Partitions

This section contains 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.
Partitions

British Gypsum offers a full range of lightweight partition and wall systems. Our systems are non-loadbearing and constructed using modern, drylining techniques. British Gypsum 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.

British Gypsum partition systems are constructed using lightweight materials, which can give rise to significant savings in structural design compared to masonry alternatives. Big benefits also include the speed of installation and reduction to overall build costs.

Buildings need to evolve throughout their life to suit changing demands placed upon them. Our lightweight partition systems are easy to reconfigure with minimal impact to both building and occupants resulting in less disruption, optimising the transformation process.

You may also be interested in...

For unique performance situations with specialist requirements:
— Curved partitions — Access to build from one side only
— High levels of fire resistance — High security including bomb blast

► Refer to C05. S01. P02 – Specialist partitions
Partitions

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.

Our quick-reference partition system guide, below, allows you to simply select the performance categories of interest and identify the British Gypsum partitions systems that best satisfy your project requirements.

### Table

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<tr>
<th>Fire performance mins</th>
<th>Partition thickness mm</th>
<th>Acoustic performance $R_w$ dB</th>
<th>Duty rating</th>
<th>Maximum height BS 5234 mm</th>
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<td>Non-loadbearing timber stud (separating walls)</td>
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1 Based on studs at 600mm centres

### Additional information

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

**Acoustic performance**

<table>
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<tr>
<th>Table 1 — Sound insulation performance for residential specification</th>
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<td><strong>D&lt;sub&gt;etr&lt;/sub&gt; + C&lt;sub&gt;tr&lt;/sub&gt; dB</strong></td>
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<td>Separating walls between new homes</td>
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<tr>
<td>Separating walls between purpose-built rooms for residential purposes and rooms created by a change of use or conversion</td>
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<thead>
<tr>
<th><strong>Technical Standards Section 5 (Scotland)</strong></th>
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<th>Laboratory&lt;sup&gt;1&lt;/sup&gt;</th>
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<td>Minimum solution</td>
<td>Recommended solution</td>
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<td>Separating walls between rooms created by a change of use or conversion (traditional buildings&lt;sup&gt;1&lt;/sup&gt;)</td>
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</table>

<sup>1</sup> 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.

<sup>2</sup> 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.

**Good practice specification guidance**

British Gypsum’s systems are designed and tested to meet every performance requirement and are fully supported by our SpecSure® lifetime system warranty.

This means that when our systems are installed following our guidance they will achieve every performance claim we make, and if they don’t then we’ll put it right.

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
## Standard GypWall performance

**Table 2 – GypWall classic metal stud partition recommended maximum heights (mm) - based on a limiting deflection of L/240 at 200Pa. Applicable to non fire-rated or BS 476: Part 22 fire-rated constructions only (not applicable to EN 1364-1)**

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**NB** In all GypWall classic systems, it is recommended that for heights between 4200mm and 8000mm, the Gyproam Deep Flange Floor & Ceiling Channel is used. Gyproam Extra Deep Flange Floor & Ceiling Channel is used for heights above 8000mm. Additional consideration needs to be given if there is a deflection head requirement.

**NB** For the affect on acoustic performance refer to C02. S01. P30.
## Standard GypWall performance (continued)

Table 2 (continued) – GypWall classic metal stud partition recommended maximum heights (mm) - based on a limiting deflection of L/240 at 200Pa. Applicable to non fire-rated or BS 476: Part 22 fire-rated constructions only (not applicable to EN 1364-2)

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<td>-</td>
<td>10300</td>
<td>-</td>
<td>11100</td>
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</tr>
</tbody>
</table>

**NB** In all GypWall classic systems, it is recommended that for heights between 4200mm and 8000mm, the Gypframe Deep Flange Floor & Ceiling Channel is used. Gypframe Extra Deep Flange Floor & Ceiling Channel is used for heights above 8000mm. Additional consideration needs to be given if there is a deflection head requirement.

