIB Fyreline®
— GIB Rondo® 340 Perimeter Channel
— GIB® Grabber® Self Tapping Drywall Screws
— 38mm x 10g GIB® Grabber® Laminator Screws or 40mm x 8g Chipboard Screws for single-layer back-blocking
— Mineral wool cavity ins… 80kg/m³
— Duct support s…tem

Note: All sheet end …tt joints are …ack-blocked with a 3…mm-wide strip …GIB Fyreline®.



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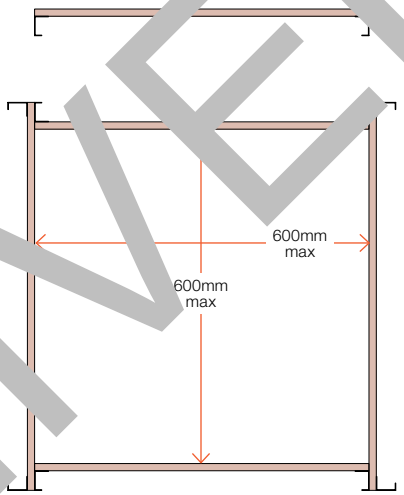
GIB® Fyreduct™ 600

BUILDING THE DUCT

Step 1

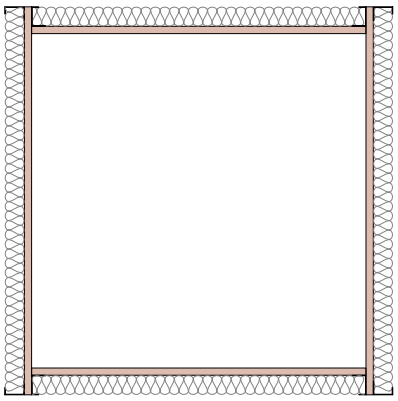
Cut maximum 600mm-wide strips of GIB Fyreline® to form the bottom and top of the duct and attach GIB Rondo® 340 Perimeter Channel to sheet edges with GIB® Grabber® Self Tapping Drywall Screws at 300mm centres. Screw length depends on lining thickness and penetrates the steel by approximately 12mm.

Cut strips of GIB Fyreline® to form the sides of the duct and attach channels as above to sheet edges with GIB® Grabber® Self Tapping Drywall Screws at 300mm centres.



Step 2

Fabricate the duct by connecting the GIB Rondo® 340 Perimeter Channels at duct corners with GIB® Grabber® Self Tapping Drywall Screws at 300mm centres.



Step 3

Insert the mineral wool cavity insulati around all four si of the duct. Cut strips of GIB Fyreline® to fo the outer layer of duct.

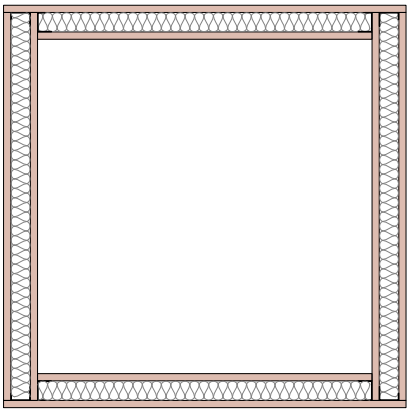
Ste

Comp te the by lining th tside with GIB Fyreline® fixed with G Grabbe pping Drywall Screws at 300mm centres ng external corners.

Sheets sh e touch fitted.

Offset joints ween layers by a minimum of 300mm.

All sheet end joints in single layers must be back-blocked with a 300mm-wide strip of GIB Fyreline® fixed using 38mm x 10g GIB® Grabber® Laminator Screws at 200mm centres.



JOINTING

Inner layer: Unstopped.

Outer layer: All screw heads stopped and all sheet joints and corners tape reinforced and stopped in accordance with the publication entitled “GIB® Site Guide”.

GFS 041

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GIB® Ventshaft

Specification number	Performance	Specifications	
GVS 60	**FRR** –/60/60	**Lining**	3 x 16mm GIB Fyreline®
		LB/NLB	Non load bearing

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 to ensure an offset with the secondary angle fixings.

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 25mm 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 top and bottom metal angles at 600mm centres horizontally commencing from one end or corner progressively attaching around the shaft using 32mm x 6g GIB® Grabber® Self Tapping Drywall 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® Drywall Screws. Fix plasterboard hard against slab and slab soffit.

Second layer lamination

Cut sheets to provide a good fit slab to slab and at intersecting walls. Mark the face of the sheet 12mm from the tapered edges, 18mm from sheet ends, and with vertical lines at 400mm centres.

Mark fasteners at 400mm centres along these lines, starting at 18mm and then 200mm from the bottom.

Stagger/overlap sheets by no less than 300mm. Fix second layer of 16mm GIB Fyreline® to metal angles around the perimeter using 41mm x 6g GIB® Grabber® Self Tapping Drywall Screws.

Laminate the second layer to the first sheet using 38mm x 10g GIB® Grabber® Laminator Screws or 40mm x 8g Chipboard Screws. The tapered joint in the previous layer must be supported by an additional double line of GIB® Grabber® Laminator Screws.

Third layer lamination

Cut sheets to provide a good fit slab to slab and at intersecting walls. Mark the face of the sheet 12mm from the tapered edges, 18mm from sheet ends, and with vertical lines at 400mm centres. Mark fasteners at 400mm centres along these lines, starting 18mm and then 400mm from the bottom.

Apply GIB Fire Soundseal® to the perimeter of the second layer before installing the third layer.

Stagger/overlap sheets by no less than 300mm. Screw fix at the perimeter to the metal angles using 63mm x 6g GIB® Grabber® Self Tapping Drywall screws.

Laminate the third layer to the second sheet using 38mm x 10g GIB® Grabber® Laminator Screws or 40mm x 8g Chipboard Screws.

Ensure boards overlap at corners.

JOINTING

Inner layer: Unstopped.

Outer layer: All screw heads stopped and all sheet joints and corners tape reinforced and stopped in accordance with the publication entitled “GIB® Site Guide”.

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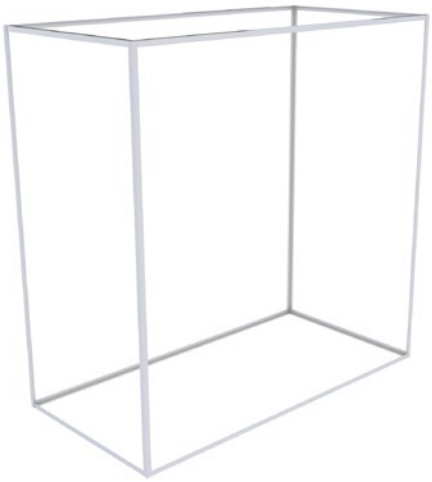
GIB® Ventshaft

Specification number	Performance	Specifications	
GVS 60	**FRR** –/60/60	**Lining**	3 x 16mm GIB Fyreline®
		LB/NLB	Non load bearing



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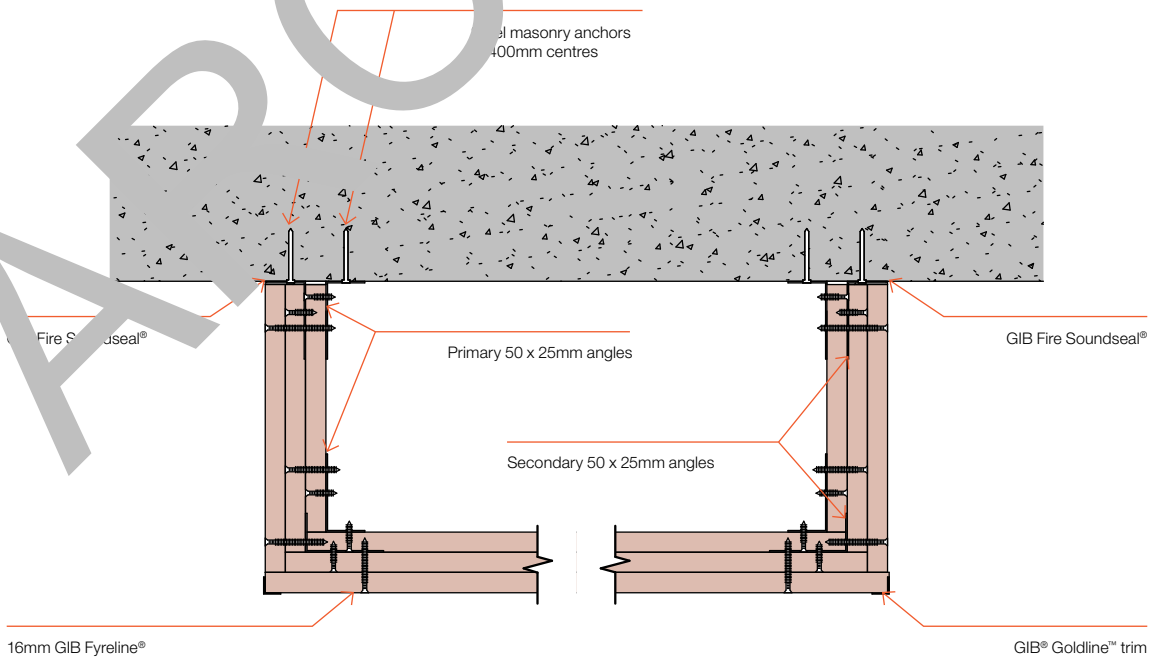
PLAN VIEW (WALL APPLICATIONS ONLY)



GFS 042

GIB® Shaftwall

Specification number	FRR	Fire side	Landing side lining (Note: Shaft side lining is 2 x 13mm GIB Fyreline® in all cases.)	Sound Transmission Class (STC)*			
				64mm stud		102mm stud	
				No fill	Fill	No fill	Fill**
GBSH 30	–/30/30	Either	1 x 13mm GIB Fyreline®	38	44	41	46
GBSH 60a	–/60/60	Shaft					
GBSH 60b	–/60/60	Either	2 x 13mm GIB Fyreline®	42	48	45	49
GBSH 90a	–/90/90	Shaft					
GBSH 90b	–/90/90	Either	Inner layer: 16mm GIB Fyreline® Outer layer: 13mm GIB Fyreline®	43	49		50
GBSH 120a	–/120/120	Shaft					
GBSH 120b	–/120/120	Either	2 x 19mm GIB Fyreline®	4[illegible]	45	47	50

**To achieve STC ratings, GIB Fire Soundseal® must be used around the perimeter of the [illegible]ding li[illegible] between sh[illegible] for double-layered systems).*

***Fill is a minimum 50mm-thick glass fibre insulation with a density of 9.6 kg/m³ or greater.*

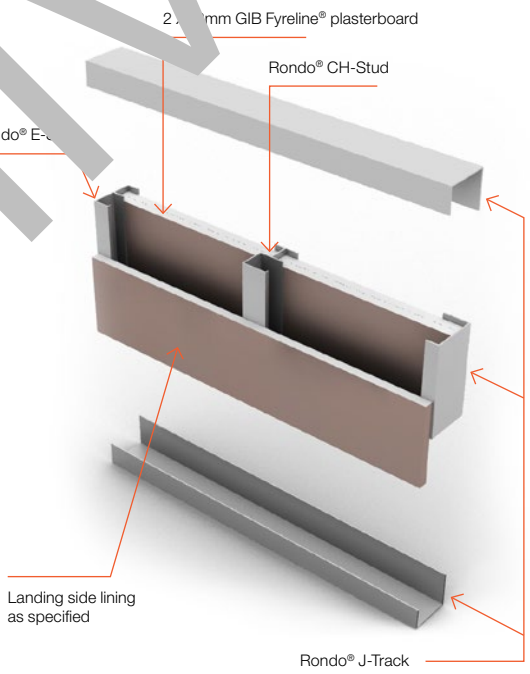
FRAMING AND WALL HEIGHT

GIB® Shaftwall Framing consists of Rondo® CH-Stud, Rondo® E-Stud and Rondo® J-Track. GIB® Shaftwall is constructed from the landing side of the shaft. All specifications are non load bearing.

Rondo® J-Track is used as top and bottom channel. Installation starts using a Rondo® E-Stud, progresses using R[illegible]® CH-Studs, and Rondo® J-Track is used as the final stud. [illegible] tha[illegible] fixings to the surrounding structure, the GIB® Shaftwall F[illegible]g system uses no mechanical fixing.

When connecting to structural steel, i[illegible]tall GIB® Shaftwall Frami[illegible] prior to any fireproofing spray applica[illegible]n.

Stud depth	Stud thickn[illegible]	Ma[illegible]um allowable wall [illegible]ht
64mm	0[illegible]mm	[illegible]600mm
102mm	[illegible]5mm	[illegible]ith lift car)
102mm	0.55[illegible]	4350mm (without lift car)
10[illegible]	0.9mm	5500mm



INSTALL[illegible]N

Top and b[illegible]om tracks

Cut Rondo® [illegible]racks to length and mechanically fix at both ends and at a[illegible]aximum of 600mm centres to the floor and upper structural support. Place the long leg of the Rondo® J-Track towards the shaft.

End studs

Cut Rondo® E-Stud 15mm short of full height and mechanically fix at a maximum of 600mm centres to the adjacent structure. A Rondo® J-Track is fixed at the opposite end of the wall in the same manner placing the long leg towards the shaft.

