C05. S03. P02 – P08
FireWall

Including C05. S01. P02
Specialist partitions introduction
Specialist partitions

This section details specialist lightweight systems where high-security, curved, fire or blast resistant partitions are required.
Specialist partitions

This section contains our solutions that have performances above and beyond the usual project requirements. Examples are enhanced security, aesthetic appeal and explosion protection.

The systems included in this section are:

<table>
<thead>
<tr>
<th>Specific performance</th>
<th>System</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ShaftWall</td>
<td>Lightweight, fire resistant structure to protect vertical or horizontal elements in confined spaces, where access is limited to one side only</td>
<td>C05.S02.P02</td>
</tr>
<tr>
<td></td>
<td>FireWall</td>
<td>Lightweight wall capable of providing up to 240 minutes fire resistance</td>
<td>C05.S03.P02</td>
</tr>
<tr>
<td></td>
<td>GypWall curve</td>
<td>Specifically designed to provide curved walls and linings with a high degree of design flexibility. Ideal for creating imaginative spaces with great aesthetic impact</td>
<td>C05.S04.P02</td>
</tr>
<tr>
<td></td>
<td>GypWall secure</td>
<td>Lightweight security wall, offering high resistance to determined attack</td>
<td>C05.S05.P02</td>
</tr>
<tr>
<td></td>
<td>BlastWall</td>
<td>High performance blast refuge system offering resistance to explosive devices</td>
<td>C05.S06.P01</td>
</tr>
</tbody>
</table>
FireWall
High performance fire-resistant wall system

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

FireWall is a lightweight, non-loadbearing wall capable of providing up to 240 minutes fire resistance. It is commonly specified in areas that contain business-critical items such as computer servers or data storage equipment. It is also specified where fire-spread containment is required, for example, in plant rooms.

Key benefits

— Satisfies insurance company requirements for enhanced performance
— Reduction of the structural load is achieved through this lightweight alternative solution to traditional masonry construction
— Increased fire resistance is achieved without compromising partition thickness through the use of non-combustible Glasroc F glass-reinforced gypsum boards
— No additional framing components required on site due to the use of standard Gypframe metal products that are widely used in other British Gypsum partition solutions

You may also be interested in...

For 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 downloads including:

— BIM (Revit) objects — CAD details (.dwg) — NBS Clauses — System and product data sheets

Refer to british-gypsum.com
FireWall performance (continued)

Gypframe 70mm and 146mm ‘C’ Studs and Gypframe 92mm ‘I’ Studs - two and three layer board linings

Table 1 — Solutions to satisfy requirements of BS EN 1364-1 and BS 476: Part 22: 1987

<table>
<thead>
<tr>
<th>Detail</th>
<th>Partition thickness mm</th>
<th>Board type</th>
<th>Lining thickness mm</th>
<th>Maximum partition height(h) mm</th>
<th>Sound insulation (R_w) dB</th>
<th>Duty rating</th>
<th>Approx. weight (\text{kg/m}^2)</th>
<th>System reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>180 minutes fire resistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>162</td>
<td>Gyproc FireLine</td>
<td>3 x 15</td>
<td>4000</td>
<td>46</td>
<td>Severe</td>
<td>73</td>
<td>A206252</td>
</tr>
<tr>
<td>2</td>
<td>238</td>
<td>Gyproc FireLine</td>
<td>3 x 15</td>
<td>4000</td>
<td>50</td>
<td>Severe</td>
<td>73</td>
<td>A206256</td>
</tr>
<tr>
<td>180 minutes fire resistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>154</td>
<td>Glasroc Firecase</td>
<td>2 x 15(c)</td>
<td>6900(c)</td>
<td>56</td>
<td>Severe</td>
<td>60</td>
<td>G106I019</td>
</tr>
<tr>
<td>4</td>
<td>166</td>
<td>Glasroc Firecase + Glasroc Multiboard</td>
<td>2 x 15 + 1 x 6</td>
<td>6900(c)</td>
<td>59</td>
<td>Severe</td>
<td>73</td>
<td>G106I018</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 Maximum wall heights quoted are limited by the fire state field of application or by limiting deflection of L/240 at 200 Pa, whichever is more onerous.
2 Actual test result gave 240 mins integrity : 222 mins insulation.
3 Gypframe Extra Deep Flange Floor & Ceiling Channel should be used at the head. For heights between 4200mm and 7600mm Gypframe Deep Flange Floor & Ceiling Channel should be used at the base.
4 For heights between 4200mm and 7600mm, Gypframe Deep Flange Floor & Ceiling Channel should be used at base and at head (subject to deflection criteria). For heights above 7600mm Gypframe Extra Deep Flange Floor & Ceiling Channel should be used at the base and at the head.