**NB** For the affect on acoustic performance refer to C02. S01. P30.
Standard GypWall construction details

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

1. Gypframe 'T' Stud
2. Gypframe 'C' Stud
3. Gypframe AcouStud
4. Gypframe Floor & Ceiling Channel
5. British Gypsum Wafer Head Drywall Screws or British Gypsum Wafer Head Jack-Point Screws
6. Crimp
7. Studs offset at top and bottom to facilitate engagement into channels
Standard GypWall construction details (continued)

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

1. Gyproc plasterboard or Glasroc F specialist board
2. Gypframe ‘C’ Stud
3. Gypframe Floor & Ceiling Channel
4. Gyproc Sealant
5. Bulk fill Gyproc jointing materials (where gap exceeds 5mm)
6. Skirting
7. Floating screed on resilient layer
8. Timber sole plate suitably fixed to structure
9. Internal blockwork
10. DriLyner basic wall lining system
11. Isover insulation
Standard GypWall construction details (continued)

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

1. Gyproc plasterboard or Glasroc F specialist board
2. Gypframe ‘C’ Stud
3. Isover insulation
4. Gypframe GAS Internal Fixing Angle
5. Gypframe GA6 Splayed Angle

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

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

**Corner detail - single layer**

**Corner detail - double layer**

**Typical control joint**

**Gypframe 99 FC 50 Fixing Channel**

(Short legs flattened at stud positions)

1. Gyproc plasterboard or Glasroc F specialist board
2. Gypframe ‘C’ Stud
3. Stone mineral wool (minimum density 23kg/m³) (by others)
4. Gyproc Control Joint
5. Gypframe 99 FC 50 Fixing Channel
6. 18mm plywood
7. Gypframe Service Support Plate

**NB** 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.
**Standard GypWall construction details (continued)**

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

1. Gyproc plasterboard or Glasroc F specialist board
2. Gypframe ‘C’ Stud
3. Gypframe GFS1 Fixing Strap
4. Gypframe Deep Flange Floor & Ceiling Channel
5. Gypframe Extra Deep Flange Floor & Ceiling Channel
6. Gyproc CoreBoard
7. Gyproc FireStrip (continuous)
8. Timber head plate suitably fixed to structure
9. 25mm Glasroc F firecase
10. Stone mineral wool (by others)
11. Nogging cut from Gypframe ‘C’ Stud

**NB** 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 in construction detail 16). 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 detail 16) or alternatively, please contact the British Gypsum Technical Advice Centre for further guidance.

**NB** To minimise loss in acoustic performance refer to C02 S01 P10 Acoustic performance of head details.

**NB** Not suitable for 60 minutes single layer systems on 48mm studs to BS EN 1364-1

**NB** Not suitable for 48mm studs to BS EN 1364-1
Standard GypWall construction details (continued)

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

Deflection head parallel to floor profile for 15mm downward movement and up to 60 minutes fire resistance

Deflection head perpendicular to floor profile for 15mm downward movement and up to 60 minutes fire resistance

Junction with external wall

Junction with external wall when acoustic performance is a key consideration - helps reduce flanking transmission

1. Gyproc plasterboard or Glasroc F specialist board
2. Gyproc FireStrip (continuous line)
3. Gypframe Deep Flange Floor & Ceiling Channels (DC)
4. Gyproc ‘C’ Stud
5. Gyproc Sealant
6. Gyproc CoreBoard
7. Fire-stopping (by others)
8. Glasroc F Firecase
9. Gypframe 99 FC 50 Fixing Channel
10. Gypframe GFS1 Fixing Strap fixed to studs with British Gypsum Wafer Head Drywall Screws
11. Isover insulation
12. External facade
13. External wall frame stud / by other(s)
14. Cavity barrier (subject to regulatory requirements)

NB: Not suitable for 60 minutes single layer systems on 48mm studs to BS EN 1364-1

NB: 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.

To minimise acoustic downgrade, install Isover insulation within the hollow rib void.

To minimise acoustic downgrade, install Isover insulation within the hollow rib void.
Standard GypWall construction details (continued)

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

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

1. Gyproc plasterboard or Glasroc F specialist board
2. Gypframe ‘C’ Stud
3. Gypframe Floor & Ceiling Channel
4. Gypframe Floor & Ceiling Channel cut and bent to form door head
5. Timber door frame and architrave
6. Gypframe ‘C’ Stud to maintain stud module
7. Timber sub-frame

Advice should be sought from the door manufacturer prior to the construction of these details.
Standard GypWall construction details (continued)

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

1. Gyproc plasterboard or Glasroc F specialist board
2. Gypframe ‘C’ Stud
3. Gypframe Floor & Ceiling Channel to sleeve studs
4. Gypframe Floor & Ceiling Channel cut and bent to form door head
5. Timber door frame and architrave
6. Gypframe ‘C’ Stud to maintain stud module
7. Gypframe Floor & Ceiling Channel cut and bent to extend up studs

Advice should be sought from the door manufacturer prior to 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.
Standard GypWall construction details (continued)