CH-Studs

Rondo® CH-Studs are cut 15mm short of full height and placed vertically into the top and bottom Rondo® J-Tracks with the H side of the stud towards the shaft. Studs are friction fitted into the top and bottom tracks and spaced at 600mm centres maximum, located so that the shaft side GIB® lining slips into the H profile.

Shaft side lining

A sheet of 13mm GIB Fyreline® is cut lengthwise and placed as a 26mm-thick, 600mm-wide double layer vertically in the Rondo® E- and CH-Studs. To facilitate easy installation, rotate the cut sheet so that it has a taper and cut edge both sides. If required, ensure sheet end joints are tight butted and staggered by a minimum of 300mm.

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Cut further 600mm-wide panels and locate them into Rondo® CH-Studs until the final wall gap is 600mm or less.

As an alternative, and for wall heights 3000mm or less, full height sheets of 25mm thick GIB Barrierline® can be used as the shaft side lining.

The final panel is cut so that it can be angled into the last Rondo® CH-Stud and rotated into the Rondo® J-Track already fixed to the structure. To allow entry, cut the vertical leg of the bottom track, bend down and return to vertical once the panel has been fitted. Fix the last panel to the Rondo® J-Track using 41mm x 6g GIB® Grabber® Self Tapping Drywall Screws at 300mm centres.

Linings sit hard to floor and a 15mm gap is left at the top of the frame. This gap and remaining side gaps are filled with GIB Fire Soundseal® prior to fixing the landing side lining(s). To minimise the use of sealant, side gaps can be packed with GIB Fyreline®.

Landing side lining

Lining layers and type depends on the required FRR as detailed in the specification table. Linings are fixed vertically and hard to floor, using full height sheets where possible. All sheet joints are formed over framing. Where sheet end butt joints are unavoidable, they shall be formed over nogs.

Fix linings to studs with GIB® Grabber® Self Tapping Drywall Screws at 300mm centres, using the following dimensions:

Single or inner layer

— 13mm or 16mm GIB Fyreline® — 32mm x 6g
— 19mm GIB Fyreline® — 41mm x 6g

Outer layer

— 13mm GIB Fyreline® — 41mm x 6g
— 19mm GIB Fyreline® — 51mm x 7g

Fill gaps left at the top of the linings with GI[illegible]re Sou[illegible]eal®.

JOINTING

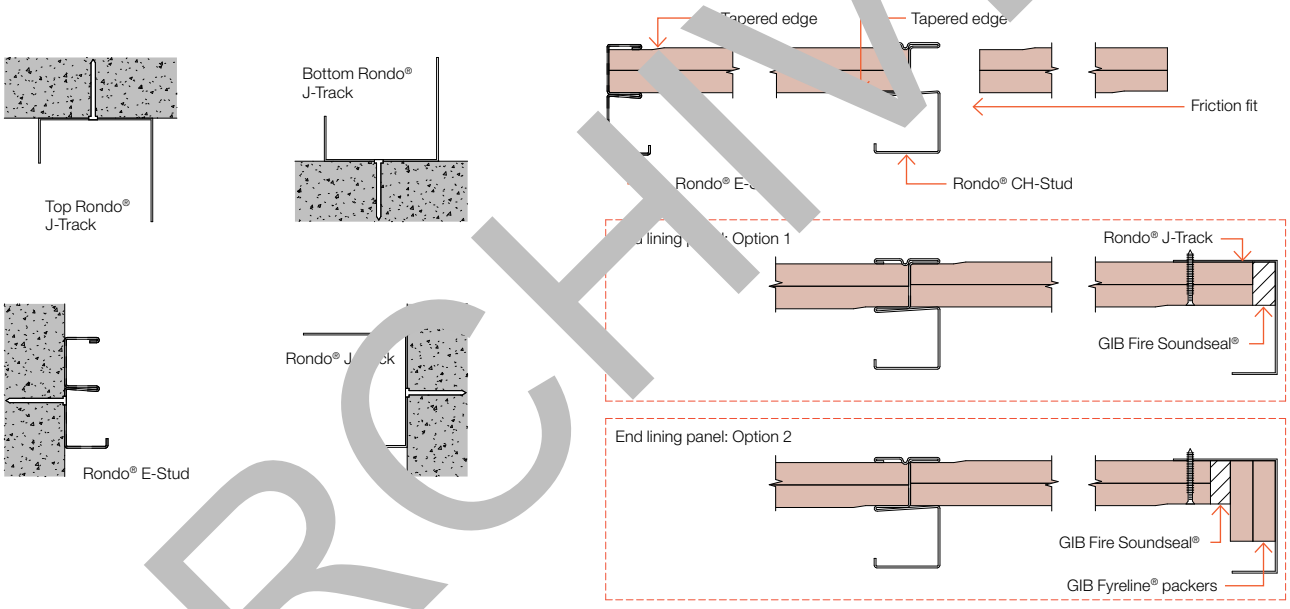
Shaft side

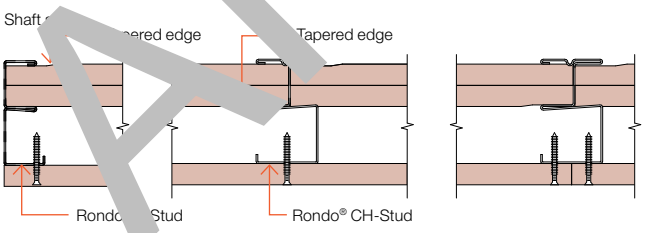
Unstopped .

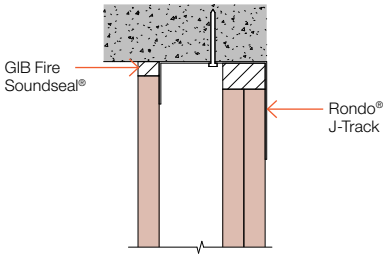
Landing side

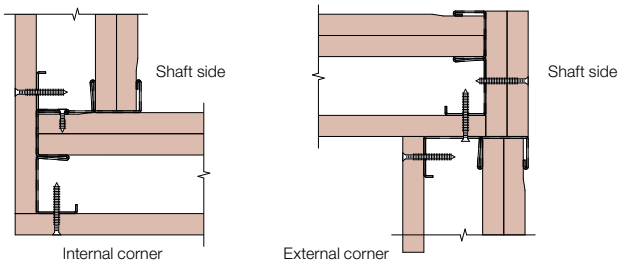
Inner layer: Unstoppe[illegible]

Outer layer: All s[illegible]ew he[illegible] sto[illegible]ed and all sh[illegible]t joints tape reinforced and s[illegible]oped in a[illegible]dance with t[illegible]publication entitled “GIB® Site [illegible]ide”.









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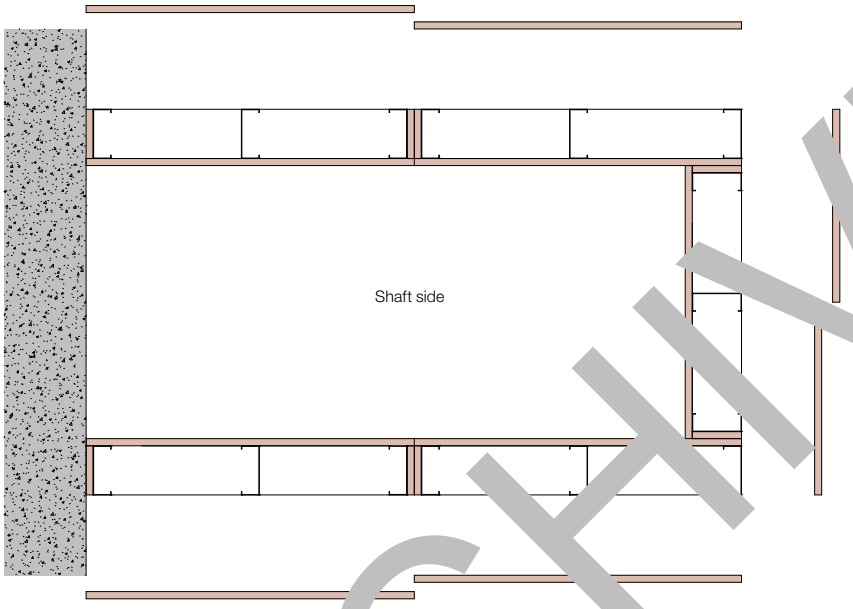
GIB® Panel Shaft

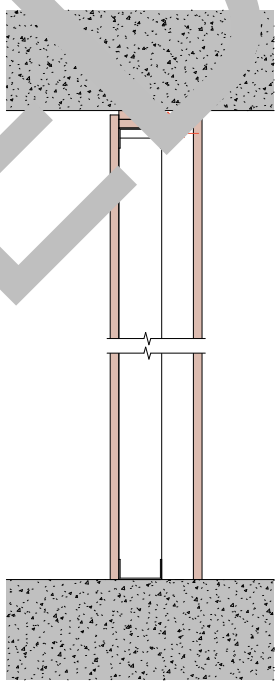
Shaft walls can be constructed by fabricating short panel lengths on site, erecting them from the landing side and connecting them together before lining the final open side. GIB® plasterboard packers are installed at the panel perimeters to ensure the FRR is maintained when connecting panels to each other and to the surrounding structure.

GIB® Panel Shaft uses conventional framing and lining materials and does not need plaster stopping of sheet joints on the shaft side. For FRR and lining specification, refer to the conventional timber or steel framing systems published in this technical literature.

PLAN VIEW



SEC N VIEW



GFS 044

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INSTALLATION

Step 1
Construct the frame usi etal top and bottom channels and fricti d metal or timbe uds. The top and bottom channels are d ontin

Step 2
Incorpora inuous plasterboard 'packer strips' at the panel ends d the head. The thickness or number of packers at the head y depend on floor deflections that need to be accommo ed.

Step 3
Fix linings to the shaft side of the panels by screw-fixing to studs. Fixing to bottom channels is optional. Do not fix to top channels.

Step 4
Move the panel into position, secure the bottom channel to the floor and secure the top channel by lifting it and fastening to the structure above while making sure the specified stud deflection tolerance is achieved and a minimum 6mm wall lining overlap with the packers is maintained.

Step 5
Construct the next panel similarly, slide into position and secure against the structure and first panel through the end stud packers.

Step 6
Once all panels have been connected and the shaft is closed in, check for remaining minor gaps, fill these with GIB Fire Soundseal® and line the open landing side conventionally.

For full fixing details, follow the selected specification details.

Chase walls

Services may be reticulated within the cavity space between double-stud 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:

— The FRR applies from outside to outside of the chase wall system and not from inside to outside.
— Service penetrations must be made in the chase wall as described in this publication or in accordance with the requirements for proprietary tested penetration seals.
— Non-loadbearing wall constructions only may be used.
— Approved variations are:
i) 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.
ii) Stud spacing between walls in the double-stud construction is optional.

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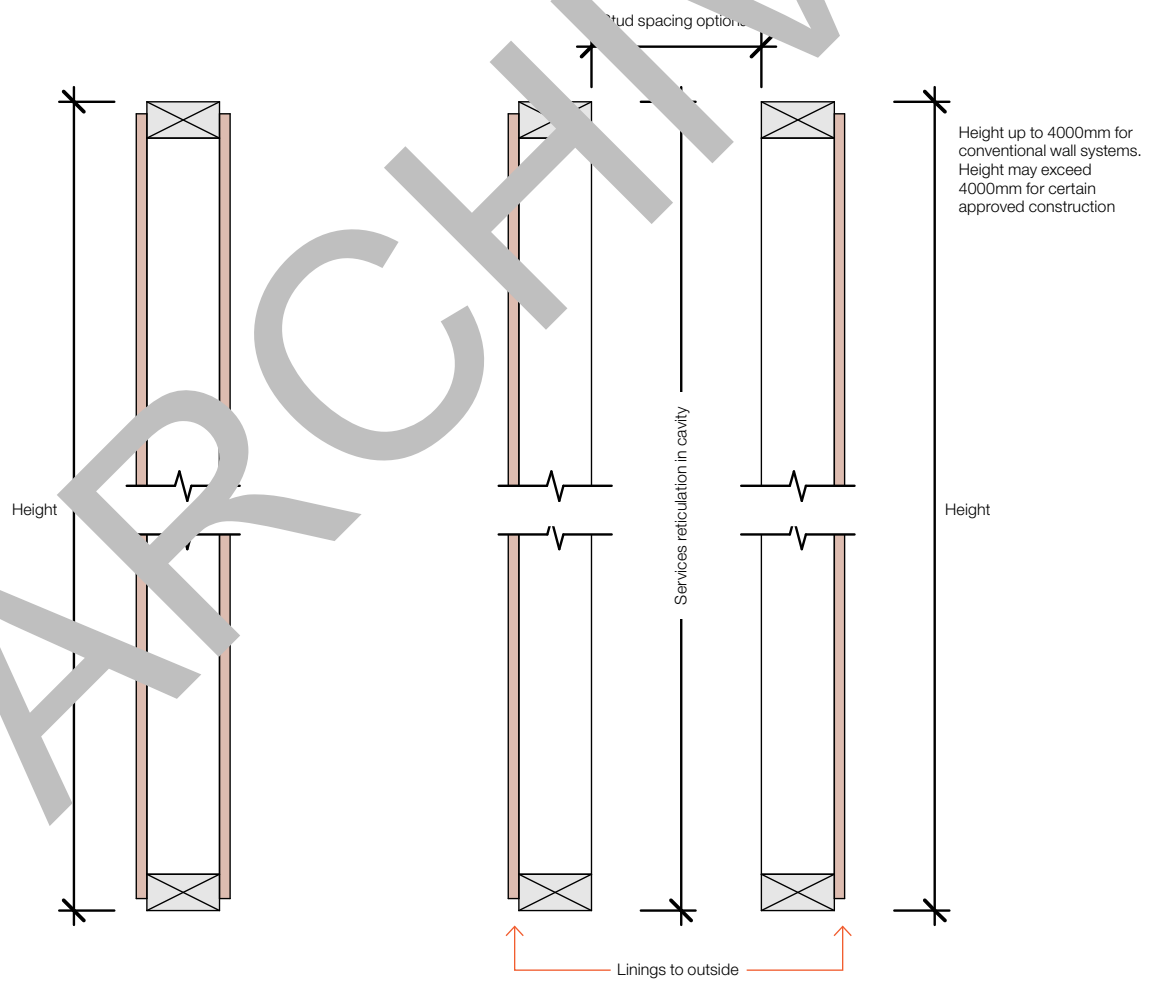
SECTION VIEW

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

Example of chase wall construction



GFS 045

Fire rated protection of 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, timber and concrete columns and beams. The illustrations below show steel members.

