INTERNAL PARTITIONS AND WALLS

For illustration purposes only

Highly versatile lightweight, non-loadbearing partition systems. A full range of lightweight partition and wall systems for use in new and existing buildings. They cover all applications, from simple space division to high performance walls.

We offer a full range of lightweight partition and wall systems. Our systems are non-loadbearing and constructed using modern, drylining techniques. Our metal framed partitions and walls can be used in all types of new and existing buildings, including private and social housing, apartments, healthcare, educational facilities, recreational and industrial properties.

They cover all applications, from simple space division, through to high performance walls designed to meet the most demanding fire resistance, sound insulation, impact and height requirements.

Our partition systems are constructed using lightweight materials, which can offer significant savings in structural design compared to masonry alternatives. Benefits also include the speed of installation and reduction to overall build costs.

SpecSure®
BRITISH GYPSUM SYSTEMS WARRANTY

There are specifications within this system that qualify for our **SpecSure**® warranty. For more information, contact us through **british-gypsum.com**

Internal partitions and walls

Internal partitions and walls

When specifying partitions, a number of performance characteristics are normally used to determine the required solution.

Depending on the project or construction type, these performance parameters could be set by minimum regulatory standards, or a client or customer requirement for buildings that offer the highest standards of performance and comfort.

Additional information

Try out The White Book Specification Selector, an online tool designed to help find the ideal solutions for your project needs. Additional information such as BIM data (Revit), Technical Specifications, CAD drawings and other associated items can be downloaded. Visit **british-gypsum.com**

GypWall Single Frame

Create all the rooms you need with the industry's original lightweight non-loadbearing drywall partition system.
See page 4.19.

Fire resistance **30-240 mins** | Sound rating **34-63 R_wdB** | Duty rating **medium to severe**

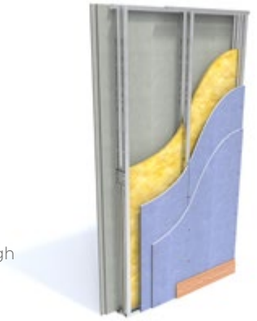
GypWall Single Frame Enhanced

Keep busy areas in great condition with robust partitions.
See page 4.27.

Fire resistance **30-120 mins** | Sound rating **38-60 R_wdB** | Duty rating **severe**

GypWall Twin Frame Braced

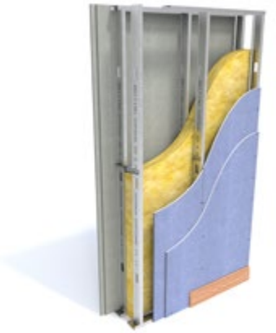
Keep the peace by reducing sound transmission through separating walls.
See page 4.63.



Fire resistance **60-120 mins** | Sound rating **59-64 R_wdB** | Duty rating **severe**

GypWall Twin Frame Audio

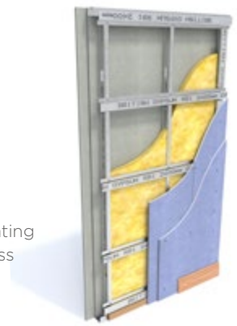
Build an acoustic sanctuary without losing floor space.
See page 4.75.



Fire resistance **60-120 mins** | Sound rating **67-80 R_wdB** | Duty rating **severe**

GypWall Resilient

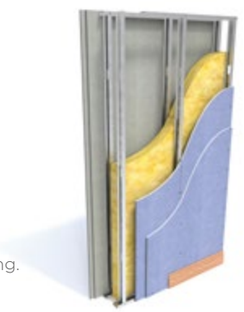
Improve acoustic performance of your partitions and separating walls with minimal loss of floor space.
See page 4.39.



Fire resistance **60-120 mins** | Sound rating **61-65 R_wdB** | Duty rating **severe**

GypWall Twin Frame Independent

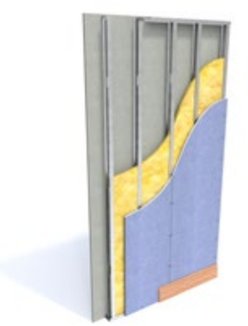
Reduce sound transmission without the need for pre-completion testing.
See page 4.51.



Fire resistance **90-120 mins** | Sound rating **65-70 R_wdB** | Duty rating **severe**

GypWall Staggered

Space-saving sound insulation.
See page 4.89.



Fire resistance **30-90 mins** | Sound rating **49-63 R_wdB** | Duty rating **heavy to severe**

GypWall Secure

Build secure spaces with attack-resistant walls.
See page 4.101.

Fire resistance **120 mins** | Sound rating **40 R_wdB** | Duty rating **severe**

Internal partitions and walls

Internal partitions and walls

Good practice specification guidance

To maximise the performance achieved on site, consider the following good practice specification guidance:

- Consider flanking transmission at the design stage and ensure construction detailing is specified to eliminate, or at least to minimise, any downgrading of the acoustic performance
- Small openings such as gaps, cracks or holes will conduct airborne sounds and can significantly reduce the sound insulation of a construction. For optimum sound insulation a construction must be airtight
- When designing the layout of rooms requiring separation by sound insulating walls abutting structural steelwork, consideration should be given to the potential loss of sound insulation performance through the steelwork
- Deflection heads, by definition, must be able to move and, therefore, achieving an airtight seal is very difficult without incorporating sophisticated components and techniques. Air leakage at the partition heads will have a detrimental effect on acoustic performance of any partition. Where acoustic performance is a key consideration, steps must be taken to minimise this loss of performance
- A common mistake made when designing a building is to specify a high performance element and then incorporate a lower performing element within it; for example, a door within a partition. Where the difference between insulation is relatively small (7dB or less), there needs to be a comparatively large area of the lower insulation element before the overall sound insulation is significantly affected. However, where there is a greater difference in sound insulation performance between the two elements, this would usually result in a greater reduction of overall sound insulation performance

Table 1 – Sound insulation performance for residential specification

Approved Document E (England and Wales)	On-site	Laboratory**	
	$D_{nT,w} + C_{tr}$ dB	Minimum solution $(R_w + C_{tr})$ dB	Recommended solution $(R_w + C_{tr})$ dB
Separating walls between new homes	45	(49)	(54)
Separating walls between purpose-built rooms for residential purposes and rooms created by a change of use or conversion	43	(47)	(52)
Technical Standards Section 5 (Scotland)	**On-site**	**Laboratory****	
	$D_{nT,w} + C_{tr}$ dB	Minimum solution R_w dB	Recommended solution R_w dB
Separating walls between new homes, purpose-built for residential purposes and conversions (not including traditional buildings*)	56	60	63
Separating walls between rooms created by a change of use or conversion (traditional buildings*)	53	57	60

* Definition of traditional buildings – A building or part of a building of a type constructed before or around 1919:
a) using construction techniques that were commonly in use before 1919; and
b) with permeable components, in a way that promotes the dissipation of moisture from the building fabric.

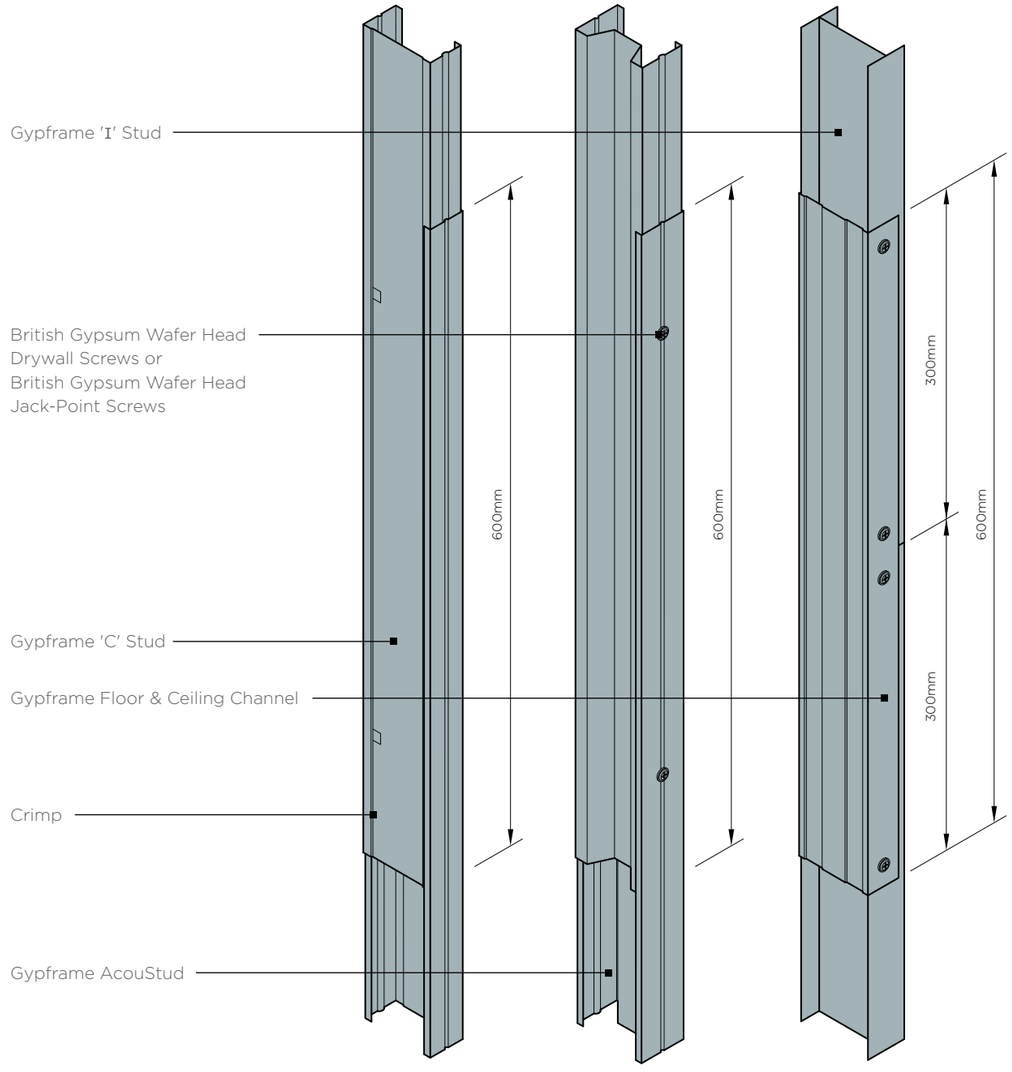
** Minimum solutions provide little or no margin of safety to allow for reduction in performance due to flanking transmission. Recommended solutions have greater potential to satisfy the requirements of Building regulations.