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

Alternative door frame for fixed partition heads only (maximum 1200mm width) to satisfy 
BS 5234: Parts 1 & 2: 1992 - Heavy and Severe Duty (up to 60kg door)

1. Gyproc plasterboard or Glasroc F specialist board
2. Gypframe 'C' Stud
3. Gypframe Floor & Ceiling Channel to sleeve studs
4. Gypframe Floor & Ceiling Channel cut and bent to form door head
5. Timber door frame and architrave
6. Gypframe 'C' Stud to maintain stud module
7. Gypframe 'C' Studs fixed back to back with British Gypsum Wafer Head Drywall Screws at 300mm centres staggered
8. Plasterboard infill (same type as lining) cut to fit between studs
9. Gypframe Floor & Ceiling Channel cut and bent to extend up studs

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

NB: 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.

NB: The principle of this alternative detail is only suitable for GypWall classic, GypWall robust and GypWall extreme for fixed head situations only.
Standard GypWall construction details (continued)

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

1. Gypframe 'C' Stud
2. Stud sleeved to full opening height with Gypframe Floor & Ceiling Channel
3. Gypframe studs (appropriate to system)
4. Gypframe Extra Deep Flange Floor & Ceiling Channel
5. Gypframe stud insert
6. Centre stud required for margin up to 600mm between openings
7. Partition between openings, minimum 600mm for Gypframe 'C' Studs (minimum 300mm for Gypframe 'I' Studs)
8. Maximum distance 2400mm (if exceeds 2400mm contact British Gypsum Technical Advice Centre)

Openings 1201 - 3300mm wide, for example double doors or large windows
Standard GypWall construction details (continued)

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

1. Gyproc plasterboard or Glasroc F specialist board
2. Gypframe 'C' Stud
3. Gypframe Floor & Ceiling Channel
4. Penetration seal if required (refer to damper manufacturer for details)
5. Damper (by others). Weight of damper should not exceed 57kg. Size of damper should not exceed 1400 x 1200mm
6. Gypframe Folded Edge Standard Floor & Ceiling Channel cut and bent to form opening head and sill

Opening for service penetrations in fire-rated partitions

Fire tested construction in which the damper is supported by the partition (isometric view)

Opening up to 600mm wide for services

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Elevation

Section X - X

Section Y - Y

---

Opening up to 600mm wide for services

---

150mm
**Standard GypWall construction details (continued)**

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

---

1. Inner layer of Gyproc plasterboard or Glasroc F specialist board
2. Outer layer of Gyproc plasterboard or Glasroc F specialist board
3. Gypframe GF51 Fixing Strap
4. Gypframe metal framing
5. British Gypsum Drywall Screws
6. Gyproc plasterboard or Glasroc F specialist board
7. Gypframe ‘C’ Stud
8. Gypframe GFT2 Fixing T (alternatively use Gypframe GSF1 Fixing Strap)
GypWall **AUDIO**

The ultimate sound insulating wall system

All our systems are covered by SpecSure® when using genuine British Gypsum and Saint-Gobain Isover products.
**GypWall Audio**

GypWall Audio is a non-loadbearing, twin-frame high performance wall system that provides exceptionally high levels of sound insulation. It is used to separate multi-use facilities, such as lecture theatres, music rooms, multi-screen cinemas, exhibition and conference centres, and leisure centres.

**Key benefits**

— Optimal sound insulation performance is achieved through minimal bridging between the Gyproc plasterboard linings and the increased cavity size

— The lightweight system combines high levels of performance and a smaller footprint, compared with masonry alternatives

— Up to 120 minutes fire protection can be provided to structural steel enclosed within the partition cavity of GypWall Audio

---

You may also be interested in...

Looking for a high degree of reverberation control (for example in a concert hall or auditorium)?