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

Specification number	FRR (structural adequacy rating*)	Lining requirement steel, timber, concrete columns and beams
GBCBT 15	15/-/-	1 x 13mm GIB® Standard
GBCBT 30a	30/-/-	1 x 16mm GIB Fyreline®
GBCBT 30b	30/-/-	2 x 10mm GIB Fyreline®
GBCBT 60	60/-/-	2 x 13mm GIB Fyreline®
GBCBT 90	90/-/-	2 x 16mm GIB Fyreline®
GBCBT 120	120/-/-	2 x 19mm GIB Fyreline®
GBCBT 180	180/-/-	3 x 19mm GIB Fyreline®

**The FRR comprises values for structural adequacy/integrity/insulation. For loadbearing structural steel members (primary elements), the structural adequacy rating is the only requirement and prevents failure under vertical gravity loads during a fire.*

STRAPPING

Strap column or beams with a timber cradle frame with a minimum nominal thickness of 35mm ensuring that the linings are supported by framing members spaced at 600mm centres maximum.

No air gap is required as long as support is provided to the protective linings at no more than 600mm centres each side of the structural member.

The protective linings can be direct fixed to timber columns and beams.

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 timber.

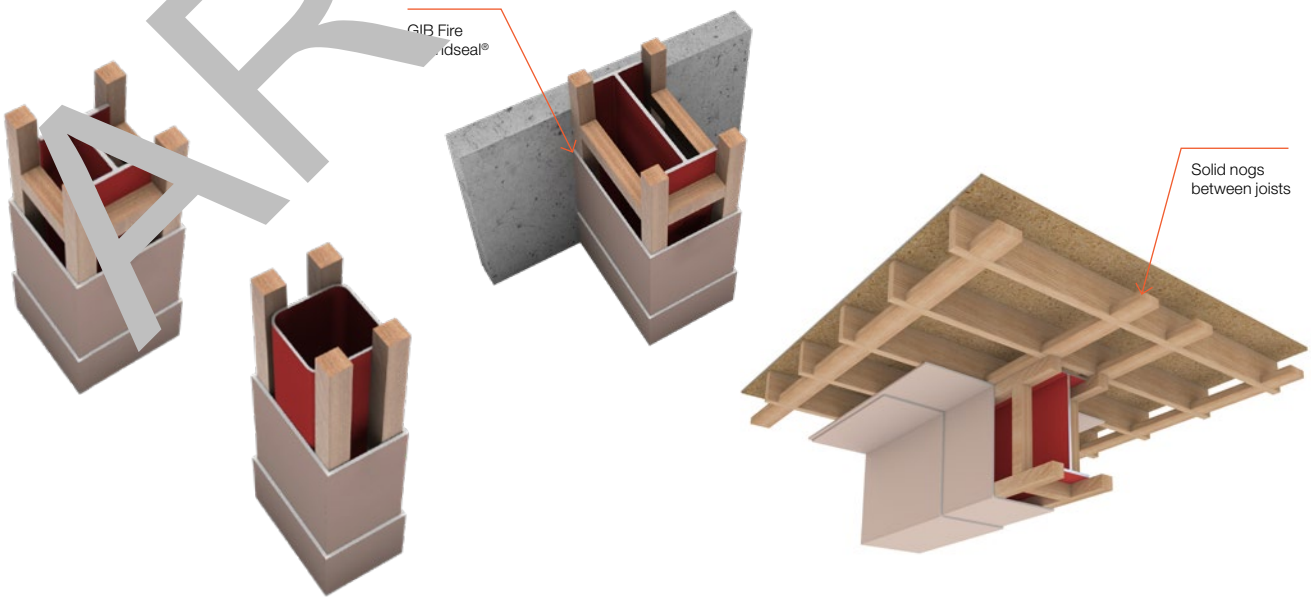
Fastener centres

Single outer layers must be fixed at 300mm centres maximum to framing spaced at 600mm centres maximum. Inner layers can be fixed at 600mm 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".



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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.

Specification number	FRR (structural adequacy rating*)	Lining requirement steel columns and beams
GBCBS 15	15/-/-	1 x 13mm GIB® Standard
GBCBS 30a	30/-/-	1 x 16mm GIB Fyreline®
GBCBS 30b	30/-/-	2 x 10mm GIB Fyreline®
GBCBS 60	60/-/-	2 x 13mm GIB Fyreline®
GBCBS 90	90/-/-	2 x 16mm GIB Fyreline®
GBCBS 120	120/-/-	2 x 19mm GIB Fyreline®
GBCBS 180	180/-/-	3 x 19mm GIB Fyreline®

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

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. NZ18) is to be secured to provide fixing for linings.

The Rondo® angle must be fixed to the underside of the beam 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 lining 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® Self-Tapping Drywall Screws.

The fastener length must ensure a 12mm minimum penetration into the steel framing.

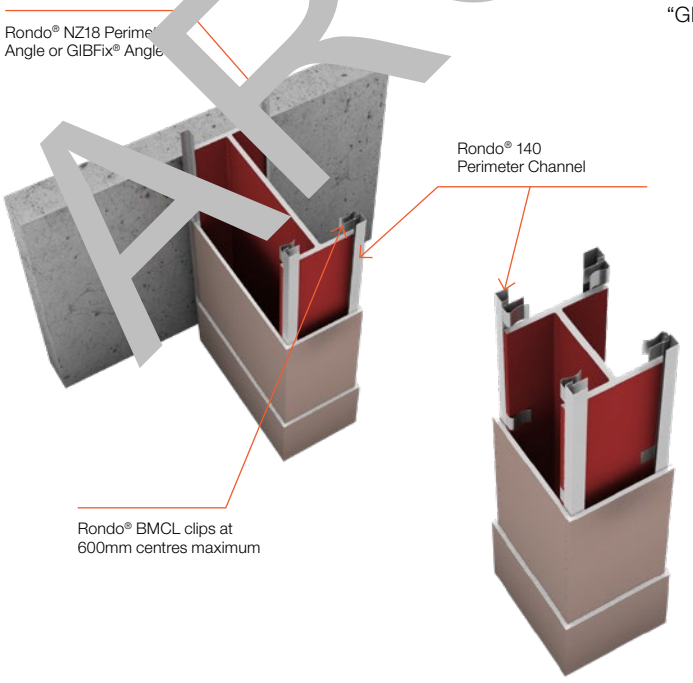
Fastener centres

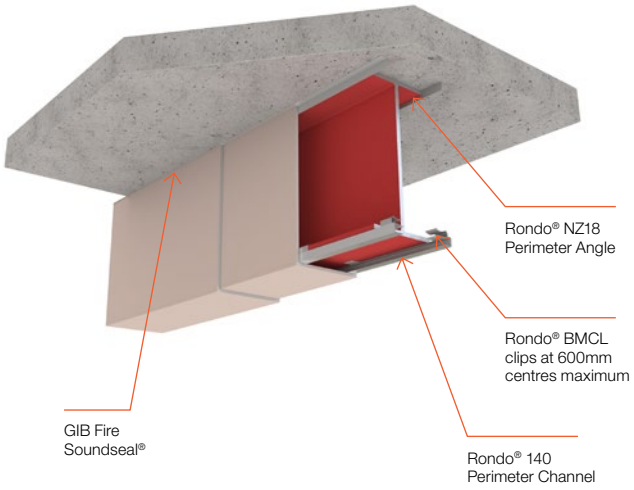
Single or outer layers must be fixed at 300mm centres maximum to framing spaced at 600mm centres maximum. Inner layers can be fixed at 600mm centres maximum to framing spaced at 600mm centres maximum.

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".





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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.

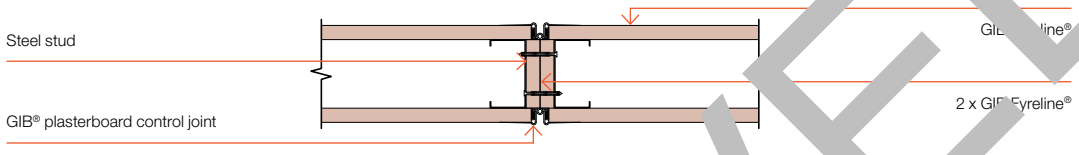
Control joints at a maximum of 12m intervals are intended to eliminate random cracking of gypsum plasterboard joints and must be used in conjunction with our recommendations for installation, fixing, jointing and finishing GIB® plasterboard.

The control joints illustrated below are not designed to accommodate structural movement such as that resulting from roof or floor deflections or seismic activity. These movement joints must be specifically designed.

Details below show the principle of creating control joints in GIB® Fire Rated Systems. Note that the control joints are only required in the outer layer of multiple-layer systems.

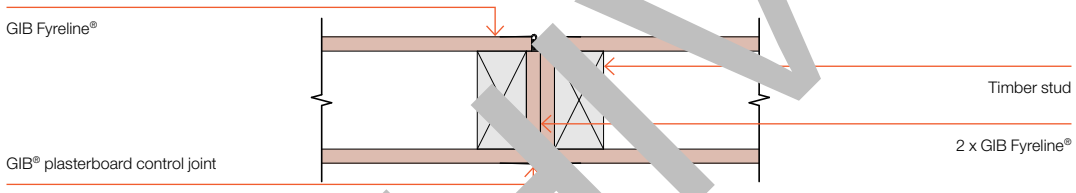
For assistance with the design of control j[illegible]s in spec[illegible]GIB® Systems, call GIB® Helpline 0800 100 [illegible].

FIRE RATED WALLS — STEEL FRAME (PLAN VIEW)



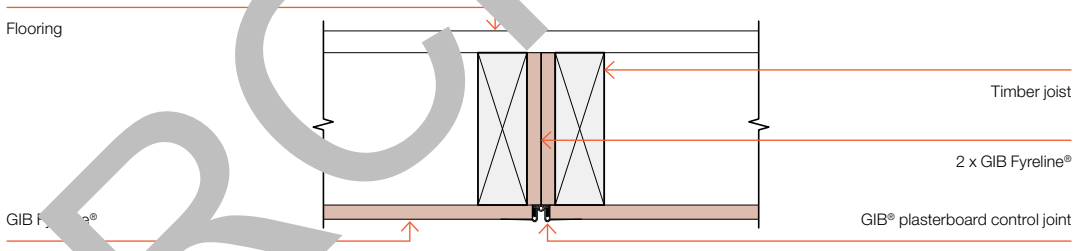
GFS 060

FIRE RATED WALLS — TIMBER FRAME (PLAN VIEW)



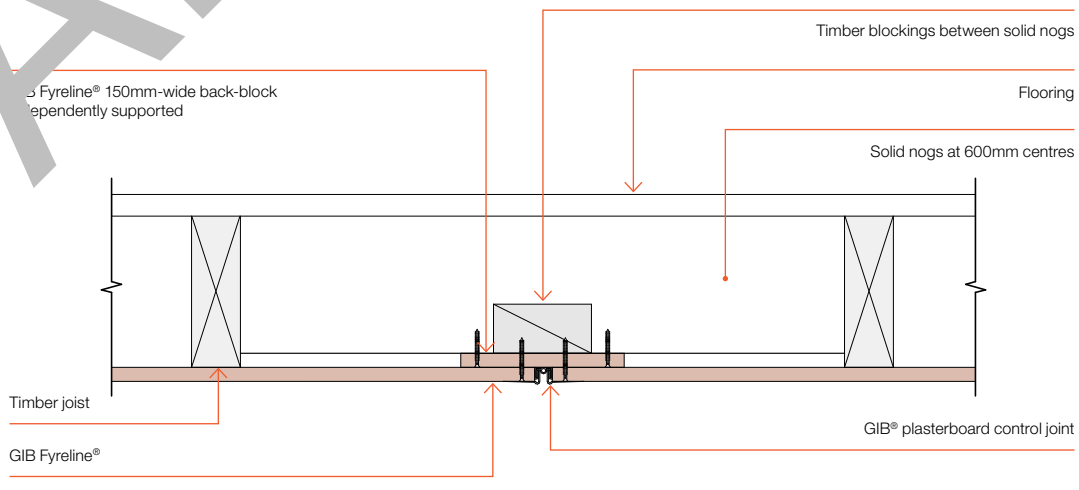
GFS 061

FIRE RATED FLOOR/CEILING (SECTION VIEW)



GFS 062

FIRE RATED FLOOR/CEILING (SECTION VIEW)



GFS 063

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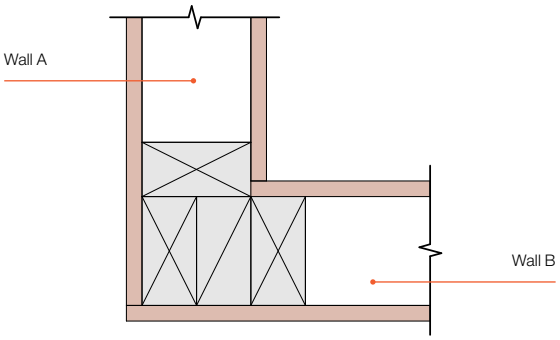
Wall junctions

Unless otherwise noted, the following junction details are intended for intersecting walls with equivalent Fire Resistance Rating (FRR) and preserve the FRR of the GIB® Fire Rated System to which they are applied.