GypWall partitions

Construction details

To be read in conjunction with system specific details. Refer to relevant system sections.

1. Stud splicing detail



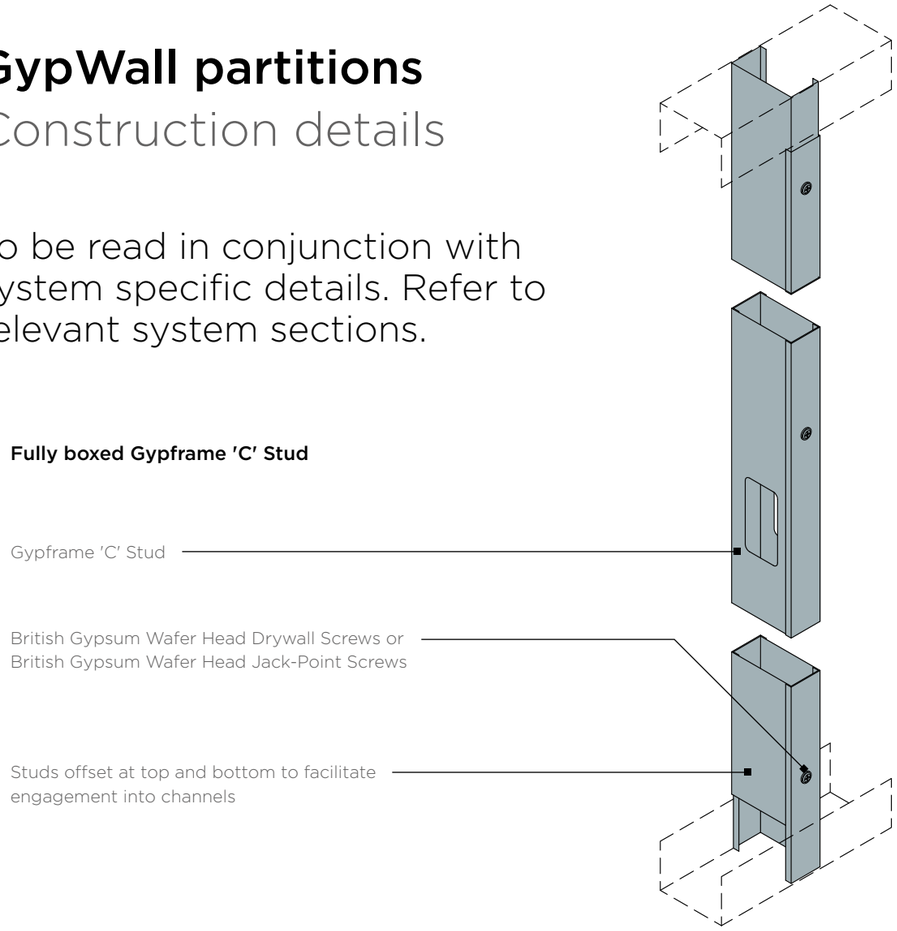
Internal partitions and walls

GypWall partitions

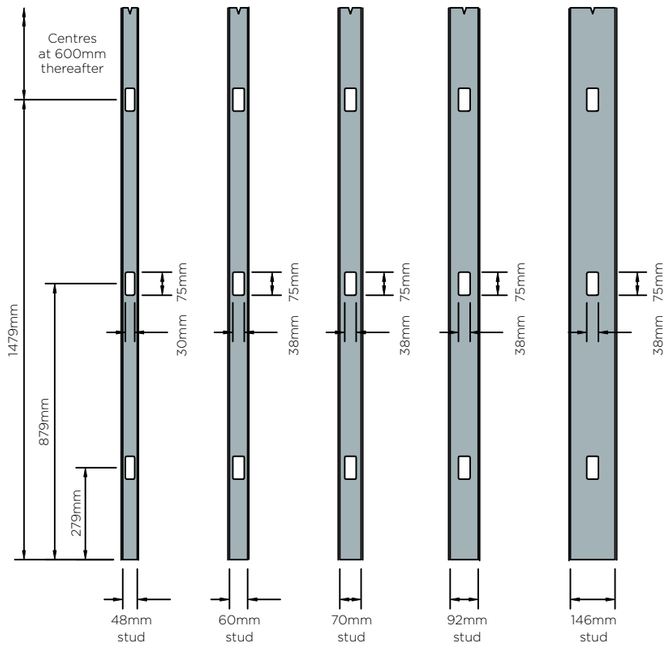
Construction details

To be read in conjunction with system specific details. Refer to relevant system sections.

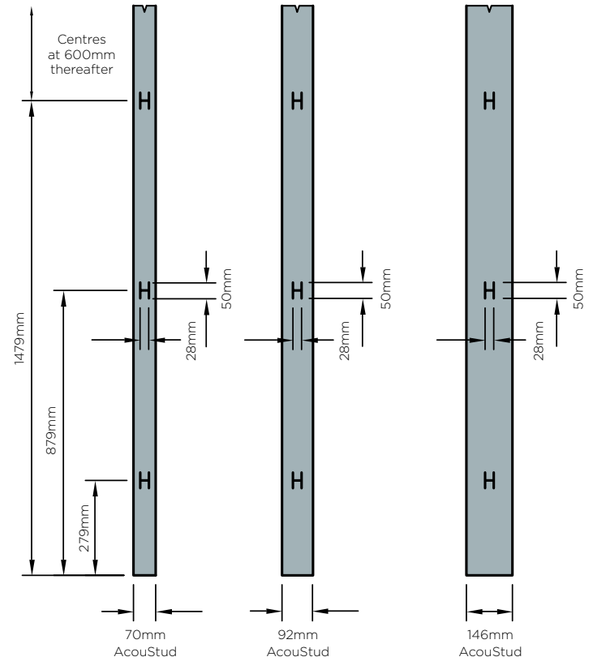
2. Fully boxed Gypframe 'C' Stud



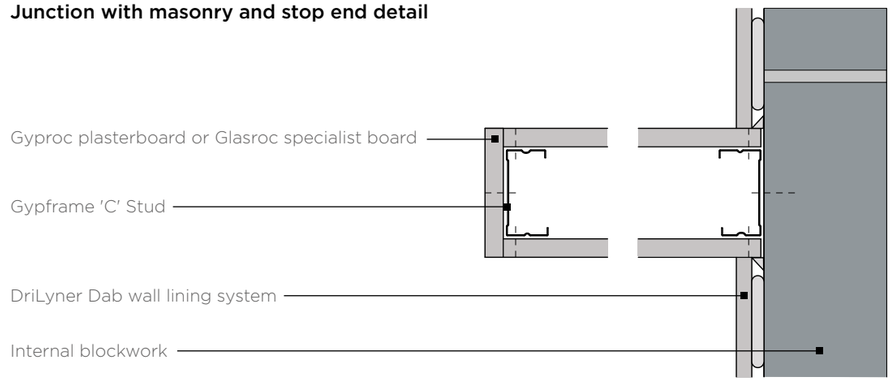
3a. Service cut-outs
Gypframe 'C' and
Gypframe 'I' Studs



3b. Service cut-outs
Gypframe AcouStuds



4. Junction with masonry and stop end detail



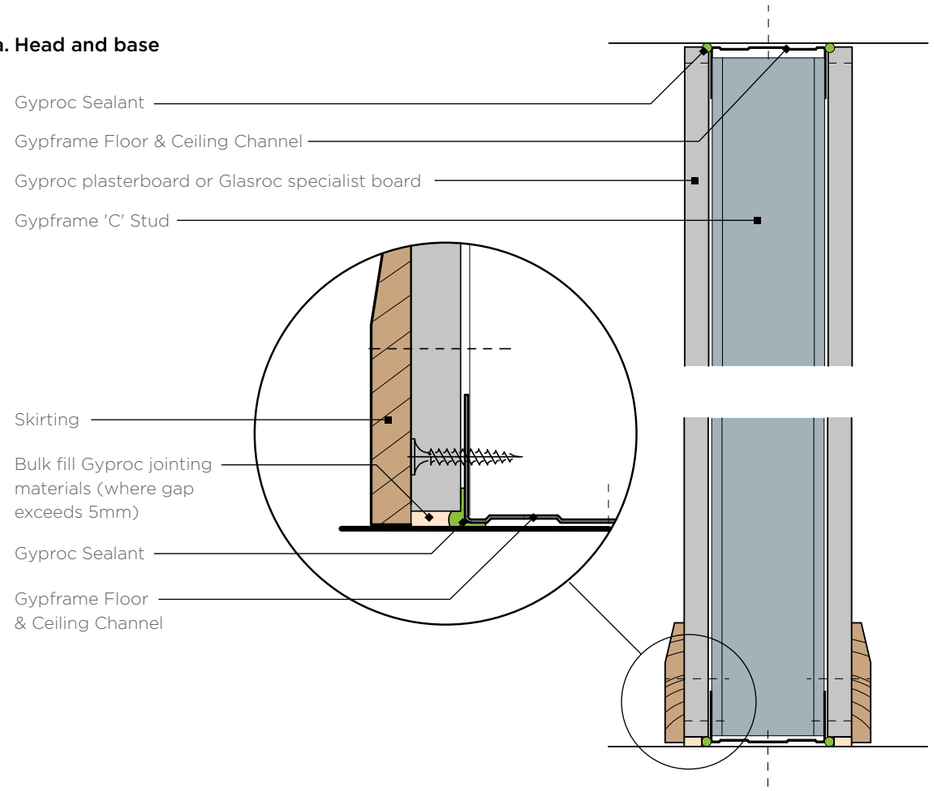
Internal partitions and walls

GypWall partitions

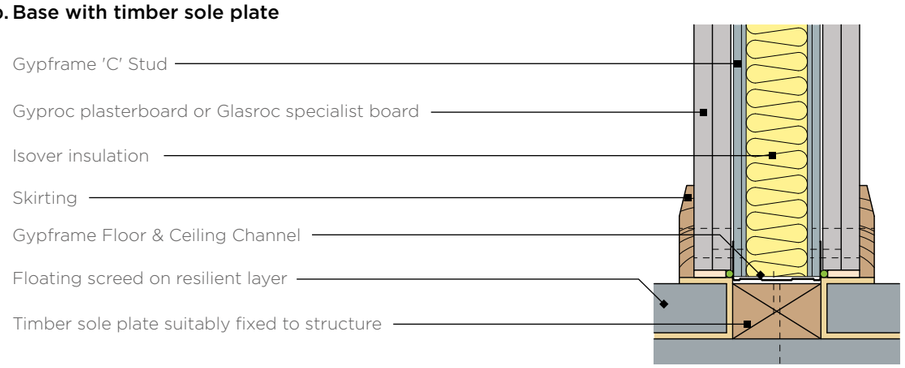
Construction details

To be read in conjunction with system specific details. Refer to relevant system sections.