► Refer to C09. S01. P04 – Sound absorbing solutions
Table 1a – Solutions to satisfy the requirements of BS EN 1364-1

<table>
<thead>
<tr>
<th>Detail Partition thickness mm</th>
<th>Partition Board type</th>
<th>Lining thickness mm</th>
<th>Max. partition height mm</th>
<th>Isover Cladding Roll 40 mm</th>
<th>Sound insulation $R_w + C_{tr}$ (dB)</th>
<th>Duty rating</th>
<th>Approx. weight kg/m²</th>
<th>System reference</th>
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<tr>
<td>1</td>
<td>300 Gyproc SoundBloc</td>
<td>2 x 12.5</td>
<td>8000</td>
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<td>67 (56)</td>
<td>Severe 47</td>
<td>A326001</td>
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<td>100</td>
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<td>A326002</td>
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<td>300 Gyproc Plank + Gyproc SoundBloc</td>
<td>1 x 19 + 1 x 12.5</td>
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<td>8000</td>
<td>100</td>
<td>70 (60)</td>
<td>Severe 58</td>
<td>A326003</td>
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<td>120 minutes fire resistance EN</td>
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<td>9000</td>
<td>9500</td>
<td>100</td>
<td>75 (69)</td>
<td>Severe 80</td>
<td>A326016</td>
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<td>9000</td>
<td>9500</td>
<td>2 x 100</td>
<td>76 (68)</td>
<td>Severe 80</td>
<td>A326013</td>
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<tr>
<td>5</td>
<td>600 Gyproc SoundBloc</td>
<td>3 x 15</td>
<td>9000</td>
<td>9500</td>
<td>4 x 100 + 2 x 100 stone mineral wool</td>
<td>77 (69)</td>
<td>Severe 80</td>
<td>A326017</td>
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<td>6</td>
<td>600 Gyproc SoundBloc</td>
<td>3 x 15</td>
<td>9000</td>
<td>9500</td>
<td>3 x 100 + 2 x 100 stone mineral wool</td>
<td>77 (69)</td>
<td>Severe 80</td>
<td>A326018</td>
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<tr>
<td>7</td>
<td>800 Gyproc SoundBloc</td>
<td>3 x 15</td>
<td>9500</td>
<td>9000</td>
<td>3 x 100 + 2 x 100 stone mineral wool</td>
<td>80 (71)</td>
<td>Severe 80</td>
<td>A326019</td>
</tr>
</tbody>
</table>

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

1 For improved durability and impact resistance, the outer layer of Gyproc FireLine or Gyproc SoundBloc can be replaced with a layer of 15mm Gyproc DuraLine.
2 For heights between 4200mm and 8000mm, Gyprframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria). For heights over 8000mm, Gyprframe Extra Deep Flange Floor and Ceiling Channel should be used at base and head. The maximum heights quoted are limited by the fire state field of application or by limiting deflection L/240 at 200 Pa, whichever is more onerous.
3 Minimum density 62kg/m³.

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

NB Each pair of studs must be braced at least once, staggered to the adjacent pairs, irrespective of the partition height or specified bracing centres.
### Table 1b – Solutions to satisfy the requirements of BS 476: Part 8: 1972 or BS 476: Part 22: 1987

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

---

1. **60 minutes fire resistance**
   - **1** 300 Gyproc SoundBloc 2 x 12.5 8000 9500 8000 10000 100 67 (56) Severe 47 A326001

2. **90 minutes fire resistance**
   - **1** 300 Gyproc SoundBloc 2 x 15 8000 9500 8000 10000 100 69 (60) Severe 55 A326002
   - **2** 300 Gyproc Plank + Gyproc SoundBloc 1 x 19 + 1 x 12.5 8000 9500 8000 10000 100 70 (60) Severe 58 A326003

3. **120 minutes fire resistance**
   - **3** 550 Gyproc SoundBloc 3 x 15 9000 11500 9500 11500 100 75 (69) Severe 80 A326016
   - **4** 550 Gyproc SoundBloc 3 x 15 9000 11500 9500 11500 100 76 (68) Severe 80 A326013
   - **5** 600 Gyproc SoundBloc 3 x 15 9000 11500 9500 11500 100 77 (69) Severe 80 A326017
   - **6** 600 Gyproc SoundBloc 3 x 15 9000 11500 9500 11500 100 77 (69) Severe 80 A326018
   - **7** 800 Gyproc SoundBloc 3 x 15 9500 11500 9000 11500 100 80 (71) Severe 80 A326019

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For improved durability and impact resistance, the outer layer of Gyproc FireLine or Gyproc SoundBloc can be replaced with a layer of 15mm Gyproc Duraline.

For heights between 4200mm and 8000mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria). For heights over 8000mm, Gypframe Extra Deep Flange Floor and Ceiling Channel should be used at base and head.

Refer to deflection criteria, in design section.

Minimum density 62kg/m³.