These junction details may also be used in smoke separations provided any perimeter gaps greater than 0.5mm wide are sealed.

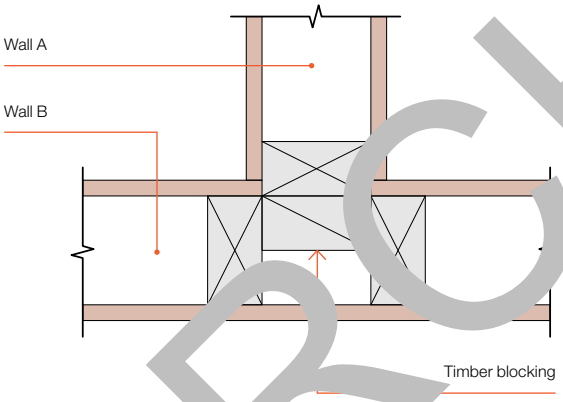
TIMBER FRAME (PLAN VIEW)

Walls A and B have equal FRR



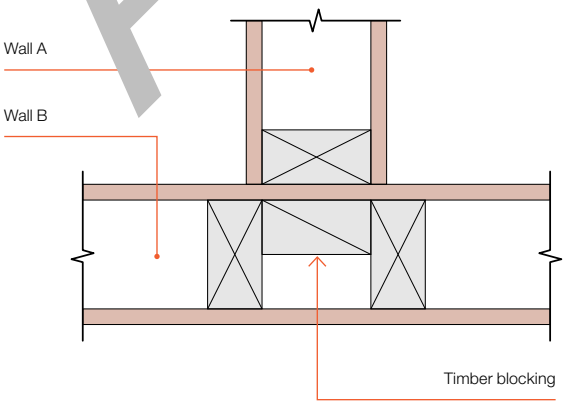
GFS 080

If the difference in FRR between walls A and B is 30 minutes or less, framing at the junction is conventional



GFS 082

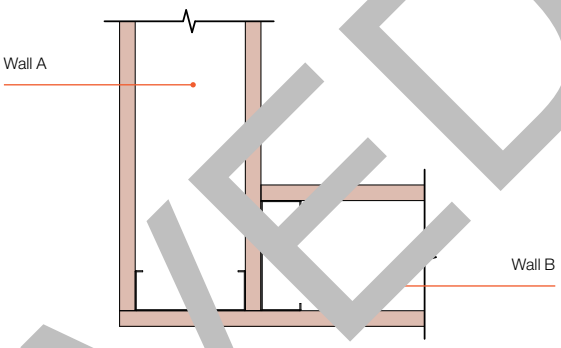
If the ffere FRR betwe alls A and B is greater than 30 min s, the li o higher rated wall (in this case wall B) is contin us t ugh the ersection



GFS 084

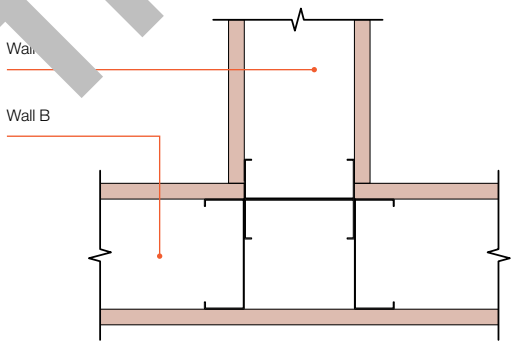
STEEL FRAME (PLAN VIEW)

Walls A and B have equal FRR



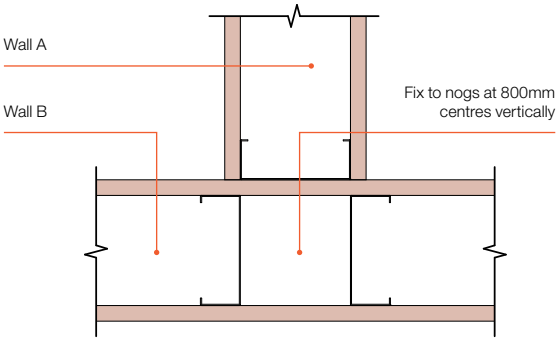
GFS 081

If wall nd B have equal FRR, framing at the junction is conve al



GFS 083

If walls A and B have a different FRR, the lining of the higher rated wall (in this case wall B) is continuous through the intersection



GFS 085

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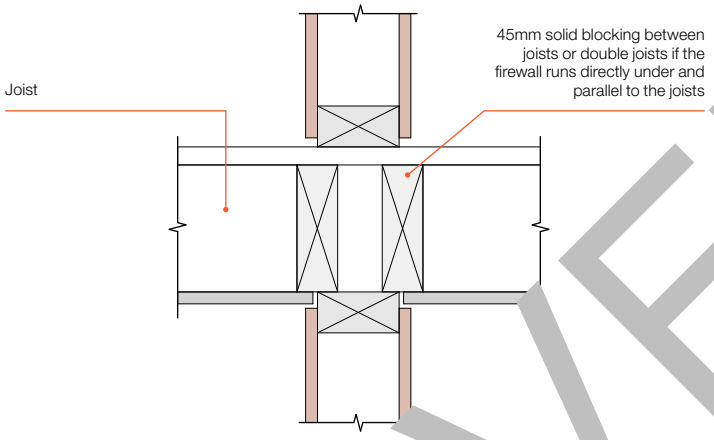
Wall — floor/ceiling junctions

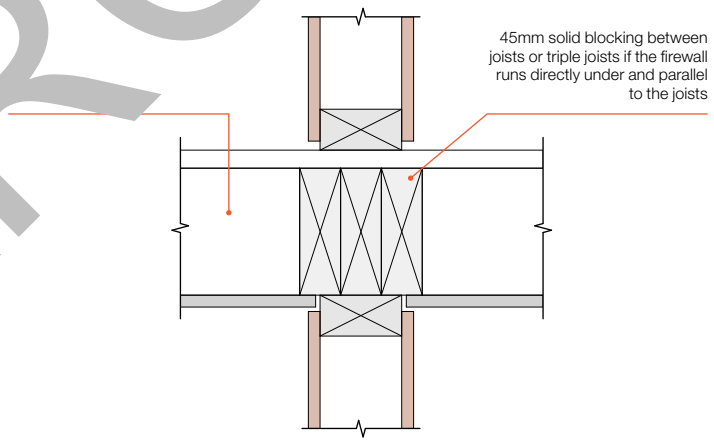
These details show in principle where blocking is required, specific framing layout can vary on-site.

DETAILS WHERE THE FRR OF THE WALL IS CONTINUOUS (SECTION VIEW)



GFS 100

— The floor/ceiling has an FRR up to 30 minutes less than th ll, or
— The wall and floor/ceiling have the same FRR, o
— The wall has an FRR less than or equal to 60 minu

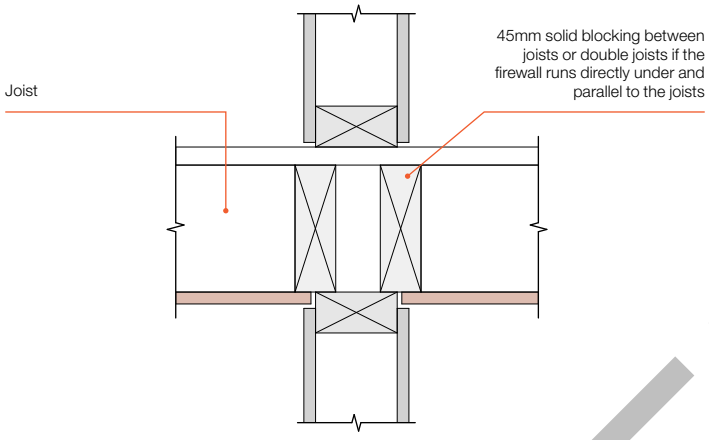


GFS 101

— The wall FRR exceeds 60 minutes, and
— The floor/ceiling has an FRR up to 60 minutes less than the wall.

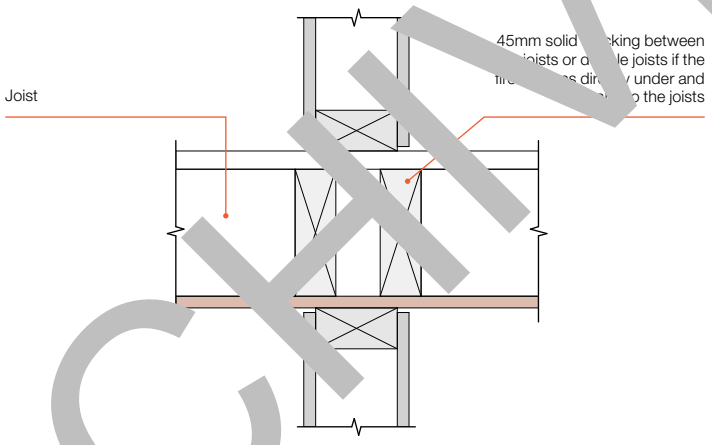
ARCHIVED

DETAILS WHERE THE FRR OF THE FLOOR/CEILING IS CONTINUOUS (SECTION VIEW)



GFS 102

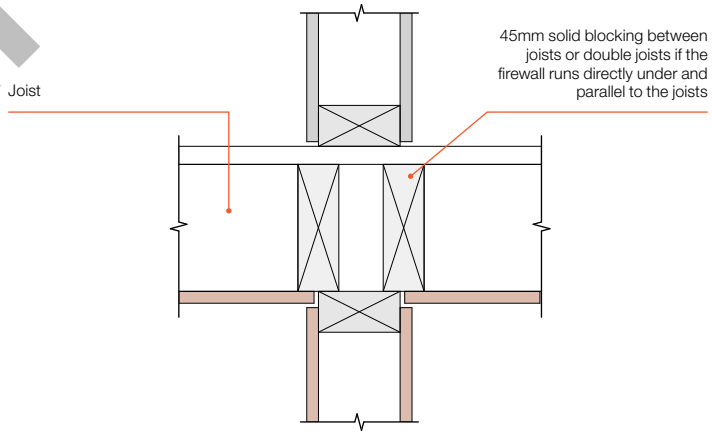
— The FRR of the floor/ceiling is more than that of the wall, and
— The difference in FRR is no more than 30 minutes, and
— The wall is non-loadbearing.



GFS 103

— The FRR of the floor/ceiling is more than that of the wall, and
— The difference in FRR is no more than 30 minutes, and
— The wall is non-loadbearing.

DETAIL WHERE THE FRR OF THE FLOOR/CEILING AND WALL ARE THE SAME (SECTION VIEW)



GFS 104

— The FRR of the floor/ceiling and wall are the same
— The wall is non-loadbearing or loadbearing
— If the wall is loadbearing and itself not a fire separation, then structural adequacy must be determined by specific design, or universal (UW) one way fire protection must be applied to both sides.

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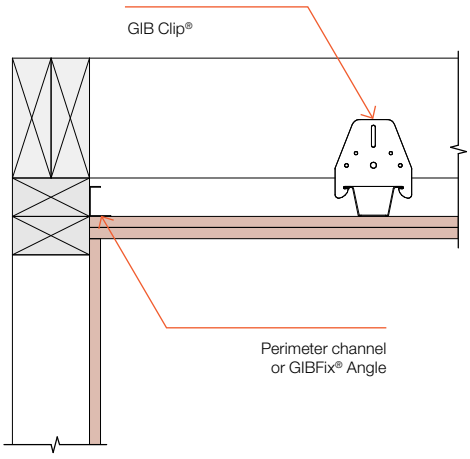
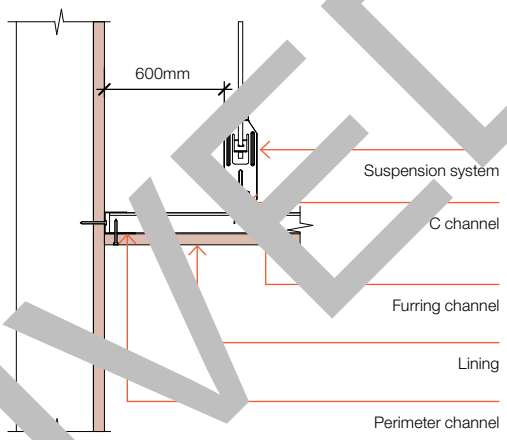
Suspended ceiling to wall junctions

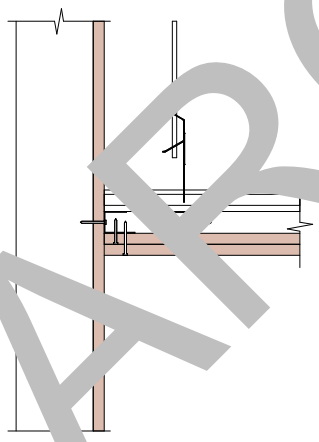
The junctions below join vertical fire separations to fire rated suspended ceiling systems, such as suspended grid and the GIB Clip® systems shown below.