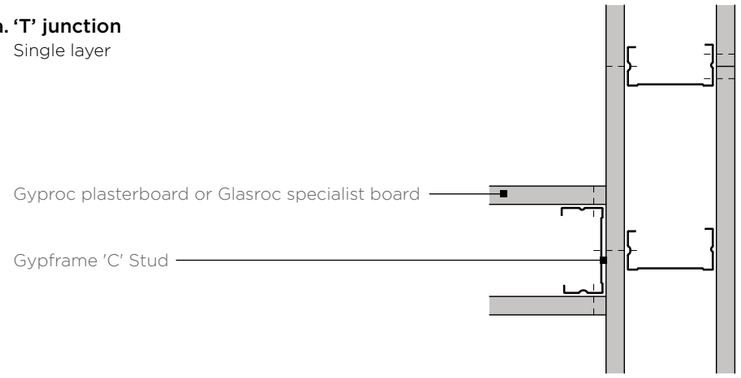
5a. Head and base



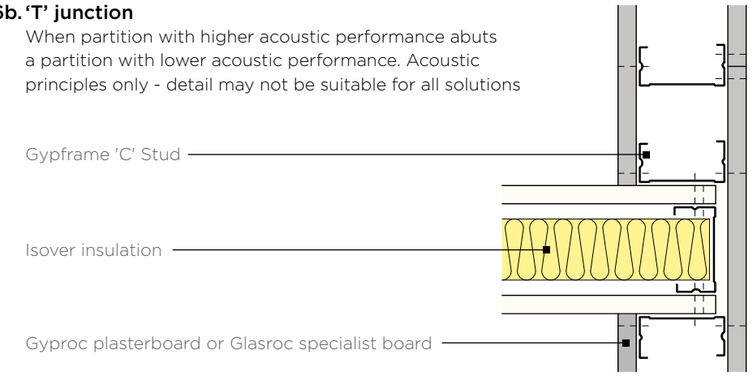
5b. Base with timber sole plate



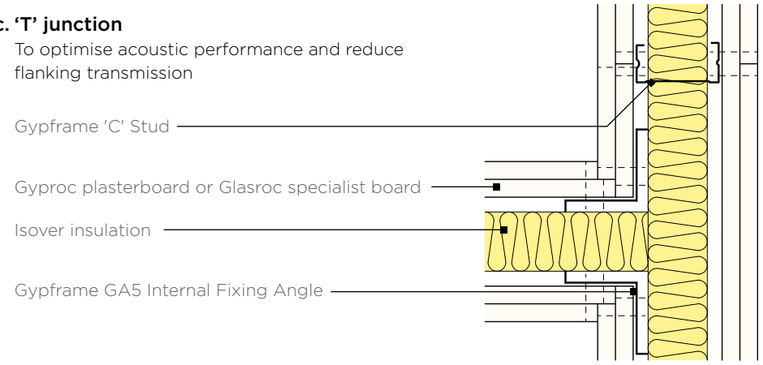
6a. 'T' junction
Single layer



6b. 'T' junction
When partition with higher acoustic performance abuts a partition with lower acoustic performance. Acoustic principles only - detail may not be suitable for all solutions



6c. 'T' junction
To optimise acoustic performance and reduce flanking transmission



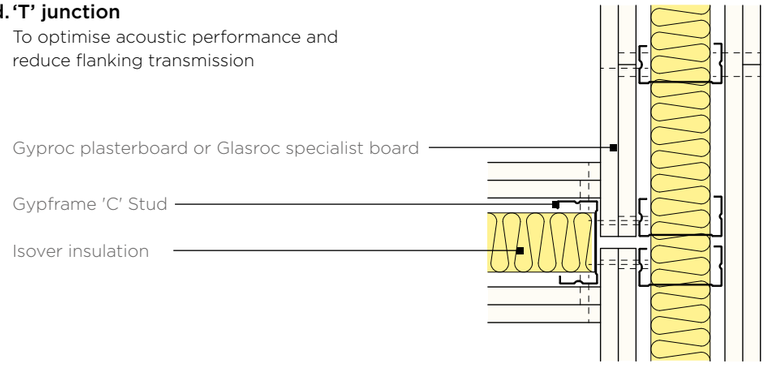
Guidance must be sought from the relevant approval authority e.g. Building Control to establish if a cavity barrier is required (Approved Document B)

Internal partitions and walls

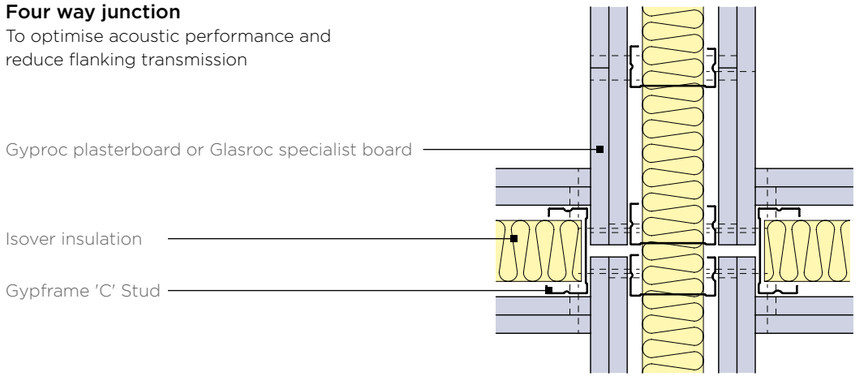
GypWall partitions
Construction details

To be read in conjunction with system specific details. Refer to relevant system sections.

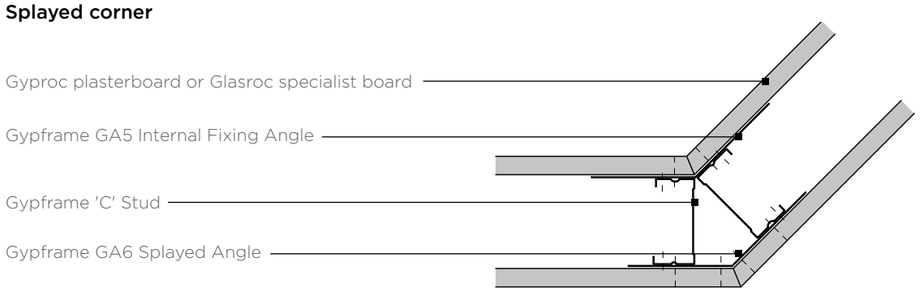
6d. 'T' junction
To optimise acoustic performance and reduce flanking transmission



7. Four way junction
To optimise acoustic performance and reduce flanking transmission

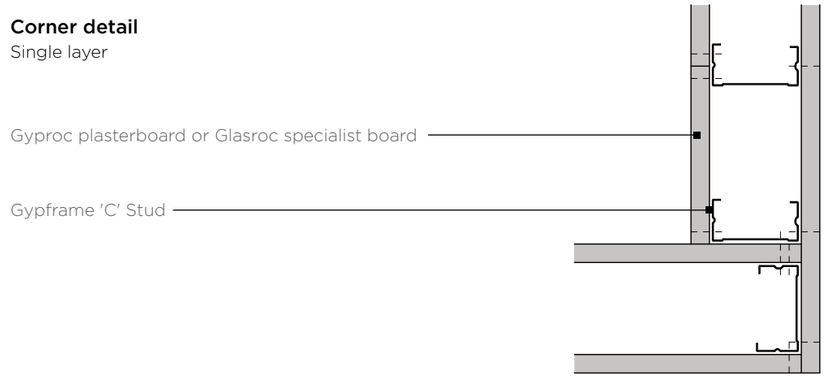


8. Splayed corner

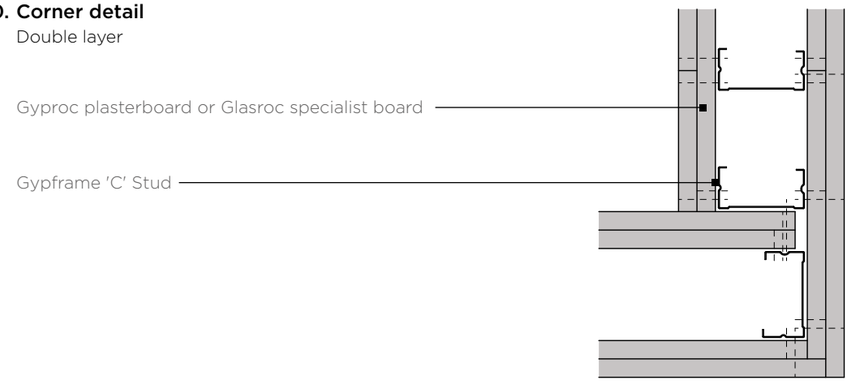


Guidance must be sought from the relevant approval authority e.g. Building Control to establish if a cavity barrier is required (Approved Document B)

