FireWall

High performance fire-resistant wall system

SpecSure®
GYPROC SYSTEMS GUARANTEE

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.

180 – 240 mins

46 – 59 R_w dB

SpecSure®

Refer to C01. S01. P08

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 Gyproc partition solutions

You may also be interested in...

For assistance in choosing the right solution for your project, try our **System Selector**; an online tool that enables quick and easy filtering by performance criteria. It provides system specific downloads including:

- BIM (Revit) objects
- Specification Clauses
- System and product data sheets

▶ Refer to gyproc.ie

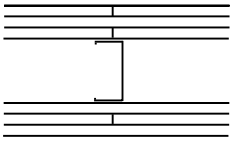
FireWall performance (continued)

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

For details of when to specify fire resistance using EN / BS
▶ Refer to **C02. S01. P18**

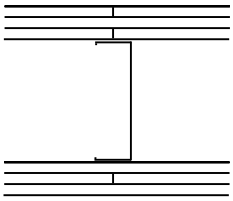
Table 1 — Solutions to satisfy requirements of *BS EN 1364-1: 1999 and BS 476: Part 22: 1987*

1



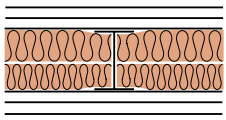
Three layers of board each side of 70 S 50 Gypframe 'C' Studs at 600mm centres. Linings as in table.

2



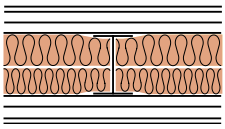
Three layers of board each side of 146 S 50 Gypframe 'C' Studs at 600mm centres. Linings as in table.

3



Two layers of board each side of Gypframe 92 I 90 'I' Studs at 600mm centres and located in Gypframe Extra Deep Flange Floor & Ceiling Channel. 90mm thickness of stone mineral wool 100kg/m3 (40mm & 50mm batts) in the cavity. Linings as in table.

4



Three layers of board each side of Gypframe 92 I 90 'I' Studs at 600mm centres and located in Gypframe Extra Deep Flange Floor & Ceiling Channel. 90mm thickness of stone mineral wool 100kg/m3 (40mm & 50mm batts) in the cavity. Linings as in table.

Detail	Partition thickness mm	Board type	Lining thickness mm	Maximum partition height[1] mm	Sound insulation R_w dB	Duty rating	Approx. weight kg/m²	System reference
180 minutes fire resistance EN								
1	162	Gyproc FireLine	3 x 15	4000	46	Severe	73	A206252
2	238	Gyproc FireLine	3 x 15	4000	50	Severe	73	A206256
180 minutes fire resistance BS								
3	154	Glasroc F FIRECASE	2 x 15[2]	6900[3]	56	Severe	60	G106I019
1	162	Gyproc FireLine	3 x 15	4900[4]	46	Severe	73	A206252
2	238	Gyproc FireLine	3 x 15	7900[4]	50	Severe	73	A206256
240 minutes fire resistance BS								
4	166	Glasroc F FIRECASE + Glasroc F MULTIBOARD	2 x 15 + 1 x 6	6900[3]	59	Severe	73	G106I018

▶ For further assistance in choosing the right solution for your project, try our 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 gyproc.ie

[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.

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 Gyproc's recommendations. The quoted performances are achieved only if Gyproc and Isover components are used throughout, and the Company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with Gyproc.

FireWall design

Building design

FireWall comprises Gypframe 'C' or 'I' Studs within Gypframe 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

Gypframe 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 Gyproc Wafer Head Drywall Screws or steel pop rivets (two to each flange).

▶ **Refer to C04. S01. P110 – 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. P21 – 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

Where required to maintain fire performance, suitable fire stopping (by others) should be installed full filled within the partition cavity to form a suitable closure.

▶ **Refer to C06. S06. P422 – 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).

▶ **Refer to C04. S01. P116 – Partitions introduction, construction details 15-21.**

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. P41 – 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. P110 – Partitions introduction, 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 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.

▶ **Refer to C04. S01. P122 – Partitions introduction, construction details 29-31.**

Fixtures

Lightweight fixtures can be made directly to the partitions. 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 to plywood using Gypframe Service Support Plates.

▶ **Refer to C02. S01. P41 – Service installations.**

Board finishing

▶ **Refer to C08. S01. P483 – Finishes.**

Tiling

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

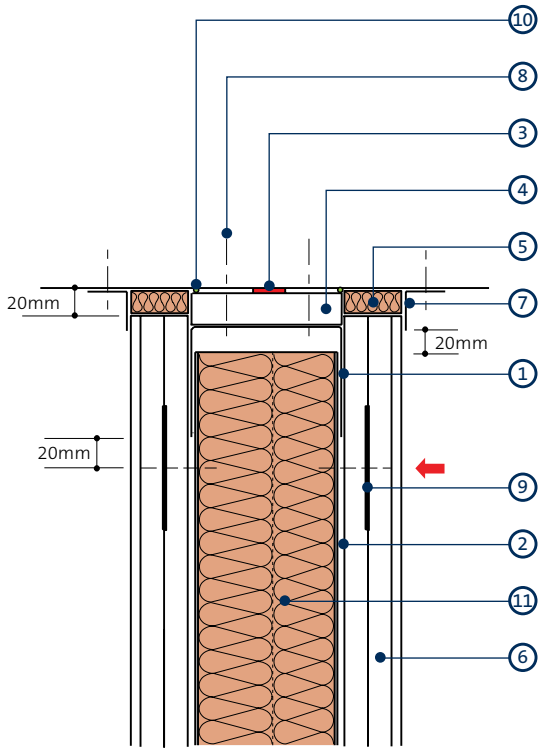
▶ **Refer to C08. S04. P498 – Tiling.**

Handy hint

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

FireWall construction details

1



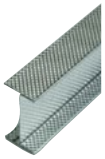
Deflection head for 15mm downward movement
up to 240 minutes fire resistance
- BS 476 Part 22: 1987