Firewalls may extend from floor to floor or to the ceiling junction as shown. Wall-ceiling junctions without cavity barriers in the concealed space are alternative solutions requiring specific fire engineering justification.

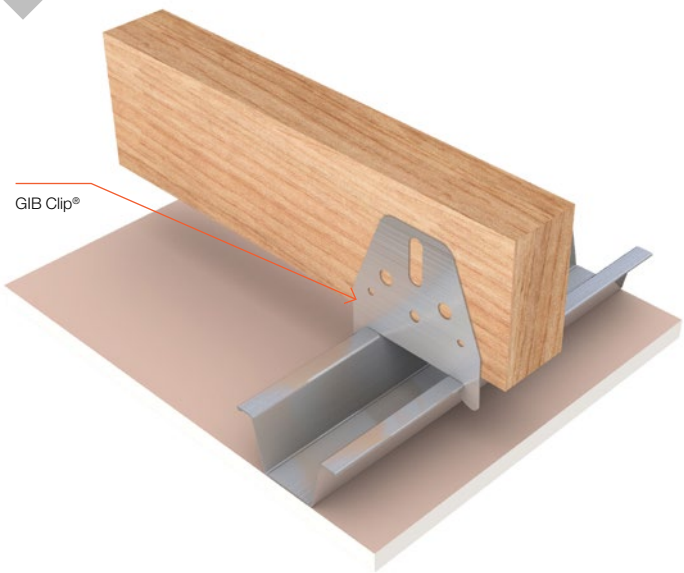


GFS 120





GFS 122



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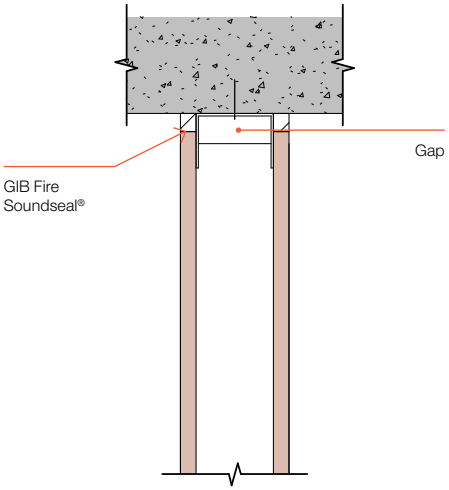
Drywall to concrete or concrete masonry junctions

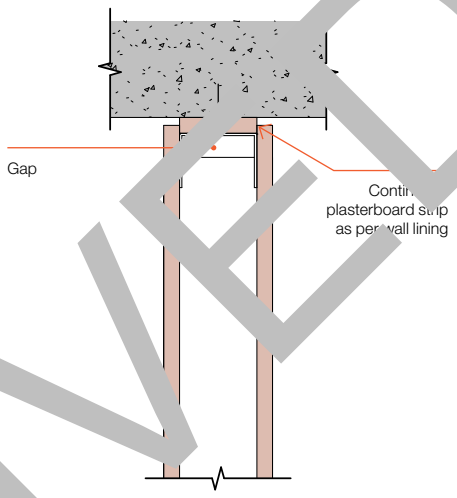
The details below illustrate joints between GIB® Fire Rated Systems and concrete or concrete masonry.

HEAD DETAILS (SECTION VIEW)

Timber or metal stud in metal track (negligible floor deflection)

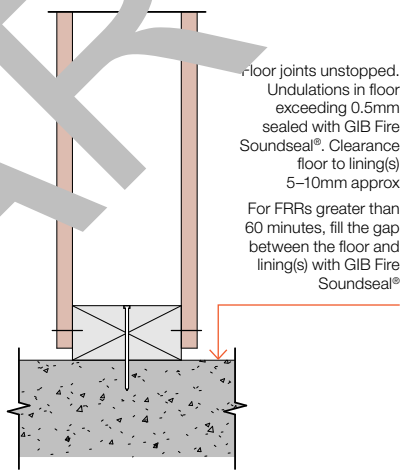


GFS 140

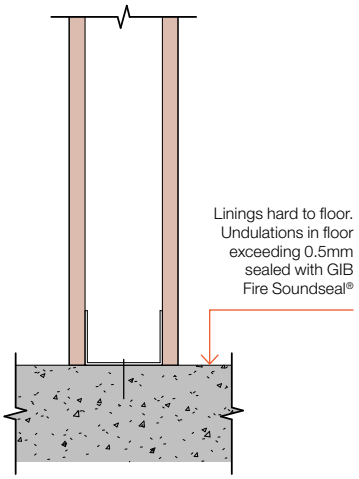


GFS 141

FLOOR DETAILS (SECTION VIEW)



GFS 142



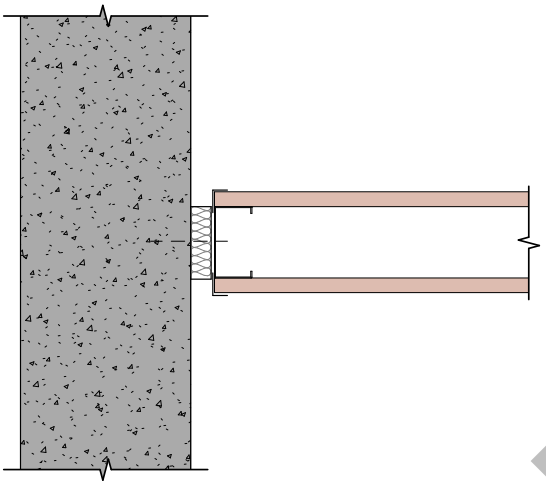
GFS 143

ARCHIVED

WALL-TO-WALL DETAILS (PLAN VIEW)

Mineral fibre packing

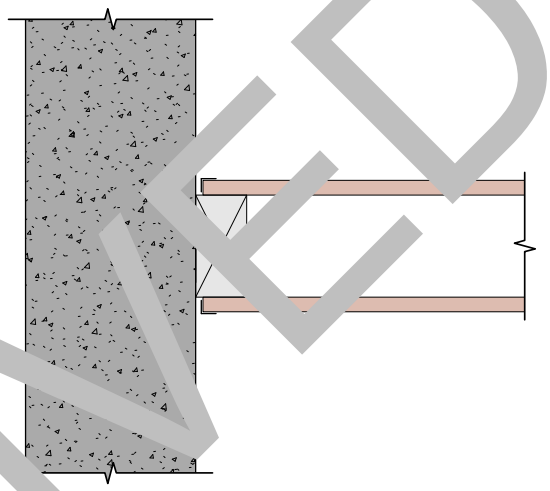
Packing mineral wool or ceramic fibre to the full depth of the stud. Fibre may be capped with sealant and/or linings may overlap the packing (optional).



GFS 160

Conventional detail

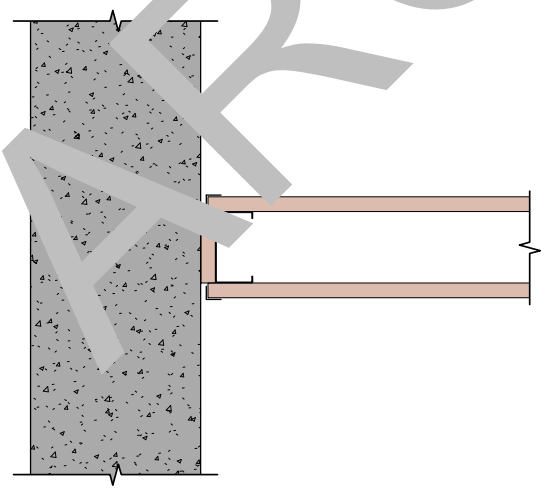
Conventional GIB® compound stopping or GIB® Goldline™ trims can be used for timber stud walls with an FRR up to and including 60 minutes. For higher ratings, include a GIB® plasterboard strip or mineral fibre packing.



GFS 161

GIB® plasterboard strip

Fit a continuous GIB® plasterboard s[illegible] between the end [illegible]d and masonry. Linings may be finished with [illegible]® Goldline™ tri[illegible].



GFS 162

GIB® Goldline™ L-Trim

This product is used extensively as a trim for plasterboard that abuts suspended ceilings, beams, plaster, masonry and concrete surfaces as well as door and window jambs.

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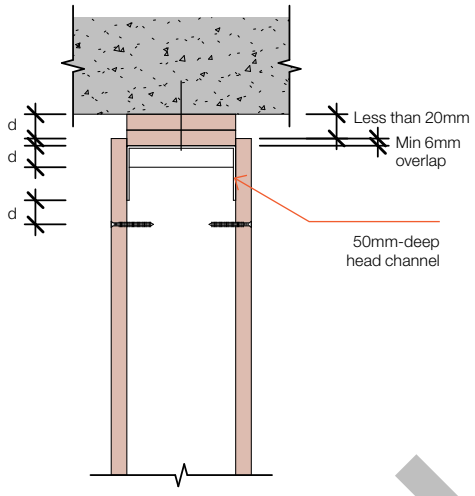
Deflection head details

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 fire separations. Examples below are shown for 13mm GIB® plasterboard.

For proprietary floor system details, please visit gib.co.nz.

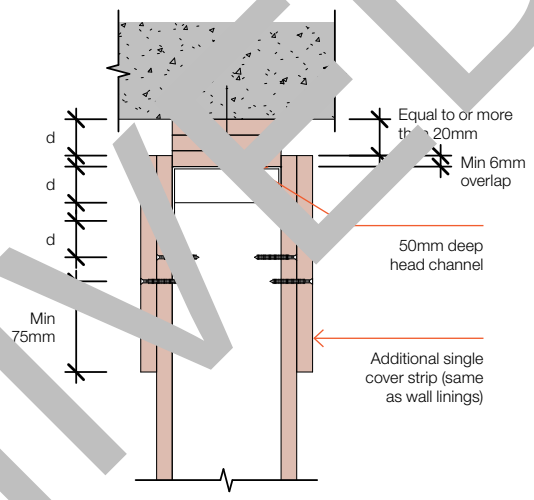
TIMBER OR STEEL STUDS IN METAL TRACK (SECTION VIEW)

Deflection (d) less than 20mm



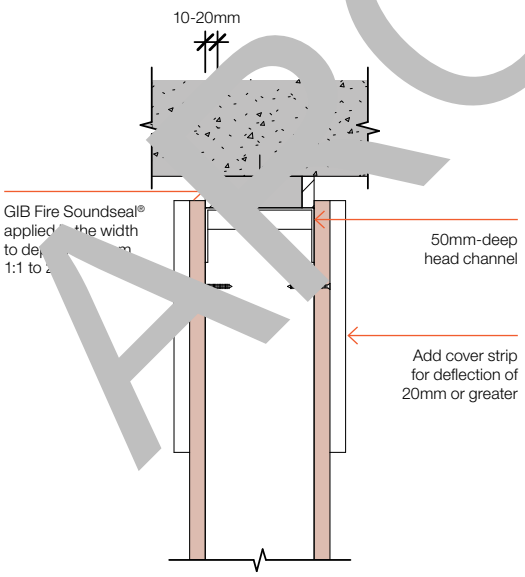
GFS 180

Deflection (d) of 20mm or greater



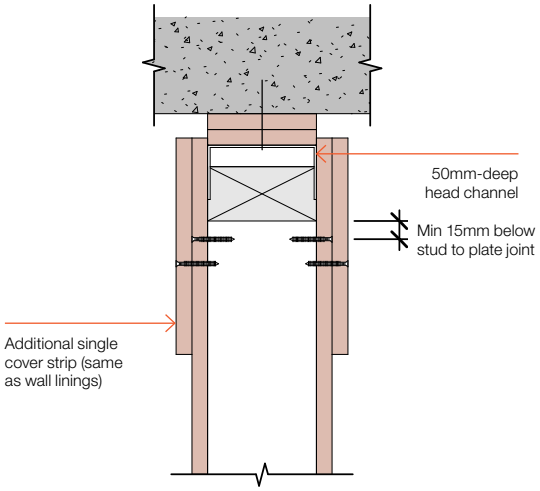
GFS 181

TIMBER BLOCK OR FIBRE CEMENT ALTERNATIVE (SECTION VIEW)



GFS 182

FULL TIMBER FRAME (SECTION VIEW)



GFS 183

— Fix wall linings no higher than a distance 'd' below the vertical leg of the head track
— Do not fix wall linings to the head track

— Extend wall linings at least 6mm above the head track
— Use additional cover strips when wall linings cantilever more than 74mm above highest fixing into the stud

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Steel stud nogging and roof detail

STEEL STUD NOGGING DETAIL

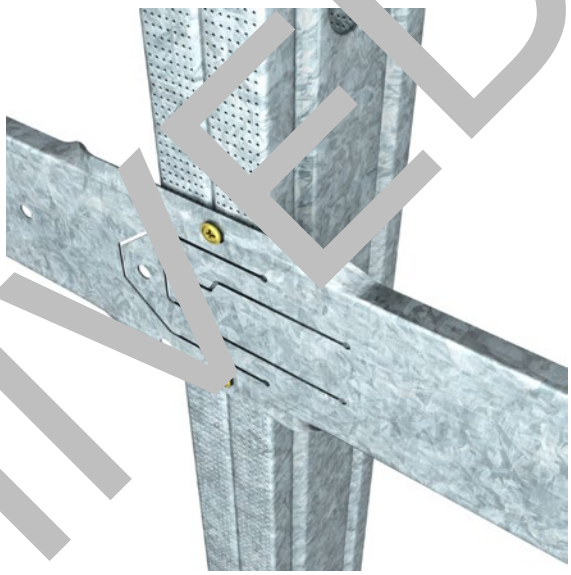
When sheet end joints in steel stud systems are unavoidable, they are best formed over channels, placed on edge and face-fitted over studs with the legs removed. The example below shows 64mm x 30mm channel over steel studs.