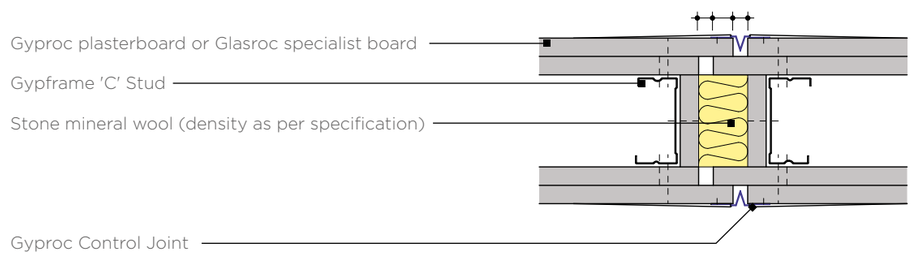
9. Corner detail
Single layer



10. Corner detail
Double layer



11. Typical control joint

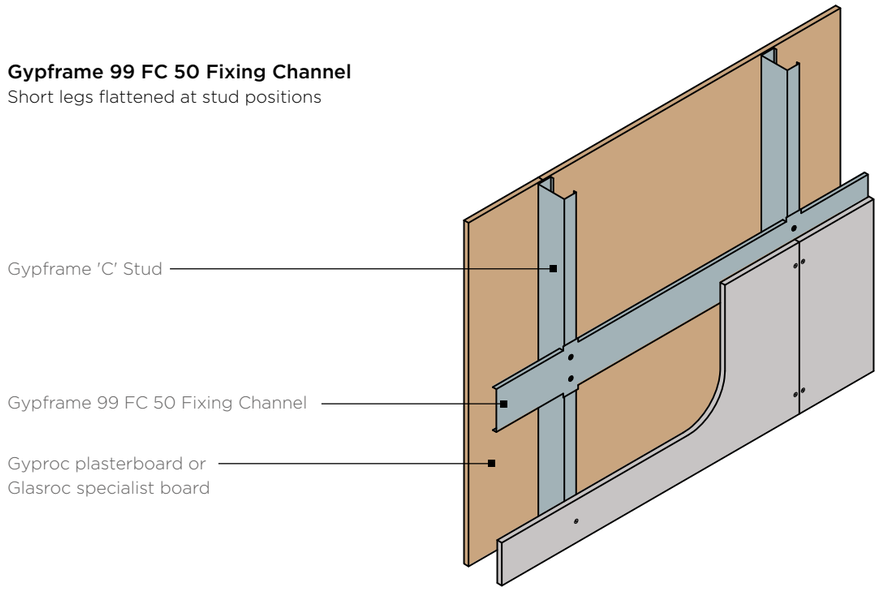


GypWall partitions

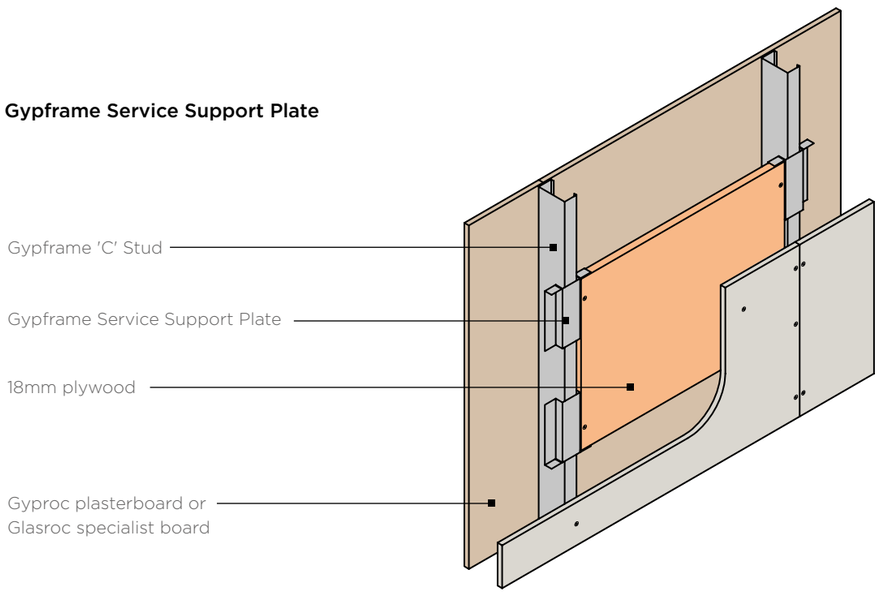
Construction details

To be read in conjunction with system specific details. Refer to relevant system sections.

12. Gypframe 99 FC 50 Fixing Channel
Short legs flattened at stud positions



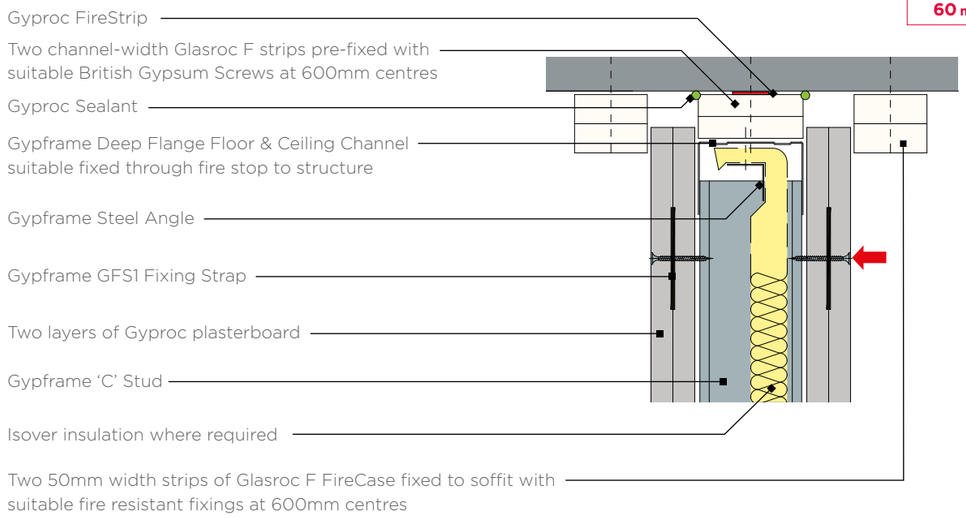
13. Gypframe Service Support Plate



Installing the screw into the side of the Gypframe Service Support Plate and the web of the Gypframe 'C' Stud will avoid creating excessive distortion to the lining board.

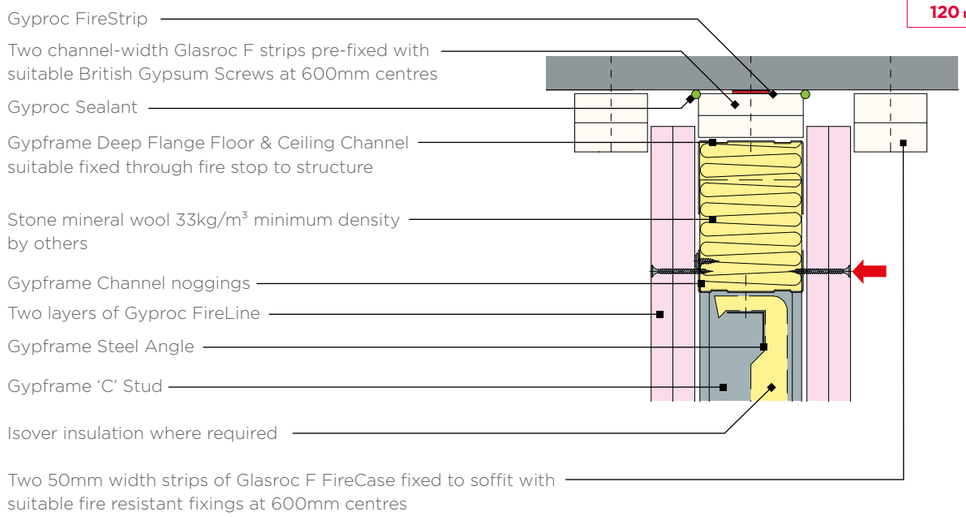
14. Deflection head
25mm downward movement and 60 minutes fire resistance to BS EN 1364-1

Fire resistance **60 mins**



15. Deflection head
25mm downward movement and 120mins fire resistance to BS EN 1364-1

Fire resistance **120 mins**



N.B. No fixings should be made through the boards into the flanges of the head channel. The arrow (⬅) denotes the position of the uppermost board fixing, which should be made into Gypframe GFS1 Fixing Strap. Continuous Gyproc FireStrip must be installed as shown to maintain fire performance.