1 Gypframe Extra Deep Flange Floor & Ceiling Channel
2 Gypframe 'I' Stud
3 Gyproc FireStrip (continuous line)
4 30mm Glasroc F FIRECASE forming fire-stop
5 Stone mineral wool (by others)
6 Glasroc specialist boards / Gyproc fire boards
7 Gypframe GA4 Steel Angle
8 Staggered rows of fixings through fire-stop
9 Gypframe GFS1 Fixing Strap
10 Gyproc Sealant
11 Stone mineral wool (by others) if required

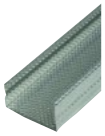
NB No fixings should be made through the boards into the flanges of the head channel. The arrow (⬅) denotes the position of the uppermost board fixing which should be made into Gypframe GFS1 Fixing Strap. Continuous Gyproc FireStrip must be installed as shown to maintain fire performance.

FireWall system components

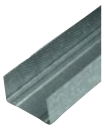
Gypframe metal components



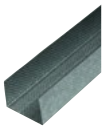
Gypframe 'I' Studs (92 I 90)
Enhanced strength stud that allows for greater partition height, without increasing partition width. Designed to receive fixing of board to both sides and enhance the fire performance of the partition.



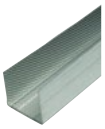
Gypframe 'C' Studs (70 S 50, 92 S 50, 146 S 50)
Vertical stud providing acoustic and structural performances designed to receive fixing of board to both sides.



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.



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.

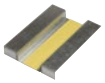


Gypframe Extra Deep Flange Floor & Ceiling Channels (72 EDC 80, 94 EDC 70, 148 EDC 80)
Floor and ceiling channels with extra deep flanges for retaining the Gypframe studs at floor and ceiling junctions for partitions over 8000mm high.

Gypframe 99 FC 50 Fixing Channel
A versatile metal fixing channel used to support medium weight fixtures on walls.

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

Gypframe GA4 Steel Angle
Steel angle providing framing stability and board support. Used at deflection head.



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

Board products

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

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

Gyproc FireLine[1]
Gypsum plasterboard with fire resistant additives.

[1] Also available in a Moisture Resistant (MR) version. MR boards are specified in intermittent wet use areas.

Fixing products

Gyproc Drywall Screws
Corrosion resistant self-tapping steel screws for fixing board-to-timber and board-to-metal framing less than 0.8mm thick ('I' studs less than 0.6mm thick).

Gyproc Collated Drywall Screws
Corrosion resistant self-tapping steel screws for fixing board-to-timber and board-to-metal framing less than 0.8mm thick ('I' studs less than 0.6mm thick).

Gyproc Wafer Head Drywall Screws
Corrosion resistant self-tapping steel screws for fixing metal to metal framing less than 0.8mm thick ('I' studs less than 0.6mm).

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

Gyproc Wafer Head Jack-Point Screws
Corrosion resistant self-tapping steel screws for fixing metal to metal framing 0.8mm thick and greater ('I' studs 0.6mm thick and greater).

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

FireWall system components (continued)

Plasterboard accessories

Gyproc Jointing Materials
Jointing compounds, ready mixes and adhesives for reinforcement and finishing of board joints.

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 Corner Tape
A paper tape bonded to two corrosion resistant steel strips.

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

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

Gyproc Drywall Primer
Used to prepare for painting.
Tub contents 10 litre.

Finishing products

Gyproc Skimcoat
To provide a plaster skim finish on most common backgrounds including undercoat plasters and plasterboard.

Gyproc Carlite Finish
To provide a plaster skim finish and provide up to 60% tougher resistance to accidental damage.

Gyproc Carlite Ultra Finish
Offers all the benefits of Gyproc Skimcoat and Gyproc Carlite Finish with a reduced set time of 90-120mins, making it ideal for smaller jobs.

Gyproc Magnetic Plaster
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.

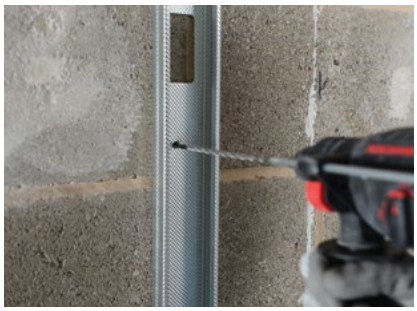
Insulation products

Stone Mineral Wool (100kg/m³ by others)
For fire stopping.

FireWall installation overview

This is intended to be a basic description of how the system is built.
For detailed installation guidance refer to the **Gyproc Installation Guide.**

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 **Gyproc Installation Guide**, available to download from gyproc.ie