Alternatively, use the Rondo FAST-FIX Nogging® system shown.

Nog detail using face-fixed metal channel

Nog on edge from ex 64mm x 30mm BMT tr... stagger... ogs by at least 400mm on opposite sides of the wall

Rondo FAST-FIX Nogging® installed usin... face-fix x 2-screw method



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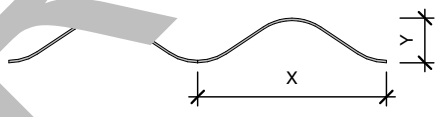
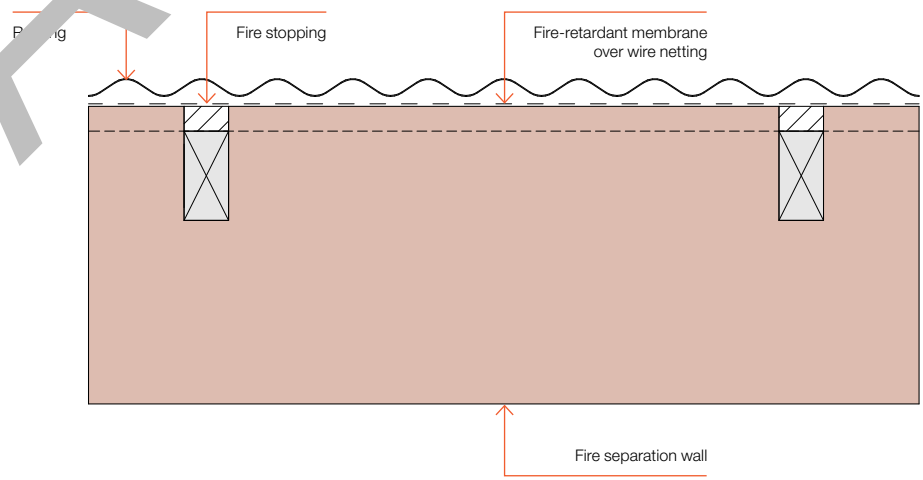
ROOF DETAIL (SECTION VIEW)

The linings are taken to... roo... derlay ... ...e nettin... Where the roofing fits within the stated limitations, no fire stopping is required in the profile of the r... ...ing materi...



Where roofing profile dimension 'x' is less than 80mm or 'y' is less than 40mm, the fire separation is permitted to stop at the roof line



GFS 200

Introduction

Penetrations in fire rated construction can allow spread of fire and smoke from one fire-cell 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.

GENERIC DETAILS FOR ONE-SIDED PENETRATIONS

The following pages give generic details for the installation of one-sided penetrations and show general principles of forming simple penetrations through the linings 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 an FRR up to 120/120/120 unless otherwise noted.

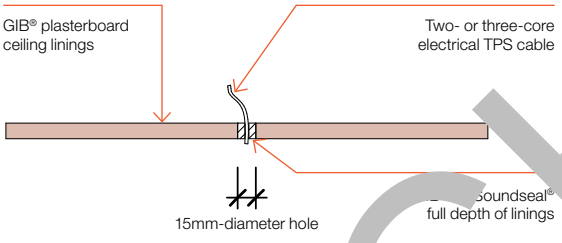
PROPRIETARY PENETRATION SEALS

More elegant proprietary penetration seals exist such as metal switch boxes with intumescent pads. Similarly, through penetrations such as for metal or plastic pipes, cable trays, ducts, etc. are not shown in this literature and [illegible] proprietary products and penetration seals.

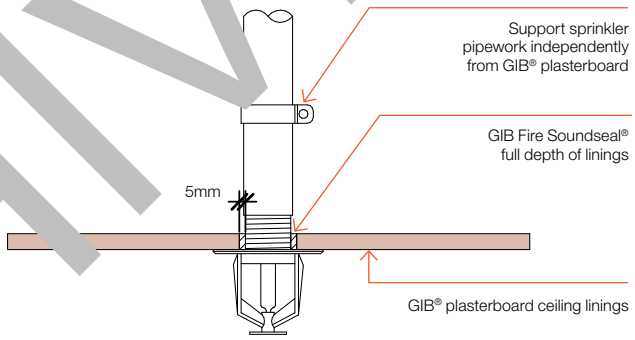
— The continuity and effectiveness of fire separations must be maintained around penetrations. Where a difference exists between the FRR of the penetration seal or closure and the FRR of the GIB® Fire Rated System, the lower FRR determines the performance of the element.
— For proprietary systems, contact the relevant penetration seal supplier.

SINGLE-CABLE PENETRATION FOR SURFACE-MOUNTED ELECTRICAL FIXTURES

SECTION VIEW

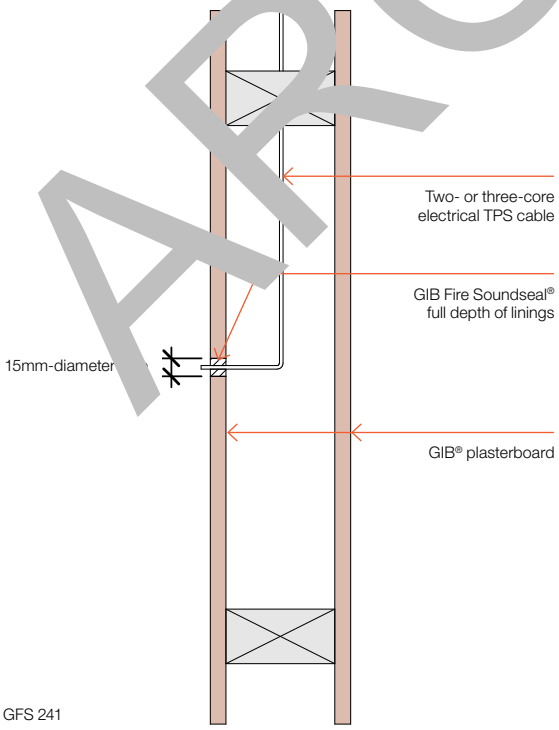


GFS 240



GFS 242

PLAN VIEW



GFS 241

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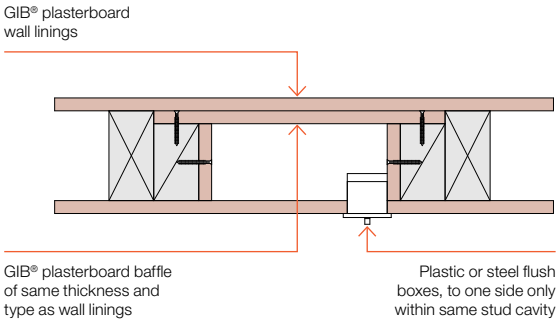
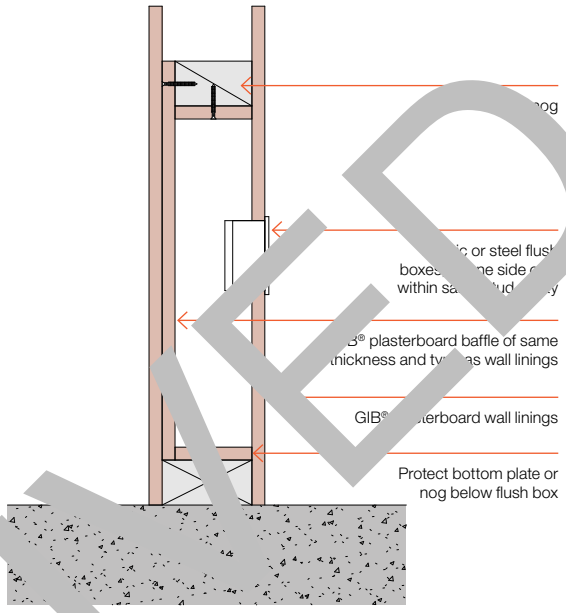
FLUSH BOXES IN TIMBER STUD WALLS