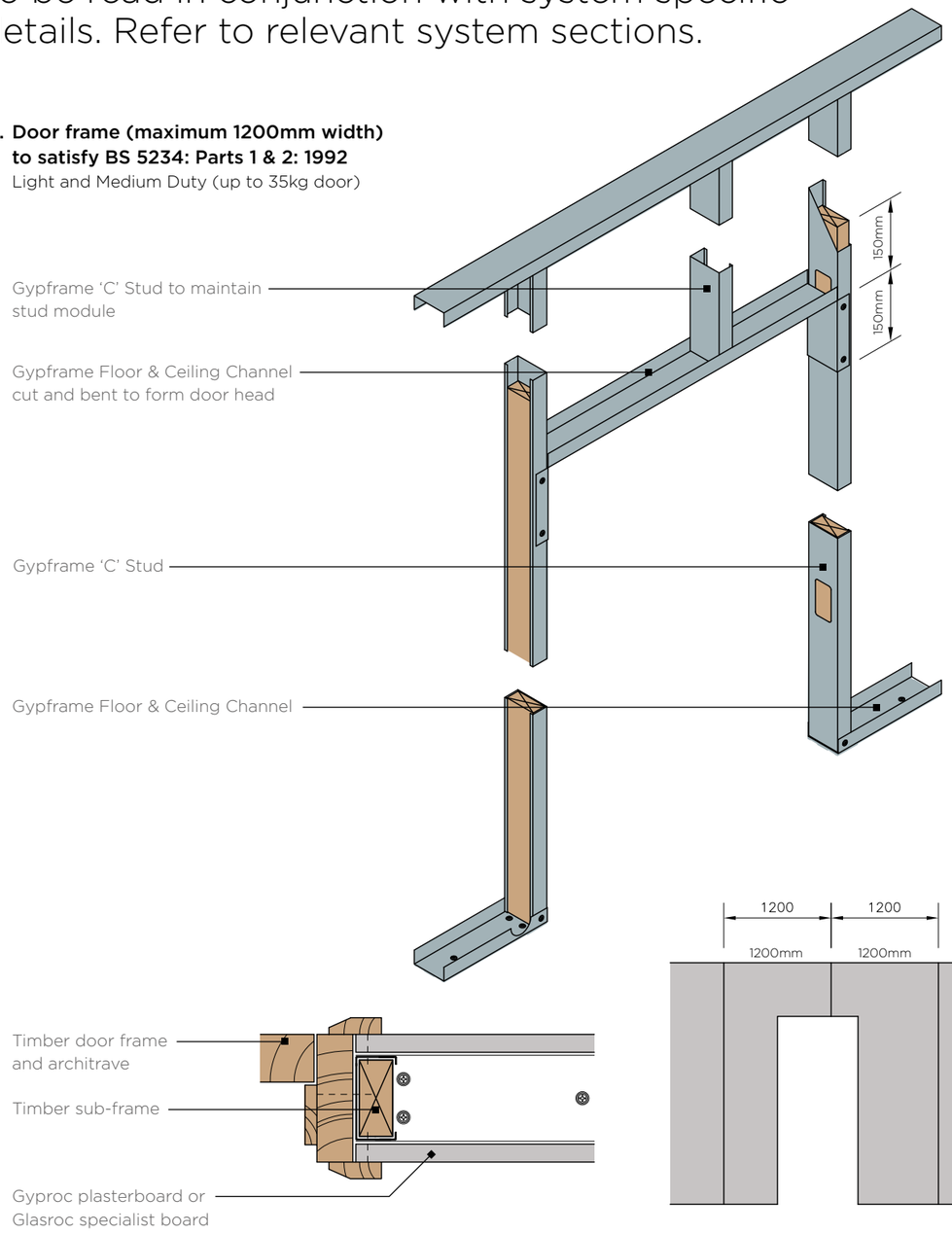
Internal partitions and walls

GypWall partitions

Construction details

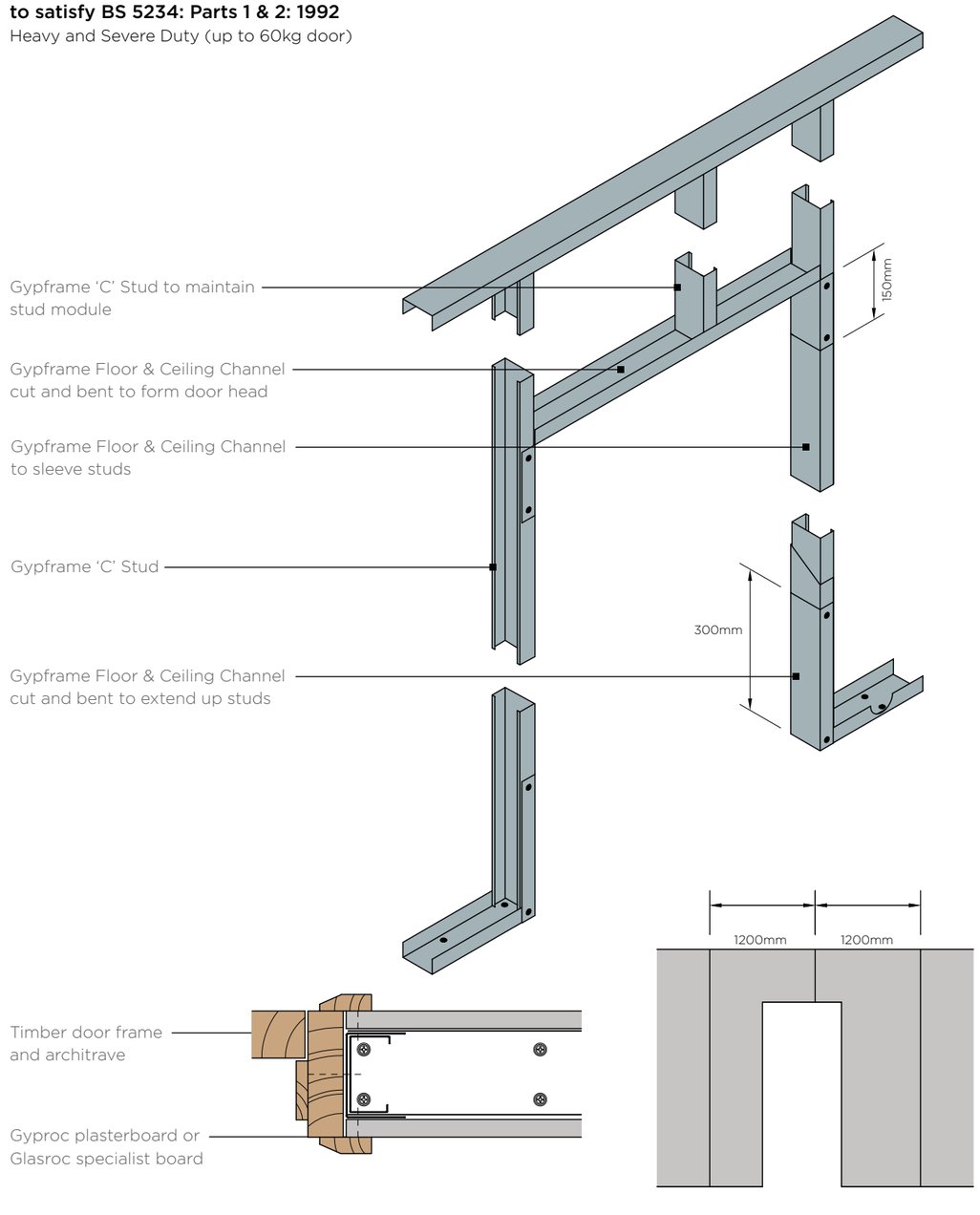
To be read in conjunction with system specific details. Refer to relevant system sections.

16. Door frame (maximum 1200mm width) to satisfy BS 5234: Parts 1 & 2: 1992
Light and Medium Duty (up to 35kg door)



Advice should be sought from the door manufacturer before the construction of these details.

17. Door frame (maximum 1200mm width) to satisfy BS 5234: Parts 1 & 2: 1992
Heavy and Severe Duty (up to 60kg door)



Advice should be sought from the door manufacturer before the construction of these details. At the base, the channel is cut and bent to extend 300mm up the studs and fixed each side with two British Gypsum Wafer Head Drywall Screws. The studs each side of the opening are sleeved full height of opening with Gypframe Floor & Ceiling Channel.

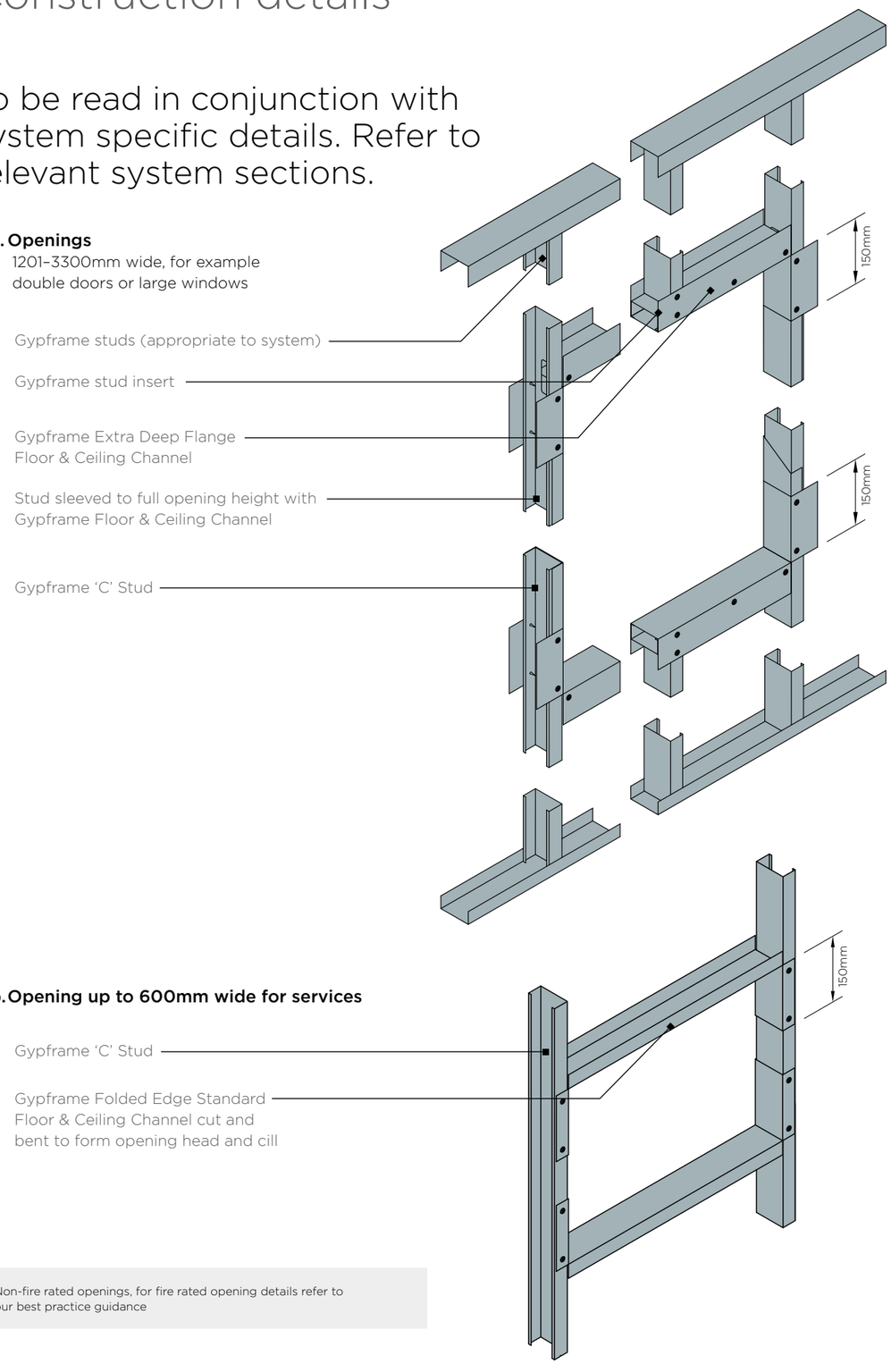
Internal partitions and walls

GypWall partitions

Construction details

To be read in conjunction with system specific details. Refer to relevant system sections.