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.
FireWall design

Building design
FireWall comprises Gyproam ‘C’ or ‘T’ Studs within Gyproam Floor & Ceiling Channels. The position of services should be pre-determined and their installation planned into the frame erection stage.

Fixing floor and ceiling channels
Gyproam Floor & Ceiling Channels must be securely fixed with a row of fixings at 600mm maximum centres. For 94mm channels and above, two rows of staggered fixings are required, 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 C04. S01. P07 – Partitions introduction, 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.

Openings
FireWall is used to divide space into fire compartments and, as such, openings are generally not required. If openings are to be specified they must be shown by fire test to maintain the fire performance of the wall.

Cavity fire barriers
12.5mm Gyproc board, screw-fixed into the web of perimeter channels or vertical studs, will provide a satisfactory closure to flame or smoke. Alternatively 25mm Gyproc FireLine or Glasroc Firecase may be used.

Refer to C06. S07. P02 – Cavity fire barriers.

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 (see construction detail 1).


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 and also that the services themselves 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 C04. S01. P07 – Partitions introduction, construction detail 2.

Switch boxes and socket outlets can be supported from Gyproam 99 FC 50 Fixing Channel fixed horizontally between studs, or a high performance socket box detail where higher acoustic performance is required i.e. chosen socket solution must be able to provide fire resistance to match the partition system.

Independent support
When designing for the installation of services such as fire dampers and associated ductwork through a FireWall partition, consideration should be given to the size and weight of the damper - this will determine whether it can be supported directly from the partition or needs to be independently supported from the structure.


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

Refer to C02. S01. P33 – Service installations.

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.

Handy hint
If horizontal board joints are necessary, they should be staggered between layers by a minimum of 600mm to avoid downgrading performance.

SpecSure®
All our systems are covered by SpecSure® when using genuine British Gypsum and Saint-Gobain Isover products.
Deflection head for 15mm downward movement up to 240 minutes fire resistance

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.
FireWall system components

Gypframe metal components (Refer to C10. S02. P02 for details)

**Gypframe ‘T’ Studs (92 T 90)**
Enhanced strength stud that allows for greater partition height, without increasing partition width. Designed to receive fixing of board to both sides and enhance the fire performance of the partition.

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**Gypframe ‘C’ Studs (70 S 50, 92 S 50, 146 S 50)**
Vertical stud providing acoustic and structural performances designed to receive fixing of board to both sides.

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**Gypframe Folded Edge Standard Floor & Ceiling Channels (72 FEC 50, 94 FEC 50, 148 FEC 50)**
Standard floor channels for retaining the Gypframe studs at floor junctions and around openings to heights not exceeding 4200mm.

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**Gypframe Deep Flange Floor & Ceiling Channels (72 DC 60, 94 DC 60, 148 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.

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**Gypframe Extra Deep Flange Floor & Ceiling Channels (72 EDC 80, 94 EDC 70, 148 EDC 80)**
Floor and ceiling channels with extra deep flanges for retaining the Gypframe studs at floor and ceiling junctions for partitions over 8000mm high.

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

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

**Glasroc F FIRECASE**
Non-combustible glass-reinforced gypsum board. Also used to form deflection heads.

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**Glasroc F MULTIBOARD**
Non-combustible glass-reinforced gypsum board.

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

**British Gypsum Drywall Screws**
Corrosion resistant self-tapping steel screws for fixing board to metal framing less than 0.8mm thick (‘T’ studs less than 0.6mm thick).