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

Each pair of studs must be braced at least once, staggered to the adjacent pairs, irrespective of the partition height or specified bracing centres.
### GypWall audio performance (continued)

For details of when to specify fire resistance using EN / BS
> Refer to C02. S01. P05

### Table 2 — Solutions based on BS EN 1364-1 and BS 476: Part 21: 1987

<table>
<thead>
<tr>
<th>Board type</th>
<th>Lining thickness mm</th>
<th>Fire protection min</th>
<th>Section factor $^A$ A/V (Hp/A) m$^{-1}$</th>
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<tbody>
<tr>
<td>Gyproc SoundBloc</td>
<td>2 x 12.5</td>
<td>30</td>
<td>Up to 300</td>
</tr>
<tr>
<td>Gyproc SoundBloc</td>
<td>2 x 15</td>
<td>60</td>
<td>Up to 300</td>
</tr>
<tr>
<td>Gyproc Plank + Gyproc SoundBloc</td>
<td>1 x 19 + 1 x 12.5</td>
<td>60</td>
<td>Up to 300</td>
</tr>
<tr>
<td>Gyproc Plank + Gyproc FireLine</td>
<td>1 x 19 + 1 x 12.5</td>
<td>60</td>
<td>Up to 300</td>
</tr>
<tr>
<td>Gyproc SoundBloc</td>
<td>3 x 15</td>
<td>120</td>
<td>Up to 300</td>
</tr>
</tbody>
</table>

1 Estimated fire protection to structural steelwork within the partition cavity. Based on metal stud thermocouple data.
2 For improved durability and impact resistance, the outer layer of Gyproc FireLine or Gyproc SoundBloc can be replaced with a layer of 15mm Gyproc DuraLine.
3 Based on four-sided exposure, with no vertical joints aligning with the column, and boards not fixed to the column to maintain air space (10mm for BS or 50mm for EN).

### Table 3 — Acoustic performance of GypWall audio at low frequencies

<table>
<thead>
<tr>
<th>Detail</th>
<th>Overall wall thickness mm</th>
<th>Board type</th>
<th>Lining thickness mm</th>
<th>Isover Cladding Roll 40 mm</th>
<th>Octave band sound reduction index ($R$) dB</th>
<th>$R_{63}$ dB</th>
<th>$R_{125}$ Hz</th>
<th>$R_{250}$ Hz</th>
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<td>300</td>
<td>Gyproc SoundBloc</td>
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<td>29.4</td>
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<td>600</td>
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<td>2 x 100 + 2 x 100 stone mineral wool$^A$</td>
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</tbody>
</table>

1 For improved durability and impact resistance, the outer layer of Gyproc FireLine or Gyproc SoundBloc can be replaced with a layer of 15mm Gyproc DuraLine.
2 Minimum density 62kg/m$^3$. 

For further assistance in choosing the right solution for your project, try the White Book System Selector; an online tool that enables quick and easy filtering by performance criteria. It provides system specific information downloads including BIM (Revit) objects. Go to british-gypsum.com
GypWall audio design

Building design

GypWall audio comprises braced twin rows of Gypframe 92 S 10 ‘C’ Studs installed at 600mm centres within Gypframe Floor & Ceiling Channels.

Planning – key factors

The position of services and heavy fixtures should be pre-determined and their installation planned into the frame erection stage.

Designers and site management should give full consideration to the potential exposure of GypWall audio to differential pressures, such as wind loadings during installation.

Fixing floor and ceiling channels

Gypframe Floor & Ceiling Channels must be securely fixed with two rows of staggered fixings, each row at 600mm centres and each fixing 25mm in from the flange. If the floor is uneven, a 38mm thick timber sole plate equal to the width of the channel should be used. If the concrete or screeded floor is new, consideration should be given to the installation of a damp-proof membrane between the floor surface and the channel or sole plate.

Splicing

To extend studs, overlap by 600mm (minimum). Fix together using British Gypsum Wafer Head Drywall Screws or steel pop rivets (two to each flange), or by using the Gyproc Stud Interlocking Tool twice to each flange.

▶ Refer to Partitions introduction C04. S01. P07 – construction detail 1.

Partition to structural steelwork junctions

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.

▶ Refer to C02. S01. P10 – Building acoustics.

Door openings

Any openings will require careful detailing if the acoustic performance is to be maintained. Specialist heavy acoustic doorsets may require additional support.

Framing surround for openings

Where services such as horizontal ducts, fire dampers and access panels are required to penetrate the wall, their position should be pre-determined in order that a framed opening can be provided.

▶ Refer to C04. S01. P16 – Service installations.

Cavity barriers

Stone mineral wool cut neatly to fit across the cavity forms a suitable closure.