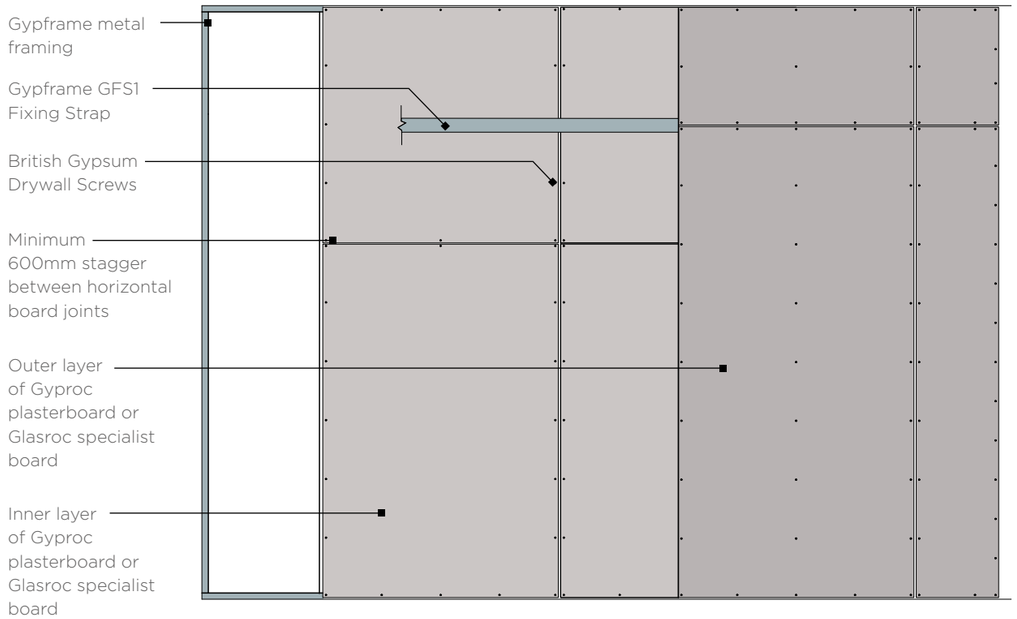
18a. Openings
1201–3300mm wide, for example double doors or large windows



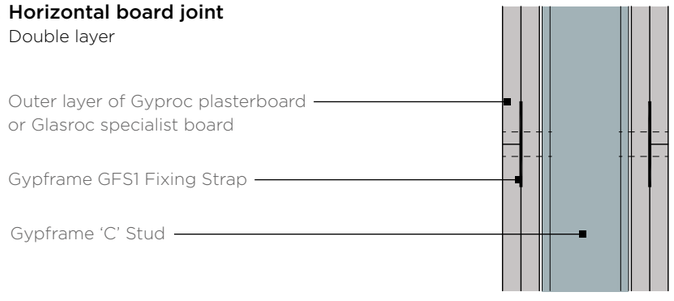
18b. Opening up to 600mm wide for services

Non-fire rated openings, for fire rated opening details refer to our best practice guidance

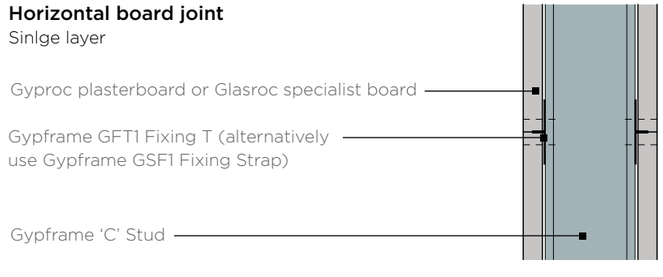
19. Board layout – typical configuration



20. Horizontal board joint
Double layer



23. Horizontal board joint
Sinlge layer



Internal partitions and walls

GypWall Twin Frame Braced

Identification

Keep the peace by reducing sound transmission through separating walls.

Peace and quiet is important for relaxing, working, learning, and lots more. By stopping noise from reaching adjoining areas, GypWall Twin Frame Braced meets or exceeds building regulations while helping people get the most out of spaces like apartments, hotel rooms and classrooms.

This system can be skim finished with ThistlePro® PureFinish which contains ACTIVair®. ACTIVair makes indoor air healthier by eliminating up to 70% of formaldehyde present in indoor air.

ACTIV air

Fire resistance **60-120 mins**

Sound rating **59-64 R_wdB**

Duty rating **severe**

Why specify GypWall Twin Frame Braced?

Lowers noise transmission through separating walls by combining Gyproc plasterboard, Isover insulation and Gypframe metal framing

Comes with our **SpecSure®** lifetime warranty

Up to 120 minutes fire resistance

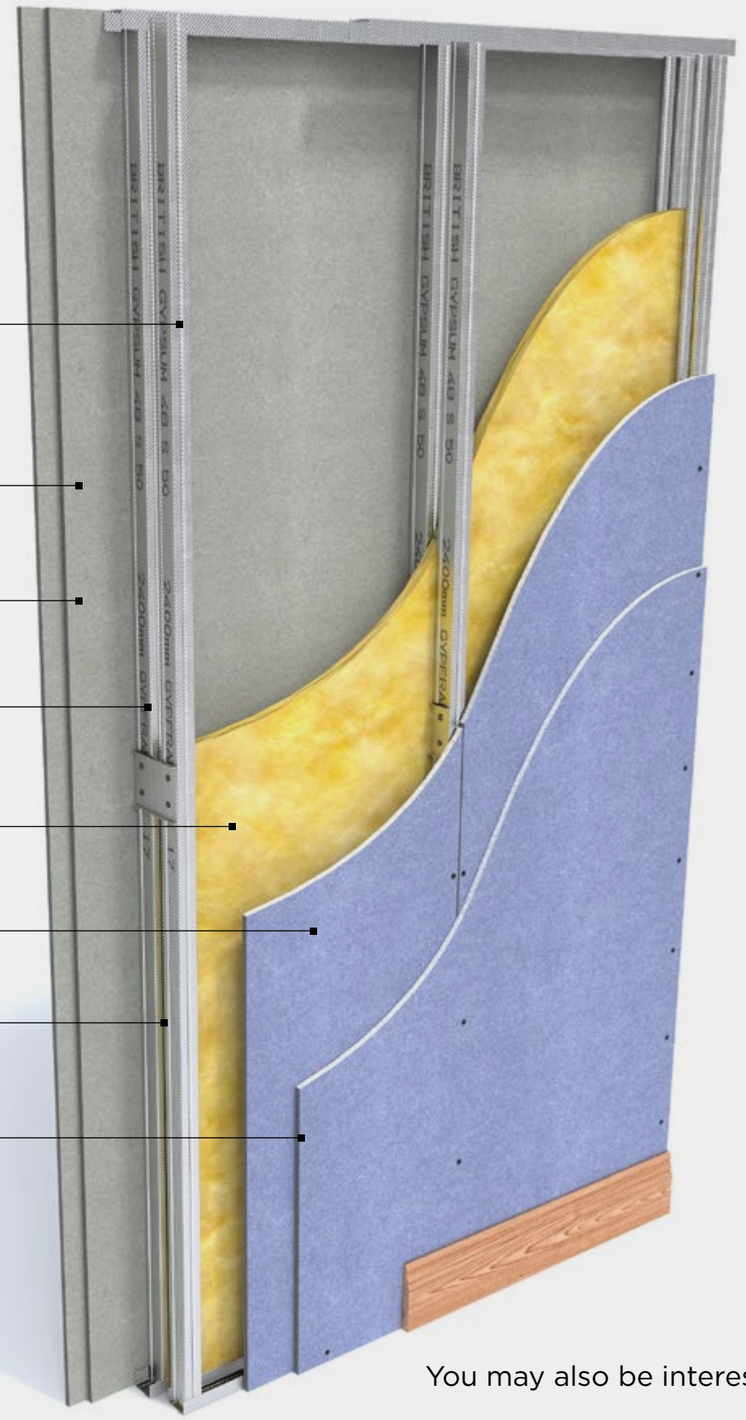
Protects enclosed structural steel from fire for up to 90 minutes

Reduces sound transmission by 60 to 64 R_wdB

Severe Duty Rating

Easily accommodates services and structural steel

Achieves even better acoustic performance when you skim with Thistle MultiFinish plaster



SpecSure® BRITISH GYPSUM SYSTEMS WARRANTY

There are specifications within this system that qualify for our **SpecSure®** warranty. For more information, contact us through **british-gypsum.com**

You may also be interested in...

GypWall Twin Frame Independent
Looking for an unbraced twin-frame system for separating walls where greater levels of acoustic insulation are needed. **See page 4.51.**

GypWall Twin Frame Braced

Design considerations

Building design – GypWall Twin Frame Braced comprises twin row Gypframe 'C' Studs at 600mm centres within twin row Gypframe Floor & Ceiling Channels. For heights up to 2400mm each pair of studs must be cross braced at mid-height. Where multiple braces are required, locate the braces at 1200mm vertical centres staggered by 600mm.

Planning – key factors

Predetermine the positioning and installation of service penetrations and heavy fixtures before the frame erection stage. Consider Timber sole plates where the floor is uneven. All penetrations need fire stopping.

Fixing floor and ceiling channels

Fix Gypframe Floor & Ceiling Channels securely at 600mm maximum centres. If the floor is uneven, use a 38mm thick timber sole plate equal to the channel width. Consider installing a damp-proof membrane for new concrete or screeded floors between the floor surface and the channel.

Splicing

To extend the studs, overlap by a minimum of 600mm. Use British Gypsum Wafer Head Drywall Screws to fix together. Use two screws per flange. Refer to the construction details in this system.

Partition to structural steelwork junctions

When designing room layouts, separated by sound insulating walls abutting structural steelwork, consider the potential loss of acoustic performance through the steelwork. Refer to Building acoustics in system design principles on **british-gypsum.com**

Looking for performance selection tables?

We're committed to providing technical information that is transparent, clear, accurate, and always up-to-date. So you can rely on it when making decisions at any stage of the design, specification, installation, use, maintenance and disposal process.

All performance data is now available to view and download on our website.

british-gypsum.com/gypwall-twin-frame-braced

Door openings

Openings need careful detailing to minimise the loss of acoustic performance through the wall. If in doubt, speak to an Acoustic Consultant. Specialist heavy acoustic doorsets may require additional support. Refer to Opening Guidance document: **british-gypsum.com**

Cavity barriers

Stone mineral wool (by others) cut neatly to fit across the cavity will form a suitable closure. Minimum 12.5mm Gyproc plasterboard, screw-fixed into the perimeter channels or vertical studs, will also provide a satisfactory closure to flame or smoke.

Deflection heads

Deflection heads may be necessary to accommodate deflections between partitions and the supporting floor. Deflection heads may also be required to the underside of roof structures, which are subject to positive and negative pressures. Partition design can incorporate deflection heads with only a slight reduction in sound insulation performance. Refer to this construction details in this system. To minimise the loss of acoustic performance, refer to Building acoustics in system design principles on **british-gypsum.com**

Services

Penetrations
Service penetrations through fire resisting or sound insulating constructions need careful consideration to ensure no loss of performance. Consider the services themselves so they do not act as a mechanism for fire spread or sound transmission. Refer to our best practice guide on service openings: **british-gypsum.com**

Electrical
Install electrical services in accordance with BS 7671. Use cut-outs in the studs for routing electrical and other small services (refer to this construction details in this system). Support switch boxes and socket outlets by fixing Gypframe 99 FC 50 Fixing Channels horizontally between studs. Use high-performance socket boxes, where acoustic performance is important.

Independent support
Consider the size and weight of services, such as fire dampers and ductwork, that will be installed through the partition. Determine whether they can be supported directly by the partition or need independent support. Refer to the construction details in this system.

Fixtures

Lightweight fixtures can be installed directly to the partitions. Medium weight fixtures can be made to Gypframe 99 FC 50 Fixing Channel. Heavyweight fixtures to BS 5234, e.g. cupboards, can be fixed using plywood secured with Gypframe Service Support Plates.
Refer to Service installations in system design principles on **british-gypsum.com**.