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

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**British Gypsum Collated Drywall Screws**
Corrosion resistant self-tapping steel screws for fixing board to metal framing less than 0.8mm thick (‘T’ studs less than 0.6mm thick).

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**British Gypsum Wafer Head Jack-Point Screws**
Corrosion resistant self-tapping steel screws for fixing metal to metal framing 0.8mm thick and greater (‘T’ studs 0.6mm thick and greater).

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**British Gypsum Wafer Head Drywall Screws**
Corrosion resistant self-tapping steel screws for fixing metal to metal framing less than 0.8mm thick (‘T’ studs less than 0.6mm).

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**Glasroc F FIRECASE Screws**
Corrosion resistant self-tapping steel screws for fixing 6mm Glasroc F MULTIBOARD to Glasroc F FIRECASE.

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

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

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gyproc Jointing Materials</td>
<td>Jointing compounds, ready mixes and adhesives for reinforcement and finishing of board joints. Primers and sealers for treatment of boards for pre-decoration.</td>
</tr>
<tr>
<td>Gyproc Corner Tape</td>
<td>A paper tape bonded to two corrosion resistant steel strips.</td>
</tr>
<tr>
<td>Gyproc Joint Tape</td>
<td>A paper tape designed for reinforcement of flat joints or internal angles.</td>
</tr>
<tr>
<td>Gyproc No-Coat Flex Tape</td>
<td>A high strength, tapered co-polymer core offers strong and uniform surface bonding for internal and external angles in plasterboard constructions.</td>
</tr>
<tr>
<td>Gyproc edge and angle beads</td>
<td>Protecting and enhancing board edges and corners</td>
</tr>
<tr>
<td>Gyproc FireStrip</td>
<td>A soft extruded linear intumescent gap sealer to maintain fire resistance located directly to the underside of the soffit when forming a deflection head.</td>
</tr>
<tr>
<td>Gyproc Sealant</td>
<td>Used to seal air paths for optimum sound insulation.</td>
</tr>
<tr>
<td>Gyproc AquaBead</td>
<td>An easy to apply, water, activated adhesive corner bead, for reinforcing external 90°C angles in taped and jointed plasterboard constructions.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thistle MultiFinish</td>
<td>To provide a plaster skim finish on most common backgrounds including undercoat plasters and plasterboard.</td>
</tr>
<tr>
<td>Thistle BoardFinish</td>
<td>To provide a plaster skim finish to Gyproc plasterboards.</td>
</tr>
<tr>
<td>Thistle SprayFinish</td>
<td>To provide a plaster skim finish by spray or hand application, ideal for medium to large projects.</td>
</tr>
<tr>
<td>Thistle ProTape FT50</td>
<td>Self-adhesive 48mm wide glass fibre mesh tape.</td>
</tr>
<tr>
<td>Thistle ProTape FT100</td>
<td>Self-adhesive 100mm wide glass fibre mesh tape.</td>
</tr>
<tr>
<td>Thistle DuraFinish</td>
<td>To provide a plaster skim finish and provide up to 60% tougher resistance to accidental damage.</td>
</tr>
<tr>
<td>Thistle PureFinish</td>
<td>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.</td>
</tr>
<tr>
<td>Thistle Magnetic Plaster</td>
<td>To provide a plaster skim finish that provides an attraction to magnets used to finish a wide range of backgrounds, including undercoat plasters and plasterboard.</td>
</tr>
</tbody>
</table>

### Insulation products

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stone Mineral Wool (100kg/m³ by others)</td>
<td>For fire stopping.</td>
</tr>
</tbody>
</table>
FireWall 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.

Gypframe 'C' Studs are suitably fixed to abutments and at openings.

Gypframe 'I' Studs or 'C' Studs are then friction fitted into the Gypframe Channels at required centres.

Door openings are constructed to the Heavy and Severe Duty Rating.

The perimeter of the partition is then sealed on both sides with Gyproc Sealant.

M&E services can be located within the partition cavity.

Stone mineral wool insulation (by others) may also be added to the partition cavity for increased performance.

The appropriate lining boards are screw-fixed to framing members to form the lining, except 6mm Glasroc F MULTIBOARD, which is screw-fixed to the Glasroc F FIRECASE linings.

Additional information

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