Control joints

Control joints may be required in the partition to relieve stresses induced by expansion and contraction of the structure (refer to Partitions introduction C04. S01. P10 – construction detail 12). They should coincide with movement joints within the surrounding structure.

Deflection heads

Partition head deflection designs may be necessary to accommodate deflections in the supporting floor. Deflection heads may also be required to the underside of roof structures subjected to positive and negative pressures.

▶ Refer to construction details 4 and 5 within this section.

Deflection criteria

Our normal recommendation is to build to a deflection criteria L/240 at 200 Pa, however it is common for this system to be built to L/125 at 200 Pa (BS 476: Part 22: 1987 fire resistance only).

Partitions built to a maximum height based on L/125 at 200 Pa will exhibit greater deflection compared to partitions built to a maximum height based on L/240 at 200 Pa. Partitions with deflection characteristics outside the standard L/240 criteria will exhibit more flex during installation and in general use, and therefore we recommend you verify the acceptibility of the deflections with the relevant interested parties before specifying / installing partitions based on L/125 criteria.

Cross bracing

Laboratory tests were carried out on walls without bracing. The results, however, are a realistic representation of site conditions in which Gypframe 99 FC 50 Fixing Channel cross-braces are fitted at the recommended 3600mm maximum centres, provided that appropriate measures are taken on site to eliminate flanking sound transmission. All braces must be staggered by half distance of the brace centres. Test evidence is provided by British Gypsum Report ATR 1299, where a site test on a large multi-screen cinema wall achieved comparable performance to the equivalent specification tested in the laboratory without bracing.

Acoustic designers may prefer the option of a resilient acoustic brace. The Gypframe GAB3 Acoustic Brace has been shown in tests not to downgrade acoustic performance in laboratory conditions. However, as a result of the mechanics of this brace fixing centres should be reduced from 3600mm to 3300mm, staggered by half distance of brace centres. Maximum recommended wall heights will vary.

▶ Refer to tables 1a and 1b within this section.

The minimum and maximum wall widths for which Gypframe GAB3 Acoustic Brace can be used without modification are 300mm and 600mm respectively. Likewise, the minimum and maximum cavity width between the two stud frames for which Gypframe GAB3 Acoustic Brace can be used without modification are 100mm and 400mm respectively.
GypWall audio design (continued)

The Gypframe GAB3 Acoustic Brace may be cut using a hacksaw or powertool. If required, the Gypframe GAB Acoustic Brace can be extended by fixing a short length of Gypframe 92 S 10 ‘C’ Stud to one brace with four British Gypsum Wafer Head Jack-Point Screws (ensure a 75mm minimum overlap to each stud with no contact to board lining). The short length of stud should also be fixed to the vertical studs with four British Gypsum Wafer Head Jack-Point Screws.

Care should be taken to ensure Gypframe GAB3 Acoustic Braces are correctly and fully engaged and not mis-aligned. Where partition heights are specified based on lateral restraint from a suitable ceiling, either this ceiling should be in place at the time of installation or temporary restraint should be used.

Each pair of studs must be braced at least once, staggered to the adjacent pairs, irrespective of the partition height or specified bracing centres.

Board fixing

In common with building practice, the twin frame wall should be boarded progressively from each side of the partition. This will help prevent differential loadings on the framework.

Services

Penetrations

Penetrations of fire-resistant or sound-insulating constructions for services need careful consideration to ensure that the performance of the element is not downgraded. Consideration also needs to be given to the services themselves so they do not act as the mechanism of fire spread or sound transmission.

Refer to C02. S01. P32 – Service installations.

Electrical

The installation of electrical services should be carried out in accordance with BS 7671. The cut-outs in the studs can be used for routing electrical and other small services (refer to Partitions introduction C04. S01. P07 – construction detail 2). Switch boxes and socket outlets can be supported from Gypframe 99 FC 50 Fixing Channel fixed horizontally between studs, or a high performance socket box detail used where higher acoustic performance is required.


Fixtures

Lightweight fixtures can be made directly to the partition linings. Medium weight fixtures can be made to Gypframe 99 FC 50 Fixing Channel. Heavyweight fixtures (to BS 5234) such as wash basins and wall cupboards, can be fixed using plywood secured by Gypframe Service Support Plates.

Refer to C02. S01. P33 – Service installations.

Access for maintenance

Gyproc Profilex Access Panels are available to provide access for maintenance. Access panels must be fully compatible with drywall construction and match the fire rating of the partition.