Board finishing

For good practice, board the twin frame wall progressively from each side of the partition. This will help prevent differential loadings on the framework.

Tiling

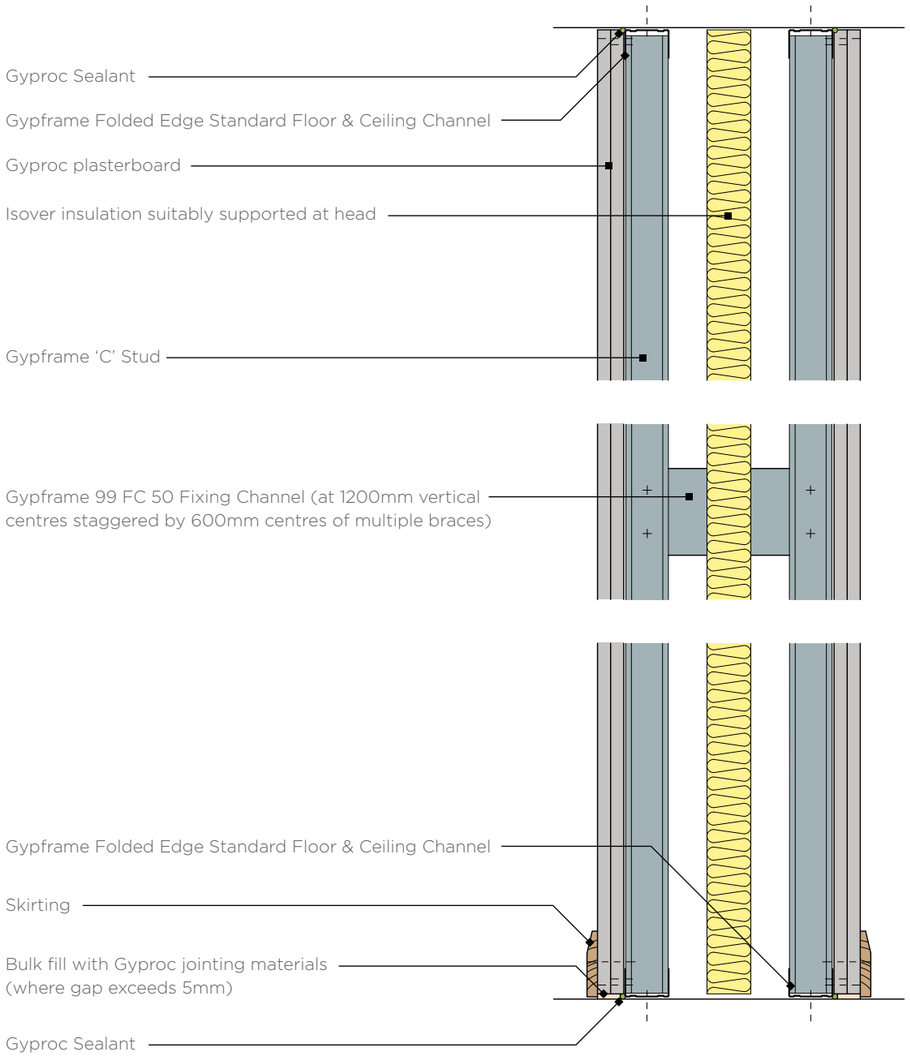
Tiles can be fixed directly to the surface of lightweight partition systems. Refer to **british-gypsum.com** for our full range and guidance on tiling-related products.

Handy hint

If horizontal board joints are necessary, stagger between layers by a minimum of 600mm, to avoid downgrading performance. For alternative stud types/sizes, to increase maximum partition height, further options are available. Refer to the White Book Specification Selector on the British Gypsum website.

GypWall Twin Frame Braced
Construction details

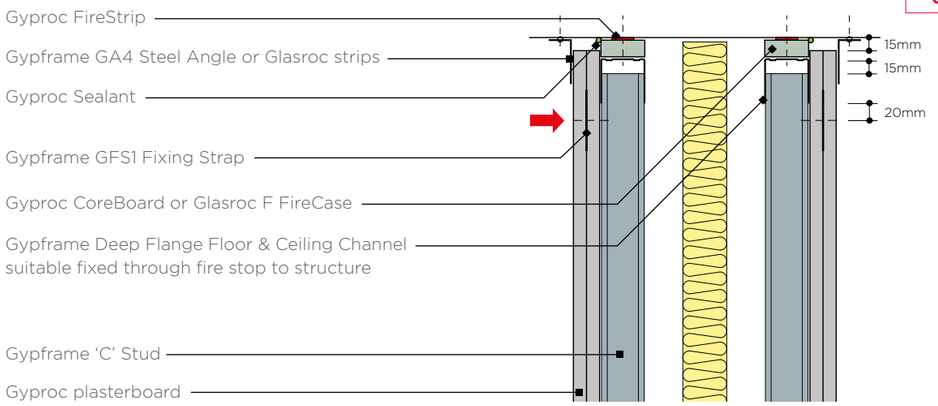
1. Head and base



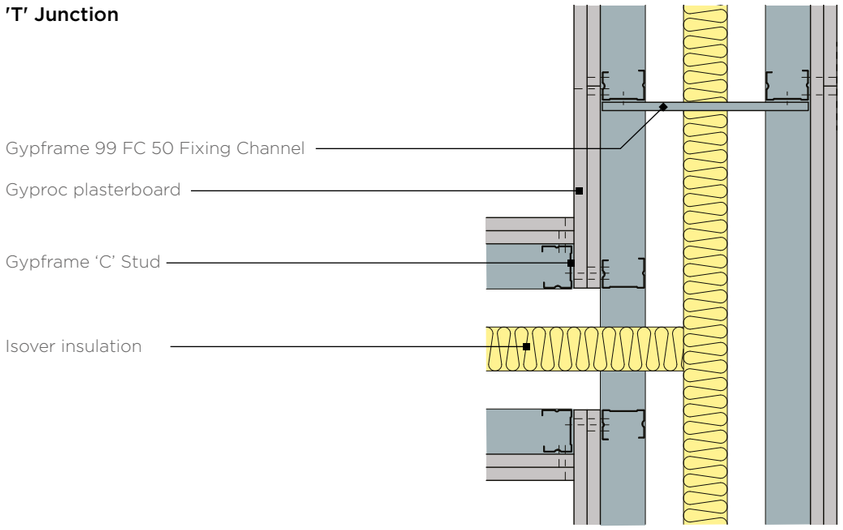
2. Deflection head

15mm downward movement and 60 minutes fire resistance

Fire resistance **60 mins**



3. 'T' Junction



Note: No fixings should be made through the boards into the flanges of the head channel. The arrow (➡) denotes the position of the uppermost board fixing, which should be made into Gypframe GFS1 Fixing Strap (or stud nogging). Continuous Gyproc FireStrip must be installed as shown to maintain fire performance. Where there is a need for a deflection head in a 90 minute wall, the 120 minute solution can be used (refer to construction details in internal partitions and walls introduction) or please refer to Technical Support on **british-gypsum.com**.

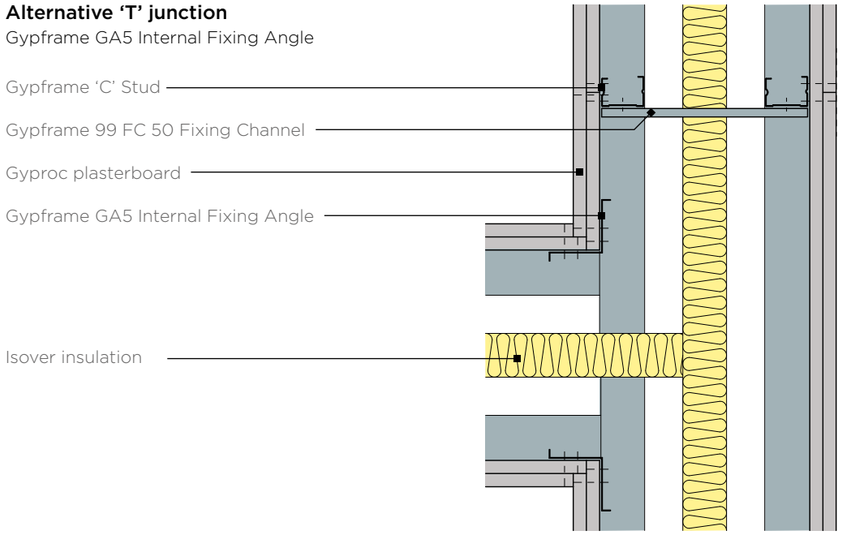
Guidance must be sought from the relevant approval authority e.g. Building Control to establish if a cavity barrier is required (Approved Document B)