PLAN VIEW



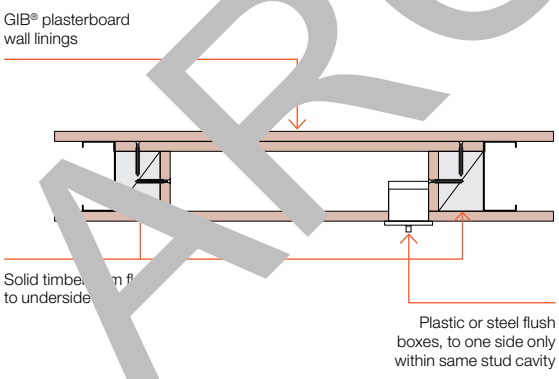
SECTION VIEW



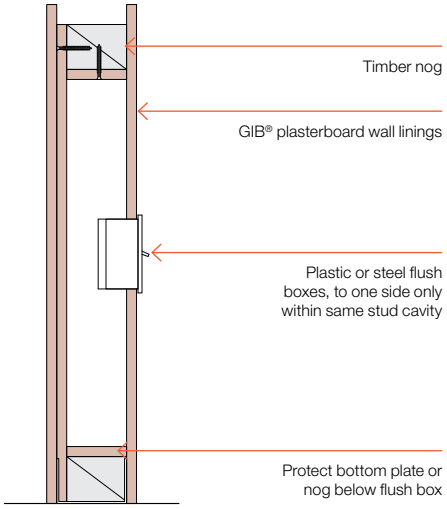
GFS 260

FLUSH BOXES IN METAL STUD WALLS

PLAN VIEW



SECTION VIEW

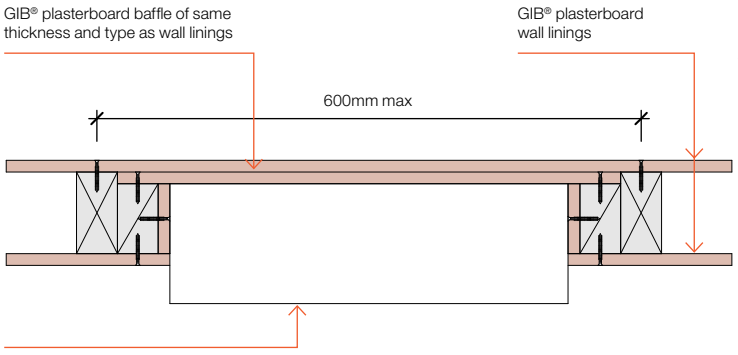


GFS 261

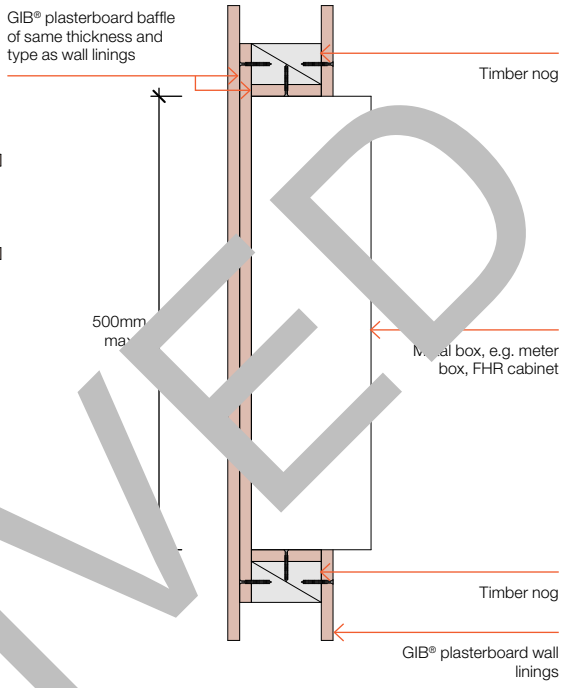
ARCHIVED

LARGER RECESSES IN TIMBER STUD WALLS

PLAN VIEW



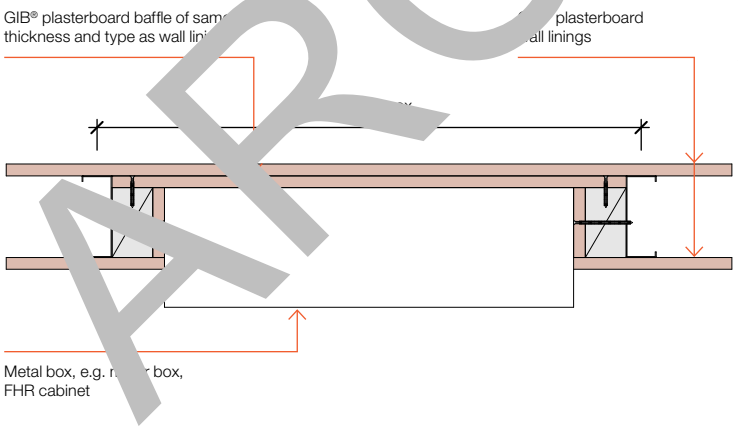
SECTION VIEW



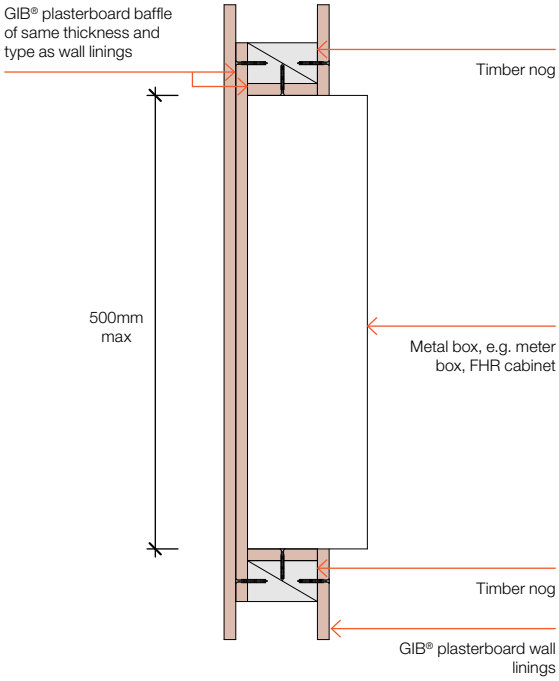
GFS 262

LARGER RECESSES IN METAL STUD WALLS

PLAN VIEW



SECTION VIEW



GFS 263

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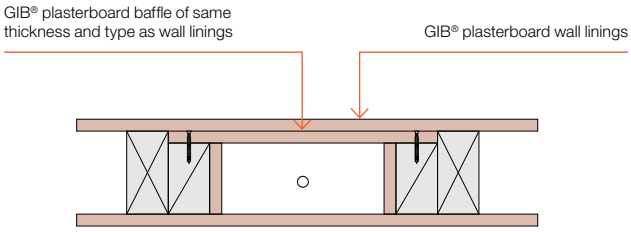
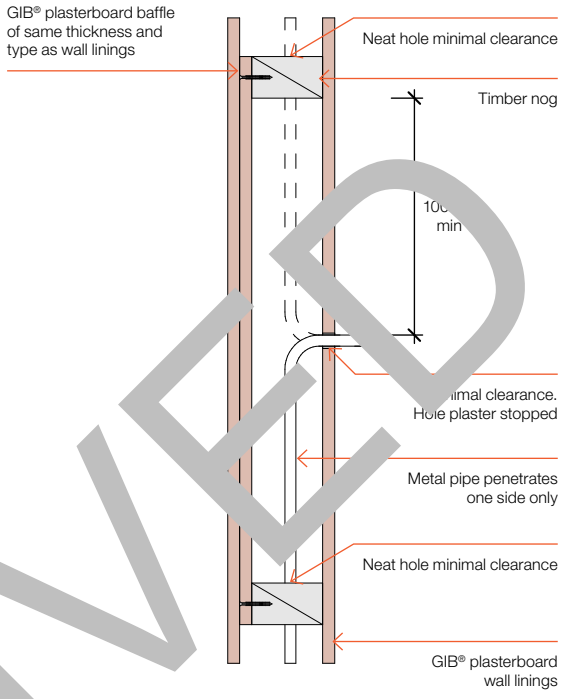
METAL PIPE IN TIMBER STUD WALL

PLAN VIEW



GFS 264

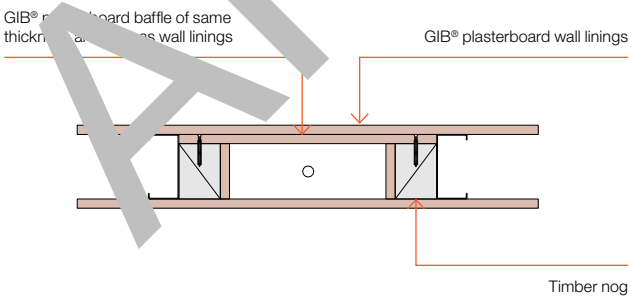
SECTION VIEW



Note: This detail applies to metal pipe only.

METAL PIPE IN METAL STUD WALL

PLAN VIEW



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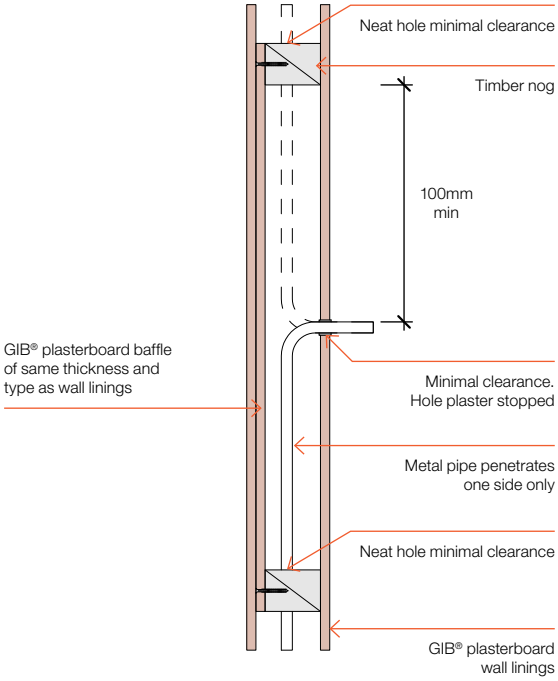
SECTION VIEW



Note: This detail applies to metal pipe only.

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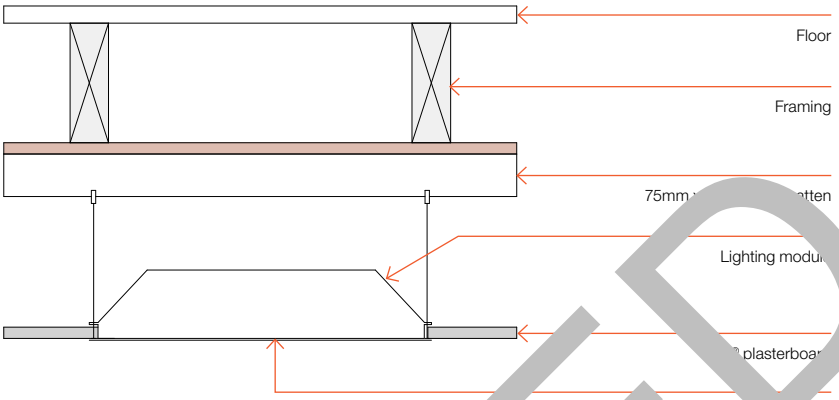
SUSPENDED CEILING (SECTION VIEW)

GIB® Fire Rated System Types
GBFC, GBCJ or GBUC

Any suspended ceiling system with ties to fixed battens. Recessed light fittings may be installed conventionally including troffer pack modules (shown), recessed downlights or other light fittings as required

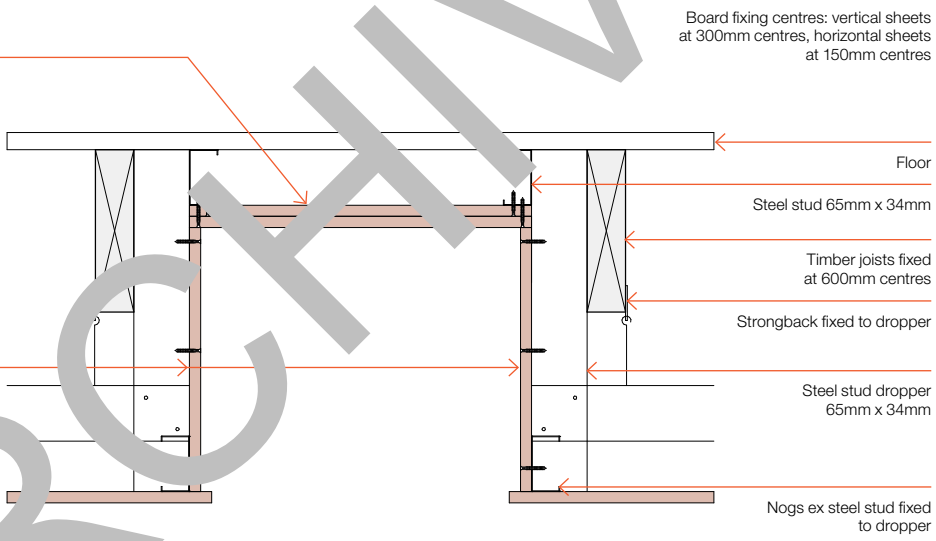


GFS 280

SPRING OR CLIP FIXED LIGHT FITTING (SECTION VIEW)

Floor/ceiling systems require one extra layer of GIB® plasterboard of same type and thickness as the ceiling lining. Universal systems are lined as per ceiling

GIB® plasterboard as per ceiling linings

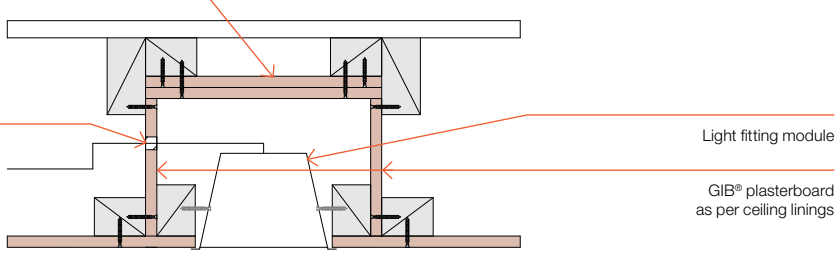


GFS 281

FRAM FIXED ITTING (SECTION VIEW)

Floor/c g systems require one ext yer of GIB® plasterboard of same type and thickness as the ceiling lining. Universal systems are lined as per ceiling

Cable penetration fire stopped (see detail GFS 241, page 97)



GFS 282

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DESIGN STRATEGY

Resolve and specify fire rated service penetrations in the design office rather than on-site. Combine services as much as possible in 'services highways' or 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, cannot be simply transferred to other types of construction such as framed construction lined with gypsum plasterboard.

Sometimes suppliers of penetration seals 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. A penetration seal must be suitable for the construction type it is installed in. Check test reports and manufacturer's information carefully.

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 may be 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, small metal pipes and plastic pipe collars.

When multiple services penetrate a fire rated wall above ceiling level, it is best practice to install a continuou[illegible]® plasterboard at that location over the wa[illegible]ings as illus[illegible]d below, providing local strengthening.

Penetration patches are not required wi[illegible]penetration seals[illegible]e installed in one way universal[illegible]V and UC[illegible]tems.

Heavy penetrating items[illegible]n as cable trays an[illegible]cts[illegible]st have separate supports, s[illegible]as hangers[illegible]the floor ab[illegible]

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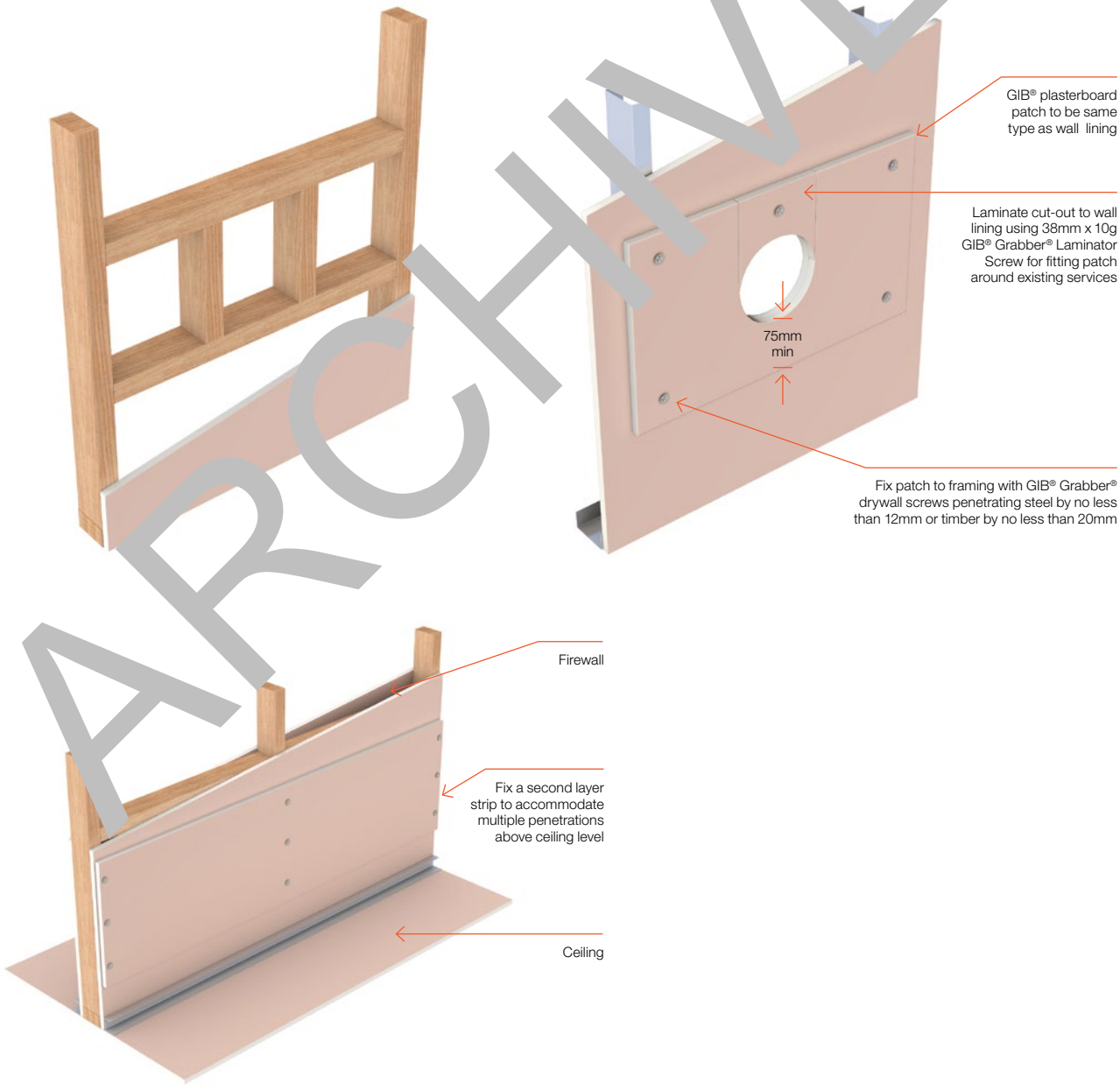

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STRUCTURAL STABILITY

In order to satisfy the requirements of NZBC Clause C6 – Structural Stability, 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.