Refer to profillex.co.uk for further information.

Board finishing

Refer to C08. S01. P02 – Finishes

Tiling

Tiles can be applied to the surface of lightweight partition systems.

Refer to C08. S04. P02 – Tiling

SpecSure®

All our systems are covered by SpecSure® when using genuine British Gypsum and Saint-Gobain Isover products.
1. Gyproc plasterboard
2. Gypframe 92 S 10 'C' Stud
3. Splice - 600mm overlap with three British Gypsum Wafer Head Jack-Point Screws into each flange
4. Isover Cladding Roll 40
5. Gypframe GAB3 Acoustic Brace
6. Brace formed from Gypframe 99 FC 50 Fixing Channel (staggered)
**GypWall Audio construction details (continued)**

1. Gyproc plasterboard
2. Gypframe 92 S 10 'C' Stud
3. Gypframe 99 FC 50 Fixing Channel
4. Gypframe Floor & Ceiling Channel
5. Isover Cladding Roll 40
6. Gyproc Sealant
7. Bulk fill with Gyproc jointing materials (where gap exceeds 5mm)
8. Skirting
9. Gypframe Deep Flange Floor & Ceiling Channel suitably fixed through fire-stop to structure
10. Gyproc FireStrip
11. Gyproc CoreBoard or Glasroc Firecase
12. Gypframe GFS1 Fixing Strap
13. Gypframe GA4 Steel Angle
14. Timber head plate suitably fixed to structure
15. Gypframe Extra Deep Flange Floor & Ceiling Channel suitably fixed to timber head plate

**NB** 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 Gypsum GFS1 Fixing Strap. Continuous Gyproc FireStrip must be installed as shown to maintain fire performance.
**GypWall Audio construction details (continued)**

6. ‘T’ junction

7. Alternative ‘T’ junction using GAS Internal Fixing Angle

8. ‘T’ junction with a low acoustic performance
   - GypWall classic partition

9. Internal / external corner

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1. Gyproc plasterboard
2. Gypframe 92 S 10 ‘C’ Stud
3. Gypframe 99 FC 50 Fixing Channel
4. Isover Cladding Roll 40
5. Gypframe GAS Internal Fixing Angle
6. Gyproc Sealant

**NB** 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 audio system components**

### Gyprock ‘C’ Studs 92 S 10
Vertical stud providing acoustic and structural performances designed to receive fixing of board.

### Gypframe GAB3 Acoustic Brace
To cross-brace two rows of Gypframe studs for optimum acoustic performance.

### Gypframe Folded Edge Standard Floor & Ceiling Channels 94 FEC 50
Standard floor and ceiling channels for retaining the Gypframe studs at floor and ceiling junctions and around openings to heights not exceeding 4200mm.

### Gypframe GFS1 Fixing Strap
Used to support horizontal board joints and within deflection heads.

### Gypframe Deep Flange Floor & Ceiling Channels 94 DC 60
Floor and ceiling channels with deep flanges for retaining the Gypframe studs at floor and ceiling junctions for partitions 4200mm to 8000mm high. Also used around openings and in deflection heads (maximum 30mm deflection).

### Gypframe GAS Internal Fixing Angle
Steel angle providing framing stability and board support.

### Gypframe Extra Deep Flange Floor & Ceiling Channels 94 EDC 70
Floor and ceiling channels with extra deep flanges for retaining the Gypframe studs at floor and ceiling junctions for partitions over 8000mm high. Also used around openings and in deflection heads (maximum 50mm deflection).

### Gypframe GA6 Splayed Angle
Steel angle providing framing stability and board support.

### Gypframe 99 FC 50 Fixing Channel
A versatile metal fixing channel used to support medium weight fixtures on walls. Also used to cross-brace the two rows of Gypframe studs.

### Gypframe Service Support Plate
For installation of 18mm plywood within a partition cavity to support medium to heavyweight fixtures.

### Board products (Refer to C10. S03. P02 for details)

#### Gyproc SoundBloc
Gypsum plasterboard with a high density core for enhanced sound insulation performance.

#### Gyproc WallBoard
Standard gypsum plasterboard.

#### Gyproc Plank
Standard gypsum plasterboard located as an inner layer.

#### Gyproc DuraLine
Gypsum plasterboard with fire resistant additives and a high density core for enhanced sound insulation and impact resistance performance. Used as a substitute outer board layer.