GypWall Twin Frame Braced

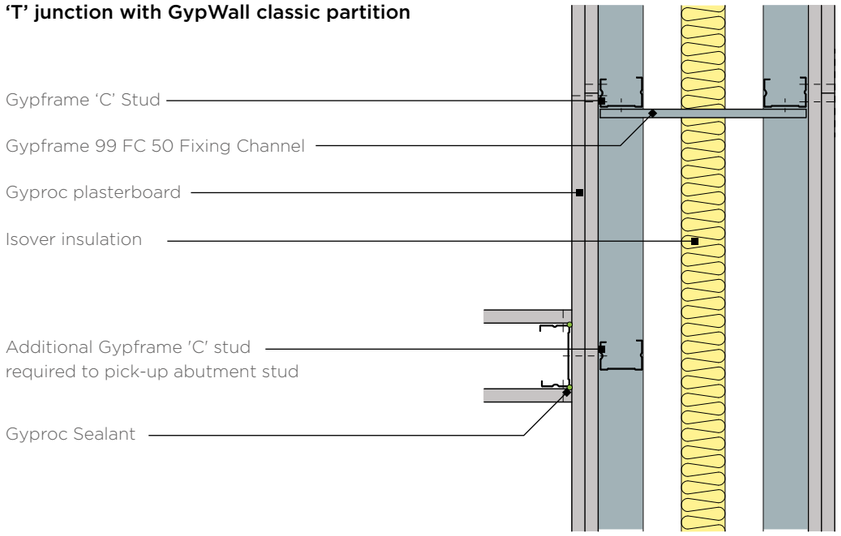
Construction details

4. Alternative ‘T’ junction

Gypframe GA5 Internal Fixing Angle

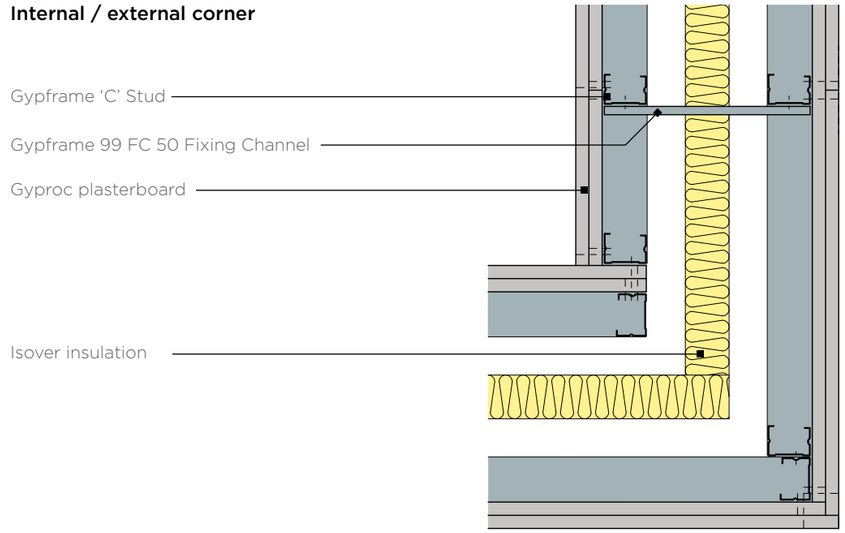


5. ‘T’ junction with GypWall classic partition



Note: Guidance must be sought from the relevant approval authority e.g. Building Control to establish if a cavity barrier is required (Approved Document B)

6. Internal / external corner

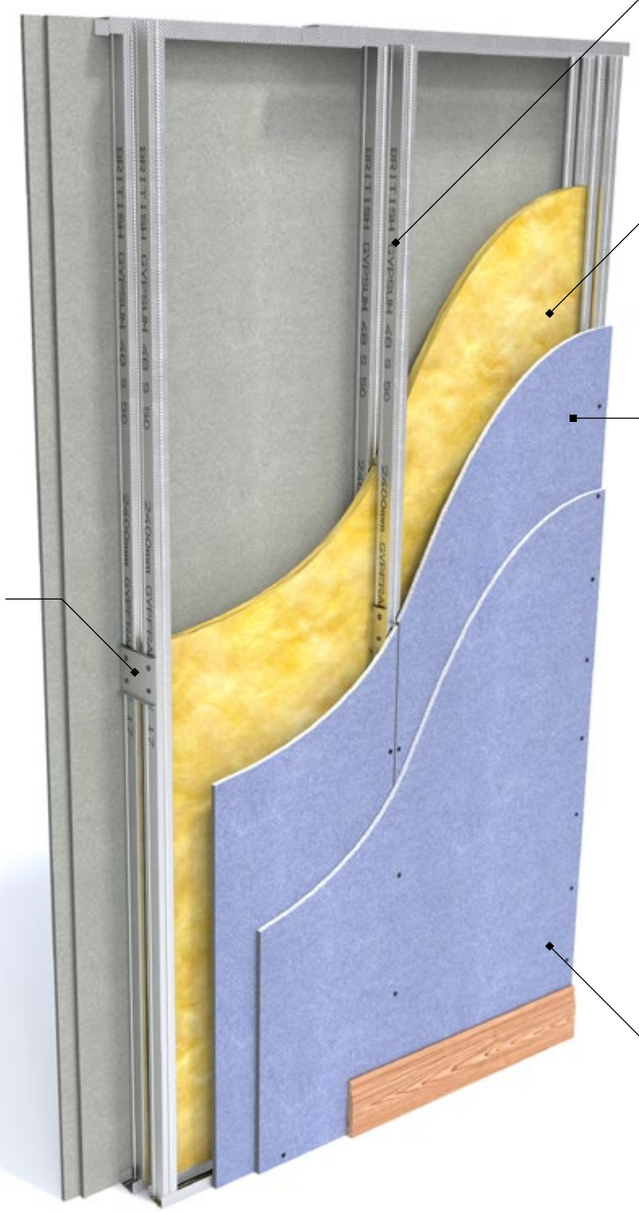


Note: Guidance must be sought from the relevant approval authority e.g. Building Control to establish if a cavity barrier is required (Approved Document B)

GypWall Twin Frame Braced

System components

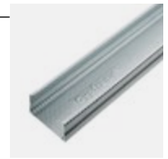
Keep the peace by reducing sound transmission through separating walls.



Gypframe 99 FC 50 Fixing Channel
A steel profile with a deep face to facilitate fixings. Used for bracing twin frame wall systems and medium weight fixtures.

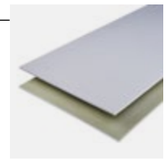
SpecSure®
BRITISH GYPSUM SYSTEMS WARRANTY

There are specifications within this system that qualify for our **SpecSure**® warranty. For more information, contact us through **british-gypsum.com**

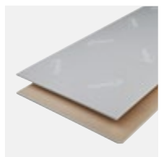


Gypframe 'C' Stud 48 S 50
Gypframe 'C' studs are cold-rolled steel studs with a 'C' section profile. They include sight lines down the flanges and service cut-outs in the web. These studs provide vertical framing support in British Gypsum partitions and linings, as defined by the system design. They're available in a range of lengths depending on project requirements.

Isover insulation
Glass mineral wool for enhanced acoustic and thermal performance.



Gyproc SoundBloc
Gyproc SoundBloc is a plasterboard with a high density core. Use it to achieve specified sound insulation levels through walls, ceilings and floors.



Gyproc Habito
Gyproc Habito is a plasterboard with an exceptionally strong gypsum core for superior fixing strength, toughness and durability. Use it for walls and partitions that require high levels of impact resistance and fixing capability.

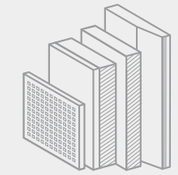
Gyproc FireLine
Gyproc FireLine 12.5mm is a plasterboard that contains glass fibre and other additives for extra fire protection. Use it in partitions, ceilings and steel encasement systems to achieve the fire performance required in domestic separating walls, corridors, garages and steel encasements.

Thistle MultiFinish
Thistle MultiFinish is a gypsum finish plaster that provides a smooth, inert and high quality surface to internal walls and ceilings, as well as a durable base for applying decorative finishes.

Careful product choice is central to maintaining system integrity, performance requirements and eligibility for our **SpecSure**® warranty. **Ensure an optimum standard of build by considering...**

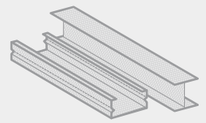
What are you fixing?

Our market leading range of plasterboard linings for walls, ceilings, floors, partitions and encasements for any building type. See **british-gypsum.com** for more details.



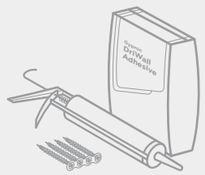
What are you fixing to?

Our Gypframe metal profiles provide a strong and versatile structure for fixing our partition lining, floor and ceiling systems. See **british-gypsum.com** for more details.



What are you fixing with?

Our fixings offer guaranteed compatibility with our systems, and are rigorously tested to meet the highest quality standards. See **british-gypsum.com** for more details.



What are you finishing with?

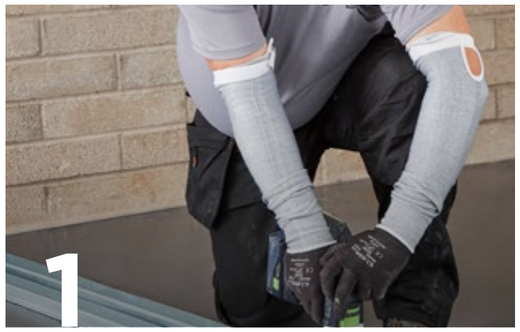
Plaster
Our wide range of Thistle plasters and Thistle accessories give you everything you need to finish a job to the highest possible standard. See **british-gypsum.com** for more details.

Finishing products
Our Gyproc jointing range gives you everything you need to complete a wall lining, partition or ceiling system, whatever the size and complexity of the project. See **british-gypsum.com** for more details.

Where defined performance requirements are required see our White Book Specification Selector on british-gypsum.com

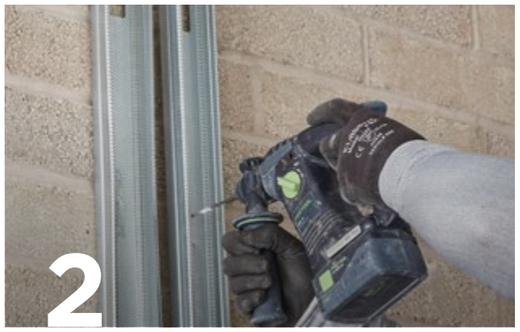
GypWall Twin Frame Braced
Installation

The information below is intended to be a basic description of how the system is built.



Suitably fix the appropriate Gypframe Floor & Ceiling Channels in two rows at the required centres to the floor and soffit.

Important note – for channels 72mm and below a single row of fixings are used. For anything above 72mm two rows of 600mm fixings staggered by 300mm are used. For deflection heads see suitable details.



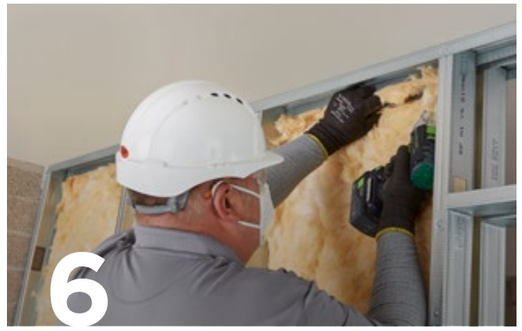
Fix Gypframe 'C' Studs at abutments and openings in two rows using suitable fixings.

Friction fit Gypframe 'C' Studs into the appropriate Gypframe Floor & Ceiling Channels at the required centres.

Construct door openings to the Severe Duty rating door detail.

Important note – Twin frame systems require additional plywood around door openings, see details for specifics.

Brace the two frameworks are with a Gypframe 99 FC 50 Fixing Channel attached to the Gypframe 'C' Studs at 1200 centres. Use two British Gypsum Wafer Head Drywall Screws per junction.



Add insulation to the partition cavity for optimal acoustic and thermal performance.

Use Gyproc Sealant to seal the perimeter of the partition.

Use British Gypsum Drywall Screws to fix Gyproc plasterboards to the Gypframe framework.