For example, a column must have at least the same structural adequacy rating as the floor it is supporting, and the same applies to a section of wall providing lateral support to a fire-cell boundary.

Note also that an FRR represents the result against a standard furnace test for fire resistance where a specimen is exposed from one side. A supporting element located entirely within a fire-cell will potentially be exposed to fire from multiple sides simultaneously. In this case, 'universal' or 'one way' lining protection needs to be provided to all relevant sides. If such an element provides lateral support, then the bracing element must be protected with a 'universal' or 'one way' lining system.

STABILITY OF BOUNDARY WALLS

When a building is located sufficiently close to a property boundary, an FRR is often required to manage the risk of fire spread to adjacent property. NZBC Clause B1 — Verification Method B1/VM1 provides guidelines for checking the lateral stability of fire rated boundary walls. The simplest and most commonly applied criterion is the ability to resist 'a uniformly distributed face load of 0.5kPa in any direction'.

Buildings complying with Acceptable Solutions that do not mention post-fire stability do not need separate assessment for compliance with B1/VM1.

This means that low-risk single and small multi-unit dwellings and residential garages designed and constructed in accordance with Acceptable Solutions B1/AS1 and C/AS1 are exempt from separate B1/VM1 analysis.

For higher risk or more complex structures, such as public facilities, multi-storey buildings or portal frame industrial structures, specific design is required. The building designer must ensure that structural stability is maintained for the specified time of fire resistance in accordance with the provisions of B1/VM1. The solution will often require project-specific considerations and could involve fire-rated return walls, rated ceiling or cantilever external wall details.

SINGLE-STOREY, LIGHT TIMBER-FRAMED BOUNDARY FIREWALL

The following details have been developed for simple single-storey, light timber-framed structures that require design for structural stability as a consequence of fire.

The detail relies on bottom plate fixing and cantilever action of the wall to resist an imposed 0.5kPa face load in any direction.

The minimum requirements for concrete slab and timber-framing details, grade and treatment, are in accordance with the latest versions of NZS3604 and NZS3602.

— Walls with a height of 2.4m require a minimum stud size of nominally 140 x 45mm at 600mm centres.
— Walls with a height of 3.0m require a minimum stud size of nominally 140 x 45mm at 400mm centres.
— With the GIB HandiBrac® use a proprietary concrete anchor with a minimum characteristic uplift capacity of 8kN verified by the supplier.

The required FRR is determined in accordance with NZBC Clause C Acceptable Solutions or Verification Method. If located more than 1m from the relevant boundary, check to see if a one way protection is permitted.

Select the relevant one way or two way FRR system and GIB® specification for this lining feature.

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.

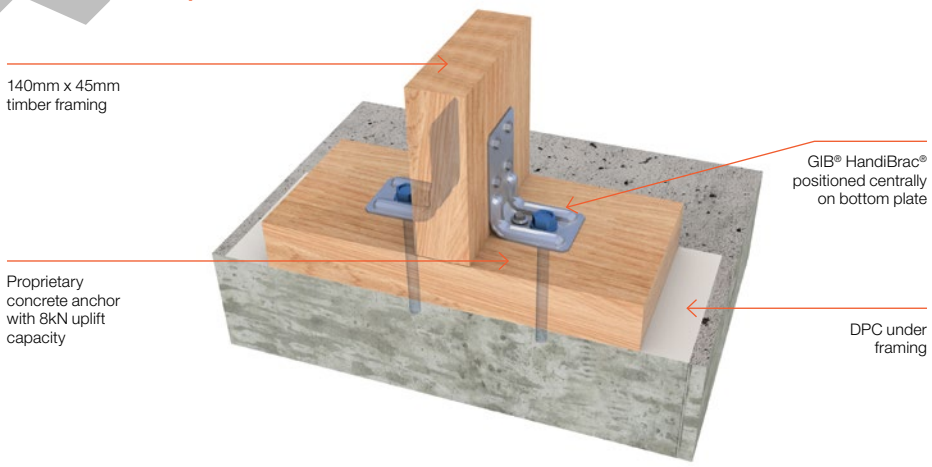
Some cladding system types, including vertical profile metal cladding, must be separated from GIB® plasterboard by means of a flexible underlay and drained cavity system. Cladding details must otherwise comply with NZBC Clause E2.

Keep the GIB® plasterboard dry during installation and maintain the cladding system to ensure that the GIB® plasterboard remains dry in-service.

GIB® plasterboard behind an NZBC E2/AS1 compliant cladding system, drained cavity and flexible underlay, has a serviceable life in excess of 15 years and satisfies the requirements of NZBC Clause B2 — Durability for an external wall cladding.

Use claddings with exterior surface finish properties that fall within the limits set by NZBC Clause C Verification Method or Acceptable Solutions.

HOLD-DOWN DETAIL (STEEL STUDS)



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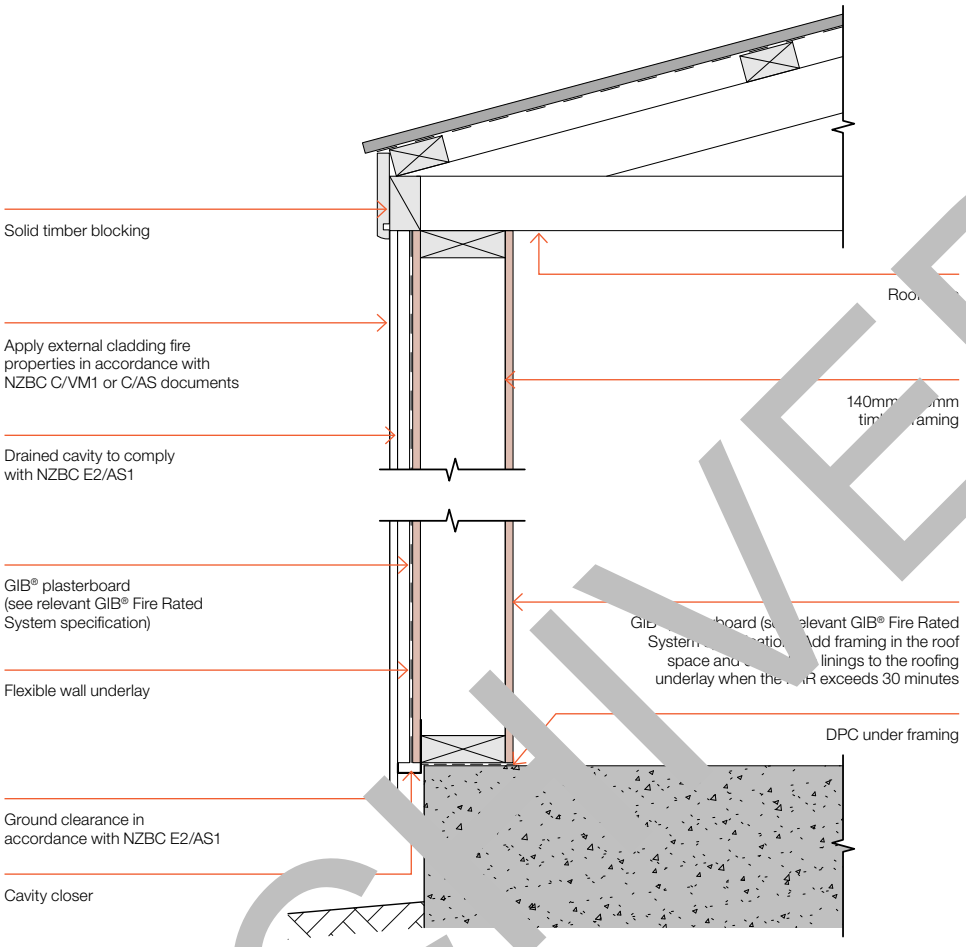
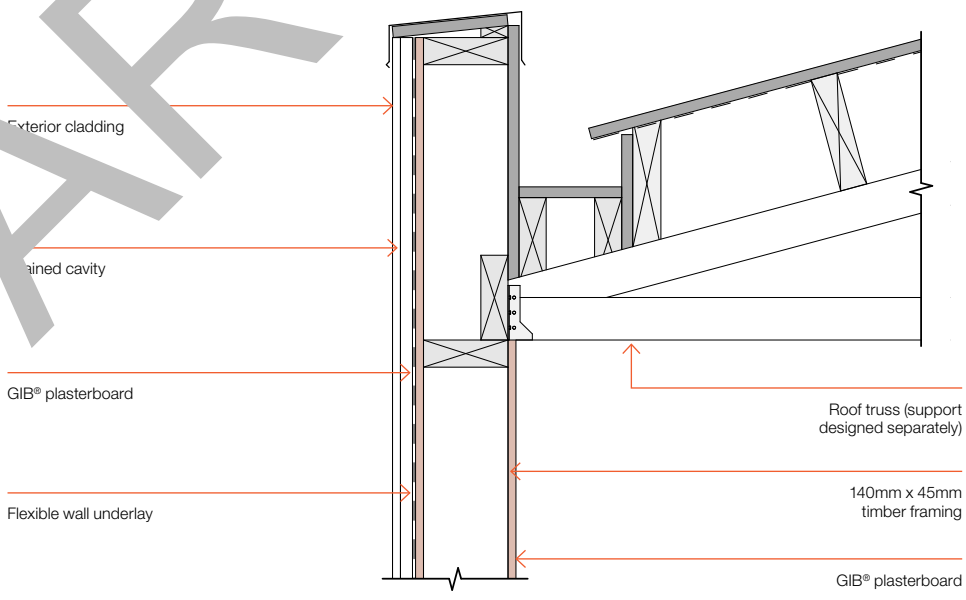
CROSS SECTION

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.



GFS 300

BOX GUTTER DETA



GFS 301

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Notes

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GIB® Fire Rated Systems, October 2018

Winstone Wallboards Ltd accepts no liability if the GIB® Fire Rated Systems and junction details are not 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 GIB® website to ensure you are using the current 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 have been specifically designed and tested to achieve the listed FRR, STC and Rw stated for each system. To maintain the GIB® Product and System Warranty, all system components detailed in this publication must be used when specifying and installing GIB® Fire Rated Systems. You should check the GIB® website to ensure you are using the current publication.

TRADEMARKS

The names GIB®, GIB Fyreline®, GIB Ultraline®, GIB Toughline®, GIB Braceline®/GIB Noiseline®, GIB Aqualine®, GIB Nail®, GIB Tradeset®, GIB Plus 4®, GIB-Cove®, GIB Lite Blue®, GIB Fix®, GIB Quiet Stud®, GIB Rail®, GIB Barrierline®, GIB Fire Soundseal®, GIB Clip®, the colour mauve for GIB Toughline®, the colour blue for GIB Braceline®, the colour pink for GIB Fyreline®, the colour green for GIB Aqualine®, and the shield device are registered trademarks of Fletcher Building Holdings Limited.

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COUNTRY OF ORIG[illegible]

We make GIB® p[illegible]terboa[illegible] New Zealand[illegible]r New Zealand conditions, giving[illegible]u 100% [illegible]inty.

*Note: GIB Barrierline[illegible] plasterboard[illegible] anufactured to Wi[illegible]e Wallboards[illegible]pecific specification from a reputable overseas [illegible]ufacturer.

[illegible]yright© Winston[illegible]boards Ltd, 2018.

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gib.co.nz

OR CALL THE GIB® HELPLINE

0800 100 442

October 2018