#### Gyproc FireLine
Gypsum plasterboard with fire resistant additives.

#### Glassroc F Firecase
Non-combustible glass-reinforced gypsum board used to form deflection head.

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1 Also available in a Moisture Resistant (mr) version. mr boards are specified in intermittent wet use areas.
**GypWall Audio system components (continued)**

**Board products (▶ Refer to C10. S03. P02 for details)**

- **Gyproc CoreBoard**  
  Gypsum plasterboard with fire and moisture resistant additives used to form deflection head.

**Fixing products (▶ Refer to C10. S04. P02 for details)**

- **British Gypsum Jack-Point Screws**  
  Corrosion resistant self-tapping steel screws for fixing board to metal framing 0.8mm thick and greater (‘I’ studs 0.6mm thick and greater).

- **British Gypsum Wafer Head Jack-Point Screws**  
  Corrosion resistant self-tapping steel screws for fixing metal to metal framing 0.8mm thick and greater.

**Plasterboard accessories (▶ Refer to C10. S05. P02 for details)**

- **Gyproc Jointing Materials**  
  Jointing compounds, ready mixes and adhesives for reinforcement and finishing of board joints. Primers and sealers for treatment of boards for pre-decoration.

- **Gyproc FireStrip**  
  A soft extruded linear intumescent gap sealer to maintain fire resistance located directly to the underside of the soffit when forming a deflection head.

- **Gyproc Control Joint**  
  To accommodate structural movement of up to 7mm.

- **Gyproc edge and angle beads**  
  Protecting and enhancing board edges and corners.

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

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

**Finishing products (▶ Refer to C10. S06. P02 for details)**

- **Thistle MultiFinish**  
  To provide a plaster skim finish on most common backgrounds including undercoat plasters and plasterboard.

- **Thistle BoardFinish**  
  To provide a plaster skim finish to Gyproc plasterboards.

- **Thistle SprayFinish**  
  To provide a plaster skim finish by spray or hand application, ideal for medium to large projects.

- **ThistlePro DuraFinish**  
  To provide a plaster skim finish and provide up to 60% tougher resistance to accidental damage.

- **ThistlePro PureFinish**  
  To provide a plaster skim finish with ACTIVair technology. Used to finish most common backgrounds including undercoat plasters and plasterboard. For more information refer to C02. S01. P49.

- **Thistle SprayFinish**  
  To provide a plaster skim finish by spray or hand application, ideal for medium to large projects.

- **Plaster accessories**  
  Designed for the reinforcement and finishing of board joints before plaster skimming.
GypWall audio system components (continued)

**Finishing products (Refer to C10. S06. P02 for details)**

<table>
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<tr>
<th>Product</th>
<th>Description</th>
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<tr>
<td>Thistle ProTape FT50</td>
<td>Self-adhesive 48mm wide glass fibre mesh tape.</td>
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<td>Thistle ProTape FT100</td>
<td>Self-adhesive 100mm wide glass fibre mesh tape.</td>
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**Insulation products (Refer to C10. S09. P02 for details)**

<table>
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<tr>
<th>Product</th>
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<tbody>
<tr>
<td>Isover Cladding Roll 40</td>
<td>Glass mineral wool roll for acoustic performance.</td>
</tr>
<tr>
<td>Stone mineral wool (62kg/m³ by others)</td>
<td>For enhanced acoustic performance at low frequency.</td>
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</table>
**GypWall audio system installation overview**

This is intended to be a basic description of how the system is built. For detailed installation guidance refer to the British Gypsum Site Book.

Gypframe Floor & Ceiling Channels are suitably fixed to the floor and soffit in two rows. Gypframe 92 S 10 ‘C’ Studs are fixed at abutments and door openings in two rows. Gyproc Sealant is applied to the frame perimeters to seal airpaths.

Gypframe 92 S 10 ‘C’ Studs are then friction fitted into the Gypframe Channels at the required centres, and door openings are constructed to the Heavy and Severe Duty Rating door detail. The Gypframe 92 S 10 ‘C’ Studs are then braced together in pairs with either staggered Gypframe GAB3 Acoustic Braces, or staggered Gypframe 99 FC 50 Fixing Channels.

M&E services can be located within the partition cavity. Insulation is added to the partition cavity. Gyproc plasterboards are then fixed to the Gypframe framework with British Gypsum Jack-Point Screws.

When applying multiple layers of board, ensure that all board joints are staggered on both sides of the partition.

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**Additional information**

For full installation details, refer to the British Gypsum Site Book, available to download from british-gypsum.com.